Medication Safety Committee Meeting

January 10, 2018

California Hospital Association - Boardroom

1215 K Street, Ste 800

Sacramento, CA, 95814

Conference Call Option:

800-882-3610 passcode: 4206832#

Meeting Book - Medication Safety Committee Meeting

AGENDA

10:00 **I. CALL TO ORDER/INTRODUCTIONS**
Hanni/Fong

A. Roster/Member Map/Member Breakdown — Page 4

B. Committee Guidelines — Page 10

C. Membership Updates

10:15 **II. MINUTES** — Recommend: Approval
Hanni/Fong

A. October 11, 2017 Meeting Minutes — Page 14

10:20 **III. OLD BUSINESS**
Hanni/Fong

A. Sterile Compounding Changes — Page 19
Hanni/Fong

B. Board of Pharmacy Construction Waivers/Process/CAU — Page 22
Hanni/Fong

C. Medication Safety Toolkit - Update — Page 210
Bartleson

D. Education Next Steps — Page 211
Bartleson

E. Medication Reconciliation Next Steps — Page 214
Shane

F. IV Minibag Shortage — Page 234
Hanni/Fong

G. Hospice Facility and Use of ADD — Page 271
Herold

H. 340B Update — Page 280
Bartleson

11:45 **IV. LEGISLATION AND REGULATORY**

A. Antibiotic Stewardship Program — Page 288
Rogers

12:00 **V. LUNCH**

12:30 **VI. NEW BUSINESS**

A. Advanced Pharm Tech Role — Page 289
Herold

B. AHA Leadership Summit Page 290
Bartleson

C. Emergency Regulations Page 291
Bartleson

1:00

VII. STANDING REPORTS

A. Board of Pharmacy
Herald

B. CDPH
Lee/Woo

C. CSHP
DeMartini

D. CALNOC
Foley

E. ACNL
Foley

F. CHPSO
Jaffe

G. CAHF
Hall

1:30

VIII. WORK GROUP REPORTS

1:45

IX. INFORMATION
All

A. Emergency Legal Authority and the Opioid Crisis Page 294

B. Elevating the Pharmacist as a Strategic Asset Page 297

C. Toward Better-Quality Compounded Drugs Page 309

D. Actions from 10-11-17 Meeting Page 313

X. NEXT MEETING

A. Wednesday, April 4, 2018 10 am - 2 pm

2:00

XI. ADJOURNMENT
Hanni

MEDICATION SAFETY COMMITTEE
2018

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Medication Safety Committee
Hospital Representation

BY COUNTY

As of January 3, 2018

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

Medication Safety Committee
Member Geographics - January, 2018

HOSPITAL MEMBERS

Member Name	Organization Name	County
Amy Gutierrez	Kaiser Permanente National Pharmacy Programs and Services	Los Angeles
Candace Fong	Dignity Health	Sacramento
Carolyn Brown	Santa Clara Valley Medical Center	Santa Clara
Chris Patty	Kaweah Delta Health Care District	Tulare
Christine Low	Scripps System	San Diego
Dan B. Dong	Kaiser Permanente	Alameda
Diana Schultz	Palomar Medical Center	San Diego
Doug O'Brien	Kaiser Foundation Hospitals	Sacramento
Eddie Avedikian	Providence Health & Services	Santa Barbara
Edna DeLeon	Long Beach Memorial Medical Center	Los Angeles
Jeannette Hanni	Sutter Health - West and South Bay Region	Santa Clara
Kathy Ghomeshi	UCSF Medical Center	San Francisco
Katie Choy	Washington Hospital Health Care System	Alameda
Kevin Dorsey-Tyler	Enloe Medical Center	Butte
Lori Nolan	Providence Little Company of Mary Medical Center	Los Angeles
Mary Foley	UCSF, School of Nursing	San Francisco
Nasim Karmali	Kaiser Foundation Hospital	Alameda
Richard Rabens	The Permanente Medical Group, Inc.	Alameda
Rita Shane	Cedars-Sinai Medical Center	Los Angeles
Sarah Stephens	Kaweah Delta Health Care District	Tulare
Susan Herman	San Joaquin Community Hospital/Adventist	Kern
Theresa Vidals	Tri-City Medical Center	San Diego

NON-HOSPITAL COMMITTEE MEMBER

Art Woo	California Department of Public Health	Contra Costa
Cari Lee	California Department of Public Health	San Mateo
Dan Ross	California Society of Health System Pharmacists	Sacramento
John Christensen	California Department of Public Health - Redwood Coast and Santa Rosa	Sonoma
Lisa Brundage O'Connell	Hospital Council of Northern and Central	Contra Costa
Lisa Hall	California Association of Health Facilities	Sacramento
Loriann DeMartini	California Society of Health System Pharmacists	Sacramento
Randy Kajioka	California Correctional Health Care	Sacramento
Rory Jaffe	California Hospital & Patient Safety Organization	Sacramento
Virginia Herold	California Board of Pharmacy	Sacramento

GUIDELINES FOR THE
CALIFORNIA HOSPITAL ASSOCIATION
MEDICATION SAFETY COMMITTEE

I. NAME

The name of this committee shall be the Medication Safety Committee.

II. MISSION

The mission of the Medication Safety Committee is to provide leadership within the health care community to promote the highest standards related to the safe and effective use of medications.

III. PURPOSE

The purpose of the Medication Safety Committee is to provide a forum for diverse multi-disciplinary health care organizations, which includes health care delivery organizations, patient safety organizations, discipline specific professional associations/organizations and regulatory agencies, to promote safe medication practices in the state of California. The Committee will focus on acting as a source of medication safety expertise, providing a venue for the coordination of medication safety activities and making recommendations related to medication safety legislation and regulations.

IV. COMMITTEE

The Committee (the "Committee") shall consist of a minimum of 16 representatives and not more than 35 representatives from hospital members and the following related organizations:

California Department of Public Health California
Society of Health System Pharmacists California
Board of Pharmacy
Centers for Medi-Care and Medi-Caid Services
Collaborative Alliance for Nursing Outcomes
Association of California Nurse Leaders California
Medical Association
California HQI and CHPSO
Risk Management Association
Representatives from the following CHA committees/centers:
Center for Behavioral Health
- Rural Health Center
- Quality Committee
- Joint Committee on Accreditation and Licensing Center
- for Hospital Medical Executives EMS/Trauma
- Committee
- Hospital Based Clinics Committee
- Center for Post Acute Care
- Governance

A. MEMBERSHIP

1. Membership on the Committee shall be based upon membership in CHA, or organizations that have a direct relationship to the purpose and mission of the Committee. CHA members will be hospital members. Non-hospital members are ex-officio members and can only be appointed to the Committee at the discretion of the CHA staff liaison.
2. The CHA Committee members shall consist of various representatives from large hospital systems, public institutions, private facilities, free-standing facilities, small and rural facilities, university/teaching facilities and specialty facilities. A member may fulfill more than one required membership position.
3. Hospital members are appointed by CHA Staff per recommendation of hospital Committee members and per hospital and non-hospital membership requirements listed above.
4. Guidelines for membership – these guidelines should be used when selecting potential new members for the Committee:
   a) Demonstrated experience in medication safety and understanding of regulatory environment based on current or recent job responsibilities
   b) Contributions to medication safety at the organizational and/or professional level
   c) Practice experience related to medication safety and regulatory compliance: at least 3 years (preferred).
5. Term:
   a) Terms of office shall be based on member participation and desire to remain active on the Committee. The CHA staff liaison will perform an annual review of member attendance, participation and desire to remain active on the committee.
   b) Chairs and Co-Chair positions will be filled by hospital members only and selected by the CHA staff liaison per recommendation of the present chair, co-chairs and by other members of the Committee. They will be selected based on their leadership and desire to fill the position.

B. MEMBER RESPONSIBILITIES

1. Provide hospital-industry leadership to the Committee and CHA Board of Trustees.
2. Identify issues and develop possible solutions and best practices to improve the safety of the medication use process.
3. Work cooperatively with key stakeholders to develop creative solutions.
4. Provide communication to member hospitals regarding medication safety issues.
5. Maintain/increased awareness of the legislative and regulatory environment with regard to medication safety issues.

C. COMMITTEE MEETINGS

1. Meetings of the Committee shall be held quarterly in person.
2. To maintain continuity, substitution of members should be discussed with the staff liaison and co-chairs on an individual basis.
3. Three consecutive unexcused absences by a Committee member will initiate a review by the co-chairs and CHA staff liaison for determination of the Committee member's continued service on the Committee.
4. Special meetings may be scheduled by the co-chair, majority vote, or CHA staff liaison.

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 present at a duly called meeting or telephone conference call.

E. QUORUM

Except as set forth herein, a quorum shall consist of a majority of members present or not less than eight.

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.

V. OFFICERS

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

A. SUB-COMMITTEES

1. Task forces of the Committee may be formed at the discretion of the Committee chairs and members and CHA staff liaison for the purpose of conducting activities specific to a special topic or goal.

VI. GENERAL PROVISIONS

Goals, and objectives, shall be developed annually by the Committee with approval by the CHA staff liaison. 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 Hospital Council, the Hospital Association of Southern California, and the Hospital Association of San Diego and Imperial Counties. The primary office and public policy development and advocacy staff of the Committee shall be located within the CHA office.

The Committee staff liaison 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 and with approval by CHA.

VIII. LEGAL LIMITATIONS

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

MEDICATION SAFETY COMMITTEE
MEETING MINUTES
October 11, 2017 / 10:00 a.m. – 2:00 p.m.

