Emergency Medical Services/Trauma Committee

March 1, 2017

California Hospital Association

1215 K Street, Suite 800

Sacramento, CA 95814

Conference Call Option: 888-240-2560 passcode: 735320975#

Emergency Medical Services/Trauma Committee Meeting Book

AGENDA - Wednesday, March 1, 2017

10:00 I. CALL TO ORDER/INTRODUCTIONS
Schneider

A. Membership

1. CHA EMS/Trauma Committee Roster — Page 5
2. Member Updates
3. CHA EMS/Trauma Committee Member Map — Page 8
4. CHA EMS/Trauma Committee Member Breakdown — Page 9
5. CHA ESM/Trauma Committee Guidelines — Page 10
6. CHA EMS/T Goals and Objectives 2016-2017 — Page 14

10:20 II. REVIEW OF PREVIOUS MEETING MINUTES
Schneider

A. Draft Minutes - December 21, 2016 — Page 15

10:25 III. OLD BUSINESS

A. Trauma Performance Improvement and Patient Safety Plan — Page 21
Nasr

B. Trauma Regulations
Nasr

C. TMAC Update
Venezio

D. ECSI — Page 27
Bartleson

E. Observation — Page 47
Rogers

F. Behavioral Health Update
Lowe

1. Outcome of Leading the Way Coalition Meeting

G. EMS/C Update
Venezio

H. Community Paramedicine — Page 51
Pierson, Bartleson, Massey

I. Stroke Regulations — Page 248
Bartleson

J. APOT — Page 257
Lynch, Barton, Bartleson

11:00 IV. NEW BUSINESS

A. Alternate Destination — Page 274
Lynch

B. MyCares Program — Page 275
Mackey

C. HIE and SB40 — Page 277
Bartleson

D. Ambulance Cleaning Policies — Page 285
Bartleson/Schneider

E. STEMI Regulation — Page 306
Bartleson

F. EMTALA — Page 316
Bartleson

G. Analysis of ED Length of Stay for Mental Health Patients at 10 Massachusetts Hospitals — Page 327

12:00 V. Lunch

12:30 VI. LEGISLATION
Bartleson

A. SB 20, Hill — Page 353

B. AB 259, Gipson — Page 356

C. AB 263, Rodriguez — Page 359

D. AB 451, Arambula — Page 365

12:50 VII. REPORTS

A. EMSA

B. ENA - Draft Position Statements

1. Obstetrical Patients in the Emergency Care Setting

2. Triage Qualifications and Competency

C. TMAC

D. CDPH

E. Ground Ambulance

F. Air Ambulance

G. Cal ACEP

1:45 VIII. INFORMATION ONLY
Chavis

A. Hospital United ED Docs with Hospitalists to Reduce ED Overcrowding	Page 372
B. Mississippi Hospital Tries New Approach to Opioids	Page 374
C. Early Death after Discharge from EDs - Analysis	Page 375

IX. IMPORTANT DATES

A. Next Meeting - Wednesday, June 7, 2017 - 10 am - 2 pm

B. EMS Commission Meeting - March 15, 2017, 10 am - Embassy Suites Garden Grove

C. 2017 HIE Summit - April 4 and 5 - Anaheim Sheraton Park, Hotel

D. 2017 California Trauma Summit - May 2 and 3, 2017 - Holiday Inn Bayside, San Diego

E. CHA Emergency Services Forum - December 6, 2017 - Mission Inn Hotel and Spa, Riverside

2:00 X. ADJOURNMENT
Schneider

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

EMS/TRAUMA COMMITTEE
2017 MEMBER ROSTER

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EMS/T Committee Hospital Representation

BY COUNTY and HOSPITAL TYPE

As of February 10, 2017

HOSPITAL/HEALTH SYSTEM TYPES	
Free-Standing Facility	3
Hospital System	7
Small/Rural Facility	1
University/Teaching Facility	3
TOTAL COMMITTEE REPRESENTATION	14

Denotes number of hospitals/health systems represented within that county.

CHA Member/ED Breakdown

February, 2017

HOSPITAL COMMITTEE

MEMBER:

Carla Schneider		Hoag Memorial Presbyterian Hospital
Pam Allen		Redlands Community Hospital
Nancy Blake		Children's Hospital Los Angeles
Neal Cline		Enloe Medical Center
Rose Colangelo		Scripps Memorial Hospital La Jolla
Connie Cunningham		Loma Linda University Med Center
Karla Earnest		Lucile Packard Children's Hospital
Fred Hawkins		Ridgecrest Regional Hospital
Cheryl Heaney-Ordez		St. Joseph's Medical Center
Laurie McCully		Cedars-Sinai Medical Center
Karen Murrell		Kaiser Permanente South Sacramento
Rupy Sandhu		UC Davis Medical Center
Chris Walker		Sharp Memorial Hospital
Jason Zepeda		Hoag Memorial Presbyterian Hospital

ED TYPE BY MEMBER:

Carla Schneider	Hoag Memorial Presbyterian Hospital	Emergency Services
Pam Allen	Redlands Community Hospital	Emergency Services
Nancy Blake	Children's Hospital Los Angeles	Pediatric/Trauma
Neal Cline	Enloe Medical Center	Flight Nurse/Pre-Hospital/STEMI
Rose Colangelo	Scripps Memorial Hospital La Jolla	Emergency Services
Connie Cunningham	Loma Linda University Med Center	Emergency/Trauma
Karla Earnest	Lucile Packard Children's Hospital	Pediatric/Trauma
Fred Hawkins	Ridgecrest Regional Hospital	Emergency Services
Cheryl Heaney-Ordez	St. Joseph's Medical Center	Emergency Services
Laurie McCully	Cedars-Sinai Medical Center	General
Karen Murrell	Kaiser Permanente South Sacramento	Emergency Services
Rupy Sandhu	UC Davis Medical Center	Emergency Services
Chris Walker	Sharp Memorial Hospital	Emergency Services
Jason Zepeda	Hoag Memorial Presbyterian Hospital	Trauma/General

EX-OFFICIO COMMITTEE MEMBER:

Heather Venezio		CAL ENA
Eric Morikawa		California Department of Public Health
Farid Nasr		California EMS Authority
Ross Fay		CALSTAR
Jim Pierson		Medic Ambulance
Ron Smith		California Department of Public Health
Lawrence Stock		Antelope Valley Hospital
Chi Perlroth		CAL ACEP
		EMSA

CHA/REGIONAL STAFF

BJ Bartleson	California Hospital Association
Cheri Hummel	California Hospital Association
Judith Yates	HASD&IC
David Serrano Sewell	HCNCC
. Jaime Garcia	HASC

STATE REPRESENTATION

Northern California	**5**
Southern California	**9**

GUIDELINES FOR THE CALIFORNIA HOSPITAL ASSOCIATION'S EMS/TRAUMA COMMITTEE

Updated 09/23/15

I. NAME

The name of this committee shall be the CHA EMS/Trauma Committee.

II. MISSION

The EMS/Trauma Committee represents CHA members that provide emergency medical and/or trauma services in the State of California, and serves in an advisory capacity to the CHA Board of Trustees regarding EMS/Trauma member needs, policies and legislation.

Recognizing the diverse organizations and providers that work in emergency systems across the state, the mission of the committee also includes representation from diverse multidisciplinary health care organizations and associations that include professional associations, regulatory agencies, emergency services organizations, prehospital providers and others, that promote quality emergency services in the state of California. This multidisciplinary group will act as a collaborative source of emergency services expertise, providing a venue for the coordination of emergency and trauma services to advocate for the highest standards of emergency trauma care services across the state.

The purposes of the Committee shall be:

- to serve as a forum for all CHA members and associated groups interested in EMS/Trauma to receive and exchange information, adopt policies and positions, guide management, adopt strategies and serve as the primary public policy arm of CHA for emergency medical services and trauma issues;

- to provide CHA member EMS/Trauma providers with a statewide structure dealing with the issues important to their interests;

- to create a representative form of leadership which is based on participation of all its members;

- to provide direct input to the CHA Board of Trustees; and

- to provide a unified voice on behalf of CHA members, taking into account the multiple diverse organizations that interact with hospital emergency/trauma services

III. COMMITTEE

The committee shall consist of a maximum of 22 representatives from California hospital /health system organizations, and organizations with related interests.

A. MEMBERSHIP

1. Membership on the CHA EMS/Trauma Committee shall be based upon membership in CHA, and reserved for those members.

2. The Committee shall consist of various representatives from large hospital systems, public institutions, private facilities, free-standing facilities, small and rural facilities, university/teaching facilities, specialty facilities and a representative from a professional group specializing in EMS/Trauma issues.

3. Membership by EMS related organizations will be considered Ex-officio members. Ex-officio members will be determined by committee input and CHA determination.

4. Appointment of members to the Committee will follow the CHA Guidelines for Committee Membership.

B. TERMS OF THE COMMITTEE MEMBERS

1. As members leave the Committee, vacancies shall be filled. It is understood that a member forfeits his/her seat if they no longer serve in the capacity, or represent a facility that is not a CHA member.

2. Committee members with specialized skills, knowledge, or professional associations may serve on the committee as ex-officio members. Ex-officio members are not subject to the above terms. These determinations shall be made by CHA.

3. Provider representatives who transition from one position to another are welcome to attend committee meetings during their transition; however, this should not exceed two consecutive meetings.

4. Provider representatives who misrepresent their organization's position are subject to review and dismissal from the committee.

C. COMMITTEE MEETINGS

1. Meetings of the Committee shall be held quarterly.

2. Provider representatives may send an appropriate substitute to the meetings when they are unable to attend. To maintain continuity for Committee meetings, this should be used sparingly, not to exceed two consecutive meetings.

3. Three consecutive unexcused absences by a Committee member may initiate a review by the Chair and CHA staff for determination of the Committee member's continued service on the Committee.

4. Special meetings may be scheduled by the Chair, majority vote or CHA staff.

5. Membership is based on one's ability to be physically present at quarterly meetings and conference call only as needed for emergency situations.

D. VOTING

1. Voting rights shall be limited to members of the Committee, and each member present shall have one vote. Voting by proxy is not acceptable.

2. All matters requiring a vote of the Committee must be passed by a majority of a quorum of the Committee members only at a duly called meeting or telephone conference call.

E. QUORUM

Except as set forth herein, a quorum shall consist of the majority of the Committee membership in attendance.

F. MINUTES

Minutes of the Committee shall be recorded at each meeting, disseminated to the membership, and approved as disseminated or as corrected at the next meeting of the Committee.

IV. OFFICERS

The officers of the Committee shall be the committee chair, co-chair, and CHA staff.

Except as provided herein, the chair and co-chair shall be elected by the Committee for a two-year term.

The chair officers vacate their Committee positions upon election, and their seats shall be filled through the nominating and election process. The past-chairs will be invited by the Committee to serve as ex-officio members.

Should a chair or co-chair vacate his/her position prior to the end of the term, a nominating committee will convene to select a replacement, and assume a two-year term of office.

V. COMMITTEES

For special and specific purposes, the chair or CHA staff may appoint a committee or ad hoc on task force. Membership may be expanded to non-members of the Committee.

VI. GENERAL PROVISIONS

The strategic plan defining the goals, objectives, and work plans shall be developed annually by the CHA staff and approved by the Committee. Quarterly updates and progress reports shall be completed by the Committee and CHA staff.

Staff leadership at the state level shall be provided by CHA with local staff leadership provided by HCNCC, HASD&IC, and HASC. The primary office and public policy development and advocacy staff of the Committee shall be located within the CHA office.

The Committee staff shall be an employee of CHA.

VII. AMENDMENTS

These Guidelines may be amended by a majority vote of the members of the Committee at any regular meeting of the Committee.

VIII. LEGAL LIMITATIONS

Any portion of these Guidelines which may be in conflict with any state or federal statutes or regulations shall be declared null and void as of the date of such determination.

Any portion of these Guidelines which are in conflict with the Bylaws and policies of CHA shall be considered null and void as of the date of the determination.

Information provided in meetings is not to be sold or misused.

IX. CONFIDENTIALITY FOR MEMBERS

Many items discussed are confidential in nature, and confidentiality must be maintained. All Committee communications are considered privileged and confidential, except as noted.

X. CONFLICT OF INTEREST

Any member of the Committee who shall address the Committee in other than a volunteer relationship excluding CHA staff and who shall engage with the Committee in a business activity of any nature, as a result of which such party shall profit pecuniarily either directly or indirectly, shall fully disclose any such financial benefit expected to CHA staff for approval prior to contracting with the Committee and shall further refrain, if a member of the Committee, from any vote in which such issue is involved.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

CHA Emergency Services /Trauma Committee Goals and Objectives, 2016-2017

SUMMARY

Goals and Objectives have been drafted for review and approval of the committee.

1) Develop guidance, tools, information and strategies to support emergency department and trauma services of the future that enhance quality patient care.

    a. Implement subject matter task forces where members can utilize their expertise to explore, plan and suggest strategies for the larger EMS/T committee

2) Advise the CHA Board on ED crowding surge issues and the changing LEMSA regulatory environment affecting hospital/health systems and EMS/Trauma care systems.

    a. Develop an issue brief that describes the present environment, issues and strategic recommendations.

3) Plan and implement a successful 2015 Behavioral Health/EMS Summit where one full day is dedicated to pure EMS/T issues and one day is combined EMS/behavioral health topics.

    a. Discuss conference planning activities at the 6/24/2015 committee meeting
    b. Assess other statewide ED conferences and identify topics of interest to stimulate high conference participation
    c. Bring interested members together as a planning team

ACTION ITEM

Discuss and advise.

Should you have any questions, please feel free to contact me at (916) 552-7537 or via email at bjbartleson@calhospital.org.

CHA EMS/TRAUMA COMMITTEE
MEETING MINUTES
December 21, 2016 / 10:00 a.m. – 2:00 p.m.

1215 K Street, Suite 730
Sacramento, CA

Members Present: Darlene Bradley, Heather Venezio, Rupy Sandhu, Farid Nasr, Ross Fay, James Pierson, Karen Murrell

Members Attending by Call: Chi Perlroth, Nancy Blake, Karla Earnest, Ron Smith, Carla Schneider

Guests: Carole Snyder

CHA Staff: BJ Bartleson, Barb Roth, Debby Rogers,

RVP Staff: Judith Yates

I. CALL TO ORDER/INTRODUCTIONS

The meeting was called to order at 10:00 a.m. Introductions were made and member updates, Goals and Objectives and Guidelines were reviewed.

BJ reiterated that we are always looking for new members in mid-state. Review of map and member breakdown. Judith had input regarding adding someone from Imperial County to add to the committee.

BJ reviewed the guidelines and goals & objectives. We will be reviewing goals and objectives for 2017 with the co-chairs.

Review of 2017 calendar. Encourage face to face meetings. The December EMSA Commission meeting will be held on December 6, 2017, in San Francisco

- *ACTION:* The December CHA EMST Committee meeting will be held on the 13th and therefore will not conflict with the December EMSA Commission meeting on December 6, 2017.

II. REVIEW OF PREVIOUS MEETING MINUTES

The minutes of the August 30, 2016, EMS/Trauma Committee meeting were reviewed as submitted.

IT WAS MOVED, SECONDED AND CARRIED:

- *Correction: Carla Schneider was present. RVPs should be listed as staff not as members. Karla Earnest wants to be in subcommittee representing Trauma*
- *Motion to approve with corrections – moved and carried.*

III. OLD BUSINESS

A. Trauma Performance Improvement & Patient Safety Plan - Bartleson

Ms. Bartleson put in the draft plan and comments submitted by CHA and pointed out membership issues along with how meeting requirements and problem resolution will occur. We also had several questions regarding PIP term definitions..

- *ACTION: information only*

B. Trauma Regulations - Bartleson

Dr. Nasr updated the committee that letters had been sent to interested parties and stakeholders for membership on the EMSA Trauma Revisions Task Force. He also mentioned that nominations for Bonnie Sinz's position (EMSA Trauma Coordinator was also sent to interested parties and stakeholders. EMSA would like to hire the Trauma Coordinator before the task force and revisions begin.. EMSA would encourage written regulations that are not too prescriptive.

Ms. Bartleson encouraged dialogue on issues of concerns to the committee at this point. The committee pointed out the following areas of focus:
1) ACS verification
2) Pediatric Level 1 Trauma centers and appropriate patient numbers
3) grandfathering
4) training
5) TQIP Funding and separate contracts
6) ACS contracts
7) Retriage
8) /RTCC's
9) Involvement of non-trauma centers
10) Quality of Care

ACTION:
- Ms. Bartleson requested members email BJ if any further issues arise so we can submit the list to the CHA Trauma revision subcommittee, headed by Heather Venezio.
- *Next steps* – Dr. Nasr will assemble the statewide taskforce and look to hire someone in the state trauma coordinator position.
- BJ – Once the state task force commences, BJ will assemble the CHA Trauma Task Force: Connie Cunningham, Nancy Blake, Darlene Bradley, Renee Smith, Karla (Peds). Fred Hawkins, to represent a Level IV. center), and Rupy Sandhu to represent a Level 1

C. Emergency Services Forum Update – Bartleson

Ms. Bartleson commented that over 170 people attended the ED Forum and enclosed all the power points for the conference in the meeting packet. Ms. Bradley commented this was one of the best conferences she had attended and that ideas and

best practices were shared. She recommended we do more best practices next year. The Human Trafficking and Washington ED pilot programs were her top presentations. Ms. Bartleson commented that in the absence of HIE community infrastructure EDIE (Collective Medical Technologies) was providing an ED care coordination opportunity. Washington State was able to track frequent narcotic users with EDIE and provide improved care at a lower cost. The ECSI and ED Crowding initiative will be about reviewing collected data to drive down unnecessary ED visits and improve crowding issues.

Ms. Bartleson also brought up that legislation will more than likely be introduced this year to improve CURES connectivity to HIE ED environments.

ACTION:

- *Barb – put ED Forum powerpoints on the EMS/T Committee site on the website*

D. APOD Update - Bartleson

Ms. Bartleson described the EMS Commission approved APOD guidelines methodology and Core Measures and included them in the meeting book. Ms. Bartleson described that while many issues were removed per hospitals request from the statewide methodology, the group did not remove the 20 minute standard which was approved as the APOT-2 benchmark across the state. Ms. Bartleson described the data validation performed by HQI across 4 of the LEMSA reports to confirm that 20 minutes was not an accurate number. The information was given to the EMS Commission and testimony by HQI representative and Jan Remm, HASC/CHA APOD representative, and Ms. Bartleson

- *ACTION: BJ will include the statistical validation in the next meeting packet.*

E. MOON Update - Rogers

Ms. Rogers reported on the status of state and federal observation mandates. A webinar planned for February to educate and inform, particularly on the differences. The Federal requirement is that Medicare eligible patients need to be notified and given a form. We are seeking more information from CMS on criteria for “not being an inpatient”. The CMS requirement is that this notification be given to patients on observation in outpatient status within a specific time frame.

The State requirement mandates – everyone to get notification about observation status, not just Medicare enrollees. Therefore, it will require two forms (one for Fed and one for State). The implication is that hospitals can care for an observation patient status on an inpatient basis. Along with the codification of an observation unit. Ms. Rogers is working with OSHPD on this and perhaps with CDPH to understand all the nuances.

The state law requires an observation unit to have same staffing status as respective unit, i.e. ED, 1:4, Med/Surg 1:5. There is no appeal process and CHA is reviewing the 5150 hold and EMTALA implications. The state requirements start on January1, and reimbursement issues are uncle

- *ACTION: information only*

F. Behavioral Health Update - Lowe

Ms. Lowe gave an informational update on the ED substance abuse disorder Medicare benefit for voluntary detox. Hospitals have not been able to access this benefit.

Ms. Lowe outlined the mental health issues. CHA commissioned a law firm to do a white paper on psychiatric Medi-Cal enrollees. There is no billing for county health plans for services rendered for patients with serious mental illness.

Ms. Lowe discussed the AB 1300 "post mortem" meeting as the bill was not moved out of committee and had advocacy opposition. Several other legislative efforts may be occurring on real-time bed registry and the 21st century CURES Act allows grant funding to states to apply for realtime bed registry services.

Ms. Lowe reported CHA is convening a coalition meeting of some 50 stakeholders. The idea is to bring divergent people to the table to discuss issues and solutions. The goal is to get a non-profit in CA to agree to sponsor and continue having these meetings in 2017 and have a stakeholder consensus at the end.

Ms. Lowe will be reviewing committee membership for ideas on legislation and how it will affect work in the ED.

- *ACTION: Committee to check with their hospitals on this voluntary detox benefit from Medicare – please provide information to BJ or Sheree.*

G. EMS/C Update – Venezio

Heather provided a brief overview of EMSC activity.

- *ACTION: Informational Only*

H. ECSI Update – Bartleson

Ms. Bartleson reported that the CHA and all four Regional Boards have voted to support the ECSI initiative. This is one of the first initiatives that all 4 associations will be working on. We are working on an internal process to engage all the associations and looking externally for funding. Reach Air Ambulance has purchased CALSTAR and they are forming a foundation that may present a future funding opportunity. We are presently working on an infographics and will send when available.

- *ACTION: Ms. Bartleson will send ECSI infographic when available*

J. Community Paramedicine – Pierson

Mr. Pierson reported on the statewide pilots and next steps. As the pilots conclude their first year of data collection, Mr. Pierson discussed the barriers with ambulance reimbursement and paramedic regulations moving forward.

Ms. Venezio commented that falls were a huge issue and wanted to hire community paramedics to work with people at home to do home assessments etc.

- *ACTION: information only*

IV. NEW BUSINESS

A. Stroke Regulations – Nasr

Dr. Nasr gave an update on the Stroke and Stemi regulations and comment due dates. Ms. Bartleson requested any comments by the group could be submitted to CHA for inclusion in the CHA remarks.

- *ACTION: Comments for Stroke send to BJ by 1/16. Comments for STEMI send to BJ by 1/23.*

B. Membership Discussion - Bartleson

CHA put out a call for potentially interested members and requested resumes. Of particular interest is someone from the central part of the state. BJ had met with Pam Allen at Redwood and would suggest her has an additional member.

Ms. Bartleson will review the candidates, CV, etc. and put out potential candidates to the committee for electronic vote. We are short on emergency services members from the central part of the state.

- *ACTION: information only.*

C. Legislation – Bartleson

Ms. Bartleson reported that the legislators were sworn in on Dec. 5. Presently there are about 150 spot bills. . Two bills of note are:

1. (SB 20, Hill)Bus seat belt safety bill
2. (SB 43 Hill)Antimicrobial issue

- *ACTION: information only*

V. INFORMATION ONLY

Ms. Schneider brought up the question of ambulance gurney cleaning and what the processes are. Mr. Pierson remarked that many have cleaning procedures but there is no standard procedure. Education is a potential way to encourage cleaning procedures to prevent infection, particularly C. Difficele.
Dr. Nasr announced that next year's Annual Trauma Program is at the Holiday Inn Bayside, San Diego on May 4-5.

VI. NEXT MEETING

March 1, 2017.

- *ACTION: Informational Only.*

VII. ADJOURNMENT

Having no further business, the meeting adjourned at 1:35 p.m.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: Trauma

SUMMARY

The following trauma items are being presented as review and/or updates from EMSA and TMAC.

ACTION REQUESTED

- *Information only*

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

October 7, 2016

California EMS Authority
ATTN: Bonnie Sinz
EMS Systems Division
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670-6073

BY ELECTRONIC CORRESPONDENCE

RE: California State Trauma Performance Improvement and Patient Safety Plan, Public Comment Period, August 1, 2016, through October 7, 2016

Dear Ms. Sinz:

On behalf of more than 400 member hospitals and health systems, the California Hospital Association (CHA) respectfully offers the following comments for consideration to the California State Trauma Performance Improvement and Patient Safety Plan. Specific comments are detailed in the attached public comment grid and a summary of the comments is listed below.

CHA appreciates EMSA's pursuit of a highly functional trauma care system and establishment of critical elements, such as a statewide performance improvement plan, to assure quality trauma care for the citizens of California. This is key to moving forward with data based evidence to guide performance measures on the most efficient and effective use of resources.

CHA has few substantive comments and our overall assessment is the document is pragmatic and thoughtfully grounded in the Public Health Foundation framework that will allow providers to not only understand the ramification of acute care provisions, but also address measures to move us to a more optimally healthy society with less traumatic injury. We view this document as one that will mature with the accelerating changes in health care delivery.

CHA has three categories of comments, (non-substantive, grammatical/clarity, substantive) a majority of which are non-substantive. Many of the non-substantive comments suggest including the entire title of statue and regulations, and, spelling out acronyms and specific organizations, such as CDC. CHA envisions a broad distribution of this documents with stakeholders who may not be fully aware of trauma system and emergency services nomenclature. CHA offers several comments to improve clarity of content , such as adding

content to the sentence “establishing lines of communication”- to assist the reader in understanding who the communication lines will be established with. In addition, on page 11, 4th paragraph, there is language that the PIPS committee has already been formed and established, while the present document language explains how the PIPS committee will be formed and operate. Clarity is necessary to distinguish the two.

CHA has several substantive suggestions for the section on membership of the PIPS committee. First, the subcommittee chair should be appointed by the EMSA Director. Second, we suggest that a CHA representative and a public member representative be added to the committee. We also suggest that the meeting requirement be left to the committee’s discretion and mandate that the committee meets “at least” bi-annually. Thirdly, CHA is concerned with page 8, lines 35-36 relative to how resolution of a problem will be resolved if the participant and the respective LEMSA disagree. CHA suggests language to outline an appeal process if the participant and the LEMSA are unable to agree on an issue.

Several CHA comments are highlighted relative to the definition of trauma performance measures, for example, define “release of patient”, define “statewide mortality statistics”, and role of the Data Technical Assistance Committee. This level of specificity may or may not be necessary for this document.

In summary, CHA appreciates the opportunity to comment on this critical document that will not only guide the development of the California State Trauma System Trauma Performance Improvement and Patient Safety Plan, but set the stage for the achievement and acceleration of exceptional quality trauma care across the state.

Sincerely,

BJ Bartleson, RN, MS, NEA-BC
VP Nursing and Clinical Services
California Hospital Association
(916)552-7537
bjbartleson@calhospital.org

California State Trauma Performance Improvement and Patient Safety Plan DRAFT
Comment Period: August 1, 2016 through August 30, 2016

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
AUTHORITY Page 3 , line 7-8	BJ Bartleson	Include entire title of CCR- California Code of Regulations, Title 22, Social Security, Division 9, Prehospital Emergency Medical Services, Chapter 7, Trauma Care Systems	
AUTHORITY Page 3, line 12-13	BJ Bartleson	Include entire title of H&SC- California Health and Safety Code, Division 2.5, Emergency Services, Chapter 1 General Provisions,§ 1797-§1797.207	
AUTHORITY Page 3, line 33-35	BJ Bartleson	Include entire title of CCR- California Code of Regulations, Title 22, Social Security, Division 9, Pre-hospital Emergency Medical Services, Chapter 7, Trauma Care Systems, §100265, §100258, §100265	
PURPOSE Page 4, line 23	BJ Bartleson	Remove "The" add care- Trauma system care delivery begins- includes access to care throughout the continuum. Sentence to read: Trauma care system delivery begins with prevention and includes access to care throughout the continuum.	
PURPOSE Page 4, line 25-26	BJ Bartleson	Remove lines of communication, replace with, establishes connections between state and regional trauma stakeholders for monitoring aspects of care, and, defines guidelines to measure trauma care outcomes and quality.	
PURPOSE Page 4, line 26-28	BJ Bartleson	Replace with: The goal of the state trauma system PIPS plan is to advance trauma quality performance improvement for a coordinated statewide impact to optimize trauma care effectiveness with minimal care variations.	
STRUCTURE/Lead Agency Page 4, Line 31	BJ Bartleson	Spell out EMSA- California Emergency Medical Services Authority	

STRUCTURE/Membership Page 5, Line ,4	BJ Bartleson	Add, The Chair of the Subcommittee shall be a member of STAC, appointed by EMSA Director	
STRUCTURE/Membership Page 5, Line 17	BJ Bartleson	Add a representative from CHA Add a public representative	
STRUCTURE/Membership Page 5, Line 23	BJ Bartleson	Change “providers” to participants	
STRUCTURE/Membership Page 5, line 25	BJ Bartleson	Add” at least” - This subcommittee meets at least bi-annually. The subcommittee will need to determine the frequency of meetings	
PROCEDURES Page 5, line 27	BJ Bartleson	Remove the word, “platform”	
PROCEDURES Page 5, line 31-34	BJ Bartleson	Change to: The following section depicts the components of the framework by which Trauma PIPS program elements can be implemented. Continuous integration of these components into the core operations of the state trauma system enables the Trauma PIPS program to assure long lasting sustainability and benefits.	
PROCEDURES Page 5-8	BJ Bartleson	Recommend numbering the individual components for easier reference.	
PROCEDURES Page 8, 35-36	BJ Bartleson	Question- how is resolution of a potential issue resolved if the participant and the LEMSA disagree? There should be some type of appeal process in place. Add a sentence, “in case of participant and LEMSA disagreement, an appeal process through the STAC shall occur.”	
ASPECTS OF REVIEW Page 11, 1st paragraph	BJ Bartleson	Spell out HRSA or footnote it with a description of what HRSA 300 series benchmarks are	
ASPECTS OF REVIEW Page 11, 2nd paragraph	BJ Bartleson	Change variances to variation	

ASPECTS OF REVIEW Page 11, 2nd paragraph	BJ Bartleson	Who will review the extent of missing data and who will forward it to the Data Technical Assistance Committee and what is their role?	
ASPECTS OF REVIEW Page 11, 4th paragraph	BJ Bartleson	"The following process and outcome measures were deemed a priority by the PIPS Subcommittee"- nowhere in the document does it describe that the committee exists, if anything it describes how it will exist in the future. Change to "the following process and outcome measures were deemed a priority by the PIPS task force" and or add some statement in the beginning about the committee already existing and now it's being formalized.	
PROCESS MEASURES Page 11,	BJ Bartleson	Spell out acronyms and organizations such as CDC, ACS	
PROCESS MEASURES Page 12	BJ Bartleson	Define "release of patient"	
OUTCOME MEASURES Page 12	BJ Bartleson	Statewide mortality statistics – for what? All of trauma? Certain trauma???	
DOCUMENTATION Page 12	BJ Bartleson	Rename Documentation to "Compliance"	

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: ECSI

SUMMARY

CHA and the regional associations are actively preparing fro ECSI and will look to this committee to provide support, information and feedback.

ACTION REQUESTED

- *Information and discussion*

DISCUSSION

The attached powerpoint and flyer can be used with your colleagues and interested parties to describe our work. We are breaking down work based on barriers and how to address them. For example, today we have a representative from the California Association of Ambulances talking about barriers to ambulance alternate destination due to financing. Other topics would include

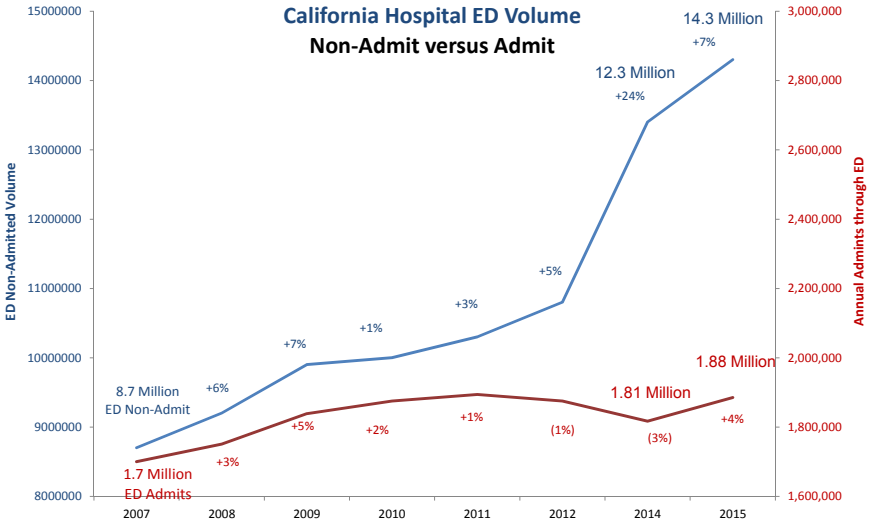
- lack of data
- poor care coordination
- lack of clarity around EMTALA
- lack of post-acute resources
- lack of behavioral health care
- lack of housing
- privacy and consent
- defining a low acuity non urgent patient

  - What other barriers do you perceive we will have?
  - Does anyone have potential funding sources we could approach?
  - What stakeholders you we need to add to the list?
  - What are your thoughts on legislative efforts?

CHA/REGIONAL ASSOCIATIONS EMERGENCY CARE SYSTEMS INITIATIVE

BJ Bartleson, RN,MS, NEA-BC
VP Nursing and Clinical Services
bjbartleson@calhospital.org

Non –Admit ED drives the volume increase and growing at a rate greater than admit ED



Source: OSHPD EMS Utilization Trends

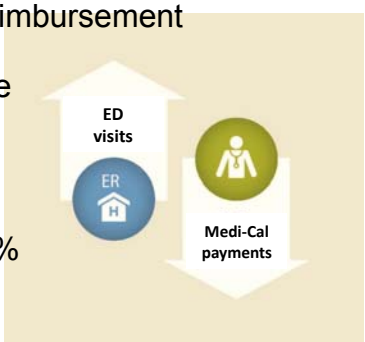
1

Coverage Does not Equal Access

- 13 plus million- 1 in 3 Californian's has Medi-Cal
- 40% of ED visits – Medi-Cal
- Ca ranks 47th in Medi-Cal reimbursement

Medi-Cal uncompensated care in hospitals exceeds $8 billion a year

2020 cost shift will exceed 55%



2

ED Crowding Symptoms Intensify

- **Consumer** – longer wait times, increased costs, lost productivity, lack of primary care
- **Hospitals/Providers** – quality and patient safety, disaster and crises preparedness, increased use of scare resources to support mission, boarding of patients in ED, hospital closures, increased 5150 impaction, homeless d/c dilemma, increased opioid seekers
- **Payers** –sub-optimal use of scarce resources in high cost settings
- **Pre-hospital** – ambulance patient offload delays, insufficient use of resources, threats

3

ED Input Solutions Examples

- Community Paramedicine
- Community Care Response Unit
- EDIE
- Field Triage Alternatives, Triage to waiting room
- Behavioral Health- PES/CSU initiatives
- 2012 DHCS Medi-Cal Managed Care Education
- FSED legislation, AHA rural hospitals/vulnerable communities
- Surge protocols/Reddinet/NEDOCS/HIE
- Hospital Reengineering- bedside registration, orders from triage, direct to

4

Throughput Solution Examples

- Safe Pain Prescribing Guidelines, CURES
- APOD tracking, AB 1223 guidelines, statewide core measures
- Hospital Reengineering-lab, pharmacy, staffing models/pods/hospital, bedflow/placement
- Behavioral Health 5150 holding areas
- Telehealth
- Workforce- scribes

ED Output Solution Examples

- Hospital Reengineering- Bed Czar, CDU, Observation units, boarding on floor,
- Case Management /Care Coordination

6

ER overcrowding solutions continue to fall short – Fierce Healthcare

- by Julie Bird | Mar 29, 2016 9:13pm

- Emergency departments around the country **continue to struggle** with overcrowding and, in some cases, come up with options for delivering care in different ways.
- For example, in Boston, **Massachusetts General Hospital's ED is at capacity** less than five years after opening a $500 million expansion, *The Boston Globe* reported. Eight out of 10 ED patients have to wait for care, in part because more patients require complex, time-consuming care, according to the article.
- It's not that all of the beds are always full, according to the *Globe.* The problem is that 30 to 45 beds in shared rooms go unused because staff can't match patient gender or don't want to put someone in a room with disruptive patients.

7

Whack-A -Mole

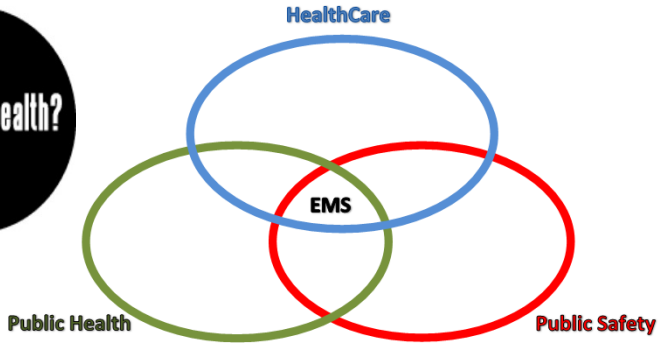
"The tragedy of the quick fix"

Tendency to deal with problems on a piecemeal basis, one problem, one solution basis, often missing the root cause of the problem, leading those to think that the problem has been solved

8

ED Crowding is Complex

- Definition of ED Crowding not clear, often based on stakeholder perspective
- Complexity requires interdependent stakeholder consensus and systems thinking



9

High ED Demand Drivers

- **Lack of public resources** –

  Affordable housing, transportation, addiction treatment

- **Insufficient behavioral health resources-** 1200 pts a day in Ca ED's /long LOS, 1 million ED Visits/yr

- **Insufficient post-acute capacity – CHA Study**

- **Limited Use of and availability of alternatives**-primary, urgent, community clinics, telemedicine, advice lines

- **Outdated regulations** such as ambulance routing patterns and 911

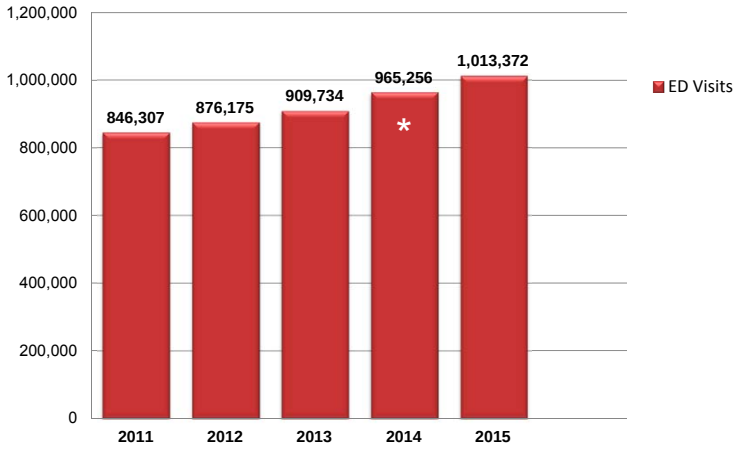
10

San Diego

- Fertile ground for a systems approach- cooperation, collaboration, coordination, communication
- Safe Pain Prescribing Initiative, 2 Community Paramedicine pilots, Sophisticated HIE
- HASDIC Study on potentially avoidable visits
- Public Health Officer alerted us to "ER is For Emergencies"

11

Emergency Department Volumes Continue to Grow

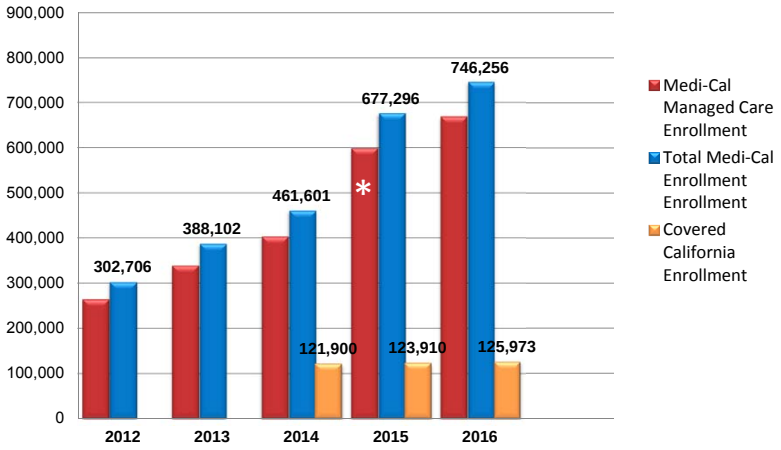


*San Diego 2015 population – 3.3 million

@HASDIC

www.hasdic.org

Medi–Cal and Covered California Enrollment in San Diego County



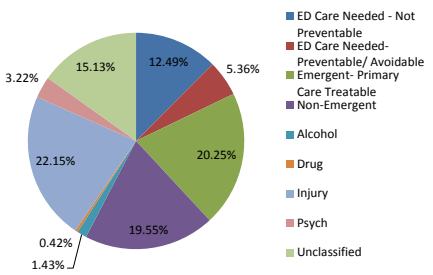
*San Diego 2015 population – 3.3 million

@HASDIC

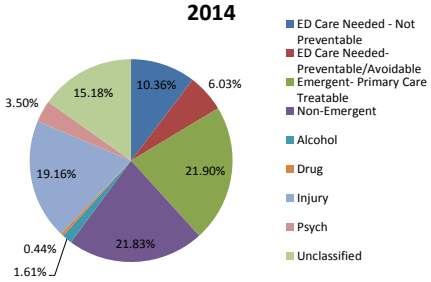
www.hasdic.org

San Diego ED Discharges

San Diego All ED Discharges, 2014



San Diego Medi-Cal ED Discharges, 2014



- 39.8% of ED visits could have **potentially** been avoided/treated in primary care.
- Number of potentially avoidable/treated in primary care is almost 4% higher (42.73%) when looking solely at Medi-Cal ED discharges.
  - *Much discussion at the HASD&IC Board level with hospitals around the issue of ED crowding and potential solutions.*

Emergency Room Crowding Collaborative Efforts


Non-emergencies clog local hospital ERs

- Press conference held in March – 2016 with Public Health, EMS, Hospitals, First Responders, Health Plans and other community stakeholders.
  - Goal was to raise public awareness of the issue
  - Information card was created and shared (Left) as well as the press reported on the issue (example above)
- Crowding taskforce continued to meet by phone weekly

San Francisco

Protecting San Francisco Emergency Services:

- Diagnosing and Addressing the Challenges of San Francisco's EDs

16

San Francisco Collaborative

- Despite increased ED bed station capacity, visits soared 23,000 with diversion rates over 25%
- Analysis showed injuries at 28%, Medi-Cal 24%, homeless 13%, Behavioral Health, 19%
- Multi-year collaborative with hospitals, hospital Council, law enforcement, EMS, payers, hi-tech
- Focusing on Mental Health Capacity Optimization
- Alternative Primary Care Options, Ambulance routing
- Non Emergency Transport alternatives

17

Washington State

Reducing Preventable Emergency Room Visits

- Systems approach, common definitions, partnership, collaboration, 7 best practices, focused on opiod frequent visits

18

State Approach to Curbing ED Use

When	What	Impact	Status
Original proposal	3-visit limit on unnecessary use	Cuts payments to providers	Won lawsuit; policy abandoned
Revised proposal	No-payment for unnecessary visits	Cuts payment to providers	Delayed by the Governor just prior to implementation
Current policy	Adoption of best practices	Improves care delivery and reliance on ER as source of care	Passed in latest state budget

19

ER is For Emergencies Results-2013

- Decreased ED Visits by 9%
- Dropped frequent ED user visits by 10%
- Decreased the rate of opioid prescriptions by 24%
- Saved $33 million in FY 2013 state budget

20

CHA/Regional ED Roadmap

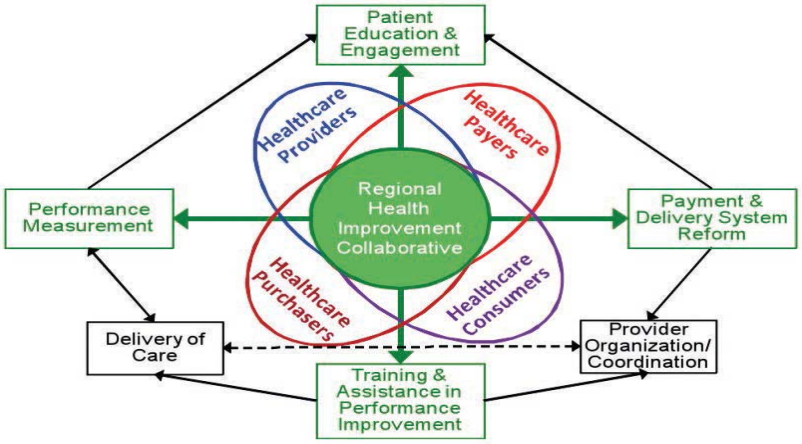
- **Emergency Care Systems Initiative – ECSI**

- **Goa**l: Transform California Emergency Systems to alleviate ED Crowding and achieve and accelerate an optimally healthy society
- Engage **stakeholders** and develop baseline assessment of current state of emergency systems. Establish meaningful metrics using the **public health model, regional networks, continuous quality improvement**

CALIFORNIA HOSPITAL ASSOCIATION · Hospital Council of Northern & Central California · HOSPITAL ASSOCIATION OF SOUTHERN CALIFORNIA · HOSPITAL ASSOCIATION of San Diego & Imperial Counties

21

Network of Regional Emergency Systems Improvement(NfRHI)



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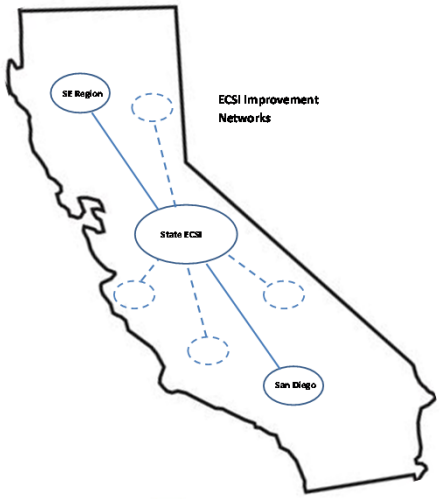
ECSI Improvement Networks



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ECSI Deliverables

- California Emergency Systems Report Card

- Stakeholder consensus document on the state of emergency systems and a definition of emergency systems of the future

- Established metrics for access, quality and patient safety, prevention, disaster preparedness and cost

- Toolkit of solutions and best practices for local, regional and statewide approach

- Public and Provider websites/portals for interactive learning

- Local, regional and state advocacy plans

CALIFORNIA HOSPITAL ASSOCIATION
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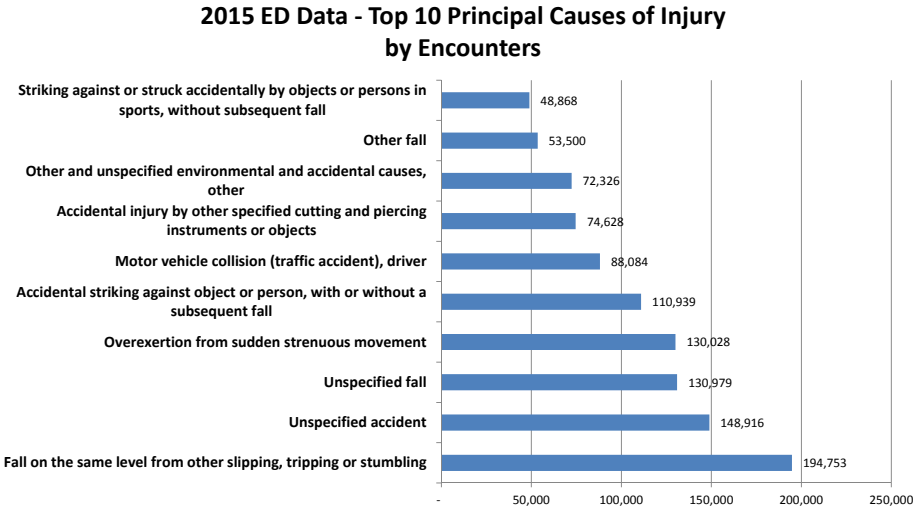
HOSPITAL ASSOCIATION OF SOUTHERN CALIFORNIA
HOSPITAL ASSOCIATION of San Diego & Imperial Counties

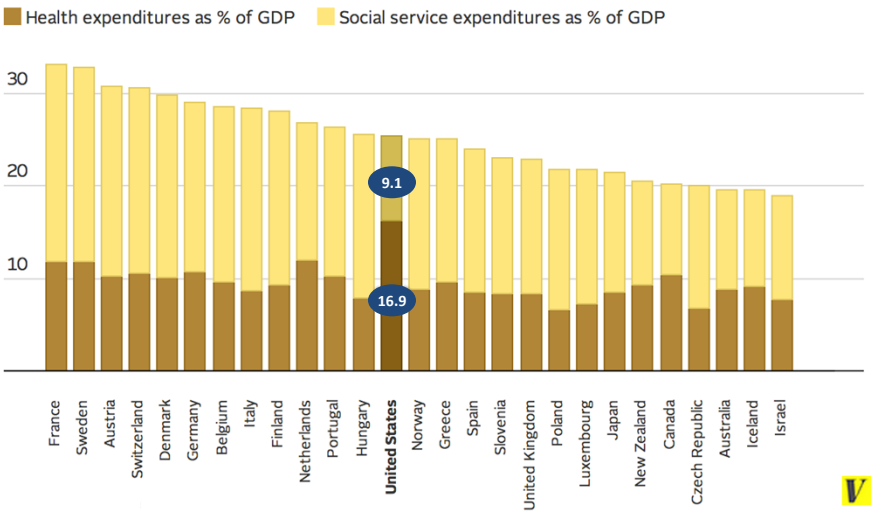
24

Top 10 Causes of Injury-OSHPD



25

The U.S. is an Anomaly in Health and Social Spending Patterns



Source: OECD 2012

26

Questions

28

Added: Green underlined text
Deleted: ~~Dark red text with a strikethrough~~
Vetoed: Red text

2017 CA A 259	**Author:**	Gipson
	Version:	Introduced
	Version Date:	01/31/2017

CALIFORNIA LEGISLATURE--2017-2018 REGULAR SESSION

Assembly Bill

No. 259

Introduced by Assembly Member Gipson

January 31, 2017

An act to amend Section 1317 of the Health and Safety Code, relating to health care facilities.

LEGISLATIVE COUNSEL'S DIGEST

AB 259, as introduced, Gipson. Health care facilities: emergency departments.

Existing law requires a health facility maintaining or operating an emergency department to provide emergency services and care to any person requesting those services and care for any condition in which the person is in danger of loss of life, or serious injury or illness. Existing law prohibits a health facility or its employees or health care providers from refusing to provide emergency services to a patient based upon their ability to pay or upon certain specified characteristics.

This bill would make a technical, nonsubstantive change to those provisions.

Vote Required: MAJORITY Appropriation: NO Fiscal Committee: NO Local Program: NO Immediate Effect NO Urgency: NO Tax Levy: NO Election: NO Usual Current Expenses: NO Budget Bill: NO Prop 25 Trailer Bill: NO

The people of the State of California do enact as follows:

SECTION 1. Section 1317 of the Health and Safety Code is amended to read:

1317. (a) Emergency services and care shall be provided to any person requesting the services or care, or for whom services or care is requested, for any condition in which the person is in danger of loss of life, or serious injury or illness, at any health facility licensed under this chapter that maintains and operates an emergency department to provide emergency services to the public when the health facility has appropriate facilities and qualified personnel available to provide the services or care.

(b) In no event shall the provision of emergency services and care be based upon, or affected by, the person's ethnicity, citizenship, age, preexisting medical condition, insurance status, economic status, ability to pay for medical services, or any other characteristic listed or defined in subdivision (b) or (e) of Section 51 of the Civil Code, except to the extent that a circumstance such as age, sex, preexisting medical condition, or physical or mental disability is medically significant to the provision of appropriate medical care to the patient.

(c) Neither the health facility, its employees, nor any physician and surgeon, dentist, clinical psychologist, or podiatrist shall be liable in any action arising out of a refusal to render emergency services or care if the refusal is based on the determination, exercising reasonable care, that the person is not suffering from an emergency medical condition, or that the health facility does not have the appropriate facilities or qualified personnel available to render those services.

(d) Emergency services and care shall be rendered without first questioning the patient or any other person as to his or her ability to ~~pay therefor.~~ pay. However, the patient or his or her legally responsible relative or guardian shall execute an agreement to pay therefor or otherwise supply insurance or credit information promptly after the services are rendered.

(e) If a health facility subject to this chapter does not maintain an emergency department, its employees shall nevertheless exercise reasonable care to determine whether an emergency exists and shall direct the persons seeking emergency care to a nearby facility that can render the needed services, and shall assist the persons seeking emergency care in obtaining the services, including transportation services, in every way reasonable under the circumstances.

(f) No act or omission of any rescue team established by any health facility licensed under this chapter, or operated by the federal or state government, a county, or by the Regents of the University of California, done or omitted while attempting to

resuscitate any person who is in immediate danger of loss of life shall impose any liability upon the health facility, the officers, members of the staff, nurses, or employees of the health facility, including, but not limited to, the members of the rescue team, or upon the federal or state government or a county, if good faith is exercised.

(g) "Rescue team," as used in this section, means a special group of physicians and surgeons, nurses, and employees of a health facility who have been trained in cardiopulmonary resuscitation and have been designated by the health facility to attempt, in cases of emergency, to resuscitate persons who are in immediate danger of loss of life.

(h) This section shall not relieve a health facility of any duty otherwise imposed by law upon the health facility for the designation and training of members of a rescue team or for the provision or maintenance of equipment to be used by a rescue team.

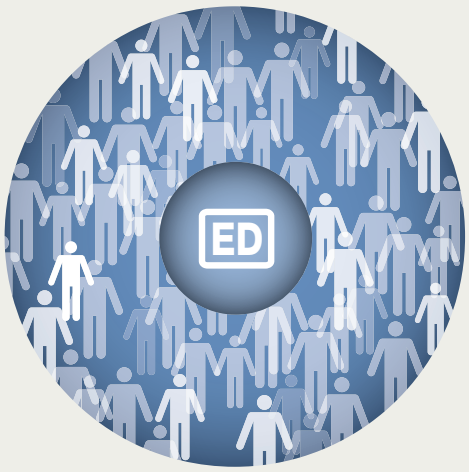
Emergency Care Systems Initiative

Californians are turning to hospital emergency departments in record numbers, often because they cannot get the care or assistance they need elsewhere. These people are in need of help, but many do not need emergency medical treatment.

How do we get people appropriate care and preserve emergency departments for those truly needing life saving care?

It is a daunting question that demands our attention. It is a societal problem that is compromising patient care, increasing health care costs, and crippling hospital emergency services.

The time for action is NOW.



14 Million Visits

were made to California EDs in 2015

What will the Emergency Care Systems Initiative do?

1 Convene a Consortium

All stakeholders must come together. This work will require the support of LEMSAs, hospitals, doctors, ambulance companies, behavioral health providers, police, community partners, post-acute care providers and others. Hospitals cannot and should not try to solve the problem alone.

2 Gather Data and Information

Who is coming to the emergency departments and why? Where are there gaps in services in our communities? How do we connect people to the right care and services? We must get to the root of the problem and gather objective data.

3 Find Solutions

Examining the findings and having input from all stakeholders will lead us to solutions. There won't be an easy answer. We must be innovative and consider new ways of doing things.

4 Take Action

Our conclusions will help us drive policy. Armed with data, and the consensus and support of stakeholders, we can promote changes to improve California's overburdened emergency care system.

Californians Deserve the Right Care, at the Right Time, at the Right Place

Caring for patients in the appropriate setting can lower costs and improve patient well-being. It is the right thing to do for Californians.

Will you join in this work?

The Emergency Care Systems Initiative will require the commitment and participation of providers, thought leaders, advocacy groups, government agencies and others. We invite you to join California's hospital associations in this important work.

Contact:
BJ Bartleson, RN, MS, NEA-BC
Vice President, Nursing & Clinical Services
California Hospital Association
(916) 552-7537
bjbartleson@calhospital.org

Representing California's 400 hospitals and health systems and 95 percent of patient beds

CALIFORNIA HOSPITAL ASSOCIATION

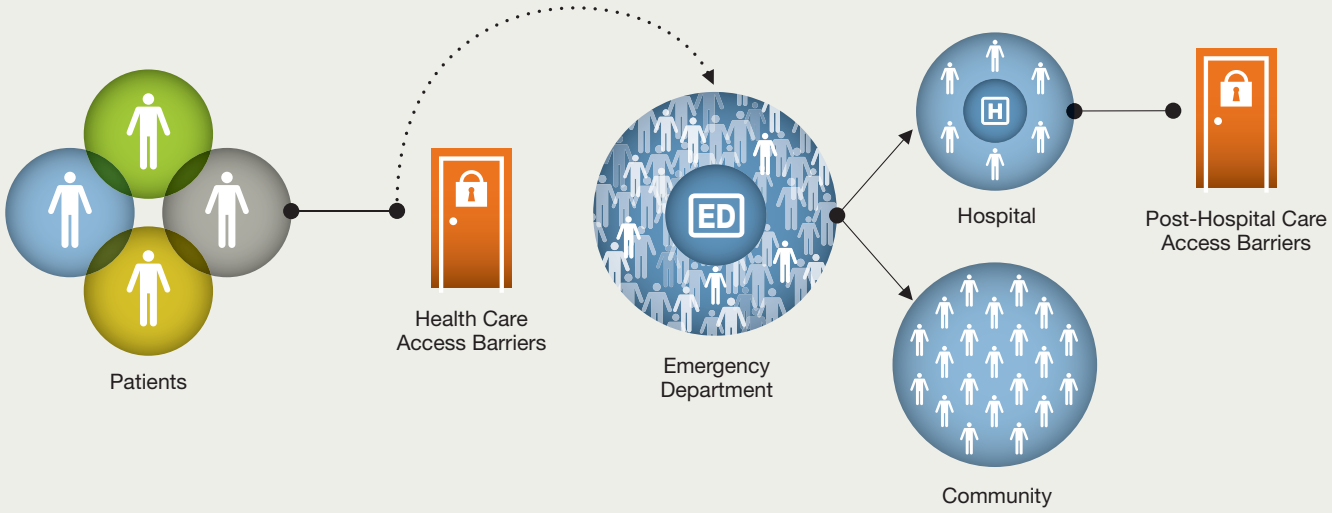
Hospital Council of Northern & Central California

HOSPITAL ASSOCIATION OF SOUTHERN CALIFORNIA

HOSPITAL ASSOCIATION of San Diego & Imperial Counties

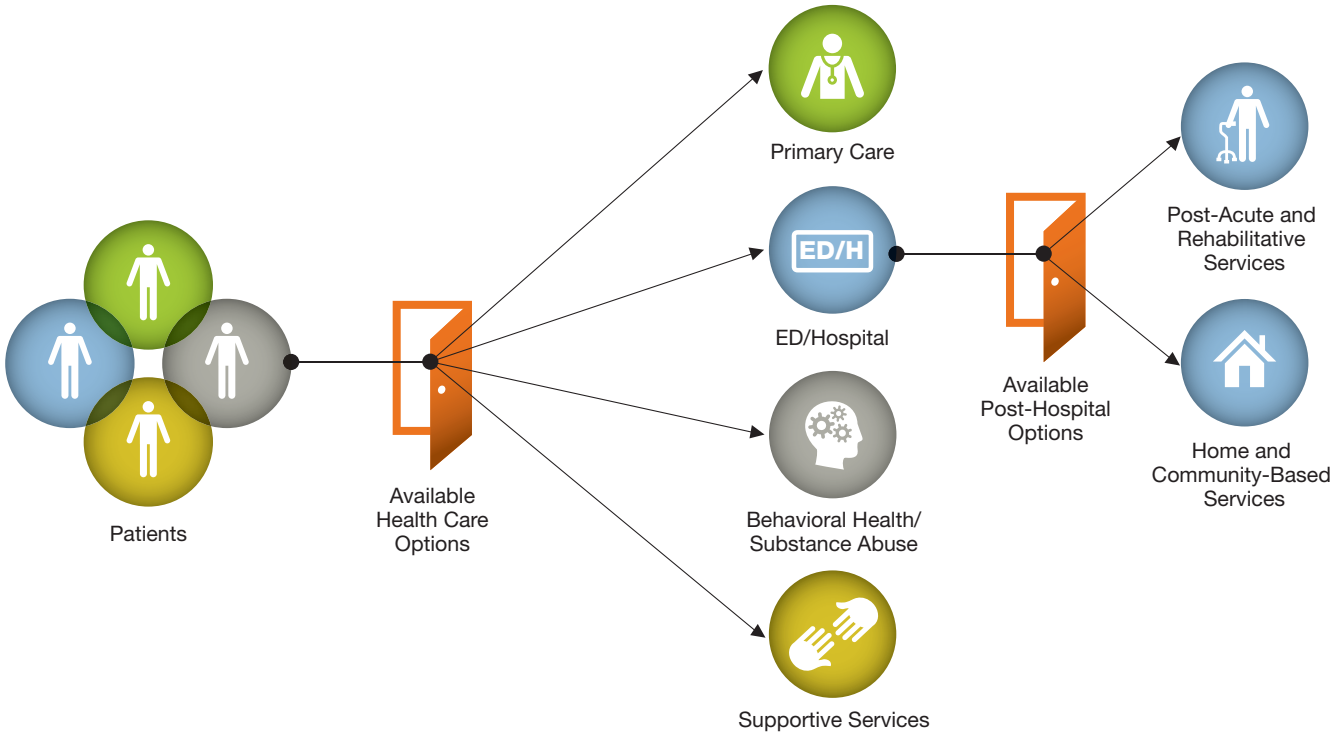
The Problem: Poor access, impacted Emergency Departments

When patients can't get the care they need, they often turn to hospital emergency departments (EDs) as a last resort. However, hospital EDs are not the right place for many patients — particularly for individuals in need of behavioral health or substance abuse treatment. In addition, some patients stay in hospitals longer than necessary due to the lack of available post-acute care and supportive services in the community.



The Solution: Open the door to access

Caring for patients in the appropriate setting can lower costs and improve patients' well-being. Help preserve EDs for those truly needing emergent, life-saving treatment.



Californians deserve the right care, at the right time, at the right place.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: Emergency Medical Services/Trauma Committee Members

FROM: Debby Rogers, VP Clinical Performance and Transformation

SUBJECT: Medicare Outpatient Observation Notice (MOON) and State Observation Requirements Operational Issues/Questions

SUMMARY

Beginning March 8, 2017, the Centers for Medicare & Medicaid Services (CMS) requires hospitals and CAHs to provide all Medicare eligible patients who receive outpatient observation services for more than 24 hours with a written Medicare Outpatient Observation Notice (MOON) and oral notification. Federal law requires that notification be given within 36 hours after observation services are initiated, or sooner if the individual is transferred, discharged or admitted as an inpatient. The notice informs patients that they are an outpatient receiving observation services, are not an inpatient, and outlines the associated implications for cost-sharing and eligibility for Medicare coverage of skilled-nursing facility (SNF) services.

Specifically, the MOON:

- Explains that the individual is an outpatient—not an inpatient, using an open text box for the hospital to insert the specific reason the person is not an inpatient
- Explains the implications of receiving observation services as an outpatient, such as Medicare cost-sharing requirements and eligibility for SNF care
- Provides the forms in English and Spanish
- Includes a blank section that a hospital may use for additional information
- Includes a dedicated signature area for patients or representatives to acknowledge receipt and understanding of the notice

In the case of where the individual is admitted as an inpatient but following internal utilization review (UR) performed while the patient is hospitalized, the hospital determines that the services do not meet its inpatient criteria and the physician concurs with UR and orders the discontinuation of inpatient services and initiation of outpatient observation services (that is, a Condition Code 44 situation), the MOON would be delivered as required by the NOTICE Act (when outpatient observation services have been ordered and furnished for more than 24 hours). In cases where a CMS reviewer denies a claim for inpatient services as not medically reasonable and necessary, CMS clarifies that there would be no requirement to issue a MOON; the same policy applies where a hospital under its own utilization review (after a beneficiary is

discharged) determines the inpatient admission is not medically reasonable and necessary and bills for the services under Part B. In both cases, the patient's status remains 'inpatient.'

In addition, SB 1076, signed by Governor Brown, requires hospitals to provide a written notice to a patient on observation status who is cared for in a hospital's inpatient unit or in an observation unit, or following a change in a patient's status from inpatient to observation. The notification must be provided as soon as practicable, beginning January 1, 2017. The state law requires the notice to state that while on observation status, the patient's care is being provided on an outpatient basis, which may affect his or her health care coverage reimbursement, but does not mandate a specific form. CHA has not identified conflicts between the state and federal requirements.

SB1076 allows for the designation and use of Observation Units for the first time. Many hospitals have developed clinical decision units, or ED adjacent units to care for patients on observation status, but this was not specifically permitted in state law before now. Hospitals choosing to establish an Observation Until must have OSHPD and CDPH approval, post appropriate signage and staff the unit at the ED staffing ratio. In addition, hospitals will be able to care for patients on observation status on inpatient units, a practice that has been used for decades, but was not formally permitted in the law before now.

ACTION REQUESTED:
Discuss and advise

DR:br

Medicare and State Requirements for Observation Status Officiation

Subject	CMS	California
Facility type	Hospital and Critical Access Hospitals	General Acute Care Hospitals
Definition of observation services	Observation services are “a well-defined set of specific, clinically appropriate services, which include ongoing short-term treatment, assessment, and reassessment before a decision can be made regarding whether patients will require further treatment as hospital inpatients or if they are able to be discharged from the hospital” (Section 20.6, Chapter 6, of the Medicare Benefit Policy Manual (Pub. 100–2).	“Observation services” means outpatient services provided by a general acute care hospital and that have been ordered by a provider, ‘to those patients who have unstable or uncertain conditions potentially serious enough to warrant close observation, but not so serious as to warrant inpatient admission to the hospital’ HSC 1253.7 (a).
Which patients need notification	Notification must be given to every eligible Medicare patient who stays in observation longer than 24 hours; even if the services provided are not covered by Medicare.	Notification given to all patients on observation status (which has been ordered by a provider) and are cared for in an inpatient unit or in an observation unit (not required for patients cared for in the emergency department).
Timely notification to patients	Required to be given to patient receiving observation services for over 24 hours but before 36 hours and must be given sooner if the patient is discharged, transferred or admitted before the 36 hours. CMS allows notification of patients who are in observation less than 24 hours (to be consistent with state laws), but does not require it.	Notification is required to be provided to patients cared for in an inpatient unit or in an observation unit as soon as practicable. Practicable is not defined in the law, but might be interpreted as feasible; give the notice as soon as feasible.
Verbal notice required	Yes	No

Medicare and State Requirements for Observation Status Officiation

If an inpatient is determined to be an outpatient	Notification only applies to those patients when a provider orders observation, which could include following a change in a patient's status from inpatient to observation. If the change occurs after the patient is discharged, then no notification is required because the patient's status was inpatient.	Notification only applies to those patients when a provider orders observation, which could include following a change in a patient's status from inpatient to observation.
Mandated form	Federal law requires the use of the Medicare Outpatient Observation Notice (MOON) form to notify Medicare eligible patients of their outpatient status. The MOON form must be used.	State law states "The notice shall state that while on observation status, the patient's care is being provided on an outpatient basis, which may affect his or her health care coverage reimbursement." State law does not prescribe a specific form. CMS states hospitals can use the MOON to notify non-Medicare patients.
Effective date	March 8, 2017	January 1, 2017
State requirements for observation unit and corresponding nurse to patient ratio	MOON does not address	Observation unit are authorized but not mandated. Observation unit must have signs indicating it is an outpatient unit. Observation unit: 1:4 (same as ED). Patients **receiving observation services** in another hospital inpatient unit: the ratio for that unit applies (i.e. Med/surg 1:5; ICU 1:2). Hospital may care for patients receiving observation services on an inpatient unit or in the Emergency Department.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: Community Paramedicine

SUMMARY

Reports provided represent the latest outcome information for the Community Paramedicine pilot programs.

ACTION REQUESTED

- *Information and discussion*

University of California
San Francisco

Report on Implementation of HWPP #173 – Community Paramedicine – Quarter 3 2016

Janet M. Coffman, MPP, PhD
Cynthia Wides, MA

Philip R. Lee Institute for Health Policy Studies
University of California, San Francisco

February 9, 2017

Contents

INTRODUCTION

On November 14, 2014, the Office of Statewide Health Planning and Development (OSHPD) approved Health Workforce Pilot Project (HWPP) # 173, a pilot project that is testing five different concepts for the practice of community paramedicine in ten geographic areas across California. Each site chose the concept(s) it would test based on local needs and interests.

The HWPP regulations require organizations that sponsor pilot projects to retain an independent evaluator to assess trainee performance, patient acceptance, and cost effectiveness. A team of evaluators at the Philip R. Lee Institute for Health Policy Studies and the Center for the Health Professions at the University of California, San Francisco is serving as the independent evaluator for the HWPP #173.

Start dates for the projects ranged from June 1, 2015, to November 1, 2015. Table 1 shows the community paramedicine pilot sites and concepts the dates on which they were implemented.

Table 1.

HWPP #173 – Pilot Sites and Community Paramedicine Concepts Included in This Report

Project #	Lead Agency	Community Paramedicine Concept	Date Implemented
CP001	UCLA Center for Pre-Hospital Care	Alternate Destination – Urgent Care	Sept. 8, 2015
CP002	UCLA Center for Pre-Hospital Care	Post-Discharge	Sept. 1, 2015
CP003	Orange County	Alternate Destination – Urgent Care	Sept. 14, 2015
CP004	Butte County EMS	Post-Discharge	July 1, 2015
CP005	Ventura County EMS	Tuberculosis	June 1, 2015
CP006	Ventura County EMS	Hospice	Aug. 1, 2015
CP007A	Alameda County EMS	Frequent EMS Users	July 1, 2015
CP007B	Alameda City EMS	Post-Discharge	June 1, 2015
CP008	San Bernardino County Fire Dept.	Post-Discharge	Aug. 13, 2015
CP009	Carlsbad Fire Department	Alternate Destination - Urgent Care	Oct. 9, 2015
CP010	San Diego County	Frequent EMS Users	Oct. 12, 2015

CP012	AMR Stanislaus	Alternate Destination – Behavioral Health	Sept. 25, 2015
CP013	Medic Ambulance Solano	Post-Discharge	Sept. 15, 2015

This report summarizes the evaluators' findings regarding implementation during the months of July, August, and September 2016. Previous reports addressed implementation in June and July 2015, August and September 2015, October through December 2015, January through March 2016, and April through June 2016.

Project #CP002, UCLA's post-discharge project, closed in August 2016 and is no longer enrolling patients.

The next chapter of this report presents general information pertinent to all five community paramedicine concepts, such as the numbers of patients enrolled, patients' demographic characteristics, numbers of CP visits completed, and provision of case management and referral services. The subsequent chapters present information specific to each CP concept.

GENERAL INFORMATION

Numbers of Patients Enrolled

Table 2 shows the numbers of patients enrolled in each of the 13 community paramedicine projects addressed in this report. CP004, Butte County's Post-Discharge program, had the largest number of enrollees per month and as a result, had the largest cumulative enrolled patients to date. The three Alternate Destination Medical – Urgent Care projects had the lowest cumulative enrollment–CP009 has enrolled two patients; CP003 has enrolled 25 patients; and CP001 has enrolled 12 patients.

Table 2.

Number of Persons Enrolled per Project, by Month

		Enrolled for the First Time			Total Enrolled			Cumulative Enrolled*
Project No.	**Concept**	**July**	**Aug**	**Sept**	**July**	**Aug**	**Sept**	
CP001	Alternate Destination – Urgent Care	0 in quarter			n/a	n/a	n/a	12
CP002	Post-Discharge	6	10	0	24	16	0	154
CP003	Alternate Destination – Urgent Care	1	1	0	n/a	n/a	n/a	25
CP004	Post-Discharge	30	24	24	45	31	33	500
CP005	Tuberculosis	2	1	1	9	10	11	29
CP006	Hospice	14	19	16	n/a	n/a	n/a	226
CP007A	Frequent EMS Users	2	2	0	5	6	6	40
CP007B	Post-Discharge	5	3	0	6	8	4	64
CP008	Post-Discharge	7	9	2	8	10	4	133
CP009	Alternate Destination – Urgent Care	0	0	0	n/a	n/a	n/a	2
CP010	Frequent EMS Users	1	0	0	36	36	36	37
CP012	Alternate Destination – Behavioral Health	11	9	8	n/a	n/a	n/a	169
CP013	Post-Discharge	6	4	10	10	9	13	71
All Projects		**76**	**74**	**55**	**143**	**126**	**107**	**1368**

* Cumulative enrollment is lower than the cumulative sum of total enrolled patients in each month because patients enrolled in these projects are not necessarily unique from month to month. Some patients participating in frequent 911 caller, hospice, and tuberculosis pilot projects receive CP services for multiple months. Some patients enrolled in post-discharge pilot projects receive CP service for a 30-day period that spans parts of two months (e.g. enrolled on August 20, 2015, and completed 30-day period on September 19, 2015).

Table 3 lists the number of persons who were eligible to enroll in a community paramedicine program, but who were not enrolled for each site/concept. In all three months, CP009

(Carlsbad's Alternate Destination – Urgent Care project) had the smallest number of persons who were eligible but not enrolled persons and CP010 (San Diego's Frequent EMS User project) had the largest number of persons who were eligible but not enrolled.

The reasons why eligible persons were not enrolled varied across the sites/concepts. CP009, Carlsbad's Alternate Destination program, reported that the many of their eligible but unenrolled patients are either over age 65 or call 911 outside of the hours when the UCC is open.

In CP005, Ventura's Tuberculosis program, the eligible but not enrolled population consists of persons with tuberculosis whose directly observed therapy (DOT) is administered by community health workers employed by the Ventura Tuberculosis Clinic instead of community paramedics (CPs).[1] Similarly, for CP006, Ventura's Hospice Program, the only patients who are eligible but not enrolled are those whose hospice provider agency does not partner with Ventura County in the pilot project.

For CP007A, Alameda's Frequent EMS User project, the main reason eligible patients were not enrolled was that CPs could not locate them. This is not surprising because many persons eligible for this program do not have stable housing.

For other projects, the main reasons eligible persons were not enrolled were lack of communication, unavailability of CPs, or patients' unwillingness to consent. In some cases, hospital staff did not notify CPs when eligible patients were discharged. In other cases, demand for CP services exceeded capacity. Some projects only enroll persons who live in specific geographic areas and do not offer persons who live outside that area the opportunity to enroll. CP012, Stanislaus's Alternate Destination project, had some patients who the mental health crisis center refused to accept due to previous experience with these patients.

[1] Under public health laws, persons with tuberculosis are required to obtain treatment because the disease is highly contagious.

Table 3.

Number of Persons Eligible but Not Enrolled

3a. Reasons for which Eligible Persons were Not Enrolled in July

Project No.	Concept	Did Not Consent	Lack of Resources*	Inability to Locate	Eligible But Not Enrolled
CP002	Post-Discharge	12	17	n/a	29
CP003	Alternate Destination – Urgent Care	3	31	n/a	34
CP004	Post-Discharge	3	17	n/a	20
CP005	Tuberculosis	0	29	0	29
CP006	Hospice	0	9	n/a	9
CP007A	Frequent EMS Users	0	6	1	7
CP007B	Post-Discharge	8	5	n/a	13
CP008	Post-Discharge	15	93	n/a	108
CP009	Alternate Destination – Urgent Care	0	1	n/a	1
CP010	Frequent EMS Users	5	143	0	148
CP012	Alternate Destination – Behavioral Health	3	10	n/a	13
CP013	Post-Discharge	10	0	n/a	10
All Projects		**59**	**361**	**1**	**421**

* For all projects other than CP005 (Ventura's Tuberculosis program), "Lack of Resources" refers to patients who were eligible for the CP project but were not offered an opportunity to enroll because CPs were not aware of their existence, CPs were too busy to accept additional patients, or no CP was available to "consent" the patient in the language in which he or she preferred to receive health information. For CP005, "Lack of Resources" refers to patients who received directly observed therapy (DOT) from tuberculosis clinic staff instead of a CP.

**Due to an oversight, these two individuals were not offered the opportunity to enroll by the CPs on duty in these pilots.

± In addition to the 1 patient who was not enrolled due to a lack of resources, the mental health crisis center declined to accept 7 patients because they were uninsured or had health insurance other than Medi-Cal or because they needed services that the facility does not offer.

3b. Reasons for which Eligible Persons were Not Enrolled in Aug					
Project No.	**Concept**	**Did Not Consent**	**Lack of Resources***	**Inability to Locate**	**Eligible But Not Enrolled**
CP002	Post-Discharge	12	8	n/a	20
CP003	Alternate Destination – Urgent Care	1	22	n/a	23
CP004	Post-Discharge	0	14	n/a	14
CP005	Tuberculosis	0	30	0	30
CP006	Hospice	0	7	n/a	7
CP007A	Frequent EMS Users	1	4	1	6
CP007B	Post-Discharge	5	2	n/a	7
CP008	Post-Discharge	8	86	n/a	94
CP009	Alternate Destination – Urgent Care	0	0	n/a	0
CP010	Frequent EMS Users	7	141	0	148
CP012	Alternate Destination – Behavioral Health	0	15	n/a	15
CP013	Post-Discharge	7	0	n/a	7
All Projects		**41**	**329**	**1**	**371**

* For all projects other than CP005 (Ventura Tuberculosis), "Lack of Resources" refers to patients who were eligible for the CP project but were not offered an opportunity to enroll because CPs were not aware of their existence, CPs were too busy to accept additional patients, or no CP was available to consent the patient in the language in which he or she preferred to receive health information. For CP005 (Ventura Tuberculosis), "Lack of Resources" refers to patients who received directly observed therapy from tuberculosis clinic staff instead of a CP.

± In addition to the 8 patient who were not enrolled due to a lack of resources, the mental health crisis center declined to accept 5 patients because they were uninsured or had health insurance other than Medi-Cal or because they needed services that the facility does not offer.

3c. Reasons for which Eligible Persons were Not Enrolled in Sept					
Project No.	**Concept**	**Did Not Consent**	**Lack of Resources***	**Inability to Locate**	**Eligible But Not Enrolled**
CP003	Alternate Destination – Urgent Care	0	23	n/a	23
CP004	Post-Discharge	2	0	n/a	2
CP005	Tuberculosis	0	27	0	27
CP006	Hospice	0	5	n/a	5
CP007A	Frequent EMS Users	0	4	2	6
CP007B	Post-Discharge	1	2	n/a	3
CP008	Post-Discharge	11	86	n/a	97
CP009	Alternate Destination – Urgent Care	0	1	n/a	1

CP010	Frequent EMS Users	0	131	0	131
CP012	Alternate Destination – Behavioral Health	0	8	n/a	8
CP013	Post-Discharge	10	0	n/a	10
All Projects		**24**	**287**	**2**	**313**

***** For all projects other than CP005 (Ventura Tuberculosis), "Lack of Resources" refers to patients who were eligible for the CP project but were not offered an opportunity to enroll because CPs were not aware of their existence, CPs were too busy to accept additional patients, or no CP was available to consent the patient in the language in which he or she preferred to receive health information. For CP005 (Ventura Tuberculosis), "Lack of Resources" refers to patients who received directly observed therapy from tuberculosis clinic staff instead of a CP.

± In addition to the 12 patient who were not enrolled due to a lack of resources, the mental health crisis center declined to accept 9 patients because they were uninsured or had health insurance other than Medi-Cal or because they needed services that the facility does not offer.

Patients' Demographic Characteristics

Tables 4 through 9 present information on the demographic characteristics and health insurance status of persons who were enrolled in CP projects in July-September 2016. All sites that have a case load of patients that can carry over from the month of initial enrollment to the subsequent month(s) are asked to report their data based on their full caseload. This instruction applies to all projects except for Alternate Destination – Behavioral Health, Alternate Destination – Urgent Care, and Hospice. In this reporting period, the Post-Discharge sites CP002 (UCLA) and CP004 (Butte) did not report based on their full caseload.

The data indicate that:

- Across all projects, most patients were male, but there was significant variation across the projects.
- During the quarter CP012 (Stanislaus's Alternate Destination – Behavioral Health project) patients had the lowest average age (range: 33 – 35 years) and CP006 (Ventura's Hospice project) had the highest average age (range: 78 – 92 years).
- The majority of patients were non-Hispanic in all pilot programs except in CP005, Ventura's TB project, and CP008, San Bernardino's Post-Discharge project, where the majority of patients enrolled in each month of the quarter were Hispanic.
- Across all projects, the majority of patients were Caucasian/White.[2]
- English was the preferred language, followed distantly by Spanish, for the majority of patients across all of the projects.

[2] Data reported for CP005 and CP006, Ventura's Hospice and TB projects, assumes that the race of Hispanic patients is White, as their partners classify Hispanic/Latino as a race.

Across all projects, the majority of patients enrolled were Medicare beneficiaries, though some variation exists. In each month of the third quarter, four projects: CP005 (Ventura's Tuberculosis project), CP008 (San Bernardino's Post-discharge project), CP012 (Stanislaus' Alternate Destination project), and CP0013 (Solano's Post-discharge project) all reported that the majority of their patients were Medicaid beneficiaries. CP010, San Diego's Frequent 911 Caller project, was the only project to report that the largest share of the enrolled patients in each month were uninsured. CP006 (Ventura's Hospice project) reported that in August 2016the majority of their enrolled patients were uninsured.

Table 4.

Enrolled Patients by Gender

4a. Total Number of Persons Enrolled by Gender in July				
Project No.	**Concept**	**No. Male**	**No. Female**	**Total No.**
CP002	Post-Discharge	4	2	6
CP003	Alternate Destination - Urgent Care	1	0	1
CP004	Post-Discharge	22	8	30
CP005	Tuberculosis	8	1	9
CP006	Hospice	6	8	14
CP007A	Frequent EMS Users	3	2	5
CP007B	Post-Discharge	4	2	6
CP008	Post-Discharge	1	7	8
CP009	Alternate Destination – Urgent Care	0	0	0
CP010	Frequent EMS Users	0	1	1
CP012	Alternate Destination – Behavioral Health	7	4	11
CP013	Post-Discharge	6	4	10
All Projects		**58**	**34**	**92**

4b. Total Number of Persons Enrolled by Gender in August				
Project No.	**Concept**	**No. Male**	**No. Female**	**Total No.**
CP002	Post-Discharge	6	4	10
CP003	Alternate Destination – Urgent Care	0	1	1
CP004	Post-Discharge	13	11	24
CP005	Tuberculosis	9	1	10

CP006	Hospice	5	13	19*
CP007A	Frequent EMS Users	3	3	6
CP007B	Post-Discharge	5	3	8
CP008	Post-Discharge	7	3	10
CP009	Alternate Destination – Urgent Care	0	0	0
CP010	Frequent EMS Users	0	0	0
CP012	Alternate Destination – Behavioral Health	3	6	9
CP013	Post-Discharge	5	4	9
All Projects		**52**	**46**	**98**
* The gender of one patient was not reported.				

4c. Total Number of Persons Enrolled by Gender in September				
Project No.	**Concept**	**No. Male**	**No. Female**	**Total No.**
CP003	Alternate Destination – Urgent Care	0	0	0
CP004	Post-Discharge	17	7	24
CP005	Tuberculosis	10	1	11
CP006	Hospice	4	9	16
CP007A	Frequent EMS Users	3	3	6
CP007B	Post-Discharge	2	2	4
CP008	Post-Discharge	3	1	4
CP009	Alternate Destination – Urgent Care	0	0	0
CP010	Frequent EMS Users	0	0	0
CP012	Alternate Destination – Behavioral Health	4	4	8
CP013	Post-Discharge	5	8	13
All Projects		**48**	**32**	**80**

Table 5.

Average Age of Enrolled Patients

5. Average Age of Enrolled Patients by Concept				
Project No.	**Concept**	**Average Age – July**	**Average Age – Aug**	**Average Age – Sept**
CP002	Post-Discharge	81	74	program closed
CP003	Alternate Destination – Urgent Care	19	27	no patients
CP004	Post-Discharge	68	71	70
CP005	Tuberculosis	47	42	43
CP006	Hospice	89	80	78
CP007A	Frequent EMS Users	59	62	62
CP007B	Post-Discharge	70	68	63
CP008	Post-Discharge	71	58	57
CP009	Alternate Destination – Urgent Care	no patients	no patients	no patients
CP010	Frequent EMS Users	57	54	54
CP012	Alternate Destination – Behavioral Health	35	33	35
CP013	Post-Discharge	56	58	64

Table 6.

Ethnicity of Enrolled Patients

6a. Ethnicity of Enrolled Patients in July					
Project No.	**Concept**	**No. Hispanic**	**No. Non-Hispanic**	**No. Unknown Ethnicity**	**Total No.**
CP002	Post-Discharge	0	6	0	6
CP003	Alternate Destination – Urgent Care	0	1	0	1
CP004	Post-Discharge	0	29	1	30
CP005	Tuberculosis	6	3	0	9
CP006	Hospice	2	12	0	14
CP007A	Frequent EMS Users	1	4	0	5
CP007B	Post-Discharge	0	6	0	6
CP008	Post-Discharge	5	3	0	8
CP009	Alternate Destination – Urgent Care	0	0	0	0
CP010	Frequent EMS Users	4	32	0	36
CP012	Alternate Destination – Behavioral Health	1	9	1	11
CP013	Post-Discharge	2	8	0	10
All Projects		**19**	**106**	**2**	**127**

6b. Ethnicity of Enrolled Patients in August					
Project No.	**Concept**	**No. Hispanic**	**No. Non-Hispanic**	**No. Unknown Ethnicity**	**Total No.**
CP002	Post-Discharge	1	9	0	10
CP003	Alternate Destination – Urgent Care	0	1	0	1
CP004	Post-Discharge	0	24	0	24
CP005	Tuberculosis	7	3	0	10
CP006	Hospice	2	16	1	19
CP007A	Frequent EMS Users	1	5	0	6
CP007B	Post-Discharge	0	8	0	8
CP008	Post-Discharge	5	4	1	10
CP009	Alternate Destination – Urgent Care	0	0	0	0
CP010	Frequent EMS Users	4	32	0	36
CP012	Alternate Destination – Behavioral Health	0	9	0	9

CP013	Post-Discharge	2	7	0	9
All Projects		**22**	**111**	**1**	**134**

6c. Ethnicity of Enrolled Patients in September					
Project No.	**Concept**	**No. Hispanic**	**No. Non-Hispanic**	**No. Unknown Ethnicity**	**Total No.**
CP003	Alternate Destination – Urgent Care	0	0	0	0
CP004	Post-Discharge	0	24	0	24
CP005	Tuberculosis	8	3	0	11
CP006	Hospice	3	11	2	16
CP007A	Frequent EMS Users	1	5	0	6
CP007B	Post-Discharge	0	4	0	4
CP008	Post-Discharge	2	1	1	4
CP009	Alternate Destination – Urgent Care	0	0	0	0
CP010	Frequent EMS Users	4	32	0	36
CP012	Alternate Destination – Behavioral Health	1	7	0	8
CP013	Post-Discharge	2	11	0	13
All Projects		**21**	**94**	**1**	**116**

Table 7.

Race of Enrolled Patients

7a. Number of Enrolled Patients by Race in July								
Project No.	**Concept**	**Cau-casian/ White**	**Black or African-Amer.**	**American Indian/ Alaska Native**	**Asian or Pacific Islander**	**Other Race**	**Unknown Race**	**Total**
CP002	Post-Discharge	6	0	0	0	0	0	6
CP003	Alternate Destination – Urgent Care	1	0	0	0	0	0	1
CP004	Post-Discharge	29	0	0	0	0	1	30
CP005	Tuberculosis	0	0	0	3	6	0	9
CP006	Hospice	10	0	0	0	2	2	14
CP007A	Frequent EMS Users	3	1	0	0	1	0	5
CP007B	Post-Discharge	6	0	0	0	0	0	6
CP008	Post-Discharge	6	1	0	1	0	0	8
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	31	5	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	6	2	0	1	1	1	11
CP013	Post-Discharge	5	3	0	1	1	0	10
All Projects		**98**	**12**	**0**	**6**	**9**	**2**	**127**

7b. Number of Enrolled Patients by Race in August								
Project No.	**Concept**	**Caucasian/ White**	**Black or African-Amer.**	**American Indian/ Alaska Native**	**Asian or Pacific Islander**	**Other Race**	**Unknown Race**	**Total**
CP002	Post-Discharge	7	1	1	1	0	0	10
CP003	Alternate Destination – Urgent Care	1	0	0	0	0	0	1
CP004	Post-Discharge	23	0	0	0	1	0	24

CP005	Tuberculosis	.	0	0	3	7	0	10
CP006	Hospice	14	1	0	0	2	2	19
CP007A	Frequent EMS Users	4	1	0	0	1	0	6
CP007B	Post-Discharge	7	1	0	0	0	0	8
CP008	Post-Discharge	6	3	0	0	0	1	10
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	31	5	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	9	0	0	0	0	0	9
CP013	Post-Discharge	7	1	0	0	1	0	9
All Projects		**105**	**13**	**1**	**4**	**10**	**1**	**134**

7c. Number of Enrolled Patients by Race in September

Project No.	Concept	Cau-casian/ White	Black or African -	American Indian/ Alaska Native	Asian or Pacific Islander	Other Race	Unknown Race	Total
CP003	Alternate Destination - Urgent Care	0	0	0	0	0	0	0
CP004	Post-Discharge	23	1	0	0	0	0	24
CP005	Tuberculosis	0	0	0	3	8	0	11
CP006	Hospice	9	0	0	0	5	2	16
CP007A	Frequent EMS Users	4	1	0	0	1	0	6
CP007B	Post-Discharge	3	1	0	0	0	0	4
CP008	Post-Discharge	2	1	0	0	0	1	4
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	31	5	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	5	2	0	1	0	0	8
CP013	Post-Discharge	10	1	0	1	1	0	13

All Projects		**87**	**12**	**0**	**5**	**10**	**2**	**116**

Table 8.

Language Preferences of Enrolled Patients

8a. Number of Enrolled Patients by Preferred Language in July

Project No.	Concept	English	Spanish	Chinese	Farsi	Viet-namese	Other	Total
CP002	Post-Discharge	5	0	0	0	0	1	6
CP003	Alternate Destination – Urgent Care	1	0	0	0	0	0	1
CP004*	Post-Discharge	30	0	0	0	0	0	30
CP005	Tuberculosis	3	5	0	0	1	0	9
CP006	Hospice	12	1	0	0	0	0	13±
CP007A	Frequent EMS Users	5	0	0	0	0	0	5
CP007B	Post-Discharge	6	0	0	0	0	0	6
CP008	Post-Discharge	4	4	0	0	0	0	8
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	36	0	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	11	0	0	0	0	0	11
CP013	Post-Discharge	10	0	0	0	0	0	10
All Projects		**116**	**9**	**0**	**0**	**1**	**1**	**127**

*Butte excludes patients who prefer a language other than English.
±One patient's language preference was not reported.

8b. Number of Enrolled Patients by Preferred Language in August								
Project No.	**Concept**	**English**	**Spanish**	**Chinese**	**Farsi**	**Viet-namese**	**Other**	**Total**
CP002	Post-Discharge	7	1	0	0	0	2	10
CP003	Alternate Destination – Urgent Care	1	0	0	0	0	0	1
CP004*	Post-Discharge	24	0	0	0	0	0	24
CP005	Tuberculosis	4	5	0	0	1	0	10
CP006	Hospice	16	1	0	0	0	0	17±
CP007A	Frequent EMS Users	6	0	0	0	0	0	6
CP007B	Post-Discharge	8	0	0	0	0	0	8
CP008	Post-Discharge	7	3	0	0	0	0	10
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	36	0	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	9	0	0	0	0	0	9
CP013	Post-Discharge	8	0	0	0	0	1	9
All Projects		**120**	**10**	**0**	**0**	**1**	**3**	**134**

*Butte excludes patients who prefer a language other than English.
±Two patients' language preferences were not reported.

8c. Number of Enrolled Patients by Preferred Language in September								
Project No.	**Concept**	**English**	**Spanish**	**Chinese**	**Farsi**	**Viet-namese**	**Other**	**Total**
CP003	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP004*	Post-Discharge	24	0	0	0	0	0	24
CP005	Tuberculosis	4	6	0	0	1	0	11
CP006	Hospice	11	2	0	0	0	0	13±
CP007A	Frequent EMS Users	6	0	0	0	0	0	6
CP007B	Post-Discharge	4	0	0	0	0	0	4
CP008	Post-Discharge	2	2	0	0	0	0	4
CP009	Alternate Destination – Urgent Care	0	0	0	0	0	0	0
CP010	Frequent EMS Users	36	0	0	0	0	0	36
CP012	Alternate Destination – Behavioral Health	8	0	0	0	0	0	8
CP013	Post-Discharge	13	0	0	0	0	0	13
All Projects		**105**	**10**	**0**	**0**	**1**	**0**	**116**

*Butte excludes patients who prefer a language other than English.
±Three patients' language preferences were not reported.

CP002, UCLA's Post-Discharge project, reported that all of their patients speaking "other" languages spoke Eastern European languages.

Table 9.

Health Insurance Status of Enrolled Patients

9a. Health Insurance Status of Enrolled Patients by Project in July						
Project No.	**Concept**	**Private/ Commercial Insurance**	**Medicare**	**Medicaid**	**Uninsured or Pay Out of Pocket**	**Total**
CP002	Post-Discharge	0	6	0	0	6
CP003	Alternate Destination – Urgent Care	1	0	0	0	1
CP004	Post-Discharge	5	19	5	1	30
CP005	Tuberculosis	1	0	5	3	9
CP006	Hospice	3	6	0	0	9*
CP007A	Frequent EMS Users	1	3	1	0	5
CP007B	Post-Discharge	1	3	2	0	6
CP008	Post-Discharge	1	2	4	1	8
CP009	Alternate Destination – Urgent Care	0	0	0	0	0
CP010	Frequent EMS Users	7	4	8	17	36
CP012	Alternate Destination – Behavioral Health	0	1	9	1	11
CP013	Post-Discharge	1	2	7	0	10
All Projects		**20**	**42**	**41**	**24**	**127**

* The health insurance of five patients was not reported.

9b. Health Insurance Status of Enrolled Patients by Project in August						
Project No.	**Concept**	**Private/ Commercial Insurance**	**Medicare**	**Medicaid**	**Uninsured or Pay Out of Pocket**	**Total**
CP002	Post-Discharge	1	9	0	0	10
CP003	Alternate Destination – Urgent Care	unable to report	unable to report	unable to report	unable to report	unable to report
CP004	Post-Discharge	1	18	5	0	24
CP005	Tuberculosis	1	0	6	3	10
CP006	Hospice	4	3	1	0	8*
CP007A	Frequent EMS Users	1	4	1	0	6
CP007B	Post-Discharge	1	6	1	0	8
CP008	Post-Discharge	0	3	6	1	10
CP009	Alternate Destination – Urgent Care	0	0	0	0	0
CP010	Frequent EMS Users	7	4	8	17	36
CP012	Alternate Destination – Behavioral Health	0	0	9	0	9
CP013	Post-Discharge	0	4	5	0	9
All Projects		**12**	**51**	**42**	**28**	**133**

*The health insurance status of 11 patients was not reported.

9c. Health Insurance Status of Enrolled Patients by Project in September						
Project No.	**Concept**	**Private/ Commercial Insurance**	**Medicare**	**Medicaid**	**Uninsured or Pay Out of Pocket**	**Total**
CP003	Alternate Destination – Urgent Care	0	0	0	0	0
CP004	Post-Discharge	5	16	3	0	24
CP005	Tuberculosis	1	0	6	4	11
CP006	Hospice	0	10	0	0	10*
CP007A	Frequent EMS Users	1	4	1	0	6
CP007B	Post-Discharge	0	4	0	0	4
CP008	Post-Discharge	0	1	2	1	4
CP009	Alternate Destination – Urgent Care	0	0	0	0	0
CP010	Frequent EMS Users	7	4	8	17	36
CP012	Alternate Destination – Behavioral Health	0	0	6	2	8
CP013	Post-Discharge	0	6	7	0	13

All Projects		**14**	**42**	**33**	**27**	**116**
The health insurance status of six patients was not reported.						

Community Paramedicine Services Provided

Table 10 provides information about the numbers of in-person visits CPs provided to enrolled patients. Alternate Destination projects and the hospice project are omitted from this table because for these projects all interactions between CPs and patients take place in response to 911 calls. The small number of visits in CP004, Butte's Post-Discharge program, relative to total patients enrolled reflects its protocol which directs CPs to initially contact patients by telephone and to visit patients in their homes only if the phone assessment suggests that patients need additional assistance. In contrast, the protocols for UCLA's, Alameda's, San Bernardino's, and Solano's Post-Discharge programs (CP002, CP007B, CP008, CP013) require CPs to make home visits to all enrolled patients.

Post-Discharge, Frequent EMS User, and the Tuberculosis projects have a caseload that carries over from one month to the next. Patients enrolled in Post-Discharge projects at or near the end of the month may not receive a visit in the month in which they were enrolled. For this reason, it is not unusual for the number of visits to differ from the number of patients enrolled. This phenomenon affected CP007B (Alameda's Post-Discharge project) and CP008 (San Bernardino's Post-Discharge project) in this reporting period. In other Post-Discharge sites, the most frequent cause of missed patient visits was patient or patient's family member refusal of a scheduled visit or a miscommunication between the CPs and the partner hospital.

Table 10.

Number of Community Paramedic Visits

10a. Number of In-Person Community Paramedic Visits per Project in July			
Project No.	**Concept**	**No. Patients Receiving Visits**	**No. Patients Enrolled (new enrolled for PD)**
CP002	Post-Discharge	3	6
CP004*	Post-Discharge	6	30
CP005	Tuberculosis	2	2
CP006	Hospice	5	5
CP007A+	Frequent EMS Users	3	2
CP007B	Post-Discharge	4	5
CP008	Post-Discharge	4	7
CP010+	Frequent EMS Users	2	1
CP013	Post-Discharge	6	6
All Projects		**35**	**64**

*Post-Discharge projects report first visit with CP, except Butte. Butte only conducts an in-person visit if required based on phone assessment. Other projects report number of unique patients with a visit.
+Frequent 911 visits reflect patients who received a physical assessment.

10b. Number of In-Person Community Paramedic Visits per Project in August			
Project No.	**Concept**	**No. Patients Receiving Visits**	**No. Patients Enrolled (new enrolled for PD)**
CP002	Post-Discharge	6	10
CP004*	Post-Discharge	3	24
CP005	Tuberculosis	1	1
CP006	Hospice	11	11
CP007A+	Frequent EMS Users	4	2
CP007B	Post-Discharge	4	3
CP008	Post-Discharge	2	9
CP010+	Frequent EMS Users	0	0
CP013	Post-Discharge	4	4
All Projects		**35**	**64**

*Post-Discharge projects report first visit with CP, except Butte. Butte only conducts an in-person visit if required based on phone assessment. Other projects report number of unique patients with a visit.
+Frequent 911 visits reflect patients who received a physical assessment.

10c. Number of In-Person Community Paramedic Visits per Project in September			
Project No.	**Concept**	**No. Patients Receiving Visits**	**No. Patients Enrolled (new enrolled for PD)**
CP002	Post-Discharge	n/a	n/a
CP004	Post-Discharge	1	24
CP005	Tuberculosis	1	1
CP006	Hospice	10	10
CP007A+	Frequent EMS Users	1	0
CP007B	Post-Discharge	0	0
CP008	Post-Discharge	2	2
CP010+	Frequent EMS Users	1	0
CP013	Post-Discharge	10	10
All Projects		**26**	**47**

*Post-Discharge projects report first visit with CP, except Butte. Butte only conducts an in-person visit if required based on phone assessment. Other projects report number of unique patients with a visit.
+Frequent 911 visits reflect patients who received a physical assessment.

The length of initial in-person CP visits varied across sites/concepts. Alternate Destination projects report the length of time in minutes from arrival on scene to arrival at an urgent care center or a behavioral health center, rather than the length of in-person visits. In the third quarter of 2016, the visit length ranged from 8 minutes in CP006, Ventura's hospice project, to 2 hours and 32 minutes in CP013, Solano's Post-Discharge project. CP013 and CP002, UCLA's Post-Discharge project, reported long visit lengths relative to other Post-Discharge programs. These two programs' long visit lengths reflect differences in medical protocols, patients' needs, and the types of services provided. For example, UCLA reported having more patients who required more instruction and assistance with medication than other projects.

The range of visit lengths within individual projects was wide for most projects. Variation is expected as individual patients have different needs, concerns, and questions for the CPs during their in-person interactions.

Table 11.

Length of Community Paramedic Visits

11a. Length of Community Paramedic Visits by Project in July				
Project No.	**Concept**	**Average Length of 1st In-person Visit (Minutes)**	**Shortest 1st In-person Visit (Minutes)**	**Longest 1st In-person Visit (Minutes)**
CP002	Post-Discharge	90	90	90
CP003	Alternate Destination - Urgent Care	19	19	19
CP004	Post-Discharge	59	40	89
CP005	Tuberculosis	25	15	45
CP006	Hospice	29	15	62
CP007A	Frequent 911 Callers	58	45	70
CP007B	Post-Discharge	28	20	30
CP008	Post-Discharge	33	13	51
CP009	Alternate Destination - Urgent Care	No patients	No patients	No patients
CP010	Frequent 911 Callers	30	20	60
CP012	Alternate Destination – Behavioral Health	39	9	94
CP013	Post-Discharge	102	83	130

11b. Length of Community Paramedic Visits by Project in August				
Project No.	**Concept**	**Average Length of 1st In-person Visit (Minutes)**	**Shortest 1st In-person Visit (Minutes)**	**Longest 1st In-person Visit (Minutes)**
CP002	Post-Discharge	75	50	100
CP003	Alternate Destination – Urgent Care	13	13	13
CP004	Post-Discharge	37	30	48
CP005	Tuberculosis	25	15	45
CP006	Hospice	35	10	60
CP007A	Frequent EMS Users	Not reported	Not reported	Not reported
CP007B	Post-Discharge	54	15	70
CP008	Post-Discharge	42.5	37	48
CP009	Alternate Destination – Urgent Care	No patients	No patients	No patients

CP010	Frequent EMS Users	30	15	60
CP012	Alternate Destination – Behavioral Health	31	30	58
CP013	Post-Discharge	103	75	152

11c. Length of Community Paramedic Visits by Project in September				
Project No.	**Concept**	**Average Length of 1st In-person Visit (Minutes)**	**Shortest 1st In-person Visit (Minutes)**	**Longest 1st In-person Visit (Minutes)**
CP003	Alternate Destination – Urgent Care	n/a	n/a	n/a
CP004	Post-Discharge	40	40	40
CP005	Tuberculosis	25	15	45
CP006	Hospice	34	8	66
CP007A*	Frequent EMS Users	No new patients	No new patients	No new patients
CP007B	Post-Discharge	Not reported	Not reported	Not reported
CP008	Post-Discharge	51	37	65
CP009	Alternate Destination – Urgent Care	n/a	n/a	n/a
CP010	Frequent EMS Users	40	20	60
CP012	Alternate Destination – Behavioral Health	36	30	41
CP013	Post-Discharge	92	58	126

Referring patients to other service providers is an important element of CPs' work, especially for the Frequent EMS User and Post-Discharge concepts. Table 12 lists the service providers to which each of the concepts/sites referred patients during their first patient encounter in the third quarter of 2016. They include organizations providing assistance in elder care, drug/alcohol rehabilitation, home safety, counseling services, housing assistance, and health care, among others. CP005, Ventura's TB program, has made referrals in previous months, but did not in this period. Data collection centers on the referrals made during the first in-person visit so the volume and variety of referrals made over the course of patient interactions can differ from what is reported in the table. This is particularly true for Frequent EMS User projects.

Alternate Destination and Hospice projects do not make referrals to other services for their patients, so they are not reflected in Table 12.

Table 12.

Referrals of Enrolled Patients to Other Services

Project No.	Concept	Referrals in July	Referrals in Aug	Referrals in Sept	Organizations to Which Referrals Made
CP002	Post-Discharge	1	4	n/a – program closed	Physician care; Pharmacy care; Public Health Dept.; Transportation assistance
CP004	Post-Discharge	1	1	0	Cardiac rehabilitation
CP005	Tuberculosis	0	0	0	None
CP007A	Frequent EMS Users	0	2	0	Alameda Fire Department Fall Prevention Program
CP007B	Post-Discharge	1	0	0	Transportation assistance
CP008	Post-Discharge	4	2	2	211-San Bernardino County Services
CP010	Frequent EMS Users	1	0	0	Psychiatric Emergency Response Team; housing assistance; mental health provider; alcohol recovery program
CP013	Post-Discharge	2	1	7	Smoking cessation; Narcotics Anonymous; cardiologist/cardiac rehabilitation; pharmacy care; counseling; primary care

Table 13 presents information on the delivery of case management services to enrolled patients. Alternate Destination and Hospice projects are not included because they do not provide case management services.[3] CPs devoted substantial numbers of hours to providing case management by telephone or in-person meetings. The total number of hours devoted to case management ranged from two hours for CP004 (Butte's Post-Discharge project) and CP008 (San Bernardino's Post-Discharge project), to 96 hours for CP007B, Alameda's Post-Discharge project. Both of Alameda's projects reported spending a high number of hours in case management activities.

[3] Hospices typically provide case management for hospice patients.

Table 13.

Case Management for Enrolled Patients per Month

13a. Case Management for Enrolled Patients in July					
Project No.	**Concept**	**No. Total Hours on Case Management**	**No. Hours on Case Management Telephone Calls**	**No. Hours on In-person Case Management Meetings**	**No. Hours on Other Case Management Activities***
CP002	Post-Discharge	22	3	3	16
CP004	Post-Discharge	19	14	5	0
CP005	Tuberculosis	17	Could not disaggregate		
CP007A	Frequent EMS Users	64	26	10	28
CP007B	Post-Discharge	96	38	20	38
CP008	Post-Discharge	9	6	3	0
CP010	Frequent EMS Users	24	16	6	2
CP013	Post-Discharge	20	6	14	0
All Projects		**271**	**109**	**61**	**84**
*Examples include attending court hearings and preparing documentation regarding patients' care plans and outcomes of patient visits.					

13b. Case Management for Enrolled Patients in August					
Project No.	**Concept**	**No. Total Hours on Case Management**	**No. Hours on Case Management Telephone Calls**	**No. Hours on in-person Case Management Meetings**	**No. Hours on Other Case Management Activities***
CP002	Post-Discharge	52	5	4	43
CP004	Post-Discharge	10	8	2	0
CP005	Tuberculosis	18	Could not disaggregate		
CP007A	Frequent EMS Users	62	30	14	18
CP007B	Post-Discharge	92	44	25	23
CP008	Post-Discharge	7	3	4	0
CP010	Frequent EMS Users	15	10	5	0
CP013	Post-Discharge	16	4	12	0
All Projects		**272**	**104**	**66**	**84**
*Examples include attending court hearings and preparing documentation regarding patients' care plans and outcomes of patient visits.					

13c. Case Management for Enrolled Patients in September					
Project No.	**Concept**	**No. Total Hours on Case Management**	**No. Hours on Case Management Telephone Calls**	**No. Hours on in-person Case Management Meetings**	**No. Hours on Other Case Management Activities***
CP004	Post-Discharge	47	7	40	0
CP005	Tuberculosis	19	Could not disaggregate		
CP007A	Frequent EMS Users	48	24	8	16
CP007B	Post-Discharge	72	36	10	26
CP008	Post-Discharge	4	2	2	0
CP010	Frequent EMS Users	12	7	5	0
CP013	Post-Discharge	30	10	20	0
All Projects		232	86	85	42

FREQUENT EMS Users

CP007A, Alameda County's Frequent EMS User project, was launched in July 2015, and CP010, San Diego County's Frequent EMS User project followed in October 2015. Both projects provide case management services to Frequent users of emergency medical services (EMS) and EDs to ensure that they receive the most appropriate services for their needs and to link them to non-emergency services that can reduce their dependence on EMS providers for care.

CP007A and CP010 have each enrolled 40 and 37 patients, respectively, through the end of the third quarter of 2016. CP010 treats patients as currently enrolled when they receive services during the reporting month. In CP007A, patients are considered currently enrolled until they graduate or expire, even if the CPs could not provide services to the patient during the reporting month. This can occur when an enrolled patient leaves the area, cannot be located, or is institutionalized (e.g., in a skilled nursing facility, rehabilitation center, or jail) for a period of time.

In order to ascertain which services would benefit individual frequent EMS users, CPs perform several assessments. These assessments are provided at the initial in-person meeting with a patient and on an ad-hoc or as-needed basis for the duration of the patient's tenure with the project. They include a physical health assessment and a bio-psycho-social assessment. For patients with a relatively stable home, a home safety assessment is also conducted. Patients who are on any medication receive medication reconciliation, where feasible. Table 14 shows the number of patients who received each type of assessment described above.

Table 14.

Number of Enrolled Patients Receiving Community Paramedicine Services by Type

Project No.	Month	No. Patients Enrolled	No. Any Physical Assess.	No. Any Bio-psycho- social Assess.	No. Any Home Assess.	No. Any Medication Recon.	No. Any Transport to Non-ED Provider
CP007A	July	5	3	3	2	3	0
	Aug	6	4	4	3	4	0
	Sept	6	1	3	0	0	0
CP010	July	36	2	1	5	0	8
	Aug	36	0	0	0	0	5
	Sept	36	1	1	6	0	2
Total –July – Sept.		*	11	12	16	7	15

*Cannot report a count of total patients enrolled during the quarter because most patients were enrolled during more than one month (e.g., some of the patients enrolled in July were also enrolled in August and September).

Table 15 shows the number of assessments provided for enrolled patients. In both Frequent EMS User projects, patients often received more than one assessment or service from CPs each month. In Alameda, many of the bio-psycho-social assessments were performed in during telephonic visits.

Table 15.

Number of Community Paramedicine Services Provided by Type

Project No.	Month	No. Patients Enrolled	Total No. Physical Assess.	Total No. Bio- psycho-social Assess.	Total No. Home Assess.	Total No. Med. Recon	Total No. Transport to Non-ED Provider.
CP007A	July	5	4	18	3	3	0
	Aug	6	5	28	3	4	0
	Sept	6	1	7	0	0	0
CP010	July	36	2	1	5	0	8
	Aug	36	0	0	0	0	5
	Sept	36	1	1	8	0	2
Total –July – Sept.		*****	**13**	**55**	**19**	**7**	**15**

*Cannot report a count of total patients enrolled during the quarter because most patients were enrolled during more than one month (e.g., some of the patients enrolled in July were also enrolled in August and September).

During the third quarter of 2016, CP007A's CPs assisted frequent EMS users with access to medical care, legal assistance, clothing, and home health services. They also referred patients to providers of other services such as senior safety, domestic violence assistance, senior fall prevention, food assistance, transportation assistance, and housing assistance. Because few new patients are enrolled each month, relatively few referrals to services are reported on the Data Collection Tool, which collects information on referrals given in the first CP visit. Many patients are enrolled for multiple months and receive referrals for additional services.

Table 16 shows the distribution of CP visits by type of location in which services were provided. In CP007A (Alameda), all patients but one were seen in their place of residence. In CP010 (San Diego), patients were seen by CPs in their place of residence, business or places of employment, residential facilities, a public park or street, and other locations. In addition, CPs often contacted patients by phone to perform additional assessments, anticipate need, and confirm whether patients need additional assistance.

Table 16.

Location at Which Community Paramedics Visited Enrolled Frequent 911 Callers

Project No.	Month	No. Patients Enrolled	No. Visits at Home	No. Visits at Place of Employment	No. Visits at Residential Facility	No. Visits at Street or Park	No. Visits at a Shelter
CP007A	July	5	3	0	0	0	0
	Aug	6	4	0	0	0	0
	Sept	6	0	1	0	0	0
CP010	July	36	12	1	2	1	1
	Aug	36	4	2	1	2	0
	Sept	36	4	2	1	2	0
Total –July – Sept.		*****	**27**	**6**	**4**	**5**	**1**

*Cannot report a count of total patients enrolled during the quarter because most patients were enrolled during more than one month (e.g., some of the patients enrolled in July were also enrolled in August and September).

Table 17 describes transitions among persons enrolled in Frequent EMS User projects. In the third quarter of 2016, two people graduated from CP007A's program, in addition to the 25 who had graduated through the first quarter of 2016. Persons graduated when, in the CPs' judgment, they no longer needed case management to function independently and use EDs appropriately. No patients in CP010's program moved into permanent housing in addition to the four who had done so by the end of the previous quarter. No participants graduated from CP010's program. The data presented in Table 17 also indicate that neither site had difficulty locating patients after they were enrolled in the program during this quarter.

Table 17.

Transitions of Enrolled Frequent 911 Callers

Project No.	Month	No. Could Not be Located after Enrolling	No. Un-Enrolled Due to Non-Compliance	No. Graduated (cumulative)	No. Moved into permanent housing (cumulative)
CP007A	July	0	0	26	0
	Aug	0	0	26	0
	Sept	0	0	27	0
CP010	July	0	0	0	4
	Aug	0	0	0	4
	Sept	0	0	0	4

In the third quarter of 2016, active patients in both Frequent EMS User projects visited the ED multiple times. In CP007A, Alameda's program, all patients visited the ED at least once in July; 33% did so in August; and 66% did so in September. Six patients in CP007A were admitted to the hospital during this quarter with a length of stay ranging from 3 to 22 days.

For CP010, San Diego's Frequent 911 Caller program, the percentage of patients who visited an ED at least once was 56% in July and 58% in both August and September. CP010 focuses on patients who have 20 or more ED visits in a month, so their ED visit rate reflects improvement in patients who typically use the ED extensively. CP010 (San Diego) continues to report difficulty in obtaining data from its partner hospital on the disposition of its patients who visit an ED.

Table 18.

Emergency Department Utilization by Enrolled Frequent 911 Callers

Project No.	Month	Total No. Enrolled	No. visiting ED 1 Time	No. visiting ED 2 Times	No. visiting ED 3 Times	No visiting ED ≥ 4 Times
CP007A	July	5	2	1	0	2
	Aug	6	0	1	0	1
	Sept	6	0	2	1	1
CP010	July	36	5	4	4	7
	Aug	36	5	3	4	9
	Sept	36	11	5	0	5
Total –July – Sept.		*****	**23**	**16**	**9**	**25**
*Cannot report a count of total patients enrolled during the quarter because most patients were enrolled during more than one month (e.g., some of the patients enrolled in July were also enrolled in August and September).						

In both Frequent EMS User projects, the number of dispositions in the ED does not equate the number of patients who went to the ED in any given month because patients often go to the ED on more than one occasion in the month. Additionally, the data is reported based on records from partner hospitals and on information provided by patients. As a result, the data sources will not always match.

Table 19.

Disposition of Enrolled Frequent 911 Callers Visiting an ED

Project No.	Month	Total No. Enrolled	No. Admitted	No. Transferred	No. Discharged from ED	No. Failed to Complete Care	No. Expired in a Hospital
CP007A	July	5	3	1	1	0	0
	Aug	6	1	0	2	0	0
	Sept	6	2	1	2	0	0
CP010	April	36	not provided	not provided	not provided	not provided	not provided
	May	36	not provided	not provided	not provided	not provided	not provided
	June	36	not provided	not provided	not provided	not provided	not provided
Total –July – Sept.		*****	**6**	**2**	**5**	**0**	**0**

*Cannot report a count of total patients enrolled during the quarter because most patients were enrolled during more than one month.

POST-DISCHARGE CARE

The goal of the Post-Discharge projects is to reduce hospital readmissions and ED revisits for persons who were discharged from a hospital for treatment of a chronic condition. Each Post-Discharge project varies with respect the conditions treated, as well as in their medical protocols. CP007B (Alameda) enrolls patients with one of six qualifying diagnoses: acute myocardial infarction (AMI), chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), diabetes, pneumonia, and sepsis. CP004 (Butte) enrolls only patients with AMI or CHF. CP013 (Solano) enrolls only patients with CHF or COPD. CP002 and CP008 (UCLA and San Bernardino) both enroll only patients with CHF.

CP002 terminated its Post-Discharge project at the end of August 2016 because the Glendale Fire Department was no longer able to absorb the cost of operating the project.

Per each site's medical protocols, CPs perform a physical assessment of each patient. CPs participating in CP004 (Butte) perform an initial assessment by phone for all patients. If a Butte CP determines that a patient also needs an in-person assessment, the CP will request the patient's permission to conduct a home visit. In February, Butte began strongly encouraging all CHF patients to have a home visit regardless of the outcome of the phone assessment. AMI patients are not being encouraged as strongly as these patients have shown themselves, in Butte's experience, to be better able to manage their condition. CPs participating in CP002, CP007B, CP008, and CP013 (UCLA, Alameda, San Bernardino, Solano) perform initial assessments in-person for all patients who consent to participate in the program.

Table 20 shows the number of newly enrolled patients for each project by month, along with the number of initial in-person assessments scheduled, and the number of initial phone and in-person assessments conducted. Discrepancies can exist between the number of patients scheduled in a month and the number of visits completed. Some patients are enrolled and scheduled during the last several days of a month and the visit is completed early in the following month.

Across the projects, CPs encounter patients who do not answer phone calls, do not return voicemail messages, and decline scheduled home visits. In some cases, family members refuse to let CPs to schedule visits with patients. In addition, they report that scheduling conflicts between clients and the CPs can contribute to missed patient visits.

Table 20.

First Post-Hospital Assessment Visit or Phone Call with Community Paramedic for Enrolled Post-Discharge Patients

Project No.	Month	New Patients Enrolled	Patients First In-person Assessment with CP Scheduled	Patients First Assessment Phone Call with CP Completed	Patients First In-person Assessment Visit with CP Completed
CP002	July	6	6	n/a	3
	August	10	10	n/a	6
	Sept	n/a – project ended	n/a – project ended	n/a – project ended	n/a – project ended
CP004*	July	30	unreported	29	6
	August	24	unreported	21	3
	Sept	24	unreported	24	1
CP007B	July	5	4	n/a	4
	August	3	3	n/a	4
	Sept	0	0	n/a	0
CP008	July	7	4	n/a	4
	August	9	2	n/a	2
	Sept	2	2	n/a	2
CP013	July	6	6	n/a	6
	August	4	4	n/a	4
	Sept	10	10	n/a	10
Total – July - Sept.		**140**	**51**	**74**	**55**

*In January, CP004 (Butte) only conducted an in-person visit if required after phone assessment. In February, CP004 began offering an in-person visit to all CHF patients but some CHF patients declined the offer.

The CPs also conduct phone follow-up with patients and additional in-person visits on an as-needed basis. Table 21 shows the number of patients who had one or more follow-up telephone calls and the number of patients who had two or more, three or more, or four or more visits by project and month. CP007B (Alameda) provides multiple visits and phones calls to enrolled patients. CP013 (Solano) also completes multiple CP visits.

Table 21.

Subsequent Contacts with Community Paramedics for Enrolled Post-Discharge Patients within 30 Days of Discharge

Project No.	Month	No. Had ≥1 Phone Follow-Up to 1st Visit	No. Had ≥2 CP Visits	No. Had ≥3 CP Visits	No. Had ≥4 CP Visits
CP002	July	3	0	0	0
	Aug	6	0	0	0
	Sept	n/a – project ended	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	22	0	0	0
	Aug	13	0	0	0
	Sept	13	0	0	0
CP007B	July	9	4	1	1
	Aug	16	3	1	0
	Sept	8	2	0	0
CP008	July	4	0	0	0
	Aug	2	0	0	0
	Sept	2	0	0	0
CP013	July	0	5	0	0
	Aug	0	3	1	0
	Sept	0	6	0	0
Total –July – Sept.		**98**	**23**	**3**	**1**

Table 22 reports on instances in which CPs provided specific services intended to reduce the risk of readmission for patients with chronic conditions. CP004 and CP008 each reported that no patients had an inconsistency in medication during the second quarter of 2016. All sites except CP004 reported identifying more than one patient who needed additional instruction in this quarter.

Other services focus on helping patients manage aspects of their care other than medication. CP008 (San Bernardino) is providing CHF patients with scales to monitor their weight and with low sodium cookbooks to help them prepare appropriate meals. CP004 (Butte) also provides scales and blood pressure cuffs to patients who need them to manage their condition.

Table 22.

Services Community Paramedics Provided to Reduce Risk of Readmission

Project No.	Month	New Patients Completing 1st Visit or Call	No. Patients for Whom CP Identified an Inconsistency in Medication	No. Patients Needed Additional Instruction
CP002	July	3	2	1
	Aug	6	6	4
	Sept	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	29	0	0
	Aug	21	0	0
	Sept	24	0	0
CP007B	July	4	1	1
	Aug	4	1	1
	Sept	0	0	0
CP008	July	4	0	4
	Aug	2	0	2
	Sept	2	0	2
CP013	July	6	3	4
	Aug	4	3	3
	Sept	10	6	8
Total –July – Sept.		**119**	**22**	**30**

CPs also provide services that reduce the risk of ED visits and hospitalizations due to reasons other than patients' qualifying diagnoses. They are conducting home safety inspections and advising patients on strategies for reducing the risk of falls, such as removing clutter. CP007B (Alameda) refers many patients to the Alameda Fire Department's Senior Safety program, where patients gain access to free assistance in installing safety equipment inside their home, such as grab bars in the bath and handrails on staircases.

Table 23 shows the distribution of the locations at which CPs saw Post-Discharge patients. Because these projects target patients who were recently discharged from a hospital for treatment of a major illness, the patient's residence was the most frequent place in which patients were seen.

Table 23.

Location at Which Enrolled Post-Discharge Patients were Visited by Community Paramedics

Project No.	Month	No. Patients Enrolled	No. Visited at Permanent Residence	No. Visited at Some Other Place
CP002	July	6	3	0
	Aug	10	6	0
	Sept	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	30	6	0
	Aug	24	3	0
	Sept	24	1	0
CP007B	July	6	5	0
	Aug	8	3	2
	Sept	4	1	1
CP008	July	8	4	0
	Aug	10	2	0
	Sept	4	2	0
CP013	July	10	5	3
	Aug	9	3	3
	Sept	13	11	1
Total –July – Sept.		**166**	**55**	**10**

Table 24 presents data on ED visits by persons enrolled in Post-Discharge projects during the 30 days following discharge from their index hospitalization. During the quarter, all projects had at least one patient who visited an ED within 30 days of discharge. CP004 reported the highest ED visit rates in each month.

Table 24.

ED Visits by Enrolled Post-Discharge Patients

Project No.	Month	No. Patients Enrolled	No. Patients ≥ 1 ED Visit	ED Visit Rate
CP002	July	6	0	0%
	Aug	10	2	20%
	Sept	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	30	14	47%
	Aug	24	19	79%
	Sept	24	8	33%
CP007B	July	6	1	17%
	Aug	8	2	25%
	Sept	4	0	0%
CP008	July	8	0	0%
	Aug	10	3	30%
	Sept	4	1	25%
CP013	July	10	3	30%
	Aug	9	1	11%
	Sept	13	3	23%
Total –July – Sept.		**166**	**57**	**34%**

Table 25 shows the disposition of patients who went to the ED within 30 days of their index hospital discharge.

CP002 (UCLA) reported two ED visits within 30 days of the index discharge during the third quarter of 2016. Neither ED visit resulted in an admission.

CP004 (Butte) reported 41 ED visits within 30 days of the index discharge that resulted in 23 hospital admissions. Seventeen of these were related to the qualifying diagnosis, and none were planned. Length of stay ranged from 3.5 to 15 days.

CP007B (Alameda) reported three ED visits within 30 days of the index discharge. One of these resulted in a hospital admission and was related to the index diagnosis. The patient had a length of stay of 6 days.

CP008 (San Bernardino) reported four ED visit within 30 days of the index discharge, and one resulted in hospital admission. The admission was related to the qualifying diagnosis. The patients did not answer phone calls from CPs to schedule a home visit after consenting to the

pilot. The average length of stay was less than one day.

CP013 (Solano) reported seven ED visits in the first quarter of 2016, two of which resulted in an admission to the ED. Both were unplanned and unrelated to the qualifying diagnosis.

Table 25.

Disposition of Enrolled Post-Discharge Patients Who Went to an Emergency Department Within 30 Days of Index Hospital Discharge

Project No.	Month	No. Patients ≥ 1 ED Visit	No. Admitted	No. Transferred	No. Discharged from ED	No. Failed to Complete Care	No. Expired in a Hospital
CP002	July	0	0	0	0	0	0
	Aug	2	0	0	2	0	0
	Sept	n/a – project ended	n/a – project ended	n/a – project ended	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	14	5	0	9	0	0
	Aug	19	12	0	7	0	0
	Sept	8	6	0	2	0	0
CP007B	July	1	0	0	1	0	0
	Aug	3	1	0	2	0	0
	Sept	0	0	0	0	0	0
CP008	July	0	0	0	0	0	0
	Aug	3	1	0	2	0	0
	Sept	1	0	0	1	0	0
CP013	July	3	1	0	2	0	0
	Aug	1	0	0	1	0	0
	Sept	3	1	0	2	0	0
Total –July – Sept.		**58**	**27**	**0**	**31**	**0**	**0**

Table 26 reports numbers and rates of readmission to a hospital within 30 days of discharge from the index hospitalization for any reason and for the qualifying diagnosis. The rate of readmission for any reason is important because Medicare penalizes hospitals that have high rates of readmission for any reason. The rate of readmission for the qualifying diagnosis is also important because CP Post-Discharge projects focus on helping patients manage qualifying diagnoses and, thus, are most likely to affect readmissions for those diagnoses. Across all projects and all three months, the average rate of readmission for any reason was 16% (range = 0% to 50%) for patients enrolled. The average rate of readmission for qualifying diagnosis was 11% (range = 0%

to 33%).

Table 26.

Hospital Readmissions by Enrolled Post-Discharge Patients

Project No.	Month	No. Patients Enrolled	No. Patients Readmitted for Any Reason (%)	No. Patients Readmitted for Qualifying Diagnosis (%)
CP002	July	6	0 (0%)	0 (0%)
	Aug	10	0 (0%)	0 (0%)
	Sept	n/a – project ended	n/a – project ended	n/a – project ended
CP004	July	30	5 (17%)	4 (13%)
	Aug	24	12 (50%)	8 (33%)
	Sept	24	6 (25%)	5 (21%)
CP007B	July	6	0 (0%)	0 (0%)
	Aug	8	1 (13%)	1 (13%)
	Sept	4	0 (0%)	0 (0%)
CP008	July	8	0 (0%)	0 (0%)
	Aug	10	1 (10%)	1 (10%)
	Sept	4	0 (0%)	0 (0%)
CP013	July	10	1 (10%)	0 (0%)
	Aug	9	0 (0%)	0 (0%)
	Sept	13	1 (8%)	0 (0%)
Total –July – Sept.		**166**	**27 (16%)**	**19 (11%)**

Table 27 describes the number of patients for whom initial contact was made by CPs outside of the time frame stipulated in the medical protocol and the number of patients for whom all of the assessments required in the medical protocol were not completed. In most cases where one of these events occurred, the lack of compliance with the protocol was due to the patient being unreachable or unwilling to participate in the planned visit. Staffing challenges also played a role. CP007B (Alameda) has difficulty making initial contacts within the stipulated time frame for patients who are discharged over the weekend because the CPs only work Mondays through Fridays. CP004 (Butte) experienced missed communication between CPs and Cardiology Department staff.

Table 27.

Lack of Compliance with Protocol for Enrolled Post-Discharge Patients

Project No.	Month	No. 1st Contacts Outside Stipulated Time Frame	Reasons Outside Stipulated Time Frame	No. Did Not Receive All Assessments	Reasons Not Receive All Assessments
CP002	July	0	n/a	3	1 patient withdrew; 2 patients discharged to SNFs
	Aug	0	n/a	4	Patients withdrew
	Sept	n/a – project ended	n/a	n/a – project ended	n/a
CP004	July	1	Patient was not included on list by Cardiology Dept.	1	Miscommunication between Cardiology and CPs
	Aug	3	2 patients expired; 1 miscommunication between Cardiology and CPs	0	n/a
	Sept	0	n/a	0	n/a
CP007B	July	4	Scheduling conflicts	1	First visit occurred in subsequent month
	Aug	3	Scheduling conflicts; unable to contact by phone	4	Visits consisted of phone follow-up only
	Sept	0	n/a	3	Visits consisted of phone follow-up only
CP008	July	0	n/a	3	2 patients did not return scheduling phone calls; 1 withdrew
	Aug	0	n/a	6	4 patients did not return scheduling phone calls; 2 withdrew
	Sept	0	n/a	0	n/a
CP013	July	0	n/a	0	n/a
	Aug	0	n/a	0	n/a
	Sept	0	n/a	0	n/a
Total –July – Sept.		**13**		**42**	

DIRECTLY OBSERVED THERAPY FOR TUBERCULOSIS

CP005, Ventura County's Tuberculosis (TB) pilot project, was launched in June 2015. CPs provide Directly Observed Therapy (DOT) for TB to supplement care provided by staff of the county's TB Clinic, which is partnering with Ventura's EMS providers on this pilot project because it does not have sufficient resources to provide DOT to all TB patients in the county. DOT is important for TB because patients who do not take their medication as directed may infect other people and may develop drug resistant strains of TB.

Many patients are enrolled for multiple months due to the length of DOT for TB. A total of nine patients were enrolled in July 2016, ten in August 2016, and eleven in September 2016.

In this section, some data are reported separately for patients with drug resistant TB and non-drug resistant TB because drug resistant TB is more difficult to treat and poses a greater risk to public health than TB that responds to standard medications. No new patients with drug-resistant TB began treatment with CPs in the third quarter of 2016.

The number and frequency of DOT treatments administered to patients are determined by both the patient's treatment protocol and start date for the DOT regimen. Table 28 shows the number of DOT treament given by CPs to patients in the third quarter of 2016.

Table 28.

Number of Directly Observed Therapy Treatments Administered by Community Paramedics

Project No. and Month	Total Number of Patients	No. Treatments - Patients with Drug Resistant TB	No. Treaments - Patients with non-Drug Resistant TB	Total No. Treaments
CP005--- July	9	28	117	145
CP005 --- August	10	32	150	182
CP005 --- Sept	11	21	135	156
Total –July - Sept	*****	**81**	**402**	**483**

* Cannot sum the number of patients across months because patients are enrolled for multiple months due to the length of treatment for TB.

TB patients sometimes experience side effects and mal-absorption of TB medications. For July, August, and September 2016, no mal-absorption issues or other side effects were reported among patients treated by CPs. (See Table 29.)

Table 29.

Monitoring of Side Effects among Patients Treated by Community Paramedics

	Project Month	Patients with Drug-Resistant	Patients with Non- Drug-Resistant TB	All Patients with Side Effects
No. Mal-absorption Issues Identified	July	0	0	0
	August	0	0	0
	September	0	0	0
No. Patients Reporting Treatment Side-effects (excluding mal- absorption)	July	0	0	0
	August	0	0	0
	September	0	0	0

All required medical assessments were performed for all patients; however, each assessment is not administered formally at each DOT since some patients are seen daily or more than once per day.

Table 30 shows the distribution of the locations at which CPs saw enrolled patients. In July, August, and September, all DOTs administered by CPs were provided in the patient's residence.

Table 30.

Location at Which Directly Observed Therapy Provided by Community Paramedics

Project No. and Month	No. Received DOT at Home	No. Received DOT at Place of Employment	No. Received DOT at a Residential Facility	No. Received DOT on Street or Park	No. Received DOT at a Shelter
CP005--- April	9	0	0	0	0
CP005 --- May	10	0	0	0	0
CP005 --- June	11	0	0	0	0
Total –July - Sept	*	**0**	**0**	**0**	**0**

* Cannot sum the number of patients across months because patients are enrolled for multiple months due to the length of treatment for TB.

It is abnormal for a patient to go to the ED or to have a hospital admission due to their TB diagnosis. No patients went to the ED or called 911 in the third quarter, but two patients were admitted to the hospital during in August 2016 for an average stay of 4.5 days. The admissions were unrelated to the patients' TB diagnosis and did not interfere with their ongoing treatment for TB.

In the third quarter of 2016, all scheduled DOTs were completed as reflected in Table 31. In September 2016, one patient with drug-resistant TB completed treatment with the CPs, as did two patients without drug- resistant TB. These patients may continue drug therapy on their own or under the care of the TB clinic staff.

Table 31.

Instances of Non-Completion of Directly Observed Therapy among Patients Treated by Community Paramedics

Project No. and Month	No. Times CP Could Not Complete Scheduled DOT	No. Patients for Whom CP Could Not Complete Scheduled DOT	Reasons Why Patient Not Available
CP005--- April	0	0	n/a
CP005 --- May	0	0	n/a
CP005 --- June	0	0	n/a
Total –July - Sept	**0**	**0**	n/a

In addition to providing DOT, CPs assist the staff of Ventura's TB clinic with contact investigations to identify persons to whom TB patients may have transmitted the disease so that they can be tested and, if necessary, treated. In some cases, the CPs' role primarily involves logistics. In other cases, CPs assist with screening of persons exposed to a person who was recently diagnosed with TB. Ventura assisted the TB clinic with one contact investigation begun in August 2016.

Table 32.

Number of Tuberculosis Contact Investigations in which CPs Participated

Project No. and Month	Number of Contact Investigations in which CPs Participated
CP005--- July	0
CP005 --- August	1
CP005 --- September	0
Total –July - Sept	**1**

HOSPICE

CP006, AMR Ventura County's Hospice project, was launched in August 2015. CPs provide care in the homes of patients receiving hospice care from partner agencies to prevent unnecessary transport to an ED. Although hospice patients are instructed to call the hospice agency if they need care, some hospice patients and their families call 911 instead. In some cases, patients and families do not understand that they should call the hospice agency. In other cases, families call 911 because they are anxious about a patient's condition or because they disagree with the patient's decision to obtain hospice care. In still other cases, patients or families may turn to 911 if they do not receive a prompt response when they contact a hospice agency. CP006 considers patients to be enrolled when a 911 dispatcher or a first responder on scene determines that a person is under the care of a hospice agency.

Twenty-six hospice patients were enrolled during the third quarter of 2016. Ventura's protocol stipulates that the CP must contact the hospice agency in all cases in which 911 is called on behalf of an enrolled hospice patient and the provider is not already with the patient. In 25 of 26 cases (95%), the hospice call was initiated by someone other than a hospice provider, often a family member. The remaining call (in August 2016) was initiated by the hospice provider, and in this instance the hospice provider was on-scene with the patient. The reasons reported for 911 calls in the third quarter of 2016 were varied and included falls, seizures, lift assistance, family concern about hospice care, hip injury, abdominal distress, shortness of breath, and syncope.

Table 33.

Presence of Hospice Agency in Response to 911 Call

Project No.	Number of Hospice Patients Enrolled	# Patients for whom Hospice Agency's Presence Needed	Hospice Agency arrived within 30 Min. of 911 Call	Hospice Agency arrived 30 Min. or More after 911 Call
CP006--- July	14	8	1	6*
CP006 --- August	19	8	2	4±
CP006 --- Sept	16	7	1	3*±
Total –July - Sept	**49**	**23**	**4**	**13*±**

*For one patient in July and for two patients in September the length of time it took the hospice nurse to arrive on scene was unknown.
±In two cases in August and one case in September, the hospice agency was asked to respond but did not do so.

A major goal of the Ventura Hospice project is to reduce of the number of hospice patients who are transported to an ED, because hospice patients are at risk of being removed from hospice if they are transported to an ED. Eight of the hospice patients (37.5%) were transported to an ED during the third quarter of 2016. Forty percent of patients transported in August were removed

from hospice, as were one-third of patients transported in September for a total of 11.5% (n=3) of the transported patients being removed from hospice in this quarter. The reasons that these patients were transported to an ED varied by patient, but the most common reason was that the patient's family insisted that the patient be transported to the ED. The other most frequent reason given was a medical need unrelated to the hospice condition, such as a fall.

Table 34.

Transports of Enrolled Patients and Hospice Care Status

Project No.	Total Enrolled	Number of Transports	Percent Transported	Number Removed from Hospice Care
CP006--- July	14	5	38%	1*
CP006 --- August	19	8	42%	3*
CP006 --- Sept	16	4	25%	1*
Total –July - Sept	**49**	**17**	**35%**	**3**

*For three patients in July, three patients in August, and three patients in September, it is not unknown whether hospice was revoked.

ALTERNATE DESTINATION - BEHAVIORAL HEALTH

Alternate Destination pilot projects are focused on transporting patients to the most appropriate level of care for the patient's needs. One of the Alternate Destination pilot projects, CP012, Stanislaus's Behavioral Health project, offers transport to an outpatient mental health crisis center for patients who are experiencing a behavioral health emergency.[4]

CP012 enrolled 28 patients during the third quarter of 2016. Table 35 shows the number of patients enrolled in each month, and the number of patients transferred to the ED within six hours of being brought to the mental health crisis center. During this quarter, no patients were transferred to an ED within six hours of transport to the mental health crisis center.

Table 35.

Transfers to ED for Enrolled Behavioral Health Patients

Project No.	Month	No. Patients Enrolled	No. Patients transferred ED within 6 hours	Reasons for transfer to the ED
CP012	July	11	0	n/a
	Aug	9	0	n/a
	Sept	8	0	n/a
Total –July - Sept		**28**	**0**	n/a

Table 36 presents information on the disposition of patients who were transferred from the mental health crisis center to an ED within six hours. Because no patients were transferred to the ED during this quarter, no patient dispositions are reported.

Table 36.

Disposition of Enrolled Behavioral Health Patients Who Went to an Emergency Department

Project No.	Month	No. Patients Enrolled	No. Admitted	No. Transferred	No. Discharged from ED	No. Failed to Complete Care	No. Expired in a Hospital
CP012	July	11	0	0	0	0	0
	Aug	9	0	0	0	0	0
	Sept	8	0	0	0	0	0
Total –July - Sept		**28**	**0**	**0**	**0**	**0**	**0**

[4] Eligibility is limited to persons who are uninsured or enrolled in Medi-Cal because the participating behavioral health facility does not accept patients with other types of health insurance.

CP012 enrolls persons with behavioral health needs who are frequent 911 users and/or have been placed on an involuntary psychiatric hold, known in California as a 5150. In July, one patient was both a frequent 911 caller and on a 5150 hold by the police. Two were categorized as solely frequent 911 callers, and six were solely on a 5150 hold. In August, no patients were both frequent 911 callers and 5150, three were categorized as frequent 911 callers, and three were 5150. In September, no patients were both frequent 911 callers and 5150, one was categorized as frequent 911 callers, and three were 5150.

Table 37 shows the distribution of CP visits during the third quarter of 2016 by type of location. Patients were seen by CPs in various locations, including place of residence, offices of health care providers, city streets, and other locations.

Table 37.

Location from Which Enrolled Behavioral Health Patients Called 911

Project No.	Month	No. Patients Enrolled	No. Calls from Permanent Residence	No. Calls from Health Care Provider	No. Calls from Street or Intersection	No. Visited at Some Other Place
CP012	July	11	1	6	2	2
	Aug	9	4	4	0	1
	Sept	8	2	3	1	2
Total –July - Sept		**28**	**7**	**13**	**3**	**5**

ALTERNATE DESTINATION – MEDICAL CARE

The goal of the Alternate Destination – Urgent Care projects is to reduce the number of visits to hospital emergency departments (EDs) and to provide the most appropriate level of care for patients. Three Alternate Destination projects enroll persons with medical care needs that could be met by an urgent care center (UCC): CP001 (UCLA), CP003 (Orange), and CP009 (Carlsbad). All three projects enroll patients who have any of the five conditions: isolated closed extremity injury, laceration with controlled bleeding, soft tissue injury, isolated fever or cough, or acute pain with mild traumatic injury. In CP009 (Carlsbad), a condition classified as generalized weakness is also included. Patients with these conditions who meet all other inclusion criteria are offered the option to be transported to a UCC instead of an ED.

CP001 and CP003's Alternate Destination projects launched in September 2015, and CP009 launched in October 2015. The Alternate Destination – Urgent Care programs continue to experience low enrollment. There are multiple reasons why enrollment in these projects is substantially lower than anticipated, including

- Lower than expected numbers of patients who meet the inclusion criteria (all sites)
- 911 calls occur at times of the day during which urgent care centers are closed (all sites)
- Enrollment limited to persons of a single insurance carrier (CP009)
- Enrollment limited to non-elderly adults (CP009)
- Insufficient numbers of paramedics trained to screen patients to determine eligibility for transport to alternate destinations (CP003)

During the second and third quarters of 2016, CP003 trained additional paramedics to screen patients for eligibility for the pilot project. CP003 leaders believe that having trained paramedics on more shifts in the three participating cities will increase the number of patients enrolled.

Table 38 presents the conditions of the 2 patients enrolled in the Alternate Destination – Urgent Care projects during the third quarter of 2016. Both had isolated closed extremity injuries and were enrolled. Neither CP001 nor CP009 enrolled patients in this quarter.

Table 38.

Condition of Enrolled Alternate Destination Patients

Project No.	Month	No. Patients Enrolled	Closed Extremity	Laceration	Soft Tissue	Fever or Cough	Other Mild Injury	Other
CP001	Q32106	0	0	0	0	0	0	0
CP003	July	1	1	0	0	0	0	0
	Aug	1	1	0	0	0	0	0
	Sept	0	0	0	0	0	0	0
CP009	July	0	0	0	0	0	0	0
	Aug	0	0	0	0	0	0	0
	Sept	0	0	0	0	0	0	0
Total –July - Sept		**2**	**2**	**0**	**0**	**0**	**0**	**0**

The sites are asked to identify their enrolled patients' mechanism of injury. These are shown in Table 39. In CP003, Orange County, both patients' mechanism of injury was marked "other."

Table 39.

Mechanism of Injury of Enrolled Alternate Destination Patients

Project No.	Month	No. Patients Enrolled	Fall < 10 feet	Vehicle	Struck or Hit	Crushing or Piercing	Over-exertion or exposure	Other	Not applicable
CP001	Q32016	0	0	0	0	0	0	0	0
CP003	July	1	0	0	0	0	0	1	0
	Aug	1	0	0	0	0	0	1	0
	Sept	0	0	0	0	0	0	0	0
CP009	July	0	0	0	0	0	0	0	0
	Aug	0	0	0	0	0	0	0	0
	Sept	0	0	0	0	0	0	0	0
Total –July - Sept		**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Table 40 shows the distribution of CP visits to Alternate Destination – Urgent Care patients during the third quarter of 2016 by location.

Table 40.

Location from Which Enrolled Alternate Destination Patients Called 911

Project No.	Month	No. Patients Enrolled	No. Calls from Permanent Residence	No. Calls from Health Care Provider	No. Calls from Street or Intersection	No. Visited at Some Other Place
CP001	Q32016	0	0	0	0	0
CP003	July	1	0	0	0	1
	Aug	1	0	0	0	1
	Sept	0	0	0	0	0
CP009	July	0	0	0	0	0
	Aug	0	0	0	0	0
	Sept	0	0	0	0	0
Total –July - Sept		**2**	**0**	**0**	**0**	**2**

One measure of the efficacy of the Alternate Destination – Urgent Care projects is whether any of the patients were transferred to the ED within six hours of transport to the UCC. In the third quarter of 2016, no patients were transferred to the ED with six hours of arrival at the UCC.

Table 41.

Transfers to ED for Enrolled Alternate Destination Patients

Project No.	Month	No. Patients Enrolled	No. Treated in UCC and Released	No. continuous transfers	No. Patients transferred ED within 6 hours	Reasons for transfer to the ED
CP001	Q32106	0	0	0	0	n/a
CP003	July	1	0	0	0	n/a
	Aug	1	0	0	0	n/a
	Sept	0	0	0	0	n/a
CP009	July	0	0	0	0	n/a
	Aug	0	0	0	0	n/a
	Sept	0	0	0	0	n/a
Total –July - Sept		**2**	**0**	**0**	**0**	n/a

Data on patient outcomes are presented in Table 42 when available. Because no patients were transferred to the ED during this quarter, no patient dispositions are reported.

Table 42.

Disposition of Enrolled Post-Discharge Patients Who Went to an Emergency Department

Project No.	Month	No. Patients Enrolled	No. Admitted	No. Transferred	No. Discharged from ED	No. Failed to Complete Care	No. Expired in a Hospital
CP001	Q32106	0	0	0	0	0	0
CP003	July	1	0	0	0	0	0
	Aug	1	0	0	0	0	0
	Sept	0	0	0	0	0	0
CP009	July	0	0	0	0	0	0
	Aug	0	0	0	0	0	0
	Sept	0	0	0	0	0	0
Total –July - Sept		**2**	**0**	**0**	**0**	**0**	**0**

Evaluation of California's Community Paramedicine Pilot Program

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Executive Summary

Community paramedicine (CP), also known as mobile integrated health, is an innovative model of care that is being implemented throughout the United States. This model of care utilizes the unique abilities of paramedics and emergency medical services (EMS) systems to meet local health care needs through partnerships between EMS agencies and other health care providers. Community paramedicine also aligns with the triple aim of improving patient experience, improving community health status, and decreasing the cost of care. Community paramedics receive additional training beyond that required for paramedic licensure and provide care outside of their traditional role, which in California is restricted to responding to 911 calls, transporting patients to an acute care hospital emergency department (ED), and performing inter-facility transfers.

In 1972, California established the Health Workforce Pilot Project (HWPP) program (California Health and Safety Code Sections 128125-128195), a farsighted program administered by the California Office of Statewide Health Planning and Development (OSHPD) that waives scope of practice laws to test and evaluate new and innovative models of care. On November 14, 2014, OSHPD approved HWPP #173, a project sponsored by the California Emergency Medical Services Authority (EMSA), which encompasses 13 projects that are testing six community paramedicine concepts. (Appendix A shows a map of the sites.)

- **Post-Discharge:** Provide short-term, home-based follow-up care to people recently discharged from a hospital due to a chronic condition (e.g., heart failure) to decrease hospital readmissions within 30 days.

- **Frequent EMS Users:** Provide case management services to frequent 911 callers and frequent visitors to EDs to reduce their use of the EMS system by connecting them with primary care, behavioral health, housing, and social services.
- **Directly Observed Therapy for Tuberculosis:** Collaborate with local public health department to provide directly observed therapy to people with tuberculosis (i.e., dispense medications and observe patients taking them to assure effective treatment) to prevent the spread of tuberculosis.
- **Hospice:** In response to 911 calls, collaborate with hospice agency nurses, patients, and family members to treat patients in their homes, according to their wishes, instead of transporting the patient to an ED.
- **Alternate Destination – Behavioral Health:** In response to 911 calls, offer people who have behavioral health needs but no emergent medical needs transport to a mental health crisis center instead of an ED.
- **Alternate Destination – Medical Care:** In response to 911 calls, offer people with low-acuity medical conditions transport to an urgent care center instead of an ED.

The HWPP regulations require organizations that sponsor pilot projects to retain an independent evaluator to assess trainee performance, patient acceptance, and cost effectiveness. A team of evaluators at the Philip R. Lee Institute for Health Policy Studies and the Healthforce Center (formerly the Center for the Health Professions) the University of California, San Francisco, serves as the independent evaluator for the HWPP #173. This report summarizes the evaluators' findings for 12-16 months of operation, depending on the time the projects first began enrolling patients (June to October 2015) through September 2016.

Methods

Information presented in this report was obtained from multiple sources:

- Baseline data reported by the CP pilot sites on cost and utilization of care among eligible persons prior to the launch of the pilot projects.
- Data reported quarterly by the CP pilot sites on the provision of patient care and care coordination and the cost of providing CP services and ambulance transports.
- Data from existing sources on the cost of ED visits and inpatient hospital admissions, two important indicators of the ability of the pilot projects to generate savings for payers and other parts of the health care system.
- Interviews with EMS agency leaders, project managers, community paramedics, and representatives of hospitals and other partner agencies to provide context for the quantitative data the projects reported.
- Conference calls with EMSA's project manager for the HWPP and the site-level project managers regarding patient safety, challenges encountered by the pilot projects, and their accomplishments.

Results

Through September 2016, the 13 community paramedicine pilot projects enrolled a total of 1,462 people. The post-discharge projects enrolled the largest number of people (922), and the tuberculosis project had the smallest number of enrollees (29). The majority of people enrolled in most pilot projects were non-Hispanic whites, except for San Bernardino's post-discharge project and Ventura's tuberculosis project, which had large proportions of Hispanic enrollees. Payer mix varied substantially across projects and concepts. Across all sites and concepts, 43% of patients

enrolled were Medicare beneficiaries, 28% were Medi-Cal beneficiaries, 14% had private health insurance, and 15% were uninsured. Medicare beneficiaries constituted the majority of patients enrolled in the post-discharge and hospice projects, whereas Medi-Cal beneficiaries accounted for over 80% of patients served by the alternate destination – behavioral health project and half of the patients enrolled in the tuberculosis project.

Findings regarding the safety, effectiveness, and cost and savings associated with each community paramedicine concept are described below. Costs are those incurred by EMS agencies to operate community paramedic programs. Savings accrue to other parts of the health care system due to reduction in ambulance transports, ED visits, and hospital admissions. Most of these savings accrue to payers, primarily Medicare and Medi-Cal, but savings also accrue to hospitals and health systems that have capitated (i.e., "full risk") contracts, have high rates of readmissions, and/or provide uncompensated care. None of the projects realized savings for EMS transport providers, because they operate on a fee-for-service basis and are reimbursed only for transport. These agencies had to provide in-kind contributions of resources and labor to operate the pilot projects.

Post-Discharge Projects

- Hospital readmissions within 30 days of discharge decreased for all sites and diagnoses except for heart failure patients enrolled in one project that provided less intensive services than other post-discharge projects.
- Community paramedics identified 129 patients (14%) who misunderstood how to take their medications or had duplicate medications and were at risk for adverse effects. Community paramedics explained to patients how to take their medications and identified

incidences where they were given duplicate prescriptions. They also assisted patients in obtaining refills, if needed.

- Four of the five post-discharge projects achieved cost savings for payers, primarily Medicare and Medi-Cal, due to reductions in inpatient readmissions within 30 days of discharge. Participating hospitals realized additional savings by lowering their risk of being penalized by Medicare for having excess readmissions. The fifth project reduced 30-day readmissions but the reduction was too small to offset the cost of operating the project.

Frequent EMS User Projects

- These projects achieved reductions in numbers of 911 calls, ambulance transports, and ED visits among enrolled patients.
- Community paramedics assisted patients in obtaining housing and other nonemergency services that met the physical, psychological, and social needs that led to their frequent EMS use.
- Both the projects achieved cost savings for payers but only one realized sufficient savings to offset the cost of operating the program. These projects also decreased the amount of uncompensated care furnished by ambulance providers and hospitals because 35% of enrolled patients were uninsured.

Tuberculosis Project

- Community paramedics dispensed appropriate doses of tuberculosis (TB) medications and monitored side effects and symptoms that could necessitate a change in treatment regimen.
- Persons with TB who received directly observed therapy (DOT) from community paramedics were more likely to receive all doses of TB medication prescribed by the TB clinic physician than patients who received DOT from the TB clinic's community health workers. Receiving all doses prescribed by the TB clinic physician increases the likelihood that a patient will be cured and will not spread TB to others or develop a drug-resistant strain of TB that would be more difficult to treat and to control in the community.
- No additional cost to the health care system because community paramedics who provide DOT at the pilot site did so while already on duty to respond to traditional 911 calls.

Hospice Project

- Community paramedics mainly provided hospice patients and their families with psychosocial support and administered medications from the hospice patients' "comfort care" packs when necessary, in consultation with a hospice nurse.
- The hospice project enhanced the EMS and hospice agencies' ability to honor patients' wishes to receive care at home by reducing rates of ambulance transports to an ED from 80% to 36%.

- The project also achieved savings for Medicare and other payers by reducing unnecessary ambulance transports, ED visits, and hospitalizations.

Alternate Destination – Behavioral Health Care Project

- Paramedics performed medical screening of patients to determine whether they could be safely transported directly to a mental health crisis center.
- Ninety-five percent of patients were evaluated at the behavioral health crisis center without the delay of a preliminary emergency department visit. Only 5% of patients required subsequent transfer to the ED, and there were no adverse outcomes. After refining the field medical evaluation protocols, the rate of transfer to an ED fell to zero.
- The project yielded savings for payers, primarily Medi-Cal, because screening behavioral health patients in the field for medical needs and transporting them directly to the mental health crisis center obviated the need for an ED visit with subsequent transfer from an ED to a behavioral health facility. For uninsured persons, the amount of uncompensated care provided by ambulance providers and hospitals also decreased.
- Enhanced community safety because it reduced the amount of time that law enforcement devotes to behavioral health calls.

Alternate Destination – Medical Care Projects

- More data are needed to make firm conclusions about the alternate destination – medical care projects due to the limited number of patients enrolled and the number of patients rerouted or transferred to an ED.

- Among the limited number of patients who were enrolled, paramedics were able to identify patients for whom transport to an urgent care center was an appropriate option.
- No patients experienced an adverse outcome, although two patients were transferred to an ED following admission to an urgent care center and nine patients were rerouted to an ED because the urgent care center declined to accept the patient.
- To operate safely and efficiently, these projects need to closely match field screening protocols with the capabilities of urgent care centers and the illnesses and injuries they are willing to treat.
- The projects yielded modest savings because insurers pay less for treatment provided in urgent care centers than in EDs for the same illnesses and injuries.

Conclusion

The community paramedicine pilot projects have demonstrated that specially trained paramedics can provide services beyond their traditional and current statutory scope of practice in California. These projects are improving patients' well-being, improving the integration and efficiency of health services in the community, and decreasing health care costs by reducing ambulance transports, ED visits, and hospital readmissions. The majority of savings achieved by these pilot projects accrue to Medicare and hospitals serving Medicare patients because Medicare beneficiaries accounted for the largest share of persons enrolled in the pilot projects (43%). Savings also accrue to the Medi-Cal program and providers that serve Medi-Cal beneficiaries because Medi-Cal beneficiaries constitute 28% of enrollees. In addition, the pilot projects provide new options to persons who call 911 that enable them to obtain the care they need more efficiently and in the settings they prefer.

Findings from the evaluation indicate that Californians benefit from these innovative models of health care that leverage an existing workforce that operates at all times under medical control, either directly or by protocols developed by physicians experienced in EMS and emergency care. These projects were designed to integrate with existing health care resources and utilize the unique skills of paramedics and their availability 24 hours per day, 7 days per week. No adverse outcome is attributable to any of these pilot projects. No other health professionals were displaced; in fact, these pilot projects demonstrated that community paramedicine programs can collaborate with physicians, nurses, behavioral health professionals, and social workers to fill gaps in the health and social services safety net.

At least 33 states are operating community paramedicine programs, and research conducted to date indicates that they are improving the efficiency and effectiveness of the health care system. Findings from this research suggest that the benefits of CP programs grow as they mature, solidify partnerships, and find their optimal structure and niche within a community. The evaluation of HWPP #173 yields consistent findings for five of the six community paramedicine concepts tested: post-discharge, frequent 911 users, DOT for TB, hospice, and alternate destination – behavioral health. Projects testing these five concepts have fulfilled the criteria for a successful HWPP. They have improved patients' well-being and, in most cases, have yielded savings for payers and other parts of the health care system. The sixth concept, alternate destination – medical care, shows potential but further research involving a larger volume of patients is needed to draw definitive conclusions.

If community paramedicine is enabled on a broader scale, California's current EMS system design is well-suited to utilize the results of these pilot programs to optimize the design and implementation of proposed programs and assure patient safety. The two-tiered system of

local control with state oversight and regulation enables cities and counties to tailor community paramedicine programs to meet local needs while both local and state oversight and regulation ensure patient safety.

Introduction

The US health care "system" often functions less like a system and more like a disjointed collection of entities. When people need care, they are often left to their own devices to navigate a complex array of providers that often do not communicate with one another. Navigating this system is especially challenging for persons who have multiple chronic conditions or who have mental health conditions or substance use disorders that affect their ability to manage their health. As a consequence, our emergency departments (EDs) are often overburdened by people who seek care in EDs that could be provided more effectively and more efficiently in other settings, or who need extra support to navigate the health care system and manage their health care needs. Overcrowding in EDs leads to delays in transfer of patients from Emergency Medical Services (EMS) personnel to ED personnel which can sometimes last as long as two to four hours in some urban areas of California.[1] These delays increase the cost of EMS services because EMS agencies must utilize more personnel and equipment to respond to 911 calls in a timely manner.

Community paramedicine (CP), also known as mobile integrated health (MIH-CP) is an innovative model of care that seeks to improve the effectiveness and efficiency of health care delivery by using specially trained paramedics in partnership with other health care providers to address identified patient needs in local health care systems. Community paramedics receive additional training beyond that required for licensure and provide care beyond their traditional role, which in California is restricted to responding to 911 calls with transport to EDs or with inter-facility transfers.[2] They are supervised by physicians and nurses who work for their EMS agencies and the health care and community agencies with which their EMS agencies partner. According to a survey conducted by the National Association of Emergency Medical

Technicians, by 2014 more than 100 EMS agencies in 33 states and the District of Columbia had implemented one or more MIH-CP initiatives.[3]

The ability of EMS agencies to implement community paramedicine initiatives depends on their state's scope of practice laws. Some states have broad scope of practice laws that give state regulators or local EMS agencies substantial discretion to determine what services paramedics provide and where they provide them. Other states' scope of practice laws are narrower. In California, the sections of the Health and Safety Code that govern paramedic scope of practice (HSC §§ 1797.52, 1797.218) specify the limited emergency settings where paramedics can provide services and the settings to which they can transport patients.