CHA
1215 K Street, Suite 800
Sacramento, CA

Members Present: Candace Fong, Jeannette Hanni, Virginia Herold, Lori Nolan, Lisa O'Connell, John Christensen, Eddie Avedikian, Dan Ross, Sarah Stephens, Vicki Ferraresi, Kathy Ghomeshi

Members on Call: Loriann DeMartini, Randy Kajioka, Nasim Karmali, Christine Low, Chris Patty, Diana Schultz, Terri Vidals, Susan Herman, Carolyn Brown,

Members Absent: Kevin Dorsey-Tyler, Mary Foley, Amy Gutierrez, Lisa Hall, Cari Lee, Doug O'Brien, Richard Rabens, Rita Shane, Art Woo, Jenna Fischer, Rory Jaffe,

Guest: Lynn Forsey – HQI, Alicia Munoz - HQI

CHA Staff: BJ Bartleson, Barb Roth, Debby Rogers

I. CALL TO ORDER/INTRODUCTIONS

The committee meeting was called to order by co-chair Candace Fong at 10:00 a.m.

II. REVIEW OF PREVIOUS MEETING MINUTES

The minutes of the July 5, 2017, Medication Safety Committee meeting were reviewed.

IT WAS MOVED, SECONDED AND CARRIED:
Typographical error on page 4 under Medication Reconciliation "the" should be "they"
- *ACTION: minutes approved with correction.*

III. OLD BUSINESS

A. Sterile Compounding Update - Herold

1. USP 800

Deadline date has been pushed back to December 1, 2019.

2. Board of Pharmacy (BoP) Waiver Process

Ms. Herold advised that it is too early to tell if the construction waivers will have an impact on deadlines. Most who received a waiver have a status report due on November 1, 2017. Expiration dates are attached to all the waivers. Waivers were not extended past July, 2018. BoP will discuss this issue during their November meeting.

Ms. Bartleson asked if CHA can support the process. Ms. Herold recommended that CHA continue to alert members of the regulatory requirements, particularly the smaller rural hospitals.

The California Department of Public Health (CDPH) Central Applications Unit (CAU) process is also a stumbling block. Ms. Rogers provided a brief summary of the process. CDPH centralized the application process, which has caused a significant backlog. CHA is partnering with CDPH to put on a webinar on December 17, 2017. CHA will also meet

with CDPH to request assistance in particular with hospital pharmacies.

Ms. Ghomeshi posed a concern about workplace surveillance as a part of sterile compounding compliance. Some hospitals have their employees sign an acknowledgement of their understanding that they are handling hazardous drugs. Mr. Ross has a template of a form that can be used. Request was made to cover the subject of employee surveillance with appropriate CHA committee. There is a need for specific information about what needs to be disseminated. Perhaps on the Medication Safety toolkit and in CHA News.

3. **Nursing Sterile Compounding**
   Ms. Bartleson took this issue to the Board of Registered Nursing (BRN). Dr. Morris is interested in improving the leadership and practices at BRN. Ms. Bartleson will be working with the BRN practice committee on this issue. Ms. Stephens has more information on this topic and can provide that to the committee.

4. **Education/Resources**
   Request was made for a sterile compounding FAQ. Ms. Herold expressed difficulty getting this information from their legal department. The committee agreed that there is need for clarity.

   - *ACTION – Ms. Bartleson will discuss with Peggy Wheeler, Rural Healthcare Center, to provide information on sterile compounding.*
   - *ACTION – CAU process – send information about the webinar to the committee.*
   - *ACTION – Ms. Stephens to provide more information regarding Nursing Sterile Compounding.*
   - *ACTION – continue to compile the list (started by Ms. Fong) to be sent to the BoP.*

B. Medication Safety Toolkit

Several changes recommended to the matrices included in the meeting books.

- *ACTION: Please continue with updates to the tools that are not yet complete.*

C. Medication Reconciliation/Safe Medication Transitions

1. **HQI – ADE Work Related to Medication Lists – Lynn Forsey**
   The HQI Hospital Improvement Innovation Network (HIIN) program supports hospitals with action planning and education. Although medication safety is covered in the training they provide, medication reconciliation has not been addressed as its own topic. Mary Andrawis is available through the HIIN and can help to support the effort for higher accuracy in medication lists.

   Their performance metrics is through adverse events. Ms. Bartleson would like to know how much the pharmacists and pharm techs are involved in the medication list process at the hospitals at this HIIN. Ms. Forsey advised that although they have access to the hospitals, it can be difficult to get responses from them. Quality leaders are the main point of contact.
   The California Hospital Patient Safety Organization (CHPSO) a division of HQI is separate from the HIIN. CHPSO has done research and directly addressed medication reconciliation this year. Ms. Ghomeshi participated in this project this year. It is a confidential forum to network and ask questions, but no specific program take aways.

   Mr. Avedikian advised that HINNs across the country defines their metrics differently. This is the case within California as well. It is not standardized.

Reminder: Healthcare Quality Week is next week and the HQI Annual Summit in Monterey is November 1-3.

2. **Medication List Infographic**
Ms. Shane developed the infographic in the meeting book. This provides a way to quantify the financial benefits of pharmacy involvement to the hospital. Consensus that this information be available in the Medication Safety Toolkit on the CHA website.

- *ACTION: send url to the committee:* https://www.hsag.com/en/hiin/
- *ACTION: add Ms. Shane's infographic to the Medication Safety Toolkit on the website.*
- *ACTION: Ms. Ghomeshi will assist Ms. Shane with the development of a survey.*
- *ACTION: Add Ms. Ghomeshi to the Medication Reconciliation subcommittee. If Mary Foley is unable serve on this committee, Lori Nolan has offered as a nurse replacement.*

D. Reducing Harm from Respiratory Depression in Non-ICU Patients through Risk Mitigation and Respiratory Monitoring – Munoz
Ms. Munoz advised that the toolkit is complete and will be printed today. In the near future, it will also be available on the HQI website.

- *ACTION: Advise committee when toolkit available on HQI website.*

IV. NEW BUSINESS

A. Hospice Facility and Use of ADD - Rogers
Discussion regarding the hospice that has its own pharmacy but is not owned or licensed by another facility (hospital or health system) – use of an ADD. The hospice use of an ADD in this instance is not covered by the BoP regulations and cannot use an ADD. Ms. Herold suggested that this might be included as part of clean-up legislation in the future.

- *ACTION: Information and discussion.*

B. Issues Facing the Pharmacy Workforce
Ms. Ferraresi and Ms. DeMartini attended this seminar. There is a concern that in food stores with a pharmacy, must be a way for the pharmacist to step away for breaks. There is also a lack of patient privacy and time for consultation. More geared toward the pharmacy within another retail facility.

- *ACTION: Information only.*

C. IV Solutions
Ms. Bartleson discussed fact that hospitals are having problem with IV solution shortage. AHA is discussing options with the FDA– may be able to bring in product from Australia.

- *ACTION: Information only.*

D. Hep A Vaccine
Concern about shortage and rising costs due to the outbreak in southern CA. Feedback received from direct inquiry is that there is no cost or supply problem in CA at this time. If committee members experience any problems, please keep CHA apprised.

- *ACTION: Information only.*

V. STANDING REPORTS

A. Board of Pharmacy (BoP) – Herold

All legislation that BoP was supporting was signed into law. One piece of legislation that BoP opposed had amendments which made it acceptable. Board of Pharmacy is seeing a high number counterfeit prescription pads. People are buying them online. Ms. Herold would like to see CA go to e-prescribing rather than using paper.

- *ACTION: Suggested agenda item – availability of Fentanyl patches in ADDs*
- *ACTION: Suggest for a small workgroup to work with DOJ*

B. CDPH – Lee, Woo, Christensen

Former Chief Robert Menet has retired, the new chief is Cari Lee.

C. CSHP - Ferraresi

Launched some new programs.

1. Launched the APP program (focus chronic disease) with Touro University – three training opportunities provided (Vallejo – already done, Seminar, and San Diego – future)
2. Launched Transitions of Care (ToC) Certificate program with Rita Shane – excellent response with 42 signed up.
3. Sterile Compounding Training– working with Touro providing training to BOP inspectors
4. Launched a new Pharmacogenomics Certificate program
5. CSHP representation on the Technical Advisory Committee supporting the newly formed CA Future Health Workforce Commission (CFHWC).
6. Development of an Opioid Stewardship Task Force. We have had 50 volunteers for the task force that we originally planned for 8 to 10.
7. Seminar 2017 is coming – beginning 10/26/17
8. CSHP membership is growing.

D. CALNOC – Foley

E. ACNL – Foley

F. CHPSO – Jaffe

G. HQI – Jaffe

H. CAHF - Hall

VI. OTHER BUSINESS

A. 340 B Program – Amber Ott

Updates at state and federal level. Updates outlined in meeting book memo. CHA contacted CMS with opposition. CMS received opposition from all levels, including their own advisory panel. CHA will not know whether this will move forward or not until we see the final rule. There is a risk for duplicate discounts with this program, which is a nationwide problem, not just California. Oregon has a process in place to address the problem, while the rest of the country does not.

B. AHA Executive Dialogue at Leadership Summit – Herman

CEOs and contract pharmacy services (vendors) were in attendance. Meeting was recorded and will be published soon. Emphasis on using pharmacists more to maximize patient outcomes. From a financial perspective, hospitals utilizing pharmacy input to provide advice regarding

lower cost alternatives.

AHA Executive Leadership Summit is held every year – dialog groups are organized and give opportunities to present. Ms. Bartleson will get the hospital publication when it's available, we can also apply to present next year. Mr. Ross agrees that this is the group that needs to hear the message to advance pharmacy practice. Ms. Fong emphasized a need to address the CFOs as well as the CEOs and COOs. HFMA is another group we can try to interact with.