In 1972, California established the Health Workforce Pilot Project (HWPP) program (HSC §§ 128125-128195), which was originally called the Health Manpower Pilot Projects program. This farsighted program, administered by the California Office of Statewide Health Planning and Development (OSHPD), enables health care organizations to test and evaluate innovative models of care that utilize health professionals in new roles. Health professionals participating in an HWPP can provide services outside of their standard scope of practice in accordance with protocols for training and care delivery that are approved by OSHPD. Since 1972, OSHPD has approved 123 HWPPs, 117 of which were implemented. Seventy-seven HWPPs have resulted in changes in law or regulation.[4] On December 19, 2013, the California Emergency Medical Services Authority (EMSA) submitted an application to OSHPD for an HWPP to evaluate community paramedicine. OSHPD approved HWPP #173 on November 14, 2014, for one year and renewed approval for additional one-year periods in 2015 and 2016.

The HWPP regulations require organizations that sponsor pilot projects to retain an independent evaluator to assess trainee performance, patient acceptance, and cost effectiveness.

A team of evaluators at the Philip R. Lee Institute for Health Policy Studies and the Healthforce Center (formerly the Center for the Health Professions) at the University of California, San Francisco, serves as the independent evaluator for HWPP #173. This report summarizes the evaluators' findings regarding implementation from the time the first projects began enrolling patients in June 2015 through September 2016. It does not include a new project in San Francisco under which eligible patients will be medically screened and offered transport to a sobering center; this project was approved as part of the annual renewal in 2016 but has not enrolled any patients yet. Funding for the evaluation is provided by the California Health Care Foundation.

Overview of California Community Paramedicine Pilot Projects

Thirteen community paramedicine projects have been launched in 10 geographic areas across California under the auspices of HWPP #173. These projects are testing six different concepts for the practice of community paramedicine. Each concept was developed by a local EMS agency to meet the needs of the local community, and implementation was customized based on local circumstances.

The six concepts are:

1. **Post-Discharge:** Provide short-term, home-based follow-up care to people recently discharged from a hospital due to a chronic condition (e.g., heart failure) to reduce their risk of readmission and improve their ability to manage their condition.
2. **Frequent EMS Users:** Provide case management services to people who are frequent 911 callers and frequent visitors to EDs to identify needs that could be met more effectively outside of an ED and assist patients in accessing services to address non-

medical needs, such as food, housing, and substance use disorder treatment. If patients have medical needs, help them obtain clinic- or office-based primary care.

3. **Directly Observed Therapy for Tuberculosis:** Provide DOT to people with tuberculosis (dispense medications and observe patients taking them) to assure effective treatment of tuberculosis and prevent its spread.
4. **Hospice:** In response to 911 calls made by or on behalf of hospice patients, collaborate with hospice agency nurses, patients, and family members to treat patients in their homes according to their wishes instead of transporting the patient to an ED.
5. **Alternate Destination – Behavioral Health:** In response to 911 calls, offer people who have behavioral health needs, but no emergent medical needs, transport directly to a mental health crisis center instead of to an ED with subsequent transfer to a mental health facility.
6. **Alternate Destination – Medical Care:** In response to 911 calls, offer people with low-acuity medical conditions transport to an urgent care center for evaluation by a physician instead of to an ED.

All sites obtained approval from an institutional review board (IRB) and enrolled patients following consent procedures stipulated by the IRB. Additional information about each concept and the sites testing the concept are contained in the respective sections of this report.

Table 1 lists the lead agencies for each HWPP #173 project, the concept tested, the date on which the project began enrolling patients, and the total number of patients enrolled from the time the project began through September 30, 2016. Collectively, the projects enrolled a total of 1,462 people over this time period.

Table 1.

Pilot Sites and Community Paramedicine Concepts Included in This Report

Project #	Lead Agency	Community Paramedicine Concept	Date Implemented	Total Number of Patients Enrolled
CP001	UCLA Center for Prehospital Care	Alternate Destination	Sept. 8, 2015	12
CP002	UCLA Center for Prehospital Care	Post-Discharge	Sept. 1, 2015	154
CP003	Orange County	Alternate Destination	Sept. 14, 2015	25
CP004	Butte County EMS	Post-Discharge	July 1, 2015	500
CP005	Ventura County EMS	Tuberculosis	June 1, 2015	29
CP006	Ventura County EMS	Hospice	Aug. 1, 2015	226
CP007A	Alameda County EMS	Frequent 911 Callers	July 1, 2015	40
CP007B	Alameda City EMS	Post-Discharge	June 1, 2015	64
CP008	San Bernardino County Fire Dept.	Post-Discharge	Aug. 13, 2015	133
CP009	Carlsbad Fire Dept.	Alternate Destination	Oct. 9, 2015	2
CP010	San Diego County	Frequent 911 Callers	Oct. 12, 2015	37
CP012	AMR Stanislaus	Alternate Destination	Sept. 25, 2015	169
CP013	Medic Ambulance Solano	Post-Discharge	Sept. 15, 2015	71
All Projects				**1,462**

Training of Community Paramedics

Paramedics were eligible to be trained to perform new roles as CPs if they had at least four years of experience, volunteered to participate in the pilot, and were sponsored by their local EMS authority. A core curriculum was developed by the State of California Community Paramedic Educational Taskforce, adapted from the Paramedic Foundation's National Community Paramedic Curriculum, to more accurately meet the standards and requirements of practice in California. The curriculum was approved by the HWPP prior to initiating training of the

community paramedics. The core curriculum taught paramedics to address patient care and management from a whole-patient perspective, including psychological and social aspects of the patient's well-being, in addition to medical needs. Assignments included preparing a manual of community health and social services resources that could be useful to people eligible for their projects. The curriculum also included additional clinical evaluation skills.

The core curriculum was a delivered over a six-week period. During the same six-week period, each site participating in the HWPP provided clinical instruction on topics related to the community paramedicine concept it was testing. The curriculum included 48 hours of didactic, classroom-based instruction and 48 hours of clinical, hands-on training, for a total of 96 hours of instruction. CP trainees were additionally required to complete 56 hours of study outside the classroom, which included required readings and other assignments.

Only the site supervisors from Alternate Destination – Medical projects were required to complete the core curriculum because this concept focuses on clinical decision-making in the field around the most appropriate site of care to which to transport the patient. Clinical decision-making about the most appropriate site of care is routine practice for paramedics, who must identify which patients to take to specialty care centers, such as stroke centers, that may not be the closest facility. At these pilot sites all other paramedics in the system received training focused on screening patients according to a protocol to determine if they would be eligible to enroll in the pilot and the procedures for enrolling them.

A total of 79 community paramedic trainees enrolled in the core curriculum and site-specific coursework. Two were unable to complete the training for nonacademic reasons. All of the 77 paramedics who completed the core curriculum passed a written final examination, a simulated patient scenario examination, and an oral examination by the pilot site's medical

director.

Patient Safety

Multiple procedures to ensure patient safety are incorporated into all levels of the pilot projects. Every program has a project manager, a medical director who is an emergency medicine physician, and a quality assurance officer who is most often a registered nurse with specialty in emergency medicine. Community paramedics have real-time access to physicians and registered nurses for consultation. Each project conducts a retrospective review of all patient encounters. In addition, each project has a local steering committee that approved protocols and reviewed data on project outcomes. A statewide steering committee has oversight over all the projects and reviews quarterly reports from the sites. The independent evaluator reviews data provided by sites for the evaluation and raises any concerns about patient safety that emerge from the data reported. Finally, OSHPD staff review the protocols and performance of the pilot sites and raise any patient safety issues they identify.

Methods

Information presented in this report was obtained from multiple sources. Data on numbers of people enrolled, characteristics of enrollees, and outcomes of community paramedic services were reported by each of the sites using a standardized, online data collection tool. Sites also reported information on people who were eligible for their projects but not enrolled. Baseline data on cost and utilization of care among eligible people prior to the launch of the pilot projects were also collected. Estimates of the cost and savings were derived from data that each site reported on the costs of their community paramedic projects and EMS transports, and from existing sources of data on the cost of ED visits and inpatient hospital admissions. These estimates focus on the incremental costs associated with operating community paramedic programs in addition to other services that the sponsoring EMS agencies provide and on savings that accrue to other parts of the health care system, such as health plans and hospitals.. Details about the methods used to estimate costs and savings are presented in Appendix B.

The safety and performance of the projects was assessed by both quantitative and qualitative means. Sites reported data to the independent evaluator on a quarterly basis on multiple metrics. For the alternate destination projects, one measure of patient safety assessed was transport to an ED within six hours of transport to the alternate destination (mental health crisis center or urgent care center). For the tuberculosis and hospice projects, the key metrics concerned dispensing correct doses of medications. In addition, the evaluation team was notified by EMSA's project manager if a site reported an "unusual occurrence" and was provided with all documentation regarding the event, including summaries of reviews conducted by the steering committee overseeing the project and the director of EMSA.

The evaluation team conducted site visits to all project sites, where they interviewed EMS agency leaders, project managers, community paramedics, and representatives of hospitals

and other partner agencies. The purpose of the site visits was to obtain a better understanding of how the projects operated than could be gleaned solely from quantitative data. In addition, the site visits provided the evaluation team an opportunity to learn about the perspectives of multiple stakeholders on the projects' accomplishments and the challenges they face. The site visits were augmented with conference calls with the manager of the HWPP and the site-level project managers. The evaluation team also reviewed minutes of local steering committee meetings.

Post-Discharge

Description

The goal of the five post-discharge projects is to reduce hospital readmissions for people discharged from a hospital for treatment of a chronic condition. Some people with these conditions are readmitted in less than 30 days following discharge because they have difficulty following through with their physicians' instructions for managing their conditions. A major impetus for the post-discharge projects is the Medicare Readmission Reduction Program, under which Medicare payments to hospitals are reduced if rates of readmission are deemed excessive. By providing telephone or home visits within 72 hours of discharge, the projects aim to give patients the tools to manage their conditions more effectively so that they can avoid readmission.

Each post-discharge project identified one or more chronic conditions to address in collaboration with its partner hospital and enrolled patients discharged from the partner hospital for treatment of that condition(s). Once a patient is enrolled, a telephone call or home visit with a community paramedic is scheduled. During the call or visit, the community paramedic performs a clinical assessment and reviews the patient's discharge instructions per the site's protocols. Some projects also provide home safety inspections during home visits.

The post-discharge projects are designed to provide short-term assistance and not to replace home health care or any other services available to patients. Some partner hospitals focus on enrolling uninsured persons and Medi-Cal beneficiaries in the pilot projects because these persons do not have insurance coverage for home health. In other cases, community paramedics served a stop-gap role by providing calls or home visits while patients waited to obtain home health services. Interviewees at partner hospitals consistently indicated that home health agencies in their communities often cannot schedule a home visit until at least one week after a patient is discharged

from the hospital. Having contact with a health professional during the first week after discharge is important because many readmissions occur during this time period. Where community paramedics learned that a patient had home health services, they coordinated with home health agency staff.

Table 2 describes the staffing models and typical numbers of calls and visits provided by each of the five post-discharge projects. Two projects have full-time community paramedics (Alameda and UCLA) and three projects have part-time paramedics (Butte, San Bernardino, and Solano). Alameda San Bernardino, Solano, and UCLA provide at least one home visit to all patients. Butte paramedics perform an initial assessment by telephone for all patients and use an algorithm to determine whether the patient needs additional assistance. If a Butte community paramedic determines that a patient would benefit from a home visit, the community paramedic will request the patient's permission to do so.

Table 2.

Staffing Models and Numbers of Calls/Visits Provided by Post-Discharge Projects

Project #	Lead Agency	Staffing Model	Typical Number of Community Paramedic Calls or Visits per Patient
CP002	UCLA Center for Prehospital Care and Glendale Fire Dept	One dedicated full-time position	One in-person visit
CP004	Butte County EMS	Three community paramedics provide CP services on an overtime basis in addition to their regular duties; three others assist on a part-time basis	One call and more if needed
CP007B	Alameda County EMS Agency and City of Alameda Fire Dept	Two dedicated, full-time positions staffed on a rotating basis among trained community paramedics	One in-person visit and more if needed
CP008	San Bernardino County Fire Department	Some paramedics provide CP services as part of their regular duties and others do so on an overtime basis	One in-person visit

CP013	Medic Ambulance Solano	Paramedics provide CP services as part of their regular duties.	Two in-person visits and more if needed

Results

Number of Patients Enrolled and Patient Characteristics

The post-discharge sites enrolled a total of 922 patients through September 30, 2016. Table 3 lists the number of patients enrolled by each of the post-discharge sites by diagnosis. A blank cell indicates that the project protocol did not include patients with that diagnosis. All projects addressed patients hospitalized for heart failure, who accounted for two-thirds of persons enrolled (622 persons). Three of the five programs included patients hospitalized for acute myocardial infarction (heart attack), who accounted for 25% of enrolled patients (232 persons). Two projects included patients hospitalized for chronic obstructive pulmonary disease, and one included patients with diabetes, pneumonia, or sepsis.

Table 3.

Number of Enrollees in Post-Discharge Projects by Diagnosis

Project #	Lead Agency	Congestive Heart Failure	Acute Myocardial Infarction	Chronic Obstructive Pulmonary Disease	Diabetes	Pneumonia	Sepsis	Total Enrollees
CP002	UCLA	154						**154**
CP004	Butte	275	225					**500**
CP007B	Alameda	21	7	11	13	10	2	**64**
CP008	San Bernardino	133						**133**
CP013	Solano	39		32				**71**
Total		**622**	**232**	**43**	**13**	**10**	**2**	**922**

Table 4 describes the demographic characteristics of people enrolled in the post-discharge projects and their health insurance status. Men constituted 56% of patients, and women constituted 44%. Across all five sites most patients were non-Hispanic whites who speak

English, with the exception of San Bernardino, which had a large percentage of Hispanic patients. The majority of patients (61%) were Medicare beneficiaries but payer mix varied substantially across projects. The vast majority of UCLA's patients were Medicare beneficiaries. In contrast, the majority of Solano's patients and a large percentage of San Bernardino's patients were Medi-Cal beneficiaries.

Table 4.

Demographic and Health Insurance Characteristics of Post-Discharge Patients

Characteristics	Number	Percentage
Gender		
Male	516	56%
Female	406	44%
Ethnicity		
Hispanic	129	14%
Non-Hispanic	682	74%
Unknown	111	12%
Race		
White	738	80%
African-American	55	6%
Asian-Pacific Islander	46	5%
Other or Unknown	83	9%
Language		
Prefer to Receive Health Info in English	830	90%
Prefer to Receive Health Info in Other Language	92	10%
Payer		
Medicare	563	61%
Medi-Cal	211	23%
Private/Commercial Insurance	125	14%
Uninsured	23	2%

Eligible but Not Enrolled Patients

An additional 2,975 people were eligible for the post-discharge projects but were not enrolled. A total of 823 were offered enrollment but did not consent. The remaining people were not enrolled

for various reasons. Some people lived outside the geographic area served by the pilot site. In other cases the site did not have sufficient community paramedic staffing to serve all eligible people or the partner hospital failed to notify the site about all eligible persons. People who were eligible but not enrolled were more likely to be Hispanic or African-American, to prefer to receive health information in a language other than English, and to be Medi-Cal beneficiaries.

Safety

The evaluation team found no evidence of any harm to patients enrolled in the post-discharge projects. On the contrary, there is substantial evidence that the projects reduced the risk of harm. The most compelling evidence of reduced harm concerns the patients' prescribed medications. Community paramedics performed medication reconciliation for all patients, which involved examining all prescription drugs in a patient's possession and reconciling them with the instructions given to the patient when he or she was discharged from the hospital. The community paramedics identified 129 instances in which patients did not understand how to take their medications correctly or did not know the correct dosage.

Some patients had multiple prescriptions for the same medication and assumed they were supposed to take all of them. For example, one patient with heart failure had three prescriptions for Lasix, a powerful diuretic medication used to reduce retention of fluid in the body, and was taking all three. Taking too much Lasix can result in dehydration with increased risk of fainting, loss of critical electrolytes, or kidney damage. Without being corrected by the CP, this excessive dosage would lead to an ED visit or hospitalization, and unless the patient brought all medication bottles to the ED, the duplication still might not be discovered.

Community paramedics also assisted patients in obtaining refills for medications they needed to treat their chronic conditions. Some patients were discharged from the hospital with

only a 30-day supply of medication. If a patient had a personal physician, the community paramedic worked with the patient to contact the physician to obtain refills. If a patient did not have a physician, the community paramedic helped the patient find one.

Effectiveness

The post-discharge pilot projects achieved their primary goal of reducing inpatient readmissions within 30 days of discharge. Rates of readmission within 30 days for patients enrolled in the projects were compared to historical readmission rates for patients with the same diagnoses at the projects' partner hospitals. Table 5 shows the historical readmission rates and the readmission rates for patients enrolled in the post-discharge projects who had heart failure, myocardial infarction, congestive heart failure, or pneumonia. Patients with diabetes or sepsis are not included because historical data on readmission rates for persons with these diseases were not available.

Patients enrolled by all sites had lower rates of 30-day readmission than historical rates for their partner hospitals for one or more diagnoses. Butte's heart failure patients were the only group whose 30-day readmission rate was not below the partner hospital's historical rate. This difference may be due to a difference between Butte's protocol and those of the other post-discharge projects. Under Butte's protocol, community paramedics conduct initial contact with patients by telephone and conduct home visits only if the telephone conversation suggests it is warranted. It is possible that patients who talk to Butte's community paramedics on the telephone understate the severity of any symptoms they are experiencing and overstate their understanding of how to manage their conditions.

Table 5.

Readmissions within 30 Days for Post-Discharge Project Enrollees versus Partner Hospitals' 30-Day Readmission Rates,2012–2015

Diagnosis	Project Number	Sponsoring Agency	Patients Enrolled	Historical 30-Day Rate of Readmission for Any Reason*	% of Enrollees Readmitted for Any Reason (#)
Congestive Heart Failure	CP002	UCLA	154	24.4%	6.5% (10)**
	CP004	Butte	275	22.5%	25.8% (71)
	CP007B	Alameda	20	23.1%	14.3% (3)**
	CP008	San Bernardino	133	23.1%	9.0% (12)**
	CP013	Solano	39	22.1%	12.8% (5)**
Acute Myocardial Infarction	CP004	Butte	225	17.2%	10.7% (24)**
	CP007B	Alameda	7	16.8%	0% (0)**
Chronic Obstructive Pulmonary Disease	CP007B	Alameda	11	19.4%	0% (0)**
	CP013	Solano	32	18.9%	9.4% (3)**
Pneumonia	CP007B	Alameda	10	20.1%	10.0% (1)**

*Historical rate of readmission obtained from Medicare Hospital Compare and reflects the rates of readmission for each disease at the project's partner hospital from 2012 through 2015.
**Indicates that there was a statistically significant difference between the readmission rate for enrolled patients and the partner hospitals' historical readmission rates (i.e., p value < 0.05).

Community paramedics also referred patients to providers of other services to improve the patients' well-being. Through September 30, 2016, they made 127 referrals to a wide range of service providers, using manuals of local resources that they had prepared as part of their training. These services included primary care physicians, specialist physicians, pharmacists, mental health services, public health departments, home health providers, drug and alcohol treatment programs, senior home safety equipment programs, food assistance agencies, housing assistance providers, transportation assistance providers, and domestic violence resources. At least one community paramedic helped a patient enroll in Covered California to obtain health

insurance. If a community paramedic perceived the need as urgent and was concerned that a patient might not follow through on their own, they would assist the patient in obtaining these services. The total number of referrals may have been higher because some post-discharge projects provided more than one visit or call and community paramedics may have made additional referrals during those visits or calls.

Cost and Savings

As Table 6 shows, four of the five post-discharge projects yielded net savings ranging from $5,097 to $15,916 per month ($188 to $1,230 per patient per month). The amount of net savings generated by the five post-discharge projects varied due to four factors. First, reported monthly costs for community paramedic labor and supplies varied substantially across projects, ranging from $2,183 to $22,649. The differences in labor costs reflect differences in staffing models. The three projects in which community paramedics provided services as needed in addition to performing other duties had substantially lower labor costs than projects that utilized full-time community paramedics. Second, the average cost of readmissions varied across the five projects because diagnosis mix varied across the projects. Estimates of mean costs per diagnosis ranged from $11,562 for chronic obstructive pulmonary disease to $26,621for acute myocardial infarction. As a consequence, average cost per readmission avoided was greater for projects that enrolled persons with acute myocardial infarction than for sites that did not enroll patients with this condition. Third, differences between historical 30-day readmission rates and 30-day readmission rates for patients enrolled in the projects varied substantially, ranging from 1% for Butte to 18% for UCLA. Greater differences in readmission rates are associated with greater savings. Fourth, average monthly enrollment differed across projects, ranging from 5 patients for

Alameda to 42 for Butte. Having larger enrollment resulted in greater savings because the difference in readmission rates was multiplied across a larger number of patients. Some of these variations would diminish as a program matures and utilization increases.

Table 6.

Average Monthly Cost and Savings for Post-Discharge Projects

Average Monthly Costs					
	UCLA	Butte	Alameda	San Bernardino	Solano
Labor Costs (incl. CPs and mgmt. staff)	$14,163	$684	$21,912*	$5,333	$1,234
Recurring Supply Costs	$473	$8,764	$737	$396	$950
Total Cost	**$14,637**	**$9,448**	**$22,649**	**$5,729**	**$2,183**
Average Monthly Savings					
	UCLA	Butte	Alameda	San Bernardino	Solano
Average Monthly Enrollment	*13*	*42*	*5*	*11*	*6*
Average Cost of Readmission**	$14,403.43	$19,901.24	$15,325.59	$14,403.43	$13,122.92
Difference in Readmission Rates***	18%	1%	2%	14%	9%
Savings from Readmissions Avoided****	**$30,552.99**	**$17,326.30**	**$2,816.26**	**$19,262.53**	**$7,280.66**
Net Savings (savings less costs)	$15,916.47	$7,878.30	($19,832)	$13,533.08	$5,097.25
Net Savings per Patient Enrolled	**$1,224.34**	**$187.58**	**($3,966)**	**$1,230.28**	**$849.54**

Note: Net impact of readmissions related to sepsis and diabetes is not captured in these data because baseline rates of 30-day readmissions were not available for comparison. Only one of the sites (Alameda) enrolled patients for sepsis or diabetes.

*Alameda operates both a post-discharge project and a frequent 911 user project. Costs for community paramedic labor and supplies were allocated to the two projects based on the percentage of total patients enrolled in each project. 62% of costs for labor and supplies were allocated to the post-discharge project because it enrolled 62% of the patients.

**This cost varies by site because the cost of readmission varies across diagnoses and because the diagnosis mix is not identical at all sites (e.g., some sites enrolled only persons with congestive heart failure whereas others enrolled persons with two to six diagnoses).

***Derived using *(expected readmission rate from hospital-reported Medicare Compare data) – (actual readmission rate reported by pilot site)*. For projects that enrolled patients with more than one diagnosis, this estimate is weighted by enrollment across all diagnoses.

**** Based on following calculation: *(# of readmissions avoided) * (cost per readmission) / (# of months for which the pilot has been active)*. Cost per readmission is a weighted average of the costs for readmission as a result of each site's diagnosis mix. These calculations generated the number of readmissions avoided using this formula: *(expected readmissions given rate of readmission reported by hospital for Medicare Compare) – (actual readmissions given rate of readmission in enrolled population)*. This follows the logic of a "pre-post" analysis.

Conclusion

The post-discharge projects have demonstrated capability to reduce hospital readmissions within 30 days among persons with the chronic conditions they target. The projects also increased the likelihood that patients will take medications for these conditions as directed, by reconciling their prescriptions, reviewing the instructions for taking the medications, and assisting patients with medication refills, if needed. Moreover, patients have been referred to providers of medical, behavioral health, and social services that can improve their ability to manage their conditions and their overall well-being. In addition, four of the five post-discharge projects have generated net savings for the health care system. The majority of savings are accruing to Medicare because 61% of patients enrolled are Medicare beneficiaries. Medi-Cal is also realizing savings because 23% of enrollees are Medi-Cal beneficiaries. Hospitals also benefit if reductions in readmissions are sufficient to lower the risk that they will be penalized by Medicare for excessive readmissions.

Frequent EMS Users

Description

The two frequent EMS users projects enroll people who call 911 and/or who have ED visits far more frequently than most people and whose use of emergency services is not warranted by their medical condition. The goal of the projects is to identify the reasons why these people frequently call 911 for transport to an ED and to provide case management to link them with nonemergency services that can reduce their dependence on EMS agencies and EDs for care. Many of these people have mental health conditions or substance use disorders that affect their ability to access medical care and other services appropriately.

To ascertain the needs of individual frequent EMS users, community paramedics assess their physical, psychological, and social needs. For patients with a stable home, a home safety assessment is also conducted. Medication reconciliation is provided for patients who take any prescription medications. These assessments are performed at an initial in-person meeting with a patient and as needed for the duration of the patient's tenure with the project. Patients remain enrolled in the projects until community paramedics believe that the patients no longer need the project's services. Criteria for determining that a patient no longer needs services emphasize reaching important individual milestones, such as obtaining housing or maintaining sobriety.

The two projects enroll different populations of frequent EMS users. San Diego's project primarily enrolls persons with 20 or more ED visits per year. Alameda's project, which serve a city whose population is much smaller than San Diego's (79,227 vs. 1,391,676)[5], is open to all persons identified by staff of the EMS agency or the partner hospital as frequent 911 or ED users. San Diego's community paramedics provide frequent EMS user services exclusively. Alameda's

community paramedics alternate between working full-time as community paramedics for their agencies frequent EMS user and post-discharge projects and full-time as traditional firefighter paramedics.

Results

Number of Patients Enrolled and Patient Characteristics

The two frequent EMS user projects enrolled a total of 77 patients through September 30, 2016, as indicated in Table 7.

Table 7.

Number of Enrollees in Frequent 911 User Projects

Project #	Lead Agency	Enrollees
CP007A	Alameda County EMS Agency and City of Alameda Fire Dept	40
CP010	City of San Diego Fire Dept	37
Total		**77**

Table 8 describes the demographic characteristics of persons enrolled in the frequent EMS user projects and their health insurance status. Fifty-four percent of patients were male. Across the two sites, most patients were non-Hispanic whites who prefer to receive health information in English. Thirty-five percent of patients were uninsured, 25% were Medicare beneficiaries, 23% were Medi-Cal beneficiaries, and the remainder had private health insurance.

Table 8.

Demographic and Health Insurance Characteristics of Persons Enrolled in Frequent 911 User Projects

Characteristics	Number	Percentage
Gender		
Male	42	54%
Female	35	46%
Ethnicity		
Hispanic	7	9%
Non-Hispanic	69	90%
Unknown	1	1%
Race		
White	59	76%
African-American	13	17%
Asian-Pacific Islander	2	3%
Other or Unknown	3	4%
Language		
Prefer to Receive Health Info in English	75	98%
Prefer to Receive Health Info in Other Language	2	2%
Payer		
Medicare	19	25%
Medi-Cal	18	23%
Private/Commercial Insurance	13	17%
Uninsured	27	35%

Eligible but Not Enrolled Patients

Both frequent EMS user projects had large numbers of persons who were eligible but not enrolled. Eighty-three persons were offered enrollment but did not consent. The sites were unable to provide the unique number of persons who were eligible but not enrolled for reasons other than not giving consent to participate. San Diego had a large numbers of persons who were eligible but not enrolled because community paramedic staffing was not sufficient to offer enrollment to all eligible persons. Alameda's community paramedics were unable to locate several eligible persons, who may have lived elsewhere in the county. The characteristics of

persons who were eligible but not enrolled were similar to those of persons enrolled by the sites except that they were much more likely to be uninsured (62% vs. 35%). This finding largely reflects the experience of San Diego, which identified a larger number of persons who were eligible but not enrolled in the pilot than Alameda.

Safety

The evaluation team found no evidence of any harm to patients enrolled in the frequent EMS user projects. On the contrary, there is substantial evidence that patients benefitted from the projects. The community paramedics visited patients multiple times to assess their physical, psychological, and social needs and assist them in obtaining nonemergency services to meet their needs, as discussed below in the section on effectiveness.

Effectiveness

The frequent EMS user projects achieved large reductions in the number of times that enrolled patients visited EDs. Data from the San Diego project since the project's launch indicate that 911 calls and ED visits decreased for most patients following enrollment. Across 35 patients for whom data was gathered on 911 calls in the six months prior to and following enrollment in the pilot project, the number of 911 calls decreased from 1,070 to 513, a reduction of 52%. For some patients, the reductions in 911 calls were immediate. Others were enrolled in the program for several months before their use of 911 changed. Reductions in 911 calls were highly correlated with reductions in ED visits because most 911 calls for frequent 911 callers result in transport to an ED. Aggregate data from Alameda indicate that among the 33 persons enrolled in the project from July 2015 through June 2016, the number of ED visits decreased from 198 prior to the start of the pilot project to 124 during the first 12 months of the pilot project, a 37% reduction.

The frequent EMS user projects also achieved their goal of linking patients to services that address the needs that are leading them to make frequent ED visits. Community paramedics in Alameda and San Diego reported making 45 referrals to other service providers during their first visits with patients and may have made additional referrals during subsequent visits. Patients were referred to medical care providers, mental health providers, drug and alcohol treatment programs, food assistance programs, housing assistance programs, transportation assistance programs, domestic violence resources, and other social services. In addition, community paramedics transported patients to some of these providers on 38 occasions to ensure that they obtained services. For example, community paramedics in Alameda took several patients who did not have photo identification cards to the Department of Motor Vehicles to obtain IDs. In addition, community paramedics have helped four patients obtain permanent housing.

Providing assistance with housing is an important component of frequent EMS user projects because many frequent 911 users are homeless. Among the 45 patients enrolled in San Diego's frequent EMS user project from November 2015 through December 2016, 32 patients (71%) were homeless. Community paramedics are uniquely positioned to assist homeless persons because the paramedics are mobile, familiar with the sites at which homeless persons congregate, and can meet patients at any location.

In some cases, community paramedics had to collaborate with staff of multiple service providers to go above and beyond routine care to meet patients' complex needs. For example, one patient in San Diego was homeless and had a cognitive disability, alcoholism, and chronic diarrhea. An inpatient alcohol treatment center was unwilling to accept the patient due to concern that the diarrhea indicated that he was medically unstable. The community paramedics facilitated

his access to medical tests he needed to be cleared to enter detox and worked with his medical providers to formalize his disability so that he could obtain housing in a skilled nursing facility.[6]

Cost and Savings

As indicated in Table 9, San Diego's frequent EMS user project has yielded net savings of $45,607 per month ($1,754 per patient per month). An estimated 33 ambulance transports to an ED and 33 ED visits were avoided per month based on data obtained from the San Diego project on patients enrolled for at least six months. Alameda's frequent 911 user project also achieved reductions in ambulance transports and ED visits, but the savings were not sufficient to offset the cost of the project at the current enrollment levels. The methods that were used to estimate costs and savings are discussed in Appendix B.

Table 9.

Costs and Savings of Frequent 911 User Projects

Average Monthly Costs		
	Alameda*	San Diego
Labor Costs (incl. CPs and mgmt. staff)	$13,430	-
Recurring Supply Costs	$451	-
Total Cost	**$13,881**	**$9,300****
Average Monthly Savings		
	Alameda*	San Diego
Average Monthly Enrollment	*9*	*26*
Average Number of Transports and ED Admissions Avoided	6	33
Average Cost of Transports Avoided	$603	$923
Average Cost of ED Visit Avoided	$749	$749
Savings from ED Transport Avoided (monthly)	$3,618	$30,305

Savings from ED Visits Avoided (monthly)	$4,496	$24,602
Total Savings per Month	**$8,114**	**$54,907**
Net Savings per Month (savings less costs)	**($5768)**	**$45,607**
Net Savings per Person per Month	**($641)**	**$1,754**

*Costs for Alameda's project were divided between the post-discharge and frequent 911 user projects based on the percentage of total enrollees in each of the two projects. 28% of costs were allocated to the frequent 911 user project because it enrolled 28% of total patients enrolled.
****** Due to the reporting method used by this site, the cost information available to the analysis team is inclusive of all program-related costs (e.g. paramedic labor, vehicle and fuel costs, etc.) and does not allow for a breakout by labor vs. supply costs

Conclusion

The frequent 911 user projects have achieved substantial reductions in 911 calls and ED visits among the patients they have enrolled, often by linking patients with needed primary care, behavioral health, housing, and social services. These reductions in 911 calls and ED visits result in substantial savings to the health care system. Large proportions of these savings have accrued to Medicare and Medi-Cal, because 25% of patients enrolled are Medicare beneficiaries and 23% are Medi-Cal beneficiaries. Hospitals and health systems also realize savings on uncompensated care because 35% of patients were uninsured.

Tuberculosis

Description

Tuberculosis (TB) is a highly contagious disease that is treated with special antibiotic medications. The number of medications and frequency of dosing are determined by a physician with expertise in TB treatment. People with TB must take their medication as directed, because stopping treatment too soon or missing doses of medication could lead to development of a drug-resistant strain of TB, which poses a major public health risk to a community.[7] To ensure that people with TB take their medication as directed, TB treatment clinics often provide directly observed therapy (DOT). Under DOT, a health care worker gives a patient medication, observes the patient taking the medication, and monitors the patient for side effects.

In Ventura County, public health officials asked the county's EMS provider to partner with the TB clinic to provide DOT, because the TB clinic does not have sufficient staff to provide DOT to all TB patients in the county. The TB clinic also utilizes community health workers (CHWs) to administer DOT, but the CHWs only work Mondays through Fridays and thus do not provide DOT on weekends. In addition, the CHWs are based in Oxnard, where the TB clinic is, and have to drive as long as 60 minutes to reach some patients because Ventura County covers a large geographic area. In contrast, the community paramedics are available 24 hours per day seven days per week and are stationed throughout the county and can often reach patients within 15 minutes.

Results

Number of Patients Enrolled and Patient Characteristics

Ventura's TB project enrolled a total of 29 patients through September 30, 2016. Because the management of tuberculosis often spans six to nine months[7], the community paramedics usually carry a caseload of patients whom they treat for multiple months. Over the course of the pilot project, the community paramedics' caseload averaged 7.5 patients per month.

Table 10 presents information on the demographic characteristics and health insurance status of persons enrolled in the TB pilot project. Most patients were male (82%), and the majority were Hispanic (63%). Fifty-nine percent preferred to receive health information in English. Fifty percent were Medi-Cal beneficiaries, 21% were uninsured, 20% had private health insurance, and 9% were Medicare beneficiaries.

Table 10.

Demographic and Health Insurance Characteristics of Tuberculosis Patients

Characteristics	Number	Percentage
Gender		
Male	24	82%
Female	5	18%
Ethnicity		
Hispanic	18	63%
Non-Hispanic	11	37%
Unknown	0	0%
Race		
White	4	14%
African-American	0	0%
Asian-Pacific Islander	7	23%
Other or Unknown	18	63%
Language		
Prefer to Receive Health Info in English	17	59%
Prefer to Receive Health Info in Other Language	12	41%
Payer		
Medicare	3	9%
Medi-Cal	14	50%
Private/Commercial Insurance	6	20%
Uninsured	6	21%

Eligible but Not Enrolled Patients

In addition to the 29 persons with TB treated by community paramedics, 60 persons with TB were treated by the TB clinic's CHWs. Compared to patients treated by the CHWs, patients treated by community paramedics were more likely to be male (82% vs. 51%), white (14% vs. 8%), or Asian-Pacific Islander (23% vs. 18%), and less likely to be Hispanic (63% vs. 71%). Payer mix also differed between persons who received DOT from community paramedics and those who received it from TB clinic staff. Persons served by community paramedics were less likely to be Medi-Cal beneficiaries (50% vs. 64%) and more likely to have Medicare or private insurance or to be uninsured.

TB clinic leaders indicated that there were conscious decisions to assign patients to either community paramedics or CHWs based on the likelihood that patients would comply with treatment. Community paramedics are more likely to be assigned patients who resist treatment or who were verbally abusive or sexually inappropriate because community paramedics have more experience and training in managing persons with such behaviors. They were also more likely to be assigned homeless persons and other patients who are difficult to locate.

Safety

The evaluation team found no evidence that the TB project harmed patients. Community paramedics dispensed appropriate doses of TB medications, and their TB patients did not experience any greater frequency of side effects or symptoms beyond those typically associated with taking TB medications.

Effectiveness

People with TB who received DOT from community paramedics were more likely to receive all doses of TB medication prescribed by the TB clinic physician than people who received DOT from the TB clinic's CHWs. Since the project was launched in June 2015, the community paramedics were unable to dispense 0.1% of DOT treatments prescribed by the TB clinic physician. In contrast, the CHWs were unable to dispense 6.0% of prescribed DOTs. This difference is due primarily to the availability of community paramedics on nights and weekends. Availability on weekends ensures that patients have DOT seven days per week if needed, and availability in evenings improves compliance among patients who travel outside of Ventura County for work during business hours. While most patients complied readily, the community paramedics were willing to go to great lengths to get patients to take medications if necessary. Taking all recommended doses of TB medications as prescribed increases the likelihood that a patient will be cured and will not spread TB to others due to lack of treatment. It also decreases the risk that the patient could develop a drug-resistant strain of TB that would be much harder to treat and to control in the community.

Community paramedics also helped patients address health care needs other than TB. For example, some TB patients also have diabetes, which is associated with worse outcomes of TB treatment, especially if it is not well-controlled. One TB patient treated by community paramedics had severely impaired vision and had difficulty filling syringes with the prescribed amount of insulin. The community paramedics found a local pharmacy that would prefill syringes for the patient to ensure that he would receive the correct dose.

Cost and Savings

There was a small increase in adherence to the prescribed TB medication schedule when DOT was administered by community paramedics instead of CHWs, but we cannot estimate the effect of increased adherence in this range in the United States. If the project substantially increased adherence among hard-to-reach patients, the project may have increased the number of patients in Ventura who were treated successfully for TB and thus reduced medical and public health expenditures associated with public health investigation of close contacts and the cost of treating additional people infected by a noncompliant patient.

The project had no monetary cost because DOT was provided by community paramedics who were on duty in the field and provided DOT when they were not responding to 911 calls. The project also helped the TB clinic use the CHWs more efficiently because community paramedics were dispersed throughout the county. They could provide DOT to patients located in parts of the county that are distant from the TB clinic in Oxnard, reducing the need to dispatch CHWs to these locations. Reducing travel time for CHWs reduces the number of "nonproductive" hours during which they were not dispensing DOT or performing other duties for the TB clinic.

Conclusion

Community paramedics can safely administer DOT for TB under the direction of a physician who specializes in treatment of TB and monitor patients for side effects that may necessitate a change in medication. Due to their unique schedule and mobility, they can achieve a very high rate of adherence to TB treatment, which reduces the risk that patients will develop a drug-resistant strain of TB and transmit it to other persons. They can also assist with patients' other social and medical needs that might create a barrier to TB treatment.

Hospice

Description

The goal of hospice care is to provide medical, psychological, and spiritual support to persons dying from a terminal illness. Care is provided by a multidisciplinary team of health professionals and volunteers in a patient's home, a residential care facility, a nursing home, or an inpatient hospice facility. Hospice staff members tell hospice patients, their family members, and other caregivers to contact the hospice instead of 911 if they believe there is a medical need or if they become concerned about the patient's comfort.

Despite this instruction, some hospice patients and their families call 911 instead of the hospice, because they are anxious about the patient's condition, the patient decides that he or she no longer wishes to receive hospice care, or family members disagree with the patient's decision to obtain hospice care. In other cases, patients or families may turn to 911 if they do not receive a prompt response when they contact a hospice agency.

The standard response to a 911 call made on behalf of a hospice patient is to transport the patient to an ED. Being transported to an ED may be upsetting and uncomfortable for hospice patients, and clinicians in EDs may perform medical interventions that the hospice patient would prefer not to receive and may admit the hospice patient for inpatient care. Hospice patients who are transported to an ED also risk losing their hospice benefits because insurers may revoke hospice benefits if the patient receives treatment or hospitalization that is incompatible with the hospice approach of comfort care. If this happens, the patient must apply for reinstatement of their hospice benefits.

Ventura County's hospice project seeks to prevent unnecessary transport of hospice patients to an ED. The community paramedics are supervisors who can respond to hospice calls

while other paramedics respond to other 911 calls. If a 911 dispatcher or a first responder on scene determines that a person is under the care of a hospice agency, a community paramedic is dispatched to the patient's home in a private residence, residential care or skilled nursing facility.

Once on scene, the community paramedic assesses the patient, talks with family members and caregivers, and contacts a registered nurse employed by the hospice agency. The hospice nurse works with the community paramedic to determine what care to provide. Depending on the circumstances, the hospice nurse may ask the community paramedic to wait with the patient and family members and/or caregivers until a nurse can arrive on scene. The hospice nurse may also ask the community paramedic to administer pain medications to the patient that the hospice has provided in a "comfort care" pack.

Results

Number of Patients Enrolled and Patient Characteristics

Ventura's hospice pilot project responded to 911 calls on behalf of 226 persons through September 30, 2016. These persons were patients of hospice agencies that partnered with Ventura County's EMS provider and were enrolled prior to a 911 call. Most 911 calls for hospice patients were initiated by a hospice patient or family member, but in some cases a hospice nurse called 911 during a visit with a patient. The reasons for 911 calls to which Ventura's community paramedics responded varied and included altered level of consciousness, cardiac arrest, constipation, fall, seizure, shortness of breath, syncope, lift assistance, and family concern about hospice care.

Table 11 presents information on the demographic characteristics and health insurance status of persons enrolled in the hospice project. Over half (55%) of patients were female and most were non-Hispanic whites. Almost all patients preferred to receive health information in

English. Just over half of persons enrolled were Medicare beneficiaries (52%), and one-third (34%) were uninsured.

Table 11.

Demographic and Health Insurance Characteristics of Hospice Patients

Characteristics	Number	Percentage
Gender		
Male	98	44%
Female	125	55%
Unknown	3	1%
Ethnicity		
Hispanic	44	20%
Non-Hispanic	170	75%
Unknown	12	5%
Race		
White	191	85%
African-American	10	4%
Asian-Pacific Islander	2	1%
Other or Unknown	23	10%
Language		
Prefer to Receive Health Info in English	187	83%
Prefer to Receive Health Info in Other Language	22	10%
Unknown	17	7%
Payer*		
Medicare	71	52%
Medi-Cal	2	2%
Private/Commercial Insurance	17	12%
Uninsured	47	34%

*Complete data on payers were available for only 137 of the 226 patients enrolled in the hospice project from August 2015 through September 2016.

Eligible but Not Enrolled Patients

Ventura's community paramedics responded to 911 calls initiated by or for an additional 79 persons who were patients of hospices that did not participate in Ventura's pilot project. Most of these patients were transported to an ED in response to a 911 call unless it was a simple problem

like needing a lift assist with no new injury. These patients were less likely to be females, non-Hispanic whites, and Medicare beneficiaries than hospice patients who were enrolled in the pilot project and were also less likely to prefer to receive health information in English.

Safety

The evaluation found no evidence that the hospice project harmed patients. After it was determined that the patient could remain at home under hospice care, the paramedics' work consisted primarily of providing emotional support to hospice patients and their families and administering medications in patients' "comfort care" packs as directed by a hospice nurse until the hospice nurse could arrive and further evaluate the situation with the paramedic.

The hospice project reduced harm by honoring patients' wishes and reducing the likelihood that they would experience an uncomfortable trip to the ED and potentially lose hospice benefits. Community paramedics worked with patients, families, and hospice nurses to avoid ED transports, unless a patient requested transport or had a medical need that could not be met in the patient's home, such as a fracture. The project provides an alternative for patients who prefer to remain at home, enabling them to avoid undergoing unpleasant evaluations and procedures that they do not want to receive. There was no attempt to avoid ED care where it was indicated and consistent with the patient's wishes.

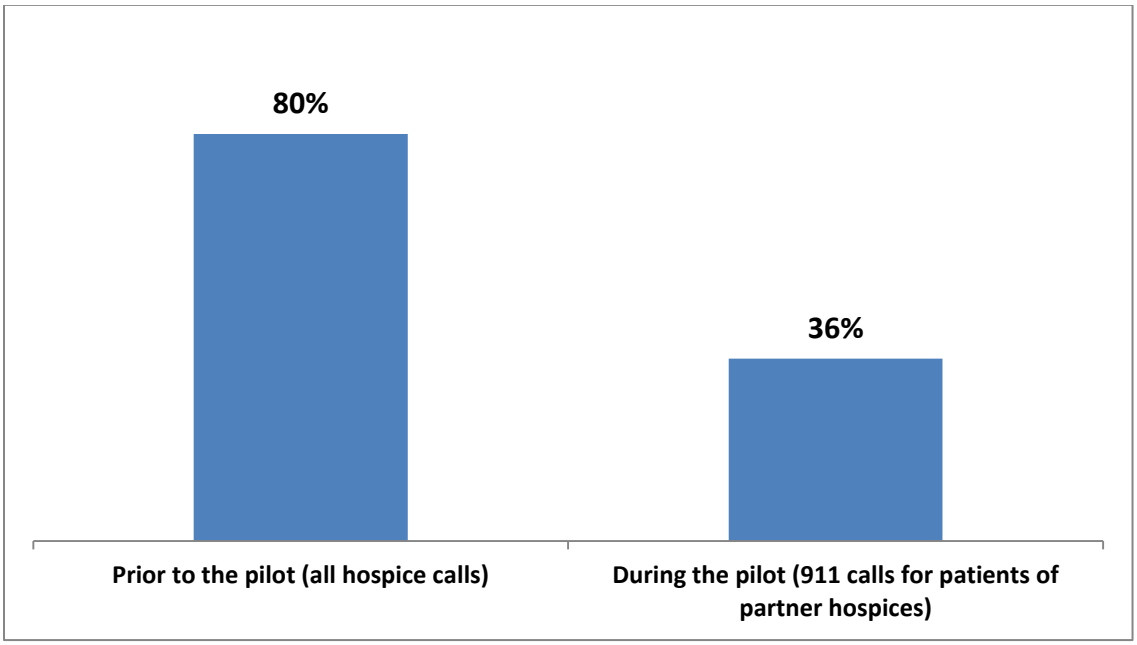
Effectiveness

The project achieved its goal of honoring patients' wishes to remain in their homes by integrating EMS and hospice protocols. Figure 1 shows the impact of the pilot project on the percentage of 911 calls for hospice patients that resulted in transport of the patient to an ED. Prior to the launch of the pilot project, 80% of 911 calls for hospice patients resulted in the

transport of a patient to an ED. After the pilot was implemented, among patients of partner hospices, the percentage of patients transported decreased to 36%. Although data on hospice revocation rates prior to the pilot project are not available, it is very likely that the large reduction in ED transports also led to a reduction in the percentage of patients of partner hospices whose benefits were revoked.

Figure 1.

Percentage of 911 Calls for Hospice Patients That Result in Transport to an ED



Community paramedics also alerted hospices and family members to patients' unmet needs. The project's very first hospice call involved a patient who lived alone and had fallen during the night while walking to the bathroom. The patient was not injured but was too weak to get back into bed. She had a paid caregiver during the day but not at night. The community paramedic confirmed that the patient was not injured and assisted the patient back to bed. The community paramedic spoke with the daytime caregiver and learned that the caregiver had attempted to give the patient enough medication to sleep through the night, which was not

medically appropriate. With the patient's permission, the community paramedic also contacted a family member who arranged for the patient to have a paid caregiver 24 hours per day until the patient died at home as she wished.[8]

Cost and Savings

As indicated in Table 12, the hospice project achieved an estimated $7,194 in net savings per month ($719 per patient per month). The hospice project saved an estimated $7,713 per month which was offset by a total monthly cost of $519 for labor (community paramedic salary and benefits) and supplies. The methods used to generate these estimates are described in Appendix B.

Total net savings are higher than these estimates because some hospice patients who were transported to an ED were admitted to a hospital for inpatient care. These savings could not be estimated precisely because the pilot project was unable to obtain data from hospitals in Ventura County on the number of patients transported to their EDs who were admitted to their hospitals. Similarly, data were not available to quantitatively estimate the impact of the hospice pilot project on revocation of hospice benefits but it is likely that the project reduced costs to hospices that are associated with hospice revocations.

Table 12.

Hospice Pilot Project Costs and Savings

Average Monthly Costs	
Labor Costs (incl. CPs and mgmt. staff)	$376
Recurring Supply Costs	$143
Total Cost	**$519**
Average Monthly Savings	
Average Monthly Enrollment	*10*

Average Number of ED Treatments Avoided	5
Average Cost of ED Transport Avoided	$520
Average Cost of ED Visits Avoided	$989
Savings from ED Visits Avoided	$5,044
Savings from Transports Avoided	$2,669
Total Savings	**$7,713**
Net Savings (savings less costs)	**$7,194**
Net Savings per Patient	**$719**

Conclusion

The hospice project demonstrates that community paramedics can partner with hospice nurses to safely reduce the number of hospice patients unnecessarily transported to an ED. Reducing ED transports increases the health care system's ability to honor the wishes of hospice patients, reduces the risk that they will lose their hospice benefits, and reduces health care costs.

Alternate Destination – Behavioral Health

Description

Many EDs in California are overcrowded, and some of the persons they serve could be treated safely and effectively in other settings, including some who arrive at EDs via ambulance. Alternate destination pilot projects focus on transporting such patients to settings in which they can obtain appropriate care more efficiently than if they were transported to an ED. People with behavioral health heeds are often transported to an ED for medical clearance or when there is no capacity to evaluate them at a crisis center. One of the sites participating in California's HWPP provides medical clearance for people with behavioral health needs and transports them directly to a county-operated mental health crisis center.

Delays in receipt of psychiatric care are a major problem in California. Since 1995, the number of beds in inpatient psychiatric facilities in California has decreased by nearly 30%.[9] Patients with behavioral health needs routinely spend hours in an ED waiting for medical clearance, and in some cases they spend days in an ED waiting for a bed to become available in an inpatient psychiatric facility, without getting definitive behavioral health care during their ED stay.[10] Nationwide, the mean length of ED visits is longer for psychiatric patients than medical patients (194 minutes vs. 138 minutes), and psychiatric patients are more likely to have stays in an ED lasting greater than 24 hours.[11]

In Stanislaus County, community paramedics are dispatched in response to 911 calls that a dispatcher believes involve a behavioral health emergency or when another paramedic or a law enforcement officer identifies a patient with behavioral health needs. They are also dispatched to the mental health crisis center to assess persons who arrive on their own and need to be medically cleared before being admitted to the county's inpatient psychiatric facility. The

community paramedics provide these services as needed in addition to responding to traditional 911 calls.

Once on scene, a community paramedic assesses the patient to determine whether he or she has any medical needs or is intoxicated due to alcohol or drug consumption. If the patient has no emergent medical needs, is not intoxicated, and is not violent, the community paramedic contacts the mental health crisis center to determine whether the county inpatient psychiatric facility located next door to the crisis center has beds available. If the inpatient psychiatric facility has the capacity to accept the patient through the crisis center, the community paramedic gives the patient the option of being transported by ambulance either to the mental health crisis center or to an ED. After a patient arrives at the crisis center, mental health professionals on the crisis center staff evaluate them further to determine the most appropriate level of care for their condition. Eligibility is limited to nonelderly adults who are uninsured or enrolled in Medi-Cal because the county inpatient psychiatric facility does not accept patients with other types of health insurance.

Results

Number of Patients Enrolled and Patient Characteristics

Stanislaus' alternate destination – behavioral health project enrolled a total of 169 persons through September 30, 2016. Table 13 presents information on the demographic characteristics and health insurance status of persons enrolled in this project. The majority of patients were non-Hispanic white males. All patients preferred to receive health information in English. The vast majority of patients were Medi-Cal beneficiaries (83%).

Table 13.

Demographic and Health Insurance Characteristics of Alternate Destination – Behavioral Health Patients

Characteristics	Number	Percentage
Gender		
Male	106	63%
Female	63	37%
Ethnicity		
Hispanic	28	16%
Non-Hispanic	135	80%
Unknown	6	4%
Race		
White	115	68%
African-American	16	10%
Asian-Pacific Islander	4	2%
Other or Unknown	34	20%
Language		
Prefer to Receive Info in English	169	100%
Prefer to Receive Health Info in Other Language	0	0%
Payer		
Medicare	1	1%
Medi-Cal	140	83%
Private/Commercial Insurance	0	0%
Uninsured	28	16%

Eligible but Not Enrolled Patients

Stanislaus' community paramedics assessed an additional 153 persons who they determined were eligible for transport to the county mental health crisis center. Eleven of these patients did not consent to be transported to the crisis center. The crisis center declined to serve 52 of these patients either because the inpatient psychiatric facility did not have any open beds or because they had treated the patient previously and felt the patient was not appropriate for their facility due to a substance use disorder or aggressive behavior. (The crisis center does not provide substance abuse treatment, and its security personnel are not trained to restrain patients.) Ninety patients were eligible but not enrolled due to other reasons, including age and not being uninsured or a Medi-Cal beneficiary. Community paramedics also assessed over 200 patients

who they deemed ineligible for transport to the county behavioral health facility because they had medical needs, were intoxicated, or were violent.

Safety

The evaluation team found no evidence of patient harm caused by the alternate destination – behavioral health project. The community paramedics accurately screened patients to determine which of them could be safely transported directly to the mental health crisis center. Only 5% of patients enrolled in the project (n = 9) were transferred to an ED within six hours of arrival at the crisis center. None of the nine transfers to an ED involved life-threatening conditions, and none of the patients were admitted for inpatient medical care. All transfers occurred during the project's first six months of operation. Most of the patients (78%) who were transferred to an ED within six hours were subsequently transferred to an inpatient psychiatric facility. The remaining 22% were discharged from an ED without transfer. (See Figure 2.)

Figure 2.

Number of Patients Transferred from the County Mental Health Facility to an ED within Six Hours of Admission

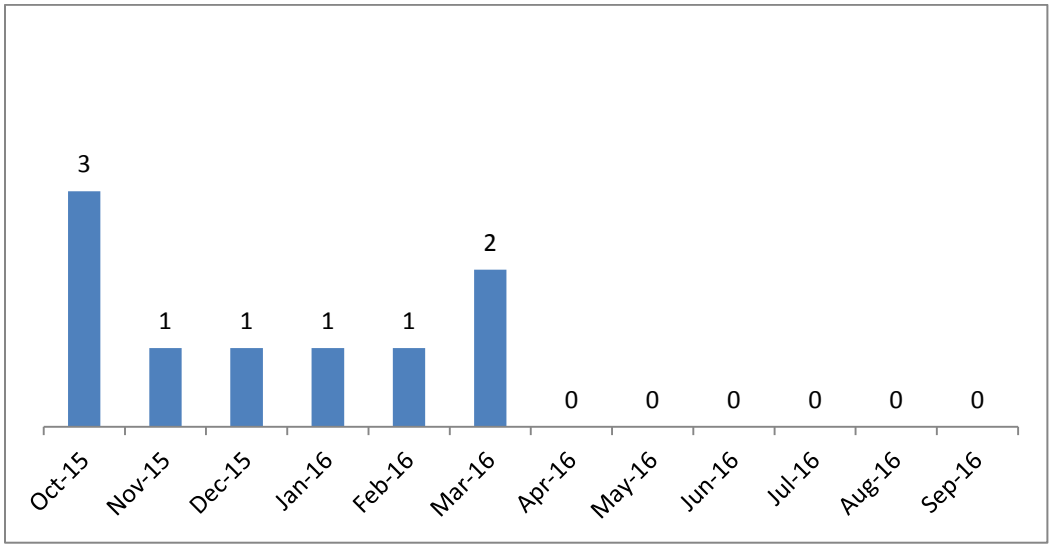


Table 14 lists the reasons why patients were transferred to an ED. To reduce the number of unnecessary transfers, the medical director of Mountain Valley EMS worked with the medical director of the county behavioral health facility to refine the protocol the community paramedics used to determine whether a patient's blood pressure was low enough for transport to the crisis center. He also trained community paramedics to use breathalyzers to identify patients whose blood alcohol levels were above the crisis center's threshold. Figure 2 indicates that these protocol changes resulted in the number of transfers going from a range of 1 to 3 during the first six months to zero in each of the subsequent six months.

Table 14.

Reasons for Transfers from Mental Health Crisis Center to an ED within Six Hours of Admission

Reason for Transfer to ED	**Number of Patients**
Blood pressure above the mental health crisis center's threshold	3
Agitation	2
Urinary incontinence	1
Patient had sleep apnea, and the county inpatient psychiatric facility did not have a continuous positive airway pressure (CPAP) machine	1
New clinician at the crisis center was unfamiliar with the pilot project	1
Not a resident of Stanislaus County	1
Total	**9**

The alternate destination – behavioral health project has also improved public safety. Law enforcement officers interviewed by the evaluation team stated that having community paramedics available enhanced their ability to respond effectively to persons with behavioral health needs. Although law enforcement officers have authority to involuntarily commit persons for psychiatric care for 72 hours, their training in behavioral health is limited. In addition, community paramedics can arrange for an ambulance to transport a behavioral health patient. aThis allows law enforcement officers to perform law enforcement duties instead of transporting

patients to an ED in their squad cars and waiting in the ED to transfer responsibility for the patient to a clinician.

Effectiveness

The pilot project substantially reduced the rate at which patients with behavioral health needs were transported to an ED. Prior to the launch of the pilot project, nearly all 911 calls involving patients with behavioral health needs resulted in a transport to an ED for medical screening. After the pilot project was implemented, approximately one-third of behavioral health patients were transported to the mental health crisis center instead of an ED, and more could have been transported there if beds had been available in the county's inpatient psychiatric facility.

The pilot project also reduced the time to treatment by a mental health professional, which improved patients' well-being. People who were transported directly to the mental health crisis center were assessed by a mental health professional within minutes of arriving at the center. In contrast, people who were transported to an ED had to wait for a medical professional to determine whether they had any medical needs and then be transported to an inpatient psychiatric facility to be assessed by a mental health professional.

Cost and Savings

As indicated in Table 15, the alternate destination – behavioral health project achieved an estimated $8,913 in net savings per month ($637 per patient per month) because transporting a behavioral health patient to the crisis center avoids an ED visit and a secondary transport of the patient from an ED to an inpatient behavioral health facility. Most of these savings benefitted the Medi-Cal program because 83% of patients enrolled in the project were Medi-Cal beneficiaries. Average monthly savings are estimated to be $15,361 per month. These savings were offset by

costs for community paramedic salaries and benefits and supplies of $6,448. The estimated cost of community paramedic labor is based on the average number of 911 calls for persons with behavioral health needs for which community paramedics are dispatched each month. These include 911 calls for persons with behavioral health needs that resulted in transport to the mental health crisis center or in transport to an ED because the patient does not meet eligibility criteria for transport to the crisis center (e.g., has a medical need, intoxicated, violent) or because the county inpatient psychiatric facility did not have beds available. Additional details about the methods used to estimate costs and savings are contained in Appendix B.

Table 15.

Alternate Destination Behavioral Health Project Costs and Savings

Average Monthly Costs	
Labor Costs (incl. CPs and mgmt. staff)	$5,973
Recurring Supply Costs	$475
Total Cost	**$6,448**
Average Monthly Savings	
Average Number of ED Visits and Transports Avoided	*14*
Average Cost of ED Visit	$546
Average Cost of Transport	$554
Savings from ED Visits Avoided	$7,651
Savings from Transports Avoided	$7,710
Total Savings	**$15,361**
Net Savings (Savings less Costs)	**$8,913**

Net Savings per Patient	**$637**

Conclusion

The alternate destination – behavioral health project demonstrates that community paramedics can perform medical screening on behavioral health patients and determine which patients can be transported directly to a mental health crisis center. Transporting these persons directly to a crisis center enables them to obtain mental health services more quickly, which is likely to improve their well-being. The project also reduces health care costs by reducing the numbers of persons transported to and assessed in an ED. Most of these savings accrue to Medi-Cal because 83% of patients in this project were Medi-Cal beneficiaries.

Alternate Destination – Medical Care

Description

Three pilot projects offer patients who have minor injuries or minor medical conditions transport to an urgent care center instead of to an ED for evaluation by a physician. Urgent care centers are walk-in clinics that treat persons with illnesses or injuries that need timely evaluation and treatment but may not require treatment in an ED. Urgent care centers are typically staffed by physicians and other health professionals, such as physician assistants, nurse practitioners, and registered nurses. Some urgent care centers are independent whereas others are operated by or affiliated with hospital systems or medical groups. California does not license urgent care centers as a distinct category of health care provider; they operate under the licenses of hospitals or of the physicians who operate them.[12] This means that there are no requirements for operating hours, equipment, or urgent care services.

All three alternate destination – medical care projects enroll patients who have any of the following five conditions: isolated closed extremity injury, laceration with controlled bleeding, soft tissue injury, isolated fever or cough, and other minor injury. One site, Carlsbad, also enrolls patients who have generalized weakness. Patients are screened by paramedics on 911 response crews who have received training on a screening protocol that was developed by emergency physicians who serve as EMS medical directors to determine whether transport to an urgent care center is an appropriate option. If the paramedic concludes that a patient could be treated safely at an urgent care center, the paramedic offers transport to an urgent care center approved by the jurisdiction's local emergency medical services agency (LEMSA). Patients who declined to be transported to an urgent care center are transported to an ED.

All urgent care centers involved in the alternate destination – medical care projects were

approved by LEMSAs following site visits to determine whether they provided minimum basic services for participation in the HWPP. To be involved in the pilot project, urgent care centers were required to provide respiratory therapy treatments, x-rays, and point of care laboratory testing for blood and urine and to have an automated external defibrillator. In addition, paramedics must call the urgent care center, give a brief report on a patient's condition, and receive confirmation that the urgent care center was willing to accept the patient before transporting the patient to that facility.

The paramedics used protocols for screening patients that excluded patients with medical conditions too emergent, complex, or inappropriate for transport to an urgent care center. For example, in Orange County, persons with lacerations who had an exposed bone, tendon, or joint were automatically transported to an ED and not offered the option of transport to an urgent care center. Other persons were not offered transport to an urgent care center due to intoxication, altered mental state, or history of dementia.[13] Paramedics were available to reroute a patient to an ED for further diagnosis or treatment if the urgent care center provider requested it.

Results

Number of Patients Enrolled and Patient Characteristics

A total of 39 patients were enrolled in the three alternate destination – medical care projects through September 30, 2016. Table 16 presents information on the demographic characteristics and health insurance status of persons enrolled in the alternate destination – medical care projects. The majority of patients were white females. All preferred to receive health information in English. Forty-one percent were Medicare beneficiaries, 28% had private health insurance, 65% were Medi-Cal beneficiaries, and 26% were uninsured.

Table 16.

Demographic and Health Insurance Characteristics of Alternate Destination – Medical Care Patients

Characteristics	Number	Percentage
Gender		
Male	18	46%
Female	21	54%
Ethnicity		
Hispanic	7	18%
Non-Hispanic	19	49%
Unknown	13	33%
Race		
White	25	64%
African-American	0	0%
Asian-Pacific Islander	1	3%
Other or Unknown	13	33%
Language		
Prefer to Receive Health Info in English	39	100%
Prefer to Receive Health Info in Other Language	0	0%
Payer		
Medicare	16	41%
Medi-Cal	2	5%
Private/Commercial Insurance	11	28%
Uninsured	10	26%

Most of the patients for whom information on type of injury or illness was reported had a laceration or an isolated closed extremity injury, such as a dislocation, sprain, or fracture, as indicated in Table 17.

Table 17.

Number of Enrollees in Alternate Destination – Medical Care Projects

Project #	Lead Agency	Total Enrollees	Closed Extremity	Laceration	Soft Tissue	Fever or Cough	Other Minor Injury	Generalized Weakness
CP001	UCLA	12	5				7	
CP003	Orange	25	15	9	0	0	1	0
CP009	Carlsbad	2	0	0	0	0	0	2
Total		39	20	9			8	2

Eligible but Not Enrolled Patients

The three alternate destination – medical care sites identified 202 people who were eligible for transport to an urgent care center but not enrolled. People who were eligible but not enrolled were more likely to be male and less likely to be Medicare beneficiaries than people enrolled in the project. Twenty-one persons declined transport to an urgent care center. An additional 181 persons were not enrolled for a variety of reasons. One of the most common reasons was that eligible people were identified at times of the day at which none of the partner urgent care centers were open. For example, 39 of the 76 people that Orange County paramedics deemed eligible for transport to an urgent care center called 911 at times of the day at which the urgent care centers were not open.[14] In addition, Orange initially trained insufficient numbers of paramedics to provide the urgent care center transport option on all shifts. (Orange later trained a second cohort of paramedics.) Eligibility for Carlsbad's program was limited to nonelderly adults insured by Kaiser Permanente, which meant that the option could not be offered to senior citizens or to nonelderly adults who had other sources of health insurance. The number of patients enrolled in all three alternate destination – medical care projects was further limited by very restrictive protocols and a lengthy consent process.

Safety

The alternate destination – medical care projects did not harm patients. Findings from the Orange County project indicate that paramedics trained to screen patients for suitability for transport to an urgent care center can identify per protocol persons for whom transport to an urgent care center is an appropriate option. Orange County paramedics participating in the pilot project screened 659 people who had conditions targeted by the pilot project and deemed 115 eligible

for transport to an urgent care center.[13] Thirty-nine of these people called 911 during the hours in which partner urgent care centers were open, and 25 were transported to an urgent care center. The paramedics transported the remaining 544 people to an ED based on the project's protocol and on their clinical judgment that took into consideration a person's functional status and home environment as well as their medical condition. (Similar information was not available for the other alternate destination – medical care sites.) It is important to note that these projects did not involve evaluation and release of patients by paramedics; in all cases patients were transported to a facility where they could be evaluated by a physician.

Among the 39 patients enrolled in the alternate destination – medical care projects, two patients (5%) were subsequently transferred to an ED within six hours of arrival at an urgent care center. In addition, nine patients (23%) were transported to an urgent care center and then rerouted to an ED because the urgent care center staff declined to treat the patient despite indicating prior to transport that they would accept the patient. None of these patients had life-threatening conditions and there were no adverse outcomes. The reasons for transport from an urgent care center to an ED are listed in the table below.

Table 18.

Reasons Transfers from Urgent Care Centers to EDs within Six Hours of Admission

Reason for Transfer to ED	**Number of Patients**
Secondary Transfers	
Patient experienced shortness of breath and heart rate slowed after transport to an urgent care center for treatment of nausea without abdominal pain	1
Patient required surgery for injury	1
Rerouted Transfers	
Patient requested opioid pain medication	3
Diagnostic equipment broken or unavailable	2
Urgent care physician believed shoulder injury needed further evaluation	2
Urgent care center physician believed patient needed to be examined by an orthopedist	2
Total	**11**

Four of the nine reroutes concerned a musculoskeletal injury that an urgent care physician believed needed further evaluation. Five of the nine reroutes involved lack of availability of medication or equipment at the urgent care center. Three patients requested opioid pain medications that the urgent care center does not provide, and two patients had to be transferred because equipment needed to diagnose the injury was broken or unavailable.

One patient who was transferred to an ED after admission to an urgent care center needed surgery for a musculoskeletal injury. The patient did not appear to have a fracture when the paramedics assessed the patient in the field because the patient could put weight on the affected limb. Only after an x-ray was taken at the urgent care center could it be determined that the patients had a significant injury that needed orthopedic management.

One case that involved the transfer of a patient to an ED following admission to an urgent care center resulted in an in-depth safety evaluation. The case involved a patient enrolled in the UCLA project who called 911 due to nausea and vomiting without abdominal pain.[15] The patient displayed no other symptoms in the field and accepted transport to an urgent care center. After arrival at the urgent care center, the patient's heart rate slowed, and he experienced shortness of breath. The urgent care center physician was concerned that the patient needed diagnostic tests that the urgent care center does not provide. The patient was transferred to an ED, where he again experienced shortness of breath and for the first time complained of chest pain. An electrocardiogram showed nonspecific abnormalities. A cardiologist took the patient to the cardiac catheterization lab for further evaluation and identified partial coronary blockage that was treated with stenting, and he was discharged the following day. The patient's ultimate diagnosis was angina without myocardial infarction (heart attack). The case was reviewed by the Local Pilot Project Steering Committee, the HWPP #173 pilot project manager, and the director

of EMSA. The reviewers concluded that the paramedics' decision to offer the patient transport to an urgent care center was appropriate according to the project's protocols for screening patients. To prevent a similar situation from occurring again, the director of EMSA requested that all alternate destination – medical care projects revise their protocols to exclude persons who have nausea without abdominal pain. (Persons with nausea *and* abdominal pain were already excluded.)

Effectiveness

While paramedics participating in the pilot projects are able to triage patients according to protocol effectively, it has been challenging for the paramedics and project leaders to determine which patients the urgent care centers would accept. Urgent care centers have sometimes rejected patients who have minor conditions that are often safely treated in an ambulatory setting, such as a dislocated shoulder. Interviews with project managers and paramedics suggest that urgent care centers may be hesitant to accept patients transported by an ambulance since that is a new practice for them. In addition, the range of services offered by urgent care centers varies substantially. For example, some urgent care centers do not have the capacity to administer intravenous fluids, which limits their ability to treat persons with dehydration and other conditions that could be treated safely outside of an ED.

Cost and Savings

Table 19 displays estimates of the savings associated with two of the three alternate destination – medical care projects. Data for the third site are not included because it had only enrolled two patients as of September 2016.

These projects saved $217 to $300 per month. The estimates of savings are based on estimates of the difference between the amounts insurers pay for treatment of the same condition in an ED and an urgent care center. (See Appendix B for details.) This analysis does not include an estimate of costs because the alternate destination – medical care projects had no recurring costs. The paramedics who offer transports to urgent care centers are part of 911 response crews that the participating fire departments would have on duty regardless of whether the pilot project had been implemented. Thus, the fire departments do not incur any recurring costs for labor, supplies, or equipment beyond what they would otherwise incur for responses to 911 calls.

Table 19.

Savings Associated with Alternate Destination – Medical Care Projects

	UCLA	Orange
Average Monthly Enrollment	*2*	*3*
Average Savings per ED Visit Avoided	$104	$104
Savings from ED Visits Avoided	$217	$300
Total Savings	**$217**	**$300**

Conclusion

More data are needed to draw firm conclusions about the alternate destination – medical care model. Paramedics participating in the alternate destination – medical care projects have demonstrated capacity to evaluate patients according to triage protocols to determine whether patients can be transported to an urgent care center. No patients experienced adverse outcomes. However, only 39 patients were enrolled across the three sites over a one-year period, in large part because many people with eligible conditions called 911 at times at which urgent care centers were not open. In addition, 2 of the 39 patients enrolled were transferred to an ED following admission to an urgent care center and nine were rerouted to an ED because the urgent

care center declined to accept the patient. These findings suggest that for alternate destination – medical care projects to offer a viable alternative to EDs, screening protocols will need to be more closely aligned with the capabilities of urgent care centers and the illnesses and injuries they are willing to treat. The projects have generated some savings by transporting patients with minor injuries and illnesses to this less costly setting and could potential generate additional savings if more patients were enrolled.

Conclusion

The community paramedicine pilot projects have demonstrated that specially trained paramedics can provide services beyond their traditional and current statutory scope of practice in California. These projects are improving patients' well-being, improving the integration and efficiency of health services in the community, and decreasing health care costs by reducing ambulance transports, ED visits, and hospital readmissions. The majority of savings achieved by these pilots accrue to Medicare and hospitals serving Medicare patients because Medicare beneficiaries accounted for the largest share of persons enrolled in the pilot projects (43%). Savings also accrue to the Medi-Cal program and providers that serve Medi-Cal beneficiaries because Medi-Cal beneficiaries constitute 28% of enrollees. In addition, the pilot projects provide new options to persons who call 911 that enable them to obtain the care they need more efficiently and in the settings they prefer. Specifically, the sites testing the six concepts have demonstrated the following.

Post-Discharge Projects

- Decreased hospital readmissions within 30 days of discharge for all sites and diagnoses except among persons enrolled for heart failure in one project that provided less intensive services than other post-discharge pilot sites.
- Improved patients' knowledge of their medications and their ability to take medications as prescribed by their physicians.
- Four of the five post-discharge projects achieved savings for payers (primarily Medicare and Medi-Cal) and hospitals due to reductions in readmissions within 30 days of

discharge. Participating hospitals realized additional savings by lowering their risk of being penalized by Medicare for having excess readmissions.

Frequent EMS User Projects

- These projects achieved reductions in the number of 911 calls, ambulance transports, and ED visits among enrolled patients.
- Community paramedics assisted patients in obtaining housing and other nonemergency services that address the physical, psychological, and social needs that led to their frequent EMS use.
- Both projects achieved savings for payers but only one realized sufficient savings to offset the cost of operating the project. These projects also decreased the amount of uncompensated care furnished by ambulance providers and hospitals because 35% of enrolled patients were uninsured.

Tuberculosis Project

- Community paramedics dispensed appropriate doses of TB medications and monitored side effects and symptoms that could necessitate a change in treatment regimen.
- Persons with TB who received DOT from community paramedics were more likely to receive all doses of TB medication prescribed by the TB clinic physician than patients who received DOT from the TB clinic's CHWs. Receiving all doses prescribed by the TB clinic physician increases the likelihood that a patient will be successfully treated and will not spread TB to others or develop a drug-resistant strain of TB that would be much harder to treat and to control in the community.

- No additional cost to the health care system because community paramedics who provide DOT at the pilot site did so while already on duty to respond to traditional 911 calls.

Hospice Project

- Community paramedics mainly provided hospice patients and their families with psychosocial support and administered medications from the hospice patients' "comfort care" packs when necessary, in consultation with a hospice nurse.
- The hospice project enhanced ability to honor patients' wishes to receive hospice services at home by markedly reducing rates of ambulance transports to an ED, which likely reduced the number of patients whose hospice benefits were revoked.
- The project also yielded savings for Medicare and other payers due to reduction in unnecessary transport and visits to an ED. Payers' expenditures for inpatient care were also reduced because some ED visits for hospice patients result in an inpatient admission.

Alternate Destination – Behavioral Health Care Project

- Paramedics performed medical screening on behavioral health patients to determine whether they could be transported directly to a mental health crisis center.
- Ninety-five percent of patients were evaluated at the behavioral health crisis center without the delay of a preliminary emergency department visit. Only 5% of patients required subsequent transfer to the ED, and there were no adverse outcomes. After refining the field medical evaluation protocols, the rate of transfer to an ED fell to zero.
- Yielded savings for payers, primarily Medi-Cal, by reducing ED visits and transfers of patients from EDs to psychiatric facilities. For uninsured persons, the amount of uncompensated care provided by ambulance providers and hospitals also decreased.

- Enhanced community safety because it reduced the amount of time that law enforcement devotes to behavioral health calls.

Alternate Destination – Medical Care Projects

- More data are needed to make firm conclusions about the alternate destination – medical care projects due to the limited number of patients enrolled and the number of patients rerouted to transferred to an ED.
- Among the limited number of patients who were enrolled, paramedics were able to screen patients according to protocol for whom transport to an urgent care center was an appropriate option.
- No patients experienced an adverse outcome, although two patients were transferred to an ED following admission to an urgent care center, and nine patients were rerouted to an ED because the urgent care center declined to accept the patient.
- To operate safely and efficiently, these projects need to closely match field screening protocols with the capabilities of urgent care centers and the illnesses and injuries they are willing to treat.
- The projects yielded modest savings because insurers pay less for treatment provided in urgent care centers than in EDs for the same illnesses and injuries.

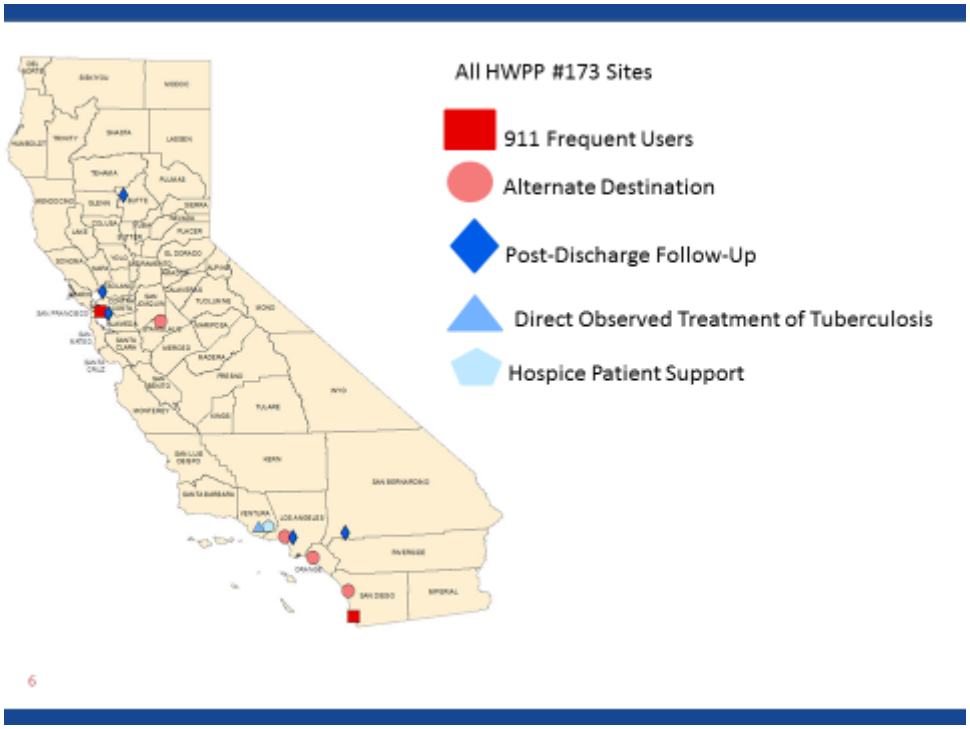
Findings from the evaluation indicate that Californians benefit from these innovative models of health care that leverage an existing workforce that operates at all times under medical control — either directly or by protocols developed by physicians experienced in EMS and emergency care. No adverse outcome is attributable to any of these pilot projects. No other health professionals were displaced; in fact, these pilot projects demonstrated that community paramedicine programs

can partner with physicians, nurses, behavioral health professionals, and social workers to fill gaps in the health and social services safety net. These projects were designed to integrate with existing health care resources and utilize the unique skills of paramedics and their round-the-clock availability.

At least 33 states are operating community paramedicine programs, and research conducted to date indicates that they are improving the efficiency and effectiveness of the health care system. [16,17,18] These findings suggest that the benefits of CP programs grow as they mature, solidify partnerships, and find their optimal structure and niche. The evaluation of HWPP #173 yields consistent findings for five of the six community paramedicine concepts tested: post-discharge, frequent 911 users, DOT for TB, hospice, and alternate destination – behavioral health. Projects testing these five concepts have fulfilled the criteria for a successful HWPP. They have improved patients' well-being and, in most cases, have yielded savings for payers and other parts of the health care system. The sixth concept, alternate destination – medical care, shows potential but further research involving a larger volume of patients is needed to draw definitive conclusions.

If community paramedicine is enabled on a broader scale, the current EMS system design is well-suited to utilize the results of these pilot programs to optimize the design and implementation of proposed programs and to assure patient safety. The two-tiered system of local control with state oversight and regulation enables cities and counties to tailor community paramedicine programs to meet local needs while both local and state oversight and regulation ensure patient safety.

Appendix A. Map of the Community Paramedicine Pilot Projects



Appendix B. Methods for Estimating Cost and Savings

This appendix describes the methods used to estimate costs and savings associated with each of the six community paramedicine concepts that are being tested as part of HWPP #173. Estimates of savings associated with the six community paramedicine concepts reflect savings that accrue to parts of the health care system other than EMS transport providers, such as health insurers and hospitals. None of the projects realized savings for the EMS transport provider because they operate on fee-for-service basis and are reimbursed only for transport. These agencies had to provide in-kind contribution of supplies and labor to operate the pilot projects.

All supply and labor costs included in the analysis are recurring costs that would be required to operate similarly designed CP programs. Costs associated with the initial implementation of the programs as well as costs unique to these programs due to their designation as "pilot projects" were not included, such as costs associated with training the community paramedics and reporting data on implementation of the project to the evaluator. The specific details of cost estimates vary across programs due to differences in staffing and use of supplies.

Different methods were used to estimate the savings associated with each concept due to the differences in the services provided and the types of outcomes each concept seeks to improve. For concepts that strive to reduce unnecessary ambulance transports, ED visits, and hospitalizations, the quantitative analysis of savings focused on estimating the impact of these reductions on health insurers' expenditures because insurers typically pay for these services. Effects on hospitals' ability to manage "full risk" contracts with health insurers and avoid Medicare readmission penalties for excessive readmissions were addressed but could not be

estimated quantitatively. Directional statements were also made about effects of the post-discharge projects on the amount of uncompensated care provided by hospitals.

Net savings (i.e., savings to insurers and others, minus costs to EMS agencies) were calculated to estimate the value added by the pilot projects. A finding of net savings indicates that sites that tested a community paramedicine concept generated savings for other parts of the health care system that exceeded the costs of providing the services. Achieving savings for health insurers, hospitals, and other health care providers that exceed the cost of providing community paramedic services creates an opportunity for EMS providers to negotiate contracts with these entities to provide community paramedic services.

Post-Discharge

Cost

The average monthly costs for post-discharge projects were estimated based on information provided by sites regarding labor costs and recurring costs for supplies. Labor costs varied across the five discharge projects due to differences in staffing models. Two projects (Alameda and UCLA) utilized full-time paramedics, whereas three projects (Butte, San Bernardino, and Solano) deployed community paramedics as needed. For UCLA's project, which employed one full-time community paramedic, the full monthly cost of the community paramedic's salary and benefits were included. For Alameda's project, costs for the two full-time community paramedics were allocated across the two projects it administers (post-discharge and frequent 911 users) based on the percentage of total patients enrolled in each project (62% post-discharge, 38% frequent 911 users). For the three projects that utilized community paramedics as needed, costs for salaries and benefits were based on the proportion of work hours that paramedics devoted to community paramedic work. Hours spent providing traditional 911 response services

were not included because the sponsoring agencies would have incurred these costs regardless of whether they operated pilot projects.

Savings

To generate estimates of average monthly savings, the differences between (1) the rates of readmission within 30 days of discharge among persons enrolled in the post-discharge projects, and (2) historical 30-day readmission rates for partner hospitals were calculated. Historical readmission rates were obtained from Medicare Hospital Compare,[19] a system for reporting and publicly releasing data on the quality of care provided by Medicare-certified hospitals. Medicare Compare collects data on readmissions for persons with four of the six conditions targeted by the post-discharge projects: heart failure, acute myocardial infarction, chronic obstructive pulmonary disease, and pneumonia. A dataset containing data on readmission rates of partner hospitals between July 2012 and June 2015 was downloaded from Data.Medicare.gov.[20] These data were used to assess the projects' impact on 30-day readmission rates because all partner hospitals used similar methods to report the data to Medicare and because there was minimal overlap between the time period for which Hospital Compare data were collected and the implementation of the post-discharge projects.

The difference in the rate readmissions was multiplied by the average number of people enrolled in each pilot project to generate an estimate of the number of readmissions avoided, which was then multiplied by an estimate of the average cost of admissions for patients with diagnoses targeted by the projects. Estimates of the cost of admissions for targeted diagnoses derived from OSHPD's public hospital inpatient discharge dataset. Costs per admission were calculated by multiplying the hospital's average charges for a diagnosis by the hospital's cost-to-

charge ratio. This is a widely used method for estimating the cost of inpatient care. Using this method, costs per admission varied substantially across diagnoses targeted by the pilot projects, ranging from $11,562 for chronic obstructive pulmonary disease to $26,621 for acute myocardial infarction. For each project, the average cost per readmission was calculated as a weighted average of the costs of admissions of persons with target diagnoses with weights assigned based on the proportion of total readmissions that occurred among persons with each diagnosis for which patients were enrolled.

Frequent EMS User

Cost

The average monthly costs for Alameda and San Diego's frequent EMS user projects were estimated based on information provided by sites regarding labor costs and recurring costs for supplies. Because Alameda uses the same paramedics to operate both a frequent EMS user project and a post-discharge project costs for labor and supplies were allocated to the two projects based on the percentage of total patients enrolled. The two projects in Alameda enrolled a total of 104 persons through September 2016, 38% of which were enrolled in the frequent EMS user project and 62% in the post-discharge project. Since San Diego only has a frequent 911 user project, all labor and supply costs for the project were included in the cost estimate.

Savings

Savings were estimated by multiplying the numbers of ambulance transports and ED visits avoided by (1) the average cost per transport to an ED, and (2) the mean Medicare reimbursement for ED visits. Based on interviews with managers of the frequent 911 user

projects, it was assumed that every 911 call avoided resulted in avoidance of an ambulance transport and an ED visit.

For San Diego, the number of ambulance transports and ED visits avoided was estimated by comparing the number of 911 calls made by enrolled patients during the six months prior to their enrollment to the number of 911 calls made during the six months following enrollment. Calls made during the month of enrollment were excluded in recognition that the month of enrollment is a time of transition for patients. Data on 911 calls pre- and post-enrollment were available for 35 of the 45 enrollees in San Diego's frequent EMS user project from November 2015 through December 2016. The reduction in 911 calls over the six months post-enrollment was divided by six to estimate the numbers of 911 calls, ambulance transports, and ED visits avoided per month (33).

The estimate of savings associated with Alameda's frequent 911 user project is less precise than the estimate for San Diego's because only aggregate data are available. The number of 911 calls among persons enrolled in Alameda's project during the 12 months prior to the implementation of the project was compared to the number of 911 calls that these patients had following the project's implementation. The difference in 911 calls was divided by 12 to estimate the average number of 911 calls avoided per month.

Estimates of the cost of ambulance transports avoided were obtained from the sites. Data for ED cost estimates were obtained from the University of California Research Exchange (UC ReX) and reflect visits to EDs at University of California medical centers in 2015. To estimate the cost of ED visits that do not result in a hospital admission, we applied national average Medicare reimbursement rates for all care provided to patients. Medicare reimbursement rates were used because Medicare is the payer whose reimbursement is widely considered to be

closest to the cost of care. The cost-to-charge ratio method used to estimate the cost of inpatient readmissions avoided could not be used because OSHPD does not collect complete data on charges for ED visits.

For the frequent 911 user projects, patients were categorized using available evaluation and management codes in order to produce a comparable set of patients, based on disease and acuity. Diagnosis codes were not used because they were not among of the criteria used to identify persons eligible for the project.

Hospitals bill insurers for ED visits at one of five levels based on the amount of equipment and supplies needed to care for a patient. Level 1 is the lowest level and level 5 is the highest. For the frequent EMS user projects, we used the mean reimbursement for all five levels of ED visits because information was not available to enable us to determine the most common reasons why frequent EMS users visit EDs or the severity and complexity of their needs.

Tuberculosis

A quantitative analysis of costs and savings associated with the project that provides directly observed therapy (DOT) for tuberculosis (TB) was not conducted due to challenges associated with estimating the impact of the project. As discussed in the main body of the report, the project found a small increase in adherence to the prescribed medication schedule when administered by a community paramedic instead of a community health worker (99% vs. 94%). However, we found no research that addressed the impact of a difference in adherence between groups of people with adherence rates of over 90% in a US population. In the absence of such research, we concluded that the most we could do would be to make directional statements about the potential impact of the increase in adherence on public health expenditures associated with investigation

of close contacts of persons with TB, treating people infected by a noncompliant patient, and the impact of the use of community paramedics on the TB clinic's use of community health workers.

Hospice

Cost

The estimated cost of community paramedic labor and supplies for Ventura's hospice project is based on the average amount of time community paramedics spend per month on responses to 911 calls for hospice patients. It does not reflect full salaries and benefits paid to community paramedics each month because the community paramedics are supervisors who serve hospice patients for only a small part of the time that they are on duty.

Savings

Average monthly savings were estimated by multiplying the average numbers of transports and ED visits avoided per month by (1) the average cost per ambulance transport to an ED and (2) the average Medicare reimbursement for an ED visit for a high-acuity patient.

The estimate of costs per transport reflects data reported by the pilot site for June through September of 2016. The estimates represented actual "cash collected" by the agency from insurers and other payers.

As indicated above in the description of the estimates of savings for the frequent 911 user projects, data for ED cost estimates were obtained from the University of California Research Exchange (UC ReX) and reflect visits to EDs at University of California medical centers in 2015. To estimate the cost of ED visits that do not result in a hospital admission, we applied national average Medicare reimbursement rates for all care provided to patients. For the hospice project, the median reimbursement for level 4 and 5 visits was used because terminally ill

patients are likely to have acute needs. Mean reimbursement for level 4 and 5 visits across all diagnoses were used in lieu of the costs related to specific diagnoses because information was not available to determine the diagnoses for which hospice patients were transported to an ED.

Alternate Destination – Behavioral Health

Cost

The estimated monthly cost of community paramedic labor for Stanislaus County's alternate destination – behavioral health project is based on the average number of unit hours that community paramedics spend per month on responses to 911 calls for persons with behavioral health needs. They do not reflect full salaries and benefits paid to community paramedics each month because the community paramedics only serve behavioral health patients part of the time that they are on duty. Costs for supplies reflect estimates of monthly expenditures that Stanislaus' EMS provider incurs for supplies used to care for alternate destination – behavioral health patients.

Savings

Average monthly savings were estimated by multiplying the numbers of ambulance transports and ED visits avoided per month by (1) the average cost per transport and (2) the average Medicare reimbursement for an ED visit for persons who only have behavioral health diagnoses. Because patients enrolled in the project are transported directly to the mental health crisis center, every time a patient is enrolled, an ED visit is avoided as well as a secondary transport from an ED to a behavioral health facility.

The estimate of the average cost per ambulance transport was based on information provided by Stanislaus' EMS provider.

As indicated above in the description of the estimates of savings for the frequent 911 user projects, data for ED cost estimates were obtained from the University of California Research Exchange (UC ReX) and reflect visits to EDs at University of California medical centers in 2015. To estimate the cost of ED visits that do not result in a hospital admission, we applied national average Medicare reimbursement rates for all care provided to patients for which the only diagnoses reported are behavioral health diagnoses. These diagnoses were chosen because the alternate destination – behavioral health project serves persons who only have acute behavioral health needs.

Alternate Destination – Medical Care

Cost

As indicated in the main text of the report, the analysis of savings associated with alternate destination – medical care projects does not include an estimate of costs because the paramedics who offer transports to urgent care centers are part of 911 response crews that the participating fire departments would have on duty regardless of whether the pilot project had been implemented.

Savings

Savings were calculated based on an estimate from the literature of the difference in the cost of treating minor illnesses and injuries in an ED versus an urgent care center. Estimates published in the literature suggest that insurers pay urgent care centers 45% of what they pay hospitals for ED visits for the same minor illnesses and injuries.[21] The difference between reimbursement for ED visits and urgent care center visits was multiplied by the average number of persons enrolled

in the alternate destination – medical care projects per month to estimate total savings per month. No estimate of savings associated with reduction in ambulance transports is included because, unlike other community paramedicine concepts that reduce ED visits, the alternate destination – medical care projects did not reduce ambulance transports because all enrolled patients were transported to an urgent care center.

As indicated above in the description of the estimates of savings for the frequent 911 user projects, data for ED cost estimates were obtained from the University of California Research Exchange (UC ReX) and reflect visits to EDs at University of California medical centers in 2015. To estimate the cost of ED visits that do not result in a hospital admission, we applied national average Medicare reimbursement rates for all documented care provided to patients. For the alternate destination – medical care projects, Medicare reimbursement rates level 1 or 2 visits were used because these projects enrolled people with minor illnesses or injuries.

Endnotes

1. California Hospital Association, *Toolkit to Reduce Ambulance Patient Offload Delays in the Emergency Department*. Sacramento, CA: California Hospital Association, 2014.

2. Kizer, K.W., K. Shore, A. Moulin. *Community Paramedicine: A Promising Model for Integrating Emergency and Primary Care*. UC Davis Institute for Population Health Improvement. July 2013. https://www.ucdmc.ucdavis.edu/iphi/publications/reports/resources/IPHI_CommunityParamedicineReport_Final%20070913.pdf

3. National Association of Emergency Medical Technicians. *Mobile Integrated Healthcare and Community Paramedicine*. 2015. http://www.naemt.org/docs/default-source/MIH-CP/naemt-mih-cp-report.pdf

4. California Office of Statewide Health Planning and Development. Health Workforce Pilot Projects (HWPP) Program. January 11, 2017. https://www.oshpd.ca.gov/HWDD/HWPP.html

5. California Department of Finance, Demographic Research Unit. E-1 Population Estimates for Cities, Counties, and the State – January 1, 2015 and 2016. May 2016. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/

6. Jensen, A. How Community Paramedics Rescue People from San Diego's Streets. California Health Care Foundation. September 21, 2016. http://www.chcf.org/articles/2016/09/community-paramedics-rescue-people

7. Centers for Disease Control and Prevention. Treatment for TB Disease. August 11, 2016. https://www.cdc.gov/tb/topic/treatment/tbdisease.htm

8. Taigman, M. Rescuing Hospice Patients. California Health Care Foundation. December 20, 2016. http://www.chcf.org/articles/2016/12/rescuing-hospice-patients

9. California Hospital Association. *California's Acute Psychiatric Bed Loss.* October 25, 2016. http://www.calhospital.org/sites/main/files/file-attachments/psychbeddata.pdf

10. Nutt, A.E.. Psychiatric Patients Wait the Longest in Emergency Rooms, Survey Shows. Washington Post. October 18, 2016. https://www.washingtonpost.com/news/to-your-health/wp/2016/10/18/sickest-psychiatric-patients-wait-the-longest-in-emergency-rooms-survey-shows/

11. Lippert, S.C., N, Jain, J. Fahimi, et al. Waiting for Care: Differences in Emergency Department Length of Stay and Disposition Between Medical and Psychiatric Patients. Annals of Emergency Medicine. 2016;68(4S):S97. http://www.annemergmed.com/article/S0196-0644(16)30721-1/fulltext

12. Hanson Bridgett. California Urgent Care Centers Offer Opportunities for New Revenue, but Raise Legal Issues. August 22, 2014. https://www.hansonbridgett.com/Publications/articles/2014-08-health-care-urgent-care-center.aspx

13. Nguyen, T.H., M.M. Masroor, S.A. Schlesinger, et al. False Estimates of Predicted Low Acuity Complaints in the Prehospital and Emergency Environments. Poster presentation at the 2016 annual meeting of the American College of Emergency Physicians.

14. Masroor, M.M., T.H. Nguyen, S.A. Schlesinger, et al. Paramedics Receiving Training in Low Acuity Complaints Demonstrate Safety in Alternate Destination Disposition Recommendations. Poster presentation at the 2016 annual meeting of the American College of Emergency Physicians.

15. H. Backer, L. Meyer. Memo to Liz Martin and Jalaunda Monroe of the Office of Statewide Health Planning and Development, December 7, 2015.

16. Abrashkin, K.A., J. Washko, J. Zhang, A. Poku, H. Kim, K.L. Smith. "Providing Acute Care at Home: Community Paramedics Enhance an Advanced Illness Management Program- Preliminary Data. *Journal of the American Geriatrics Society*. 2016;64(12):2572-2576.

17. Choi B.Y., C. Blumberg, K. Williams. Mobile Integrated Health Care and Community Paramedicine: An Emerging Emergency Medical Services Concept. *Annals of Emergency Medicine*. 2016;67(3):361-366.

18. Coffman, J., A. LaFrance. (Mobile Integrated Health Care – Community Paramedicine: A Resource for Community-Dwelling People at Risk for Needing Long-Term Care. San Francisco, CA: UCSF Healthforce Center, 2016. http://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/REPORT_2016_Mobile_Integrated_HC_Paramedicine.pdf

19. Centers for Medicare and Medicaid Services. What is Hospital Compare? https://www.medicare.gov/hospitalcompare/about/what-is-HOS.html

20. Centers for Medicare and Medicaid Services. Hospital Compare Datasets. December 19, 2016. https://data.medicare.gov/data/hospital-compare?sort=relevance&tag=readmissions%20and%20death

21. Thygeson M., K.A. Van Vorst, M.V. Maciosek, and L Solberg. Use and Costs of Care in Retail Clinics Versus Traditional Care Settings. *Health Affairs*. 2008;27(5):1283-1292.

CITY AND COUNTY OF SAN FRANCISCO

PILOT PROPOSAL:

San Francisco Sobering Center as an Alternative Destination for Acute Alcohol Intoxication

Submitted to: California Emergency Medical Services Authority

From: San Francisco Emergency Medical Services Agency

September 9, 2016

CONTENTS

TITLE OF PROJECT: Utilization of a Sobering Center as an Alternative Destination for Acute Alcohol Intoxication

SCOPE OF PROPOSED PROJECT

San Francisco City and County will evaluate the safety and value of establishing an Alternate Destination Pilot Project to achieve the following goals and objectives:

Goals:

- Reduce utilization of emergency room services by adults with uncomplicated acute alcohol intoxication within San Francisco City and County that would have normally been transported directly to emergency departments through the utilization of trained paramedics to assess, treat, and transport patients meeting specific and pre-identified criteria to appropriate alternative care at a sobering center.
- Demonstrate appropriate utilization of non-traditional alternate destinations for acutely intoxicated patients assessed and treated by paramedics.
- Reduce the utilization of emergency department (ED) services by intoxicated adult patients within San Francisco.
- Use paramedic training to decrease the frequency of secondary EMS transports to Emergency Departments
- Improve efficiency of ambulance resource by having decreased turnover times at sobering facility versus emergency departments.

Objectives:

- Designate the general assessment of the trained paramedic as “appropriate” or “inappropriate” in accordance with the established diagnosis by the treating sobering center health professional with 95% accuracy within six hours of admission.
- Less than 5% of intoxicated patients transported to the ED by paramedics ultimately identified as a patient who should have gone directly to an alternative sobering center facility.
- Less than 5% of patients transported to an alternative destination were sent to the ED within six hours.
- All paramedics with 911-transport unit response will maintain demonstrated competency to specified triage training at a 100% success rate with an average grade of 85% or better.
- Demonstrated competency at a 100% success rate with an average grade of 85% or better will be maintained by paramedics participating in the Community Paramedic Training Program to lead ongoing evaluation of outcomes.

DESCRIPTION OF PROPOSED CONCEPT

Addressing a substantial problem of emergency department overcrowding, public intoxication, and alcohol intoxicated patient recidivism in the emergency care system within San Francisco City and County, this pilot project expands the role of the paramedic to assess and triage individuals with acute alcohol intoxication to a sobering center as an alternative destination to the emergency department. The

pilot project will train the paramedic with 911-transport unit response to triage patients intoxicated on alcohol in the pre-hospital setting. Additionally, select paramedics will be trained using community paramedicine curricula to oversee the pilot project and coordinate with local stakeholders. All paramedics within the 911 system will be able to transport to the Sobering Center.

These pre-hospital triage guidelines provide a safe manner for paramedics to transport intoxicated adults meeting explicit parameters to a sobering center that specializes in the care of acute intoxication. The impact of alcohol on the San Francisco Emergency Medical Care system is significant. The City and County of San Francisco has the one of the highest per capita presence of alcohol outlets in the world, and emergency department patients present with elevated levels of blood alcohol frequently.

In many regions throughout the world, “sobering” facilities have been developed as an alternative care site to the criminal justice system and emergency departments for adults with acute alcohol intoxication. Domestically, the sobering center model in the care for acute alcohol intoxication was established alongside detoxification services through the Uniform Alcoholism and Public Intoxication Act of 1971. Internationally, there are dozens of programs established or in development including programs offering an alternative destination to the emergency department.

These efforts offer a number of benefits to both the system and the patients. Transporting intoxicated individuals directly to a sobering center, through the use of a strict triage algorithm and screening, will decrease the impact of acute intoxication in the emergency departments. Benefits will focus on relieving emergency department overcrowding, decreasing ambulance turnaround time, and thus more efficiently utilizing emergency medical system resources. Patients will receive monitoring and medical care by registered nurse staff specializing in public health, harm reduction, and behavioral health. Patients will have access to two licensed clinical social workers and one peer counselor dedicated to sobering center clients, and a part-time psychiatric nurse practitioner providing bridging primary and behavioral health care.

San Francisco EMS Agency will be partnering with San Francisco Department of Public Health including Zuckerberg San Francisco General Hospital and Emergency Department, San Francisco Community Hospitals, Department of Emergency Management, City College of San Francisco Paramedic Program, AMR Ambulance, and King-American Ambulance.

This project will cover the City and County of San Francisco with a population of approximately 840,000 citizens over approximately 47 square miles.

ESTIMATED PROJECT LENGTH

12 months

BACKGROUND INFORMATION

Need for Project:

Alcohol consumption and related harms are a substantial public health issue. As of a recent citywide assessment, 43% of patients in San Francisco emergency departments have a significant blood alcohol level regardless of chief complaint. A substantial number of these patients are transported via EMS to the emergency department. In the first six months of 2016, ambulance transport data for the San Francisco Fire Department (one of three ambulance companies) indicate there were over 6,017 calls for alcohol intoxication, which averages to 32 calls per day. Additional evaluation has found that annually from 2011 to 2016, an estimated 2,400 adults with acute alcohol intoxication and no other medical need were transported by paramedics for uncomplicated resolution of intoxication. It is estimated these cases with uncomplicated alcohol intoxication could be cared for outside the emergency department care setting.

Importantly, Zuckerberg San Francisco General Hospital and Trauma Center is the Level-1 trauma center for the Bay Area including San Francisco and Northern San Mateo counties providing trauma care for 1.5 million citizens. Decreasing uncomplicated alcohol intoxication admissions to this emergency department will positively impact the care provided to these counties for trauma-related presentations.

Approaches to prevent and decrease harms is a complex and challenging issue for our community. San Francisco has the highest density of off-sale alcohol availability of any city in the United States, with over 4,600 businesses with a liquor license. Additionally, the rate of binge drinking in San Francisco is higher than the state average (39 vs 32% respectively in 2013-14), increasing risk for harm and involvement with the emergency medical system.

Emergency department treatment capacity in relationship to demand for services has been decreasing over time in San Francisco. Using rates of ambulance diversion as a proxy for this capacity, from May of 2015 through May of 2016, the rates of ambulance diversion in the City were as follows:

Overall rate of ambulance diversion: 13%

Zuckerberg San Francisco General Hospital (trauma center and public hospital): 32%

Community hospitals disproportionately affected by intoxicated patients:

St. Luke’s Hospital 19%

UCSF Parnassus campus: 25%

St. Francis Hospital: 5%

Types and number of patients likely to be seen

It is anticipated the paramedics will assess and transport between 4 to 8 patients per day to the sobering center, or approximately 140 patients monthly.

Anticipated number of community paramedics:

We estimate that a minimum 4 community paramedics (excluding the current Field Supervisors) can provide for the oversight of the Alternate Destination Paramedics throughout the city and county. The goal is to train up a total of 6 to 8 community paramedics for the full one-year pilot.

Employment Opportunities for Community Paramedics:

Community paramedics with experience in effective and safe triage of patients to sobering facilities will be in high demand in most urban areas, as well as other EMS systems where alcohol has a disproportionate impact, e.g. impoverished rural areas, geographic areas in urban centers with below median income levels. Another area of high demand for this skill will be in the provision of emergency care for special events where alcohol is served. In San Francisco this is a growing need with over 860 permitted events annually.

Other Programs Serving as Models for this Project:

Regarding sobering center design and medical oversight, the EMS Agency Medical Director and the Sobering Center Deputy Director have corresponded with numerous sobering care facilities in operation, both internationally and domestically. The Sobering Center Deputy Director has toured and met with administrators of the sobering programs in Portland OR, Seattle WA, Ottawa Canada, San Diego CA, Alameda CA, and San Antonio TX.

The San Francisco Sobering Center has been in operation since 2003, providing care to intoxicated individuals referred by parties including the police, street outreach workers, and from the EDs directly. Medical protocols detailing assessment and monitoring guidelines have been evaluated and updated consistently since 2007, under the direction of the Sobering Center Deputy Director, Program Director, and Medical Director.

Recent studies detailing ambulance personnel triage of intoxicated clients form the basis of our triage guidelines. Three studies of emergency medical services out of Providence Rhode Island, San Francisco California, and El Paso County Colorado evaluated distinct pre-hospital “check lists” aimed at triaging intoxicated individuals to the emergency department versus a sobering facility. The Sobering Center Deputy Director has corresponded with the authors of all three studies; a collaborating SF Fire Department Paramedic Captain is a co-author of the San Francisco study. Overall, retrospective cohort studies found paramedics and emergency medical technicians could appropriately assess in the pre-hospital environment using a triage checklist, assigning intoxicated individuals with no other medical

need appropriately to a sobering facility. They found the triage checklists had high sensitivity; however, they did not show high specificity and erred conservatively. Thus, ambulance personnel over-triaged clients to emergency department care who would have been appropriate for sobering services. This indicates that the use of a standardized checklist, along with evaluation of triage decisions, may be a critical part of safe and appropriate triage for emergency medical services. Recent programs in Cardiff Wales, UK and Wellington New Zealand have successfully initiated sobering centers for the primary purpose of diverting intoxicated persons from the emergency department. The Sobering Center Deputy Director has been in communication with these emerging programs.

PROGRAM MANAGEMENT

Project Leadership and Local Steering Committee:

The project leadership and local steering committee will work in collaboration with the Local EMSA Administrator, the EMSA Community Paramedic Project Manager, the Sobering Center onsite lead, Independent Evaluator, and State Community Paramedic Advisory Committee as necessary throughout the duration of this pilot project.

Project leadership and local steering committee members are described below:

San Francisco Emergency Medical Services Agency (Dr John Brown, Medical Director San Francisco EMS Agency; Dr. Melody Glenn, EMS/Disaster Medicine Fellow); provide project management, regulatory oversight, and medical direction.

Department of Emergency Management (Anne Kronenberg, Executive Director of the Department of Emergency Management; Michael Dayton, Deputy Director of Division of Emergency Services); serve as a primary stakeholder, provide regulatory oversight, and function in a support capacity for the project.

Department of Public Health (Dr Tomás Aragón, Health Officer of the City & County of San Francisco; Barbara Garcia, Director of Public Health); Dr. Tomás Aragón is the Health Officer of the City & County of San Francisco, and Director of the Population Health Division (PHD) at the SF Department of Public Health. As Health Officer, he exercises leadership and legal authority to protect and promote health. As PHD director, he directs public health services. Dr. John Brown, Medical Director of EMS at DEM, reports to Dr. Aragon. Dr. Aragon is Adjunct Associate Professor of Epidemiology at the UC Berkeley School of Public Health where he teaches epidemiologic computing. He also specializes in continuous quality improvement (lean management). He will provide epidemiologic and CQI support as needed.

San Francisco Fire Department (Joanne Hayes-White, Chief of San Francisco Fire Department; Mark Gonzales, Deputy Chief of Operations; Dr Clement Yeh, Medical Director, San Francisco Fire Department); serve as a project partner and system first responder stakeholder, and function in a support capacity for the project.

San Francisco Sobering Center (Dr Shannon Smith-Bernardin, Deputy Director; Megan Kennel, Charge Nurse and High Utilizer Coordinator); serve as alternate transport primary partner, serve as care experts for acute intoxication, provide and monitor quality improvement, data collection and analysis.

City College of San Francisco (Megan Corry, Paramedic Program Director; Jim Fazackerley, Paramedic Program Faculty); serve as training liaison and secondary paramedic triage expert.

American Medical Response Ambulance (Rod Brouhard, Operations Manager): secondary partner and transportation stakeholder.

King American Ambulance (Josh Nultemeier, Chief Paramedic/Operations Manager): secondary partner and transportation stakeholder.

San Francisco Emergency Physicians Association (Dr Susan Lambe, President of SFEPA; Dr Steve Polevoi); serve as a system emergency service stakeholder and function in a support capacity for the project.

Operational Logistics:

San Francisco Fire Department and the San Francisco Emergency Medical Services Agency will provide the community paramedics and logistical support for the pilot project.

Training of Alternate Destination Paramedics

All ambulance paramedics will be trained in the triage algorithm and alternate destination. Training and education (totaling 8 hours) will be provided to all paramedics in the 911 system of San Francisco, including approximately 270 SFFD paramedics and 180 paramedics with AMR and King American.

Training of Community Paramedic Supervisors

Two SFFD paramedic supervisors will provide site coordination and daily operational project oversight. A group (4-8) SFFD paramedics will be trained in the Core Curriculum at 152 hours to staff the Community Paramedic Supervisor position. In addition to the California Core Curriculum, an additional module focused on calls for alcohol intoxication, triage algorithm, and the alternative destination will be completed. Under direction of the SFFD and EMS Agency medical directors, these Community Paramedics will oversee this pilot and collaborate with stakeholders throughout the city, including reviewing client outcomes, providing support for negative outcomes, and engaging with steering committee members throughout the City and County.

Training and education will be provided through the San Francisco Fire Department and Department of Emergency Management, and augmented by Steering Committee members from City College of San Francisco Paramedic Program and the Sobering Center.

The Improvement Process:

The attached Quality Assurance/ Quality Improvement Process protocols (Appendix VI and VII) detail current practices within the related departments and will be utilized as the foundation for quality improvement efforts and evaluation. Improving patient and system outcomes through quality improvement has been a consistent part of San Francisco health and wellness efforts. The DPH is

undergoing a lean enterprise transformation that started five years ago at Zuckerberg San Francisco General Hospital. Lean, also known as the Toyota Management System, is a comprehensive continuous improvement system focused on improving performance and eliminating waste. Many health care systems in the United States have adopted lean as their primary performance improvement system. The quality improvement process has control mechanisms to ensure the highest level of patient safety, comprehensive evaluation, and clinical elements are present.

Governance & Medical Control:

The EMS Agency Medical Director will act as the principal investigator and has primary responsibility for medical control. The SFFD Medical Director and Sobering Center Deputy Director will have primary responsibility for the coordination of the pilot project. For project management, they will work closely with the local steering committee, the DPH Health Officer, and the Independent Evaluator. The steering committee will be asked to provide feedback, direction, and monitor any programmatic issues that may arise.

Provisions for Protecting Patient's Safety:

Community paramedics will be trained according to the Community Paramedicine CORE curriculum approved by the California EMS Authority, which will include a site-specific training to the Sobering Center and triage protocols. This core curriculum has been approved. The onsite training program has been developed through the coordination of various steering committee members including the Director of the Paramedic Program at CCSF, the Medical Director of the EMS Agency, and the Deputy Director and the Charge Nurse from the Sobering Center. This program includes didactic, clinical, field experience and onsite alternative destination components.

To ensure patient safety throughout the pilot, Community Paramedics will meet weekly with the Sobering Center Deputy Director to review the records of all patients transferred into the Sobering Center from paramedics. In depth analysis of 100% of secondary transports out of the Sobering Center will be completed, including but not limited to chart review from the emergency department and sobering center, staff interviews, and RCA2 (root cause analysis-action) as recommended by the National Patient Safety Foundation. Surveys of sobering centers nationally indicate fewer than 5% of all encounters result in transfer to the emergency department. Based on projected transports of 43 clients per week to the sobering center and estimating conservatively, we anticipate fewer than 10 secondary transports monthly.

The Alternative Destination Triage Protocols (Appendix I) and the Sobering Center Medical Protocols (Appendix II) have been reviewed and approved by the EMS Agency Medical Director, SFFD Medical Director, DPH Health Officer, the Sobering Center Medical Director and Deputy Director. Medical backup by the Attending On Duty at ZSFGH emergency department, successfully providing real-time consults to sobering center staff since 2010, will continue to be available 24/7.

Patient safety is our goal, and we will comply to the guidelines set forth by our IRB regarding patient consent. For immediate transfers, all clients must opt-in to the transfer and verbally consent (Yes vs. No)

to be transferred to the Sobering Center as an alternative to the emergency department. Importantly, our work involves the transfer of intoxicated clients to an alternative destination. Addressing the presence of intoxication in this population, which can be a barrier to informed consent, we are seeking a waiver of consent through the Institutional Review Board under 45 CFR 46.116(d).

Weekly reviews of the records and all collected data elements will be reviewed by the SFFD and EMS Medical Directors. Monthly meetings of the steering committee will be conducted. A data report will be produced bi-weekly and submitted to the steering committee.

Data Collection and Security:

The San Francisco EMS Agency has applied for Institutional Review Board (IRB) approval via the University of California-San Francisco Human Research Protection Program to ensure safety and welfare of all participants. All requested data points for the Independent Evaluator have been reviewed and are accessible upon completion of the IRB and initiation of the pilot. Encounter level data points will be collected and electronically recorded at the Sobering Center, and are detailed in Appendix VIII.

Patient protection will be assured throughout the pilot process. Patient data will only be transmitted via secure communications, and will adhere to IRB standards. Evaluation and data collection (including process evaluation, qualitative evaluation, impact evaluation and utilization, estimate of healthcare cost savings, and dissemination of results) will be conducted in collaboration with the Independent Evaluator.

SAN FRANCISCO EMERGENCY MEDICAL SERVICES AGENCY

Proposed as addendum to
Policy Reference No.: 5000

DESTINATION POLICY: SOBERING CENTER

I. PURPOSE

A. To delineate clinical criteria for when patients should be transported to the alternate destination of a sobering facility for acute alcohol intoxication.

II. POLICY

A. This policy is a proposed addendum to the *Destination Policy #5000* identifying approved ambulance-transport destinations for the Emergency Medical Services (EMS) Agency.

B. When a patient is in need of treatment related to alcohol intoxication only with no other emergency medical need, the ambulance crew may bring the patient directly to the sobering facility as dictated in the algorithm below.

III. DESTINATION DECISION

A. Sobering Services: Intoxicated patients with no acute medical condition(s) or co-existing medical complaints may be transported to the San Francisco Sobering Center, if the patient meets the following criteria:
   i. Be at least 18 years or older;
   ii. Found on street / in a shelter or in Police Department custody;

B. Voluntarily consent or have presumed consent (when not oriented enough to give verbal consent) to go to the Sobering Center;

C. Not be on the San Francisco Sobering Center "Exclusion List."

D. Be medically appropriate by meeting ALL of the following criteria:
   i. Indication of alcohol intoxication (odor of alcoholic beverages on breath, bottle found on person);
   ii. Glasgow Coma Score of 13 or greater;
   iii. Pulse rate greater than 60 and less than 120;
   iv. Systolic blood pressure greater than 90;
   v. Diastolic blood pressure less than 110;
   vi. Respiratory rate greater than 12 and less than 24;
   vii. Oxygen saturation greater than 89%;
   viii. Blood glucose level greater than 60 and less than 250;
   ix. No active bleeding;
   x. No bruising or hematoma above clavicles ;
   xi. No active seizure; and
   xii. No laceration that has not been treated.

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Sobering Center Medical Protocols

Created March 2009
Updated August 2016

SOBERING PROTOCOLS
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SOBERING CENTER ADMISSION CRITERIA

Intoxicated clients with no acute medical condition or co-existing medical complaints may be transported to the San Francisco Sobering Center, if the client meets the following criteria:

All of the following must be present:

a. Indication of alcohol intoxication (odor of alcoholic beverages on breath, bottle)
b. Glasgow coma score 13 or greater
c. Systolic blood pressure above 80
d. Diastolic blood pressure under 110
e. Pulse rate over 60 and under 140
f. Oxygen saturation above 89%
g. Respiratory rate over 8 and under 24
h. Temperature above 93º F (33.9º C) and below 101.5 º F (38.6 º C) tympanic
i. Blood sugar level over 50 and below 250
j. No active bleeding noted
k. Not actively seizing
l. No open wounds or lacerations
m. Ability to provide basic information
n. Age 18 or older

Clients may enter via one of the following sources of entry:

a. Ambulance (EMS) transports;
b. Homeless Van Service;
c. Police Department custody;
d. Screened and cleared by Hospital ED or Clinic and sent via Van;
e. Case management/ outreach service providers;
f. Client pre-approved by Sobering management;
g. Walk-ins including case managed clients.

Exclusion Criteria:

a. Client has not consumed alcohol.
b. Client is intoxicated solely with other drugs, illicit or prescription, which does not include alcohol.
c. Client has obvious trauma which does not have corresponding documentation stating condition has been medically cleared. These clients must be refused by nursing staff upon arrival.
d. If client is found to not meet inclusion criteria, or is in need of immediate medical attention after intake, refer to appropriate protocol(s).

Managing Inappropriate Referrals:

a. If the client does not meet inclusion criteria, please assist the referring agency or individual to find a more appropriate disposition. It is the responsibility of the referring agency or individual to arrange and transport to an alternative disposition.

CALL 911/ EMERGENCY RESPONSE

Nursing staff must call 911 when assessing a client who presents with:

1. Unresponsiveness
2. Signs of recent head trauma
3. Cardiac Arrest
4. Chest Pain
5. Grand mal seizure > 2 minutes or multiple seizures
6. Abdominal and/or chest wounds
7. Vomiting frank red blood or coffee ground emesis
8. Black tarry stools or bright red bloody stools
9. Hemoptysis
10. Violent Behavior
11. Actively suicidal and/or homicidal
12. Systolic blood pressure < 80 or < 90 and unable to take POs
13. Systolic blood pressure > 180 with headache or confusion
14. Diastolic blood pressure > 110 with headache or confusion
15. Heart rate < 60 with dizziness, syncope or altered mental status
16. Heart rate > 140
17. Blood glucose < 50
18. Blood glucose < 60 and stuperous or obtunded
19. Respiration less than 8 or greater than 24 per minute
20. Audible wheezing and respiratory distress
21. Oxygen saturation less than 90%
22. Temperature < 93º F (33.9º C) tympanic

An Automatic External Defibrillator (AED) is accessible in the San Francisco Sobering Center at all times for instances of suspected cardiac arrest. In case of use with or without shock, email Deputy Director and Program Director in order to provide maintenance.

Emergency boxes and oxygen source (concentrator or tank) is available within the Sobering Center clinical station for medical emergencies.

Sobering management including the Deputy Director and Program Director **should be alerted immediately of all critical emergencies in the Sobering Center involving cardiopulmonary resuscitation (CPR), AED/ defibrillator use, and/or resulting in client death.**

Staff may contact management at any time 24/7 with questions regarding client care, staff safety, or facility operation.

CONTACT MEDICAL BACK-UP

What is Medical Back-up:

During encounters, a client may present with a clinical scenario necessitating medical assessment or evaluation. Medical back up includes onsite nurse practitioners and physician assistants, the Medical Director, ZSFGH emergency department attending-on-duty, and 911. The particular clinical scenario will often dictate which medical back up is appropriate as stated in the protocols.

How to Contact Medical Back-Up:

During business hours seven days a week 8am – 5pm, consult with the onsite provider on duty or contact the Medical Director via pager.

If unavailable, or between 5pm – 8am, call ZSFG ED at (628) 206-8111 and ask for attending on duty (AOD).

Procedure:
All nursing staff must state *"I am calling from the San Francisco Sobering Center"* and be prepared to give the following information:

- Client age,
- Gender,
- Current presentation and reason for calling,
- Current level of consciousness,
- Orientation,
- Ability to ambulate,
- Ability to take PO fluids,
- Relevant medical history.

Sobering staff should state *that: "According to our protocols, this patient requires urgent evaluation. Should this patient be sent by 911, transport (code 2) ambulance, or Van?"*

Forms:
Referring staff should fill out the *Acute Transfer Form*. Make a photocopy of the form. Give the transporting team (EMS or Van) one copy, and place the other in the ATF Binder.

Please see individual protocols for indications to contact the Medical Back Up.

CLIENT REFUSAL OF MEDICAL SERVICES

Scenario:

A client may present with a clinical need requiring assessment or medical attention at the emergency department. This may be determined via the attached protocols and/or clinical judgment of staff.

During certain encounters, a client may verbally state they are not in need of additional medical services. This can happen with either a Sobering client or a Respite client. Examples may include (but are not limited to): decreasing oxygen saturation, symptoms of cardiac instability, suspected systemic infections, post-fall confusion, or severe undertreated wounds.

If staff feel the client is at risk of decompensation or worsening condition, and the client is still refusing care, medical back-up should be contacted for onsite assessment. Emergency medical staff (paramedics, EMTs, supervisors/captains) can offer additional support in negotiating a plan of care with the client.

Procedure:
Contact medical back-up or 911 directly as indicated in the related protocol. Depending on the situation, you may or may not need immediate response to engage with the client and this can be determined on a case-by-case basis.

- Provide information as appropriate for medical back-up call
- Inform dispatch that the client is at risk for worsening condition (be specific to the scenario), but is currently refusing treatment.
- Upon arrival of EMS, provide your report and indicate your clinical concerns regarding the client.
- EMS should assess client at this time. If client still refuses transport to further care, determine with EMS if:
    1. Additional support is needed to encourage/order participation (police or sheriff). In this case, EMS or Sobering staff should contact 911 dispatch for further support. Or,
    2. Client has capacity to refuse transport. If it is determined the client can refuse transport:
        - Have EMS complete an AMA form. Make and keep a copy.
        - Document in CCMS specifically how capacity was determined.
            - Reference in the Appendix: *"Evaluating Patients' Decision Making Capability"* by Thom Dunn.

ABDOMINAL PAIN

Subjective information

- Client complains of abdominal pain, nausea, vomiting, diarrhea, blood in emesis or stool, constipation
- History of ulcers, constipation, gallbladder problems, recent abdominal trauma, pancreatitis, HIV/AIDS, GI bleeding
- Menstruating or pregnant, abnormal vaginal discharge, unprotected sex
- Poor intake over past few days
- Medications (particularly ASA, NSAIDS)

Objective information

- Vital Signs
- Abdominal guarding, absent bowel sounds, abdominal distention or rigidity
- Signs of Dehydration (low blood pressure, sunken eyes, decreased skin turgor)

Assessment

Abdominal pain can be caused by something simple such as gas or indigestion, or may be a serious life threatening condition like internal bleeding. Careful assessment and observation must be done.

See related protocols *Nausea & Vomiting* and/or *Diarrhea* as appropriate.

Plan

1. Evaluate vitals signs. Assess for shock related to internal bleeding, including hypotension (BP <100/60) or tachycardia (HR >110).
2. Call 911 if vomiting frank blood or coffee grounds, passing black tarry stools (melena), or bright red bloody stools (hematochezia).
3. Abdominal pain: If patient complains of abdominal pain offer fluids and reassess in 30 minutes. If pain is persistent and not improving, and vital signs are within normal limits, send patient to ED via non-emergent transport.
4. Abdominal pain: If pain persists and vital signs are abnormal (see #1), call 911.
5. Pregnancy: Any pregnant women with abdominal pain send via non-emergent transport to ED.
6. Document into Adverse Event section of Sobering Center Encounter Form.

ABUSE

Registered Nurses are among the health practitioners who must report known or observed instances of abuse to the appropriate authorities. (Abuse Reporting Requirements CA Board of Registered Nursing, CA Nursing Practice Act 2010 Edition). Medical Assistants are not mandated reporters; however, any observations by a medical assistant must be reported immediately to the RN on staff to further evaluate available information.

Subjective information

- Report or client statement of an incident that reasonably suggests physical abuse, abandonment, isolation, financial abuse, or neglect of client or other individual.
- A client (age 18 and over) has reported rape and/or sexual assault.
- Client reports known injury or abuse of another elderly person, adult dependent or child under 18, who may or may not be present in the Sobering Center

Objective information

- Visible wounds or other physical injury is present
- Paperwork or reports indicating investigation or presence of abuse
- Client is an elder or dependent adult with suspected presence of abuse

Assessment

- If client is able and willing, perform head to toe assessment to confirm there are no injuries requiring immediate medical care.
- Do not attempt to investigate the abuse or remove any evidence (such as clothing)

Plan

7. If immediate medical assistance is needed, refer client to the ED. Call medical back-up for advice on transport method and location. Contact provider during business hours for assessment of non-urgent injuries.
8. Document all statements of abuse in exact words, and document all injuries explicitly (i.e. location, nature of wound/injury, size, cause of injury, and photograph as able).
9. Staff should report reasonable suspicions of abuse to local law enforcement officials in accordance with the California law; specifically the suspicion of elder/dependent adult abuse, child abuse, assaultive and abusive conduct and rape/sexual assault.
10. Although abuse reporting is mandated by law, caution should be taken not to unnecessarily violate the patient's confidentiality expectations. The SFGHMC Risk Manager (415-206-6600) should be contacted before any psychiatric information is disclosed or if there are any questions regarding information to disclose.
11. Follow Community Oriented Primary Care (COPC) Policy 1.01 for specific reporting of Elder Abuse, Child Abuse, Assaultive and Abusive Conduct or Sexual Assault/Rape.
12. Alert Sobering Center Program Director and/or Deputy Director if a report is filed.

Refer to COPC policy 1.01 Victim of Abuse for further guidelines. *http://in-sfghweb03.in.sfdph.net/copc/policies%20and%20procedures/OTHERS/HTML%20documents/1.01%20Victim%20of%20Abuse.htm*

ALCOHOL (ETHANOL) POISONING

Subjective Information

- Amount of alcohol consumed, complaints of nausea, difficulty standing or sitting

Objective Information

- Stopped or decreased respirations with <8 breaths per minutes
- Seizure activity
- Irregular pulse or tachycardia
- Hypotension
- Pallor or turning blue
- Continued emesis
- Unresponsiveness or stupor
- Confusion or slurred speech

Assessment

Alcohol (ethanol) intoxication is a diagnosis of exclusion and should be considered only after ruling out more serious conditions such as head trauma, hypoxia, hypoglycemia, hypothermia, or other metabolic or physiologic differentials.

Alcohol poisoning can occur when an individual consumes an excessive amount of alcohol in a short time, particularly if the amount is greater than typical intake. Alcohol poisoning is different than intoxication or "being drunk" and is considered a medical emergency. Alcohol poisoning is not common, but is possible, in chronic alcoholics.

Due to ongoing metabolism after ethanol is absorbed from the gastrointestinal tract, an individual may continue to become more intoxicated even after ingestion has stopped and/or vomiting has occurred.

Plan

1. Lay client on their side in recovery position to avoid aspiration.
2. Obtain finger-stick blood glucose to assess hypo/ hyperglycemia (see protocol).
3. Assess client for injury including trauma or bleeding.
4. If client is able, attempt to re-hydrate orally with water or electrolyte solution.
5. Call 911 for emergency medical care for patients with decreased or absent respirations (see protocol), tachycardia (see protocols), altered mental status (see protocol) and seizure (see protocol).
6. Refer to medical provider during work hours.
7. Reorient and reassure clients with confusion or disorientation.
8. Document into Adverse Event section of Sobering Center Encounter Form.

ALCOHOL WITHDRAWAL

Subjective Information

- Client complains of withdrawal, strong craving for alcohol, past history of seizures, number of hours since last drink

Objective Information

- Tremors, visual hallucinations, seizures
- Vital signs (HR >120; SBP either >180 or with large fluctuations)
- Clients with D.T. (delirium tremens) - the most serious and dangerous form of alcohol withdrawal - will have agitation, disorientation, tachycardia, hypertension, and may have fever and diaphoresis.

Assessment

Alcohol withdrawal is common in chronic alcoholics and may occur even while the patient is still drinking and still has detectable blood alcohol level. Severe alcohol withdrawal (DT's) is less common and is considered a medical emergency.

Plan

1. Call 911 for emergency medical care for patients with agitation, tachycardia (see protocol), hypertension (see protocol), and seizure (see protocol).
2. Reorient and reassure clients with hallucinations, tremor and mild disorientation.
3. Refer to medical provider during work hours.
4. Document into Adverse Event section of Sobering Center Encounter Form.

ALLERGIC REACTION/ ANAPHYLAXIS

Allergic reactions range from mild, self-limited symptoms to rapid death after exposure to an antigen which has been injected, ingested or inhaled. Reactions:

1. Mild to moderate allergic reactions involve the gastrointestinal tract and skin.
2. Severe/anaphylactic reactions involve the respiratory and/or cardiovascular systems. These may initially appear minor (i.e., coughing**,** hoarseness, dizziness, mild wheeze) but any involvement of the respiratory tract or circulatory system has the potential to rapidly become severe. Death can occur within minutes.

Subjective information

- Client states ingestion of or contact with substance of which they are allergic.
- Complaints consistent with below-listed physical manifestations.

Objective information

- Difficulty breathing
- Glascow Coma Scale < 13 (see Appendix I)
- Signs/ Symptoms may involve:
  - Skin (Itching and hives or welts; flushing or skin edema; tingling; itching);
  - Gastrointestinal (Abdominal pain; nausea/vomiting; diarrhea);
  - Cardiac (hypotension; palpitations; chest pain; respiratory; difficulty breathing; bronchospasm, wheezing);
  - Upper airway swelling (including lips and tongue).

Assessment

Reactions involving more than one organ system or causing difficulty breathing or hypotension/shock **are by definition severe** and may progress rapidly to death. Observe the client for rapid increase in severity of signs/symptoms, as the sequence of itching, cough, dyspnea and cardiopulmonary arrest can lead quickly to death.

Plan

Mild: Cutaneous symptoms only including angioedema and hives:

a. Assess area for other possible skin conditions, including lice, lacerations, burns.
b. Medications:
   a. **Diphenhydramine** (Benadryl) PO: Adults: 25-50mg PO every 6-8 hours. Adult not to exceed 400 mg/day.
   b. **Famotidine** (Pepcid) PO: Adults: 20mg PO given simultaneously with Diphenhydramine. Maximum 2 doses total.

Severe/ Anaphylaxis:

a. Call EMS/911 and/or the provider on duty. Do not leave client unattended.
b. Administer **epinephrine IM**: 0.3mg IM via EpiPen.
c. Apply **oxygen** at 8 L/min by simple mask or 4 L/min via nasal cannula.
d. Assure airway; begin CPR if indicated. Place client in supine position, legs elevated, if tolerated. Monitor vital signs q5mins.
e. Any client who has received epinephrine must be transported by EMS to the emergency department.

ALTERED MENTAL STATUS

Subjective information

- Knowledge of client baseline mental status and how current mental status compares
- Client unable to give accurate information

Objective information

- Confusion and disorientation
- Glascow Coma Scale < 13 (see Appendix I)
- Focused exam including:
  - Pupils [equality, size, and responsiveness]
  - Oxygen saturation by pulse oximeter, blood pressure and pulse
  - Presence of asterixes (flap)
  - Finger stick glucose (See hypo/hyperglycemia protocol)

Assessment

Changes in mental status can be a result of various situations/conditions including but not limited to: stroke, metabolic syndromes, medications, infections or head injury. Any of these conditions may coexist with intoxication of alcohol or any other substances. Intoxication can impair ability to answer questions and ambulate independently. If the client is not able to give simple yes or no answers about him or herself, he may have dangerously altered mental status and must be referred to the ED for further evaluation. Abnormalities of focused neurological exam can point to serious problems.

Plan

1. Obtain finger stick blood glucose. If blood glucose < 50, call 911 and see related protocol.
2. Call 911 if client is totally unresponsive, unable to follow simple commands, or severely disoriented.
3. Ask client about recent head injury. Examine for contusions and abrasions.
   a. Follow head injury protocol as applicable.
4. Perform neurological assessment on admission and every 30 minutes thereafter if client presents with anything atypical from expected alcohol intoxication.
   a. Check both pupils for reactivity and equal size, check for ability to respond to simple commands, and check movements of 4 extremities.
5. Refer to ED if client's condition deteriorates or does not recover as expected. Contact medical backup for transportation method and location.
6. Monitor level of consciousness and progress in improvement every 1-2 hours. If after 2-4 hours client level of consciousness is not improved, transport to ED by non-emergent ambulance.
7. Confusion/Dementia: If you have a client that remains altered and a safe discharge is not obvious (aka continued confusion, dementia, elderly with stroke), sending them to the ED for advanced assistance could be warranted. Contact medical backup and/or the program director or deputy director for support.
8. Document into Adverse Event section of Sobering Center Encounter Form.

BRADYCARDIA

Subjective information

- Current cardiac and/ or other medications (e.g. atenolol, metoprolol, clonidine)
- Past history of pulse abnormalities
- Fatigue, dizziness

Objective information

- Pulse rate <60
- Regular or irregular
- Abnormal characteristics ie. weak, thready or bounding pulse

Assessment

Low pulse or bradycardia may be due to a drug effect, heart problem, syncope, or may be normal in athletic persons.

Plan

1. Any client with a pulse <60 must be referred to the ED. Call medical back-up for advice on transport method and location.
2. Clients with a pulse <60 accompanied with dizziness, syncope, or other signs of altered mental status (see Altered Mental Status protocol) should be referred to the ED via 911.
3. Refer to medical provider for evaluation during working hours.
4. Document into Adverse Event section of Sobering Center Encounter Form.

CHEST PAIN

Complaints of chest pain must be taken seriously. The patient who describes chest pain represents an immediate challenge, as the symptom is often of benign etiology, but it may indicate imminent catastrophe. Try to gather as much information as possible including patient history.

Subjective information

- The patient with myocardial ischemia may feel chest "pain." Other descriptions include squeezing, tightness, pressure, constriction, strangling, burning, heart burn, fullness in chest, band-like sensation, knot in the center of chest, lump in the throat, ache, heavy weight on chest, and toothache (with radiation to lower jaw).
- Acute chest pain with a **classically ripping or tearing quality may indicate acute aortic dissection**. This is a significant medical emergency with a high risk of death. Symptoms typically include severe, sharp or "tearing" posterior chest or back pain or anterior chest pain which can radiate in the thorax or abdomen. It is most commonly seen in patients with severe hypertension or recent cocaine use.
    - Note: **If dissection suspected, provide oxygen** but do not administer other medications such as aspirin.

"PQRST" Assessment

Nurse should assess the subjective information for presence of Pain; Quality of Pain; Region/Radiation; Severity; and Temporal characteristics.

Other information to obtain:

- Past Medical History
- Associated Symptoms
- Medications
- Vital Signs
- Skin signs

Assessment and Plan

1. The client complaining of chest pain requires an emergency medical assessment and 911 should be called. A client complaining of chest pain should not be admitted to the San Francisco Sobering Center.
2. Medications: Clients with active chest pain should be provided (prioritizing administration in order listed):
    a. **Oxygen**: 4 L/min via nasal cannula
    b. **Aspirin**: 162-325mg to be chewed PO x 1 *except* when primary complaint is "tearing chest pain"
    c. **Nitroglycerin**: 1 tab (0.3-0.6mg) sublingually x 1 *except* when primary complaint is "tearing chest pain". Must have SBP >110mmHg to administer. Nitroglycerin administration may be delayed per clinical judgment until EMS arrival to ensure IV access.
3. Upon EMS arrival, report medications provided and hand off further treatment.
4. Document into Adverse Event section of Sobering Center Encounter Form, and within CCMS database.

COUGH

Subjective Information

- History of tuberculosis (TB) exposure
- Complaints of cough, weight loss, night sweats
- History of +PPD (TB skin test) or +QFT (QuantiFeron)

Objective Information

- Persistent coughing
- +PPD or +QFT (QuantiFeron)
- Hemoptysis (bloody cough)
- Clinical alert stating exposure to tuberculosis

Assessment

Homeless individuals are at risk of contracting tuberculosis and exposing others if they have active pulmonary tuberculosis. Alcoholics and persons with poor nutrition and immuno-suppression (e.g. HIV infection) are susceptible to reactivation of latent TB. All homeless persons and staff who work with the homeless population should have screening for tuberculosis at least once every 6 months.

Plan

1. Clients with intermittent cough: place a mask on client and alert provider for evaluation. If no provider available, refer client to urgent care after sobering.

2. Clients who refuse to wear a mask should be discharged and referred to urgent care or an emergency room. See "Client Refusal of Medical Services" as appropriate, if a higher level of care is needed and refused.

3. Clients with persistent cough require urgent evaluation. Place mask on client. Alert provider during business hours. If no provider available, contact medical backup and transport client to emergency department via non-emergent transportation.

4. Clients with hemoptysis, cough with fever or difficulty breathing (see shortness of breath protocol) require urgent evaluation. Call 911 for transportation.

5. Staff has the option of wearing a mask as appropriate.

6. Document into Adverse Event section of Sobering Center Encounter Form.

DEHYDRATION

Subjective Information

- Client complains of being thirsty
- Client has not consumed any non-alcoholic fluids for greater than 4 hours
- Exposure to hot conditions or dressed inappropriately

Objective Information

- Dry mucus membrane, decreased skin turgor, sunken eyes
- Low blood pressure (see hypotension protocol)
- Tachycardia (see tachycardia protocol)

Assessment

Alcohol in any form may cause dehydration due to a diuretic effect. Chronic alcoholics may not drink other fluids and become dehydrated.

Plan

1. All clients are offered and re-offered oral rehydration
2. All clients who are alert enough should be encouraged to drink as much oral rehydration as possible.
3. If patient unable to hydrate due to inability to tolerate fluids, vomiting and/or diarrhea, call medical back-up for transport to ED. This may indicate an underlying condition requiring a higher level of care.
4. Document into Adverse Event section of Sobering Center Encounter Form.

DIARRHEA/ LOOSE STOOLS

Subjective information

- Client complains of abdominal pain, nausea, vomiting, diarrhea, blood in emesis or stool, constipation
- History of constipation, gallbladder problems, pancreatitis, HIV/AIDS, GI bleeding
- Menstruating or pregnant, abnormal vaginal discharge, unprotected sex
- Poor intake over past few days
- Client report of recent diagnosis of shigella, c-diff (clostridium difficile)
- Rectal pain

Objective information

- Vital Signs
- Signs of Dehydration (low blood pressure, sunken eyes, decreased skin turgor)
- Bloody stool or melena

Assessment

Abdominal pain can be caused by something simple such as gas or indigestion, or may be a serious life threatening condition like internal bleeding. Careful assessment and observation must be done.

Plan

1. Evaluate vitals signs. Assess for shock related to internal bleeding, including hypotension (BP <100/60) or tachycardia (HR >110).

2. Encourage oral rehydration with electrolyte solution.

3. Assess for history of transmissible disorder such as c-diff or shigella. If any recent history of un- or undertreated infectious process, contact medical back-up for likely transport to ED or urgent care for further evaluation.

4. Call 911 if vomiting frank blood or coffee grounds, passing black tarry stools (melena), or bright red bloody stools (hematochezia)

5. If bloody, accompanied by fever, or more frequent than once/hour, patient should be transported via non-emergent transport to ED.

6. Document into Adverse Event section of Sobering Center Encounter Form.

FALLS

Subjective information

- Client states s/he has just fallen
- Client has a fall witnessed by other clients or staff

Objective information

- Witnessed fall
- Physical signs of trauma consistent with a fall (swelling, lacerations, deformities)
- Client found on floor

Assessment

Due to the effects of intoxication, clients are at risk of falling. A fall can originate from a standing position or from a sitting or lying position, such as rolling out of bed or out of a wheelchair. A fall may result in physical trauma including head trauma, loss of consciousness, internal hemorrhaging, fractures and soft tissue damage. A thorough examination is critical to evaluate for possible injury resulting from a fall.

Plan

1. Upon notification a client is on the floor and/ or has fallen, either by report or witnessing a fall, immediately assess the ABCs (airway, breathing, circulation) and the level of consciousness of the client.
2. If client is unresponsive, has a new sign of head injury, or a change in mental status, call 911. Provide life-sustaining interventions as appropriate until assistance arrives.
3. For any signs of head or neck injury, encourage client not to move and implement cervical-spine precautions as able until assistance arrives to evaluate client.
4. Check vital signs, including blood pressure, pulse, respirations, and temperature. Check blood glucose level. For abnormal results, refer to respective protocols.
5. Perform neurological assessment. Check both pupils for reactivity and equal size, check for ability to respond to simple commands, check movement of 4 extremities. For any change in neurological status, call 911.
6. For any change in client status from intake or most recent nursing assessment, refer to appropriate protocol.
7. Notify staff provider during business hours.
8. If there are no obvious signs of injury, assist client back to bed.
9. Client should be monitored closely for change in level of consciousness and orientation throughout remainder of sobering stay. Perform neurological assessment every 1 hour for two hours; then continue to perform neurological assessment every 2 hours thereafter with vital signs. Refer to Head Injury protocol for assessment and plan.
10. Document into Adverse Event section of Sobering Center Encounter Form.

FEVER

Subjective information

- Chills and sweats
- Any infected wound, cough, sore throat, abdominal pain, vomiting or diarrhea, dysuria
- Taking antibiotics
- HIV/ AIDS diagnosis

Objective information

- Temperature greater than 100.9 ºF (38.3 ºC) (tympanic)
- Elevated pulse
- Signs of infection or abscess

Assessment

The most common cause of fever in this setting is acute infection. It may also be a result of a variety of other conditions, including drug reactions, tumors, dehydration, and alcohol withdrawal. A fever is never considered a normal finding. Per accepted clinical practice standards, **acetaminophen (Tylenol)** is not typically indicated for fevers less than 102.0 ºF.

Plan

1. Refer to ED any client with a temperature greater than 101.5 ºF (38.6 ºC) (tympanic). Call medical back up for mode of transportation.
    a. For clients able to tolerate orals, offer cold water until transport arrives.

2. Clients with a temperature greater than **100.9 ºF (38.3 ºC) accompanied by any of the following** must be referred to the ED as this combination of vital sign abnormality is worrisome for sepsis:
    a. Blood pressure < 90/60; Pulse > 100; Respiratory rate > 20
    b. Refer also to appropriate protocols for vital sign abnormalities as needed.
    c. Call medical back up for mode of transportation.

3. For temperature between 100-101.4 ºF, recheck temperature and blood pressure every 1-2 hours. Refer to medical provider during business hours. If no provider on duty, ask client to follow-up with Urgent Care after sobering stay.
    a. Rehydrate client as per dehydration protocol.

4. Acetaminophen should not be provided to clients appropriate for ED transfer due to fever conditions as indicated above. This may mask the fever and alter the diagnostic workup.

5. Document into Adverse Event section of Sobering Center Encounter Form, and within CCMS.

HEAD INJURY

Subjective information

- History of head injury: including when and how it occurred
- Any loss of consciousness at or after time of head injury
- Headaches, nausea, vomiting, lethargy, visual disturbance, weakness of an extremity, problems with coordination

Objective information

- Glasgow coma scale <13 (see Appendix I)
- Head contusions or laceration
- Level of consciousness
- Orientation to person, place, time, and situation
- Pupils; equality, size and reactivity
- Abnormal gait
- Ability to move all four extremities

Assessment

Persons with recent head injury, especially with loss of consciousness, are at risk for neurological complications. Signs of impending neurological disaster are easily confused with signs of acute intoxication. These clients must be observed carefully.

Signs of initial intracranial event are tachycardia and normal or low blood pressure.
Late signs are widening pulse pressure (when the SBP rises while the DBP falls or stays the same) and bradycardia.

Plan

1. If client is unresponsive, presents with signs of recent head trauma (red or purple bruises anywhere above the clavicles, lacerations, dried blood) or with abnormal neurological signs (unequal pupils, paralyzed limbs, not sobering as expected), call 911.

2. If client reports recent head injury but shows no obvious signs, client should be monitored closely for change in level of consciousness and orientation.
   - Monitor level of consciousness and orientation every 1 hour.
   - Perform neurological assessment on admission and every 1 hour thereafter. Check both pupils for reactivity and equal size, check for ability to respond to simple commands, check movement of 4 extremities.
   - If client does not improve as expected or becomes increasingly more confused, client should be sent to ED via 911.
   - Document into Adverse Event section of Sobering Center Encounter Form.

HYPERTENSION

Subjective information

- Headache, chest pain, confusion, dizziness, irritability, past history of elevated blood pressure, current antihypertensive medications

Objective information

- Systolic blood pressure greater than 160
- Diastolic blood pressure greater than 90

Assessment

Elevated blood pressure may be due to essential hypertension, stress, agitation, effect of drugs, chronic alcoholism, alcohol withdrawal, or various medical conditions. Often hypertensive persons are asymptomatic. The constellation of headache, confusion, and/or chest pain with SBP>180 and DBP>110 may represent **malignant hypertension**, a medical emergency.

Clients may present with elevated blood pressures related to the stress and activity during transportation and admission to the Sobering Center.

Plan

1. Upon arrival to the Sobering Center, assist client to remove clothing from the upper body in order to obtain the most accurate blood pressure. Offer fluids and allow client to rest for 5-10 minutes.
2. After the short rest period, take initial blood pressure. If elevated with SBP>180 or DBP>110, re-check blood pressure on opposite arm.

    - If client presents with elevated blood pressure without other symptoms (headache, chest pain, confusion), provide the client rest and water.
    - Re-check in 30 minutes. If after 30 minutes, the blood pressure remains elevated above SBP>180 or DBP>110, contact medical backup and refer to ED via non-emergent transport.

    - If client has SBP>180 or DBP>110, with symptoms of headache, chest pain or confusion, refer client to emergency department via 911.

    - If SBP is 160-179 or DBP is 90-109, rehydrate with 1 liter of oral fluids and recheck blood pressure in 1 hour.

3. Refer to medical provider for evaluation during working hours.
4. Once blood pressure is within parameters, recheck blood pressure every 2 hours.
5. Assess for other signs of alcohol withdrawal (see Alcohol Withdrawal protocol).
6. Provide appropriate client teaching if able.
7. Document into Adverse Event section of Sobering Center Encounter Form.

HYPOGLYCEMIA/ HYPERGLYCEMIA

Subjective information

- Any past history of diabetes
- Past history of hyper- or hypoglycemic episodes
- Current medications
- Compliance with blood glucose checks and insulin

Objective information

- Blood glucose level
- Signs/ symptoms of hypoglycemia ex: weakness, sweating, rapid pulse, tremor, hunger, anxiety, confusion, disorientation, and deterioration of level of consciousness.
- Signs/ symptoms of hyperglycemia or DKA: confusion, lethargy, abdominal pain, nausea.

Assessment

Hypoglycemia and hyperglycemia may be difficult to distinguish from intoxication and withdrawal syndromes. Identification of diabetes and prevention of hypoglycemia are the main objectives of care. Hypoglycemia in general is less well tolerated and more rapid in onset than hyperglycemia. Alcoholics tend to deplete their sugar stores and are more prone to hypoglycemia than non-alcoholics. Diabetics are also prone to dehydration due to excessive diuresis. Perform fingerstick glucose on any client whose status is uncertain.

Plan

Blood glucose should be obtained at least once during sobering stay for all known diabetics. Observe all clients for signs and symptoms of hypoglycemia and dehydration.

Hyperglycemia (FSBG >250).

1. If FS blood glucose is greater then 250 clients need to be referred to the ED. Call medical back-up for advice on transport method and location.
2. Encourage diabetics to use their medications and insulin as directed.
3. Encourage fluids.

Hypoglycemia (FSBG <70)

4. For FSBG 60-69, give nutritional snack and recheck in 1 hour.
5. For FSBG 50-59, give **glucose tab** and nutritional snack. Recheck at 20 minutes and 60 minutes. If FSBG does not elevate above 69, refer to ED via nonemergent transportation.
6. For FSBG <50, refer to ED via 911. Administer **glucose tabs or gel** if client able to tolerate POs while awaiting 911.
7. For clients with FSBG <60 and stuporous/ obtunded, call 911 and use glucagon pen while awaiting 911. If no glucagon, a small amount of **glucose gel** may be administered orally. Put on gloved finger and rub inside cheeks and on gums.
8. All persons stuporous/obtunded or unable to comply with oral glucose shall be referred to the ED via 911 for evaluation (see Altered mental status protocol).
    a. Administer **glucagon pen** while awaiting 911.
9. Document into Adverse Event section of Sobering Center Encounter Form.

HYPOTENSION

Subjective information

- Dizziness, especially when standing or getting up quickly
- Use of any antihypertensive medication
- Use of diuretics

Objective information

- Systolic blood pressure less than 100
- Diastolic blood pressure less than 60
- Evidence of blood or fluid loss

Assessment

A systolic blood pressure less than 90 is not a normal finding per medical standards; however, in some individuals a reading of 90 can be normal. Hypotension is most often a result of dehydration in this setting; it may also be due to blood loss, drug effect, heart problems, or hypothermia.

Plan

1. Recheck blood pressure immediately if SBP less than 100 or DBP less than 60.
2. Interventions depend on intake systolic blood pressure:
    a. SBP < 80, call 911.
    b. SBP < 90, and client is unresponsive or unable to take PO fluids, call 911.
    c. If SBP is 80-99 and client is arousable and able to take PO fluids, give oral rehydration of 1 liter or more and recheck in 30 minutes. If SBP less than 90 after 30 minutes, call medical backup.
3. Continue to monitor blood pressure every 2 hours for SBP between 90-100 or DBP less than 60.
4. Though clients on medications should be encouraged to comply with their medication regimen, a client with hypotension on anti-hypertensive medications should not take these medications until provider evaluation.
5. Document into Adverse Event section of Sobering Center Encounter Form.

HYPOTHERMIA

Subjective information

- Complains of feeling cold
- Exposure to cold, especially wet, weather
- Inadequate clothing

Objective information

- Temperature less than 97º F (36.1 º C) oral or 96.5º (35.8 º C) tympanic bilaterally
- Shivering
- Lethargic
- Damp or inadequate clothing
- Body is cold to touch
- Diminished level of consciousness

Assessment

A subnormal temperature in this setting is most often as a result of exposure. Rarely will it be a sign of other disorders such as sepsis or hypothyroidism.

Plan

1. Provide radiant heat, dry clothes, blankets, warm liquids (note: never force fluids on a client with diminished level of consciousness).
2. Call 911 if temperature is less than 93º F (33.9 º C) and client has a diminished level of consciousness.
3. Call medical back-up or non-emergent ambulance transport if temperature < 93º F (33.9 º C) and client is fully alert and oriented.
4. Recheck temperature every 1 hour until 97º F (36.1 º C) oral or greater.
5. If temperature does not improve over 3 hours, and client is alert and oriented, send to emergency department via non-emergent transportation. For altered level of consciousness, refer to Altered Mental Status protocol.
6. Document into Adverse Event section of Sobering Center Encounter Form.

LICE AND SCABIES

Subjective information

- Itching or report of rash on head, neck, axilla, waist, hands, genital area, etc.
- History of allergies

Objective information

- Live lice on body or in seams of clothing
- Nits and lice in hair
- Excoriations
- Can not stop scratching
- Diagnosis from medical provider indicating active scabies or lice

Assessment

Lice infestation most commonly occurs in hairy parts of the body. There are two forms, head lice and body lice, which can be observed by visual assessment. Head lice are extremely contagious and difficult to successfully treat.

Scabies is an infestation caused by mites that burrow into the skin, usually into the fingerwebs, waist, axilla and groin. Providers look for evidence of burrows. These organisms are too small to be observed by routine visual assessment.

Plan

1. Assess clients for lice and scabies at intake. Use best judgment regarding safety and risk for infestation in obtaining vital signs.
2. If client warrants treatment, treat clients after intake and prior to assignment of bed.
3. Lice treatment:
    - Remove all clothing and belongings from client.
    - Wash all clothes with hot water and dry at least 30 minutes in high heat dryer.
    - Have client shower and wash thoroughly with staff supervision.
    - Treat all clients with lice in hair with **1% permethrin** (Nix) shampoo.
    - Leave lotion on for 10 minutes. After ten minutes, comb through all hair with comb provided in Nix packet.
    - After combing, wash thoroughly with soap and water.
    - Inform client that treatment should be repeated in 7-10 days. Client should follow-up with primary care or urgent care.
    - Client should be returned to clean bedding. Any bedding used by client before shower should be washed immediately.
4. For clients with suspected scabies, refer to onsite provider for further evaluation. If no onsite provider available, refer client to Tom Waddell Urban Health Clinic or SFGH Urgent Care for treatment.
5. Document treatment on Sobering Center Encounter Form.

NAUSEA and VOMITING

Subjective information

- Client complains of abdominal pain, nausea, vomiting, diarrhea, blood in emesis or stool, constipation
- History of ulcers, constipation, gallbladder problems, recent abdominal trauma, pancreatitis, HIV/AIDS, GI bleeding
- Poor intake over past few days
- Medications (particularly ASA, NSAIDS)

Objective information

- Vital Signs
- Abdominal guarding, absent bowel sounds, abdominal distention or rigidity
- Signs of Dehydration (low blood pressure, sunken eyes, decreased skin turgor)
- Bloody or coffee ground emesis, bloody stool or melena

Assessment

Abdominal pain can be caused by something simple such as gas or indigestion, or may be a serious life threatening condition including internal bleeding or alcohol poisoning. Careful assessment and observation must be done.

Plan

7. Evaluate vitals signs. Assess for shock related to internal bleeding, including hypotension (BP <100/60) or tachycardia (HR >110).
8. Call 911 if vomiting frank blood or coffee grounds, passing black tarry stools (melena), or bright red bloody stools (hematochezia)
9. Nausea: If nausea persists have client take slow sips of water; reassess in 30 minutes.
10. Emesis: If patient vomits assess for nausea and have client sip fluids and reassess in 30 minutes. If emesis persists longer than 60 minutes or if patient unable to hold down any fluids, send to ED via non-emergent transport.
11. Document into Adverse Event section of Sobering Center Encounter Form.

OPIATE OVERDOSE/ DEPRESSED RESPIRATIONS

Subjective information

- Patient states s/he has taken oral, inhaled or injected opiates

Objective information

- Pinpoint pupils
- Respirations < 8 bpm
- Difficult or unable to arouse to pain
- Possession of needles, opiate medication, empty medication bottles

Assessment

Suspect opioid overdose. Client may present with symptoms at intake or during stay as a sobering client.

Plan

1. Attempt to arouse client. Check ABCs and provide CPR as warranted. Utilize support staff to obtain medications and/or provide CPR.
2. Contact provider during business hours for immediate assessment.
3. If no provider is immediately available and client remains unarousable, call 911 for a possible overdose. Be prepared to provide details on client condition and presentation.

4. Medications:
    a. **Oxygen**:
        i. For unconscious clients, apply **oxygen** at 8 L/min via simple mask.
        ii. For clients with respirations < 4 bpm, utilize an ambu bag and provide rescue breathing every 4-5 seconds.
        iii. If mask is not available, apply nasal cannula at 4 L/min.

    b. **Naloxone**:
        i. **IM**: Provide naloxone 0.4mg IM. May repeat x 1 after 5 minutes for total of 0.8mg IM. IM injections can be administered via needles or automated injector as available.
        ii. **Nasal**: Administer 1mg/1ml per nostril (total 2mg/2ml). May repeat x 1 after 5 minutes for total 4mg/4ml.

5. Clients receiving naloxone **must** continue to the ED via EMS, due to the risk of overdose after the naloxone effect diminishes (30-45 minutes).

6. Contact medical backup after calling 911 for additional verbal orders.

7. Provide life sustaining interventions as necessary including rescue breathing.

8. Document into Adverse Event section of Sobering Center Encounter Form.

PREGNANCY

Subjective information

- Client states that she is or may be pregnant
- Client states that her period is late
- Client appears to be pregnant

Objective information

- Client has a positive pregnancy test
- Client has documentation of pregnancy
- Date of last menstrual period

Assessment

The pregnant client using drugs and alcohol has a significant risk for adverse birth outcomes. Substance using women often avoid prenatal care because they feel ashamed of their use or are too involved in using to make care a priority.

Plan

1. Start by performing a pregnancy test.
2. Make sure client gets plenty of fluids and food.
3. If she is pregnant, given the risks to mother and fetus associated with pregnancy and substance use:
    a. During business hours 8a-5p: client should be encouraged to be assessed by provider.
    b. After hours 5p-8a: contact medical backup and refer client as recommended to an appropriate level of care (ED, urgent care) via recommended transportation.
4. If client presents or develops any abnormal vital signs, contact medical backup for transportation to emergency department. Refer to respective protocols as applicable.
5. If client does not wish to remain at Sobering Center, client should be referred to an urgent care clinic.
6. Offer referral to the Homeless Prenatal Program in San Francisco:
    Homeless Prenatal Program
    2500 18th St, San Francisco 94110
    415-546-6756
7. Document into Adverse Event section of Sobering Center Encounter Form.

SEIZURE

Subjective Information

- Past history of seizures
- Feeling of imminent seizure
- History of taking anti-epileptic medications

Objective Information

- Witnessed seizure

Assessment

Seizures are common in chronic alcoholics and may be due to alcohol use or withdrawal, brain scarring due to previous head trauma, or idiopathic epilepsy. Seizures can be dangerous if prolonged or recurrent and can be associated with risk for injury.

Plan

1. In the event of a seizure, protect the client against injury. Place client in side-lying position.
2. Obtain vital signs and blood glucose when safe. Refer to appropriate protocols as needed.
3. Continue to monitor the client while emergency transport is notified. Code 2 (non-urgent) transportation is generally sufficient. Note time, length and type of seizure.
4. In the event of a seizure lasting longer than 2 minutes or the occurrence of multiple seizures: protect client against injury and call 911. A staff member must be present with client at all times until ambulance arrives.
5. For any seizure resulting in head injury, please refer to Head Injury protocol and call 911.
6. Document into Adverse Event section of Sobering Center Encounter Form.