- ACTION: Ms. Bartleson will contact AHA to see if we can put a CEO/CFO/Pharmacist dialog together
- ACTION: Ms. Bartleson will contact HFMA to see if we can put a CEO/CFO/Pharmacist dialog together
- ACTION: Will send out Hospital and Health Education information when available.

VII. NEXT MEETING

Wednesday, January 10, 2018

VIII. ADJOURNMENT

Having no further business, the committee adjourned at 1:30 PM

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Changes to Board Compounding Regulations, California Code of Regulations, Title 16, Sections 1735 et seq. and 1751 et seq., Including Presentations Regarding Beyond Use Date Testing

SUMMARY

Attached are the proposed changes to Sterile Compounding Regulations proposed at December 11, 2017, Board of Pharmacy Enforcement and Compounding Committee meeting. Of note is the definition of hazardous drugs.

ACTION REQUESTED

- Discussion on proposed changes

DISCUSSION QUESTIONS

1. Does the definition of "hazardous" contain mitigating language of USP 800 and define alternate containment process for drugs in Table 2 and Table 3 of NIOSH (reproductive risks)? All sites must now meet USP 800 language and this language should be identical to our sterile compounding regulatory language. As stated now we would have to make oxytocin and phenytoin in a negative pressure room, with negative pressure hood, externally vented, etc. It also forces the pharmacy into compounding non-antineoplastic drugs in the same space/hood as antineoplastic drugs needlessly exposing both the employee and the product to that environment.
2. What other issues need to be addressed in the proposed changes? What definitions can we offer?

Attachments: CDPH/CHA Licensing and Certification meeting – November 29, 2017

BJB:br

CDPH/CHA Licensing and Certification meeting- Nov.29, 2017

Title 22 Regulations- Sterile Compounding Requirements

Notify the GACH Lead Consultants, Art Woo AND Rajvir Sajjan, of Pharmaceutical Consultant Unit via email at art.woo@cdph.ca.gov and rajvir.sajjan@cdph.ca.gov 8 weeks prior to the Board of Pharmacy onsite inspection. An administrative review will be conducted upon receipt of all required documents for each project to determine if an onsite visit is needed. Please note that L&C will not schedule onsite inspection until:

- CAU application completed and approved
- A Certificate of Occupancy has been issued by OSHPD
- Certification of environment and equipment by a third party company with microbiology reports available for review
- Board of Pharmacy approval for LSC licensure with inspection report available for review

§ 70105. Application Required.
(a) A verified application shall be forwarded to the Department whenever any of the following circumstances occur:
(1) Construction of a new or replacement facility or addition to an existing facility.
(2) Increase or decrease of licensed bed capacity. --for example, converting a patient room to a pharmacy clean room
(3) Added service or change from one service to another.
(4) Change of ownership.
(5) Change of name of hospital.
(6) Change of license category.
(7) Change of location of the hospital.
(8) Change of bed classification.

§ 70805. Space Conversion.
Spaces approved for specific uses at the time of licensure shall not be converted to other uses without the written approval of the Department. -- for example changing an existing conference room into a pharmacy clean room

§ 70803. Application for Architectural Plan Review.
(a) Drawings and specifications for alterations to existing buildings or new construction shall be submitted to the Department for approval and shall be accompanied by an application for plan review on forms furnished by the Department. The application shall:
(1) Identify and describe the work to be covered by the plan review for which the application is made.
(2) Describe the land on which the proposed work is to be done, by lot, block, tract or house and street address or similar description that will readily identify and definitely locate the proposed building or work.
(3) Show the present and proposed use or occupancy of all parts of the building or

buildings.
(4) State the number of square meters (feet) of floor area involved in new construction and in alterations.
(5) Give such other information as may be required by the Department for unusual design circumstances.
(6) Be signed by the person designing the work or the owner of the work.
(b) The application for plan review shall also include a written statement that a description of the proposed work has been submitted to the Area Comprehensive Health Planning Agency approved by the State Advisory Health Council pursuant to Section 437.7 of the Health and Safety Code.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Board of Pharmacy Construction Waivers/Approval Process

SUMMARY

Hospital members have informed us of significant delays with CDPH Central Applications Unit approval processes while undergoing sterile compounding pharmacy construction changes. We have had questions regarding board of pharmacy waiver renewals, and CDPH application approvals. We would like to understand the specific process hospitals must follow to meet approval for sterile compounding changes from all three organizations, particularly CDPH. We understand there is a backlog with the newly formed CDPH Central Applications Unit and hospitals are waiting 6-8 months for paperwork to be assigned to an analyst.

CHA has been hosting CDPH Round Table events. One was held in Fresno in November where a hospital member pharmacist attended and received the following information: (See attachment: CDPH/CHA Licensing and Certification Meeting- Nov 29, 2017)

- All new spaces, whether permanent or temporary will require approval from OSHPD, the board of pharmacy, and CDPH.
- The GermFree trailer requires a different process than SCAs/Cleanrooms within the four walls of the hospital – something to do with pharmacy equipment being physically outside the existing pharmacy. Cari Lee offered to walk us through the process. She is the "trailer specialist" for California.
- All CDPH requests must go through the CAU. However, the local DM recommended that Sutter send a copy of the CAU cover letter to the district office in their area.
- "Local offices will not supersede the CAU"
- CDPH will not approve a space until the Board of Pharmacy (BoP) signs off on it. CDPH gave a laundry list of documentation that would be required for approval. One of the documents they specifically called out was the BoP inspection report. – question was asked whether it would be ok to perform staff competency testing prior to official sign off. I do not have an answer to that questions. However, CDPH did mention that they want employee competency testing as part of the inspection request package (floor plan; certification from 3rd party – i.e. TSS, MicroTech, etc.; a copy for the CAU application – assume this is the HS200 form; a copy of pressure monitoring data from the new SCA/Cleanroom; BoP inspection report and approval letter; among other items). The items listed is consistent with our previous interaction with Claire McGill from CDPH.

- "Eight or more weeks prior to the BoP inspection", the facility is to notify the GACH lead consultants (Art Woo or Rajvir Sajjan) that an inspection is requested. – I included the email addresses for Art and Raj: art.woo@cdph.ca.gov and rajvir.sajjan@cdph.ca.gov
- CDPH reiterated that the space cannot be occupied or used before their official approval, even with BoP and OSHPD signoff. This includes moving drugs into the space, i.e. can't do it until they give approval to use the space.
- Currently a 6 month backlog in the CAU. I verified this with Steven Lopez and Cari Lee after the meeting. CDPH recently hired 16 new "evaluators", but the current backlog is approximately 6 months. They expect that time to decrease but gave no estimates. Given this information, the "55-day" model in our project plans will likely have to be re-worked.

Cari Lee has been working closely with CDPH and has provided the attached applicant checklist.

ACTION REQUESTED

- Answers from CDPH on exact process for sterile compounding pharmacy changes. Is the information explained above and shared at the Fresno Round Table and expedited process for construction waiver application approvals? Can the information above be placed into the CDPH applicant checklist and distributed?

DISCUSSION QUESTIONS

1. How does the above mentioned call to GACH pharmacy coincide with the actually CDPH CAU process?
2. How does the construction waiver renewal process work?
3. Does the board of pharmacy, CDPH and OSHPD construction waiver reps still meet on construction waiver issues?
4. What other activities do we need to deploy to streamline the process?

Attachment: GACH – Pharmacy Clean Room and Sterile Compounding
OSHPD – Sterile Compounding Pharmacies – For Hospital Facilities – Advisory Guide Series
Board of Pharmacy, Enforcement and Compounding Committee Report, December 11, 2017

BJB:br

General Acute Care Hospital
Pharmacy Clean Room and Sterile Compounding
Applicant Checklist

For Pharmacy Clean Room and Sterile Compounding projects, submit the following documents to CAU.

Form #	Item #	Description	Checklist	
HS 200		Licensure & Certification Application – *Only complete the fields indicated below.* (Title 22, Section 70107)		
	A.1.	Type of Application • Choose "d. Other change"		
	A.4.	Type of Change • Choose "j. Other" specify "Pharmacy Clean Room/Sterile Compounding Project"		
	A.5.	Type of Facility, Agency, or Clinic Choose "j. General Acute Care Hospital"		
	A.11.	Construction (Title 22, Sections 70109, 70801 & 70803) • Choose "Yes" or "No" • If "YES," see the "Certificate of Occupancy" section below.	YES	NO
	B.1.	Licensee Name • Enter the licensee's name as filed with the Secretary of State.		
	C.2.	Name of "Current" facility, agency, or clinic • Enter facility name.		
	C.3.	Address of facility, agency or clinic • Enter pharmacy/compounding room address.		
	D.1. & D.2.	Property • If location is offsite (of the licensed location), provide proof of control of property – e.g., Deed, Lease, Rental Agreement, Title, etc.		
	F.1.	Signature		
Certificate Of Occupancy		If "YES" to construction on HS 200 A.11, submit certificate of occupancy issued by OSHPD.		
Floor Plan		Submit floor plan of pharmacy space.		
STD 850		Fire Safety Inspection Request • Must be completed by local fire authority. If fire authority requires CAU to provide STD 850 form to them, provide CAU with contact information for the local fire authority.		
Mobile Unit (if applicable)		Mobile Sterile Compounding Unit Submit the following:		
		• Vehicle Registration including ID, type & manufacturer (H&S 1765.120(a))		
		Control of Mobile Unit • Title, Lease, etc.		
		• CDPH approval of program flex for temporary use of mobile unit to meet patients' medication needs. (Title 22, 70267(a))		
		• Site Plan showing where mobile unit will be located.		
		• Photos of the mobile unit to include identifying information (VIN, license plate, Housing and Community Development (HCD) Insignia)		

OSHPD

STERILE COMPOUNDING PHARMACIES

A2

FOR HOSPITAL FACILITIES

(OSHPD 1 Buildings)

Advisory Guide Series

December 2017

INTRODUCTION

The California State Board of Pharmacy (BoP) has changed its regulations to ensure they reflect changes in current law as a result of SB 294 (Emmerson, Statutes of 2013, Chapter 565). The regulations also address the problem of ensuring that board regulations are aligned with compounding standards of United States Pharmacopeia (USP) <797> and USP <800>, which further ensures the safety of consumers receiving compounded drugs in California.