SHORTNESS OF BREATH

Subjective information

- Complains of shortness of breath
- History of Asthma, COPD
- Current medications
- Presence of chest pain or pressure (also refer to Chest Pain protocol)

Objective information

- Audible wheezing or stridor (high pitched wheezing from upper airway obstruction)
- Gasping for breath
- Oxygen saturation less than 90%
- Respiration greater than 24 or less than 8 per minute
- Slow, shallow breathing or noisy respirations
- Signs of opiate/barbiturate/sedative/hypnotic use (excessive sedation, respiration rate < 8, pinpoint pupils)
- Respiratory symptoms and signs associated with fever

Assessment

Respiratory rate outside acceptable parameters may be due to intoxication or pre-existing pulmonary disease.

Plan

1. During daytime hours, contact provider onsite to assess for asthma or COPD exacerbation. Treatment should be initiated via provider orders, and may include albuterol nebulizer and prednisone. These medications can be obtained by the provider via Respite onsite stores. Transcribe orders onto CCMS Encounter Form.

2. If no providers on site, call 911 if:
    a. Respirations are less than 8 or greater than 24 per minute;
    b. Client has oxygen saturation less than 90%; or
    c. If patient has audible wheezing or gasping for breath.

3. After calling 911, apply **oxygen** via simple mask at 8 LPM.
    a. If mask is not tolerated or available, assist client to hold mask directly in front of mouth/nose or apply nasal cannula at 4 LPM.

4. If oxygen saturation is between 90-93%, or respirations are between 8-12 per minute, monitor respirations and level of consciousness every 30 minutes. If breathing does not improve after 2 hours, call medical backup for transport to ED.
    a. If 911 is contacted, follow oxygen recommendations above.

5. Document into Adverse Event section of Sobering Center Encounter Form, and within CCMS database.

SUICIDAL CLIENT

Subjective information/ Risk Factors

- Verbal expressions of suicide
- History of past suicide attempts
- History of mental illness, bipolar, schizophrenia, depression, psychiatric medications
- Verbalizes a plan for suicide and the means to carry it out
- Ability to contract to not harm self

Objective information

- Active attempt at harming self.
- New wounds including lacerations, bruising,

Assessment

Clients who come to the Sobering center are at high risk for suicidal ideations, particularly after they sober and realize their current situation. We must be alert and always assess for potential suicidality, especially if any history of mental illness or previous attempts is known.

Plan

1. If client is attempting suicide or unable to contract for safety, call 911 or Sheriff's for 5150 evaluation. Observe client at all times and obtain additional staff support as needed. If safe for staff and other clients, intervene to keep client from self harm.
2. If client is able to verbally contract to not harm self, and staffing is adequate to provide ongoing visual monitoring, continue to monitor closely throughout stay.
    - Place client in a bed visible to nursing station.
    - Engage with client to remove any potentially harmful belongings from bedside; place items in clinical station.
    - Alert front desk staff that this client should not leave the building unattended. If client does attempt to leave, they should encourage client to stay and call for help.
    - 911 should be called for any client attempting suicide or departing the building while actively suicidal. A staff member should keep visual contact on client at all times, including if client is outdoors and 911 has been contacted but not yet arrived.
3. Notify provider and/or social work staff of any suicidal patient during business hours.
4. Document into Adverse Event section of Sobering Center Encounter Form. Document client status and activity every 30 minutes on the Continued Assessment Form.
5. You may refer client to crisis intervention services before or during discharge.

Progress Foundation's Dore Urgent Care Center (DUCC) 52 Dore St., San Francisco 415-553-3100 Phone	Westside Crisis 245 11th Street, San Francisco 94103 415-355-0311 Phone Mon-Sat, 9am-7pm

TACHYCARDIA

Subjective information

- Current cardiac or antihypertensive medications
- Complaints of palpitations, anxiety, fatigue, chest pain, dizziness
- Past history of cardiac conditions

Objective information

- Pulse >110
- Regular or irregular pulse
- Syncope

Assessment

Elevated pulse or tachycardia may be due to stress, drug effect, exertion, dehydration, heart conditions, alcohol withdrawal, or a host of other conditions. A pulse above 100 is almost never normal except as a temporary reaction to stress or exercise. A client with a history of tachycardia may have an abnormally high pulse rate at baseline.

A corresponding abnormal blood pressure may indicate additional complications. Hypotension (see Blood Pressure protocol) in the presence of tachycardia can be indicative of hypovolemia or cardiogenic shock.

Plan

1. Any client with a pulse >140 must be referred to the ED via 911.
2. For clients with a pulse of 110-139, initiate fluids, including water with rehydration salts. Recheck pulse every 30 minutes until pulse <110.
3. If pulse remains persistently above 110, after two hours of fluid and electrolyte replacement, contact medical backup for plan. Document plan on Sobering Center Encounter Form in nursing notes.
4. Evaluate for other signs of alcohol withdrawal (see Alcohol Withdrawal protocol).
5. If client is prescribed medication, encourage adherence to ordered regimen.
6. Client with abnormal pulse rate greater than 110 should be referred to the provider for evaluation during working hours.
7. Document into Adverse Event section of Sobering Center Encounter Form.

VIOLENT BEHAVIOR

Subjective and Objective information

- Physical threats, verbal abusiveness, disruptive behavior, extreme agitation, combative behavior

Assessment

Assaultive or disruptive behavior is not tolerated in the Sobering center. It does not matter if this is a result of substance induced behavior or mental health disorder. Combative clients may harm themselves and others.

Plan

1. Call 911, the San Francisco Police Department dispatch, or the Sheriff's department for assistance.

2. Safely protect yourself, co-workers, and other clients from potential injury. Seek help from available staff and do not attempt to prevent client from leaving the Sobering center.

3. Do not attempt to physically restrain client or intervene in a physical altercation.

4. Give the police officers any history you may have about the client's medical history.

5. Bring to attention of program director and deputy director during working hours.

6. Document into Adverse Event section of Sobering Center Encounter Form.

7. Document in written incident report. This should be in addition to the Adverse Event documentation.

8. For any staff injuries, report immediately to the program director and/or deputy director. Seek medical attention as appropriate.

WOUNDS

Subjective information

- Place and duration of wound/injury
- Pain
- History of tetanus immunization (per client or check LCR)

Objective information

- Fever (refer to Fever protocol)
- Redness, warmth, tenderness, swelling
- Purulent discharge, color and amount
- Active bleeding

Assessment

Clients present with wounds in many stages of healing and treatment. Lacerations <6 hours old with separation of skin edges may need suturing. Lacerations >6 hours cannot be closed. Deep lacerations, especially on the hand may involve deeper structures, i.e. nerves or tendons.

Because of the poor hygiene and immuno-suppression associated with chronic substance abuse, wound infections are more common and may need antibiotic treatment, as well as local care. All of these situations require assessment by provider, ED, or urgent care staff.

Plan

1. Wounds which have not been previously assessed or treated:
    a. Any stab wound refer client to the ED.
    b. All lacerations <6 hours old, refer client to the ED or urgent care. Call medical back up for advice on transport method and location.
    c. Wounds >6hours old may or may not need transport out of the facility. Contact medical backup or onsite provider for advice.

2. Wounds previously treated and/or with existing dressing:
    a. Remove existing dressings if dirty, and clean wound area. If able, have client shower with soap and water. Intact, clean, secure dressings should not be removed unless by client request.
    b. During daytime hours, contact onsite provider for assessment and wound care orders.
    c. Clean and dress wounds according to standard nursing procedure.
    d. For any wounds that appear infected (red, swollen, hot to touch, purulent), refer to medical backup for transport to ED or urgent care.
3. Any hand wound that is red, hot, swollen, and purulent should be seen in urgent care or the ED. Non-emergent ambulance transportation should be used.
4. Any deep laceration or puncture wound that is red, hot, swollen, and purulent and any wound accompanied by fever should be seen in urgent care or the ED. Non-emergent ambulance transportation should be used.
5. Document into Adverse Event section of Sobering Center Encounter Form.

SAN FRANCISCO EMERGENCY MEDICAL SERVICES AGENCY

APPENDIX III: Paramedic "Alternative Destination" Training Curriculum

Community Paramedic Supervisors will be trained to the CP CORE Education curriculum developed by the California Emergency Medical Services Authority. This curriculum was developed in conjunction with the UCLA Center for Prehospital Care under the direction of Baxter Larmon, PhD MICP. Dr. Larmon was consulted in developing the optimal delivery of educational content for this project site.

Course Content

The course content for CP CORE students will mirror the courses given in 2015 at previous CP sites. The overall course is subdivided as follows:

Core Didactics:	**48 hours**
Site-Specific Didactics:	**20 hours**
Clinical Preceptorship:	**28 hours**
Independent Study:	**56 hours**
Total:	**152 hours**

Core Didactic Sessions (48 hours)

Core Didactic Sessions will provide the approved state curriculum for Community Paramedicine. The core didactics will be divided into the following sessions:

Session 1	Introduction to the California Community Paramedic Program / Role of the Community Paramedic in the Health Care System
Session 2	Public Health and the primary care role of the Community Paramedic
Session 3	Social Determinants of Health
Session 4	Developing a Culture of Competency
Session 5	The Community Paramedic's role in the community: Part 1
Session 6	The Community Paramedic's role in the community: Part 2
Session 7	The Community Paramedic's role in the community: Part 3
Session 8	Psychosocial Standardized Patient Encounters
Session 9	Community Paramedic's Personal Safety and Wellness
Session 10	Clinical Assessment, Application, and Skills for the Community Paramedic
Session 11	Standardized patient Encounters of Patients with Medical Complaints
Session 12	Final Competencies

Site Specific Didactic Sessions (20 hours)

Didactic sessions will be delivered that are specific to evaluation and management of the intoxicated patient by local subject matter experts. Topics are listed in Appendix IV

Clinical Preceptorships (28 hours)

The clinical preceptorships training will focus on medical and psychosocial evaluation of patients and operations at the San Francisco Sobering Center. CP Core Students will complete mentored rotations at the SFSC and with Outreach Staff to develop and demonstrate clinical competencies.

Course Completion

Successful course completion will be measured by class attendance, assignment completion, course quizzes, simulated patient exams, and oral exam as benchmarked with other CP training sites.

APPENDIX IV: Site Specific Paramedic Training Module Topics

As part of the training curriculum, Community Paramedic Supervisors will also undergo site specific training modules and clinical preceptorship focusing on the necessary background knowledge and skills to provide project oversight.

Didactic Session Topics (20 hours):

1. **Alcohol intoxication overview**
    a. An overview of module educational objectives, resources and structure
2. **Public health and Alcohol Intoxication**
    a. The learner will understand the recent history and societal implications of alcohol dependence
3. **Ethics, Consent, and the Intoxicated Patient**
    a. The learner will review topics of ethics and consent with regard to care of intoxicated and alcohol dependent patients including autonomy, beneficence, non-maleficence and justice
4. **Assessment of the Alcohol Dependent Patient**
    a. The learner will review important history and physical exam skills for assessing alcohol dependent patients
    b. The learner will understand important disease and injury patterns that can be easily missed while assessing the alcohol dependent patient including:
        i. Traumatic injuries
        ii. Metabolic abnormalities
        iii. Infectious conditions
        iv. Behavioral emergencies
        v. Alcohol Withdrawal Syndrome
        vi. Wernicke-Korsakoff Syndrome
5. **Management of Acute Alcohol Intoxication**
    a. The learner will identify key history and physical findings in identifying acute alcohol intoxication
    b. The learner will recognize important health risks and interventions in stabilizing acutely intoxicated patients
6. **Management of Alcohol Withdrawal Syndrome**
    a. The learner will identify key history and physical findings in identifying acute Alcohol Withdrawal Syndrome
    b. The learner will recognize important health risks and interventions in stabilizing patients with Alcohol Withdrawal Syndromes
7. **San Francisco Alcohol Dependence Community Resources**
    a. The learner will become familiar with various community resources available to alcohol dependent individuals
8. **Quality Improvement Workshop**
9. **Case Studies**

APPENDIX V: Paramedic Alternative Destination Training Curriculum

All ambulance paramedics within the City and County of San Francisco 911-ambulance system will be trained for the alternative destination pilot, including a description of the role of community paramedicine in the community. This curriculum was developed in conjunction with the City College of San Francisco Paramedic Program, and is modeled after existing alternative destination curriculums including the Alternative Transport Program in Los Angeles County (courtesy of Baxter Larmon PhD and UCLA Center for Prehospital Care).

This 8-hour curriculum consists of a 4-hour online training portion and a 4-hour classroom portion. The classroom portion will include case studies, discussion and a 30-minute final exam with post-exam review. The primary goal of the training is to prepare paramedics to safely assess and evaluate intoxicated patients in the pre-hospital environment based on the triage guidelines, and transport appropriate patients to the sobering center.

1. **Introduction/ Background**
    a. An overview of curriculum, educational objectives, resources and structure
    b. An overview of community paramedicine and alternative destinations
    c. Review of impact of alcohol intoxication on local public health and emergency medical system resources
2. **Alternative Destination**
    a. An overview of Sobering Center including model of care provided
    b. Review of goals for alternative destination pilot, including review of state regulations
3. **Alcohol intoxication overview**
    a. Review of alcohol use disorders and introduce distinctions for patient assessment
4. **Ethics, Consent, and the Intoxicated Patient**
    a. The learner will review topics of ethics and consent with regard to care of intoxicated and alcohol dependent patients including autonomy, beneficence, non-maleficence and justice
5. **Triage Guidelines for Alternative Destination**
    a. Identify specific parameters in the assessment of alcohol intoxicated patients
    b. Distinguish between appropriate and not appropriate transfers to the Sobering Center
6. **Management of Acute Alcohol Intoxication**
    a. Identify key history and physical findings in identifying acute alcohol intoxication
    b. Distinguish intoxication from alcohol versus alternative substances
    c. The learner will recognize important health risks and interventions in stabilizing acutely intoxicated patients

d. Integrate assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement treatment plan for intoxicated individual
e. Presentation of case studies

7. Assessment of the Alcohol Dependent Patient

a. The learner will review important history and physical exam skills for assessing alcohol dependent patients
b. The learner will understand important disease and injury patterns that can be easily missed while assessing the alcohol dependent patient including:
    i. Traumatic injuries
    ii. Metabolic abnormalities
    iii. Infectious conditions
    iv. Behavioral emergencies
    v. Alcohol Withdrawal Syndrome
    vi. Wernicke-Korsakoff syndrome
c. Presentation of case studies

8. Final exam and post-exam review

SAN FRANCISCO EMERGENCY MEDICAL SERVICES AGENCY

Policy Reference No.: 6000
Effective Date: August 1, 2008
Review Date: January 1, 2011
Supersedes: July 1, 2007

QUALITY IMPROVEMENT PROGRAM

I. PURPOSE

A. The purpose of this policy is to maintain an effective method for monitoring and evaluating patient care.
B. To define the local EMS System data collection and utilization.
C. To establish standards of patient care and to resolve identified problems through a systematic quality improvement (QI) program.
D. To define the minimum required elements of provider QI plans.

II. AUTHORITY

A. California Health and Safety Code, Division 2.5, Sections 1797.10, 1797.107, 1797.174, 1797.176, 1797.204, 1797.220, and 1798
B. California Code of Regulations, Title 22, Division 9, Chapter 12, Sections 100147, 100400, 100401, 100402, 1004003, 1004004, and 1004005.

III. REFERENCE

A. EMSA #163 EMS System Quality Improvement Indicators (Appendix M)
B. EMSA #166 EMS System Quality Improvement Guidelines

IV. EMS SYSTEM QI

A. The EMS Agency will develop a Quality Improvement Program in accordance with EMS Authority requirements and EMS QI Program Model Guidelines.
B. The EMS Agency shall use the EMS System Quality Indicators to evaluate quality of prehospital care in the San Francisco EMS System.
   1. The EMS System Quality Indicators consist of variables collected in the Local EMS Information System (LEMSIS-Policy 6020).
   2. The EMS System providers shall collect, compile and submit LEMSIS data elements pursuant to the LEMSIS policy.
   3. The EMS Agency shall manage the LEMSIS data repository and its elements.
C. The EMS Agency shall analyze the EMS System quality indicators based upon the data elements collected in the LEMSIS data repository.
   1. The EMS Agency Medical Director shall report the results of the EMS Agency quality indicator analysis to the Emergency Medical Services Advisory Committee.
D. Clinical acts or system issues that constitute a threat to public health and safety or integrity of the EMS System shall be reported through the EMS Agency Incident Reporting process in Policy 6020.
E. When the EMS Agency identifies performance improvement needs, the Agency will develop performance improvement plans in cooperation with appropriate provider agencies.

F. The Medical Director may require prehospital personnel as a condition of reaccredidation or recertification to participate in any prehospital clinical training conducted by the Base Hospital that has been recommended through the EMS System quality indicator analysis.

G. The continuous process of data collection, evaluation and analysis using the LEMSIS data repository and the EMS System quality indicators as described above is the foundation for improving the quality of care in the San Francisco EMS System.

V. BASE HOSPITAL QI PROGRAM

A. The Base Hospital shall be the primary training component of the EMS system QI program as described in Policy 5011, Sections III, D, and E.

VI. PROVIDER QI PROGRAMS

A. Each approved EMS provider shall develop, and submit to the EMS Agency for approval, a comprehensive Quality Improvement Plan meeting the requirements of 22 CCR 100402 and which address but are not limited to the following:

1. Personnel
2. Equipment and Supplies
3. Documentation
4. Clinical Care and Patient Outcome
5. Skills Maintenance/Competency
6. Transportation/Facilities
7. Public Education and Prevention
8. Risk Management
9. Quality indicators defined by EMSA regulation and those indicators unique to San Francisco and defined in the LEMSIS policy.

B. Providers will develop internal policies requiring participation in the QI process, including remediation, with provisions for disciplinary action for non-compliance.

C. Providers will participate in the QI activities of the LEMSIS Steering Group (refer to Policy 6010) for the purpose of conducting audits of prehospital audio communications and patient care records to evaluate outcomes and system performance in order to identify opportunities for improvement.

D. Providers will conduct an annual review of the QI program and revise the written plan for the upcoming year as necessary to meet performance objectives.

E. Providers will submit a report of the annual review and plan for the upcoming year to the EMS Agency detailing: QI and training activity to include analysis of quality indictors, any formal remediation and disciplinary actions taken in accordance with the Incident Reporting policy.

F. Records of QI activity, including individual employee records, must be stored in a secured environment with access limited to QI and management personnel only

1. Records must be available to the EMS Agency for review:
    a) During site evaluations
    b) As part of an investigation
    c) As determined by the EMS Medical Director with advanced notice.

SFCCC HEALTH CENTER ANNUAL QUALITY IMPROVEMENT PLAN
San Francisco Department of Public Health – Primary Care
25 Van Ness, Suite 500
San Francisco, CA 94102
YEAR 2016

I. Statement of QUALITY VISION for your Health Center

To be every San Franciscan's first choice for health care and well-being

II. QUALITY IMPROVEMENT INFRASTRUCTURE

A. Leadership:

1. Oversight and Monitoring - The Primary Care Quality Improvement (PCQI) committee provides oversight to Primary Care's QI projects and major initiatives. PCQI is comprised of provider representatives from each clinic, health care analysts, pharmacy representation, and Primary Care leadership including the Director of Primary Care, Chief Medical Officer, Director of Nursing, and the Director of Quality Improvement, Dr. Ellen Chen.

   In addition to PCQI, each clinic has a QI committee (e.g. QuIC at Tom Waddell led by Dr. Eagen) with membership from MD's, RN's, medical assistants, eligibility staff, and more.

   The Health Care for the Homeless and Ryan White Part C Quality Improvement work is integrated into PCQI, QuIC, and other individual clinic QI committees as appropriate, and the coordination is facilitated by Beth Neary, the Project Director and QI Representative for HCH and RWPC sub-recipient agreements.

2. QI Committee

   PCQI (Primary Care Quality Improvement Committee)
   - Ellen Chen, MD, Director of Quality Improvement and Medical Director, Silver Avenue Health Center
   - Hali Hammer, MD, Director of Primary Care
   - Catherine James, MD, Medical Director
   - Judith Sansone, RN, MS, Director of Nursing
   - Susan Scheidt, MD, Director of Primary Care Behavioral Health Integration
   - Jeanette Cavano, PharmD, CGP, Ambulatory Care Clinical Pharmacy Supervisor
   - Winnie Tse, Health Program Coordinator
   - Justin Webber, Health Care Analyst
   - Amy Petersen, Heatlh Care Analyst, Care Experience

Primary Care Health Centers & QI Reps		
Clinic	**Last**	**First**
CHC –	Bakken	Hayes

6M PEDS	McAllister	Diedre
	Taber	Bret
CHPY	Dominguez	Lili
CMHC	DiDonato	Blanca
	Nguyen	Christopher
	Salinas	Roxana
CPHC	Lui	Ben
	Pak	Sunny
	Zhang	Pansy
CSC	Stephens	Dawn
	Ainza	Rachel
FHC	Abdel-Wahab	Minna
	Fernandez	Larry
FHC	Mittal	Pooja
GMC	Gupta	Reena
	Horton	Claire
MHHC	Beza	Maria
	Coyne	John
MHHC	James	Catherine
	Rosenthal	Anne
	Williams	Kristalia
OPHC	Brindley	Lisa
	DelTredici	Aaron
	Wang	Ruth
PHHC	Garduño	Lakisha
	Dubbin	Leslie
PHP	Murethi	Eva
	Zeitschel	Deborah
	Jain	Vivek
SAFHC	Green	Pat
	Stout	Suzannah
	Chen	Ellen
SEHC	Harris	Jamal
	Wlodarczyk	Dan
SPY	Tahsini	Mona
	Taniguchi	Carol
TWUHC	Eagen	Kelly
	Wismer	Barb
	Soto	Diana

QuIC (QI Committee at Tom Waddell)
The Program Manager of the TWUH QuIC is Kelly Eagen (physician).

Active Members (regular meeting attendees) of the committee include:

- Annette Spears (principle clerk)
- Angela Winn (physician assistant)
- Barbara Wismer (physician)
- Devora Keller (physician)
- Joan Brosnan (nurse)
- Kelly Eagen (physician)
- Kim Pelish (nurse practioner)
- Lilian Chen (medical assistant)
- Max Ruben (Americorps member)
- Moises Vega (Public Service Trainee)
- Nathan Kim (Americorps member)
- Naomi Zubin (nurse practitioner)
- Stella Chan (QI Coordinator)
- Vanessa Sotelo (health worker)
- Vivian Lian (pharmacist)
- Yuliya Kogan (health worker)
- Kristina Gunhouse-Vigil (API QI Coordinator)
- Associate Medical Director (position unfilled)
- Practice Manager (position unfilled)

3. Which Committee Member represents health center at SFCCC Quality Improvement Committee (SFCCC CQI)?

   Beth Neary – attending PCQI, QuIC, and SFCCC CQI meetings 2-4 times per year

B. Meeting structure description:

1. PCQI meets monthly on the third Friday of each month from 8:00 – 10:00am & QuIC meets monthly on the fourth Thursday of the month from 10:00 – 11:30am

2. Data is used to drive the discussion in both committees. PCQI follows PIP measures monthly as well as measures prioritized each year. PCQI will soon also be following PRIME metrics that are under development. This year PCQI is following six "Driver" metrics monthly that include:
   a. Hypertension Blood Pressure Control and Equity
   b. Fluoride Varnish for Children
   c. Smoking Cessation Intervention
   d. Unlocked Notes
   e. CG CAHPS "Likelihood to recommend as a place to receive care"
   f. Third Next Available Appointment (non-urgent) TNAA
   g. 7-Day Post-Discharge Follow Up

3. QuIC at Tom Waddell reviews data presented at PCQI and generates data for improvement projects to review, for example, the proportion of patients with follow up colonoscopies after positive FIT tests.

4. Decisions are made in a variety of ways, most frequently through group discussion and consensus. The directors of each group and the leaders within each specific QI initiative often formalize decisions after receiving input from the committee.

5. PCQI collects attendance information by using an attendance sheet and posting it to the Reports Registry each month. QuIC has an attendance policy that each committee member must attend at least 7 meetings annually, and attendance is recorded by the person taking the minutes.

6. Both QI committees select their strategic goals to begin at the start of the calendar year and discussions about the measures of focus begin in the last quarter of the year, with some of the specifics of the goals for relative improvement specified in the first quarter of the year once the baseline data is available.

DPH SOBERING CENTER Encounter Form (v080511b)

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

LCR MED REC #	ADMITTED BY

CAUTION: Federal and State laws protecting confidential patient information apply to patient information contained in this completed form.

SOBERING CENTER CLIENT INFORMATION

LAST NAME	FIRST NAME	M.I.

ALIASES	SSN	DOB

ARRIVAL

MONTH	DAY	YEAR	TIME

ARRIVED VIA: ❑ ED via VAN ❑ EMS ❑ HMLS VAN SVC ❑ POLICE ❑ EMS-6 ❑ HOT CM ❑ MEDICAL RESPITE ❑ COMM BIZ ❑ WALK-IN ❑ OTHER:______________

REFERRED BY WHICH HOSPITAL (choose one)

❑ SFGH ❑ St. Francis ❑ CPMC Davies ❑ CPMC Pacific ❑ CPMC California ❑ St. Luke's ❑ UCSF ❑ Kaiser ❑ VA Hosp ❑ St. Mary's ❑ Other Hospital (specify):

SOBERING CENTER INTAKE ASSESSMENT

WHEN WAS LAST DRINK LAST DRUG?	DESCRIBE WITHDRAWAL HISTORY

PULSE	BP	RR	O^2 SAT	BLOOD SUGAR	TEMP

GAIT
- ❑ Normal
- ❑ Unsteady
- ❑ Assisted only
- ❑ Unable to walk

CONSCIOUSNESS
- ❑ Normal
- ❑ Sleepy, but arousable to answer questions
- ❑ Arousable with painful stimuli
- ❑ Unarousable

ORIENTED TO
- Name: ❑ Yes ❑ No
- Place: ❑ Yes ❑ No
- Day: ❑ Yes ❑ No

NEURO CHECK
- ❑ Yes ❑ No Moving four extremities
- ❑ Yes ❑ No Pupils equal & normal size
- ❑ Yes ❑ No Other neuro abnormality as follows:

HEAD TRAUMA WOUND BLEEDING
- ❑ **No** signs of trauma, wounds, or bleeding
- ❑ Bruises or lacerations present on head or neck
- ❑ Blood stains on clothing
- ❑ Other signs as follows:

TB SYMPTOM SCREEN
- ❑ **No** TB symptoms
- ❑ Observed persistent coughing
- ❑ Patient reports coughing for over 2 weeks
- ❑ Observed coughing up blood
- ❑ Patient reports 20 lbs weight loss in last 6 mos
- ❑ Other symptoms or signs of TB as follows:

INFESTATION CHECK
- ❑ **No** lice, bed bugs, or scabies observed
- ❑ Lice visible in seams of clothes or on skin
- ❑ Lice or nits in hair
- ❑ Multiple scratch marks on body, neck or scalp
  - ❑ TREATED ❑ NOT TREATED

CLINICAL ALERTS (LCR) ❑ None ❑ Yes, as follows:

❑ **PT APPROVED FOR EXTENDED STAY** **REASON:**

❑ **PLACED ON WITHDRAWAL MANAGEMENT PROTOCOL**

SOBERING CENTER VITAL SIGNS

TIME	TEMP	PULSE / RR	BP / O^2 SAT	CONSCIOUSNESS
TIME	TEMP	PULSE RR	BP O^2 SAT	**CONSCIOUSNESS** Staff Initials______ ❑ Normal ❑ Sleepy, but arousable to answer questions ❑ Arousable with painful stimuli ❑ Unarousable
TIME	TEMP	PULSE RR	BP O^2 SAT	**CONSCIOUSNESS** Staff Initials______ ❑ Normal ❑ Sleepy, but arousable to answer questions ❑ Arousable with painful stimuli ❑ Unarousable
TIME	TEMP	PULSE RR	BP O^2 SAT	**CONSCIOUSNESS** Staff Initials______ ❑ Normal ❑ Sleepy, but arousable to answer questions ❑ Arousable with painful stimuli ❑ Unarousable
TIME	TEMP	PULSE RR	BP O^2 SAT	**CONSCIOUSNESS** Staff Initials______ ❑ Normal ❑ Sleepy, but arousable to answer questions ❑ Arousable with painful stimuli ❑ Unarousable
TIME	TEMP	PULSE RR	BP O^2 SAT	**CONSCIOUSNESS** Staff Initials______ ❑ Normal ❑ Sleepy, but arousable to answer questions ❑ Arousable with painful stimuli ❑ Unarousable

SOBERING CENTER NURSING NOTES (INCLUDING NP/ PA EVAL)

❑ **ENGAGED WITH SCCM (Chart under "Other-SCCM")**

❑ **CM CONTACTED** ❑ **CLOTHING** ❑ **LAUNDRY** ❑ **SHOWER** ❑ **FOOD** ❑ **VITAMINS** ❑ **WALKER/ CRUTCHES** ❑ **WOUND CARE**

DPH SOBERING CENTER
Encounter Form, PAGE 2

LAST NAME	FIRST NAME

❑ MEDICAL DETOX ❑ SOCIAL DETOX **CLIENT INTERESTED? ❑ YES ❑ NO ❑ NOT ASKED**

❑ Contacted Date/Time: _____

If Medical Detox:

❑ Referral Section completed

❑ Physical Assessment completed

❑ Labs Drawn ❑ Labs Labeled ❑ Labs Sent

❑ Form faxed Date/Time: _____

❑ Detox intake notified via telephone

Accepted by (name):

Scheduled pickup time:

Status Notes:

Not accepted, reason:

DEMOGRAPHICS

ETHNICITY
- ❑ African American/ Black
- ❑ Asian
- ❑ Latino/a
- ❑ Native American (AIAN-Indígena-First Nation)
- ❑ Native Hawaiian-Other Pacific Islander (NHOPI)
- ❑ Multi-ethnic
- ❑ White
- ❑ Declined/not stated
- ❑ Question not asked

GENDER
- ❑ Male ❑ Transgender Male (F to M)
- ❑ Female ❑ Transgender Female (M to F)
- ❑ If not listed, specify: _____
- ❑ Declined/not stated
- ❑ Question not asked

ORIENTATION/ PREFERENCE
- ❑ Heterosexual
- ❑ Gay ❑ Lesbian ❑ Bisexual
- ❑ Other_____
- ❑ Declined/not stated
- ❑ Question not asked

SEX AT BIRTH
- ❑ Male ❑ Female
- ❑ Declined/not stated
- ❑ Question not asked

PRIMARY LANGUAGE
- ❑ English ❑ Spanish ❑ Other: _____
- ❑ Declined/not stated
- ❑ Question not asked

CURRENT LIVING SITUATION

(CHOOSE ONE)

Homeless:
- ❑ Shelter – no CM
- ❑ Shelter – w CM
- ❑ Outdoors
- ❑ Encampment
- ❑ Abandoned Bldg
- ❑ Vehicle
- ❑ Other

Homeless Transitional:
- ❑ SRO Temporary
- ❑ Jail/Prison
- ❑ LTC or Residential Treatment
- ❑ Temp situation w family/friends
- ❑ Foster Care
- ❑ SRO living with child(ren)

Permanently Housed:
(with tenancy rights):
- ❑ SRO Non-Supported
- ❑ SRO Supported
- ❑ Board and Care
- ❑ Apartment
- ❑ Home

SOBERING CENTER DISPOSITION

DISCHARGE DATE – TIME				DEPARTURE VIA (choose one)			DISCHARGE BY (NAME)
MO	DAY	YEAR	TIME	❑ EMS	❑ Taxi	❑ HOT CM	
				❑ Hmls Van	❑ Police	❑ DETOX VAN	ID
				❑ Walked	❑ Other:	❑ Unknown	

Discharged to: (review options 1 through 16, **select only one**)

1. ❑ * Transferred to Psychiatric Emergency Program/Facility (note: requires Adverse Event section to be completed below):
❑ PES ❑ Westside Crisis ❑ Dore Urgent Care Center 5150? ❑ Yes ❑ No

2. ❑ * Transferred to Medical Emergency Department (note: requires Adverse Event section to be completed below):
❑ SFGH ❑ St. Francis ❑ CPMC Davies ❑ CPMC Pacific ❑ CPMC California ❑ St. Luke's
❑ UCSF ❑ Kaiser ❑ VA Hosp ❑ St. Mary's ❑ Other Hospital (specify): _____

3. ❑ Transferred to Medical Detox

4. ❑ Transferred to Social Detox

5. ❑ Transferred to Medical Respite

6. ❑ Completed Program, discharged to Self Care

7. ❑ Completed Program, discharged to Family

8. ❑ Completed Program, discharged to Shelter

9. ❑ Completed Program, referred to _____
(Ex: Urgent Care, Wound Clinic, TB Clinic, Ward 86 or 93)

10. ❑ AWOL

11. ❑ * Self, escorted out due to violent behavior or threat of same

12. ❑ * Self, escorted out due to inappropriate behavior

13. ❑ * AMA

14. ❑ * Discharged to Police Custody

15. ❑ * Death

16. ❑ Other as follows: _____

(* Requires Unusual Occurrence section to be completed.)

SOBERING CENTER UNUSUAL OCCURRENCE

ADVERSE EVENT DATE - TIME				BRIEF DESCRIPTION OF OCCURRENCE
MO	DAY	YEAR	TIME	
MD/NP/PA Consulted / Location:				

57

415-255-3706 – Form Revised 030416

☐ ENTERED INTO CCMS: DATE: _____ BY: _____

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: EMSA Stroke Regulations

SUMMARY

On December 9, 2016, EMSA released a letter seeking public comment for the Emergency Medical Services Stroke Critical Care Systems Regulation Draft. With input from the EMS/T Committee, BJ submitted a response on January 23, 2017.

ACTION REQUESTED

- *Information and discussion*

DISCUSSION

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

January 23, 2017

California EMS Authority
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670-6073
Attn: Farid Nasr, MD
EMS Systems Division
Farid.nasr@emsa.ca.gov

BY ELECTRONIC CORRESPONDENCE

RE: Stroke Critical Care System, Notice of Proposed Rulemaking, Title 22, Division 9, Prehospital Emergency Medical Services, Chapter 7.2

Dear Dr. Nasr:

On behalf of more than 400 member hospitals and health systems, the California Hospital Association (CHA) respectfully offers the following comments for consideration to the proposed regulatory text for the EMS Authority, California Health and Safety Code sections 1797,103 and 1797.176.

CHA appreciates EMSA's pursuit of a highly functional stroke critical care system. These standards will improve the care of patients suffering from life-threatening acute stroke through establishment of standards for local optional acute Stroke Critical Care Systems throughout the State for the local EMS agencies (LEMSAs) to adopt. The regulations should provide statewide consistency and fairness and increase transparency of local and state government. They should concur with national standards of stroke critical care and assure California citizens that there is a comprehensive systemic approach for care of the stroke victim that is evidenced based, continuously evaluated, well coordinated, and, driven by the most efficient and effective use of resources.

That being said, CHA offers a substantive change to the infrastructure of the document to modernize the regulations as presently written. Presently, the proposed regulations can't be modified in a timely manner to accommodate today's rapid changes in science and technology. CHA proposes that state regulatory standards of care be based on national stroke certification standards, principly, the American Heart Association/American Stroke Association (AHA/ASA) Standards, that represent the leading scientific evidenced based standards of practice and are

updated every two years. By utilizing AHA/ASA standards, as the certifying body, versus the proposed written regulations, hospitals will be held to current evidence based practice, as well as effectively complying with new changes in practice and technology that cannot be accommodated efficiently through the present state regulatory review process. Using existing AHA/ASA standards of Stroke certification, the EMSA state regulations are kept current without tedious, lengthy, regulatory review, approval and change. AHA/ASA standards of stroke practice are reviewed every two years which coincides with the presently proposed stroke critical care hospital policy and procedure review period. Many other states have adopted this methodology and CHA suggests that California do the same.

The comments outlined on the attached comment form (Comments for Draft Stroke Regulations) reflect the specific additions and deletions that modernize the regulations to existing AHA/ASA standards for all three stroke hospital categories requirements, definitions, LEMSA evaluation, data management and quality improvement processes. To summarize this and other changes- in Article 1., we corrected inaccurate definitions for certain terms, and used the CMS definition for "immediately available". In Article 3., the use of "accreditation" was unclear in lines 192 and 199, and we changed the word"available" training to "provided" training to assure training occurs. In Article 4., we adjusted language to reflect current AHA/ASA standards by deleting redundant standards, and in Article 5., we added hospitals participation in data determination and added use of the Get With the Guidelines® database or other equivalent stroke database.

I. Article 1.Definitions-
   a. We added two new terms and their definitions to support regulations via AHA/ASA certification. Those terms are AHA/ASA Stroke Certification, and Get With the Guidelines®- Stroke.
   b. Board Certified and Board Eligible were incorrectly defined. Board certification is defined by the American Board of Medical Specialties (ABMS), and board certification can vary between 3-7 years depending upon the specific specialty board.
   c. Continuing Medical Education- was redefined based on the Accreditation Council for Graduate Medical Education ACGME definition.
   d. Replaced the present definition of "immediately available" with the more accepted definition of immediately available (2011) that does not include specifics about the proximity of the person providing supervision in terms of the time or distance .
   e. The definition for "protocol" was inaccurate and replaced with the addition of the term "medical guidelines" and "protocols" as they are two distinct entitities. Protocol describes a method to be used in a clinical trial or a research method study. Medical guidelines are written documents that include a treatment plan, summarized consensus statements and practical issues.
   f. Two key elements of brain death, blockage of blood flow or ruptured artery were added to the definition of stroke.
   g. In the telemedicine description we suggested removing the neurologist information as it's irrelevant to the definition of telemedicine.

II. Article 3. Prehospital Stroke Critical Care System Requirements
    a. To assure preshopital training occurs CHA changed the word “available” to “provided”.
    b. There is lack of clarity on who is accrediting what in lines 192, and 199.
III. Article 4. Hospital Stroke Care Requirements
    a. Have minimum standards based on AHA/ASA certification requirements and remove lines 215-220.
    b. Have minimum standards based on AHA/ASA certification requirements and remove lines 269-271, 288-299, and 314-316
    c. Have minimum standards based on AHA/ASA, remove lines 330-332, 336-357, and 365-381
    d. Insert in line 389, EMS receiving hospitals in order that they participate in data collection activities.
IV. Article 5, Data Management
    a. In line 402, add participating hospitals so data management can be a collaborative effort.
    b. In line 404, use the AHA/ASA, “Get With The Guidelines”or equivalent database.

In summary, CHA appreciates the opportunity to comment on this critical document that will not only modernize the development of California’s Stroke Critical Care System, but set the stage for the achievement and acceleration of exceptional quality stroke care across the state.

Sincerely,

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California Hospital Association
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COMMENTS for DRAFT STROKE REGULATIONS
Comment Period: December 9, 2016 - January 23, 2017

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
Article 1. Definitions	BJ Bartleson, CHA	Add two additional terms to the Definitions section: 1. AHA/ASA Stroke Certification-American Heart Association, American Stroke Association – nationally recognized stroke certification body 2. Get With The Guidelines®-Stroke(GWTG-Stroke)-AHA's national database that adheres to the latest scientific AHA/ASA sanctioned guidelines	
§100270.200 Board-Certified, page 1, lines 7-9	BJ Bartleson, CHA	Change the definition to : "Board Certified is defined as Certification by the American Board of Medical Specialties (ABMS) which demonstrates a physician's exceptional expertise in a particular specialty and/or subspecialty of medical practice"-Board certification occurs under the authority of the ABMS. ACGME approves residency programs	
§100270.201 Board Eligible, page 1, lines 14-15	BJ Bartleson, CHA	Change the second sentence to: "Board certification must be obtained within the specified time allotted for the respective medical board, between 3-7 years" - ABMS	
§100270.203 Continuing Medical Education, page 2, 28-30	BJ Bartleson, CHA	Change the definition to: "Educational activities which serve to maintain, develop, or increase the knowledge, skills, and professional performance	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
		and relationships that a physician uses to provide services for patients, the public, or the profession.," ACGME	
§100270.205 Immediately Available, page 2, lines 41-44	BJ Bartleson, CHA	Change the definition to "physically present, interruptible, and able to furnish assistance and direction throughout the performance of the procedure .CMS. CMS does not include specifics about the proximity of the person providing supervision in terms of time or distance (e.g. the person providing supervision must be able to reach the patient within X minutes or must be located within X distance). The 2011 requirements have been revised to remove any reference to physical boundaries.	
§100270.207 Protocol, page 3, lines 58-59	BJ Bartleson, CHA	Change this definition as medical care guidelines and protocols are two different entities-add medical guidelines definition and change protocol definition to: "Protocol describes a method to be used in a clinical trial (e.g. of a drug or medical treatment) or a medical research study". Add Medical Guidelines definition: "written document that includes a treatment plan, summarized consensus statements and addresses practical issues.	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
§100270.208 Stroke, page 3, lines64-65	BJ Bartleson, CHA	Change definition to : Stroke means a condition where there is sudden death of brain cells due to lack of oxygen, caused by blockage of blood flow or rupture of an artery to the brain. Specifies types of impaired blood flow.	
§100270.216 Telemedicine, page 5, lines, 120-122	BJ Bartleson, CHA	Delete the second sentence involving a neurologist , irrelevant to the basic definition of telemedicine	
Article 3. Prehospital Stroke Critical Care System Requirements §100270.220 EMS Personnel and Early Recognition, Page 8,lines 191, 192	BJ Bartleson, CHA	Recommend in line 191 changing available to" provided" to assure adequate pre-hospital stroke assessment training Use of the term "accreditation" in lines 191,192 is unclear- who is accrediting what?	
Article 4. Hospital Stroke Center Requirements, §100270..221, Page 8 lines 212-214 Page 9 lines, 215-220	BJ Bartleson, CHA	Have minimum standards be based on the most current AHA/ASA certification standards- "Hospitals to be designated by the local EMS agency as a Primary Stroke Center shall meet the most current AHA/ASA certification standards to provide care for stroke patients in the emergency department and those patients that are admitted. Remove Lines 215-220 , as these are all qualification s of a certified primary stroke center	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
§100270.222 Evaluation of Primary Stroke Center, lines 228 Lines 239-251 Lines 269-271 Lines 273-279	BJ Bartleson,CHA	Add a new (a), "The hospital will be AHA/ASA certified as a Primary Stroke Center/, (b) the hospital shall be committed to supporting the agency Stroke Critical Care System. Remove lines 229-238 as all required in PSC certification Delete Lines 239-251 Delete Lines 269-271 Change the sentence to read, " a neurologist, neurosurgeon, interventional neuroradiologist, who is board certified or board eligible in neurology, neurosurgery, endovascular neurosurgical radiology, with experience and expertise dealing with cerebral vascular disease, or emergency physician with experience and expertise dealing with cerebral vascular disease	
§100270.223, Comprehensive Stroke Centers, page 11,Lines 285-287 Lines 298-299 Lines 314-316	BJ Bartleson, CHA	Utilize and add AHA/ASA standards – add, after the word shall in line 285, meet the most current AHA/ASA certification standards and" Delete lines 288-299 as all required by certification Delete lines 314-316	
§100270.224 Acute Stroke Ready Hospitals (Satellite	BJ Bartleson, CHA	Change the sentence to : Acute Stroke Ready Hospitals (Satellite Stroke Centers) provide the minimum	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
Stroke Centers) Page 12, lines 328-330. Lines330-332 Line 334 Lines 336-357 Lines 365-381		level of care for stroke patients in the emergency department , are AHA/ASA certified and paired with one or more hospitals with higher level of services. Delete," In these hospitals the necessary emergency department neurological expertise may be provided in person or through telemedicine". Delete "of the following structural components" and insert "AHA/ASA certification Delete Delete	
§100270.225 EMS Receiving Hospitals, page 14 Lines 389-390	BJ Bartleson, CHA	Insert ," EMS receiving hospitals" and the local EMS agency medical director	
§100270.226. Data Management Page15 Line 402 Line 404	BJ Bartleson, CHA	Add, "and participating hospitals" after local EMS agency. Insert after the word of, "AHA/ASA Get With The Guidelines, or equivalent stroke database,	

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: APOT

SUMMARY

Bruce Barton, Riverside LEMSA Director, will discuss the new APOT guidelines and core measures approved by the EMS Commisssion in December, 2016. Of interest will be how LEMSA's convert their information to the core measures methodology.

ACTION REQUESTED

- *Questions for discussion*

DISCUSSION

- Does your hospital exist in a LEMSA measuring APOT?
- Are you working with your prehospital providers to co-measure times, particularly at transfer of care?
- Are you doing performance improvement efforts in your ED and, if so, what and how are you measuring?
- Do your area hospitals meet with your LEMSA and other ED providers and discuss APOT?

EMERGENCY MEDICAL SERVICES AUTHORITY
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DATE: December 14, 2016

TO: Commission on EMS

FROM: Howard Backer, MD, MPH, FACEP
Director

PREPARED BY: Kathy Bissell
Transportation Coordinator

SUBJECT: Ambulance Patient Offload Time (APOT) Methodology Guidelines

RECOMMENDED ACTION:

Approve APOT Methodology and Reporting Guidance and APOT 1 and APOT 2 Specifications

FISCAL IMPACT:

Unknown cost to the EMS Authority and local areas to collect, report, and display the APOT data.

DISCUSSION:

AB 1223 went into effect on January 1, 2016 and mandated that the EMS Authority (EMSA) develop a statewide methodology for calculating and reporting ambulance patient offload times by a local EMS agency (LEMSA). This statewide, standard methodology will be based on input received from stakeholders, including but not limited to: hospitals, LEMSAs, public and private EMS providers and must be approved by the Commission on EMS.

On August 30th EMSA re-convened the working group, to further discuss amendments to the matrix along with the Standardized Methods for Data Collection and Reporting document that will accompany the matrix.

The APOT Methodology and Reporting Guidance document is before the Commission for the first time and the APOT 1 and APOT 2 documents are presented with additional input since the last Commission review. The EMS Authority is requesting approval of these documents so that they can be implemented.

APOT–1: Ambulance Patient Offload Time for Emergency Patients?

- Report aggregate values by:
  1) LEMSA
  2) Individual hospital

- Report the 90 percentile time calculated and the denominator (number of 911 transports to emergency department with time stamp data available)

- Report Quarterly

APOT–2: Duration of Ambulance Patient Offload Time for Patients transported to the Emergency Department by 911 response emergency ambulance.

2.1: What percentage of patients transported by EMS personnel experience a transfer of care within 20 minutes of arrival at the Hospital Emergency Department?

2.2: What percentage of patients transported by EMS personnel experience a transfer of care between 21 - 60 minutes of arrival at the Hospital Emergency Department?

2.3: What percentage of patients transported by EMS personnel experience a transfer of care between 61 - 120 minutes after arrival at the Hospital Emergency Department?

2.4: What percentage of patients transported by EMS personnel experience a transfer of care between 121 - 180 minutes after arrival at the Hospital Emergency Department?

2.5: What percentage of patients transported by EMS personnel experience a transfer of care more than 180 minutes after arrival in the Hospital Emergency Department?

- Report aggregate values by:
  3) LEMSA
  4) Individual hospital

- Report the % calculated and the denominator used to calculate (911 transports to emergency department)

- Report Quarterly, within 2 months of the end of the quarter

The APOT Methodology and Reporting Guidance document is before the Commission for the first time and the APOT-1 and APOT-2 documents are presented with additional input since the last Commission review. The EMS Authority is requesting approval of these documents so that they can be implemented.

Ambulance Patient Offload Time (APOT)
Standardized Methods for Data Collection and Reporting

Draft For EMS Commission Approval Version 11-21-2016

Purpose

To provide recommendations/guidelines to Local EMS Agencies (LEMSAs) for implementing standardized methodologies for Ambulance Patient Offload Time (APOT) data collection and reporting to the EMS Authority (EMSA) in accordance with AB 1223 (O'Donnell, 2015. See appendix A for entire text of bill.)

Background

Health and Safety Code 1797.120 now requires EMSA to develop a standard methodology for calculation of, and reporting by, a LEMSA of ambulance patient offload time.

Health and Safety Code 1797.225 establishes that a LEMSA may adopt policies and procedures for calculating and reporting ambulance offload time. Those policies and procedures must be based on the statewide standard methodology developed pursuant to 1797.120. LEMSAs that adopt patient off-loading policies and procedures must also establish criteria for reporting and quality assurance follow-up for a patient off load time that exceeds the standard.

1. Definitions

Ambulance arrival at the Emergency Department (ED) - the time ambulance stops at the location outside the hospital ED where the patient will be unloaded from the ambulance.

Ambulance Patient Offload Time (APOT) - the time interval between the arrival of an ambulance patient at an ED and the time the patient is transferred to the ED gurney, bed, chair or other acceptable location and the emergency department assumes the responsibility for care of the patient.[1]

Ambulance Patient Offload Time (APOT) Standard – the time interval standard established by the LEMSA within which an ambulance patient that has arrived in an ED should be transferred to an ED gurney, bed, chair or other acceptable location and the ED assumes the responsibility for care of the patient.

Non-Standard Patient Offload Time – the ambulance patient offload time for a patient exceeds the standard period of time designated by the LEMSA.[2] (See *Standards* below.)

Ambulance transport – the 911 response emergency ambulance transport of a patient from the prehospital EMS system to an approved EMS receiving hospital. [3]

APOT 1 - an ambulance patient offload time interval measure. This metric is a continuous variable measured in minutes and seconds then aggregated and reported at the 90th percentile.

APOT 2 - an ambulance patient offload time interval process measure. This metric demonstrates the incidence of ambulance patient offload times expressed as a percentage of total EMS patient transports within a twenty (20) minute target and exceeding that time in reference to 60, 120 and 180 minute time intervals,.

[1] Health and Safety Code Division 2.5, Chapter 3, Article 1, Section 1797.120 (b).

[2] Health and Safety Code Division 2.5, Chapter 4, Article 1, Section 1797.225(c)(1).

[3] For the first year of reporting to EMSA, this will be limited to 911 response; however, LEMSAs may choose to also track APOT for all Inter-facility transports, 7-digit response, and other patient transports to the ED.

Ambulance Patient Offload Delay (APOD) - the occurrence of a patient remaining on the ambulance gurney and/or the emergency department has not assumed responsibility for patient care beyond the LEMSA approved APOT standard. (Synonymous with non-standard patient offload time)

AVL/GPS - Automated Vehicle Location/Global Position System

CEMSIS - California Emergency Medical Services Information System

CAD - Computer Aided Dispatch

Clock Start – the timestamp that captures when APOT begins. This is captured in the NEMSIS 3.4 data set as the time the patient/ambulance arrives at destination/receiving hospitalat the location outside the hospital ED where the patient will be unloaded from the ambulance (eTimes.11).

Clock Stop – the timestamp that captures when APOT ends. This is captured in the NEMSIS 3.4 data set as destination patient transfer of care date/time (e.Times.12).

ePCR – Electronic Patient Care Report

Emergency Department (ED) Medical Personnel – an ED physician, mid-level practitioner (e.g. Physician Assistant, Nurse Practitioner) or Registered Nurse (RN).

EMS Personnel – Public Safety First Responders, EMTs, AEMTs, EMT-II and/or paramedics responsible for out of hospital patient care and transport consistent with the scope of practice as authorized by their level of credentialing.

NEMSIS – National Emergency Medical Services Information System

MDC – Mobile Data Computer

Timestamp - a continuous variable that captures a date and time on a twenty-four (24) hour clock.

Transfer of Patient Care - the transition of patient care responsibility from EMS personnel to receiving hospital ED medical personnel. (See criteria below in Measurement Methods.)

Verbal Patient Report - The face to face verbal exchange of key patient information between EMS personnel and ED medical personnel provided that is presumed to indicate transfer of patient care.

Written EMS Report - The written report supplied to ED medical personnel that details patient assessment and care that was provided by EMS personnel. Electronic report (ePCR) is now required by Health and Safety Code 1797.227.

2. LEMSA Standards

In adopting policies and procedures for calculating and reporting APOT, a LEMSA must do the following[4]:

a. Use the statewide standard methodology for calculating and reporting APOT developed by the EMSA.

b. Establish criteria for the reporting of, and quality assurance follow-up for a non-standard patient offload time

Standard Offload Time
For purposes of local policy and quality improvement activities, each LEMSA may determine its own local system standard for comparison against APOT-1 (90th percentile of APOT time intervals). A survey of LEMSAs in 2015 indicated that LEMSAs measuring at that time had standard times that varied from predominantly between fifteen (15) and thirty (30) minutes with a range of ten (10) to forty-five (45) minutes. LEMSAs may develop the standard time using statistical techniques based on current or initial measures and in collaboration with health care partners.

Non-Standard Offload Time
"Non-standard patient offload time" is a time interval that is poorly defined in statute. For the purposes of statute implementation, it will be interpreted to mean any time interval that exceeds the APOT standard established by the LEMSA. Many LEMSAs currently define this as Ambulance Patient Offload Delay (APOD) consistent with the metrics and definitions contained in The Ambulance Patient Offload Toolkit[5].

Best Practice Example/Recommendation: LEMSAs should adopt the definition of non-standard patient offload time as synonymous with APOD. The associated quality improvement activity required in the statute[6] may be a graduated response that includes but would not be limited to measurement, monitoring, and a process consistent with the Toolkit. Refer to Section 6 below for recommendation of an APOT that would be considered a threshold event.

3. Measurement Methods

APOT is defined in statute as a time interval, therefore process controls must be established for collecting the beginning and ending timestamps to be utilized for the calculation of the time interval.

Clock Start (eTimes.11, "Patient Arrived at Destination Date/Time")
The clock start timestamp is straightforward and most commonly defined as the time the ambulance arrives at the ED and stops at the location outside the hospital ED where the

[4] Health and Safety Code Division 2.5, Chapter 4, Article 1, Section 1797.225(b)(1) and (2).

5 Toolkit to Reduce Ambulance Patient Offload Delays in the Emergency Department: Building Strategies for California Hospital and Local Emergency Services Agencies, 2014
http://www.emsa.ca.gov/Media/Default/PDF/Toolkit-Reduce-Amb-Patient.pdf

[6] Health and Safety Code Division 2.5, Chapter 4, Article 1, Section 1797.225(b)(2)

patient will be unloaded from the ambulance. LEMSAs currently collect this timestamp in several ways:

- Ambulance provider Computer Aided Dispatch (CAD) systems with two-way radio voice communication or Mobile Digital Communicator (MDC);
- Systems with Automated vehicle location/Global positioning systems (AVL/GPS) capability;
- ePCR or other commercial data collection system (e.g. FirstWatch, ReddiNet, EMSystems).

It is advantageous to have an ePCR system that is integrated with the provider agency CAD and/or other data collection systems for single point data retrieval.

Clock Stop (eTimes.12, "Destination Patient Transfer of Care Date/Time")
Capturing a timestamp for clock stop is more complex since the statute establishes two processes as the end point of APOT: *when the patient is transferred to the emergency department gurney, bed, chair or other acceptable location **and** the emergency department has assumed the responsibility for care of the patient*. This means that LEMSAs must establish a process control(s) with an associated data collection tool that can capture the completion of both under a single timestamp (clock stop). This needs to be defined as an event, not a process, for the purpose of collecting an accurate timestamp as to when transfer of care occurred.

Transfer of care criteria should include the following:

- Verbal patient report is given by transporting EMS personnel and acknowledged by ED medical personnel[7]
- The patient is moved off of the EMS gurney
- Clock stop is documented through a timestamp that is captured as eTimes.12 "Destination Patient Transfer of Care Date/Time" in NEMSIS 3.

Completion of the ePCR is not a requirement for Clock Stop.

In accordance with Health and Safety Code 1798.0, this is the responsibility of the local EMS agency Medical Director, because it determines when EMS medical direction terminates and EMS personnel may legally and ethically leave the patient.[8]

To avoid disagreement on time interval validity, it is recommended that LEMSAs, with hospital input, agree on the procedural implementation of these criteria for transfer of patient care that is synonymous with "acceptance of patient care responsibility" by hospital ED medical personnel.

Best Practice Example/Recommendation: Process controls that provide for the alignment of these two events, transfer of care and removal of the patient from the ambulance gurney, allow for the collection of a single timestamp. Optimally, documenting the completion of these two events should be accomplished with the signature of ED medical personnel on the

[7] Verbal report must include a structured and complete report with the following information: Chief complaint; initial vital signs; pertinent history and exam findings; laboratory tests (e.g., glucose) and copy of ECG; interventions and treatment provided in the field; current vital signs and status.

[8] HSC 1798.0 (Medical Director Responsibilities)

(a) The medical direction and management of an emergency medical services system shall be under the medical control of the medical director of the local EMS agency. This medical control shall be maintained in accordance with standards for medical control established by the authority.

ePCR and a validation or closed call rule within the ePCR program for the associated timestamp.

4. Data Collection and Documentation Options

An electronic patient care report (ePCR) or reporting system is a critical element of APOT data collection and required for an EMS provider to report data to the LEMSA. It is presumed that a LEMSA will adopt policies and procedures for the collection and reporting of APOT data collected from EMS providers that are using an ePCR in compliance with State law[9]. Data elements defined in APOT-1 and APOT-2 are consistent with NEMSIS version 3 and CEMSIS (California Data Dictionary).

The CAD systems are utilized to record two-way radio communications or information transmitted via MDC between the field and dispatch centers. CAD is utilized by most EMS providers to capture dispatch data and provide, critical information related to EMS operations. CAD data has historically provided much of the information needed to determine APOT. Accurate capture of data for statewide APOT reporting requires standardized CAD, data elements and definitions compliant with the NEMSIS 3.4 data standards. Newer systems combined with the updated NEMSIS data set for CAD provide integration with ePCR systems utilizing data elements defined in NEMSIS 3.4 and CEMSIS.

Examples of data collection and documentation tools currently in use include:

- A wide variety of CAD platforms
- ePCR without CAD integration
- ePCR with CAD integration
- First Watch – Transfer of Care (TOC) Module
- ReddiNet
- EMSystems

Best Practice Example/Recommendation: LEMSA's encourage/require all EMS providers to implement digital CAD data migration into ePCR platforms during transition to NEMSIS 3.4. This will provide for data analysis from a single source.

5. Data Validation, Local EMS System Reporting, and Data Analysis

Data collection systems, processes, analysis, reporting should be developed as a collaborative effort between the LEMSA, EMS provider(s) and hospitals. Local EMS systems that have identified negative system impacts due to APOD should utilize common language and metrics established by this document to define and measure APOT in the development of action plans to decrease or eliminate APOD. During discussions with the statewide ambulance patient offload coalition in 2012 and in subsequent surveys, some agencies did not recognize that they had a problem or realize the extent of the problem until they initiated measurement.

Measurement and data analysis should be followed by action planning, if indicated. Systems that demonstrate improvement in ambulance patient offload delay (APOD) have

[9] Health and Safety Code Division 2.5, Chapter 4, Article 1, Section 1797.227

consistently had high degree of collaboration between hospital and local EMS providers, and successful implementation of process improvement activities.

Examples currently utilized by LEMSAs include:

- Formation of ad-hoc or standing committees and workgroups
- Standardized definitions and nomenclature for APOT
- Collaborative development and review of performance reports by hospital and system
- Collaborative analytical and process control methodology (e.g. Six Sigma)
- Inclusion of APOT indicators in the LEMSA EMS Quality Improvement Plan

There is no requirement for a LEMSA to collect and report APOT. A LEMSA that *"adopts policies and procedures for calculating and reporting ambulance patient offload time shall":*

- Use the standard methodology,
- Establish criteria for providers to report the data,
- Utilize the data by establishing criteria for quality assurance follow-up for their local definition of a nonstandard patient offload time, and
- Report the data to EMSA.

Since EMS providers are obligated by a different statute to report patient data in electronic format to the LEMSA, local reporting is not an issue. The LEMSA may choose to display the data in a format of their choice.

Best Practice Example/Recommendation: LEMSAs should generate standardized monthly APOT reports utilizing the APOT-1 and APOT-2 methodology. Although initial state reporting requirements will be limited to emergency ambulance transports resulting from 911 response, LEMSAs may chose to include all ambulance transports, including 7-digit and interfacility transfers. Monthly or quarterly reports should be sent to EMS system stakeholders followed by periodic working meetings utilizing contemporary statistical process control analytics (e.g., Six Sigma) for data validation, CQI drill-down and action planning.

6. Criteria for Quality Assurance Follow-up

LEMSAs that adopt policies and procedures related to APOT must also establish criteria for the reporting and quality assurance follow-up for non-standard patient offload time.[10] It is recommended that the LEMSA adopt definitions for events with triggers linked to the LEMSA EMS Quality Improvement Program (EQIP).

Triggers for specific quality assurance or quality improvement actions could include but are not be limited to:[11]

- Occurrence of extended APOD, for example, more than one hour (APOT-2)

[10] Health and Safety Code Division 2.5, Chapter 4, Article 1, Section 1797.225(b)(2)

[11] Toolkit to Reduce Ambulance Patient Offload Delays in the Emergency Department: Building Strategies for California Hospital and Local Emergency Services Agencies, 2014 http://www.emsa.ca.gov/Media/Default/PDF/Toolkit-Reduce-Amb-Patient.pdf

- Occurrence of APOD with the patient decompensating or worsening in condition
- Occurrence of APOD with an associated patient complain
- Occurrence of APOD with associated delayed ambulance response(s) to other calls in the community
- Facility or system performance below established fractile (e.g. 90%) for compliance to the LEMSA's APOT standard

Best Practice Example/Recommendation: LEMSAs may establish an APOT that exceeds sixty (60) minutes as a threshold event that would trigger a response that may include engaging an EMS supervisor and hospital executive, the immediate transfer care and removal of the patient from the ambulance gurney, reporting to the effected entities, and quality assurance follow-up by the ambulance provider agency, the hospital and the LEMSA. As with the definition of Standard time, each LEMSA may determine its own threshold triggers.

7. Reporting to EMSA

EMSA has developed two (2) Indicator Specification Sheets (ISS) similar to the Core Measures specifications to provide guidance to LEMSAs on how to voluntarily submit the APOT data with the Core Measures. LEMSAs collecting ambulance patient offload times shall use the standard methodology when collecting the appropriate data to measures APOT. The two new ISS forms are included with this guidance and serve as the statewide standard methodology to extract and report APOT data and the reporting format.

In summary, these are:

- Aggregate data, but include the denominator (number of runs) for each data value
- Total by LEMSA for the reporting period
- Stratify by hospital--denominators are needed to provide context for hospital results.
- Report quarterly on specified dates

a. APOT-1: The number reported is the APOT in minutes for transfer of care of 90% of ambulance patients and the number of ambulance runs included in the report.

b. APOT-2: The number reported is the percentage of ambulance patients transported by EMS personnel with an offload time within twenty (20) minutes and those transports with an ambulance patient offload delay beyond 20 minutes. APOD is further stratified by sixty (60) minute intervals up to one hundred eighty (180) minutes then any APOT exceeding one hundred eighty (180) minutes. Twenty minutes has been selected as the target standard for statewide reporting consistency based on precedence from other systems outside of California, as well as experience of some of the California LEMSAs. Nothing in this measure limits the LEMSA from selecting their preferred standard and non-standard time for local discussion and performance improvement processes.

Appendix A: Language of AB 1223 (O'Donnell, 2015)

SECTION 1. Section 1797.120 is added to the *Health and Safety Code*, to read:

1797.120.

(a) The authority shall develop, using input from stakeholders, including, but not limited to, hospitals, local EMS agencies, and public and private EMS providers, and, after approval by the commission pursuant to Section 1799.50, adopt a statewide standard methodology for the calculation and reporting by a local EMS agency of ambulance patient offload time.

(b) For the purposes of this section, "ambulance patient offload time" is defined as the interval between the arrival of an ambulance patient at an emergency department and the time that the patient is transferred to an emergency department gurney, bed, chair, or other acceptable location and the emergency department assumes responsibility for care of the patient.

SEC 2. Section 1797.225 is added to the *Health and Safety Code*, to read:

1797.225.

(a) A local EMS agency may adopt policies and procedures for calculating and reporting ambulance patient offload time, as defined in subdivision (b) of Section 1797.120.

(b) A local EMS agency that adopts policies and procedures for calculating and reporting ambulance patient offload time pursuant to subdivision (a) shall do all of the following:

(1) Use the statewide standard methodology for calculating and reporting ambulance patient offload time developed by the authority pursuant to Section 1797.120.

(2) Establish criteria for the reporting of, and quality assurance followup for, a nonstandard patient offload time, as defined in subdivision (c).

(c) (1) For the purposes of this section, a "nonstandard patient offload time" means that the ambulance patient offload time for a patient exceeds a period of time designated in the criteria established by the local EMS agency pursuant to paragraph (2) of subdivision (b).

(2) "Nonstandard patient offload time" does not include instances in which the ambulance patient offload time exceeds the period set by the local EMS agency due to acts of God, natural disasters, or manmade disasters.

AMBULANCE PATIENT OFFLOAD TIME

MEASURE SET	Ambulance Patient Offload Time	
SET MEASURE ID #	APOT-1	
PERFORMANCE MEASURE NAME	Ambulance Patient Offload Time for Emergency Patients	
Description	What is the 90th percentile for Ambulance Patient Offload Time at the Hospital Emergency Department?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	Time (in minutes) from time ambulance arrives at the hospital until the patient is transferred to hospital emergency department care. All 911 emergency ambulance transports to the ED with eTimes available are included.	
Inclusion Criteria	**Criteria in NEMSIS 3.4**	**Data Elements--NEMSIS 3.4**
	• All events for which eResponse.05 "type of service requested" has value recorded of 911 Response (Scene)[1] AND • All events in eDisposition.21 "Type of Destination" with the value of 4221003, "Hospital-Emergency Department"; AND • eTimes.11 "Patient Arrived at Destination Date/Time" values are logical and present AND • eTimes.12 "Destination Patient Transfer of Care Date/Time" values are logical and present[2]	• Type of Service Requested (eResponse.05) • Type of Destination (eDisposition.21) • Patient Arrived at Destination Date/Time (eTimes.11) • Destination Patient Transfer of Care Date/Time (eTimes.12) (See APOT 2 and Guidance for criteria for eTimes.12)

[1] Initial year of reporting to EMSA will include only 911, but LEMSA may choose to also monitor APOT for IFT, 7-digit and other transports to the ED

[2] It is recommended to configure eTimes.12 "Destination Patient Transfer of Care Date/Time" in NEMSIS 3.4 with a signature block. If a system does not accommodate a signature block or a signature is not obtained for operational reasons, a time stamp on the ePCR based verbal acknowledgement of EMS patient report by ED medical personnel is sufficient.

Exclusion Criteria	Criteria	Data Elements
	None	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (number and units)	19 minutes, 34 seconds (19:34)	
Sampling	No	
Aggregation	Yes	
Minimum Data Values	Not Applicable	
Data Collection Approach	Retrospective data sources for required data elements include administrative data and pre-hospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	
Reporting Notes	Report aggregate values by: 1) LEMSA 2) Individual hospital Report the 90 percentile time calculated and the denominator (number of 911 transports to emergency department with time stamp data available) Report Quarterly, within 2 months of the end of the quarter: • June 1 for period of January 1 through March 31; • September 1 for period of April 1 through June 30; • December 1 for period of July 1 through September 30; • March 1 for period of October 1 through December 31	

AMBULANCE PATIENT OFFLOAD TIME—EXTENDED DELAY

MEASURE SET	Extended Ambulance Patient Offload Time	
SET MEASURE ID #	APOT-2	
PERFORMANCE MEASURE NAME	Duration of Ambulance Patient Offload Time for Patients transported to the Emergency Department by 911 response emergency ambulance[1]	
Description	2.1: What percentage of patients transported by EMS personnel experience a transfer of care within 20 minutes of arrival at the Hospital Emergency Department? 2.2: What percentage of patients transported by EMS personnel experience a transfer of care between 21 - 60 minutes of arrival at the Hospital Emergency Department? 2.3: What percentage of patients transported by EMS personnel experience a transfer of care between 61 - 120 minutes after arrival at the Hospital Emergency Department? 2.4: What percentage of patients transported by EMS personnel experience a transfer of care between 121 - 180 minutes after arrival at the Hospital Emergency Department? 2.5: What percent of patients transported by EMS personnel experience a transfer of care greater than 180 minutes after arrival at the Hospital Emergency Department?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Number of patients who were transported to a hospital emergency department by EMS Personnel. Include only 911 response transports with eTimes.11 and eTimes.12 available.	
Denominator Inclusion Criteria	**Criteria in NEMSIS 3.4**	**Data Elements--NEMSIS 3.4**
	All events for which eResponse.05 "Type of Service Requested" has value recorded of 911 Response (Scene); AND eDisposition.21 "Type of Destination" has value of 4221003, "Hospital-Emergency Department";	• Type of Service Requested (eResponse.05) • Type of Destination (eDisposition.21) • Patient Arrived at Destination Date/Time (eTimes.11) • Destination Patient Transfer of

1 The first year of reporting to EMSA will focus on 911 response units; however, LEMSAs may choose to also monitor IFT, 7-digit and other transports to the ED.

	AND eTimes.11 "Patient Arrived at Destination Date/Time" values are logical and present AND Destination Patient Transfer of Care Date/Time (eTimes.12) values are logical and present[2]	Care Date/Time (eTimes.12)
Exclusion Criteria	None	
	Criteria[3]	**Data Elements**
Numerator Statement (sub-population)	2.1: What percentage of patients transported by EMS personnel experience a transfer of care within 20 minutes of arrival at the Hospital Emergency Department? 2.2: Number of patients who were transported to a hospital emergency department by EMS Personnel and had their care transferred within 20 - 60 minutes after their arrival to the Emergency Department. 2.3: Number of patients who were transported to a hospital emergency department by EMS Personnel and had their care transferred 61-120 minutes after their arrival to the Emergency Department. 2.4: Number of patients who were	• Type of Service Requested (eResponse.05) • Type of Destination (eDisposition.21) • Patient Arrived at Destination Date/Time (eTimes.11) • Destination Patient Transfer of Care Date/Time (eTimes.12)

[2] It is recommended to configure ePCR programs so that the signature block timestamp is collected as eTimes.12 "Destination Patient Transfer of Care Date/Time" in NEMSIS 3.4. If a system does not accommodate a signature block or a signature is not obtained for operational reasons, a time stamp on the ePCR based verbal acknowledgement of EMS patient report by ED medical personnel is sufficient.

[3] Transfer to hospital care and end of APOT interval should include the following:

- Verbal patient report is given by transporting EMS personnel and acknowledged by ED medical personnel
- Patient is transferred off the EMS gurney
- Clock stop is documented through a timestamp that is captured as eTimes.12 in within NEMSIS 3

	transported to a hospital emergency department by EMS Personnel and had their care transferred 121 - 180 minutes after their arrival to the Emergency Department. 2.5: Number of patients transported by EMS personnel that experience a transfer of care greater than 180 minutes after arrival at the Hospital Emergency Department.	
Numerator Inclusion Criteria	**Criteria**	**Data Elements**
	All events for which eResponse.05 "type of service requested" has value recorded of "911 response (Scene)"; AND eTimes.12 "Destination Patient Transfer of Care Date/Time" values are logical and present	• Type of Service Requested (eResponse.05) • Type of Destination (eDisposition.21) • Patient Arrived at Destination Date/Time (eTimes.11) • Destination Patient Transfer of Care Date/Time (eTimes.12)
Exclusion Criteria	**Criteria**	**Data Elements**
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore the indicator expressed numerically is N/D =%	
Example of Final Reporting Value	15%	

(number and units)		
Sampling	No	
Aggregation	Yes	
Minimum Data Values	Not Applicable	
Data Collection Approach	• Retrospective data sources for required data elements include administrative data and pre-hospital care records. • Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format &Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Reporting Notes	Report aggregate values by: 1) LEMSA 2) Individual hospital Report the % calculated and the denominator used to calculate (number of 911 transports with time stamp data available) Report Quarterly, within 2 months of the end of the quarter: • June 1 for period of January 1 through March 31; • September 1 for period of April 1 through June 30; • December 1 for period of July 1 through September 30; • March 1 for period of October 1 through December 31	

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: Alternate Destination

SUMMARY

Todd Valeri, President of American Ambulance and Dan Lynch, LEMSA Director of Fresno will be presenting on Fresno's alternate Behavioral Health destination policy and issues around alternate destination policies.

ACTION REQUESTED

- *How is Fresno able to perform alternate destination activity?*
- *How does their policy conform to regulatory requirements?*
- *How is care of the patient affected and is there any significant ED crowding effect on area hospitals?*

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: MyCares

SUMMARY

Dr. Kevin Mackey will be presenting on the MyCares program and how it supports performance improvement with community CPR efforts

ACTION REQUESTED

- *Questions for discussion*

DISCUSSION

- Does your LEMSA participate in the MyCares program?
- What are your thoughts on the program and would you recommend it to your LEMSA?

CARES
Cardiac Arrest Registry to Enhance Survival

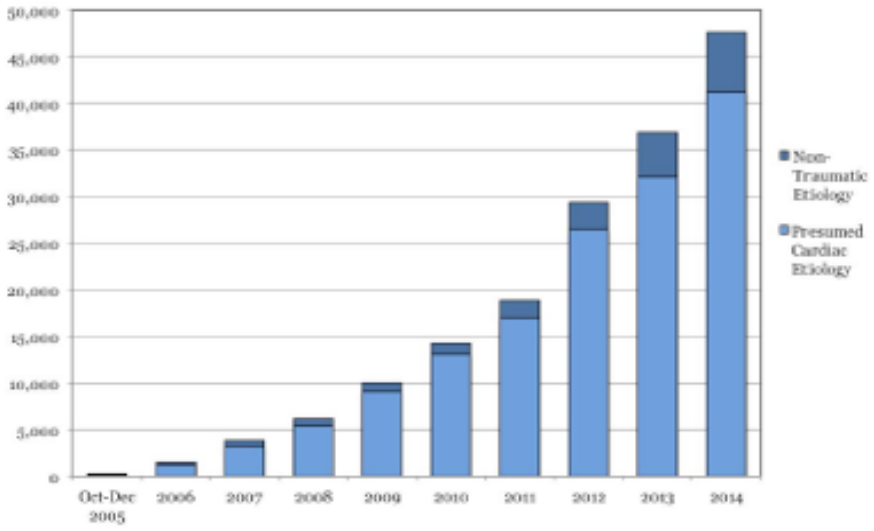
CARES

EMORY UNIVERSITY SCHOOL OF MEDICINE

FACT SHEET

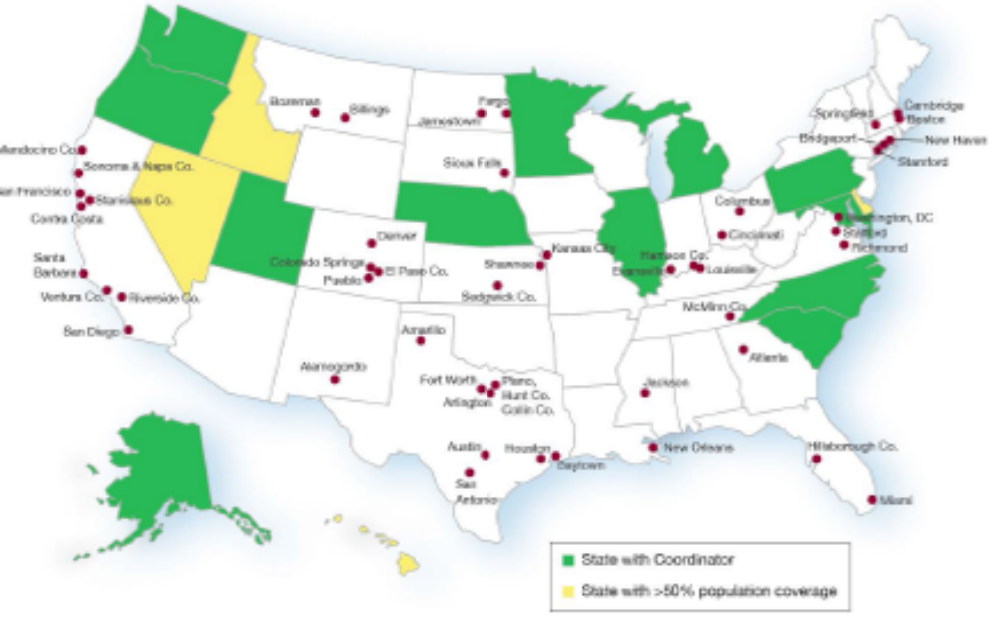
- Uses a secure Web database with restricted access for authorized users.
- Has software that collects and links data sources to create a single de-identified record for each OHCA event.
- Uses a simple, HIPAA-compliant methodology to protect confidentiality.
- Accepts a variety of input methods, such as uploaded data files or online data entry.
- Collects 9-1-1 computer-aided dispatch data for EMS response times.
- Allows longitudinal, internal benchmarking of key performance indicators.
- Provides multiple reporting features, including charts, graphs, and maps.

CARES Annual Call Volume



CARES helps local EMS administrators and community leaders determine:

- Who is affected in my community?
- When and where are cardiac events happening?
- What parts of the system are working well?
- What parts of the system could work better?
- How can we improve emergency cardiac treatment?



- **55** communities in **23** states
- **13** additional statewide registries
- Covers a catchment area of over **80 million**
- More than **800** EMS agencies
- More than **1,300** hospitals

More information is available at **https://mycares.net**

2017 HIE in EMS Summit
Moving Interoperability Forward By Engaging EMS
April 4 & 5, 2017, Anaheim Sheraton Park, Hotel

The California Emergency Medical Services Authority (EMSA) is hosting the 4th California Health Information Exchange (HIE) in Emergency Medical Services Summit at the Sheraton Park Hotel, in Anaheim, California on April 4th and 5th, 2017.

The HIE in EMS Summit will convene for two full days, featuring selected keynote presentations, workshops, and a fireside chat. Participants will significantly expand their knowledge base for HIE, and build a network of support for HIE projects supporting pre-hospital environments. Attendees will have the opportunity to learn alongside of our federal partners from Office of the National Coordinator for Health Information Technology (ONC), the Assistant Secretary for Preparedness and Response (ASPR), National Highway Traffic Safety Administration (NHTSA), California Health and Human Services Agency, Local EMS Agencies, health care partners, stakeholder groups, as well as our state partners implementing HIE.

HIE in EMS Summit topics include:
•National EMS Information System evolution, and integration with HIE efforts
•A demo of HIE projects in California (+EMS, PULSE & POLST eRegistry)
•Health information exchange policy direction in California and nationwide
•Leading & Funding Opportunities for HIE in EMS
•Consumable Data and Data Governance standards development
•Health Information Exchange and Governance
•A Deep Dive in HIE in EMS Interoperability
•Introduction to HIE in EMS

Register on Eventbrite.com 2017 HIE in EMS Summit, Anaheim, California
Registration Fee $220.00

Target Audience: Health IT professionals and providers, including EMS professionals, and especially those interested in emergency and pre-hospital care and disasters response.

On April 3rd, the HIE Advisory Committee will be meeting in a session open to the public at the same location from 10:00am - 4:00pm.

Event and Hotel Information:
A hotel room block is available to attendees at the Sheraton Park Hotel at a rate of $120.00 a night until March 5, 2017. Please click here to access the room block.
•Continental Breakfast and Lunch will be provided on both days of the event.
•Complimentary Wireless Internet will be provided
•Self-Parking is $12 per day
•Continuing Education Units will be offered to BRN and EMS

For updates on this event and health information exchange activities in California, please visit our blog at: http://hieinemsinca.com/. Please direct all Summit related questions to Rita Cervantes (916) 431-3730 or send an email to: Rita.Cervantes@emsa.ca.gov.

Dear Supporter,

The Emergency Medical Services Authority (EMSA) invites you to sponsor the 4th California Health Information Exchange (HIE) in Emergency Medical Services (EMS) summit, being held at the Sheraton Park Hotel in Anaheim, California on April 4 & 5, 2017. Your sponsorship will provide your organization with industry exposure and the ability to connect with approximately 200 local EMS agency representatives, EMS providers, Health IT professional, hospital administrators, and health information organizations, that are actively working to establish HIE in the EMS arena.

Attendees will hear from influential policymakers and industry leaders on topics such as:

- Sustainability in the "Post-HITECH Era", and Cure
- HIE progress and policy direction nationwide
- ePCR evolution to facilitate HIE in EMS
- NEMSIS 3 data
- Consumable data and data governance
- POLST eRegistry development

We are seeking a $1,200 contribution from each sponsor, and all event sponsors will be recognized with:

- A six-foot skirted table in the main conference room with electricity and two chairs. (No back drapes or side-dividers will be provided.)
- Sponsor vendor resource contracts for attendees.
- One complimentary summit registration which includes all summit events and meals.
- Verbal recognition of your sponsorship by the event host during the summit.
- Recognition on EMSA's website, newsletter and on the HIE in EMS blog.

If you are not able to attend or do not want to exhibit we are happy to work out a reduced sponsorship agreement. Please let us know if your organization is interested in sponsoring the 2017 summit, no later than February 3, 2017.

EMSA will encourage attendees to visit sponsor exhibits during the breaks and during the evening reception held on April 4, 2017.

With your support, we can make this year's summit the best one yet!

Please contact Rita Cervantes at EMSA directly to register as a sponsor at rita.cervantes@emsa.ca.gov or at (916) 431-3730.

2017 HIE in EMS Summit, California EMS Authority (EMSA)
Sponsor Information

On behalf of the California Emergency Medical Services Authority (EMSA), I would like to thank you for your agreement to be a sponsor in the upcoming 2017 Health Information Exchange Summit. The Summit will be held Tuesday, April 4, 2017 starting at 8:00 am to 5:00 pm and a sponsors networking reception from 6:00 pm to 7:30 pm - Wednesday, April 5, 2017 8:30 am to 3:00 pm (PDT) at the Sheraton Park Hotel 1855 S. Harbor Blvd., Anaheim, California 92802.

Accommodations
As a sponsor, you will be provided 2 chairs with a 6 foot, draped table, Wi-Fi access, and 1 power strip/electrical cord combo. We encourage you to bring a power strip if electricity is needed for more than one piece of equipment or you may contact: Kirsten Garcia Sr. Convention Services Manager at the hotel to purchase the use of additional items you might need. She can be reached at (714) 750-1811.

Advertisement in Summit Electronic Program Guide
As a sponsor, you will receive a color full-page advertisement in the Summit Program Guide. The document will be distributed digitally to all participants and will be placed on EMSA's HIE Blog for the public to access.

Electronic Program Guide Artwork
Please submit your advertisement to rita.cervantes@emsa.ca.gov by **Friday, March 3, 2017,** so that we may include it in the Electronic Program Guide. Please provide your artwork/ad/logo exactly as you would like it displayed in the program guide. Please make sure it is in a High Resolution PDF, jpeg, or EPA format. Late submissions may not be included in the Electronic Program Guide. If you have questions, contact Rita Cervantes directly at (916) 431-3730.

Exhibit Signage
As a sponsor, you will receive signage for your exhibit table.

Exhibit Signage Artwork
Please submit your artwork (exactly as you would like it to appear) to rita.cervantes@emsa.ca.gov by **Friday, March 3, 2017,** if you have questions, contact Rita Cervantes directly at (916) 431-3730.

Listing Company Name
The Electronic Program Guide and EMSA website will have a list of all the sponsors. Please provide EMSA with the correct way to list your company. Send information to rita.cervantes@emsa.ca.gov by **Friday, March 3, 2017.**

Exhibit Set-up and Take Down

Exhibit set-up will take place between 7:00 a.m. and 8:00 a.m. April 4, 2017. Exhibit tear-down will take place from 3 p.m. until 4:30 pm April 5, 2017. The exhibit room will be locked at night but we suggest your remove valuables daily as EMSA and the Sheraton Park Hotel do not accept responsibility for lost or stolen items.

Shipping Information

You are responsible for the shipment and receipt of your own items. EMSA and the Hotel does not accept any liability for equipment, goods, displays or other materials. The Hotel will provide a maximum of 3 days prior and 3 days post storage of materials.

The hotel's receiving entrance is open from 8:00 am to 5:00 pm, Monday through Friday. Any materials being sent to the Hotel must be marked as follows:

1. Hold for arrival – ATTN: (Guest's Name who will claim the shipment at hotel)
2. Date of claim persons arrival
3. Name of Group, preferably the posting name of the group**(EMSA HIE Conference)**
4. Complete Return Address
5. Sheraton Park Hotel Manager's Name: **Kirsten Garcia, Sr. Convention Services Manager**
6. Number of Boxes (Example: Box 1 of 2, and Box 2 of 2)
7. Address Package to Hotel as follows:
   Sheraton Park Hotel
   1855 S. Harbor Blvd.
   Anaheim, California, 92802

Hotel Reservations

Reservations can be made at the following URL**: Click Here for Hotel Information**

Summit Registration

We ask you to register for the Summit using Eventbrite at the following URL: **Click Here to Register for our 2017 HIE in EMS Summit**
Your sponsorship includes 1 complimentary registration for both days of the Summit which include all meeting materials, 2 continental breakfasts, 2 lunches on both days, and the sponsor networking reception held on April 4, 2017 at the hotel from 6:00 pm to 7:30 pm.

Sponsor Networking Reception

Part of your Sponsorship covers the networking reception to be held on April 4, 2017 at the hotel from 6:00 pm to 7:30 pm. Sponsorship recognition will be given at the event.

Thank you again for supporting the 2017 HIE in EMS Summit! Please contact rita.cervantes@emsa.ca.gov if you have any questions.

SENATE BILL No. 40

Introduced by Senator Roth
(Principal coauthor: Assembly Member Cervantes)

December 5, 2016

An act to amend Section 273.5 of the Penal Code, relating to domestic violence.

LEGISLATIVE COUNSEL'S DIGEST

SB 40, as introduced, Roth. Domestic violence.

Existing law makes it a crime, punishable by a fine, by imprisonment, or by both a fine and imprisonment, for a person to willfully inflict corporal injury, including, but not limited to, by strangulation or suffocation, resulting in a traumatic condition upon a person with whom the defendant has been in a specified domestic relationship.

This bill would recognize state law to separately establish the felony offense of domestic violence where the corporal injury is caused by strangulation or suffocation, as specified.

Vote: majority. Appropriation: no. Fiscal committee: no. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 273.5 of the Penal Code is amended to read:

273.5. (a) *(1)* Any person who willfully inflicts corporal injury resulting in a traumatic condition upon a victim described in subdivision (b) is guilty of a felony, and upon conviction thereof shall be punished by imprisonment in the state prison for two, three, or four years, or in a county jail for not more than one year,

or by a fine of up to six thousand dollars ($6,000), or by both that fine and imprisonment.

(2) Any person who willfully inflicts corporal injury resulting in a traumatic condition upon a victim described in subdivision (b), where the corporal injury resulting in a traumatic condition is caused in whole or in part by strangulation or suffocation, is guilty of a felony, and upon conviction thereof shall be punished by imprisonment in the state prison for two, three, or four years, or in a county jail for not more than one year, or by a fine of up to six thousand dollars ($6,000), or by both that fine and imprisonment. For purposes of this paragraph, "strangulation" and "suffocation" include impeding the normal breathing or circulation of the blood of a person by applying pressure on the throat or neck.

(b) Subdivision (a) shall apply if the victim is or was one or more of the following:

(1) The offender's spouse or former spouse.

(2) The offender's cohabitant or former cohabitant.

(3) The offender's fiancé or fiancée, or someone with whom the offender has, or previously had, an engagement or dating relationship, as defined in paragraph (10) of subdivision (f) of Section 243.

(4) The mother or father of the offender's child.

(c) Holding oneself out to be the spouse of the person with whom one is cohabiting is not necessary to constitute cohabitation as the term is used in this section.

(d) As used in this section, "traumatic condition" means a condition of the body, such as a wound, or external or internal injury~~, including, but not limited to, injury as a result of strangulation or suffocation,~~ whether of a minor or serious nature, caused by a physical force. ~~For purposes of this section, "strangulation" and "suffocation" include impeding the normal breathing or circulation of the blood of a person by applying pressure on the throat or neck.~~

(e) For the purpose of this section, a person shall be considered the father or mother of another person's child if the alleged male parent is presumed the natural father under Sections 7611 and 7612 of the Family Code.

(f) (1) Any person convicted of violating this section for acts occurring within seven years of a previous conviction under

subdivision (a), or subdivision (d) of Section 243, or Section 243.4, 244, 244.5, or 245, shall be punished by imprisonment in a county jail for not more than one year, or by imprisonment in the state prison for two, four, or five years, or by both imprisonment and a fine of up to ten thousand dollars ($10,000).

(2) Any person convicted of a violation of this section for acts occurring within seven years of a previous conviction under subdivision (e) of Section 243 shall be punished by imprisonment in the state prison for two, three, or four years, or in a county jail for not more than one year, or by a fine of up to ten thousand dollars ($10,000), or by both that imprisonment and fine.

(g) If probation is granted to any person convicted under subdivision (a), the court shall impose probation consistent with the provisions of Section 1203.097.

(h) If probation is granted, or the execution or imposition of a sentence is suspended, for any defendant convicted under subdivision (a) who has been convicted of any prior offense specified in subdivision (f), the court shall impose one of the following conditions of probation:

(1) If the defendant has suffered one prior conviction within the previous seven years for a violation of any offense specified in subdivision (f), it shall be a condition of probation, in addition to the provisions contained in Section 1203.097, that he or she be imprisoned in a county jail for not less than 15 days.

(2) If the defendant has suffered two or more prior convictions within the previous seven years for a violation of any offense specified in subdivision (f), it shall be a condition of probation, in addition to the provisions contained in Section 1203.097, that he or she be imprisoned in a county jail for not less than 60 days.

(3) The court, upon a showing of good cause, may find that the mandatory imprisonment required by this subdivision shall not be imposed and shall state on the record its reasons for finding good cause.

(i) If probation is granted upon conviction of a violation of subdivision (a), the conditions of probation may include, consistent with the terms of probation imposed pursuant to Section 1203.097, in lieu of a fine, one or both of the following requirements:

(1) That the defendant make payments to a battered women's shelter, up to a maximum of five thousand dollars ($5,000), pursuant to Section 1203.097.

(2) (A) That the defendant reimburse the victim for reasonable costs of counseling and other reasonable expenses that the court finds are the direct result of the defendant's offense.

(B) For any order to pay a fine, make payments to a battered women's shelter, or pay restitution as a condition of probation under this subdivision, the court shall make a determination of the defendant's ability to pay. An order to make payments to a battered women's shelter shall not be made if it would impair the ability of the defendant to pay direct restitution to the victim or court-ordered child support. If the injury to a person who is married or in a registered domestic partnership is caused in whole or in part by the criminal acts of his or her spouse or domestic partner in violation of this section, the community property may not be used to discharge the liability of the offending spouse or domestic partner for restitution to the injured spouse or domestic partner, required by Section 1203.04, as operative on or before August 2, 1995, or Section 1202.4, or to a shelter for costs with regard to the injured spouse or domestic partner and dependents, required by this section, until all separate property of the offending spouse or domestic partner is exhausted.

(j) Upon conviction under subdivision (a), the sentencing court shall also consider issuing an order restraining the defendant from any contact with the victim, which may be valid for up to 10 years, as determined by the court. It is the intent of the Legislature that the length of any restraining order be based upon the seriousness of the facts before the court, the probability of future violations, and the safety of the victim and his or her immediate family. This protective order may be issued by the court whether the defendant is sentenced to state prison or county jail, or if imposition of sentence is suspended and the defendant is placed on probation.

(k) If a peace officer makes an arrest for a violation of this section, the peace officer is not required to inform the victim of his or her right to make a citizen's arrest pursuant to subdivision (b) of Section 836.

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CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: Ambulance Cleaning Policies

SUMMARY

Hospital members have expressed concern over inconsistent use of appropriate germicidal agents in between patient transports. This is particularly concerning for effective prevention of Clostridium Difficile.

ACTION REQUESTED

- *Request the issue be presented to the California Association of Ambulance Providers for understanding of standardized cleaning procedures.*

American Ambulance recognizes the role EMS providers have in the prevention and control of infections. We are at the front line of medical care and have a high risk of exposure to patients with known or unknown infectious diseases. Our field crews understand their role in reducing the risk of cross infection to themselves, their colleagues, and their patients. This is best achieved by participating in frequent and routine cleaning activities.

After researching disinfectants, American Ambulance has chosen CaviCide® as its surface disinfectant/decontaminant cleaner (Cleaning method A) and Expose II 256® as its all-purpose cleaner and disinfectant (Cleaning method B and C). CaviCide® and Expose II 256® have been proven useful in all medical settings, and both products are effective disinfectants, cleaners, and decontaminants for all surface types.

Post Transport Decontamination and Disinfection – (Cleaning Method A)

Cleaning Method A is used after all patient encounters where there is a risk for contamination of equipment or ambulance surfaces.

Decontamination:

Use Personal Protective Equipment.

Spray all visible and soiled areas with CaviCide®.

Wipe away all visible and soiled areas with dry paper towel.

Disinfection:

Use Personal Protective Equipment.

Disinfect the following after each patient transport: a. Strip gurney of paper sheets and spray mattress, gurney handles and all touch points on gurney.

b. Spray bench seat and pedestal surface areas.

c. Spray on-scene equipment.

Disinfect the following after contact with a possible aerosol transmitted disease (ATD) patient. a. All ambulance patient compartment areas to include walls, seats, and floors

b. All gurney surfaces

c. All on-scene equipment

Allow disinfectant three minutes of contact time on surface.
Wipe off disinfected area with dry paper towel.
Allow area to dry.

Pre-shift Disinfection – (Cleaning Method B)

Cleaning Method B is the process used by Support Service Technicians (SST) prior to the beginning of the shift.

Clean and disinfect using Expose II 256®

Use Personal Protective Equipment.

Disinfect the patient compartment area: a. Include walls, seats, and pedestal.

b. All gurney surfaces

c. All on-scene equipment

Disinfect the crew compartment area a. Steering wheel

b. Dashboard

Allow disinfected three minutes of contact time on surface.
Wipe off area of disinfected with dry paper towel.
Allow area to dry.

Clean and disinfect using mop or brush

Use Personal Protective Equipment.

Fill mop bucket with adequate amount of disinfect.

Mop and disinfect the ambulance floor.

Using a brush, clean, and disinfect hard surface non-absorbing medical equipment (backboard and break away flat).

Allow disinfected three minutes of contact time on surface.

Allow equipment to dry.

Highly Saturated Surfaces with Body Fluid Decontamination and Disinfection - (Cleaning Method C)

Ambulances with highly saturated surfaces are placed out of service and driven to our headquarters for cleaning, disinfecting, and sanitization.

Decontamination

Use Personal Protective Equipment, which may include a gown.

Using Expose II 256®, spray all visible and soiled areas.

Wipe away all visible and soiled areas with dry paper towel and place in red bag.

Disinfect using spray bottle

Use Personal Protective Equipment.

Disinfect the patient compartment area. a. Include walls, seats, and pedestal.

b. All gurney surfaces.

c. All on-scene equipment.

Clean and disinfect using mop or brush

Use Personal Protective Equipment.
Fill mop bucket with adequate amount of disinfect.
Mop and disinfect the ambulance floor.
Using a brush, clean and disinfect hard surface non-absorbing medical equipment (backboard and break away flat).
Allow disinfected three minutes of contact time on surface.
Allow equipment to dry.

Non-Disposable Absorbing equipment – (Cleaning Method D)

Examples of equipment include backboard/gurney straps, patient restraints, and blood pressure cuffs. Field crews place soiled items in white plastic bags, and are turned over to the Support Services Department at the conclusion of their shift. SSTs are responsible for the cleaning, disinfecting, and sanitizing of the equipment prior to it being placed back in service.

Use Personal Protective Equipment.
Place Item in white plastic bag (Do not use red bag).
Place bag in laundry area in the ambulance bay
Equipment will be laundered by SSTs with an appropriate disinfectant and sanitizer detergent.

Disposable Equipment

Use Personal Protective Equipment.
Discard disposable equipment in clear plastic bag.
Red Bag Usage - Red bags should only be used for disposable items saturated with body fluid.
Red bags should be disposed of at hospitals in larger red bag containers.

Deep Cleaning and Disinfection – (Cleaning Method D-1)

Regular interval extensive deep cleaning and decontamination performed by Detailer Staff.

Ambulance Cab

Remove all items from cab.
Clean, disinfect, and sanitize all panels, and door pockets.
With brush, clean, disinfect, and sanitize floor and door jams.

Patient Compartment

Remove equipment from under bench seat.
Clean, disinfect, sanitize bench seat area.
Remove all items from cabinetry
Clean, disinfect, and sanitize all cabinets.
Remove and clean gurney locking parts.
Clean, disinfect, and sanitize ambulance floor.
Replace non-skid tape as needed.
Clean all windows.

INFECTION PREVENTION AND CONTROL GUIDANCE FOR EMS PROVIDERS

This document was developed by the Metropolitan Chicago Healthcare Council, Clinical Services Department, Infection Prevention and Control Forum.

AMBULANCE CLEANING AND DISINFECTION

AMBULANCE CLEANING AND DISINFECTION

In a recent study published in the American Journal of Infection Control, several Chicago-area ambulances tested positive for *Staphylococcus aureus*, a bacteria that causes serious infections and is resistant to certain types of antibiotics. At least one *Staphylococcus aureus* sample was found in 69% of the ambulances tested. Of samples detected, 77% showed resistance to at least one commonly used antibiotic, and 12% of samples were identified as one of the 'superbugs' known as methicillin-resistant *S. aureus* (MRSA). This study found that the meticulous application of existing cleaning techniques in ambulances is necessary to prevent the further spread of these harmful pathogens (disease causing germs) in the prehospital environment (Rago et al., 2012).

Compliance with best practices for cleaning and disinfecting EMS vehicles and patient care equipment is an important factor in preventing the spread of infections. EMS providers and their patients have an increased risk for spreading infections without clear policies and an understanding of these procedures (Fleming, 2009).

Ambulance Cleaning & Disinfection

Cleaning is defined as the physical removal of foreign and organic materials such as blood, body fluids, and disease causing microorganisms or germs from a surface or object. **Cleaning physically removes, but does not kill, germs.** Cleaning is accomplished by using water, detergents, and a scrubbing action. The key to cleaning is the use of friction to remove debris and reduce presence of germs (PIDAC, 2009).

Disinfection is the process used to kill and prevent the growth of germs on objects and surfaces. Disinfection is accomplished through the use of chemical products regulated by the U.S. Environmental Protection Agency (EPA). Disinfectants should only be used after items have been thoroughly cleaned.

Cleaning and disinfection is a two-step process. Following cleaning, the disinfectant should be applied or reapplied and allowed to remain on the surface for the full contact time (PIDAC, 2009). Contact time, or kill time, is the length of time that the disinfectant must remain on the surface or object, as specified by the manufacturer (Rutala et al., 2008).

Recommendations for Ambulance Cleaning & Disinfection

Objects and surfaces must be cleaned thoroughly before effective disinfection can take place (PIDAC, 2009). The following routine cleaning and disinfection methods should be employed throughout the vehicle (Hill, 2009):

1. Visible soil, blood, and other items should be removed from the item or surface before the disinfectant is applied.

2. Cleaning and disinfection should be done as soon as possible after the items and surfaces have been used. Disinfectants should be used according to the manufacturer's instructions. Adhere to any safety precautions or other recommendations as directed (e.g., allowing adequate ventilation in confined areas and proper disposal). Gloves must be worn while using disinfectants. Immediately perform hand hygiene per CDC guidelines after removing gloves.

3. Contaminated **reusable** patient care devices and equipment should be placed in clearly marked biohazard bags for appropriate cleaning and disinfection.

4. **Disposable equipment and contaminated linens** should be appropriately bagged and disposed of at the receiving hospital, per the hospital policies.

5. **Frequently touched surfaces in patient-care compartments** (including stretchers, railings, medical equipment control panels, adjacent flooring, walls, ceilings and work surfaces, door handles, radios, keyboards, and cell phones) that become directly contaminated with respiratory secretions and other body fluids during patient care, or indirectly by touching the surfaces with gloved hands, should be first cleaned and then disinfected using an EPA-approved disinfectant in accordance with the manufacturer's instructions. Ensure that the disinfectant is applied to the surface for the full contact time, or kill time, as specified by the manufacturer.

6. **Non-patient-care areas of the vehicle**, such as the driver's compartment, may become indirectly contaminated. Personnel should be particularly vigilant to avoid contaminating environmental surfaces not directly related to patient care (e.g., steering wheels, light switches, gear shifts, etc.). If the surfaces in the driver's compartment become contaminated, clean and disinfect according to the vehicle manufacturer's recommendations.

Please see **Appendix A: Checklist for the Cleaning and Disinfection of an Ambulance,** for more information on these procedures.

Recommendations for the Frequency of Cleaning in Ambulances

1. High-risk Surfaces

Surfaces that are frequently touched with hands (both gloved and ungloved) require cleaning and disinfection between every patient encounter (PIDAC, 2009).

Stretchers/Railings	Stethoscopes	Work surfaces
Door handles	Monitoring equipment and control panels	Radios
Computer keyboards	Steering wheels	Light Switches

2. Low-risk Surfaces

Surfaces that have minimal contact with hands require cleaning on a regular basis or when contamination occurs (PIDAC, 2009).

Floors	Ceilings	Cabinets
Walls	Windows	

Providers should always wipe down equipment, carefully focusing on items used for patient care and items in contact with the patient during care (McCallion, 2012). Please see **Appendix B – Cleaning Standards for Ambulance Equipment**.

Special Precautions and Recommendations

Routine cleaning and disinfection may not be adequate to remove some germs, particularly *Clostridium difficile* and Norovirus, from contaminated surfaces.

1. *Clostridium difficile* – Specialized cleaning and disinfection practices are required to remove *C. difficile* from surfaces and patient care items. *C. difficile* is a spore-forming bacteria that causes severe diarrhea.Spores can persist in the environment for months.. Not all disinfectants can kill spores.

   Ambulance companies that frequently transport patients to and from nursing homes and long-term care facilities are at an increased risk for exposure to *C. difficile* (Sehulster et al., 2003).

2. Norovirus – Noroviruses are a group of viruses that cause acute gastroenteritis in humans. Noroviruses are extremely contagious and easily transmitted by direct person-to-person contact; by transfer of the virus after touching contaminated materials and surfaces; or via droplets from vomitus. Noroviruses can survive in the environment for at least 12 days (PIDAC, 2009).

   It is recommended that EPA approved disinfectants for use for C. difficile such as bleach,1:10 dilution, is used to disinfect objects and surfaces contaminated by *C. difficile* and the Norovirus.
   Standard bleach is available in ready to use wipes or sprays (Sehulster et al., 2003; PIDAC, 2009).

REFERENCES

Arora, V., & Johnson, J. (2006). A model for building a standardized hand-off protocol. *The Joint Commission Journal on Quality and Patient Safety, 32* (11). Retrieved from http://web.ebscohost.com.flagship.luc.edu

Centers for Disease Control and Prevention. (2012). Tuberculosis: Basic Facts. Retrieved from http://www.cdc.gov/tb/topic/basics/default.htm

Centers for Disease Control and Prevention. (2011). Vaccines & Immunizations: What would happen if we stopped using vaccines? Retrieved from http://www.cdc.gov/vaccines/vac-gen/whatifstop.htm

Centers for Disease Control and Prevention. (2010). Vaccines & Immunizations: 10 things you need to know about immunizations. Retrieved from http://www.cdc.gov/vaccines/vac-gen/10-shouldknow.htm

Evans, G. (2011). Vermont's infection prevention network unites long term care, hospitals against MDRO's. *Hospital Infection Control and Prevention.* Retrieved from http://web.ebscohost.com.flagship.luc.edu

Fleming, J. (2009). EMS equipment and transport vehicle cleaning and disinfection: challenges and best practices. *EMS World*. Retrieved from http://www.emsworld.com/article/10320653/ems-equipment-and-transport-vehicle-cleaning-and-disinfection-challenges-best-practices

The Health Care Improvement Foundation. (2010). Consensus based guideline on the: transport of patients on contact precautions. Retrieved from http://www.hcifonline.org/content/document/detail/1062/

Hill, J. (2009). Ambulance decontamination guidelines for suspected influenza patients. Retrieved from http://www.newsquest911.com/eNewsletter/pdf/05_01_09.pdf

Jensen, P., Lambert, L., Lademarco, M., & Ridzon, R. (2005). Guidelines for preventing the transmission of *Mycobacterium* tuberculosis in health-care settings. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, 54* (17), 1-141. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm

Koeing, G., & Galvagno, S. (2012). Effective communication between providers and physicians improves patient hand-offs. *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/patient-care/effective-communication-between-provider

Metropolitan Chicago Healthcare Council (MCHC). (2007). Guideline for the Development of the Process for Hand-Off Communication.

McCallion, T. (2012). How clean is your ambulance? *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/ems-insider/how-clean-your-ambulance

National Patient Safety Agency. (2007). A framework for setting and measuring performance outcomes in ambulance trusts. United Kingdom: National Health Service. Retrieved from http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID

National Occupation Research Agenda. (2009). Identification of research opportunities for the next decade of NORA. *Department of Health and Human Services.* Retrieved from www.cdc.gov/niosh

National Transitions of Care Coalition. (2010). Improving transitions of care. Retrieved from http://www.ntocc.org/

Occupational Safety and Health Administration. (2012). Standard 29 CFR 1910.1030, Occupational exposure to blood borne pathogens. Retrieved from http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10051

Provincial Infectious Disease Advisory Committee. (2009). Best practices for environmental cleaning for prevention and control of infections. Retrieved from http://www.caenvironmentalmanagement.com/PIDAC%20best%20practice.pdf

Rago, J., Buhs, K., Makarovaite, V., Patel, E., Pomeroy, M., & Yasmine, C. (2012). Detection and analysis of *Staphylococcus aureus* isolates found in ambulances in the Chicago metropolitan area. *American Journal of Infection Control, 40* (3), 201-205.
Retrieved from http://www.abih.net.br/wp-content/uploads/Rago-et-al-AJIC-Abr2012.pdf

Rupp, A. (2012). Patient Isolation Guide for EMS Transport.

Rutala, W., Weber, D., & the Healthcare Infection Control Practices Advisory Committee (HICPAC). (2008). Guideline for disinfection and sterilization in healthcare facilities. Retrieved from: http://www.cdc.gov/hicpac/pdf/guidelines/Disinfection_Nov_2008.pdf

Sehulster, L.M., Chinn, R.Y.W., Arduino, M.J., Carpenter, J., Donlan, R., Ashford, D.,Cleveland, J. (2003). Guidelines for environmental infection control in health-care facilities. *Recommendations from Centers for Disease Control and Prevention and the Healthcare Infection Control Practices Advisory Committee (HICPAC).* Retrieved from http://www.cdc.gov/hicpac/pdf/guidelines/eic_in_hcf_03.pdf

Shefer, A., Atkinson, W., Friedman, C., Kuhar, D., Mootrey, G., Bialek, S.,Wallace, G. (2011). Immunization of health-care personnel: Recommendations of the Advisory Committee on Immunization Practices (APIC). *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, 60* (7), 1-45. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm

Siegel J., Rhinehart, E., Jackson M., Chiarello L., and the Healthcare Infection Control Practices Advisory Committee. (2007) Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings. Retrieved from http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf

Washington State Hospital Association. (2009). Standardization of isolation precaution signage in Washington. Retrieved from http://www.wsha.org/files/82/MSWordIIsolationPrecautionToolkit_RevNov09.pdf

West, K. (2009). The right shot: meeting the requirements for vaccination and immunization. *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/health-and-safety/right-shot-meeting-requirement

Wisconsin Department of Health Services. (2012). TB Testing and Guidelines for EMS Personnel. Retrieved from http://www.dhs.wisconsin.gov/ems/Prevention_safety/tbtesting.htm

World Health Organization. (2007). Standard precautions in health care. *Infection Control.* Retrieved from http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf

Appendix A:

CHECKLIST FOR THE CLEANING AND DISINFECTION OF AN AMBULANCE

CHECKLIST FOR THE CLEANING AND DISINFECTION OF AN AMBULANCE

Cleaning Following Each Patient Transport	
Completed	**Action**
☐	Place potential infected medical waste in a clearly marked biohazard waste receptacle or bag per OSHA standards.
☐	Carefully dispose of sharps into a sharps container.
☐	Clean and disinfect all equipment used during the patient encounter following your agency's policies *(See Appendix B – Cleaning Standards for Ambulance Equipment).*
☐	Clean and disinfect the cab and patient compartment, as required.
☐	Restock vehicle as required.
☐	**If the vehicle is heavily contaminated, it should be taken out of service and cleaned following your agency's policies**.
Routine Scheduled Cleaning	
Completed	**Action – Patient Compartment**
☐	Remove all equipment and sweep out the compartment; clean and disinfect.
☐	Remove stretchers; clean and disinfect all components including mattress and belts.
☐	Remove wall suction; clean and disinfect.
☐	Remove the contents of cabinets and shelves; clean and disinfect all surfaces.
☐	Clean, disinfect, and dry all hard surface items before returning them to the cabinet or shelf; inspect for damage and expiration dates; repair/replace as needed.
☐	Sweep, vacuum, clean, and disinfect floor.
☐	Clean and disinfect all chairs, bench seats, and seat belts.
☐	Clean and disinfect all interior surfaces, including ceiling and walls.
☐	Empty, clean, and disinfect waste containers.
☐	Clean interior windows.
Completed	**Action – Driver's Compartment**
☐	Remove all equipment from the front of the vehicle.
☐	Clean and vacuum floor.
☐	Clean and disinfect all interior surfaces, including walls, doors, radio equipment, windows, and the dashboard.

Adapted from Provincial Infectious Disease Advisory Committee's 'Best Practices for Environmental Cleaning for Prevention and Control of Infections.'

Appendix B
CLEANING STANDARDS FOR AMBULANCE EQUIPMENT

CLEANING STANDARDS FOR AMBULANCE EQUIPMENT

1. According to OSHA standards, every EMS agency is required to have an exposure control plan for their EMS providers. This plan must clearly state how the EMS vehicle and each piece of equipment is to be cleaned, including the type of the cleaning/disinfection products to be used, and how often it is to be cleaned (McCallion, 2012).
2. When performing cleaning and decontamination, staff will wear personal protective equipment. Use an **EPA-registered sporicidal solution** (https://www.epa.gov/sites/production/files/2017-01/documents/20172701.listk_.pdf) for cleaning and decontamination following manufacturer's recommendations.

Vehicle Equipment – Patient Contact		
Equipment	**Cleaning Frequency**	**Additional Considerations**
Stretchers	After every patient use	
Spinal Boards/ Head Blocks	After every patient use	
Transport Chair and Other Manual Transfer Equipment	After every patient use	
All Reusable Medical Equipment *(e.g., cardiac monitor, defibrillator, resuscitation equipment, etc.)*	After every patient use	
Stretcher Mattresses	After every patient use	
Pillows	After every patient use	
Linens	After every patient use	
Passenger Seat - Upholstered	After every use	Replace seatbelts if heavily Contaminated with blood or body fluids Torn or damaged seat covers should be replaced Vacuum and/or shampoo as needed

Passenger Seat - Vinyl	After every use	Replace seatbelts if heavily contaminated with blood or body fluids Torn or damaged seat covers should be replaced
Medical Gas Equipment	After every use	Replace single-use items after each use
Computer Equipment	Daily and after every use, especially if used while treating the patient	

Vehicle Equipment – Non-Patient Contact		
Equipment	**Cleaning Frequency**	**Additional Considerations**
Response Kits and Bags	Bags regularly taken into patient care areas must be wiped clean after every use, with special attention given if contaminated with blood or body fluid Heavily used bags should be laundered weekly or monthly Lesser used bags should be cleaned every other month	All bags placed on ambulances should be made of wipeable material Any bag heavily contaminated with blood or body fluids should be disposed
Hand Sets *(e.g., radios and mobile phones)*	Daily and when contaminated	
Sharps Container	Weekly or when contaminated	

Vehicle – Internal and External Fixed Features		
Equipment	**Cleaning Frequency**	**Additional Considerations**
Overall Appearance - Exterior	Routine cleaning should be performed weekly, or as necessary due to weather conditions	If operational pressures prevent thorough cleaning of the exterior, the minimum cleaning standards to comply with health and safety laws should be met *(i.e. windows, lights, reflectors, mirrors, and license plates)*
Overall Appearance - Interior	Clean between patients, daily, and deep-clean weekly	Clean all surfaces in contact with the patient and that may have been contaminated Crews should routinely clean the vehicle floor Remove all detachable equipment and consumables
Ceiling	Weekly	If contaminated, clean as soon as possible
Cabinets, Drawers, and Shelves	Weekly	If contaminated, clean as soon as possible
Product Dispensers	Daily or as soon as possible, if contaminated	Liquid dispenser nozzles should be free of product build- up, and the surrounding areas should be free from splashes of the product
Electrical Switches, Sockets, and Thermostats	Weekly or as soon as possible, if contaminated	
Equipment Brackets	Weekly or as soon as possible, if contaminated	

Fire Extinguisher	Weekly or as soon as possible, if contaminated	
Floor	Daily and when heavily soiled or contaminated with blood and/or body fluids.	
Floor Mounted Stretcher Locking Device/Chair Mounting	Weekly or as soon as possible, if contaminated	
Hand Rails	Clean rails that have been touched after every patient Clean all rails weekly	
Heating/Ventilation Grills	Weekly or as soon as possible, if contaminated	
Walls	Weekly or as soon as possible, if contaminated	
Windows	Weekly or as soon as possible, if contaminated	
Work Surfaces	After every patient	
Waste Receptacles	Daily or as soon as possible, if contaminated	

Adapted from the National Patient Safety Agency's 'A Framework for Setting and Measuring Performance Outcomes in Ambulance Trusts.'

REFERENCES

Arora, V., & Johnson, J. (2006). A model for building a standardized hand-off protocol. *The Joint Commission Journal on Quality and Patient Safety, 32* (11). Retrieved from http://web.ebscohost.com.flagship.luc.edu

Centers for Disease Control and Prevention. (2012). Tuberculosis: Basic Facts. Retrieved from http://www.cdc.gov/tb/topic/basics/default.htm

Centers for Disease Control and Prevention. (2011). Vaccines & Immunizations: What would happen if we stopped using vaccines? Retrieved from http://www.cdc.gov/vaccines/vac-gen/whatifstop.htm

Centers for Disease Control and Prevention. (2010). Vaccines & Immunizations: 10 things you need to know about immunizations. Retrieved from http://www.cdc.gov/vaccines/vac-gen/10-shouldknow.htm

Evans, G. (2011). Vermont's infection prevention network unites long term care, hospitals against MDRO's. *Hospital Infection Control and Prevention.* Retrieved from http://web.ebscohost.com.flagship.luc.edu

Fleming, J. (2009). EMS equipment and transport vehicle cleaning and disinfection: challenges and best practices. *EMS World*. Retrieved from http://www.emsworld.com/article/10320653/ems-equipment-and-transport-vehicle-cleaning-and-disinfection-challenges-best-practices

The Health Care Improvement Foundation. (2010). Consensus based guideline on the: transport of patients on contact precautions. Retrieved from http://www.hcifonline.org/content/document/detail/1062/

Hill, J. (2009). Ambulance decontamination guidelines for suspected influenza patients. Retrieved from http://www.newsquest911.com/eNewsletter/pdf/05_01_09.pdf

Jensen, P., Lambert, L., Lademarco, M., & Ridzon, R. (2005). Guidelines for preventing the transmission of *Mycobacterium* tuberculosis in health-care settings. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, 54* (17), 1-141. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm

Koeing, G., & Galvagno, S. (2012). Effective communication between providers and physicians improves patient hand-offs. *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/patient-care/effective-communication-between-provider

Metropolitan Chicago Healthcare Council (MCHC). (2007). Guideline for the Development of the Process for Hand-Off Communication.

McCallion, T. (2012). How clean is your ambulance? *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/ems-insider/how-clean-your-ambulance

National Patient Safety Agency. (2007). A framework for setting and measuring performance outcomes in ambulance trusts. United Kingdom: National Health Service. Retrieved from http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID

National Occupation Research Agenda. (2009). Identification of research opportunities for the next decade of NORA. *Department of Health and Human Services.* Retrieved from www.cdc.gov/niosh

Care Coalition. (2010).

REFERENCES

Occupational Safety and Health Administration. (2012). Standard 29 CFR 1910.1030, Occupational exposure to blood borne pathogens. Retrieved from http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10051

Provincial Infectious Disease Advisory Committee. (2009). Best practices for environmental cleaning for prevention and control of infections. Retrieved from http://www.caenvironmentalmanagement.com/PIDAC%20best%20practice.pdf

Rago, J., Buhs, K., Makarovaite, V., Patel, E., Pomeroy, M., & Yasmine, C. (2012). Detection and analysis of *Staphylococcus aureus* isolates found in ambulances in the Chicago metropolitan area. *American Journal of Infection Control, 40* (3), 201-205.
Retrieved from http://www.abih.net.br/wp-content/uploads/Rago-et-al-AJIC-Abr2012.pdf

Rupp, A. (2012). Patient Isolation Guide for EMS Transport.

Rutala, W., Weber, D., & the Healthcare Infection Control Practices Advisory Committee (HICPAC). (2008). Guideline for disinfection and sterilization in healthcare facilities. Retrieved from: http://www.cdc.gov/hicpac/pdf/guidelines/Disinfection_Nov_2008.pdf

Sehulster, L.M., Chinn, R.Y.W., Arduino, M.J., Carpenter, J., Donlan, R., Ashford, D.,Cleveland, J. (2003). Guidelines for environmental infection control in health-care facilities. *Recommendations from Centers for Disease Control and Prevention and the Healthcare Infection Control Practices Advisory Committee (HICPAC).* Retrieved from http://www.cdc.gov/hicpac/pdf/guidelines/eic_in_hcf_03.pdf

Shefer, A., Atkinson, W., Friedman, C., Kuhar, D., Mootrey, G., Bialek, S.,Wallace, G. (2011). Immunization of health-care personnel: Recommendations of the Advisory Committee on Immunization Practices (APIC). *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, 60* (7), 1-45. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm

Siegel J., Rhinehart, E., Jackson M., Chiarello L., and the Healthcare Infection Control Practices Advisory Committee. (2007) Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings. Retrieved from http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf

Washington State Hospital Association. (2009). Standardization of isolation precaution signage in Washington. Retrieved from http://www.wsha.org/files/82/MSWordIIsolationPrecautionToolkit_RevNov09.pdf

West, K. (2009). The right shot: meeting the requirements for vaccination and immunization. *Journal of Emergency Medical Services.* Retrieved from http://www.jems.com/article/health-and-safety/right-shot-meeting-requirement

Wisconsin Department of Health Services. (2012). TB Testing and Guidelines for EMS Personnel. Retrieved from http://www.dhs.wisconsin.gov/ems/Prevention_safety/tbtesting.htm

World Health Organization. (2007). Standard precautions in health care. *Infection Control.* Retrieved from http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: EMS/Trauma Committee Members

FROM: BJ Bartleson, VP Nursing & Clinical Services

SUBJECT: EMSA STEMI Regulations

SUMMARY

On December 16, 2016, EMSA released a letter seeking public comment for the Emergency Medical Services STEMI Critical Care Systems Regulation Draft. With input from the EMS/T Committee, BJ submitted a response on January 30, 2017.

ACTION REQUESTED

- *Information and discussion*

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

January 30, 2017

California EMS Authority
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670-6073
Attn: Farid Nasr, MD
EMS Systems Division
Farid.nasr@emsa.ca.gov

BY ELECTRONIC CORRESPONDENCE

RE: STEMI Critical Care System, Notice of Proposed Rulemaking, Title 22, Division 9, Prehospital Emergency Medical Services, Chapter 7.1 ST Elevation Myocardial Infarction (STEMI) Critical Care System

Dear Dr. Nasr:

On behalf of more than 400 member hospitals and health systems, the California Hospital Association (CHA) respectfully offers the following comments for consideration to the proposed regulatory text for the EMS Authority, California Health and Safety Code sections 1797,103 and 1797.176.

CHA appreciates EMSA's pursuit of a highly functional STEMI critical care system. These standards will improve the care of patients suffering from life-threatening myocardial infarction through establishment of standards for local optional acute STEMI Critical Care Systems throughout the State for the local EMS agencies (LEMSAs) to adopt. The regulations should provide statewide consistency and fairness and increase transparency of local and state government. They should concur with national standards of STEMI critical care and assure California citizens that there is a comprehensive systemic approach for care of the STEMI victim that is evidenced based, continuously evaluated, well coordinated, and, driven by the most efficient and effective use of resources.

That being said, CHA offers a substantive change to the infrastructure of the document to modernize the regulations as presently written. Presently, the proposed regulations can't be modified in a timely manner to accommodate today's rapid changes in science and technology. CHA proposes that state regulatory standards of care be based on national STEMI certification standards, principly, the American Heart Association's Mission Lifeline Standards, that represent the leading scientific evidenced based standards of practice and are updated every two years. By utilizing AHA Mission Lifeline standards, as the approval body, versus the proposed written regulations, hospitals will be held to current evidence based practice, as well as

effectively complying with new changes in practice and technology that cannot be accommodated efficiently through the present state regulatory review process. Using existing AHA Mission Lifeline certification, the EMSA state regulations are kept current without tedious, lengthy, regulatory review, approval and change. AHA/ASA standards of stroke practice are reviewed every two years which coincides with the presently proposed stroke critical care hospital policy and procedure review period. Many other states have adopted this methodology and CHA suggests that California do the same.

The comments outlined on the attached comment form (Comments for Draft STEMI Regulations) reflect the specific additions and deletions that modernize the regulations to existing AHA STEMI Mission Lifeline Systems of Care for STEMI Receving Hospitals, STEMI Referral Hospitals and EMS.

To summarize this and other changes-

I. Article 1. Definitions

a. We added four new terms to explain the AHA STEMI Mission Lifeline Systems of Care. (American Heart Association, American Heart Association Mission Lifeline, American Heart Association Get With the Guidelines® and American Heart Association, STEMI Systems of Care
b. We changed the definition of Cardiac Catheterization to match Title 22, wording (§70438)
c. We added a new term “Cardiac Catheterization” and also used Title 22 wording(§70438)
d. Cardiac Catheterization Team was changed to reflect both the performance and assistance activities included in cardiac catheterization and added the term registered to nurses.
e. In concordance with following the AHA STEMI standards we deleted the term immediately as the time allowances are embedded in the standards
f. Added a more detailed definition of Percutaneous Coronary Intervention.
g. Added state licensure requirements to the STEMI Receiving Center and STEMI Referring Hospital definitions
h. Changed the definition of STEMI Critical Care System to match the AHA Mission Lifeline definition
i. Changed the definition of STEMI Team to match the AHA Mission Lifeline definition

II. Article 2. Local EMS Agency STEMI Critical Care Systems Requirements

a. In keeping with the AHA standards we added adherence to all criteria in AHA’s STEMI Systems of Care as the initial requirement in addition to those outlined in (a)-(f).

III. Article 3. Prehospital STEMI Critical Care Requirements

a. Lines were adjusted to hold standards to AHA's Mission Lifeline criteria and remove lines that would be unessary under AHA guidance criteria.

IV. Article 4. STEMI Critical Care Facility Requirements

a. Both Receiving Center and Referral Center descriptions were aligned with AHA Mission Lifeline STEMI Critical Care Systems criteria and items were removed that would be redundant.

V. Article 5. Data Management, Quality Improvement and Evaluations

a. All lines were changed to align with AHA Get With the Guidelines® or equivalent data base within the AHA Mission Lifeline STEMI Critical Care Systems of performance improvement and evaluation. Lines were deleted if redundant to the AHA criteria.

In summary, CHA appreciates the opportunity to comment on this critical document that will not only modernize the development of California's STEMI Critical Care System, but set the stage for the achievement and acceleration of exceptional quality STEMI care across the state.

Sincerely,

BJ Bartleson, RN, MS, NEA-BC
VP Nursing and Clinical Services
California Hospital Association
(916)552-7537
bjbartleson@calhospital.org

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
Article 1 Definitions §100270.xxx	BJ Bartleson, CHA	Add the following new definitions: American Heart Association- (AHA) is the national non-profit health organization that sets standards of cardiac care delivery to foster appropriate cardiac care to reduce disability and deaths caused by cardiovascular disease and stroke. American Heart Association Mission:Lifeline - A national initiative to advance the systems of care for patients with ST-segment elevation myocardial infarction (STEMI) and Out of Hospital Cardiac Arrest (OOHCA American Heart Association Get With The Guidelines, GWTG®- Heart Failure- an in-hospital program for improving cardiac care by promoting consistent adherence to the latest scientific treatment guidelines with metrics and performance improvement. American Heart Association, STEMI Systems of Care - A proactive system of care that connects healthcare providers, prehospital providers and community stakeholders that saves and improves lives from symptom onset through cardiac rehabilitation.	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
§100270.101 Page 1, Lines 9-10	BJ Bartleson, CHA	Change the definition to match Title 22, §70438, "Cardiac Catheterization Laboratory" or "Cath Lab" means the setting in the hospital where laboratory procedures for obtaining physiologic, pathologic and angiographic data can be performed".	
"Cardiac Catheterization "	BJ Bartleson, CHA	Add a definition for "Cardiac Catheterization the performance of laboratory procedures for obtaining physiologic , pathologic and angiographic data on patients with cardiovascular disease" Title 22 §70438	
§100270.102 Page 1, line 14-17	BJ Bartleson, CHA	Change to: "Cardiac Catheterization Team means the specialty trained medical staff that performs and assists with cardiac catheterization. It may include, but is not limited to, an interventional cardiologist, mid-level practitioners, registered nurses, technicians and other health care professionals".	
§100270.107. Page 2, line 45-49	BJ Bartleson, CHA	Delete the definition of immediately available and utilize the AHA STEMI time standards	
§100270.111 Page 3, lines 74-76	BJ Bartleson, CHA	Change to: "Percutaneous Coronary Intervention" or PCI means a broad group of percutaneous techniques utilized in the dilation of coronary, heart or arterial obstructions to	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
		diagnose and treat patients with STEMI.	
§100270.120 STEMI Receiving Center (SRC) Page 6 Lines, 132-134	BJ Bartleson, CHA	Change to, "A licensed acute care facility with special permit for cardiac catheterization laboratory and cardiovascular surgery by the California Department of Public Health and meets the minimum hospital STEMI care requirements pursuant to section 100270.129."	
§100270.121 STEMI Referring Hospital (SRH) Page 6 Lines, 138-139	BJ Bartleson, CHA	Change to, "a licensed acute care facility that meets the minimum hospital STEMI care requirements pursuant to section 100270.130.	
§100270.123 STEMI Critical Care System Page 6 Lines149-152	BJ Bartleson, CHA	Change to: "A critical care system developed by the local EMS agency that meets all the criteria for the AHA STEMI Systems of Care.	
§100270.124 STEMI Team Page 6 Lines 156-157	BJ Bartleson, CHA	Change to " STEMI Team" refers to all personnel in the PCI, Non-PCI, and EMS components of the STEMI system of care, that perform STEMI related functions according to the AHA STEMI Systems of Care Criteria	
Article 2. Local EMS Agency STEMI Critical Care System Requirements §100270.126 STEMI Critical Care System Plan Requirements, Page 7-8	BJ Bartleson, CHA	Add, "Adherence to all criteria in AHA's STEMI Systems of Care" as the initial requirement in addition to (a) through (f).	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
Line 187			
Article 3. Prehospital STEMI Critical Care Requirements §100270.128 Page 9, lines 219-230	BJ Bartleson, CHA	Change lines 220-222 to read, "A local EMS agency with an established STEMI Critical Care System shall perform all protocols outlined in AHA's Mission Lifeline Criteria for STEMI Systems of Care, EMS. Remove lines 223-230.	
Article 4. STEMI Critical Care Facility Requirements, Page 9, lines 236-266	BJ Bartleson, CHA	Change lines 236-237 to say:"AHA Primary PCI Hospital STEMI Receiving Center criteria shall be used by the local EMS agency for the designation of SRC." Remove lines 238-241 Remove lines 244-248 Remove lines252-253 Remove lines 252-262 Change line 266 to:" Additional requirements may be included at the discretion of the local EMS agency medical director with the concurrence of the local EMS STEMI Systems of Care providers."	
§100270.130 STEMI Referring Hospital (SRH), Page 11, lines 272-288	BJ Bartleson, CHA	Change Lines 272-273 to:"AHA Non-PCI Hospital STEMI Receiving Center criteria shall be used by the local EMS agency for designation of an SRH. Remove lines 274-281 Remove lines 285-286 Change 287-288 to," Additional requirements may be included at the discretion of the local EMS agency	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
		medical director with the concurrence of the local EMS STEMI Systems of Care providers."	
Article 5. Data Management, Quality Improvement and Evaluations Page 11 Lines294-307	BJ Bartleson, CHA	Change lines 294-295 to, "The local EMS agency shall implement a standardized data collection and reporting process for STEMI Critical Care Systems based on AHA's Mission Lifeline required data elements and Get With The Guidelines GWTG® or equivalent data registry" Remove lines 296-297 Change lines 303-304 to, "STEMI data shall be integrated into the local EMS agency and the EMS Authority data management system through data submission or data acquisition, on no less than a quarterly basis. Change lines 305-307 to: all hospitals that receive STEMI patients shall participate in the local EMS agency data collection process in accordance with local EMS, and AHA Criteria for STEMI Systems of Care policies and procedures.	
§100270.132 Quality Improvement Process Page 13, lines 350-		Change lines 350-353 to read:" STEMI Critical Care System shall have a quality improvement process based on AHA's Criteria for STEMI Systems of Care, Mission Lifeline guidelines. In addition, the process shall include: Remove lines 355-356	
§100270.133 STEMI Critical Care System	BJ Bartleson, CHA	Lines 368-371 to read: "The local EMS agency shall be responsible for	

Section/Page/Line	Commenter's Name	Comments/ Suggested Revisions	Response
Evaluation, Page 14, lines 368-371		ensuring the standards set forth by the AHA STEMI Systems of Care Criteria for all aspects of care, as these recommendations may evolve over time."	

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

March 1, 2017

TO: Certification and Licensing Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Enforcement of the Emergency Medical Treatment and Labor Act, 2005 - 2014

SUMMARY

A recent Annals of Emergency Medicine article looked at the incidence of and trends in enforcement of the Emergency Medical Treatment and Labor Act (EMTALA). Researchers analyzed all EMTALA investigations conducted between 2005 and 2014 directly from the Centers for Medicare & Medicaid Services (CMS) through a Freedom of Information Act request. Characteristics of EMTALA investigations and resulting citation for violations during the study period are described.

The study found there were 4,772 EMTALA investigations, of which 2,118 (44%) resulted in citations for EMTALA deficiencies at 1,498 (62%) of 2,417 hospitals investigated during the study. Investigations were conducted at 43% of hospitals with CMS provider agreements, and citations issued at 27%. On average, 9% of hospitals were investigated and 4.3% were cited for EMTALA violation annually. The proportion of hospitals subject to EMTALA investigation decreased from 10.8% to 7.2%, and citations from 5.3% to 3.2%, between 2005 and 2014. There were 3.9 EMTALA investigations and 1.7 citations per million emergency department (ED) visits during the study period. Table 1, below, displays the charateristics of EMTALA citations and CMS provider agreement terminations.

Table 1. Characteristics of EMTALA citations and resulting CMS provider agreement terminations, 2005 to 2014.

Categories	EMTALA Citations, n=2,118 No.	%	CMS Terminations n=12 No.	%
Citation service category				
Medical	1,201	57	6	50
Psychiatric	355	17	4	33
Obstetric	97	5	0	0
Labor	198	9	2	17
Trauma	245	12	0	0
Surgical	212	10	0	0
No service type listed	50	2	1	8
Deficiency tag and category				
2400 Policies and procedures	1,547	73	8	67
2401 Recipient hospital reporting	19	1	0	0
2402 Sign posting	211	10	0	0
2403 Maintenance of transfer records	64	3	0	0
2404 Physician on-call list and availability	292	14	1	8
2405 Central log	536	25	3	25
2406 Appropriate medical screening exam	1,163	55	6	50
2407 Stabilizing treatment	526	25	2	17
2408 Delay in examination treatment	108	5	2	17
2409 Restricting transfer until stabilized	589	28	5	42
2410 Whistle-blower protections	0	0	0	0
2411 Recipient hospital responsibilities	335	16	3	25

Citations are decreasing overall, but violations for medical emergencies, psychiatric emergencies, failure to provide a medical screening examination, and restricting transfer to stabilize patients are increasing in proportion.

The study is attached.

ACTION REQUESTED: Discuss and advise.

BJB:br
Attachments

Enforcement of the Emergency Medical Treatment and Labor Act, 2005 to 2014

Sophie Terp, MD, MPH*; Seth A. Seabury, PhD; Sanjay Arora, MD; Andrew Eads, MD, MBA; Chun Nok Lam, MPH; Michael Menchine, MD, MPH

*Corresponding Author. E-mail: terp@usc.edu.

Study objective: We determine the incidence of and trends in enforcement of the Emergency Medical Treatment and Labor Act (EMTALA) during the past decade.

Methods: We obtained a comprehensive list of all EMTALA investigations conducted between 2005 and 2014 directly from the Centers for Medicare & Medicaid Services (CMS) through a Freedom of Information Act request. Characteristics of EMTALA investigations and resulting citation for violations during the study period are described.

Results: Between 2005 and 2014, there were 4,772 investigations, of which 2,118 (44%) resulted in citations for EMTALA deficiencies at 1,498 (62%) of 2,417 hospitals investigated. Investigations were conducted at 43% of hospitals with CMS provider agreements, and citations issued at 27%. On average, 9% of hospitals were investigated and 4.3% were cited for EMTALA violation annually. The proportion of hospitals subject to EMTALA investigation decreased from 10.8% to 7.2%, and citations from 5.3% to 3.2%, between 2005 and 2014. There were 3.9 EMTALA investigations and 1.7 citations per million emergency department (ED) visits during the study period.

Conclusion: We report the first national estimates of EMTALA enforcement activities in more than a decade. Although EMTALA investigations and citations were common at the hospital level, they were rare at the ED-visit level. CMS actively pursued EMTALA investigations and issued citations throughout the study period, with half of hospitals subject to EMTALA investigations and a quarter receiving a citation for EMTALA violation, although there was a declining trend in enforcement. Further investigation is needed to determine the effect of EMTALA on access to or quality of emergency care. [Ann Emerg Med. 2017;69:155-162.]

Please see page 156 for the Editor's Capsule Summary of this article.

A **feedback** survey is available with each research article published on the Web at www.annemergmed.com.
A **podcast** for this article is available at www.annemergmed.com.

0196-0644/$-see front matter

http://dx.doi.org/10.1016/j.annemergmed.2016.05.021

SEE EDITORIAL, P. 163.

INTRODUCTION

Background

In 1986, Congress passed the Emergency Medical Treatment and Labor Act (EMTALA) in response to publicized incidents of inadequate, delayed, or denied treatment of uninsured patients by emergency departments (EDs).[1,2] The intent of EMTALA was to ensure access to emergency medical services and to prevent patient "dumping," the practice of refusing or transferring financially disadvantaged patients without authorization or stabilization. EMTALA requires that all patients presenting to an ED receive timely medical screening evaluation and stabilizing care regardless of ability to pay. If specialty services required to stabilize an identified emergency condition are unavailable, patients must be transferred to an alternate hospital for a higher level of care. Receiving hospitals have a duty to accept transfer of patients requiring available specialized services (eg, neurosurgery, burn care) if the facility has capacity to treat the patient.

EMTALA enforcement is delegated to the 10 regional offices of the Centers for Medicare & Medicaid Services (CMS). CMS regional offices are responsible for authorizing EMTALA investigations, determining whether a violation occurred, and enforcing corrective actions when violations are identified. Hospitals that fail to implement acceptable corrective action plans after an EMTALA violation have their provider agreements terminated by CMS, which has severe financial implications and can ultimately result in facility closure. The Office of the

Editor's Capsule Summary

What is already known on this topic

The Emergency Medical Treatment and Labor Act (EMTALA) requires that all emergency department patients receive a medical screening examination and stabilization regardless of ability to pay. The Centers for Medicare & Medicaid Services investigate and cite hospitals for violations.

What question this study addressed

How often, and why, are hospitals investigated and cited for EMTALA violations?

What this study adds to our knowledge

During the last decade, approximately 9.0% of hospitals were investigated and 4.3% were cited annually. Citations are decreasing overall, but violations for medical emergencies, psychiatric emergencies, failure to provide a medical screening examination, and restricting transfer to stabilize patients are increasing in proportion.

How this is relevant to clinical practice

These data show that violations related to administrative (nonclinical) components of the law are decreasing in proportion but that those related to clinical components may be increasing in proportion.

Inspector General of the Department of Health and Human Services is responsible for assigning civil monetary penalties or physician exclusion from CMS participation when EMTALA violations are reported.

Importance

EMTALA is one of the most important pieces of federal legislation specific to the provision of emergency medicine. Despite its importance, there has been relatively little published on EMTALA enforcement activities. The current literature on EMTALA is mostly limited to summaries and interpretations of the EMTALA statute,[3-5] reviews of case law,[6,7] assessments of patient and provider knowledge about EMTALA,[8,9] indirect measures of effect of the statute,[10-13] and limited descriptions of EMTALA enforcement before 2001.[14-16] We were unable to identify any recent original peer-reviewed longitudinal studies of epidemiology of EMTALA enforcement. To understand the influence of this law on emergency care, it is critical to understand how actively CMS pursues EMTALA enforcement and the characteristics of the incidents for which facilities were cited.

Goals of This Investigation

The goal of this investigation is to describe the incidence, characteristics of, and trends in enforcement of EMTALA during the past decade.

MATERIALS AND METHODS

Study Design

This is a retrospective study of observational data on EMTALA enforcement activities obtained from CMS. Complaints about potential EMTALA violation can be made by any individual or institution to a state survey agency or CMS regional office. All complaints are forwarded to the designated CMS regional office for review.

In accordance with findings of an initial inquiry, the CMS regional office may authorize an investigation, but state survey agencies are responsible for conducting it.[15] Once authorized, an investigation must be completed within 5 working days, and once it is completed, state survey agencies have 10 to 15 working days to provide findings to the CMS regional office.[15] State survey agencies investigating EMTALA complaints often review hospital compliance with all aspects of the EMTALA statute (Table E1, available online at http://www.annemergmed.com) and may identify deficiencies unrelated to the specific complaint triggering the investigation. Findings of investigations with actual medical concerns identified (ie, those unrelated to technical components of the statute such as posting of signs) are sent to physicians for review and recommendations. CMS regional offices make the final determination about whether violation of EMTALA has occurred and whether the affected hospital will be cited with an immediate, 23-, or 90-day termination notice. Hospitals failing to implement acceptable corrective action plans to resolve identified deficiencies within the designated timeframes have their CMS provider agreements terminated.

We obtained a comprehensive list of all EMTALA investigations conducted between 2005 and 2014 directly from CMS through a Freedom of Information Act request. Our evaluation of EMTALA enforcement starts at the investigation level because allegations of EMTALA violations are not systematically recorded in the absence of an investigation. Although not specifically tracked by CMS, nearly all allegations are authorized by CMS regional offices for investigation (personal communication, Mary Ellen Palowitch, EMTALA Technical Lead, CMS, 2015). The provided data set included the name and location of the hospital and the date of investigation. Additionally, the data included the service type that was alleged to be deficient (medical, trauma, other surgical, labor, other obstetric, or psychiatric) and deficiency type (eg, delay in medical screening examination, inadequate stabilization before transfer). Investigations

resulting in a citation for EMTALA violation were identified with CMS's EMTALA-specific deficiency codes (Table E1, available online at http://www.annemergmed.com). We also observed which citations resulted in termination of CMS provider agreements. For investigations resulting in termination, but for which specific deficiency codes were unavailable in the data set provided, deficiency types were determined according to substantiated allegations for that investigation. Investigations for which completion dates were not available were excluded from analysis. An additional 823 of 5,595 identified investigations (15%) for which survey completion dates were missing were excluded from analysis.

Annual trends in the number of investigations and citations were characterized with descriptive statistics and graphically displayed. The total number of hospitals subject to EMTALA requirements during the study period was estimated by using the number of unique facilities (identified by Medicare provider identification numbers) reporting core measure data between 2005 and 2014 (n=5,594). The annual number of hospitals subject to EMTALA requirements was estimated by identifying the number of unique facilities reporting Medicare core measure data in a given year. Annual estimates of ED visits and ED visits per 1,000 population between 2005 and 2013 were obtained from the American Hospital Association[17] and were used to calculate the number of EMTALA investigations and citations per 1 million ED visits. Data from 2014 were unavailable at article submission.

For hospitals with termination of CMS provider agreements, we queried hospital-reported Medicare core measures before and after reported investigation to verify whether facility closure was indicated by cessation of reporting of core measures after the reported citation. Additionally, we conducted an online search to determine whether there was documented evidence of temporary or permanent facility closure after termination of CMS provider agreements. Data were managed with Stata/MP13 (Stata Statistical Software: Release 13; StataCorp LP, College Station, TX).

RESULTS

We identified 5,594 hospitals with unique CMS provider identification numbers during the study period. Between 2005 and 2014, there were 4,772 completed investigations for EMTALA violations at 2,417 individual hospitals. Of these 4,772 investigations, 2,118 (44%) resulted in citations for EMTALA deficiencies at 1,498 (62%) of the 2,417 hospitals investigated. Ultimately, CMS terminated provider agreements at 12 hospitals cited for EMTALA deficiencies, representing 0.21% of 5,594 hospitals with CMS provider agreements during the study period. Investigations were conducted at approximately 43% of hospitals (2,417 of 5,594), and citations were issued at 27% (1,498 of 5,594) during the study period. During the study period, there were 4.2 investigations and 1.9 citations for EMTALA violation per million ED visits.

EMTALA citations most frequently involved medical emergencies (57%), followed by psychiatric (17%), trauma (12%), other surgical (10%), active labor (9%), and other obstetric-related emergencies (5%). Many investigations resulting in a citation for EMTALA deficiency involved more than 1 service type. For example, among 1,201 citations involving medical emergencies, 167 (14%) involved at least 1 other service type. Additional characteristics of EMTALA citations are summarized in Table 1.

Most hospitals receiving a citation for EMTALA violation were cited for multiple deficiency types. Of hospitals that were cited, most were cited for policies and procedures (73%) (eg, failure of a hospital to adopt and enforce a policy to ensure compliance with EMTALA statutes). Clinical deficiencies associated with citations, including failure to provide an appropriate medical screening examination (55%), failure to stabilize before transfer (28%), and failure to provide appropriate stabilizing treatment (25%), were also common during the study period. Deficiency related to recipient hospital responsibilities were noted in 16% of citations.

Table 1. Characteristics of EMTALA citations and resulting CMS provider agreement terminations, 2005 to 2014.

		EMTALA Citations, n=2,118		CMS Terminations, n=12	
Categories		**No.**	**%**	**No.**	**%**
Citation service category					
	Medical	1,201	57	6	50
	Psychiatric	355	17	4	33
	Obstetric	97	5	0	0
	Labor	198	9	2	17
	Trauma	245	12	0	0
	Surgical	212	10	0	0
	No service type listed	50	2	1	8
Deficiency tag and category					
2400	Policies and procedures	1,547	73	8	67
2401	Recipient hospital reporting	19	1	0	0
2402	Sign posting	211	10	0	0
2403	Maintenance of transfer records	64	3	0	0
2404	Physician on-call list and availability	292	14	1	8
2405	Central log	536	25	3	25
2406	Appropriate medical screening exam	1,163	55	6	50
2407	Stabilizing treatment	526	25	2	17
2408	Delay in examination treatment	108	5	2	17
2409	Restricting transfer until stabilized	589	28	5	42
2410	Whistle-blower protections	0	0	0	0
2411	Recipient hospital responsibilities	335	16	3	25

Between 2005 and 2014, there was a decline in EMTALA investigations, from 571 to 371 (a 35% decrease), and also in citations, from 248 to 159 per year (a 40% decrease) (Figure 1). Simultaneously, the number of hospitals with investigations decreased from 469 to 353 (a 25% decrease), whereas the number of hospitals receiving citations decreased from 232 to 154 per year (a 34% decrease). The proportion of investigations resulting in citations remained stable throughout the study period and was 43% both in 2005 and 2014. The annual number of hospitals with unique CMS provider identification numbers increased from 4,354 in 2005 to 4,875 in 2014.

On average during the study period, 9.0% of hospitals were investigated in a given year, and 4.3% were cited for EMTALA violation. Figure 2 depicts the proportion of hospitals with an EMTALA investigation or citation during the study period. Between 2005 and 2014, the proportion of hospitals with an EMTALA investigation decreased from 10.8% to 7.2% (32%), and the proportion with EMTALA citations decreased by 41%, from 5.3% to 3.2%. Between 2005 and 2013 (years for which American Hospital Association ED visit data were available), the annual rate of EMTALA investigations declined by 36%, from 5.0 to 3.2 per million ED visits, whereas citations decreased by 38%, from 2.1 to 1.3 (Figure 3).

Characteristics of EMTALA citations by service and deficiency types in 2005 and 2014 are included in Table 2. During the decade-long study period, the proportion of EMTALA citations related to medical emergencies increased from 52% to 60%, and the proportion related to psychiatric emergencies increased from 18% to 20%. A decrease in the proportion of EMTALA citations attributable to obstetric (5% to 3%), labor (13% to 11%) and trauma (10% to 9%), and other surgical emergencies (17% to 7%) was observed during the same period.

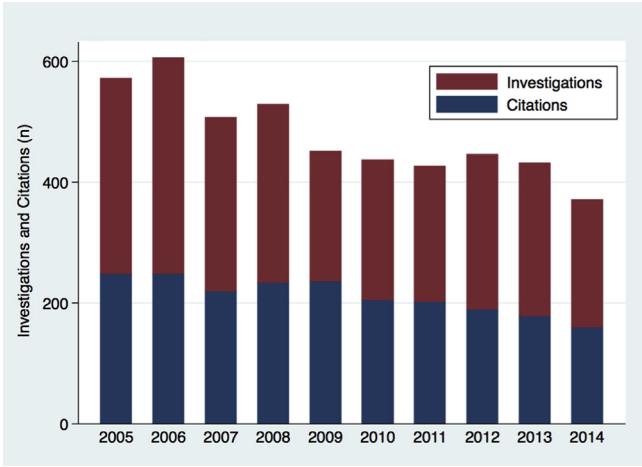

Figure 1. Investigations and citations for EMTALA violation, 2005 to 2014.

Between 2005 and 2014, the proportion of citations related to general policies and procedures increased from 66% to 76%, whereas the proportion of citations related to maintenance of a central log decreased from 30% to 24%, and those related to maintenance of a physician-on-call list decreased from 15% to 13%.

The proportion of citations related to provision of appropriate medical screening examination increased from 52% to 60%, and the citations related to restricting transfer until a patient is stabilized increased from 26% to 32%.

During the study period, CMS terminated provider agreements at 12 hospitals as a result of EMTALA citations. One public safety-net facility in Los Angeles County had 3 separate investigations (1 in 2006 and 2 in 2007), for which the outcome was CMS provider agreement termination and ultimately facility closure. Information for all 3 citations for this facility was combined and reported as a single citation/termination. Characteristics of investigations resulting in a citation and CMS provider agreement termination are included in Table 1. Categories associated with EMTALA citations resulting in termination included 6 medical- (50%), 4 psychiatric- (33%), and 2 labor-related services (17%). One hospital was cited for both labor- and medical-related emergencies, and another had no clinical category assigned. Six of 12 terminations (50%) occurred in 2007, and no terminations were identified after 2012. All citations resulting in facility termination notices occurred within 3 CMS regions (IV, VI, and IX). According to a review of available news and other Internet sources, it appears that termination of CMS provider agreement resulted in at least temporary facility closure and or downgrading of emergency services at 9 of the 12 facilities (75%). Facility closure was additionally verified by review of CMS core measures, which for all 9 facilities identified as having been closed were reported before CMS provider agreement termination and ceased to be reported after termination.

LIMITATIONS

Although this study is the most comprehensive assessment of EMTALA enforcement to date to our knowledge, there are several potential limitations. First, the reported findings depended on administrative data provided by CMS. Therefore, our findings may have been limited by coding inconsistencies inherent to secondary data analysis. However, there is no reason to believe that there was any systematic error in recording of data fields by CMS regional offices.

Second, it is possible that not all investigations or citations are included in the data set provided. We believe

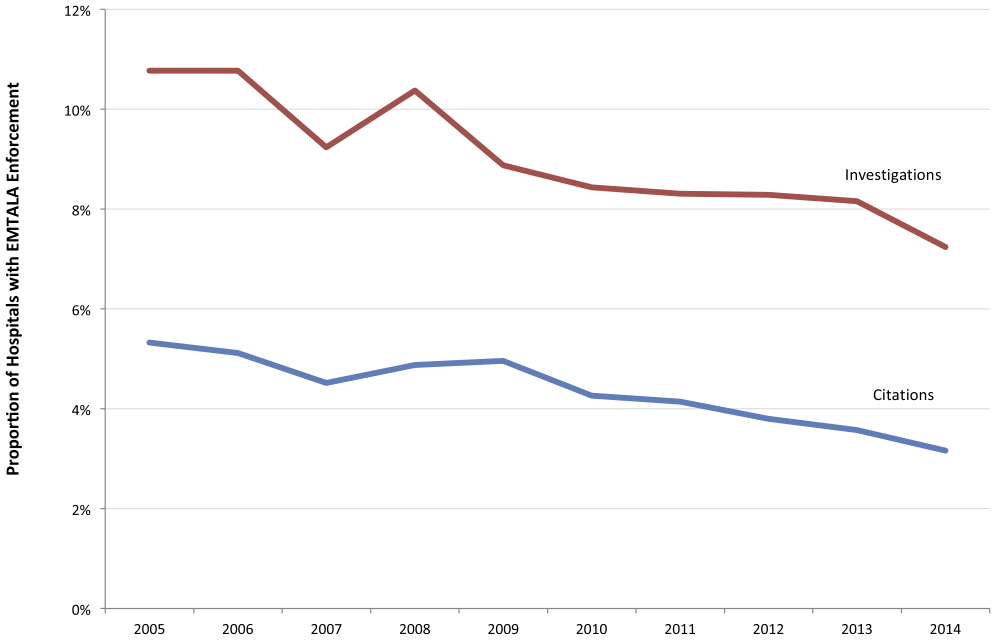

Figure 2. Proportion of hospitals with EMTALA investigations and citations, 2005 to 2014.

that the information obtained from CMS through the Freedom of Information Act request represents the best available data source to study EMTALA enforcement.

Third, our evaluation of EMTALA enforcement started at the level of the investigation rather than the allegation. Because allegations of EMTALA violations are not systematically recorded in the absence of an investigation, thorough evaluation of complaints not resulting in authorized investigations was not possible. However, whereas EMTALA investigations have tremendous influence on hospitals, CMS does not routinely inform hospitals of EMTALA allegations not resulting in investigation, and therefore allegations of EMTALA violation without resulting investigations are unlikely to change practice.

Fourth, available data did not include descriptions of the plans for corrective action, and we were therefore unable to evaluate how hospitals allocated resources in response to

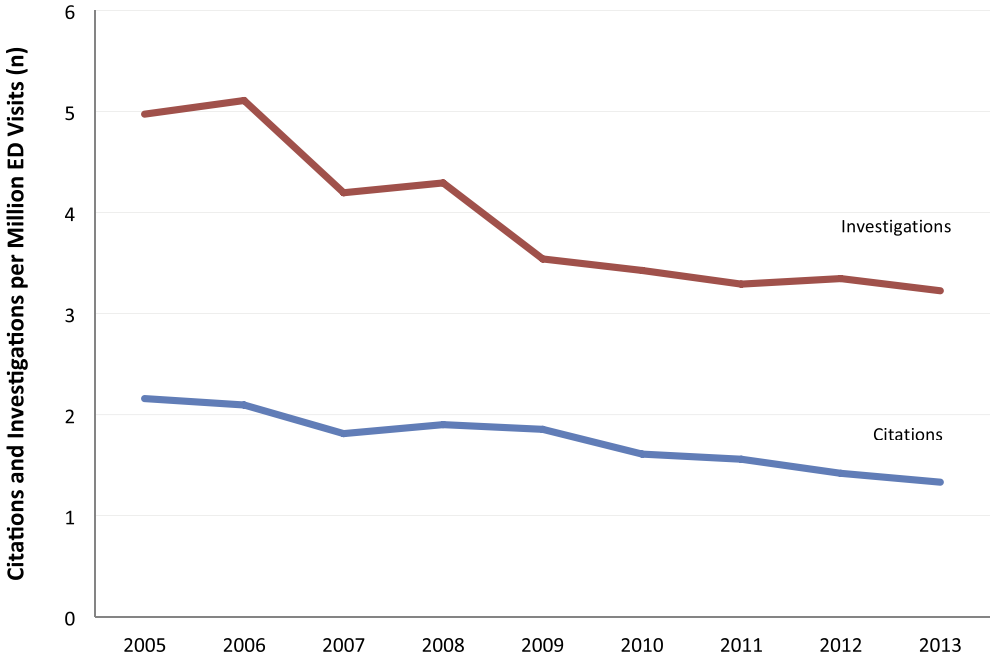

Figure 3. EMTALA investigations and citations per million ED visits, 2005 to 2013.

Table 2. Characteristics of EMTALA citations by service type and deficiency in 2005 and 2014.

		Year			
Characteristics		**2005**		**2014**	
EMTALA citations (n)		248		159	
Hospitals cited (n)		232		154	
Citation service category		No.	%	No.	%
	Medical	130	52	96	60
	Psychiatric	45	18	32	20
	Obstetric	13	5	5	3
	Labor	32	13	17	11
	Trauma	25	10	14	9
	Surgical	41	17	11	7
	No service type listed	2	1	2	1
Allegation subtypes					
2400	Policies and procedures	163	66	121	76
2401	Recipient hospital reporting	0	0	1	1
2402	Sign posting	23	9	15	9
2403	Maintenance of transfer records	8	3	5	3
2404	Physician on-call list and availability	38	15	20	13
2405	Central log	74	30	38	24
2406	Appropriate medical screening exam	132	53	96	60
2407	Stabilizing treatment	65	26	29	18
2408	Delay in examination or treatment	16	6	11	7
2409	Restricting transfer until stabilized	64	26	51	32
2410	Whistle-blower protections	0	0	0	0
2411	Recipient hospital responsibilities	51	21	15	9

EMTALA investigations and citations or the associated costs. Fifth, our evaluation of EMTALA was limited to the past decade, the years for which CMS has maintained electronic records of EMTALA enforcement. To better understand trends in EMTALA enforcement during the first 2 decades of EMTALA enforcement, hard copies of historic nonelectronic documents need to be obtained and abstracted. Finally, the present study did not assess the effect of EMTALA on patient care.

DISCUSSION

Passed by Congress in 1986, EMTALA was landmark legislation aimed at improving access to and quality of emergency care. To our knowledge, we report the first peer-reviewed longitudinal description of trends in EMTALA enforcement activities. Although EMTALA citations were rare on the ED-visit level, with 1.7 per million ED visits, we found that citations were common at the facility level. In the past decade, investigations occurred at nearly half of hospitals with Medicare provider agreements, and more than a quarter of hospitals received citations for EMTALA violations.

Faced with the threat of CMS provider agreement termination, facilities investigated or cited for EMTALA violation must respond quickly and aggressively and may overcompensate to avoid hospital closure. Facilities have only 23 to 90 days to execute corrective actions, an extremely challenging timeframe in which to implement the types of changes needed to avoid provider agreement termination (eg, recruiting, hiring, and credentialing additional staff to avoid future delays in examination). Although specific costs have not been reported, rapidly implementing these types of corrective actions to EMTALA citations could be incredibly costly. Hospitals that hire additional staff as part of their corrective action plan face incurring not only the expense at hire but also the costs associated with maintaining additional staffing in perpetuity. Evaluation of hospital response to an investigation or citation and associated costs are prime areas for future research.

Although there were 2,118 citations for EMTALA violation issued during the study period, only 12 hospitals ultimately had provider agreements terminated by CMS. These terminations were important because the majority resulted in facility closure, undoubtedly a powerful motivator for other hospitals to aggressively respond to EMTALA citations. The majority of hospitals cited for EMTALA violation were able to successfully implement appropriate corrective actions, thereby avoiding CMS provider agreement terminations. Although corrective actions to improve EMTALA compliance are costly and burdensome to hospitals, our findings suggest that they are almost always achievable and that an investigation or citation might be required to motivate facilities to implement these measures to achieve compliance. Half of CMS provider agreement terminations occurred in 2007, and terminations have been relatively rare since then. The relatively rarity of terminations after their upswing in 2007 may represent increased awareness by hospital administrators of consequences of EMTALA enforcement and resulting improved compliance with the law. Alternately, the decline in terminations since 2007 may reflect diminishing enforcement efforts by CMS.