Specifically, the California State Board of Pharmacy has recently revised Title 16 California Code of Regulations (CCR), §1735 “Compounding in Licensed Pharmacies” & §1751 “Sterile Compounding,” promulgated in July of 2016 and enforceable January 1, 2017. There is some alignment with USP <797> and <800>.

The US Pharmacopeia is currently in the process of revising Chapter <USP 797> “Pharmaceutical Compounding – Sterile Preparations” in its entirety, and has finalized the new Chapter <USP 800> “Hazardous Drugs – Handling in Healthcare Settings.”

For further information on the California State Board of Pharmacy (BoP) regulations please refer to the Board of Pharmacy web page under the following address:

http://www.pharmacy.ca.gov/

Hospital facilities not currently meeting the subject regulations covered in these guidelines will require physical construction or alteration to a hospital building or its physical environment.

The BoP regulations became effective on January 1, 2017. Any compounding facilities not currently in compliance must submit a request for delay in compliance to the BoP if they have not already done so.

Suggested submittal items include:

- BoP Application
- Functional Program (see Checklist item 3)
- Validation of OSHPD Project Submittal (Preliminary or Final)

Please email all requests to: Compounding.Waivers@dca.ca.gov

The California Office of Statewide Planning and Development (OSHPD) has drafted this Advisory Guide in consultation with the California State Board of Pharmacy (BoP) and California Department of Public Health (CDPH).

TABLE OF CONTENTS

I. STERILE COMPOUNDING ENVIRONMENT TYPES

The diagrams and checklists in this *Advisory Guide* will present information for the two types of sterile compounding environments, each of which having unique requirements:

Non-Hazardous Sterile Compounding regulations set standards for an appropriate sterile environment for mixing compounded sterile products that present no hazard to the compounding technician/pharmacy staff.

Hazardous Sterile Compounding regulations set standards for an appropriate sterile environment for mixing compounded sterile products that present a health hazard to the compounding technician/pharmacy staff, and must also limit outside environmental exposure to adjoining rooms and at all ventilation discharge locations. Refer to "Hazardous" in the definitions, below, for application of this designation.

II. CODE REFERENCE INDEX

This *Advisory Guide* is the result of a joint effort between various regulatory authorities. Consequently, references from a number of code sources are included. The items/requirements on the following pages are categorized into groups as color-coded below:

RED –Code Sections designated in red are direct code requirements supported by Title 24, CCR, California Building Standards Code (CBSC) including the California Building Code (CBC), California Electrical Code (CEC), California Mechanical Code (CMC) and California Plumbing Code (CPC).

PURPLE – Code Sections designated in purple are indirect code requirements as standards referenced by the CBSC. These include requirements associated with Board of Pharmacy regulations Title 16 §1735 & §1751 and USP <797> & <800>. Although not direct requirements, they are referenced by the CBSC and will need to be in compliance with those regulations for licensure by the Board of Pharmacy and/or for CMS Sterile Compounding Pharmacies survey compliance.

BLUE – Items designated in blue are strongly recommended items and/or practical support of submitted project programmatic requirements.

BLACK – Black text is generally provided for reference and context.

This guide is to be used for reference only. Whereas it presents code information regarding key elements of sterile compounding environments, this guide shall not be considered a complete representation of all requirements. Compliance with applicable laws, regulations and codes are the responsibility of the design professional in responsible charge, in accordance with California Administrative Code section 7-115.

III. DEFINITIONS

Ante-area: means an area with ISO Class 8 or better air quality where personnel hand hygiene and garbing procedures, staging of components, and other high-particulate-generating activities are performed, that is adjacent to the area designated for sterile compounding. It is a transition area that begins the systematic reduction of particles, prevents large fluctuations in air temperature and pressures in the cleanroom, and maintains air flows from clean to dirty areas. ISO Class 7 or better air quality is required for ante-areas providing air to a negative pressure room. [1735.1(a)]

Beyond use date (BUD): means the date, or date and time, after which administration of a compounded drug preparation shall not begin, the preparation shall not be dispensed, and the preparation shall not be stored (other than for quarantine purposes). [1735.1(b)]

> Refer to *1751.8. Beyond Use Dating for Sterile Compounded Drug Preparations* for further information regarding determination of allowable BUDs within various environments.

Biological Safety Cabinet (BSC): means a ventilated cabinet for compounding sterile drug preparations, having an open front with inward airflow for personnel protection, downward HEPA-filtered laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection. Where hazardous drugs are prepared, the exhaust air from the biological safety cabinet shall be appropriately removed by properly designed external building ventilation. This external venting (i.e. exhaust) should be dedicated to one BSC or Compounding Aseptic Containment Isolator (CACI). [1735.1(c)]

> These cabinets are divided into three general classes (Class I, Class II, and Class III). Class II BSCs are further divided into types (Type A1, Type A2, Type B1, and Type B2). See *Appendix 3* for details. [USP <800>]

Buffer Room or Buffer Area: is a term that is interchangeable with Cleanroom or Clean Area. See also definition for “Cleanroom or Clean Area”.

(1) As referenced in USP <797> an area where the primary engineering control (PEC) is physically located. Activities that occur in this area include the preparation and staging of components and supplies used when compounding CSPs.

(2) As referenced in USP <800> for Hazardous Compounding: A type of secondary engineering control (C-SEC) under negative pressure that meets ISO Class 7 or better air quality where the primary engineering control (C-PEC) that generates and maintains an ISO Class 5 environment is physically located. Activities that occur in this area are limited to the preparation and staging of components and supplies used when compounding HDs.

Classified space: An area that maintains an air cleanliness classification based on the International Organization for Standardization (ISO). [USP <800>]

Cleanroom or Clean Area: means a room or area with HEPA-filtered air that provides ISO Class 7 or better air quality where the primary engineering control (PEC) is physically located.

[1735.1(e)] This term is interchangeable with Buffer Room or Buffer Area. See also definition for “Buffer Room or Buffer Area”.

(1) For nonhazardous compounding at least 30 air changes per hour of HEPA-filtered supply air [USP <797>] and a positive pressure differential of 0.02- to 0.05-inch water column relative to all adjacent spaces is required.

(2) For hazardous compounding at least 30 air changes per hour of HEPA-filtered supply air and a negative pressure of between 0.01 to 0.03 inches of water column relative to all adjacent spaces is required.

Compounded Sterile Preparations (CSP): A preparation intended to be sterile that is created by combining, diluting, pooling, or otherwise altering a drug product or bulk drug substance. A product produced by reconstituting a conventionally manufactured product for an individual patient strictly in accordance with the directions contained in the approved labeling provided by the product manufacturer is not considered a CSP for the purposed of this guide. [USP <797>]

Compounding Aseptic Containment Isolator (CACI): means a unidirectional HEPA-filtered airflow compounding aseptic isolator (CAI) designed to provide worker protection from exposure to undesirable levels of airborne drug throughout the compounding and material transfer processes and to provide an aseptic environment for compounding sterile preparations. Air exchange with the surrounding environment should not occur unless the air is first passed through a microbial retentive filter (HEPA minimum) system capable of containing airborne concentrations of the physical size and state of the drug being compounded. Where hazardous drugs are prepared, the exhaust air from the isolator shall be appropriately removed by properly designed external building ventilation. This external venting should be dedicated to one Biological Safety Cabinet (BSC) or CACI. Air within the CACI shall not be recirculated nor turbulent. [1735.1(f)]

Also referenced in USP <800> as a specific type of CAI that is designed for the compounding of sterile HDs. The CACI is designed to provide worker protection from exposure to undesirable levels of airborne drugs throughout the compounding and material transfer processes and to provide an aseptic environment with unidirectional airflow for compounding sterile preparations.

Compounding Aseptic Isolator (CAI): means a form of isolator specifically designed for non-hazardous compounding of pharmaceutical ingredients or preparations while bathed with unidirectional HEPA-filtered air. It is designed to maintain an aseptic compounding environment within the isolator throughout the compounding and material transfer processes. Air exchange into the isolator from the surrounding environment should not occur unless the air has first passed through a microbial retentive filter (HEPA minimum) system capable of containing airborne concentrations of the physical size and state of the drug being compounded. Air within the CAI shall not be recirculated nor turbulent. [1735.1(g)]

Also referenced in USP <800> as an isolator specifically designed for compounding sterile, non-hazardous pharmaceutical ingredients or preparations. The CAI is designed to maintain an aseptic compounding environment throughout the compounding and material transfer processes.

Compounding Workstation: is a term used to describe the Primary Engineering Control. Terms are interchangeable. See definition for “Primary Engineering Control (PEC)”.

Controlled room temperature: means 20 degrees to 25 degrees C (68 degrees to 77 degrees F). [1735.1(j)]

Displacement airflow method: means a concept which utilizes a low pressure differential, high airflow principle to maintain segregation from the adjacent ante-area by means of specific pressure differentials. This principle of displacement airflow shall require an air velocity of 40 ft per minute or more, from floor to ceiling and wall to wall, from the clean area across the line of demarcation into the ante-area. The displacement concept may not be used to maintain clean area requirements for sterile compounds which originate from any ingredient that was at any time non-sterile, regardless of intervening sterilization of the ingredient, or for hazardous compounds. [1735.1(m)]

Doff: to remove personal protective equipment (PPE). [USP <800>]

Don: to put on personal protective equipment (PPE). [USP <800>]

Equipment: means items that must be calibrated, maintained or periodically certified. [1735.1(o)]

First air: means the air exiting the HEPA filter in a unidirectional air stream that is essentially particle free. [1735.1(p)]

Hazardous: see also "Hazardous Drug". Means all anti-neoplastic agents identified by the National Institute for Occupational Safety and Health (NIOSH) as meeting the criteria for a hazardous drug and any other drugs, compounds, or materials identified as hazardous by the pharmacist-in-charge. [1735.1(r)] See also "Hazardous Drug".

Hazardous Drug (HD): see also "Hazardous". Any drug identified by at least one of the following criteria: [USP <800>]

- Carcinogenicity, teratogenicity, or developmental toxicity
- Reproductive toxicity in humans
- Organ toxicity at low dose in humans or animals

Laminar Air Flow Workbench (LFW or LAFW): a Primary Engineering Control (PEC) that is a type of laminar airflow system that provided an ISO Class 5 or better environment for sterile compounding. The device provides a unidirectional HEPA-fileted airflow. An LAFW shall not be used for the manipulation of hazardous drugs (HD's). [USP 797 & USP 800]

Parenteral: means a preparation of drugs administered in a manner other than through the digestive tract. It does not include topical, sublingual, rectal or buccal routes of administration. [1735.1(w)]

Personal protective equipment (PPE): means clothing or devices that protect the employee from exposure to compounding ingredients and/or potential toxins and minimize the contamination of compounded preparations. These include shoe covers, head and facial hair covers, face masks, gowns, and gloves. [1735.1(x)]

Preparation: means a drug or nutrient compounded in a licensed pharmacy; the preparation may or may not be sterile. [1735.1(z)]

Primary Engineering Control (PEC or C-PEC): means a device that provides an ISO Class 5 or better environment through the use of non-turbulent, unidirectional HEPA-filtered first air for compounding sterile preparations. Examples of PEC devices include, but are not limited to, laminar airflow workbenches, biological safety cabinets, sterile compounding automated robots, compounding aseptic isolators, and compounding aseptic containment isolators. [1735.1(ab)]

Also referenced in USP <800> as Containment Primary Engineering Control (C-PEC). A ventilated device designed and operated to minimize worker and environmental exposures to HDs by controlling emissions of airborne contaminants through the following:

- The full or partial enclosure of a potential contaminant source
- The use of airflow capture velocities to trap and remove airborne contaminants near their point of generation
- The use of air pressure relationships that define the direction of airflow into the cabinet
- The use of HEPA filtration on all potentially contaminated exhaust streams

Product: means a commercially manufactured drug or nutrient evaluated for safety and efficacy by the FDA. [1735.1(ad)]

Secondary Engineering Control (SEC or C-SEC): also known as Containment Secondary Engineering Control (C-SEC)**.** The room with fixed walls in which the PEC is placed. It incorporates specific design and operational parameters required to contain the potential hazard within the compounding room. [USP <797>, USP<800>]

Segregated Sterile Compounding Area (SCA or S-SCA): means a designated space for sterile-to-sterile compounding where a PEC is located within either a demarcated area (at least three-foot perimeter) or in a separate room. Such area or room shall not contain and shall be void of activities and materials that are extraneous to sterile compounding. The segregated sterile compounding area shall not be in a location that has unsealed windows or doors that connect to the outdoors, in a location with high traffic flow, or in a location that is adjacent to construction sites, warehouses, or food preparation. The segregated sterile compounding area shall not have a sink, other than an emergency eye-washing station, located within one meter of a PEC. The segregated sterile compounding area shall be restricted to preparation of sterile-to-sterile compounded preparations. [1735.1(af)]

(1) The BUD of a sterile drug preparation made in a segregated sterile compounding area is limited to 12 hours or less as defined by section 1751.8(d).

(2)) When the PEC in the segregated sterile compounding area is a CAI or a CACI and the documentation provided by the manufacturer shows it meets the requirements listed in section 1751.4(f)(1)-(3), the assigned BUD shall comply with section 1751.8(a-b) or (d).

Unclassified space: A space not required to meet any air cleanliness classification based on the International Organization for Standardization (ISO). [USP <800>]

IV. TITLE 16, DIVISION 17 CODE REFERENCES – SELECT EXCERPTS

ARTICLE 4.5

1735.6. COMPOUNDING FACILITES AND EQUIPMENT

(a) Any pharmacy engaged in compounding shall maintain written documentation regarding the facilities and equipment necessary for safe and accurate compounding of compounded drug preparations. This shall include records of maintenance and cleaning of the facilities and equipment. Where applicable, this shall also include records of certification(s) of facilities or equipment.

(b) Any equipment used to compound drug preparations shall be stored, used, maintained, and cleaned in accordance with manufacturers' specifications.

(c) Any equipment that weighs, measures, or transfers ingredients used to compound drug preparations for which calibration or adjustment is appropriate shall be calibrated prior to use, on a schedule and by a method determined by the manufacturer's specifications, to ensure accuracy. Documentation of each such calibration shall be recorded in a form which is not alterable and these records of calibration shall be maintained and retained in the pharmacy.

(d) Any pharmacy engaged in any hazardous drug compounding shall maintain written documentation regarding appropriate cleaning of facilities and equipment to prevent cross-contamination with non-hazardous drugs.

(e) Hazardous drug compounding shall be completed in an externally vented physically separate room with the following requirements:

(1) Minimum of 30 air changes per hour except that 12 air changes per hour are acceptable for segregated compounding areas with a BSC or CACI when products are assigned a BUD of 12 hrs or less or when non sterile products are compounded; and

(2) Maintained at a negative pressure of 0.01 to 0.03 inches of water column relative to all adjacent spaces (rooms, above ceiling, and corridors); and

(3) Each PEC in the room shall also be externally vented; and

(4) All surfaces within the room shall be smooth, seamless, impervious, and non-shedding.

(f) Where compliance with the January 1, 2017 amendments to Article 4.5 or Article 7, requires physical construction or alteration to a facility or physical environment, the board or its designee may grant a waiver of such compliance for a period of time to permit such physical change(s). Application for any waiver shall be made by the licensee in writing, and the request shall identify the provision(s) requiring physical construction or alteration, and the timeline for any such change(s). The board or its designee may grant the waiver when, in its discretion, good cause is demonstrated for such waiver.

ARTICLE 7. STERILE COMPOUNDING

1751. STERILE COMPOUNDING; COMPOUNDING AREA; SELF-ASSESSMENT

(a) Any pharmacy engaged in compounding sterile drug preparations shall conform to the parameters and requirements stated by Article 4.5 (Section 1735 et seq.), applicable to all compounding, and shall also conform to the parameters and requirements stated by this Article 7 (Section 1751 et seq.), applicable solely to sterile compounding.

(b) Any pharmacy compounding sterile drug preparations shall have a compounding area designated for the preparation of sterile drug preparations that is in a restricted location where traffic has no impact on the performance of the PEC(s). The cleanroom, including the walls, ceilings, and floors, shall be constructed in accordance with Section 1250.4 of Title 24, Part 2, Chapter 12, of the California Code of Regulations. The pharmacy shall be ventilated in a manner in accordance with Section 505.5 of Title 24, Part 4, Chapter 5 of the California Code of Regulations. The environments within the pharmacy shall meet the following standards:

(1) Each ISO environment shall be certified at least every six months by a qualified technician in accordance with Section 1751.4. Certification records must be retained in the pharmacy.

(2) Items related to the compounding of sterile drug preparations within the compounding area shall be stored in such a way as to maintain the integrity of an aseptic environment.

(3) A sink shall be included in accordance with Section 1250.4 of Title 24, Part 2, Chapter 12, of the California Code of Regulations. Sinks and drains shall not be present in any ISO Class 7 or better cleanroom, nor in a segregated sterile compounding area within one meter of an ISO Class 5 or better PEC, with the exception of emergency eye-rinsing stations. A sink may be located in an ante-area. When the PEC in the segregated sterile compounding area is a CAI or CACI and the documentation provided by the manufacturer shows it meets the requirements listed in 1751.4(f)(1)-(3) the sterile compounding area is exempt from the room requirement listed in 1751(b)(3).

(4) There shall be a refrigerator and, where appropriate, a freezer, of sufficient capacity to meet the storage requirements for all material requiring refrigeration or freezing, and a backup plan to ensure continuity of available compounded drug preparations in the event of a power outage.

1751.4. FACILITY and EQUIPMENT STANDARDS for STERILE COMPOUNDING

(a) No sterile drug preparation shall be compounded if it is known, or reasonably should be known, that the compounding environment fails to meet criteria specified in the pharmacy's written policies and procedures for the safe compounding of sterile drug preparations.

(b) During the compounding of sterile drug preparations, access to the areas designated for compounding must be limited to those individuals who are properly attired.

(c) All equipment used in the areas designated for compounding must be made of a material that can be easily cleaned and disinfected.

(d) Cleaning shall be done using a germicidal detergent and sterile water. The use of a sporicidal agent is required to be used at least monthly.