For emergency physicians, a civil monetary fine is one of the most feared consequences of an EMTALA citation because physicians may be held individually liable, and this fine is not covered by malpractice insurance. CMS regional offices forward cases of citations for EMTALA violation to the Office of the Inspector General, which has the power to assign civil monetary penalties of up to $50,000 to hospitals or individual physicians and can exclude physicians from future participation in the Medicare program.[15] Previously published reports show that between 1995 and 2000, the Office of the Inspector General imposed fines on 194 hospitals and 19 physicians, totaling $5.6 million, and from 2002 to 2012,[14] the office filed 160 monetary penalties, 6 of which were assessed to individual

physicians.[18] There were on average approximately 21 Office of the Inspector General penalties to facilities and only 1.5 fines to individual physicians annually during the years reported. In comparison, between 2005 and 2014, we found an average of 477 investigations and 212 citations for EMTALA violation annually. Monetary penalties assessed by the Office of the Inspector General are rare at the hospital level and almost negligible at the physician level. Fewer than 1 in 10 citations for EMTALA violation results in monetary penalties to facilities, and less than 1% of EMTALA citations result in assignment of monetary fines to individual physicians.

The comparative risk of a malpractice claim highlights the relative rarity of an EMTALA penalty's being imposed on an individual physician. Annually, 7.6% of emergency physicians face a malpractice claim, and 1.4% have a claim resulting in payment to a plaintiff.[19] In comparison, only 1 or 2 physicians in the country are subject to individual monetary penalties by the Office of the Inspector General in a given year. Of 5 civil monetary penalties assigned to individual providers between 2002 and 2007, 3 were assigned to obstetricians and 2 to on-call surgical specialists; none were assigned to emergency physicians.[20] Because civil monetary penalties assigned to individual physicians appear to primarily target on-call obstetricians and surgical specialists rather than emergency physicians, risk of monetary penalty to an individual emergency physician appears to be exceedingly low.

Between 2005 and 2013, ED visits in the United States increased in number (from 114.8 to 133.6 million) and rate (from 388 to 423 per 1,000).[17] During the same period, the number of hospitals with CMS provider agreements increased from 4,354 to 4,875, but the number of EDs decreased from 4,611 to 4,440.[17] We identified a trend toward fewer EMTALA investigations and citations during the past decade. EDs are being visited by more patients, thereby incurring opportunities for possible EMTALA complaints; however, there were actually fewer EMTALA investigations and citations per capita and per hospital over time. We are left with the question of whether the observed temporal decline in EMTALA enforcement despite increasing numbers of ED visits reflects improved hospital compliance with administrative components of the statute, diminished enforcement efforts by CMS, or improvement in access to or quality of emergency care.

We found that many EMTALA investigations and citations involve administrative components of the law (eg, policies and procedures). Citations for some administrative categories of EMTALA deficiencies (eg, maintenance of central log, maintenance of physician on-call list) decreased during the study period, suggesting that hospitals may be improving their ability to comply with nonclinical aspects of the law. However, citations for important EMTALA deficiencies pertaining specifically to patient care were common during the study period. Citations for provision of appropriate medical screening examinations and restricting transfer until a patient is stabilized actually increased as a proportion of all citations during the study period, raising questions about whether EMTALA actually accomplished its original goals of reducing patient dumping or improving access to quality emergency care.

Officials investigating EMTALA complaints typically review hospital compliance with all aspects of the EMTALA statute, often identifying additional deficiencies unrelated to the specific complaint that triggered the investigation. A summary of findings from a 2009 EMTALA investigation at an Arizona hospital is provided as an example in Table E2 (available online at http://www.annemergmed.com). This investigation was initiated after a 69-year-old woman presenting with an ear laceration was reportedly encouraged by a physician at triage to seek care at another facility because plastic surgery was unavailable at the ED. Investigators found that this patient was not triaged or assessed for her injuries by the ED. Using observation, interview, and review of 20 patient records, investigators identified and cited the facility for a variety of administrative and clinical EMTALA deficiencies both related and unrelated to the case for which the investigation was initiated, including failure to provide appropriate medical screening examination, arrange appropriate transfer, maintain a log of all patients presenting to the ED for evaluation, and post appropriate signage. This case highlights how EMTALA citations may be issued in absence of an adverse outcome when the letter of the law has been disregarded, in contrast with malpractice, for which damages must be established.

Initially intended as an antidumping law, EMTALA was established to prevent EDs from refusing or transferring uninsured or otherwise financially disadvantaged patients without authorization or stabilization. Whether EMTALA has effectively improved access to or quality of emergency care is an important policy question that remains to be answered. There is some indirect evidence to suggest that it may have a paradoxic effect on access to emergency services. For example, previous research suggests that since passage of EMTALA, erosion of on-call panels and the ability to transfer for higher level of care appear to have worsened.[10,13] However, the health care landscape has changed significantly in the past few years. Since 2014, approximately 16.4 million previously uninsured persons have gained health care coverage through Medicaid expansion and other provisions

of the Patient Protection and Affordable Care Act.[21] Theoretically, this should result in a decrease in patient dumping and increased access to quality emergency care. Looking forward, trends in EMTALA enforcement may yield insight into the effect of insurance expansion on patient dumping and access to emergency care.

CMS actively pursued EMTALA investigations and issued citations throughout the study period, with nearly half of hospitals subject to EMTALA investigations and more than a quarter receiving a citation for EMTALA violation. Whether EMTALA enforcement serves as a feasible mechanism to change hospital behavior and improve access to or quality of care remains to be determined. Unfortunately, presently no reliable measurement is available to determine how successful EMTALA has been at reducing patient dumping or improving access to care. Although EMTALA citations resulting in termination of CMS contracts typically result in closure of EDs and on occasion entire medical facilities, the effect of EMTALA citations on the many facilities that remain open does not appear to have been previously studied. Further work is needed to examine the effect of EMTALA enforcement on access to and quality of emergency care at institutions investigated and cited for EMTALA violations.

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Author contributions: ST, SAS, AE, and MM conceived the study design. ST, AE, and MM obtained EMTALA data from CMS through a Freedom of Information Act request. ST and CNL managed and analyzed the data. SAS provided direction in regard to data analysis and display. ST drafted the article and all authors contributed substantially to its revision. ST takes responsibility for the paper as a whole.

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REFERENCES

1. Ansell DA, Schiff RL. Patient dumping. Status, implications, and policy recommendations. *JAMA*. 1987;257:1500-1502.
2. Schiff RL, Ansell DA, Schlosser JE, et al. Transfers to a public hospital. A prospective study of 467 patients. *N Engl J Med*. 1986;314:552-557.
3. Rosenbaum S. The enduring role of the Emergency Medical Treatment and Active Labor Act. *Health Aff (Millwood)*. 2013;32:2075-2081.
4. West JC. EMTALA obligations for psychiatric patients. *J Healthc Risk Manag*. 2014;34:5-12.
5. Zibulewsky J. The Emergency Medical Treatment and Active Labor Act (EMTALA): what it is and what it means for physicians. *Proceedings*. 2001;14:339-346.
6. Lindor RA, Campbell RL, Pines JM, et al. EMTALA and patients with psychiatric emergencies: a review of relevant case law. *Ann Emerg Med*. 2014;64:439-444.
7. Rosenbaum S, Cartwright-Smith L, Hirsh J, et al. Case studies at Denver Health: "patient dumping" in the emergency department despite EMTALA, the law that banned it. *Health Aff (Millwood)*. 2012;31:1749-1756.
8. McDonnell WM, Roosevelt GE, Bothner JP. Deficits in EMTALA knowledge among pediatric physicians. *Pediatr Emerg Care*. 2006;22:555-561.
9. McDonnell WM, Gee CA, Mecham N, et al. Does the Emergency Medical Treatment and Labor Act affect emergency department use? *J Emerg Med*. 2013;44:209-216.
10. American College of Emergency Physicians. On-call specialist coverage in U.S. emergency departments: ACEP survey of emergency department directors. 2004. Available at: https://www.acep.org/clinical—practice-management/on-call-specialty-shortage-resources. Accessed October 15, 2015.
11. McConnell KJ, Johnson LA, Arab N, et al. The on-call crisis: a statewide assessment of the costs of providing on-call specialist coverage. *Ann Emerg Med*. 2007;49:727-733; 733.e721-728.
12. McConnell KJ, Newgard CD, Lee R. Changes in the cost and management of emergency department on-call coverage: evidence from a longitudinal statewide survey. *Ann Emerg Med*. 2008;52:635-642.
13. Menchine MD, Baraff LJ. On-call specialists and higher level of care transfers in California emergency departments. *Acad Emerg Med*. 2008;15:329-336.
14. United States General Accounting Office. EMTALA implementation and enforcement issues. June 2001. Available at: http://www.gao.gov/new.items/d01747.pdf. Accessed August 15, 2015.
15. US Department of Health & Human Services: Office of Inspector General. The emergency medical treatment and labor act: the enforcement process. January 2001. Available at: http://oig.hhs.gov/oei/reports/oei-09-98-00221.pdf.
16. Ballard DW, Derlet RW, Rich BA, et al. EMTALA, two decades later: a descriptive review of fiscal year 2000 violations. *Am J Emerg Med*. 2006;24:197-205.
17. American Hospital Association. Table 3.3: Emergency department visits, emergency department visits per 1,000 and number of emergency departments, 1993-2013. 2015. Available at: http://www.aha.org/research/reports/tw/chartbook/2015/table3-3.pdf. Accessed October 1, 2015.
18. Raffetto BEA, Burner E, Menchine M. Trends in EMTALA violations from 2002-2012. *Acad Emerg Med*. 2013;20(Suppl):S88.
19. Jena AB, Seabury S, Lakdawalla D, et al. Malpractice risk according to physician specialty. *N Engl J Med*. 2011;365:629-636.
20. US Department of Health and Human Services: Office of Inspector General. Patient dumping. Available at: http://oig.hhs.gov/reports-and-publications/archives/enforcement/patient_dumping_archive.asp. Accessed October 15, 2015.
21. US Department of Health & Human Services. Health insurance coverage and the affordable care act. May 5, 2015. Available at: https://aspe.hhs.gov/pdf-report/health-insurance-coverage-and-affordable-care-act.

Table E1. EMTALA deficiency tags and summary of EMTALA interpretive guidelines.[1]

Deficiency Tag	Guideline Code, §	Description
2400	489.20(l)	Policies and procedures that address antidumping provisions
2401	489.20(m)	Receiving hospitals must report suspected incidences of individuals with an emergency medical condition who are transferred in violation of §489.24(e)
2402	489.20(q)	Sign posting
2403	489.24(r)(1)	Maintain transfer records for 5 years
2404	489.20(r)(2)	Maintenance of on-call list
2404	489.24(j)	Availability of on-call physicians
2405	489.20(r)(3)	Maintain central log of individuals seeking care in an ED and whether he or she refused treatment, was refused treatment, or was transferred, admitted and treated, stabilized and transferred, or discharged.
2406	489.24(a)	Appropriate medical screening examination
2407	489.24(d)(1,2,3)	Stabilizing treatment
2408	489.24(d)(4) and (5)	No delay in examination or treatment to inquire about payment status
2409	489.24(e)(1,2)	Appropriate transfer
2410	489.24(e)(3)	Whistle-blower protections
2411	489.24(f)	Recipient hospital responsibilities

REFERENCE

1. Centers for Medicare & Medicaid Services. Revisions to Appendix V, "Emergency Medical Treatment and Labor Act (EMTALA) Interpretive Guidelines." May 29, 2009. Available at: https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/downloads/R46SOMA.pdf.

Table E2. Examples of deficiencies identified during an EMTALA investigation in Arizona, 2009.

Deficiency Tag	Description of Identified Deficiencies	Summary of Case and Investigation Findings
2400	Policies and procedures that address antidumping provisions	This EMTALA investigation was initiated after a 69-year-old woman presented to an ED after a fall at home with a laceration to her ear. A physician at triage reportedly stated that the patient could not be treated at the ED because she may need plastic surgery and encouraged her family to transport her by private vehicle to another facility for care. The patient was not triaged or assessed for pain from her injuries. The family transported the patient to the receiving hospital.
2402	Sign posting	According to observation and interview, the facility failed to post signs conspicuously in any ED or in a place or places likely to be noticed by all individuals entering the ED, as well as individuals waiting for examination and treatment in other areas.
2405	Maintenance of central log	According to interview and document review, the hospital failed to maintain a central log on each individual presenting to the ED seeking assistance, and whether he or she refused treatment, was refused treatment, or was transferred, admitted and treated, stabilized and transferred, or discharged. Investigators identified that 3 of 20 cases reviewed had no disposition documented. The hospital was found not to have a policy about log maintenance.
2406	Medical screening examination	According to interview and record review, the hospital failed to provide and document appropriate medical screening examination within the capability of the hospital's ED for 6 of 20 sampled patients, including the 69-year-old patient presenting with an ear laceration described above. In regard to the described patient, there was no record of refusal of examination or treatment form.
2409	Appropriate transfer	According to interview and record review, hospital failed to provide appropriate transfer to 3 of 20 sampled patients. Examples include a patient who presented to the ED after a motorcycle crash, was noted to have an emergency medical condition, and was transferred to another facility. Investigators found that in this case, there was no documentation that a copy of the patient's medical record went with the patient.

Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments

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Study objective: Prolonged boarding times in the emergency department (ED) disproportionately affect mental health patients, resulting in patient and provider dissatisfaction and increased patient morbidity and mortality. Our objective is to quantify the burden of mental health boarding and to elucidate the effect of insurance together with demographic, social, and comorbid factors on length of stay.

Methods: We conducted a cross-sectional observational study of 871 consecutive patients requiring an ED mental health evaluation at one of 10 unaffiliated Massachusetts hospitals. Demographics; insurance; length of stay; medical, psychiatric, and social history; and disposition data were collected. We evaluated the effect of these characteristics on boarding time.

Results: ED median length of stay varied greatly by disposition, driven primarily by ED boarding time. Admitted and transferred patients had longer delays than discharged patients (5.63, 9.32, and 1.23 hours, respectively). Medical clearance time (1.40 hours) composed only 10.5% of total ED length of stay and varied little by insurance. In our multivariate analyses, patients with Medicaid and the uninsured had significantly longer total lengths of stay and were more than twice as likely to remain in the ED for 24 hours or greater compared with privately insured patients.

Conclusion: Mental health patients in Massachusetts have lengthy ED visits, particularly those requiring inpatient admission. Boarding time accounts for the majority of total ED length of stay and varies by insurance, even when other factors known to affect ED length of stay are controlled. Efforts to improve timeliness of care for mental health emergencies should focus on reducing ED boarding and eliminating disparities in care by insurance status. [Ann Emerg Med. 2016;■:1-10.]

Please see page XX for the Editor's Capsule Summary of this article.

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INTRODUCTION

Background

Emergency department (ED) boarding, the practice of prolonged waiting in the ED for an inpatient hospital bed or transfer to another inpatient facility, is a pervasive public health problem.[1] Boarding has been shown to lead to ED crowding, poor patient experience and lower quality of care,[2,3] delays in treatment, with increased morbidity and mortality,[4] and lost revenue.[5] Although overall boarding is a common problem nationwide, patients with mental health emergencies are disproportionately affected.[5-7] Mental health patients wait more than 3 times longer for an inpatient bed than nonmental health admissions.[5] Mental health boarding consumes scarce ED resources and worsens crowding so that other patients with undifferentiated, potentially life-threatening conditions wait longer to be seen and treated.[8] One study demonstrated that every mental health admission prevented 2.2 bed turnovers and cost the ED on average $2,264.[5] This is exacerbated by the fact that mental health patients are more than 2.5 times more likely to require admission (41%) than patients with other conditions[9] and are routinely held in EDs for days or even weeks without access to definitive psychiatric care.[10] Prolonged boarding times for mental health patients can lead to increased medication errors and adverse outcomes.[11,12] Additionally, mental health boarding has a negative effect on nursing and physician job satisfaction.[13]

Importance

Mental health emergencies represent a growing proportion of ED visits nationally, increasing from 5.4% in 2000 to approximately 12.5% as recently as 2007.[9] Mental health boarding has been the subject of ongoing policy discussions in Massachusetts, involving multiple

Editor's Capsule Summary

What is already known on this topic

Patients with psychiatric emergencies have longer emergency department (ED) length of stay than other patients.

What question this study addressed

This cross-sectional study examined potential patient- and administrative-level correlates of ED length of stay among 885 consecutive patients requiring mental health evaluation at a nonrandom but diverse sample of 10 Massachusetts EDs.

What this study adds to our knowledge

Patients requiring psychiatric admission or transfer had significantly longer length of stay than those discharged. Most of this difference was due to wait for a bed, not due to evaluation time; this wait was significantly longer for Medicaid and uninsured patients.

How this is relevant to clinical practice

This study provides further evidence that the wait for inpatient psychiatric beds, particularly for Medicaid or uninsured patients in Massachusetts, is the primary driver of ED psychiatric boarding.

governmental, regulatory, provider, and consumer stakeholders. There has been significant discussion about the factors that lead to prolonged ED stays for mental health patients, including which portion of the visit leads to the greatest delays (eg, medical clearance versus boarding time). In Massachusetts, the Department of Mental Health and the Division of Insurance[14] have questioned whether medical clearance is a significant contributor to prolonged length of stay. However, clinician experience and existing literature suggest that boarding time is a greater contributor to prolonged ED length of stay for mental health patients.[15] Furthermore, there has been a perception among emergency care providers that demographics, social factors, and insurance status may explain some of the differences in boarding times for ED patients. A 2012 study of 5 hospitals within a single health system in Massachusetts found prolonged total ED length of stay for uninsured relative to commercially insured patients, but no difference in boarding times after a disposition decision was made for admitted or transferred patients.[16] The study also found that public insurance was associated with an ED stay of greater than 24 hours.[17]

Goals of This Investigation

The objective of this study was to quantify the burden of mental health boarding in EDs across Massachusetts and to assess for variation in ED length of stay for mental health patients by insurance type. We sought to specifically assess the effect of health insurance status on the various components of ED length of stay (medical clearance, mental health response time, mental health evaluation, and boarding times) while taking into account other demographic variables and comorbidities that are believed to affect boarding times. Finally, we investigated which factors are specifically associated with prolonged ED boarding times greater than 24 hours in a diverse group of Massachusetts hospitals.

MATERIALS AND METHODS

Study Design

We performed a cross-sectional observational study of all patients requiring a mental health consultation in the ED who were treated during a 2-week period at one of 10 nonaffiliated preselected Massachusetts study hospitals.

Data abstraction forms were completed for the 885 consecutively enrolled patients; 14 patients were excluded because of incomplete interval data. Recorded data elements included demographic information, insurance carrier, length of stay, medical treatment and assessment, medical history, psychiatric diagnosis, and treatment and disposition (Appendix E1, available online at http://www.annemergmed.com). Additionally, data were collected on ED total length of stay and its component intervals: patient arrival to mental health evaluation request (medical clearance), mental health request to consultant arrival (mental health response time), arrival to completion of mental health evaluation (mental health evaluation), and completion of mental health evaluation to patient departure from the ED (boarding time). One individual from each site was trained and performed the chart abstraction, using a data abstraction manual (Appendix E2, available online at http://www.annemergmed.com). Time logs were kept on each patient, and when necessary, data were also collected from or verified by chart review. The same individual abstractor also completed the aggregate abstraction form, using the aggregate abstraction manual (Appendixes E3 and E4, available online at http://www.annemergmed.com).

Study Setting

All hospitals in Massachusetts were offered the chance to participate in the study, and the hospitals selected were those that expressed interest and were collectively reflective of the various ED treatment settings throughout the state, with the

intent of maximizing external validity. Subjects were enrolled from 10 nonaffiliated hospitals, 2 in each of the 5 state-defined emergency medical services (EMS) geographic regions. The study sites were composed of 7 community hospitals and 3 academic medical centers EDs. Six hospitals provide inpatient psychiatric care (Table 1), which reflects both the state's proportional availability of mental health beds in acute care hospital settings and academic ED volume compared with nonacademic ED volume. Annual ED volume ranged between 30,000 and 112,000 visits per year at the selected sites. Total ED volumes in the aggregate for these hospitals accounted for approximately 22% of ED visits in Massachusetts during this study period.[18]

Selection of Participants

All consecutive patients, regardless of age, presenting to a participating ED during the study period (January 25 through February 7, 2012) who received a mental health evaluation were enrolled in the study.

Data Collection and Processing

A standardized case report form (Appendix E1, available online at http://www.annemergmed.com) was developed, along with a detailed instruction and training manual for each site's data abstractors (Appendix E2, available online at http://www.annemergmed.com). Data abstraction was completed by detailed review of both electronic and paper medical records and customized time sheets. Case report forms were completed at each site and then manually entered into a REDCap (version 6.7; Vanderbilt, Nashville, TN) database for analysis.[19] Data integrity was verified through quality assurance at the individual site level and by the project research coordinator once entries were made into the database. Staff and clinicians evaluating patients were instructed to keep accurate time logs of patient arrival, mental health evaluation request, mental health consultant arrival, completion of mental health evaluation, and patient departure to calculate the 4 individual time components of ED length of stay. Intervals that were incomplete or appeared inaccurate were referred to the site for completion and verification by the research coordinator. After this process, patients with inaccurate or incomplete data were excluded from the study. Each site and subject was provided with an individual study identifier so that protected health information entered into the case report form was deidentified. The case report form captured primary and secondary psychiatric diagnoses, as well as corresponding *International Classification of Diseases, Ninth Revision* codes. Patients were further categorized into 7 insurance groups for analysis: private, Medicare, Medicaid, dual Medicaid and Medicare coverage, State Commonwealth insurance (a publicly subsidized insurance created by Massachusetts health reform in 2006), uninsured or self-pay, and other.

Outcome Measures

We used ED length of stay and its component intervals (medical clearance, mental health response, mental health evaluation, and boarding time) as a measure of throughput for patients because this metric has been used in multiple other mental health studies[5,16,20] and is also what is reported as a quality metric for emergency care by the Centers for Medicare & Medicaid Services Hospital Compare Web site (https://medicare.gov/hospitalcompare/about/timely-effective-care.html). The primary outcome in this study was mental health boarding time, which was analyzed according to disposition (discharged, admitted, or transferred to an outside acute care facility).

Primary Data Analysis

All analyses were performed with SPSS (version 22; IBM, Armonk, NY). The code for data analysis is in Appendix E5,

Table 1. Hospital site summary data.

Hospital Site	N	Type	Inpatient MH Beds	Annual Total ED Volume	Annual MH Volume	Annual Med Surg LOS, Admitted, Hours:Minutes*	Annual Med Surg LOS, Transfer, Hours:Minutes*
1	117	Academic	28	112,713	13,664	7:36	6:20
2	86	Academic	25	56,787	1,749	5:28	N/A
3	116	Community	22	61,932	6,396	5:38	N/A
4	54	Community	20	36,123	1,944	3:41	4:23
5	84	Community	N/A	74,834	4,364	5:38	5:53
6	123	Community	N/A	51,973	1,238	5:06	3:02
7	63	Community	N/A	55,187	3,567	5:35	5:00
8	60	Community	32	37,192	2,754	4:56	3:38
9	85	Community	N/A	49,291	2,331	5:05	4:18
10	83	Academic	56	97,032	5,117	11:20	12:12

MH, Mental health; *LOS*, length of stay; *med surg*, medical surgical.
*Mean medical surgical LOSs for admitted and transferred patients were collected from sites in aggregate. These are average LOSs for the year in which our study was conducted.

available on line at http://www.annemergmed.com. Summary statistics were generated for demographic variables by site (Table 2). For continuous variables, the median and interquartile ranges were calculated, and for categorical variables, proportions were calculated and compared with Pearson's χ^2 test. The total ED length-of-stay time components were expressed as medians, with their associated 95% confidence intervals (CIs).

We analyzed the influence of insurance on the total ED length of stay and each time component by using a univariate Kaplan-Meier survival analysis detecting significant differences in median time with the log-rank test. However, our primary analysis was a multivariate Cox regression model evaluating ED boarding times by disposition (discharge, transfer, or admission) across insurance type. We identified a number of factors we believe impact mental health boarding times to evaluate as potential confounders: age, race, sex, alcohol and substance abuse, medical problems, history of aggressive behavior, recent mental health admission, prisoner status, homelessness, prearranged bed, hospital site, and day of admission. We evaluated the effect of hospital site, hospital type (community versus academic), hospital size (small, medium, and large), and hospital access to inpatient psychiatric beds in our Cox regression analysis. Testing was performed to evaluate the significance of these potential confounders by identifying variables that modified the crude hazard ratio estimates by a factor of 10% or more. The assumption of constant hazard ratios across time was tested by ascertaining that none of the log-log survival curves for each of the 7 insurance categories crossed one another. The association between the type of insurance and the time of occurrence for each step of the ED stay is expressed as an adjusted hazard ratio.

Finally, an additional logistic regression analysis was carried out to quantify the association between long length of stay (more than 24 hours) and risk factors of interest. We used median as our measure of central tendency, given the skewed nature of mental health boarding data, as is convention for nonparametric data. The 24-hour threshold was not selected a priori; however, the Massachusetts Department of Public Health has required hospitals to report boarding greater than 12 and 24 hours, and previous literature has also used a 24-hour cutoff to define extended length of stay for mental health patients.[17] In our first modeling step, we calculated crude associations between "insurance status" (our exposure) and "length of stay greater than 24 hours" (our outcome), using a threshold for significance of 0.20. A saturated logistic model that included our exposure (type of insurance) and the identified significant covariates was constructed, including those variables that modified the calculated odds ratio estimates by a factor of 10% or more, and forcing the variable "prearranged admission" into the model. The resulting association between the probability of an extended length of stay (>24 hours) and the type of insurance is expressed as an adjusted odds ratio.

RESULTS

Hospital and ED structural characteristics, as well as aggregate mean boarding time for medical and surgical

Table 2. Patient summary data.*

Hospital Site	1	2	3	4	5	6	7	8	9	10
Age, y	28 (16, 43)	39 (23, 52)	31 (20, 46)	40 (29, 48)	32 (20, 46)	29 (18, 45)	26 (19, 47)	46 (30, 52)	27 (17, 47)	39 (25, 47)
Men	53.8	55.8	56	57.4	57	51.2	42.9	56.7	62.4	50.6
White	51.3	60.5	67.5	94.4	57	75.6	93.7	80	84.7	66.3
MH diagnosis										
Mood	58.1	59.3	72.6	74.1	67.9	58	50.8	83.3	61.1	78
Adjustment	12.8	2.3	0.9	1.9	7.4	3.4	6.3	0	8.2	2.4
Psychoses	9.4	18.6	12.8	14.8	8.6	16.8	12.7	13.3	8.2	15.9
Substance	7.7	14	12	5.6	8.6	18.5	20.6	0	18.8	2.4
Anxiety	12	5.8	1.7	3.7	7.4	3.4	9.5	3.3	3.5	1.2
Prearranged bed	8.5	7	1.7	0	1.2	9.8	7.9	11.7	4.7	3.6
Active ETOH use	29.9	30.2	25.6	20.4	23.5	23.6	22.2	20	25.9	28.9
Active drug use	29.1	41.9	43.6	40.7	37.2	28.5	12.7	21.7	38.8	33.7
Active medical problem	17.9	20.9	17.2	7.5	30.6	13.8	20.6	25	20	18.1
Aggressive behavior	4.3	5.8	17.1	7.4	4.7	8.9	12.7	6.7	9.4	7.2
Recent MH admission	13.7	4.7	15.4	7.4	5.8	6.5	4.8	3.3	14.1	7.2
Prison	3.4	1.2	6.8	9.3	3.5	4.9	0	0	0	2.4
Homelessness	5.1	9.3	9.4	7.4	9.3	8.9	1.6	5	4.7	12
Weekday admission	59	68.6	64.7	64.8	64	65.9	74.6	55	62.4	65.1

ETOH, Alcohol.
*All categorical variables presented as percentage, and all continuous variables are median (IQR), unless otherwise stated.

patients, are presented in Table 1. Subjects enrolled at these 10 sites were mostly comparable (Table 2), except for the variable age, in which site 1 had the youngest median age (28 years; interquartile range [IQR] 16, 43) and site 8 had the oldest median age (46 years; IQR 30, 52). Other differences were found in the percentages of social comorbidities (alcohol and drug use, aggression, previous psychiatric consultation, and previous incarceration).

In our study, the mean length of stay for medical or surgical admissions and transfers during the same 2-week period was 4.2 hours and 3.9 hours, respectively, compared with the mental health mean length of stay of 16.5 hours and 21.5 hours, respectively.

The aggregated median length of stay for all patients in our sample stratified by disposition is presented in Figure 1. The time components that occurred before a disposition decision (medical clearance, mental health provider response time, and mental health provider evaluation time) did not differ by patient disposition. However, after a disposition decision was made, the majority of discharged patients left the ED relatively quickly (1.3 hours; 95% CI 1.1 to 1.5 hours). However, admitted patients boarded in the ED for a median of 6.0 hours (95% CI 5.6 to 6.9 hours), and transferred patients boarded for 9.2 hours (95% CI 7.7 to 11.5 hours).

The overall total median length of stay for mental health patients was 10.92 hours. Patients with State Commonwealth insurance (8.32 hours; 95% CI 5.59 to 11.04 hours) and private insurance (8.83 hours; 95% CI 7.40 to 10.27 hours) experienced the shortest overall length of stay, with self-pay or uninsured patients (13.88 hours; 95% CI 8.70 to 20.07 hours) having the longest total

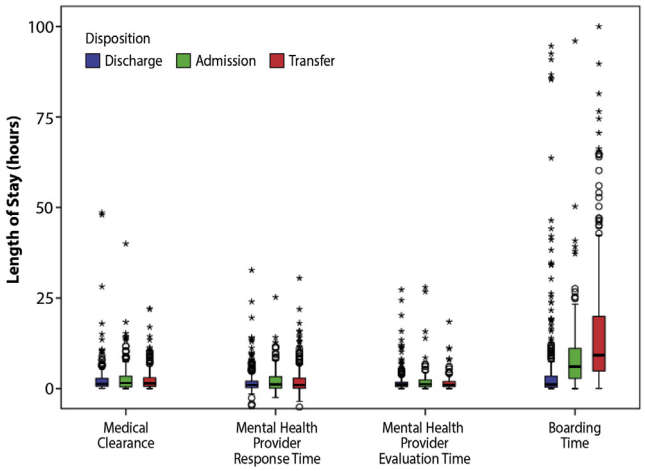

Figure 1. Median length of stay by time component for mental health patients in the ED. (To improve the scale of the Y-axis, 2 patients with length-of-stay values of 129 and 162 are depicted here at 100 hours)

length of stay. However, a much larger percent of State Commonwealth patients compared with all other insurance types were discharged from the ED (77% versus 51%), and discharged patients had a shorter ED length of stay on average compared with admitted or transferred patients. Using a Mantel-Cox analysis, we identified a significant difference between self-pay or uninsured patients in comparison with patients with Medicaid or "other" insurance. Additionally, there was a significant difference in overall ED length of stay for uninsured patients relative to those with Medicare.

The median time for medical clearance was similar for all patients, regardless of insurance type (1.40 hours; 95% CI 1.26 to 1.55 hours). Insurance type was associated with a difference in mental health response times (1.1 hours; 95% CI 1.0 to 1.3 hours) and mental health evaluation times (1.1 hours; 95% CI 1.0 to 1.2 hours). However, the magnitude of the difference was small for both time components. As shown in Figure 2, there was a marked difference in median time to leave the ED after a disposition decision was made (boarding time), depending on whether the patient was admitted (5.6 hours; 95% CI 4.2 to 7.0 hours), transferred (9.3 hours; 95% CI 7.8 to 11.0 hours), or discharged (1.2 hours; 95% CI 1.0 to 1.5 hours). However, when we stratified by disposition category, we found a varying association between boarding time and insurance status. For discharged patients, boarding time varied little by insurance type. Transferred patients, by contrast, experienced median boarding times ranging from 7.1 hours (95% CI 6.4 to 7.9 hours) for patients with Medicare to 13.4 hours (95% CI 9.0 to 17.8 hours) for patients with "other" insurance type. For patients admitted to the same hospital, State Commonwealth (2.8 hours; n=1) and Medicare patients (3.9 hours; 95% CI 2.3 to 5.5 hours) had the shortest boarding times, whereas uninsured patients had the longest (9.9 hours; 95% CI 2.4 to 17.4 hours). We present the logarithmic boarding time by disposition type (admitted, discharged, or transferred) and stratified by insurance type to better illustrate the shorter time intervals.

We performed a multivariate survival analysis to evaluate boarding time by insurance adjusting for multiple other variables of interest (Table 3). Independent Cox proportional hazards models were fitted for each period. The hazard ratio in this survival analysis represents the ED boarding time (or the "risk" of departing the ED) for admitted, transferred, and discharged patients by insurance type, using private insurance as the reference group. Privately insured, Medicare, and dual Medicare and Medicaid patients who are admitted appeared to have similar boarding times. Uninsured and self-pay patients

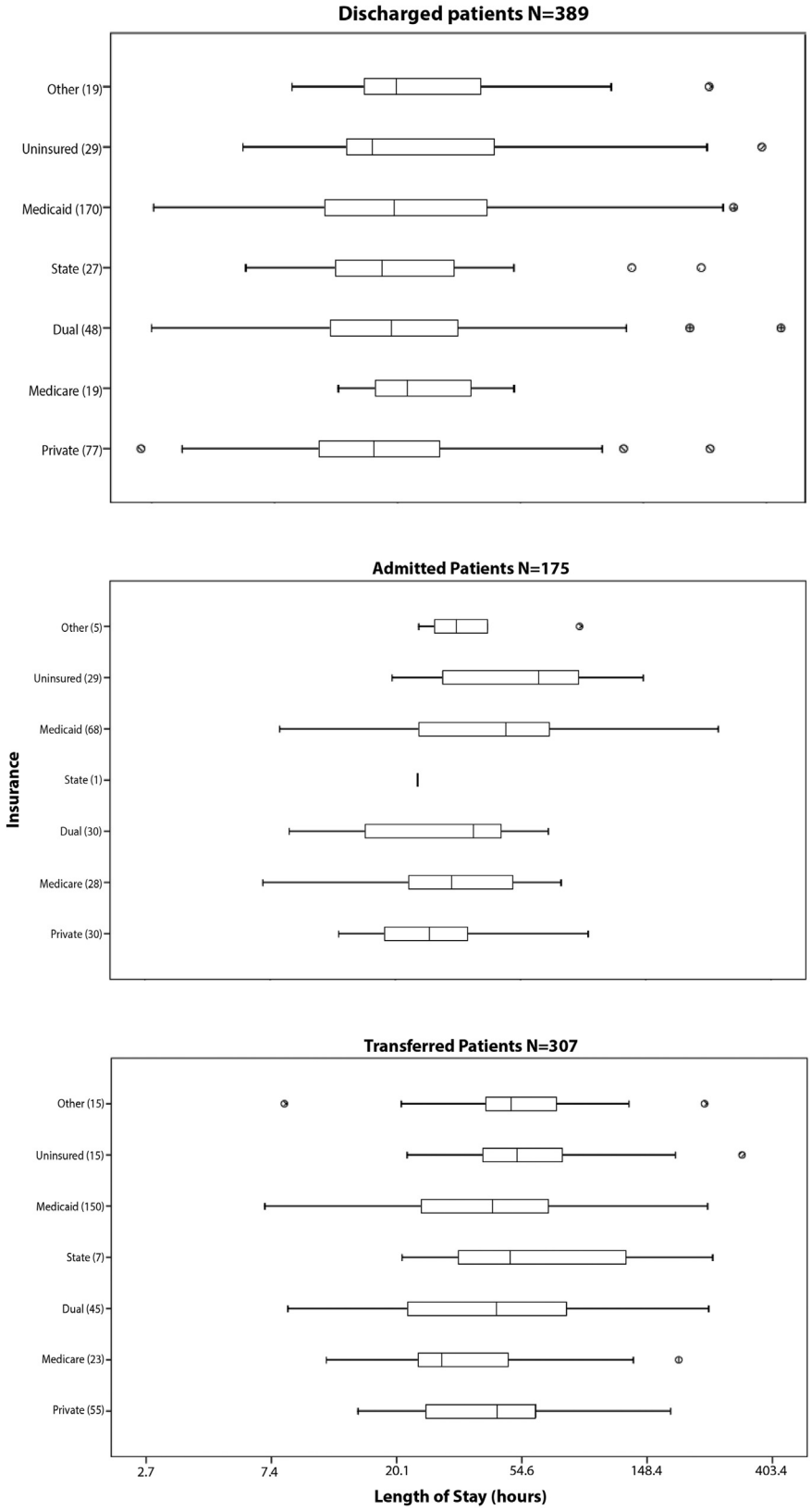

Figure 2. Boarding time by disposition and insurance. The numbers in parenthesis following the box identifier represent the number of subjects for that box. The x-axis is graphed on a log scale.

Table 3. Adjusted hazard ratios for boarding time by disposition.

	Boarding					
Insurance	**n**	**Admitted Patients (CI)**	**n**	**Transferred Patients (CI)**	**n**	**Discharged Patients (CI)**
Private	25	[Reference]	43	[Reference]	64	[Reference]
Medicare	20	1.02 (0.55–1.86)	19	0.72 (0.42–1.25)	18	1.10 (0.63–1.90)
Dual	17	0.87 (0.46 to 1.63)	35	0.69 (0.44–1.08)	45	0.88 (0.59–1.31)
State	1	N/A	7	0.32 (0.13–0.74)	27	1.01 (0.65–1.59)
Medicaid	55	0.65 (0.39–1.07)	111	0.71 (0.50–1.02)	147	0.81 (0.60–1.10)
Uninsured	9	0.36 (0.16–0.82)	14	0.47 (0.25–0.89)	25	0.75 (0.47–1.19)
Other	5	0.61 (0.21–1.73)	12	0.64 (0.34–1.22)	13	0.74 (0.41–1.34)
Significant confounders	Day of admission and aggressive behavior		Day of admission and homelessness			Age

experienced a significantly longer boarding time (hazard ratio 0.36; 95% CI 0.16 to 0.82) relative to privately insured patients. These comparisons take into account the day of admission and the display of aggressive behavior, the identified confounders in the analysis. Although hospital site was investigated as a covariate in the analysis, it was not significant and therefore was not included in the final model.

For patients transferred to another facility for inpatient psychiatric treatment, the boarding time is significantly longer for those with State Commonwealth insurance (hazard ratio 0.32; 95% CI 0.13 to 0.74) and for the uninsured and self-pay group (hazard ratio 0.47; CI 0.25 to 0.89). These comparisons take into account the day of admission and homelessness. For patients deemed safe to be discharged from the ED, the time from disposition decision to departure varied little among insurance types, and the only significant covariate identified was age.

Adjusted associations for the relationship between insurance type and the probability of spending 24 hours or more in the ED can be found in Table 4. Of all the possible confounders, we retained age, mode of arrival to the ED, arrival during the weekend, prearranged admission, homelessness, and aggressive behavior. All others (sex, race, presence of comorbidities, alcohol or substance abuse, recent psychiatric admission, and history of incarceration) were not found to be significant. We found that uninsured patients were 2.8 times more likely to have an ED stay greater than 24 hours (adjusted odds ratio 2.8; 95% CI 1.27 to 6.22), whereas patients with Medicaid were twice as likely to remain in the ED for greater than 24 hours compared with privately insured patients (adjusted odds ratio 2.04; 95% CI 1.15 to 3.61).

Table 4. The odds ratio of ED stay greater than 24 hours by insurance.

Insurance	**N**	**Adjusted Odds Ratio***	**95% CI**
Private insurance	161		
Medicare	70	0.72	0.28–1.89
Dual Medicare/Medicaid	120	1.53	0.75–3.11
State/Commonwealth	35	1.33	0.45–3.96
Medicaid	382	2.04	1.15–3.61
Uninsured/self-pay	57	2.81	1.27–6.22
Other	38	1.86	0.69–4.98

*Adjusted for age, mode of arrival, weekend arrival, aggression, homeless, and prearranged bed.

LIMITATIONS

There were notable limitations to this observational cross-sectional study. Because there was only 1 data abstractor per site who was not blinded to the study hypothesis, there was no interrater reliability testing performed. Data abstraction forms were completed at the individual hospital sites, and some subjects initially had missing demographic or interval data.

We experienced some loss of data during the transitions between the individual time components of the total length of stay. Fourteen subjects (1.6%) were eventually dropped from the study base as a result despite vigorous attempts to locate missing data from the sites. Although we were able to enroll subjects at 10 nonaffiliated hospitals, they were all in Massachusetts, which limits generalizability to other states. However, we do not have reason to believe that mental health boarding times and demographic differences differ substantially between Massachusetts and other states across the United States, and we included a diverse group of hospitals in terms of size, region, and academic status. Nor can we exclude the possibility of unmeasured bias or confounding; however, we accounted for many demographic features—insurance status, disposition, aggression, necessity of restraints, etc—in an effort to control for prominent confounders. A generalized estimating equations analysis was not conducted to evaluate for the influence of site, although site was investigated as a covariate in the regression analysis. Last, the time-series analysis may be limited by an autocorrelation effect, whereby during times of overall system overload the mental health provider response times and boarding times for

admissions or transfers are likely to be prolonged, which could affect the overall length of stay.

DISCUSSION

In our study of 10 diverse and unaffiliated EDs in Massachusetts, we again found a prolonged ED length of stay for mental health patients. Overall length of stay was significantly greater for patients requiring admission or transfer, and this varied substantially by insurance type. Medical clearance, in contrast, represented a relatively small fraction of total ED length of stay and varied neither by disposition nor insurance status. Consistent with clinical experience, patients with public or no insurance experienced longer waits to definitive care. In a multivariate survival analysis, we found that uninsured admitted and transferred patients tended to board in the ED for a significantly longer period than those with private insurance. The uninsured and Medicaid beneficiaries were also more likely to spend 24 hours or more in the ED. This was true even when other comorbidities were controlled for, such as a history of aggression, incarceration, substance abuse, and homelessness, factors traditionally associated with difficulty in obtaining inpatient psychiatric placement.

Prolonged ED boarding of mental health patients has received attention in the medical literature and popular press.[2,21-24] Although ED boarding for patients overall continues to be problematic, those presenting with mental health emergencies tend to have some of the longest waits for definitive care.[5] This suggests that although the notion of mental health parity has received greater attention in recent years, the inequity in care for this particularly vulnerable group of patients persists. Front-line providers have also suspected that insurance may mediate prolonged boarding times for psychiatric patients in a way that is not generally observed for medical or surgical patients. Although we did not investigate the effect of insurance status on medical or surgical boarding times, the mean length of stay for mental health patients during our 2-week study period was nearly 4 times greater for admitted and 5 times greater for transferred mental health patients relative to admitted and transferred medical and surgical patients during the same period. Although the method of data collection for each of these length-of-stay measures does not lend itself to a formal statistical comparison, it does suggest a disparity in timeliness of care for mental health care relative to other conditions.

Additionally, there has been debate about how to address this problem of prolonged ED length of stay for mental health patients, with some suggesting a focus on expedited medical clearance as a key strategy to reduce total ED length of stay.[14] Our data suggest that medical clearance times are relatively uniform across all insurance types and disposition, representing a small fraction of the overall ED length of stay. These findings suggest that policies to address prolonged ED length of stay will have the greatest influence if focused on the long waits to definitive treatment (boarding) rather than the comparably short medical clearance evaluation.

Other studies have demonstrated significant variation in ED length of stay by disposition, with admitted patients having longer total treatment times than discharged patients, and transferred patients having the longest times.[17] Our results are consistent with these previous studies of mental health boarding, as well as with the large body of general emergency medicine literature indicating that the wait for inpatient treatment is the largest driver of delays and crowding for ED patients.[5,13,15,17,20,25] This issue is particularly true for the uninsured and underinsured. We found that uninsured patients spent approximately 4 hours longer in the ED relative to those with private insurance. Although total ED length of stay was not significantly different for patients with public insurance, the interval from disposition decision to leaving the ED was significantly greater for Medicaid patients relative to privately insured individuals.[17]

Our study augments this previous literature several ways. First, it was designed to enhance the generalizability of our findings to reflect the diverse landscape of ED mental health care. In particular, we obtained data from nonaffiliated EDs across Massachusetts, including small community hospitals and large academic medical centers with and without inpatient mental health beds. Moreover, the mental health evaluation was performed by a variety of licensed mental health clinicians, including physicians, residents, social workers, and psychologists, who were either on-site employees or part of geographically assigned mobile screening teams who service multiple EDs.

There has been extensive debate and proposed solutions, including a 7-point plan to mitigate mental health boarding.[3] And although the causes are multifactorial, the lack of access to community mental health services is frequently beyond the control of individual hospitals and EDs. Many have argued that solutions for mental health boarding and crowding may need to be legislated.[26] Although myriad solutions have been proposed, there is a critical need for intervention-based trials to reduce mental health boarding to best evaluate which solutions are most effective. A recent publication demonstrated that community EDs with an associated regional emergency psychiatric service had substantially shorter boarding times

and inpatient admission rates.[27] Support for such community-based initiatives is urgently needed. In addition, the Patient Protection and Affordable Care Act has created opportunities to break down fragmented mental health care and explore alternative payment modeling studies seeking to better coordinate and integrate mental and physical health care. Moreover, recent case reports of successful community-based paramedicine programs support the need for future exploratory studies investigating the effect of mental health boarding resulting from averting ED visits with mobile integrated health.[28,29] Emergency physicians are well positioned to lead multidisciplinary collaborative efforts to improve community-based access and overall quality of care for this vulnerable patient population at both state and federal levels, using legislative and regulatory means.

In summary, across a broad spectrum of nonaffiliated institutions, our study found that the burden of prolonged length of stay for mental health patients is due primarily to boarding in the ED for patients awaiting admission or transfer. Efforts aimed solely at expediting medical clearance are unlikely to substantially improve the throughput for these patients. We also found that the uninsured and those with Medicaid had greater delays to definite care and were more likely to remain in the ED for more than 24 hours. Policies to address delays in care for mental health patients should focus on reducing boarding times and addressing the mechanisms for lack of parity by insurance type.

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Author contributions: MDP conceived the study, designed the trial, obtained research funding, supervised the conduct of the trial, oversaw recruitment of participating centers and site investigators, and supervised data collection. MDP and KHD managed the data, including quality control. LM provided statistical advice on study design and analyzed the data. All authors drafted portions of the article. MDP, KHD, and LB contributed substantially to its revision. MDP takes responsibility for the paper as a whole.

All authors attest to meeting the four ICMJE.org authorship criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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REFERENCES

1. Pitts SR, Vaughns FL, Gautreau MA, et al. A cross-sectional study of emergency department boarding practices in the United States. *Acad Emerg Med*. 2014;21:497-503.
2. Bender D, Pande N, Ludwig M. *Psychiatric Boarding Interviews*. Washington, DC: US Dept of Health & Human Services, Office of the Assistant Secretary for Planning & Evaluation; 2009.
3. Alakeson V, Pande N, Ludwig M. A plan to reduce emergency room "boarding" of psychiatric patients. *Health Aff (Millwood)*. 2010;29:1637-1642.
4. Bernstein SL, Aronsky D, Duseja R, et al. The effect of emergency department crowding on clinically oriented outcomes. *Acad Emerg Med*. 2009;16:1-10.
5. Nicks BA, Manthey DM. The impact of psychiatric patient boarding in emergency departments. *Emerg Med Int*. 2012;2012:360308.
6. Slade EP, Dixon LB, Semmel S. Trends in the duration of emergency department visits, 2001-2006. *Psychiatr Serv*. 2010;61:878-884.
7. Ding R, McCarthy ML, Desmond JS, et al. Characterizing waiting room time, treatment time, and boarding time in the emergency department using quantile regression. *Acad Emerg Med*. 2010;17:813-823.
8. Abid Z, Meltzer A, Lazar D, et al. Psychiatric boarding in the US EDs: a multifactorial problem that requires multidisciplinary solutions. Policy brief. *Urgent Matters*. 2014;1:1-6.

9. Owens PL, Mutter R, Stocks C. Mental Health and Substance Abuse–Related Emergency Department Visits Among Adults, 2007: Statistical Brief #92. 2010. Available at http://www.hcup-us.ahrq.gov/reports/statbriefs/sb92.pdf. Accessed November 28, 2016.
10. Kutscher B. Bedding, not boarding. Psychiatric patients boarded in hospital EDs create crisis for patient care and hospital finances. *Mod Healthc*. 2013;43:15-17.
11. Liu SW, Thomas SH, Gordon JA, et al. A pilot study examining undesirable events among emergency department–boarded patients awaiting inpatient beds. *Ann Emerg Med*. 2009;54:381-385.
12. Bakhsh HT, Perona SJ, Shields WA, et al. Medication errors in psychiatric patients boarded in the emergency department. *Int J Risk Saf Med*. 2014;26:191-198.
13. Misek RK, DeBarba AE, Brill A. Predictors of psychiatric boarding in the emergency department. *West J Emerg Med*. 2015;16:71-75.
14. Murphy JG. Report Summarizing the Study of Differences Between Behavioral Health and Non-Behavioral Health Treatment Records for Massachusetts Health Insurance Carriers When Referring Patients from Hospital Emergency Departments. 2014. Available at: http://www.mass.gov/ocabr/docs/doi/examination-of-carriers-compliance.pdf. Accessed November 13, 2016.
15. Stone A, Rogers D, Kruckenberg S, et al. Impact of the mental health delivery system in California emergency departments. *West J Emerg Med*. 2012;13:51-56.
16. Chang G, Weiss AP, Orav EJ, et al. Hospital variability in emergency department length of stay for admitted patients receiving psychiatric consultation: a prospective study. *Ann Emerg Med*. 2012;58:127-136.
17. Chang G, Weiss A, Kosowsky JM, et al. Characteristics of adult psychiatric patients with stays of 24 hours or more in the emergency department. *Psychiatr Serv*. 2012;63:283-286.
18. Centers for Health Information and Analysis. Acute hospital utilization trends in Massachusetts FY2009-FY2013. Available at: http://chiamass.gov/utilization-analysis/. Accessed October 16, 2015.
19. Harris P, Taylor R, Thielke R, et al. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42:377-381.
20. Weiss AP, Chang G, Rauch SL, et al. Patient- and practice-related determinants of emergency department length of stay for patients with psychiatric illness. *Ann Emerg Med*. 2012;60:162-171.
21. Bender D, Pande N, Ludwig M. A Literature Review: Psychiatric Boarding. Washington, DC: US Dept of Health & Human Services, Office of the Assistant Secretary for Planning & Evaluation. 2008. Available at: http://aspe.hhs.gov/daltcp/reports/2008/PsyBdLR.pdf. Accessed September 16, 2016.
22. Baraff LJ, Janowicz N, Asarnow JK. Survey of California emergency departments about practices for management of suicidal patients and resources available for their care. *Ann Emerg Med*. 2006;48:452-458.
23. American College of Emergency Physicians (ACEP) psychiatric and substance abuse survey 2008. Fact sheet. Available at: http://www.acep.org/uploadedFiles/ACEP/Advocacy/federal_issues/PsychiatricBoardingSummary.pdf. Accessed October 20, 2015.
24. Gold J. Mentally ill languish in hospital emergency rooms. 2011. Available at: http://www.npr.org/2011/04/13/135351760/mentally-ill-languish-in-hospital-emergency-rooms. Accessed October 30, 2016.
25. Stephens RJ, White SE. Selected topics: psychiatric emergencies, factors associated with longer length of stay for mental health emergency department patients. *J Emerg Med*. 2014;47:412-419.
26. Rabin E, Kocher K, McClelland M, et al. Solutions to emergency department "boarding" and crowding are underused and may need to be legislated. *Health Aff (Millwood)*. 2012;31:1757-1766.
27. Zeller S, Calma N, Stone A. Effects of a dedicated regional psychiatric emergency service on boarding of psychiatric patients in area emergency departments. *West J Emerg Med*. 2014;15:1-6.
28. Ross DW, Schullek, Homan MB. EMS triage and transport of intoxicated individuals to a detoxification facility instead of an emergency department. *Ann Emerg Med*. 2013;61:175-184.
29. Kizer K, Shore K, Moulin A. Community paramedicine: a promising model for integrating emergency and primary care. 2013. Available at: http://www.ucdmc.ucdavis.edu/iphi/publications/reports/resources/IPHI_CommunityParamedicineReport_Final%20070913.pdf. Accessed November 10, 2016.

APPENDIX E1

Mental health boarder study

Data Abstraction Form
(Site Specific)
Reviewer's Initials __ __ __

Section 1. Basic Information

1.	Site: XXX				
2.	Subject number: (XXX)				
3.	Age: (XXX y)				
4.	Sex:	O Male		O Female	
5.	Race/ethnicity:	O White	O Black	O Hispanic	O Asian
		O Other:	O American Indian	O Not documented	
6.	Mode of arrival:	O Walk in/automobile		O Police	O No record
		O EMS			
7.	Insurance: (all that apply)	O Medicaid	O Medicare	O HMO/commercial	O None/self-pay
		O Mass Health	O Other, specify: _____		
8.	Date/time of triage: __ __/__ __/12 __ __:__ __ military time				O No record
9.	Date/time med clearance completed: (ie, mental health consultation placed): __ __/__ __/12 __ __:__ __ military time				O No record
10.	Date/time of arrival mental health: __ __/__ __/12 __ __:__ __ military time				O No record
11.	Date/time of bed request: *(mental health consultation completed)* __ __/__ __/12 __ __:__ __ military time				O No record
12.	Date/time of ED departure: __ __/__ __/12 __ __:__ __ military time				O No record

Section 2. Medical Assessment and Treatment

13.	Laboratory tests?	O Yes	O No	
14.	*If yes, check all that apply →*	O CBC	O BAC	O Urinalysis
		O BMP	O LFTs	O Cardiac panel
		O Toxic screen	O Pregnancy test	O Other:_____
15.	Other diagnostic tests?	O Yes	O No	
16.	*If yes, check all that apply →*	O Radiograph	O ECG	O Other (specify):
		O CT		
17.	Active alcohol abuse?	O Yes	O No	O Not documented
18.	Active substance abuse?	O Yes	O No	O Not documented
19.	Active medical problem?	O Yes	O No	O Specify: _____

Section 3. Psychiatric Diagnostic Impression

20.	Final psychiatric diagnosis?	O Depression	O Suicidality	O Bipolar/manic
	Check all that apply:	O Schizoaffective	O Adjustment Disorder	O Agitation/aggression
		O Psychoses	O Borderline Personality	O Other: _____
		O Not documented		
21.	*ICD-9* code	Primary:	Secondary:	

ICD-9, International Classification of Diseases, Ninth Revision.

Section 4. Psychiatric and Behavioral Treatment

22.	Was close observation required?	O Yes	O Not specified
22a.	Did patient require physical restraints?	O Yes	O No

Section 5. Disposition

23.	Was patient placed into observation status while in the ED?	O Yes		O No
24.	Was patient transferred to outside psychiatric facility?	O Yes		O No
25.	*If yes, name of psychiatric facility →*			
26.	*Location of psychiatric facility →*			
27.	Type of facility?	O Adult O Adolescent O Geriatric		
	Type of admission?	O Inpatient O Observation O CSU O Day care O Other _____		
28.	Admitted to your hospital's psychiatric adult unit as inpatient or observation?	O Yes O Inpatient O Observation		O No
	(a) *If yes, type of admission:*			
29.	Admitted to your hospital's geriatric/psychiatric unit?	O Yes		O No
	(a) *If yes, type of admission:*	O Inpatient O Observation		
30.	Admitted to substance abuse facility?	O Yes		O No
31	Discharged?	O Yes	O No	
32.	Discharge disposition?	O Home O Nursing home/assisted living	O Residential setting O Safe house	O Other (specify): _____

Section 6. Miscellaneous

33.	Primary mental health evaluator?	O In-house resident psychiatrist O In-house psychiatric social worker or nurse	O In-house attending psychiatrist O State mobile screening team (ESP)	O In-house clinical psychologist O Outside contracted mental health clinician (nonstate ESP) O Other:_____
34.	Secondary mental health evaluator if applicable?	O Yes	O No/no record	
35.	*If yes, check all that apply →*	O Resident psychiatrist O Psychiatric social worker/nurse	O Attending psychiatrist O State's mobile screening team (ESP)	O Clinical psychologist O Outside contracted mental health clinician (nonstate ESP) O Other:_____

Section 7. Medical History

36.	Medical history?	O COPD O Currently pregnant O HIV/AIDS	O HTN O Cardiac O None	O Diabetes O Other (specify): _____
37.	Previous/current social history?	O Aggression/violence O Recent psychiatric admission (within 1 mo) or 3/y	O Incarceration O Homeless O Developmentally disabled O Insurmountable language barrier	O Sexual offender
38.	Did patient have a previously arranged bed at a receiving facility?	O Yes	O No	

APPENDIX E2

Boarder retrospective chart review manual

General Instructions

All charts of patients who receive a mental health consultation (either internal or external resource) should be abstracted with this chart review manual.

This includes patients who are admitted to an inpatient or observation status, transferred to another psychiatric facility, or discharged.

In addition, all *ICD-9* codes 290.0 through 319 (mental health and substance abuse codes) shall be collected on patients who meet the above abstraction criteria.

The study period will commence on January 24 at midnight (ie, Tuesday) and end on February 7 at 11:59 PM. Do not include mental health patients who are boarding in your ED at the commencement of the study (ie, arrived in your ED before January 24 at midnight). Conversely, please include patients who remain in your ED after the 2-wk study period who initially arrived during that time. For example, a patient who arrives on February and boards in your ED through February 9 should be included in the data abstraction.

Documentation that may be considered:

Reviewers may use any documentation that occurred while the patient was in the ED to include hospital demographic information page, nursing/physician ED medical record, discharge sheet, tracking board information, consultations, EMTALA transfer form or other documentation tools/instruments by mental health clinicians.

Decision rules for conflicting results:

In cases in which there is conflicting documentation, the reviewer should prioritize certain providers' documentation according to the following rules:

Attending MD's documentation should be used over a resident MD's documentation.

Resident MD over a physician assistant (PA) or nurse practitioner (NP)

PA or NP over a nurse

Nurse over a medical student

Dates: All date fields should be abstracted as MM/DD. Use a leading zero if necessary (eg, enter October 25 as 10/25).

Times: Time notations should be made according to the 24-h clock. Valid times should be recorded as 00:00 to 23:59 (24:00 is not valid).

Qualifiers: Qualifiers indicate some uncertainty about whether a condition really exists. In general, qualifiers such as *probable*, *consistent with*, *presumed*, *compatible with*, *consider*, or *diagnostic of* should be abstracted as positive findings. Qualifiers such as *rule out*, *r/o*, *possible*, *risk of*, and *questionable* should be abstracted as negative findings unless a later documentation of a positive finding is noted.

Symbols: Symbols that may be considered include:

+=positive, ∅=negative, ↑=elevated or high or increased, ↓=decreased or low

Special Instructions for Online Data Entry With REDCap

Pop-up Questions From Branching Logic

This online form is programmed with branching logic, so some questions will appear on the screen only when certain questions are answered in a way that make them "pop up." In other words, some questions on the hard-copy form are "hidden" on the online version until they are prompted.

Variable Validation

Some questions have been programmed so that answers are accepted only after they have been validated. In the event that an invalid answer is typed into a response, a pop-up screen will appear with an error message, and a new response must be entered.

"Other" Response

Whenever the "other" response is selected, a pop-up text box will appear that allows one to enter text to specify the response.

Required Responses

Every question that appears or "pops up" on the screen requires a response. The answers to the questions have been organized so that "other" and "not documented" are always possible options, so no questions should ever be skipped. When you save the document, a pop-up screen will inform you if you have skipped any questions.

Saving Data

When you save each form, it must be categorized as "complete," "incomplete," or "unverified" as follows:

Click "complete" if all fields have responses.

Click "incomplete" if any fields are pending responses.

Click "unverified" if no information is found for a required field.

Remember to click the "Save" or "Save and continue" button when you are done regardless of whether the form is complete, incomplete, or unverified.

Reviewer's initials	Enter the initials of the reviewer completing the form. If the abstractor does not have a middle name, use X for the middle initial. Examples: Jane A. Jones: J A J

Reviewer's Initials ___ ___ ___

Section 1. basic information

Site XXX	Enter the first 3 digits of the particular site code assigned to your hospital. Include leading zeros when necessary. This will be provided to you before study.
2. Subject number (XXX)	The subject number is the second set of 3 digits, which should represent the number of the subject assigned. Prepopulated abstraction tools with subject numbers will be provided. Include leading zeros when necessary. Example: (right): 0 2 3 0 1 5 (wrong): _ 2 3 or 2 3 1 5
3. Age (XXX y)	Enter the patient's age on the date of his or her ED visit. If age is not documented or not legible, enter 999. Include leading zeros when necessary. Example: (right): 0 6 5 (wrong): _ 6 5

Section 1. Continued.

4. Sex	Enter the patient's sex (male or female) as documented on the admission/registration face sheet. If the patient's sex is not documented on the admission/registration face sheet, you may also consider: clinician notes (eg, this 56-y-old woman presents with…) abbreviations (eg, WDWM=well-developed white male patient) pronouns (eg, his, her, he, she) Enter "not documented" if you are unable to determine the patient's sex from one of these sources.
5. Race/ethnicity	If the patient's race/ethnicity is not documented on the admission/registration face sheet, you may also consider: Clinician notes (eg, Hispanic woman presents with…) Abbreviations (eg, ill-appearing AA man=African American=black). Enter "other" for any ethnicity documented but not present as a discrete check-off box. Enter "not documented" if you are unable to determine the patient's race or ethnicity from any source. Please refer to the following definitions: American Indian: A person having origins in any of the original peoples of North, Central, or South America and who maintains tribal affiliation or community attachment. Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. (Note: Individuals from the Philippine Islands have been recorded as Pacific Islanders in previous data-collection strategies.) Black or African American: A person having origins in any of the black racial groups of Africa. Terms such as "Haitian," "Caribbean," "West Indian," "African," or "Ethiopian" can be used in addition to "Black or African-American." *Hispanic* refers to peoples having origins in Mexico, Puerto Rico, Cuba, Central America, South America, or any other Spanish-American culture or origin, regardless of race. White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.
6. Mode of arrival	Enter the documented mode of arrival as documented on the admission/registration face sheet. If it is not indicated on the admission/registration face sheet, you may also consider the ED nursing or physician documentation. Search for EMS sheet when appropriate. If no record of mode of arrival, enter "no record."
7. Insurance	Medicare Medicaid NHP Commercial BCBS Tufts Fallon Harvard Ma Health Other (specify)
8. ED date and time of triage	Enter the date (MM/DD) the patient presented to ED triage. If the ED triage date is not documented or not legible, enter "not documented." Enter the time (24-h clock) the patient presented to the ED. If triage time is not documented, enter the first (earliest) documented time on the chart. If a greeting or registration time is not documented, you can select "not documented."
9. Date/time med clearance complete	Enter time documented that medical clearance is complete. If not specifically documented, then enter time mental health consultation obtained. If not documented, then select "no record."
10. Date/time mental health arrival	Enter date/time of initial mental health evaluation arrival. If not specifically identified, indicate initial documentation of evaluation in progress by mental health clinician. If not documented, then select "no record."
11. Date/time of bed request	This includes patients who are ultimately admitted to inpatient or observation or crisis stabilization unit, as well as patients who are ultimately discharged home. Enter date/time the initial mental health consultation was completed. If not specifically documented, indicate initial documentation that bed search was in progress. If unable to be extracted, indicate "no record." If mental health evaluation occurred before ED arrival and a bed search was initiated before arrival, then indicate date and time of ED arrival. If a mental health evaluation occurred before ED arrival and another mental health evaluation occurred in the ED to initiate a bed request, then indicate the date and time the hospital-based mental health consultation was completed.
12. Date/time of ED departure	For same hospital psychiatric admissions: Enter date/time documented by clinician when patient left or departed from ED. If not specifically documented, indicate date/time of arrival of transport. If transport arrival time not documented, then indicate date/time patient arrived on inpatient floor. For transfers to another psychiatric facility: Enter date/time documented by clinician when patient left ED. If not specifically documented, indicate date/time of departure or arrival of EMS vehicle. For discharge home: Enter date/time documented by clinician when patient left ED.

Section 2. medical assessment and treatment

13. Laboratory test requested	If no orders found indicating lab tests ordered, then search physician and nursing documentation for any lab results. If none found, then indicate "no."
14. Type of lab test	CBC: check box if any 1 of following or all test documented: Hgb, Hct, WBC BMP: check box if any one of following tests are documented: sodium, potassium, BUN, creatinine, glucose BAC: check box if blood alcohol level or other assessment of quantitative alcohol level documented (including breathalyzer) LFTs: check box if any 1 of the following tests are documented: SGPT/AST, SGOT/ALT, bilirubin, alkaline phosphatase, CPK, or LDH Pregnancy test: check box for serum or urine HCG Urinalysis: check box for any urinalysis dipstick results Cardiac panel: check box for CK-MB or troponin (TnT, TnI)
15. Other diagnostic tests conducted	If no orders found indicating diagnostic tests ordered, then search physician and nursing documentation for any diagnostic test results. If none found then indicate "no."
16. If yes, check all that apply	Self-explanatory
17. Active alcohol abuse	Enter "yes" if the patient is currently intoxicated or if there is evidence of current alcohol abuse (any positive ETOH in blood or urine or stated history of current use). Enter "no" if there is documentation that indicates no evidence of any current use. Enter "not documented" if there is no documentation about alcohol abuse.
18. Active substance abuse	Enter "yes" if toxicology screen is positive for nonprescribed medication. Enter "yes" if there is positive documentation of current intentional illegal or prescription drug misuse. Enter "no" if there is documentation that indicates no current or intentional illegal or prescription drug misuse. Enter "no" if there is a history of illegal drug use or drug misuse. Enter "not documented" if there is no documentation of current intentional illegal drug use or prescription drug misuse.
19. Active medical problem	Enter "yes" if patient has any medical problem documented that requires diagnostic evaluation, treatment, or specialty consultation while the patient is in the ED. Examples include hypertension requiring medication and abdominal pain requiring imaging or medication. In addition, specify any medical reason (if documented) that receiving medical facility would not accept patient.

Section 3. psychiatric diagnostic impression

20. Final psychiatric diagnosis	Check off box according to diagnosis documented in mental health or ED medical record. Enter the primary emergency physician discharge diagnosis. If the emergency physician discharge diagnosis is not documented in the ED chart, you may look elsewhere for this documentation. You may enter more than 1 diagnosis if appropriate (3/15/12). Enter "not documented" if the primary emergency physician discharge diagnosis is not documented or not legible.
21. *ICD-9* code	Enter appropriate primary and secondary *ICD-9* code found in medical record or hospital billing report for patient. Applicable *ICD-9* codes are 290.0 through 319. Note that substance abuse codes are embedded within mental health codes and are 291.0 through 292.9, in addition to 303–305.93.

Section 4. psychiatric and behavioral treatment

22. Close observation	Enter "yes" if an order is written for close observation, 1:1, or physical or chemical restraints. Enter "yes" if nursing or physician documentation indicates close observation or 1:1 observation, or security present. Enter "not specified" if none of the above documentation is found.
22a. Did patient require physical restraints?	Indicate "yes" if patient received physical restraints during any portion of his or her ED stay. If patient required no restraints or chemical restraints, indicate "no."

Section 5. disposition

23. Was patient placed into observation status while in the ED?	Enter "yes" if patient has orders to admit to observation status/category or has an admit to observation note while in the ED itself, awaiting further evaluation or placement. Enter "no" if an observation order or admit to observation note is not present.
24. Transferred to outside psychiatric facility	Enter "yes" if patient transferred to outside psychiatric facility (whether freestanding or within general acute care hospital). If "no," proceed to question 28.
25. Name of psychiatric facility	Enter name of psychiatric freestanding hospital or the name of the general acute care hospital with an inpatient psychiatric unit.

Section 5. Continued.

26. Location of psychiatric facility	Enter location of above psychiatric unit.
27. Type of facility	Enter type of facility.
Type of admission	Enter the type of admission according to the available choices: inpatient, observation, or crisis stabilization unit (CSU). Enter "other" if specified and not any of the choices If not otherwise specified, assume patient was admitted to inpatient bed status.
Admitted to your hospital's psychiatric unit?	Enter "yes" if patient admitted to your hospital's psychiatric unit on campus.
(a) If yes, type of admission	Enter "inpatient" for regular psychiatric admission. Enter "observation only" if patient admitted to a non ED location as observation case. Observation box to be checked if an "observation order" or "admit to observation note" is present. If not found, check inpatient box.
Admitted to geriatric psychiatric unit?	Enter "yes" if patient admitted to designated hospital geriatric psychiatric unit.
(a) If yes, type of admission	Enter "inpatient" for regular psychiatric admission. Enter "observation only" if patient admitted to a non ED location as observation case. Observation box to be checked if an "observation order" or "admit to observation note" is present. If not found, check inpatient box.
30. Admitted to substance abuse treatment facility?	Enter "yes" if patient was admitted to any substance abuse treatment facility/unit.
31. Discharged	Enter "yes" if discharged.
32. Discharge disposition	Check off appropriate outpatient setting. Enter "discharged home" if exact disposition and setting not specified. Enter "nursing home" or "assisted living" for those patients sent to these locations, as well as any facility that provides skilled or intermediate nursing care. Enter "residential setting" for (1) patients being discharged to a community group home for developmentally, or severely disabled patients that does not provide skilled or intermediate nursing care or (2) a shelter, youth/group home, or (3) halfway house for drugs or alcohol. Consider an adult or elder day care setting a residential setting. Enter "safe house" for those who are discharged into a protective setting against physical or emotional abuse. Enter "home" if exact disposition and setting not specified. Enter "other" if any other disposition setting documented.

Section 6. miscellaneous

33. Primary mental health professional	For this question, we want to capture who performed the initial mental health evaluation at your institution. ESP=emergency service provider (Mass Behavioral Health Program–contracted provider). If other, please specify.
34. Secondary mental health evaluator if applicable?	This question attempts to capture whether there was a separate mental health evaluation in addition to the primary one. Answer "no" if an attending psychiatrist evaluated a patient as part of supervision of any in house clinician (resident, social worker, etc). If no, skip to question 35.
35. If yes, check all that apply	Same as question 33

Section 7. medical history

36. Medical history?	Check off any medical condition listed in patient's medical history.
37. Current history/social history?	Check off only those conditions or social history that is abstracted from the medical record. Check box "aggression/violence" if there is written documentation that the patient is violent, agitated, aggressive, abusive, or likely to assault or has a history of these behaviors. This would include documentation of restraint usage or resistance to medical treatments (eg, pulling at tubes), and combativeness. Check box "recent psych admission" (1 within past month) or >3 within past year if specifically documented in the medical record. Check box "incarceration" if medical record indicates previous imprisonment, jail, incarceration, or police accompaniment or arrest. Check box "homeless" if there is documentation in the chart that patient is currently homeless. Check box "developmentally disabled" if there is any documentation of developmental delay or disability. Check box "insurmountable language barrier" if there is documentation in the chart that the patient speaks a language other than English or Spanish. Also enter "insurmountable language barrier" if the patient has a physical inability to speak or is hard of hearing. Check box "sexual offender" if medical record indicates any documentation of such, or history of sexual predatorship.

Section 7. Continued.

Did patient have a previously arranged bed at a receiving facility?	Answer "yes" if patient had a mental health evaluation before the ED visit and a bed was already arranged/obtained at a receiving facility before (or in place of) a repeated mental health evaluation at your hospital. Only answer "yes" if bed is verified by receiving facility. Answer "no" if bed was requested before ED visit but receiving facility had not arranged a bed or if no bed was requested before ED visit. If the mental health bed request occurred before ED visit and bed search was in progress on patient arrival to ED, then see question 11 explanation for date/time of bed request.

APPENDIX E3

Aggregate data abstraction form

(Site Specific)

Reviewer's Initials __ __ __

Section 1. Aggregate Information

1. Total ED volume_____			
2. Psychiatric *ICD-9* volume _____			
3. Substance abuse *ICD* volume _____			
4. In patient psych beds		O Yes	O No
If yes, number of beds	O Adult _____	O Adolescent _____	O Geriatric _____
5. Substance abuse beds within hospital		O Yes	O No
6. Primary on-call mental health resource (weekdays)		O Internal	O Outsourced
MA Health patients/Medicaid		O Internal	O Outsourced
Commercial payers		O Internal	O Outsourced
Uninsured		O Internal	O Outsourced
Medicare			
7. Primary on-call mental health resource (weekends/holidays)		O Internal	O Outsourced
MA Health patients/Medicaid		O Internal	O Outsourced
Commercial payers		O Internal	O Outsourced
Uninsured		O Internal	O Outsourced
Medicare			
8. Primary on-call mental health resource (after hours)		O Internal	O Outsourced
MA Health patients/Medicaid		O Internal	O Outsourced
Commercial payers		O Internal	O Outsourced
Uninsured		O Internal	O Outsourced
Medicare			
9. Mean and median arrival to departure time for medical/surgical admissions _____			
10. Mean and median arrival to departure time for medical/surgical transfers _____			

APPENDIX E4

Aggregate abstraction form

Review Manual

Special Instructions for Online Data Entry With REDCap

Pop-up Questions From Branching Logic

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Variable Validation

Some questions have been programmed so that answers are accepted only after they have been validated. In the event that an invalid answer is typed into a response, a pop-up screen will appear with an error message, and a new response must be entered.

"Other" Response

Whenever the "other" response is selected, a pop-up text box will appear that allows one to enter text to specify the response.

Required Responses

Every question that appears or "pops up" on the screen requires a response. The answers to the questions have been organized so that "other" and "not documented" are always possible options, so no questions should ever be skipped. When you save the document, a pop-up screen will inform you if you have skipped any questions.

Saving Data

When you save each form, it must be categorized as "complete," "incomplete," or "unverified" as follows:

Click "complete" if all fields have responses.
Click "incomplete" if any fields are pending responses.
Click "unverified" if no information is found for the required field.

Remember to click the "Save" or "Save and continue" button when you are done regardless of whether the form is complete, incomplete, or unverified.

Reviewer's initials	Enter the initials of the reviewer completing the form. If the abstractor does not have a middle name, use X for the middle initial. Examples: Jane A. Jones: J A J

Reviewer's Initials ___ ___ ___

1. Total ED volume	Indicate total year-end volume for most recent fiscal year.
2. Psychiatric *ICD-9* volume	Indicate most recent fiscal year psychiatric volume, using mental health *ICD-9* codes 290 through 319 and subtracting substance abuse *ICD-9* codes 291.0 through 292.9, as well as 303–305.93.
3. Substance abuse *ICD* volume	Indicate most recent fiscal year substance abuse volume, using substance abuse *ICD-9* codes 291.0 through 292.9, in addition to 303–305.93.
4. Inpatient psych beds	Indicate "yes" if your hospital has any licensed inpatient psychiatric beds within the hospital at the initiation of the 2-wk study period. If yes, indicate how many licensed beds for each category: adult, adolescent, geriatric.
5. Substance abuse beds within hospital	Indicate "yes" if your hospital has any licensed outpatient substance abuse beds at the initiation of the 2-wk study period.
6. Primary on-call mental health resource (weekdays)	Indicate by insurer if your usual and customary initial on-call mental health clinician for behavioral patients is internal resource (attg psychiatrist, resident, social worker, psychologist or mental health nurse, etc) or outsourced, ie, external (state designated mobile screener or other outside vendor that provides mental health evaluation). Weekdays are normal business hours, 8:30 AM to 5 PM. Mass Health or Medicaid Commercial payers include Tufts, Harvard, and Blue Cross Blue Shield. Uninsured are those without any documented insurance. Medicare is one of any multiple Medicare products.
7. Primary on-call mental health resource (weekends/holidays)	Same as above.
8. Primary on-call mental health resource (after hours)	Same as above *After hours* is defined as outside of business hours. If this resource changes at a certain time after business hours, then indicate the mental health resource that exists overnight.
9. Mean arrival to departure time for medical/surgical admissions	Indicate your mean arrival to departure time in minutes for medical/surgical admissions during the same 2-wk study period. Arrival time is defined as either initial greeting or triage, whichever comes first. If neither greeting time nor triage time is recorded, indicate arrival time as registration time. Exclude all pediatric and ob/gyn admissions. Do not include observations within your department.
10. Mean arrival to departure time for medical/surgical transfers	Indicate your mean arrival to departure time in minutes for medical/surgical transfers during the same 2-wk study period. If neither greeting time nor triage time is recorded, indicate arrival time as registration time. Exclude all pediatric and ob/gyn transfers.