(1) All ISO Class 5 surfaces, worktable surfaces, carts, counters, and the cleanroom floor shall be cleaned at least daily. After each cleaning, disinfection using a suitable sterile agent shall occur on all ISO Class 5 surfaces, worktable surfaces, carts, and counters.

(2) Walls, ceilings, storage shelving, tables, stools, and all other items in the ISO Class 7 or ISO Class 8 environment shall be cleaned at least monthly.

(3) Cleaning shall also occur after any unanticipated event that could increase the risk of contamination.

(4) All cleaning materials, such as wipers, sponges, and mops, shall be non-shedding and dedicated to use in the cleanroom, or ante-area, and segregated sterile compounding areas and shall not be removed from these areas except for disposal.

(e) Disinfection, using a suitable sterile agent, shall also occur on all surfaces in the ISO Class 5 PEC frequently, including:

(1) At the beginning of each shift;

(2) At least every 30 minutes when compounding involving human staff is occurring or before each lot;

(3) After each spill; and

(4) When surface contamination is known or suspected.

(f) Pharmacies preparing sterile compounded preparations require the use of a PEC that provides ISO Class 5 air or better air quality. Certification and testing of primary and secondary engineering controls shall be performed no less than every six months and whenever the device or area designated for compounding is relocated, altered or a service to the facility is performed that would impact the device or area. Certification must be completed by a qualified technician who is familiar with certification methods and procedures in accordance with CETA Certification Guide for Sterile Compounding Facilities (CAG-003-2006-13, Revised May 20, 2015), which is hereby incorporated by reference. Certification records must be retained for at least 3 years. Unidirectional compounding aseptic isolators or compounding aseptic

containment isolators may be used outside of an ISO Class 7 cleanroom if the isolator is certified to meet the following criteria:

(1) Particle counts sampled approximately 6-12 inches upstream of the critical exposure site shall maintain ISO Class 5 levels during compounding operations.

(2) Not more than 3520 particles (0.5 um and larger) per cubic meter shall be counted during material transfer, with the particle counter probe located as near to the transfer door as possible without obstructing transfer.

(3) Recovery time to achieve ISO Class 5 air quality shall be documented and internal procedures developed to ensure that adequate recovery time is allowed after material transfer before and during compounding operations. Compounding aseptic isolators that do not meet the requirements as outlined in this subdivision or are not located within an ISO Class 7 cleanroom may only be used to compound preparations that meet the criteria specified in accordance with subdivision (d) of Section 1751.8 of Title 16, Division 17, of the California Code of Regulations.

(g) Pharmacies preparing sterile hazardous agents shall do so in accordance with Section 505.5.1 of Title 24, Chapter 5, of the California Code of Regulations, requiring a negative pressure PEC. Additionally, each PEC used to compound hazardous agents shall be externally vented. The negative pressure PEC must be certified every six months by a qualified technician who is familiar with CETA Certification Guide for Sterile Compounding Facilities (CAG-003-2006-13, Revised May 20, 2015), which is hereby incorporated by reference. Any drug preparation that is compounded in a PEC where hazardous drugs are prepared must be labeled as hazardous, regardless of whether the drug ingredients are considered hazardous.

(1) During the hazardous drug compounding that is performed in a compounding aseptic containment isolator, full hand hygiene and garbing must occur. Garbing shall include hair cover, facemask, beard cover (if applicable), polypropylene or low shedding gown that closes in the back, shoe covers, and two pairs of sterile ASTM D6978-05 standard gloves.

(h) If a compounding aseptic isolator is certified by the manufacturer to maintain ISO Class 5 air quality during dynamic operation conditions during compounding as well as during the transfer of ingredients into and out of the compounding aseptic isolator, then it may be placed into a non-ISO classified room. Individuals that use compounding aseptic isolators in this manner must ensure appropriate garbing, which consists of donning sterile gloves over the isolator gloves immediately before non-hazardous compounding. These sterile gloves must be changed by each individual whenever continuous compounding is ceased and before compounding starts again.

(i) Compounding aseptic isolator and compounding aseptic containment isolator used in the compounding of sterile drug preparations shall use non-turbulent unidirectional air flow patterns. A smoke patterned test shall be used to determine air flow patterns.

(j) Viable surface sampling shall be done at least every six months for all sterile-to-sterile compounding and quarterly for all non-sterile-to-sterile compounding. Viable air sampling shall be done by volumetric air sampling procedures which test a sufficient volume of air (400 to 1,000 liters) at each location and shall be done at least once every six months. Viable surface and viable air sampling shall be performed by a qualified individual who is familiar with the methods and procedures for surface testing and air sampling. Viable air sampling is to be performed under dynamic conditions that simulate actual production. Viable surface sampling is to be performed under dynamic conditions of actual compounding. When the environmental monitoring action levels are exceeded, the pharmacy shall identify the CFUs at least to the genus level in addition to conducting an investigation pursuant to its policies and procedures. Remediation shall include, at minimum, an immediate investigation of cleaning and compounding operations and facility management.

(k) The sterile compounding area in the pharmacy shall have a comfortable and well-lighted working environment, which includes a room temperature of 20-24 degrees Celsius (68-75 degrees Fahrenheit) or cooler to maintain comfortable conditions for compounding personnel when attired in the required compounding garb.

(l) A licensee may request a waiver of these provisions as provided in section 1735.6(f).

1751.5. STERILE COMPOUNDING ATTIRE

(a) When compounding sterile drug preparations the following standards must be met:

(1) Personal protective equipment consisting of a non-shedding gown, head cover, face mask, facial hair covers (if applicable), and shoe covers must be worn inside the designated area at all times. For hazardous compounding double shoe covers are required.

(2) Personal protective equipment must be donned and removed in an ante-area or immediately outside the segregated compounding area. (Note: Per USP 800, for HD compounding, the outermost gown, glove and booties should be removed before exiting the Clean/Buffer Room and before entering the Ante Area/Room.)

(3) Personnel shall don personal protective equipment in an order that proceeds from those activities considered the dirtiest to those considered the cleanest. The following order is to be followed unless the pharmacy has a procedure in place that documents a method equivalent to or superior to the method described here: The donning of shoe covers or dedicated shoes, head and facial hair covers and face masks shall be followed by the washing of hands and forearms up to the elbows for 30 seconds with soap and water, drying hands, and then the donning of a non-shedding gown.

(4) Compounding personnel shall not wear any wrist, hand, finger, or other visible jewelry, piercing, headphones, earbuds, or personal electronic device.

(5) Sterile gloves that have been tested for compatibility with disinfection with isopropyl alcohol are required. Hand cleansing with a persistently active alcohol-based product followed by the donning of sterile gloves may occur within the ante or cleanroom. Gloves are to be routinely disinfected with sterile 70 percent isopropyl alcohol before entering or re-entering the PEC and after contact with non-sterile objects. Gloves shall also be routinely inspected for holes, punctures, or tears and replaced immediately if such are detected.

(6) Individuals experiencing exposed rashes, sunburn, weeping sores, conjunctivitis, active respiratory infections or other communicable disease, or those wearing cosmetics, nail polish, or artificial nails shall be excluded from the ISO Class 5 and ISO Class 7 compounding areas until their conditions are remedied.

(b) When preparing hazardous agents, appropriate gowns and personal protective equipment shall be worn regardless of the PECs used (e.g., biological safety cabinet and compounding aseptic containment isolator).

V. TITLE 24, PARTS 2, 3, 4 and 5 CODE REFERENCES – SELECT EXCERPTS

PART 2: CALIFORNIA BUILDING CODE

1224.19 PHARMACEUTICAL SERVICE SPACE
…The pharmacy room or service space shall conform to the requirements of §1751, Article 7, Division 17, Title 16, California Code of Regulations as enforced by the California Board of Pharmacy.

1224.19.1.1 Handwashing fixture. *Handwashing fixture(s) shall be provided within each separate room where open medication is handled, or in an anteroom, or immediately outside the room where open medication is handled, still within the pharmaceutical service space.*

> ***Exception:*** *ISO Class 5 sterile preparation areas (e.g. chemotherapy and intravenous solutions) and their ISO Class 7 buffer area(s) shall not contain sources of water (sinks) or floor drains. However, the anteroom to the buffer area shall have a hand-washing fixture regardless of its intended ISO Classification (i.e. Class 7 or Class 8). Reference: U.S. Pharmacopeia (USP) 797 Pharmaceutical Compounding – Sterile Preparations.*

1224.19.1.2 Location. *Provide for immediate accessibility to staff toilet rooms and lockers (toilet room is not required in satellite pharmacy if other staff facilities are available nearby).*

1250 PHARMACIES

1250.1 Application. *This section applies to pharmacies listed in Section 1.4.1 regulated by the Department of Consumer Affairs.*

1250.2 Restrooms. *A pharmacy shall maintain a readily accessible restroom. The restroom shall contain a toilet and washbasin supplied with running water.*

1250.3 Sink. *All pharmacies shall be equipped with a sink within the pharmacy for pharmaceutical purposes. The sink shall be supplied with hot and cold running water.*

1250.4 Compounding area for parenteral solutions. *The pharmacy shall have a designated area for the preparation of sterile products for dispensing which shall:*

1. *1. In accordance with Federal Standard 209 (b), Clean Room and Work Station Requirements, Controlled Environment as approved by the Commission, Federal Supply Service, General Service Administration meet standards for Class 100 HEPA (high efficiency particulate air) filtered air such as laminar airflow hood or clean room.*

2. *Have nonporous and cleanable surfaces, ceilings and ceiling tiles, walls, floors and floor coverings.*

3. *The pharmacy shall be arranged in such a manner that the laminar-flow hood is located in an area which is exposed to minimal traffic flow, and is separate from any area used for bulk storage of items not related to the compounding of parenteral solutions.*

4. *A sink with hot and cold running water must be within the parenteral solution compounding area or adjacent to it.*

5. *Any pharmacy that compounds sterile injectable products from one or more nonsterile ingredients must compound the medication in one of the following environments:*

   5.1 An ISO class 5 laminar airflow hood within an ISO class 7 cleanroom. The cleanroom must have a positive air pressure differential relative to adjacent areas.

   5.2 An ISO class 5 cleanroom.

   5.3 A barrier isolator that provides an ISO class 5 environment for compounding.

   Note: For additional pharmacy mechanical standard requirements, see Chapter 5, California Mechanical Code.

PART 3: CALIFORNIA ELECTRICAL CODE

517.33 Critical Branch.

(A) Task Illumination and Selected Receptacles. *The critical branch of the essential electrical system shall supply power for task illumination, fixed equipment, selected receptacles, and special power circuits serving the following areas and functions related to patient care:*

(3) Patient care areas - task illumination and selected receptacles in the following:

b. Medication preparation areas
c. Pharmacy dispensing areas

517.34 Equipment Branch Connection to Alternate Power Source. *The equipment branch shall be installed and connected to the alternate power source such that the equipment described in 517.34(A) is automatically restored to operation at appropriate time-lag intervals following the energizing of the essential electrical system. Its arrangement shall also provide for the subsequent connection of equipment described in 517.34(B). [99:6.4.2.2.5.2]*

(B) Equipment for Delayed Automatic or Manual Connection. *The following equipment shall be permitted to be arranged for either delayed automatic or manual connection to the alternate power source:*

(1.1) [OSHPD 1 & 4] Heating, ventilating and cooling equipment as required by the California Mechanical Code.

(7) Controls for equipment listed in 517.34.

PART 4: CALIFORNIA MECHANICAL CODE

321.4 *All supply, return, and exhaust fans required to maintain the positive and negative air balances as required in Table 4-A.*

321.5 *All control components and control systems necessary for the normal operation of equipment required to have essential electrical power.*

407.4.1 *Design of the ventilation system shall provide air movement that is generally from clean to less clean areas.*

502.2.1 *Environmental Air Ducts. Environmental air duct exhaust shall terminate not less than 3 feet (914 mm) from a property line, 10 feet (3048 mm) from a forced air inlet, and 3 feet (914mm) from openings into the building. Environmental exhaust ducts shall not discharge onto a public walkway.*

502.2.2 *Product Conveying Ducts. Ducts conveying explosive or flammable vapors, fumes, or dusts shall terminate not less than 30 feet (9144 mm) from a property line, 10 feet (3048 mm) from openings into the building, 6 feet (1829 mm) from exterior walls or roofs, 30 feet (9144 mm) from combustible walls or openings into the building that are in the direction of the exhaust discharge, and 10 feet (3048 mm) above adjoining grade.*

Other product-conveying outlets shall terminate not less than 10 feet (3048 mm) from a property line, 3 feet (914mm) from exterior walls or roofs, 10 feet (3048 mm) from openings into the building, and 10 feet (3048 mm) above adjoining grade.

505.0 Product-Conveying Systems.

505.1 General. *A mechanical ventilation or exhaust system shall be installed to control, capture, and remove emissions generated from product use or handling where required in accordance with the building code or fire code and where such emissions result in a hazard to life or property. The design of the system shall be such that the emissions are confined to the area in which they are generated by air currents, hoods, or enclosures and shall be exhausted by a duct system to a safe location or treated by removing contaminants. Ducts conveying explosives or flammable vapors, fumes, or dusts shall extend directly to the exterior of the building without entering other spaces and shall not extend into or through ducts and plenums.*

Exception: Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their Lower Flammability Limit (LFL) shall be permitted to pass through other spaces.

505.1.1 Incompatible Materials*. Incompatible materials shall not be conveyed in the same exhaust system. | [NFPA 91:4.1.2]*

505.1.2 Flammability Limit. *In systems conveying flammable vapors, gases, or mists, the concentration shall not exceed 25 percent of the lower flammability limit (LFL).*

Exception: Higher concentrations shall be permitted where the exhaust system is designed and protected in accordance with the Standard on Explosion Prevention Systems in Chapter 1 7, using one or more of the following techniques:

(1) Combustible concentration reduction
(2) Oxidant concentration reduction
(3) Deflagration suppression
(4) Deflagration pressure containment [NFPA 91:4.1.3, 4.1.3. 1]

Contaminated air shall not be recirculated to occupied areas unless contaminants have been removed. Air contaminated with explosive or flammable vapors, fumes, or dusts; flammable or toxic gases; or radioactive material shall not be recirculated.

***505.1.3 Mechanical Ventilation**. A mechanical ventilation system shall be interlocked to operate with the equipment used to produce vapors, fumes, or dusts that are flammable or hazardous.*

***505.2 Penetrations**. Fire dampers shall not be installed where the material being exhausted is toxic and where a risk evaluation indicates that the toxic hazard is more than the fire hazard. Exhaust ducts shall not pass through fire walls. [NFPA 91:4.1.10, 4.1.11]*

***505.3 Product-Conveying Ducts Classification.** Product-conveying ducts shall be classified according to their use, as follows:*

> *Class 1 - Ducts conveying nonabrasives, such as smoke, spray, mists, fogs, noncorrosive fumes and gases, light fine dusts, or powders.*
>
> *Class 2 - Ducts conveying moderately abrasive particulate in light concentrations, such as sawdust and grain dust, and buffing and polishing dust.*
>
> *Class 3 - Ducts conveying Class 2 materials in high concentrations and highly abrasive materials in low concentrations, such as manganese, steel chips, and coke.*
>
> *Class 4 - Ducts conveying highly abrasive material in high concentrations.*
>
> *Class 5 - Ducts conveying corrosives, such as acid vapors.*

***505. 7 Pharmacies** - CompoundingArea ofParenteral Solutions. [CA - Board ofPharmacy] The pharmacy shall have a designated area for the preparation ofsterile products for dispensing which shall he ventilated in a manner not interfering with laminar airflow.*

Note: For additional pharmacy building standard requirements, see Chapter 12, California Building Code.

> ***505. 7.1 Pharmacies** - Laminar Flow Biological Safety Cabinet. [CA - Board of Pharmacy] In all pharmacies preparing parenteral cytotoxic agents, all compounding shall be conducted within a certified Class II TypeA or Class II TypeB vertical laminar airflow hood with bag in - bag out*

design. The pharmacy must ensure that contaminated air plenums that are underpositive air pressure are leak tight. Note: For additional pharmacy building standard requirements, see Chapter 12, California Building Code.

512.1 Dampers. *Dampers shall not be installed in exhaust ducts or exhaust duct systems. [NFPA 96:9.1.1]*

PART 5: CALIFORNIA PLUMBING CODE

416.0 Emergency Eyewash and Shower Equipment.

416.1 Application. *Emergency eyewash and shower equipment shall comply with ISEA Z358. 1.*

416.2 Water Supply. *Emergency eyewash and shower equipment shall not be limited in the water supply flow rates. Flow rate, discharge pattern, and temperature of flushing fluids shall be provided in accordance with ISEA Z358.1 based on the hazardous material.*

416.3 Installation. *Emergency eyewash and shower equipment shall be installed in accordance with the manufacturer's installation instructions.*

416.4 Location. *Emergency eyewash and shower equipment shall be located on the same level as the hazard and accessible for immediate use. The path of travel shall be free of obstructions and shall be clearly identified with signage.*

416.5 Drain. *A drain shall not be required for emergency eyewash or shower equipment. Where a drain is provided, the diseharge shall be in accordance with Section 811.0.*

VI. USP <797> – SELECT REQUIREMENTS for STERILE COMPOUNDING

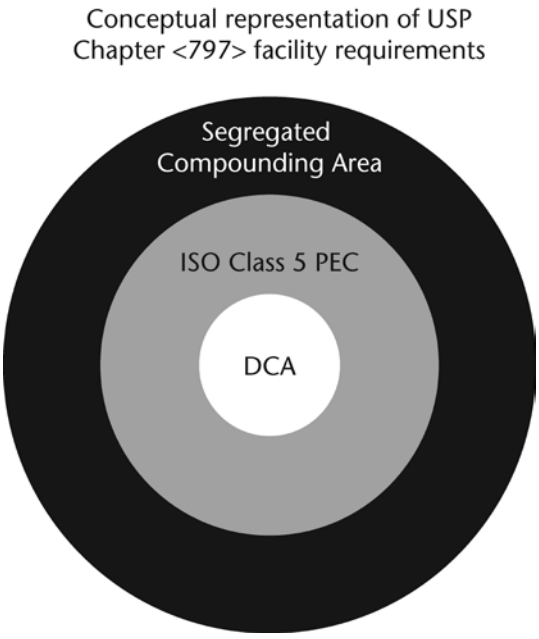


Figure 1. Conceptual representation of the placement of an ISO Class 5 PEC in a segregated compounding area used for low-risk level CSPs with 12-hour or less BUD.