APPENDIX E5

Code for data analysis

```
GET DATA /TYPE=XLSX
/FILE='Z:\Consultations\Volturo\MACEP final modeling Oct 2.xlsx'
/SHEET=name 'Survival Analysis'
/CELLRANGE=full
/READNAMES=on
/ASSUMEDSTRWIDTH=32767.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
```

1) Kaplan-Meyer Analysis

```
KM TotalLOS BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DoortoRequest BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DoortoRequest BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
KM RequesttoPsychiatry BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM RequesttoPsychiatry BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
KM PsychtoDisposition BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM PsychtoDisposition BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
USE ALL.
COMPUTE filter_$=(Admit = 1).
VARIABLE LABELS filter_$ 'Admit = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
USE ALL.
COMPUTE filter_$=(Transferred = 1).
VARIABLE LABELS filter_$ 'Transferred = 1
(FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
USE ALL.
COMPUTE filter_$=(Transferred = 1 AND
Admit=1).
VARIABLE LABELS filter_$ 'Transferred = 1 AND
Admit=1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

```
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
USE ALL.
COMPUTE filter_$=(Transferred = 1 OR Admit=1).
VARIABLE LABELS filter_$ 'Transferred = 1 OR
Admit=1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
USE ALL.
COMPUTE filter_$=(Discharged = 1).
VARIABLE LABELS filter_$ 'Discharged = 1
(FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
KM DispositiontoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE PAIRWISE POOLED.
KM MedCleartoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
FILTER OFF.
USE ALL.
EXECUTE.
KM MedCleartoDeparture BY Insurance
/STATUS=Status(1)
/PRINT MEAN
/PLOT SURVIVAL
/TEST LOGRANK
/COMPARE OVERALL POOLED.
```

2) Cox Proportional Hazards Model

1) Disposition to Departure: time it takes the patients to leave the ED, no matter where they go (n=732-48 (pre-arranged)=684)

```
GET DATA /TYPE=XLSX
/FILE='Z:\Consultations\Volturo\MACEP final
modeling Dec 18.xlsx'
/SHEET=name 'Survival Analysis'
/CELLRANGE=full
/READNAMES=on
/ASSUMEDSTRWIDTH=32767.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
USE ALL.
COMPUTE filter_$=(PreArranged ~= 1).
VARIABLE LABELS filter_$ 'PreArranged ~= 1
(FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/PRINT=CI(95)
```

```
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol Comorbidity DayCode
Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

2) Disposition to Admission: time it takes the patients to leave the ED, when they are admitted to the hospital they entered (n=144)

```
USE ALL.
COMPUTE filter_$=(Admit = 1).
VARIABLE LABELS filter_$ 'Admit = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Race
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

```
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

3) Disposition to Transfer: time it takes the patients to leave the ED, when they are transferred elsewhere (n=265-24 (pre-arranged)=241)

```
USE ALL.
COMPUTE filter_$=(Transferred = 1 AND PreArranged ~= 1).
VARIABLE LABELS filter_$ 'Transferred = 1 AND PreArranged ~= 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Race
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

```
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

5) Disposition to Admission+Transfer: time it takes the patients to leave the ED, when they are discharged (n=345)

```
USE ALL.
COMPUTE filter_$=(Admit = 1 OR Transferred = 1 AND PreArranged ~= 1).
VARIABLE LABELS filter_$ 'Admit = 1 OR Transferred = 1 AND PreArranged ~= 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Race
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

```
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless Aggression DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
```

6) Disposition to Discharge: time it takes the patients to leave the ED, when they are discharged (n=339)

```
USE ALL.
COMPUTE filter_$=(Discharged = 1 AND
PreArranged ~= 1).
VARIABLE LABELS filter_$ 'Discharged = 1 AND
PreArranged ~= 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Race
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
```

```
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
COXREG DispositiontoDeparture
/STATUS=Status(1)
/CONTRAST (Insurancesep)=Indicator(1)
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/PRINT=CI(95)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20).
3) Logistic Regression
GET DATA /TYPE=XLSX
/FILE='C:\Users\marandal
\Desktop\Volturo\MACEP final modeling Dec
18.xlsx'
/SHEET=name 'Survival Analysis'
/CELLRANGE=full
/READNAMES=on
/ASSUMEDSTRWIDTH=32767.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/CONTRAST (Insurancesep)=Indicator(1)
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20)
CUT(.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Sex
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Race
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER PreArranged
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Arrival
```

```
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Arrival
/CONTRAST (Insurancesep)=Indicator(1)
/CONTRAST (Arrival)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Alcohol
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Substance
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Comorbidity
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Aggression
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER RecentPsych
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Prison
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Homeless
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age Arrival Aggression
RecentPsych Prison Homeless
/CONTRAST (Insurancesep)=Indicator(1)
/CONTRAST (Arrival)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER DayCode
/CONTRAST (Insurancesep)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age Arrival DayCode Aggression
Homeless
/CONTRAST (Insurancesep)=Indicator(1)
/CONTRAST (Arrival)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
LOGISTIC REGRESSION VARIABLES LOS24
/METHOD=ENTER Insurancesep
/METHOD=ENTER Age Arrival DayCode Aggression
Homeless
/METHOD=ENTER PreArranged
/CONTRAST (Insurancesep)=Indicator(1)
/CONTRAST (Arrival)=Indicator(1)
/PRINT=CI(95)
/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20)
CUT(0.5).
```

SENATE BILL No. 20

Introduced by Senator Hill
(Coauthor: Senator Stone)

December 5, 2016

An act to amend Section 34505.8 of, and to add Section 27315.2 to, the Vehicle Code, relating to vehicles.

LEGISLATIVE COUNSEL'S DIGEST

SB 20, as introduced, Hill. Vehicles: buses: seatbelts.

Existing law prohibits a person from operating a motor vehicle on a highway unless that person and all passengers 16 years of age or over are properly restrained by a safety belt. Existing law makes the violation of this provision an infraction.

This bill would also require a passenger in a bus that is equipped with safety belts to be properly restrained by a safety belt. The bill would also require a bus operator to inform passengers of the requirement to wear a seatbelt and would authorize a bus driver to post, or allow to be posted, signs or placards informing passengers of the requirement to wear a seatbelt, as specified. The bill would make a violation of this provision an infraction punishable by a fine of not more than $20 for a first offense and a fine of not more than $50 for each subsequent offense. By creating a new crime, the bill would impose a state-mandated local program.

Existing law requires a charter-party carrier of passengers engaged in charter bus transportation to ensure that drivers of certain vehicles provide each passenger with written or video instructions that include, among other things, the importance of wearing a seatbelt, if available. A violation of this provision is an infraction.

This bill would instead require those written or video instructions to include, among other things, instructions on the requirement to wear a

seatbelt, if available, and the penalties for violating that requirement. By changing the definition of a crime, the bill would impose a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

SECTION 1. Section 27315.2 is added to the Vehicle Code, to read:

27315.2. (a) A passenger in a bus that is equipped with safety belts, including a bus that is required to be equipped with a seat belt assembly pursuant to Federal Motor Vehicle Safety Standard No. 208 (49 C.F.R. 571.208), shall be properly restrained by a safety belt.

(b) (1) Before the departure of a bus carrying passengers in a bus equipped with safety belts, the bus operator shall inform passengers of the requirement to wear the seatbelt under California law and shall inform passengers about the penalties for the violation of the requirement to wear a seatbelt pursuant to this section.

(2) In addition to the information pursuant to paragraph (1), a bus operator may also post, or allow to be posted, signs or placards that inform passengers of the requirement to wear a seatbelt under California law and the penalties for a violation of the requirement to wear a seatbelt pursuant to this section. The signs or placards shall be in a font type and font size that is reasonably easy to read and shall be affixed to a bus in multiple, conspicuous locations.

(c) Notwithstanding subdivision (a) of Section 42001, a violation of subdivision (a) is an infraction punishable by a fine of not more than twenty dollars ($20) for a first offense, and a fine of not more than fifty dollars ($50) for each subsequent offense.

SEC. 2. Section 34505.8 of the Vehicle Code is amended to read:

34505.8. (a) A charter-party carrier of passengers engaged in charter bus transportation shall ensure that the driver of a vehicle

as described in paragraph (1) of subdivision (b) of Section 5363 of the Public Utilities Code that is designed to carry 39 or more passengers shall instruct or play a video for all passengers on the safety equipment and emergency exits on the vehicle prior to the beginning of any trip and provide each passenger with written or video instructions that include, at a minimum, a demonstration of the location and operation of all exits, including emergency exits, ~~and the importance of wearing~~ *the requirement to wear* a seatbelt, if ~~available.~~ *available, and the penalties for a violation of the requirement to wear a seatbelt.*

(b) Notwithstanding any other law, no later than July 1, 2018, the department shall adopt standards and criteria for the implementation of the safety requirements specified in this section.

(c) This section does not alter or affect the requirements of the Passenger Charter-party Carriers' Act (Chapter 8 (commencing with Section 5351) of Division 2 of the Public Utilities Code).

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

O

ASSEMBLY BILL No. 259

Introduced by Assembly Member Gipson

January 31, 2017

An act to amend Section 1317 of the Health and Safety Code, relating to health care facilities.

LEGISLATIVE COUNSEL'S DIGEST

AB 259, as introduced, Gipson. Health care facilities: emergency departments.

Existing law requires a health facility maintaining or operating an emergency department to provide emergency services and care to any person requesting those services and care for any condition in which the person is in danger of loss of life, or serious injury or illness. Existing law prohibits a health facility or its employees or health care providers from refusing to provide emergency services to a patient based upon their ability to pay or upon certain specified characteristics.

This bill would make a technical, nonsubstantive change to those provisions.

Vote: majority. Appropriation: no. Fiscal committee: no. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 1317 of the Health and Safety Code is amended to read:

1317. (a) Emergency services and care shall be provided to any person requesting the services or care, or for whom services or care is requested, for any condition in which the person is in

danger of loss of life, or serious injury or illness, at any health facility licensed under this chapter that maintains and operates an emergency department to provide emergency services to the public when the health facility has appropriate facilities and qualified personnel available to provide the services or care.

(b) In no event shall the provision of emergency services and care be based upon, or affected by, the person's ethnicity, citizenship, age, preexisting medical condition, insurance status, economic status, ability to pay for medical services, or any other characteristic listed or defined in subdivision (b) or (e) of Section 51 of the Civil Code, except to the extent that a circumstance such as age, sex, preexisting medical condition, or physical or mental disability is medically significant to the provision of appropriate medical care to the patient.

(c) Neither the health facility, its employees, nor any physician and surgeon, dentist, clinical psychologist, or podiatrist shall be liable in any action arising out of a refusal to render emergency services or care if the refusal is based on the determination, exercising reasonable care, that the person is not suffering from an emergency medical condition, or that the health facility does not have the appropriate facilities or qualified personnel available to render those services.

(d) Emergency services and care shall be rendered without first questioning the patient or any other person as to his or her ability to ~~pay therefor.~~ *pay.* However, the patient or his or her legally responsible relative or guardian shall execute an agreement to pay therefor or otherwise supply insurance or credit information promptly after the services are rendered.

(e) If a health facility subject to this chapter does not maintain an emergency department, its employees shall nevertheless exercise reasonable care to determine whether an emergency exists and shall direct the persons seeking emergency care to a nearby facility that can render the needed services, and shall assist the persons seeking emergency care in obtaining the services, including transportation services, in every way reasonable under the circumstances.

(f) No act or omission of any rescue team established by any health facility licensed under this chapter, or operated by the federal or state government, a county, or by the Regents of the University of California, done or omitted while attempting to resuscitate any

person who is in immediate danger of loss of life shall impose any liability upon the health facility, the officers, members of the staff, nurses, or employees of the health facility, including, but not limited to, the members of the rescue team, or upon the federal or state government or a county, if good faith is exercised.

(g) "Rescue team," as used in this section, means a special group of physicians and surgeons, nurses, and employees of a health facility who have been trained in cardiopulmonary resuscitation and have been designated by the health facility to attempt, in cases of emergency, to resuscitate persons who are in immediate danger of loss of life.

(h) This section shall not relieve a health facility of any duty otherwise imposed by law upon the health facility for the designation and training of members of a rescue team or for the provision or maintenance of equipment to be used by a rescue team.

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AMENDED IN ASSEMBLY FEBRUARY 14, 2017

CALIFORNIA LEGISLATURE—2017–18 REGULAR SESSION

ASSEMBLY BILL No. 263

Introduced by Assembly Member Rodriguez

January 31, 2017

An act *to add Sections 226.9 and 6401.9 to the Labor Code,* relating to employment.

LEGISLATIVE COUNSEL'S DIGEST

AB 263, as amended, Rodriguez. Emergency medical services workers: rights and working conditions.

Existing law, the Emergency Medical Services System and the Prehospital Emergency Medical Care Personnel Act, governs local emergency medical service systems *and plans* and establishes the Emergency Medical Services Authority, which is responsible for the coordination and integration of all state activities concerning emergency medical services. Existing law provides that emergency medical personnel have specified due process rights when they are subject to suspension or termination for disciplinary cause or reason, as defined.

~~The California Occupational Safety and Health Act of 1973 has the purpose of assuring safe and healthful working conditions for all California workers by authorizing the enforcement of effective standards, assisting and encouraging employers to maintain safe and healthful working conditions, and by providing for research, information, education, training, and enforcement in the field of occupational safety and health.~~

Existing law prohibits an employer from requiring an employee to work during a meal or rest or recovery period mandated by an applicable statute, or an applicable regulation, standard, or order of

the Industrial Welfare Commission, the Occupational Safety and Health Standards Board, or the Division of Occupational Safety and Health.

Under existing law, the Occupational Safety and Health Standards Board within the Department of Industrial Relations promulgates occupational safety and health standards for the state. Under existing law, the Division of Occupational Safety and Health is required to enforce all occupational safety and health standards, as specified. A violation of these standards and regulations under specific circumstances is a crime.

This bill would ~~declare the intent of the Legislature to enact legislation relating to the rights and working conditions of emergency medical services workers.~~ *require an employer that provides emergency medical services as part of an emergency medical services system or plan to authorize and permit its employees to take prescribed rest periods.*

The bill would require the standards board, no later than July 1, 2019, to adopt standards developed by the division that require any employer that provides emergency medical services as part of emergency medical service system or plan to adopt a workplace violence prevention plan as a part of the employer's injury and illness prevention plan to protect system workers from aggressive and violent behavior. The bill would require the standards to include prescribed elements. The bill would require the division and the authority, by January 1, 2020, and annually thereafter, to post a report on their respective Internet Web sites containing specified information regarding violent incidents at hospitals.

The bill would exempt certain public employers from these provisions.

Because this bill would expand the scope of a crime, the bill would impose a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: ~~no~~ *yes*. State-mandated local program: ~~no~~ *yes*.

The people of the State of California do enact as follows:

SECTION 1. Section 226.9 is added to the Labor Code, to read:

226.9. (a) An employer that provides emergency medical services as part of an emergency medical services system or plan, as defined in Division 2.5 (commencing with Section 1797) of the Health and Safety Code, shall authorize and permit its employees to take rest periods, which, to the extent practicable, shall be in the middle of each work period. The duration of the authorized rest period shall be based on the total hours worked daily at the rate of 10 minutes net rest time per four hours or major fraction thereof. However, a rest period need not be authorized for an employee whose total daily work time is less than three and one-half hours. Authorized rest period time shall be counted as hours worked for which there shall be no deduction from wages.

(b) During the authorized rest period set forth in subdivision (a), an employer shall relieve an employee of all duties and relinquish control over how the employee spend his or her time, and shall not require that employees remain on call.

(c) If an employer fails to provide an employee a rest period as specified in this section, the employer shall pay the employee one hour of pay at the employee's regular rate of compensation for each workday during which the rest period is not provided.

(d) This section shall not apply to employees directly employed by the state or any political subdivision thereof, including any city, county, or special district.

SEC. 2. Section 6401.9 is added to the Labor Code, to read:

6401.9. (a) As used in this section:

(1) "EMS provider" means an employer that provides emergency medical services as part of an emergency medical services system or plan as defined in Division 2.5 (commencing with Section 1797) of the Health and Safety Code.

(2) "EMS employee" means an employee of an EMS provider, as defined in paragraph (1).

(b) The standards board, no later than July 1, 2019, shall adopt standards developed by the division that require any employer that provides emergency medical services as part of an emergency medical services system or plan as defined in Division 2.5 (commencing with Section 1797) of the Health and Safety Code, to adopt a workplace violence prevention plan as a part of its injury and illness prevention plan to protect emergency medical system workers from aggressive and violent behavior.

(c) The standards adopted pursuant to subdivision (b) shall include all of the following:

(1) A requirement that the workplace violence prevention plan be in effect at all times in all areas where emergency medical services are provided.

(2) A definition of workplace violence that includes, but is not limited to, both of the following:

(A) The use of physical force against an EMS employee by a patient or a person accompanying a patient that results in, or has a high likelihood of resulting in, injury, psychological trauma, or stress, regardless of whether the employee sustains an injury.

(B) An incident involving the use of a firearm or other dangerous weapon, regardless of whether the employee sustains an injury.

(3) A requirement that a workplace violence prevention plan include, but not be limited to, all of the following:

(A) Personnel education and training policies that require all EMS employees who provide direct care to patients to, at least annually, receive education and training that is designed to provide an opportunity for interactive questions and answers with a person knowledgeable about the workplace violence prevention plan. The education and training shall cover topics that include, but are not limited to, the following topics:

(i) How to recognize potential for violence, and when and how to seek assistance to prevent or respond to violence.

(ii) How to report violent incidents to law enforcement.

(iii) Any resources available to employees for coping with incidents of violence, including, but not limited to, critical incident stress debriefing or employee assistance programs.

(B) A system for responding to, and investigating violent incidents and situations involving violence or the risk of violence.

(C) A system to, at least annually, assess and improve upon factors that may contribute to, or help prevent workplace violence, including, but not limited to, the following factors:

(i) Staffing, including staffing patterns and patient classification systems that contribute to, or are insufficient to address, the risk of violence.

(ii) Sufficiency of security systems, including alarms, emergency response, and security personnel availability.

(iii) Job design, equipment, and facilities.

(iv) Security risks associated with specific emergency medical services units.

(4) A requirement that all workplace violence prevention plans be developed in conjunction with affected employees, including their recognized collective bargaining agents, if any.

(5) A requirement that all temporary personnel be oriented to the workplace violence prevention plan.

(6) Provisions prohibiting an EMS provider from disallowing an EMS employee from, or taking punitive or retaliatory action against an EMS employee for, seeking assistance and intervention from local emergency services or law enforcement when a violent incident occurs.

(7) A requirement that EMS providers document, and retain for a period of five years, a written record of any violent incident against an EMS employee, regardless of whether the employee sustains an injury, and regardless of whether the report is made by the EMS employee who is the subject of the violent incident or any other employee.

(8) A requirement that an EMS provider report violent incidents to the division. If the incident results in injury, involves the use of a firearm or other dangerous weapon, or presents an urgent or emergent threat to the welfare, health, or safety of EMS employees, the EMS provider shall report the incident to the division within 24 hours. All other incidents of violence shall be reported to the division within 72 hours.

(d) By January 1, 2020, and annually thereafter, the division, in a manner that protects patient and employee confidentiality, shall post a report on its Internet Web site containing information regarding violent incidents involving EMS providers, that includes, but is not limited to, the total number of reports, and which specific employers filed reports, pursuant to paragraph (8) of subdivision (c), the outcome of any related inspection or investigation, the citations levied against an employer based on a violent incident, and recommendations of the division on the prevention of violent incidents involving EMS providers. The Emergency Medical Services Authority, as established in Article 1 (commencing with Section 1797.100) of the Health and Safety Code, shall also post annually a report on its Internet Web site meeting the same specifications.

(e) This section does not limit the authority of the standards board to adopt standards to protect employees from workplace violence. Nothing in this section shall be interpreted to preclude the standards board from adopting standards that require other employers, including, but not limited to, employers exempted from this section by subdivision (f), to adopt plans to protect employees from workplace violence. Nothing in this section shall be interpreted to preclude the standards board from adopting standards that require an employer subject to this section, or any other employer, to adopt a workplace violence prevention plan that includes elements or requirements additional to, or broader in scope than, those described in this section.

(f) This section shall not apply to the state or any political subdivision thereof, including any city, county, or special district, in its capacity as the direct employer of an EMS employee.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

~~SECTION 1. It is the intent of the Legislature to enact legislation relating to the rights and working conditions of emergency medical services workers.~~

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ASSEMBLY BILL No. 451

Introduced by Assembly Member Arambula

February 13, 2017

An act to amend Sections 1317 and 1317.1 of the Health and Safety Code, relating to health facilities.

LEGISLATIVE COUNSEL'S DIGEST

AB 451, as introduced, Arambula. Health facilities: emergency services and care.

(1) Existing law requires a health facility that maintains and operates an emergency department to provide emergency services and care to any person requesting the services or care for any condition in which the person is in danger of loss of life, or serious injury or illness, as specified. If a licensed health facility does not maintain an emergency department, its employees are nevertheless required to exercise reasonable care to determine whether an emergency exists and to direct the person seeking emergency care to a nearby health facility that can render the needed services, as specified.

This bill would specify that an acute psychiatric hospital, regardless of whether it maintains an emergency department, is required to provide emergency care and services to relieve or eliminate a psychiatric emergency medical condition. The bill would prohibit a general acute care hospital or an acute psychiatric hospital, as a condition to accepting a transfer of the patient from another health facility, from requiring that a patient be in custody as a result of a mental health disorder causing him or her to be a danger to others or himself or herself, or is gravely disabled.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

SECTION 1. Section 1317 of the Health and Safety Code is amended to read:

1317. (a) Emergency services and care shall be provided to any person requesting the services or care, or for whom services or care is requested, for any condition in which the person is in danger of loss of life, or serious injury or illness, at any health facility licensed under this chapter that maintains and operates an emergency department to provide emergency services to the public when the health facility has appropriate facilities and qualified personnel available to provide the services or care.

(b) In no event shall the provision of emergency services and care be based upon, or affected by, the person's ethnicity, citizenship, age, preexisting medical condition, insurance status, economic status, ability to pay for medical services, or any other characteristic listed or defined in subdivision (b) or (e) of Section 51 of the Civil Code, except to the extent that a circumstance such as age, sex, preexisting medical condition, or physical or mental disability is medically significant to the provision of appropriate medical care to the patient.

(c) Neither the health facility, its employees, nor any physician and surgeon, dentist, clinical psychologist, or podiatrist shall be liable in any action arising out of a refusal to render emergency services or care if the refusal is based on the determination, exercising reasonable care, that the person is not suffering from an emergency medical condition, or that the health facility does not have the appropriate facilities or qualified personnel available to render those services.

(d) Emergency services and care shall be rendered without first questioning the patient or any other person as to his or her ability to pay therefor. However, the patient or his or her legally

responsible relative or guardian shall execute an agreement to pay therefor or otherwise supply insurance or credit information promptly after the services are rendered.

(e) *(1)* If a health facility subject to this chapter does not maintain an emergency department, its employees shall nevertheless exercise reasonable care to determine whether an emergency exists and shall direct the persons seeking emergency care to a nearby facility that can render the needed services, and shall assist the persons seeking emergency care in obtaining the services, including transportation services, in every way reasonable under the circumstances.

(2) An acute psychiatric hospital, as defined in subdivision (b) of Section 1250, which is subject to this chapter but does not maintain an emergency department, shall nevertheless provide emergency services and care as described in subparagraph (B) of paragraph (2) of subdivision (a) of Section 1317.1.

(f) No act or omission of any rescue team established by any health facility licensed under this chapter, or operated by the federal or state government, a county, or by the Regents of the University of California, done or omitted while attempting to resuscitate any person who is in immediate danger of loss of life shall impose any liability upon the health facility, the officers, members of the staff, nurses, or employees of the health facility, including, but not limited to, the members of the rescue team, or upon the federal or state government or a county, if good faith is exercised.

(g) "Rescue team," as used in this section, means a special group of physicians and surgeons, nurses, and employees of a health facility who have been trained in cardiopulmonary resuscitation and have been designated by the health facility to attempt, in cases of emergency, to resuscitate persons who are in immediate danger of loss of life.

(h) This section shall not relieve a health facility of any duty otherwise imposed by law upon the health facility for the designation and training of members of a rescue team or for the provision or maintenance of equipment to be used by a rescue team.

SEC. 2. Section 1317.1 of the Health and Safety Code is amended to read:

1317.1. Unless the context otherwise requires, the following definitions shall control the construction of this article and Section 1371.4:

(a) (1) "Emergency services and care" means medical screening, examination, and evaluation by a physician and surgeon, or, to the extent permitted by applicable law, by other appropriate licensed persons under the supervision of a physician and surgeon, to determine if an emergency medical condition or active labor exists and, if it does, the care, treatment, and surgery, if within the scope of that person's license, necessary to relieve or eliminate the emergency medical condition, within the capability of the facility.

(2) (A) "Emergency services and care" also means an additional screening, examination, and evaluation by a physician, or other personnel to the extent permitted by applicable law and within the scope of their licensure and clinical privileges, to determine if a psychiatric emergency medical condition exists, and the care and treatment necessary to relieve or eliminate the psychiatric emergency medical condition, within the capability of the facility.

(B) The care and treatment necessary to relieve or eliminate a psychiatric emergency medical condition may include admission or transfer to a psychiatric unit within a general acute care hospital, as defined in subdivision (a) of Section 1250, or to an acute psychiatric hospital, as defined in subdivision (b) of Section 1250, pursuant to subdivision (k). Nothing in this subparagraph shall be construed to permit a transfer that is in conflict with the Lanterman-Petris-Short Act (Part 1 (commencing with Section 5000) of Division 5 of the Welfare and Institutions Code). *A general acute care hospital or an acute psychiatric hospital shall not require a person to be in custody pursuant to Section 5150 of the Welfare and Institutions Code as a condition to accepting a transfer of that person.*

(C) For the purposes of Section 1371.4, emergency services and care as defined in subparagraph (A) shall not apply to Medi-Cal managed care plan contracts entered into with the State Department of Health Care Services pursuant to Chapter 7 (commencing with Section 14000), Chapter 8 (commencing with Section 14200), and Chapter 8.75 (commencing with Section 14590) of Part 3 of Division 9 of the Welfare and Institutions Code, to the extent that those services are excluded from coverage under those contracts.

(D) This paragraph does not expand, restrict, or otherwise affect the scope of licensure or clinical privileges for clinical psychologists or other medical personnel.

(b) "Emergency medical condition" means a medical condition manifesting itself by acute symptoms of sufficient severity (including severe pain) such that the absence of immediate medical attention could reasonably be expected to result in any of the following:

(1) Placing the patient's health in serious jeopardy.

(2) Serious impairment to bodily functions.

(3) Serious dysfunction of any bodily organ or part.

(c) "Active labor" means a labor at a time at which either of the following would occur:

(1) There is inadequate time to effect safe transfer to another hospital prior to delivery.

(2) A transfer may pose a threat to the health and safety of the patient or the unborn child.

(d) "Hospital" means all hospitals with an emergency department licensed by the state department.

(e) "State department" means the State Department of Public Health.

(f) "Medical hazard" means a material deterioration in medical condition in, or jeopardy to, a patient's medical condition or expected chances for recovery.

(g) "Board" means the Medical Board of California.

(h) "Within the capability of the facility" means those capabilities that the hospital is required to have as a condition of its emergency medical services permit and services specified on Services Inventory Form 7041 filed by the hospital with the Office of Statewide Health Planning and Development.

(i) "Consultation" means the rendering of an opinion or advice, prescribing treatment, or the rendering of a decision regarding hospitalization or transfer by telephone or other means of communication. When determined to be medically necessary, jointly by the treating physician and surgeon, or by other appropriate licensed persons acting within their scope of licensure, under the supervision of a physician and surgeon, and the consulting physician and surgeon, "consultation" includes review of the patient's medical record, examination, and treatment of the patient in person by a consulting physician and surgeon, or by

other appropriate licensed persons acting within their scope of licensure under the supervision of a consulting physician and surgeon, who is qualified to give an opinion or render the necessary treatment in order to stabilize the patient. A request for consultation shall be made by the treating physician and surgeon, or by other appropriate licensed persons acting within their scope of licensure under the supervision of a treating physician and surgeon, provided the request is made with the contemporaneous approval of the treating physician and surgeon. The treating physician and surgeon may request to communicate directly with the consulting physician and surgeon, and when determined to be medically necessary, jointly by the treating physician and surgeon and the consulting physician and surgeon, the consulting physician and surgeon shall examine and treat the patient in person. The consulting physician and surgeon is ultimately responsible for providing the necessary consultation to the patient, regardless of who makes the in-person appearance.

(j) A patient is "stabilized" or "stabilization" has occurred when, in the opinion of the treating physician and surgeon, or other appropriate licensed persons acting within their scope of licensure under the supervision of a treating physician and surgeon, the patient's medical condition is such that, within reasonable medical probability, no material deterioration of the patient's condition is likely to result from, or occur during, the release or transfer of the patient as provided for in Section 1317.2, Section 1317.2a, or other pertinent statute.

(k) (1) "Psychiatric emergency medical condition" means a mental disorder that manifests itself by acute symptoms of sufficient severity that it renders the patient as being either of the following:

(A) An immediate danger to himself or herself or to others.

(B) Immediately unable to provide for, or utilize, food, shelter, or clothing, due to the mental disorder.

(2) This subdivision does not expand, restrict, or otherwise affect the scope of licensure or clinical privileges for clinical psychologists or medical personnel.

(*l*) This section shall not be construed to expand the scope of licensure for licensed persons providing services pursuant to this section.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

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How a Las Vegas Hospital United ED Docs with Hospitalists to Reduce ED Overcrowding

Sunrise Hospital & Medical Center's integration created a 'one team' culture

January 27, 2017

Matt O'Connor

Like many hospitals, Sunrise Hospital & Medical Center, Las Vegas was receiving more patients in its emergency department than it was equipped to manage regularly.

One of the largest Medicaid providers in Nevada and situated minutes from the rowdiness of the Las Vegas Strip, Sunrise was struggling with hold hours in its ED. In its worst month, the hospital experienced 28,000 hold hours, with the normal average nearing 20,000 per month, says Alan Keesee, COO, Sunrise Hospital & Medical Center.

Ever since the passage of the Affordable Care Act, and Nevada's decision to expand Medicaid, Sunrise's utilization of emergency services has increased double-digits each year. Last year, the Las Vegas hospital received 157,000 ED visits, the largest in the state, by far, says Keesee. With well over half of those visits attributed to Medicaid patients, he added.

Something had to be done to ease the burden on providers. Keesee says leadership saw an opportunity to streamline processes and get patients up to the floors and reduce patients' length of stay overall.

Sunrise decided to integrate its emergency department and hospital medicine teams into one — unifying them under a single medical director.

The result was a one-team, one culture philosophy, says Keesee. The hospital's efforts to increase the number of providers through recruitment and the development of team-based models for observational patients and protocols as part of the integration has also helped reduce hold hours.

Whereas most hospitals have their observational patients spread across the facility, Sunrise created a 30-bed observation unit, and dedicated providers and case managers to oversee that unit and monitor results, which has helped increase the number of patients discharged prior to 11 a.m. to 50 percent, up from 10. These measures have also contributed to a one day decline in length of stay for patients.

And not only have those hold hours dropped 79 percent in the ED to 6,000 hours per month, but there has been a palpable change in culture and care. One of the most noticeable changes has come from a nursing standpoint, says Keesee. Nurses now know who is on a team that day, and trust has greatly improved since having a dedicated leadership team focused on shared goals. Nurses will call and text physicians, and are able to know who their doctor is that day, says Keesee. “It’s really increased overall nursing and physician collaboration,” he added.

Keeping the momentum going and avoiding old pitfalls is always a concern after a large integration. Keesee notes that in order to keep pushing forward, leadership needs to come together to continually look for areas to collectively improve.

“You can’t do that in a silo, just the ED, just the hospitalists, you have to really have all those voices at the table, to make the improvements [and] continue to move forward,” says Keesee.

“If you’re disconnected, as an administration, with your medical leadership it’s really hard to move the organization forward with patients.”

H&HN is an AHA Publication

Mississippi ED Stops Opioids for Chronic Pain;

January 27, 2017

H&HN Staff

Mississippi Hospital Tries New Approach to Opioids

Aiming to end a wave of death and addiction, hospital emergency departments in the Magnolia State are shifting away from using opioids to treat pain, the *Northeast Mississippi Daily Journal* reports. While it hasn't experienced quite the level of overdose deaths as some of its northern neighbors, Mississippi does rank high on the list of prescriptions written, the newspaper notes. So, hospitals such as Baptist Memorial Golden Triangle, in Columbus, are coming up with new policies in their EDs. Beginning Jan. 1, the organization is no longer treating chronic pain (lasting more than three) months with opioids like Percoset or Demerol in the emergency room. When necessary, Golden Triangle doctors do dish out opioids for acute pain, but only with a three-day supply for those who need further relief after they're discharged. If all goes smoothly, the system plans to expand the new policies to 11 other hospitals across the state. North Missisippi Medical Center-Tupelo, too, is revising its ED policies on opioids, offerring altnerntaive pain relief options first and lowering dosages where possible, the newspaper reports. "We're trying to make it the last line of defense," says Joe Johnsey, M.D., medical diretor of NMMCT's ED.

Early death after discharge from emergency departments: analysis of national US insurance claims data

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ABSTRACT

OBJECTIVE

To measure incidence of early death after discharge from emergency departments, and explore potential sources of variation in risk by measurable aspects of hospitals and patients.

DESIGN

Retrospective cohort study.

SETTING

Claims data from the US Medicare program, covering visits to an emergency department, 2007-12.

PARTICIPANTS

Nationally representative 20% sample of Medicare fee for service beneficiaries. As the focus was on generally healthy people living in the community, patients in nursing facilities, aged ≥90, receiving palliative or hospice care, or with a diagnosis of a life limiting illnesses, either during emergency department visits (for example, myocardial infarction) or in the year before (for example, malignancy) were excluded.

MAIN OUTCOME MEASURE

Death within seven days after discharge from the emergency department, excluding patients transferred or admitted as inpatients.

RESULTS

Among discharged patients, 0.12% (12 375/10 093 678, in the 20% sample over 2007-12) died within seven days, or 10 093 per year nationally. Mean age at death was 69. Leading causes of death on death certificates were atherosclerotic heart disease (13.6%), myocardial infarction (10.3%), and chronic obstructive pulmonary disease (9.6%). Some 2.3% died of narcotic overdose, largely after visits for musculoskeletal problems. Hospitals in the lowest fifth of rates of inpatient admission from the emergency department had the highest rates of early death (0.27%)—3.4 times higher than hospitals in the highest fifth (0.08%)—despite the fact that hospitals with low admission rates served healthier populations, as measured by overall seven day mortality among all comers to the emergency department. Small increases in admission rate were linked to large decreases in risk. In multivariate analysis, emergency departments that saw higher volumes of patients (odds ratio 0.84, 95% confidence interval 0.81 to 0.86) and those with higher charges for visits (0.75, 0.74 to 0.77) had significantly fewer deaths. Certain diagnoses were more common among early deaths compared with other emergency department visits: altered mental status (risk ratio 4.4, 95% confidence interval 3.8 to 5.1), dyspnea (3.1, 2.9 to 3.4), and malaise/fatigue (3.0, 2.9 to 3.7).

CONCLUSIONS

Every year, a substantial number of Medicare beneficiaries die soon after discharge from emergency departments, despite no diagnosis of a life limiting illnesses recorded in their claims. Further research is needed to explore whether these deaths were preventable.

WHAT IS ALREADY KNOWN ON THIS TOPIC

Hospitals vary widely in how often emergency department patients are admitted to hospital, but it is unclear how this relates to patient outcomes

Small studies point to non-trivial numbers of patients who die unexpectedly after discharge home from the emergency department, but these studies rely on individual chart reviews or data from single health systems

It is difficult to assess generalizability of these findings or to shed light on how variation across hospitals might shape the quality and safety of emergency care

WHAT THIS STUDY ADDS

A substantial number of Medicare patients, over 10 000 every year, die soon after discharge from US emergency departments, despite relatively young age and no evidence of previous life limiting illnesses

Hospitals with lower admission rates, lower costs, and lower patient volumes had significantly higher rates of death after discharge, despite serving healthier overall patient populations

There is a particular clinical "signature" of discharge diagnoses from emergency departments linked to short term deaths, especially syndromic diagnoses not involving pain, like altered mental status, dyspnea, and malaise and fatigue

Introduction

A growing number of patients visit emergency departments every year: nearly 20% of the US population each year,[1] or 400 visits per 1000 population in the UK.[2] As a result, the decision to admit or discharge a patient from the department is made hundreds of thousands of times a day.

Errors in this decision can take two forms, each with different implications for patients and the healthcare system. One error is avoidable admission to hospital—that is, admission of patients who could be managed safely and effectively in other settings. This issue has been studied extensively, given its importance for healthcare costs.[3-6] The other error is avoidable harm—that is, discharge of patients who would have benefitted from further monitoring or treatment as inpatients. This issue has received comparatively little attention, despite its importance for patient safety, outside of studies on specific diagnoses (such as myocardial infarction,[7-10] subarachnoid hemorrhage[11-13]) comprising a small percentage of emergency department populations.

Prior studies have suggested that the deaths of patients who die shortly after discharge from an emergency department could potentially be avoidable if they result from unanticipated deterioration. These efforts have yielded valuable insights into patient characteristics

linked to early death, such as atypical presentations of acute illnesses[14 15] or injuries in the elderly.[16] This is timely given increasing attention to the issue of diagnostic error.[17-20]

Existing studies, however, rely on painstaking review of individual charts or data from single health systems. This makes it difficult to assess generalizability of findings or to understand the incidence of early death after discharge nationally. Nor can such studies shed light on how variation across hospitals might shape the quality and safety of emergency care. A key example here is variation in the rate of inpatient admission from an emergency department: while this metric is commonly used to assess the extent of low value hospital care,[6 21 22] it has not, to our knowledge, been shown to affect patient outcomes.

To fill this gap, we performed the first nationally representative study of early death after discharge from an emergency department in patients living in the community, using US Medicare claims linked to death certificates. Clearly, administrative data cannot offer conclusive evidence on whether such deaths resulted from error. Instead, we hoped to identify clinical and health systems factors linked to potentially unexpected death as a starting point for future study. Understanding of these sentinel events will become increasingly important as policy and quality incentives drive health systems to reduce rates of admission to hospital from the emergency department.

Methods

Study population and outcome

From a nationally representative 20% sample of Medicare claims, we identified fee for service beneficiaries with visits to emergency department in 2007-12.[23] We excluded those with nursing facility claims in the month before their visit to focus on active patients living in the community who were attending the department for acute problems. Table A in appendix 1 provides further details.

Our primary outcome was death within seven days after discharge from emergency departments, as in prior studies.[14-16 24 25] People admitted as inpatients, transferred out of the department, or discharged to palliative care or a hospice were ineligible for the outcome. In many US emergency departments, patients who require a period of observation for diagnostic testing or monitoring are billed under a specific "observation status." These patients are subsequently discharged or formally admitted as inpatients, and, for the purposes of this study, we classified patients by this ultimate disposition (that is, admitted or discharged). Observation can happen either in units based in the emergency department or in other hospital departments; as Medicare claims did not distinguish by location, we considered these together. Seven day mortality was chosen based on the assumption that discharged patients were deemed to be at low risk of acute deterioration, such that no immediate testing or treatment was required, and they would be able to return to care if they worsened. Discharged patients should thus resemble generally healthy patients, with similarly low baseline risk of mortality, and early death would be a potentially unanticipated adverse event—though by no means evidence of error or poor care.

Life limiting illnesses

Of course, in patients with known life limiting illnesses diagnosed in the emergency department or before, death after discharge could have been fully anticipated: poor prognosis can limit utility of admission, or patients might simply prefer to avoid admission. We attempted to exclude such visits in several ways. First, we excluded beneficiaries aged ≥90, who often have incurable conditions[26] and DNR ("do not resuscitate") or "do not hospitalize" orders.[27] Second, we excluded those with any claims for hospice or palliative care over the year before visits. Given the fee for service structure of the US healthcare system, providers have a strong incentive to report all patient encounters to insurers; thus it is traditionally assumed[28] (though difficult to verify) that nearly all care is captured in claims. This assumption applies only to formally coded encounters and would not identify patients who were tacitly rather than formally receiving care oriented to palliation.

As a result, it is likely that such coarse criteria alone are insufficient for identifying patients with a poor prognosis. We thus also broadly excluded discharged patients with conditions that, when diagnosed, implied provider awareness of potentially poor near term prognosis and thus a deliberate decision to discharge despite known risk of mortality. To do so, we convened a panel of three emergency physicians to identify diagnoses indicating life limiting disease: chronic conditions diagnosed in the year before visits—for example, malignancies—and acute conditions diagnosed in the emergency department typically requiring inpatient management—for example, myocardial infarction (see table B in appendix 1). We did not exclude acute conditions for which outpatient management is reasonable in appropriately risk stratified patients—for example, pneumonia.[29 30] Initial inter-rater agreement (κ) was 0.81. Disagreements were resolved by consensus.

Descriptive analyses

After estimating incidence of early death after discharge over the study period, we determined cause of death by linking claims to death certificates. This was last possible in 2008, after which the Medicare administration disallowed linkage. We thus used the subset of 2007-08 visits (n=3 197 209) to tabulate cause of early deaths after discharge (n=4273); deaths from 2009-12 were excluded from these analyses. While these data are often inaccurate for assigning specific cause of death,[31 32] they can be useful for ascertaining broader categories of causes.[33]

Hypothesis testing

We explored several hypotheses regarding potential sources of variation in early mortality rates.

Temporal variation—We hypothesized that risk of mortality would vary over the year after visits to an department, with the influence of care most apparent

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soon after visits, and the influence of patients' underlying conditions more or less constant over the year. As observed evolution of risk might itself vary as a function of hospitals' admission rates (calculated as fraction of Medicare patients admitted, similar to previous studies that used Medicare data as a proxy for hospital level metrics[34-36]), we inspected trends separately by fifth of admission rate. We then calculated weekly mortality for discharged and admitted patients, excluding hospitals with <100 visits annually because of unstable rates.

Hospital level variation—We explored additional potential correlates of early mortality at the hospital level, focusing on the first week after discharge. We investigated correlation of risk with urban versus rural location and by academic status based on data from the American Hospital Association. As hospital case mix could affect both early death after discharge and early death after admission, we explored correlations of hospital factors with both.

To more systematically explore factors linked to early death after discharge, we regressed our outcome on two sets of variables: first, hospital level factors including location, annual Medicare volume of the emergency department (that is, by number of Medicare visits to emergency departments by hospital year, calculated from the 100% inpatient and outpatient files), and the amount charged by the hospital for the visit, as a measure of the complexity and amount of care delivered. Second, we controlled for case mix across hospitals by including demographics, eligibility for Medicaid (a proxy for low income), mean income at postal code level, patient comorbidities over the year before visits,[37] and fixed effects for year, season, and weekend. As only discharged patients could experience the outcome, we also controlled for hospital admission rate. We clustered standard errors by hospital.

Our first analysis included all patients presenting to emergency departments—that is, both discharged or admitted—to determine which factors, among all patients seen in the department, were associated with early death after discharge? We also present an alternative strategy, in which we included only discharged patients. This answers a different question: among patients whom doctors decided to discharge, which factors are associated with higher risk? This is appealing because only discharged patients are eligible for the outcome; its disadvantage lies in selecting patients for inclusion based on physician judgment, which might vary across hospitals. This limits generalizability to all emergency department patients and also means that departments with higher rates of admission were under-represented, which could bias coefficients. We thus view the first model as preferable.

Diagnostic variation—Finally, we hypothesized that risk of death after discharge would vary across grouped[38] diagnoses in the emergency department. We calculated risk ratios by diagnosis (primary discharge diagnosis for discharged patients, admitting diagnosis for admitted patients), comparing diagnosis incidence among early deaths after discharge with incidence among all other visits.

Statistical packages

All analyses were performed in Stata (version 14.0; StataCorp) and R (version 3.2.3; Foundation for Statistical Computing).

Patient involvement

No patients were involved in setting the research question or the outcome measures, nor were they involved in developing plans for design or implementation of the study. No patients were asked to advise on interpretation or writing up of results. There are no plans to disseminate the results of the research to study participants or the relevant patient community. Our interest in poor short term outcomes after ED visits, however, was informed by patients' priorities, experiences, and preferences.

Results

Descriptive analyses

In a nationally representative 20% sample Medicare beneficiaries, we identified 28 086 293 visits to an emergency department over 2007-12. We excluded 12 091 966 (43%), mostly because of life limiting illnesses diagnosed in the department (such as acute myocardial infarction) or illness diagnosed in the year before the visits (such as malignancy); age ≥90; and non-fee for service (see fig A in appendix 2). Table 1 shows baseline characteristics of remaining visits, of which 37% involved admission or transfer of the patient.

Among those discharged, 0.12% (12 375/10 093 678, in the 20% sample over 2007-12) died within seven days or 10 093 per year nationally. Average age at death was 69; 50.3% were men, and 80.9% were white. There were small decreases in rates of early death after discharge from 2007-12, 4-5% annually (fig B in appendix 2).

Death certificates identified atherosclerotic heart disease (13.6%), acute myocardial infarction (10.3%), and chronic obstructive pulmonary disease (9.6%) as most common causes of death. Figure 1 shows top causes of death and their antecedent diagnoses on discharge. Narcotic overdose was the eighth most common cause of death (2.3%); the most common antecedent discharge diagnoses were back pain (15%) and superficial injuries (10%).

Temporal variation

Figure 2 shows the evolution of weekly risk of mortality over the year after emergency department visits, by fifth of rate of admission from department to inpatient. Among admitted patients, mortality was highest in the first weeks in all hospitals, then declined rapidly. Among discharged patients, by contrast, evolution of risk varied by admission rate. In hospitals in the highest fifth of admission rates, discharged patients had low mortality soon after discharge compared with the remainder of the year. In hospitals in the lowest fifth of admission rates, conversely, discharged patients had higher—not lower—early mortality; rates then declined over the course of the year.

Table 1 | Basic demographic and medical characteristics of Medicare patients' visits to emergency department, 2007-12, by disposition (admitted or transferred versus discharged), with 95% confidence intervals

Variable	Admitted or transferred (n=5 867 649)	Discharged (n=10 093 678)	Difference (admitted *v* discharged)*
Demographics			
Mean age on day of visit (years)	69.8 (69.7 to 69.8)	62.2 (62.2 to 62.2)	7.6 (7.5 to 7.6)
Women (%)	55.2 (55.2 to 55.2)	59.5 (59.5 to 59.6)	−4.3 (−4.3 to −4.3)
White (%)†	79.7 (79.7 to 79.7)	76.2 (76.2 to 76.2)	3.6 (3.5 to 3.6)
Rural (%)	3.7 (3.7 to 3.8)	6.7 (6.7 to 6.7)	−2.9 (−3.0 to −2.9)
Mean income ($)‡	67 389 (67 368 to 67 410)	64 394 (64 379 to 64 408)	2995 (3020 to 2970)
Comorbidities (% unless marked otherwise)			
Mean summed score§	3.7 (3.7 to 3.7)	2.0 (2.0 to 2.0)	1.7 (1.7 to 1.7)
Alcohol abuse	4.0 (3.9 to 4.0)	4.6 (4.6 to 4.7)	−0.7 (−0.7 to −0.7)
Any tumor	40.2 (40.1 to 40.2)	25.1 (25.1 to 25.1)	15.0 (15.0 to 15.1)
Cardiac arrhythmias	22.7 (22.7 to 22.7)	38.7 (38.6 to 38.7)	−16.0 (−16.0 to −15.9)
Chronic pulmonary disease	39.7 (39.7 to 39.7)	31.5 (31.4 to 31.5)	8.2 (8.2 to 8.3)
Coagulopathy	9.9 (9.9 to 9.9)	5.2 (5.1 to 5.2)	4.7 (4.7 to 4.8)
Complicated diabetes	21.5 (21.4 to 21.5)	12.9 (12.9 to 12.9)	8.5 (8.5 to 8.6)
Congestive heart failure	40.6 (40.6 to 40.7)	20.0 (20.0 to 20.0)	20.6 (20.6 to 20.7)
Deficiency anemias	40.2 (40.1 to 40.2)	25.1 (25.1 to 25.1)	15.0 (15.0 to 15.1)
Dementia	0¶	0¶	0¶
Fluid and electrolyte disorders	36.7 (36.7 to 36.7)	22.1 (22.1 to 22.1)	14.6 (14.5 to 14.6)
Hemiplegia	4.2 (4.2 to 4.2)	2.2 (2.2 to 2.2)	2.0 (1.9 to 2.0)
HIV/AIDS	0.8 (0.8 to 0.8)	1.0 (1.0 to 1.0)	−0.2 (−0.2 to −0.2)
Hypertension	79.3 (79.3 to 79.4)	68.2 (68.2 to 68.3)	11.1 (11.0 to 11.1)
Liver disease	5.9 (5.9 to 6.0)	5.7 (5.7 to 5.8)	0.2 (0.2 to 0.2)
Metastatic cancer	0¶	0¶	0¶
Peripheral vascular disease	29.0 (29.0 to 29.1)	15.7 (15.6 to 15.7)	13.4 (13.3 to 13.4)
Psychosis	18.0 (18.0 to 18.0)	22.5 (22.5 to 22.6)	−4.6 (−4.6 to −4.6)
Pulmonary circulation disorders	29.0 (29.1 to 29.0)	15.6 (15.6 to 15.7)	13.4 (13.3 to 13.4)
Renal failure	26.7 (26.6 to 26.7)	12.6 (12.6 to 12.7)	13.9 (13.9 to 13.9)
Weight loss	5.9 (5.9 to 5.9)	2.2 (2.2 to 2.2)	3.7 (3.7 to 3.7)
Healthcare use in year before visit (%)			
Inpatient admission	40.1 (40.1 to 40.1)	18.6 (18.6 to 18.6)	22.1 (22.1 to 22.1)
Emergency department visit	15.5 (15.5 to 15.6)	17.9 (17.9 to 18.0)	−2.4 (−2.5 to −2.4)
Clinic visit	75.5 (75.4 to 75.5)	75.4 (75.4 to 75.4)	0.7 (0.6 to 0.7)
Hospice	0¶	0¶	0¶
Palliative care	0¶	0¶	0¶

*Given large sample size, some 95% confidence intervals are so small that they are not different from point estimate at reasonable number of significant digits.
†Defined based on race variable in Medicare claims.
‡Based on home postal code.
§Combined comorbidity index combining Elixhauser and Charlson scores.[37]
¶By construction, based on exclusion criteria.

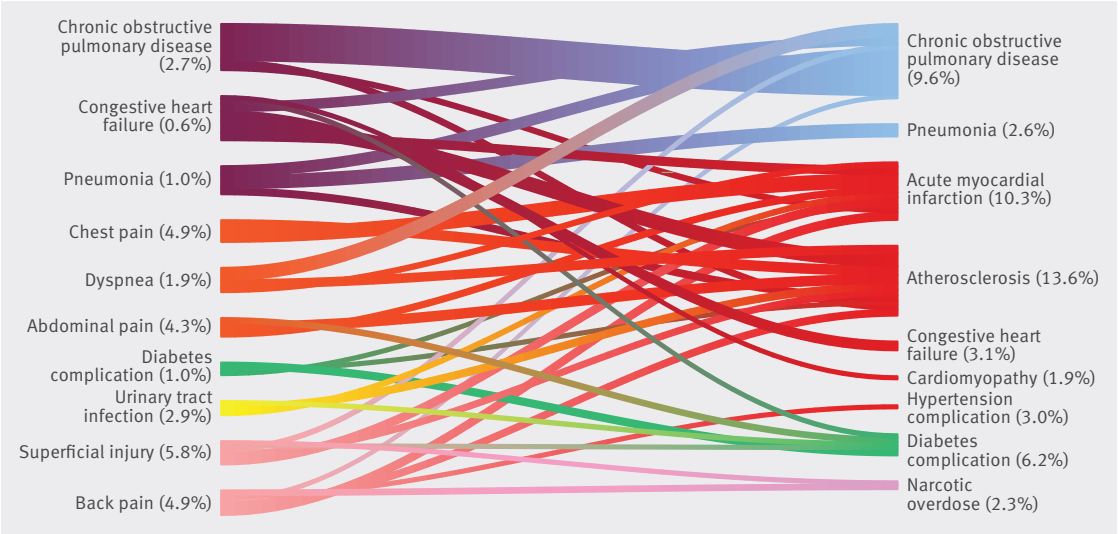

Fig 1 | Cause of death and antecedent discharge diagnoses from emergency departments. Association between most common primary discharge diagnoses and most common causes of death from death certificates, for subset of deaths from 2007-08 when death certificate data were available. Thickness of line is proportional to number of beneficiaries with given discharge diagnosis who later died of given cause (see table D in appendix 1 for further details)

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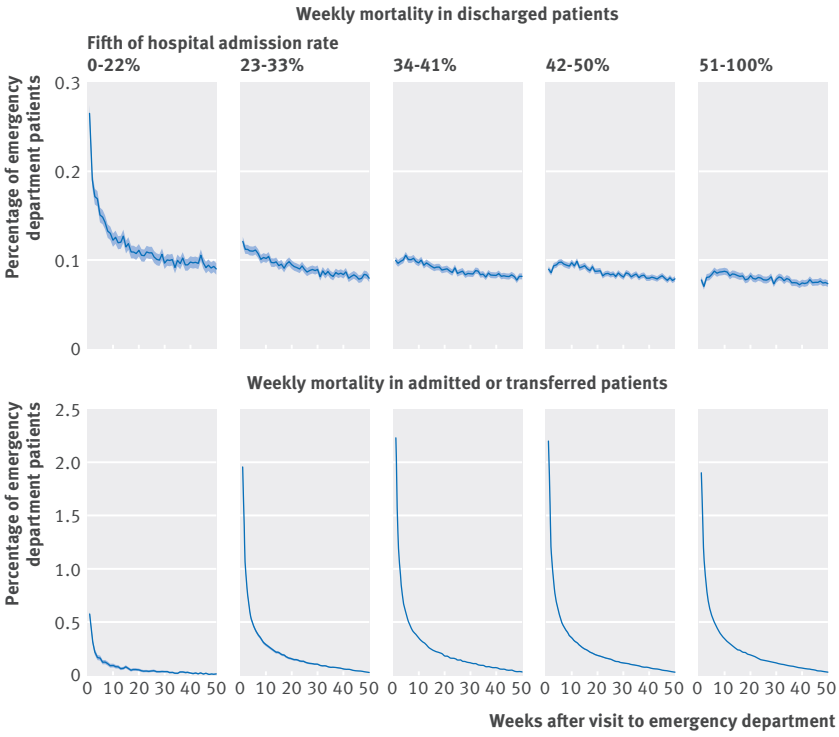

Fig 2 | Evolution of weekly mortality risk after emergency department visits. Visit is denoted as week 0 (left). Rates calculated separately, by fifth of rate of emergency department to inpatient admission for Medicare patients, shown in columns from lowest fifth (left) to highest fifth (right). Shaded area around lines shows 95% confidence interval for mortality rates

Hospital level variation

Figure 3 focuses just on mortality in the first week after visits to an emergency department and its association with hospital level admission rate. Among discharged patients, mortality declined non-linearly with increasing admission rate. Hospitals in the lowest fifth of admission rates discharged 85% of patients, compared with 44% in the highest fifth (1.9 times more, 95% confidence interval 1.9 to 1.9). But the seven day mortality rate after discharge in hospitals in the lowest fifth was far higher: 3.4 times (0.27% *v* 0.08%; 95% confidence interval 3.3 to 3.3). Rural hospitals were over-represented in the lowest fifth of admission rates (33% *v* 17% of all hospitals), but most hospitals in this fifth were simply urban or suburban non-academic hospitals. Academic hospitals had high median admission rates (39%) and lower early death rates (0.06%).

Was this trend simply caused by bias? If emergency departments with low admission rates served sicker populations, discharged patients would have higher mortality rates—but this would reflect higher overall mortality rates from baseline patient factors, not because of care in the emergency department. Crucially, in this scenario, admitted patients in these hospitals should also have higher mortality. Thus inpatient mortality rates can help detect potential biases among discharged patients.

Figure 3 shows that inpatient mortality followed the exact opposite trend than expected if results were driven by baseline mortality rates. Hospitals with the lowest admission rates had inpatient mortality 3.4 times lower (95% confidence interval 3.2 to 3.7) than the highest. When we combined admitted and discharged patients, overall seven day mortality rates for all comers to emergency departments were 71% lower in the hospitals with the lowest versus highest admission rates (0.3 *v* 1.0, 95% confidence interval 69% to 71%). Thus it seems unlikely that baseline population differences alone explained higher early death rates among hospitals with low admission rates.

Table 2 shows factors linked to our outcome via multivariate logistic regression, adjusted for demographics, comorbidities, time trends, and hospital admission rate (table C in appendix 1 gives the full results). Those who died early were older, more likely to be white and male, and lived in poorer areas. Hospitals with higher Medicare volumes had significantly fewer deaths (odds ratio 0.82, 95% confidence interval 0.80 to 0.85). Patients who visited hospitals with higher emergency department charges were significantly less likely to die (0.75, 0.74 to 0.77) versus all other visits; this coefficient was reversed (1.39, 1.32 to 1.36) in model 2 (including only discharged patients), probably reflecting higher complexity of deaths versus other discharged patients. Otherwise, models were similar.

Diagnostic variation

Figure 4 shows risk ratios for early death after discharge for the 20 most common diagnoses in the emergency department, calculated as the ratio of incidence of diagnosis among deaths versus all other visits (admitted and discharged). Patients with syndromic diagnoses like altered mental status (relative risk 4.4, 95% confidence interval 3.8 to 5.1), dyspnea (3.1, 2.9 to 3.4), and malaise and fatigue (3.0, 2.9 to 3.7) had the highest risks, followed by diagnoses for which patients at low risk can be managed as outpatients: congestive heart failure (1.8, 1.7 to 2.0), chronic obstructive pulmonary disease (1.6, 1.5 to 1.8), and pneumonia (1.6, 1.5 to 1.8). Interestingly, those with chest pain had among the lowest risks (0.8, 0.8 to 0.9).

Discussion

In this national analysis, we found that over 10 000 Medicare beneficiaries each year died within seven days after being discharged from emergency departments, despite mean age of 69 and no obvious life limiting illnesses. For context, these deaths accounted for 1.7% of all non-hospice deaths in the Medicare fee for service population annually (see table D in appendix 1). Variability in mortality rates across hospitals was striking: hospitals with low patient volumes and lower admission rates had the highest rates of early death, and small increases in admission rates were linked to large decreases in risk—despite the fact that hospitals with low admission rates served emergency department populations with lower overall near term mortality.

These data should not be viewed as evidence of error. Indeed, some of the variation in outcomes we identified could be linked to the geographic and socioeconomic context of emergency care. First, access to resources

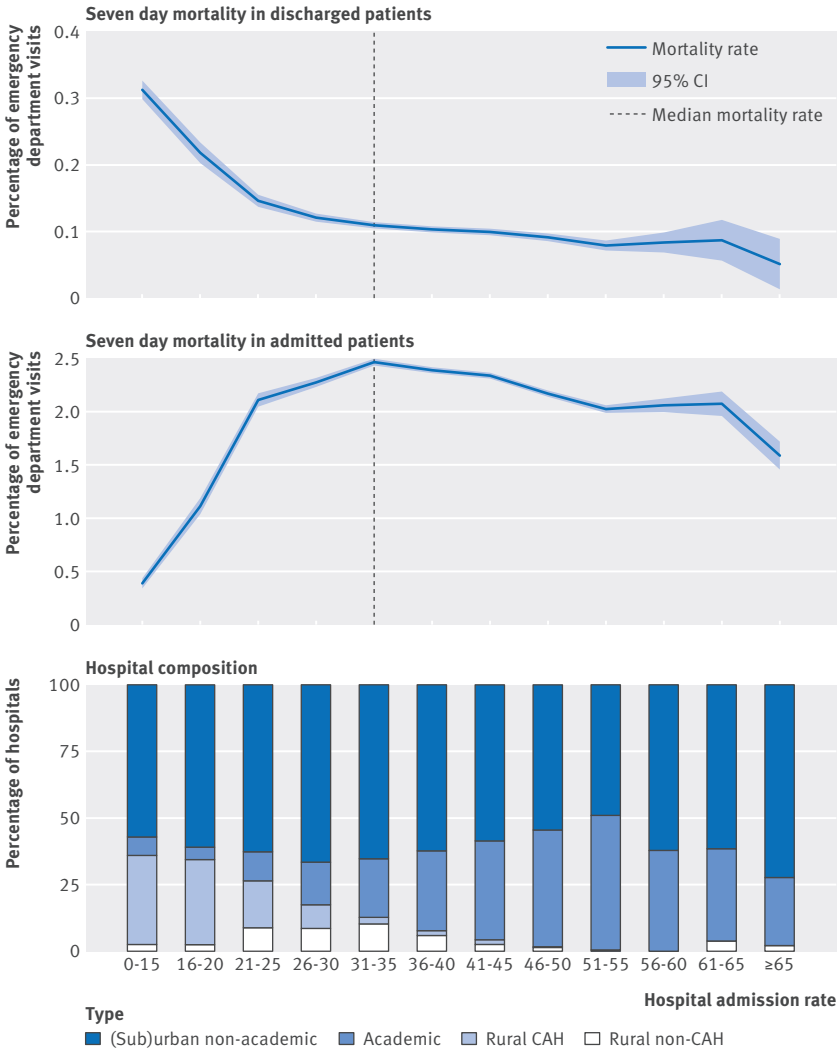

Fig 3 | Association between seven day mortality rates and rates of inpatient admission from emergency departments. Rates calculated separately by hospital admission rate. Types of hospital based on data from American Hospital Association. CAH=critical access

varies dramatically across hospitals. For example, to admit patients from the emergency department in hospitals without dedicated internists staffing inpatient beds (hospitalists), emergency physicians must identify willing primary care physicians. These clinicians in turn must take time away from their busy schedules to make rounds on inpatients. The barriers imposed by such arrangements, in addition to a lack of consistent access to specialist consultation or diagnostic resources in the emergency department (such as cardiac ultrasonography, computed tomography), could contribute to worse outcomes in poorer hospitals and patients (T Putnam, personal communication, 2015). Second, patients attending emergency departments with higher mortality after discharge probably differed in important ways that we could not measure. For example, poor beneficiaries eligible for Medicaid can access taxi vouchers to facilitate follow up, but such transportation is generally far less accessible in rural areas, making patients less likely to obtain any scheduled follow-up care (T Putnam, personal communication, 2015). Importantly, while these factors can make sudden death more likely, they do not make it either unavoidable or any less tragic for patients and families.

What are the practical implications of these results? Clearly, not all patients can or should be admitted. But in low volume hospitals with low admission rates, and in patients with specific discharge diagnoses, seven day mortality levels were not trivial. While our study could not determine whether admission would prevent these deaths, it is possible that additional testing or monitoring—whether via admission, monitoring at home, or expedited outpatient follow-up—could have benefitted at least some patients.

This observation perhaps raises more questions than answers and thus suggests several important directions for future research. First, focused clinical audit studies of high risk patients at high risk hospitals could identify opportunities to improve systems of care—rather than to

Table 2 | Results of multivariate logistic regression investigating association between death in seven days after discharge and patient, emergency department, and visit level factors. Model 1 shows results with all patients presenting to departments included in analysis, irrespective of whether they were discharged or admitted. Model 2 includes only discharged patients. Both models control for hospital admission rate, patient comorbidities, and seasonal and temporal factors (see table C in appendix 1). Standard errors were clustered by hospital. Figures are odds ratios with 95% confidence interval and P values

Variable	Model 1: all patients, admitted and discharged(n=15 961 327)	Model 2: discharged patients only (n=10 093 678)
Patient factors		
Age	1.02 (1.02 to 1.02); <0.001	1.03 (1.02 to 1.03); <0.001
Female	0.71 (0.68 to 0.74); <0.001	1.39 (0.62 to 0.67); <0.001
Non-white	0.90 (0.85 to 0.95); <0.001	0.84 (0.80 to 0.89); <0.001
Mean income* (log)	0.78 (0.73 to 0.83); <0.001	0.72 (0.68 to 0.77); <0.001
Medicaid dual eligible	1.01 (0.96 to 1.06); 0.792	1.01 (0.97 to 1.06); 0.607
Emergency department and visit factors		
Visit charges (log)	0.75 (0.74 to 0.77); <0.001	1.39 (1.36 to 1.42); <0.001
Annual volume (log)	0.82 (0.79 to 0.85); <0.001	0.84 (0.81 to 0.87);<0.001
Rural location	1.10 (0.98 to 1.24); 0.10	1.07 (0.96 to 1.20);0.226

*Based on home zip code.

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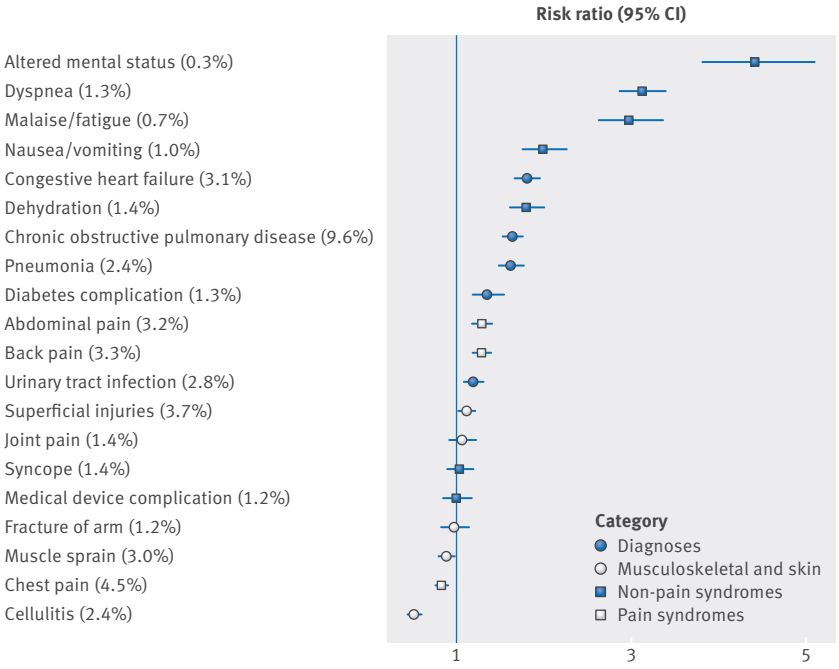

Fig 4 | Risk ratios (and 95% confidence intervals) for early death for 20 most common diagnoses in emergency departments. Incidence of each diagnosis among all patients (admission diagnosis for admitted patients, primary discharge diagnosis for discharged patients) shown in parentheses. Risk ratios calculated as ratio of incidence of diagnosis among early deaths after discharge *v* frequency among all other emergency department visits (admitted and discharged). Diagnoses grouped into four categories: formal pathophysiological diagnoses of disease (such as pneumonia); syndromic diagnoses, either involving pain (such as chest pain) or not involving pain (such as dyspnea); and diagnoses related to injuries, skin conditions (such as cellulitis) or musculoskeletal pain (such as muscle sprain)

assign blame to individual providers.[39] Second, prospective clinical studies of specific presenting symptoms could be conducted, modeled on the original literature on missed myocardial infarction in patients with chest pain.[7-10] We identified a particular "signature" of clinical diagnoses linked to early death after discharge: those with non-pain syndromes (such as dyspnea) were at highest risk, especially compared with pain syndromes (such as chest pain), as those with were cardiopulmonary diagnoses (such as pneumonia). It is tempting to engage in speculation here: patients in pain might command more physician attention than patients with vague symptoms, or specific low cost diagnostic tests (such as troponin concentration) or clinical pathways (as for chest pain) might play a role. Ultimately, however, careful prospective studies are the only way to elucidate the mechanisms underlying these findings. A third important line of research concerns gaps in knowledge on the value of hospital admission itself. Despite clinical decision rules for deciding on inpatient versus outpatient management of specific illnesses,[29] there is little evidence on the benefits of admission for nearly all emergency department patients. Economic analyses are needed to gauge the cost effectiveness of admission, balancing potential improvements in outcomes against cost. Generating such evidence need not involve randomized trials, but rather could exploit existing, plausibly random variation in the healthcare system to measure the benefit and cost of admission for different patient groups.[40] The role of financial incentives must also be explored: while all patients in this study were insured, supplementary insurance could increase the likelihood of admission and thereby decrease the risk of early death after discharge.

Finally, our results also have implications for ongoing policy efforts to reduce unnecessary admissions from the emergency department.[41] Unless extreme care is taken with selection of patients, these well intentioned efforts could put patients at risk. Policies designed to reduce overuse, whether in the setting of National Health Service budget constraints in the UK or the Affordable Care Act in the US, could exacerbate this problem. Novel metrics to track patient safety and diagnostic error—which are otherwise under-represented in existing quality measures[17]—are urgently needed to aid policy makers in evaluating how changes in the broader healthcare system impact patient outcomes.

Limitations

We used Medicare claims because of their broad coverage of US hospitals and the populations they serve. But claims data cannot conclusively identify preventable errors in care. Rather, our aim was to present the first national data on early death after discharge and to identify clinical and health systems factors linked to higher risk. We see this effort as a starting point for future research on patient safety in emergency departments, which has been surprisingly under-researched outside of specific diagnoses comprising a small minority of patients (such as myocardial infarction, stroke, subarachnoid hemorrhage, appendicitis).

We attempted to focus on potentially unexpected deaths by restricting our study to younger generally healthy patients living in the community with good overall prognoses. A particularly difficult task was exclusion of beneficiaries with diagnosed life limiting illnesses, in whom death was not unexpected. As there was, to our knowledge, no prior literature on this topic, we developed a list of ICD codes for this study: acute life threatening conditions diagnosed in the emergency department or chronic conditions diagnosed in the year before visits. While it was based on the judgment of experienced emergency physicians, this list was necessarily subjective. We attempted to be conservative, but some life limiting comorbidities might be omitted; alternatively, excluded diagnoses could be viewed as overly broad. For example, we excluded any beneficiaries with claims indicating any malignancy in the year before emergency department visits because cancer stage cannot be reliably determined from claims[42]; but this might exclude patients with good overall prognoses. Likewise, exclusion of pulmonary embolism might exclude seemingly low risk patients deliberately sent home from emergency departments. Finally, given differences in coding intensity and access to end of life care, patients in less well resourced areas might have been less likely to be excluded by these criteria; this is symptomatic of a broader, and as yet unsolved, problem with risk adjustment in administrative data.[43]

Some deaths might have reflected "baseline" mortality after discharge from the emergency department. We view this as unlikely given observed variation in risk of mortality over time and across hospitals. Hospitals with higher admission rates seemed better able to triage high risk patients into hospital admission, rather than discharging them home: discharged patients had lower early mortality rates after visits than over the remainder of the year, while inpatients had higher early mortality. In lower admission rate hospitals, conversely, high risk patients were less likely to be admitted and more likely to be sent home. Such discharged patients had a far higher mortality in the days after visits than subsequently, while inpatients had a far lower early mortality than other hospitals. Together, these trends argue that early death after discharge was not simply a reflection of baseline mortality rates. Interestingly, this also suggests that hospitals with high admission rated do not admit indiscriminately: if high acuity inpatients were diluted with healthy patients who could have been discharged, inpatient mortality would fall, not rise, with admission rate (unless these hospitals were also killing their inpatients at dramatically higher rates).

Conclusion

Many Medicare beneficiaries die shortly after discharge from emergency departments, despite no obvious life limiting illnesses recorded in their claims. Hospitals with low admission rates and low patient volumes, and patients with high risk diagnoses at discharge, could represent targets for clinical research and quality improvement efforts.

We thank David Peak for participating in the expert panel to classify groups of ICD codes into acute and chronic life limiting diagnoses and for his thoughtful advice on this project; and Tim Putnam for providing extremely valuable insights into emergency care in rural hospitals.

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Competing interests: All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: no financial relationships with any organizations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

Ethical approval: This study was approved by the institutional review boards of Partners HealthCare and the National Bureau of Economic Research.

Data sharing: No additional data available.

Transparency: The lead author affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned have been explained

1 Garcia TC, Bernstein AB, Bush MA. Emergency department visitors and visits: who used the emergency room in 2007?*NCHS Data Brief* 2010;38:1-8. http://www.cdc.gov/nchs/data/databriefs/db38.pdf.
2 Baker C. *Accident and Emergency Statistics*. House of Commons Library, 2015.
3 Fisher ES, Wennberg JE, Stukel TA, et al. Associations among hospital capacity, utilization, and mortality of US Medicare beneficiaries, controlling for sociodemographic factors. *Health Serv Res* 2000;34:1351-62.
4 Schuur JD, Venkatesh AK. The growing role of emergency departments in hospital admissions. *N Engl J Med* 2012;367:391-3. doi:10.1056/NEJMp1204431.
5 Joynt KE, Gawande AA, Orav EJ, Jha AK. Contribution of preventable acute care spending to total spending for high-cost Medicare patients. *JAMA* 2013;309:2572-8. doi:10.1001/jama.2013.7103.
6 Venkatesh AK, Dai Y, Ross JS, Schuur JD, Capp R, Krumholz HM. Variation in US hospital emergency department admission rates by clinical condition. *Med Care* 2015;53:237-44. doi:10.1097/MLR.0000000000000261.
7 Lee TH, Rouan GW, Weisberg MC, et al. Clinical characteristics and natural history of patients with acute myocardial infarction sent home from the emergency room. *Am J Cardiol* 1987;60:219-24. doi:10.1016/0002-9149(87)90217-7.
8 Schor S, Behar S, Modan B, Barell V, Drory J, Kariv I. Disposition of presumed coronary patients from an emergency room. A follow-up study. *JAMA* 1976;236:941-3. doi:10.1001/jama.1976.03270090035024.
9 Collinson PO, Premachandram S, Hashemi K. Prospective audit of incidence of prognostically important myocardial damage in patients discharged from emergency department. *BMJ* 2000;320:1702-5. doi:10.1136/bmj.320.7251.1702.
10 Pope JH, Aufderheide TP, Ruthazer R, et al. Missed diagnoses of acute cardiac ischemia in the emergency department. *N Engl J Med* 2000;342:1163-70. doi:10.1056/NEJM200004203421603.
11 Vermeulen MJ, Schull MJ. Missed diagnosis of subarachnoid hemorrhage in the emergency department. *Stroke* 2007;38:1216-21. doi:10.1161/01.STR.0000259661.05525.9a.
12 Kowalski RG, Claassen J, Kreiter KT, et al. Initial misdiagnosis and outcome after subarachnoid hemorrhage. *JAMA* 2004;291:866-9. doi:10.1001/jama.291.7.866.
13 Mayer PL, Awad IA, Todor R, et al. Misdiagnosis of symptomatic cerebral aneurysm. Prevalence and correlation with outcome at four institutions. *Stroke* 1996;27:1558-63. doi:10.1161/01.STR.27.9.1558.
14 Sklar DP, Crandall CS, Loeliger E, Edmunds K, Paul I, Helitzer DL. Unanticipated death after discharge home from the emergency department. *Ann Emerg Med* 2007;49:735-45. doi:10.1016/j.annemergmed.2006.11.018.
15 Gabayan GZ, Derose SF, Asch SM, et al. Patterns and predictors of short-term death after emergency department discharge. *Ann Emerg Med* 2011;58:551-558.e2. doi:10.1016/j.annemergmed.2011.07.001.
16 Kefer MP, Hargarten SW, Jentzen J. Death after discharge from the emergency department. *Ann Emerg Med* 1994;24:1102-7. doi:10.1016/S0196-0644(94)70239-X.
17 Institute of Medicine. *Improving Diagnosis in Health Care*.National Academies Press, 2015.
18 Wachter RM. Why diagnostic errors don't get any respect--and what can be done about them. *Health Aff (Millwood)* 2010;29:1605-10. doi:10.1377/hlthaff.2009.0513.
19 Newman-Toker DE, Pronovost PJ. Diagnostic errors--the next frontier for patient safety. *JAMA* 2009;301:1060-2. doi:10.1001/jama.2009.249.
20 Singh H. Diagnostic errors: moving beyond 'no respect' and getting ready for prime time. *BMJ Qual Saf* 2013;22:789-92. doi:10.1136/bmjqs-2013-002387.
21 Pines JM, Mutter RL, Zocchi MS. Variation in emergency department admission rates across the United States. *Med Care Res Rev* 2013;70:218-31. doi:10.1177/1077558712470565.
22 Capp R, Ross JS, Fox JP, et al. Hospital variation in risk-standardized hospital admission rates from US EDs among adults. *Am J Emerg Med* 2014;32:837-43. doi:10.1016/j.ajem.2014.03.033.
23 Research Data Assistance Center (ResDAC) U of M. How to Identify Hospital Claims for Emergency Room Visits in the Medicare Claims Data. http://www.resdac.org/resconnect/articles/144.
24 Gabayan GZ, Sun BC, Asch SM, et al. Qualitative factors in patients who die shortly after emergency department discharge. *Acad Emerg Med* 2013;20:778-85. doi:10.1111/acem.12181.
25 Gabayan GZ, Gould MK, Weiss RE, et al. Poor Outcomes After Emergency Department Discharge of the Elderly: A Case-Control Study. *Ann Emerg Med* 2016;68:43-51.e2. doi:10.1016/j.annemergmed.2016.01.007.

26 Bynum JPW, Rabins PV, Weller W, Niefeld M, Anderson GF, Wu AW. The relationship between a dementia diagnosis, chronic illness, medicare expenditures, and hospital use. *J Am Geriatr Soc* 2004;52:187-94. doi:10.1111/j.1532-5415.2004.52054.x.
27 Levy CR, Fish R, Kramer A. Do-not-resuscitate and do-not-hospitalize directives of persons admitted to skilled nursing facilities under the Medicare benefit. *J Am Geriatr Soc* 2005;53:2060-8. doi:10.1111/j.1532-5415.2005.00523.x.
28 Wennberg JE, Roos N, Sola L, Schori A, Jaffe R. Use of claims data systems to evaluate health care outcomes. Mortality and reoperation following prostatectomy. *JAMA* 1987;257:933-6. doi:10.1001/jama.1987.03390070053022.
29 Fine MJ, Auble TE, Yealy DM, et al. A prediction rule to identify low-risk patients with community-acquired pneumonia. *N Engl J Med* 1997;336:243-50. doi:10.1056/NEJM199701233360402.
30 Lim WS, van der Eerden MM, Laing R, et al. Defining community acquired pneumonia severity on presentation to hospital: an international derivation and validation study. *Thorax* 2003;58:377-82. doi:10.1136/thorax.58.5.377.
31 Lauer MS, Blackstone EH, Young JB, Topol EJ. Cause of death in clinical research: time for a reassessment?*J Am Coll Cardiol* 1999;34:618-20. doi:10.1016/S0735-1097(99)00250-8.
32 Lloyd-Jones DM, Martin DO, Larson MG, Levy D. Accuracy of death certificates for coding coronary heart disease as the cause of death. *Ann Intern Med* 1998;129:1020-6. doi:10.7326/0003-4819-129-12-199812150-00005.
33 Murray CJ, Lopez AD. Global and regional cause-of-death patterns in 1990. *Bull World Health Organ* 1994;72:447-80.
34 Birkmeyer JD, Stukel TA, Siewers AE, Goodney PP, Wennberg DE, Lucas FL. Surgeon volume and operative mortality in the United States. *N Engl J Med* 2003;349:2117-27. doi:10.1056/NEJMsa035205.
35 Ross JS, Normand S-LT, Wang Y, et al. Hospital volume and 30-day mortality for three common medical conditions. *N Engl J Med* 2010;362:1110-8. doi:10.1056/NEJMsa0907130.
36 McGrath PD, Wennberg DE, Dickens JD Jr, et al. Relation between operator and hospital volume and outcomes following percutaneous coronary interventions in the era of the coronary stent. *JAMA* 2000;284:3139-44. doi:10.1001/jama.284.24.3139.
37 Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol* 2011;64:749-59. doi:10.1016/j.jclinepi.2010.10.004.
38 Healthcare Cost and Utilization Project. Clinical Classifications Software for ICD-9-CM. https://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp. 2015.
39 Leape LL. Error in medicine. *JAMA* 1994;272:1851-7. doi:10.1001/jama.1994.03520230061039.
40 Doyle J, Graves J, Gruber J, Kleiner S. Measuring returns to hospital care: Evidence from ambulance referral patterns. *J Polit Econ* 2015;123:170-214. doi:10.1086/677756.
41 Venkatesh AK, Schuur JDA. A "Top Five" list for emergency medicine: a policy and research agenda for stewardship to improve the value of emergency care. *Am J Emerg Med* 2013;31:1520-4. doi:10.1016/j.ajem.2013.07.019.
42 Cooper GS, Yuan Z, Stange KC, Amini SB, Dennis LK, Rimm AA. The utility of Medicare claims data for measuring cancer stage. *Med Care* 1999;37:706-11. doi:10.1097/00005650-199907000-00010.
43 Wennberg JE, Staiger DO, Sharp SM, et al. Observational intensity bias associated with illness adjustment: cross sectional analysis of insurance claims. *BMJ* 2013;346:f549. doi:10.1136/bmj.f549.

Appendix 1: Supplementary tables
Appendix 2: Supplementary figures