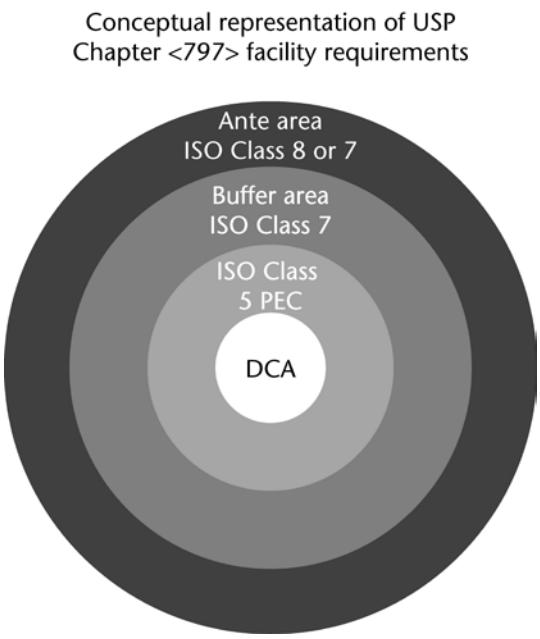


Figure 2. Conceptual representation of the arrangement of a facility for preparation of CSPs categorized as low-, medium-, and high-risk level.

DCA = Direct Compounding Area

VII. USP <800> – SELECT REQUIREMENTS for HAZARDOUS DRUG STERILE COMPOUNDING

5.2 HD STORAGE

HDs must be stored in a manner that prevents spillage or breakage if the container falls. Do not store HDs on the floor. In areas prone to specific types of natural disasters (e.g., earthquakes) the manner of storage must meet applicable safety precautions, such as secure shelves with raised front lips.

Antineoplastic HDs requiring manipulation other than counting or repackaging of final dosage forms and any HD API must be stored separately from non-HDs in a manner that prevents contamination and personnel exposure. These HDs must be stored in an externally ventilated, negative-pressure room with at least 12 air changes per hour (ACPH). Non-antineoplastic, reproductive risk only, and final dosage forms of antineoplastic HDs may be stored with other inventory if permitted by entity policy.

Sterile and nonsterile HDs may be stored together, but HDs used for nonsterile compounding should not be stored in areas designated for sterile compounding to minimize traffic into the sterile compounding area.

Refrigerated antineoplastic HDs must be stored in a dedicated refrigerator in a negative pressure area with at least 12 ACPH [e.g., storage room, buffer room, or containment segregated compounding area (C-SCA)]. If a refrigerator is placed in a negative pressure buffer room, an exhaust located adjacent to the refrigerator's compressor and behind the refrigerator should be considered.

5.3 COMPOUNDING

Sterile hazardous drugs (HD) must be compounded within a C-PEC located in a C-SEC. The C-SEC used for sterile compounding must:

- Be externally vented
- Be physically separated (i.e. a different room from other preparation areas)
- Have minimum air exchange rate of at least 30 ACPH / 12 ACPH for segregated environment
- Have a negative pressure between 0.01 and 0.03 inches of water column relative to all adjacent areas

The C-PEC must operate continuously if it supplies some or all of the negative pressure in the C-SEC, or if it is used for sterile compounding. Refer to USP <800> regarding loss of power or shut-down.

A sink and eyewash must be readily available, however, restrictions regarding water sources and drains apply if placed within the C-SEC. Their placement must prohibit interference with required ISO classifications.

All water sources and drains must be located at least 1 meter away from the C-PEC.

(Refer to to USP <800> for further requirements regarding environments that compound both nonsterile and sterile HDs.)

5.3.2 STERILE COMPOUNDING

In addition to the requirements of USP <800>, sterile compounding must also meet the requirements of USP <797>.

All C-PECs used for sterile HDs must be externally vented and provide an ISO Class 5 or better air quality. Refer to USP <800> for specific types of allowable and prohibited C-PECs.

The C-PEC must be located in a C-SEC, which is to also be externally vented and may be either:

- An ISO Class 7 buffer room with an ISO Class 7 ante-room:
    - The buffer room must have fixed walls, HEPA-filtered supply air, and meet the C-SEC requirements in Table 3, below. It shall be negative pressure relative to the ante-room.
    - The ante-room must have fixed walls, HEPA-filtered supply air and maintain a positive pressure of at least 0.02 inches of water column relative to all adjacent unclassified areas. It shall meet air quality of ISO Class 7 or better, with a minimum of 30 ACPH. A required sink capable of hand-washing up to the elbows must be placed a minimum of one meter away from the entrance to the HD buffer room.
- An unclassified containment segregated compounding area (C-SCA) with limitations on the BUDs per USP <797>:
    - Must have fixed walls, and meet the C-SCA requirements in Table 3, below.
    - A hand-washing sink capable of washing up to the elbows must be placed at least one meter from the C-PEC and may be either inside the C-SCA or directly outside the C-SCA.
    - Only applicable to low-risk and medium-risk HD CSPs, and must not exceed the BUDs described in USP <797> for CSPs prepared in a segregated compounding area.

Table 3. Engineering Controls for Sterile HD Compounding

Configuration	C-PEC	C-SEC	Maximum BUD
ISO Class 7 buffer room with an ISO Class 7 ante-room	*Externally Vented * Examples: Class II BSC or CACI	*Externally vented * 30 ACPH * Negative pressure between 0.01 and 0.03 inches of water column relative adjacent areas	As described in USP <797>
Unclassified C-SCA	*Externally Vented * Examples: Class II BSC or CACI	*Externally vented * 12 ACPH * Negative pressure between 0.01 and 0.03 inches of water column relative adjacent areas	As described in USP <797> for CSPs prepared in a segregated compounding area

VIII. OSHPD SUBMITTAL INSTRUCTIONS

1. In addition to code citations listed in this document, pharmacy projects, as with all construction, remodeling, and alteration of hospital buildings and structures, are required to be designed in conformance with applicable codes as noted in OSHPD CAN-1.

2. For those projects which are affected by local planning and zoning, evidence of approval is required as part of the submittal to OSHPD.

3. The *Checklist* portion of this guide in the following Appendix is provided to assist the design professional in responsible charge [CAC 7-115], in the preparation and submission of project documents. Inclusion of this checklist with all OSHPD submittals for sterile compounding projects will facilitate a more expeditious review.

4. *Appendix B - Pharmacy Summary Checklist* is required to assist CDPH in their review of pharmacy projects. This checklist is required for all OSHPD submittals for sterile compounding projects.

5. OSHPD projects that were created with an open project number via the eServices Portal must have a functional program, as described in *Checklist* item 3, and either a preliminary or final submittal received by the Office within 10 days. Open OSHPD project numbers without an accompanying submittal within 10 days of the creation of that number will be cancelled. The Board of Pharmacy will be notified of project number cancellations.

6. Facilities intending to use **mobile units** as an interim solution to maintaining compounding operations during construction must submit:

    a. An application to the Board of Pharmacy with an accompanying functional program, in order to confirm that the intended mobile unit has been assessed for conformance with applicable requirements for licensure, and that the mobile unit is acceptable for use at that facility in its proposed location.

    b. Construction documents to OSHPD per the guidelines listed in PIN 34 Review of Mobile Units Used for Outpatient Hospital Services, with an accompanying Alternate Method of Compliance (AMC) request for Program Flexibility (preliminary) for use of a mobile unit for inpatient sterile compounding. The AMC application shall be in accordance with the California Administrative Code (CAC) section 7-104, and include a functional program.

        i. BoP requires a ramp or lift to the trailer to provide for taking pharmaceutical products into and out of the trailer in a safe

manner. Based on Title 24, Part 2, Section 1224.19 it is incumbent to require this as a condition of AMC approval.

ii. A means for emergency power shall be available for the mobile unit for up to 72 hours of use due to loss of power. This may be integral to the unit, external or connected to Hospital system.

c. Functional programs shall address the following specific items in addition to the general information required by CAC section 7-119:
   i. Make and model of the mobile clean room unit and a brochure showing the interior design of the mobile unit.
   ii. A diagram of the intended site placement that includes path of travel from the mobile unit to the proposed destination of the compounded sterile products (CSP's) within the hospital. This could be either the hospital's Pharmacy Department, or the staff/service elevators intended for direct disbursement to the various patient care areas. Departmental boundaries along the CSP's interior path of travel must also be shown.
   iii. A statement of reason regarding use of the mobile unit, and the intended duration.

Please note that OSHPD approval is for construction identified in PIN 34. The Owner is to secure additional **separate** approvals as follows:

- The Board of Pharmacy for licensure of the mobile unit, based upon their initial application and subsequent onsite inspection and certification process at the end of construction.

- The California Department of Public Health for final Program Flexibility approval, which will be subject to prior approval processes by both OSHPD and the Board of Pharmacy. An onsite inspection by CDPH may be required prior to final approval for use. Program Flexibility may only be granted for a maximum of 12 months.
  CA Code of Regulations, Title 22, § 70267 (a)

7. Guideline for Mobile Units Used for Temporary Pharmacy Relocation
   a. Trailer design shall comply with State and National design standards for highways.
   b. Trailer is assumed to consist of 8 wheels in the back of trailer blocked to resist rolling, and two steel support legs in front connected to rubber or concrete pads capable of limiting punching shear of bearing surface when overturning loads are applied. Legs shall be braced and/or strengthened as necessary to resist forces as calculated in (c) below.
   c. Trailer tethered anchorage shall be designed to resist overturning and sliding forces from wind or seismic as follows:
      i. Trailer shall be parked on an engineered concrete or asphalt surface that is relatively flat for 10 feet around trailer.
      ii. Utility connections are flexible allowing for 10 feet of movement.

iii. Seismic horizontal and vertical demands may be based on ASCE 7-10 Chapter 13 at ASD force level using 50% Fp for temporary installations per CAN 2-108, page 4 of 8 Seismic Design (Long Term Temporary Permit – 180 day max*). *Extensions may be granted.

iv. Wind Load horizontal and vertical demands may be based on ASCE 7-10 Chapter 29.5 (Other structure) at ASD force level using Risk Category II map. Demand/Capacity to be <= 1.0.

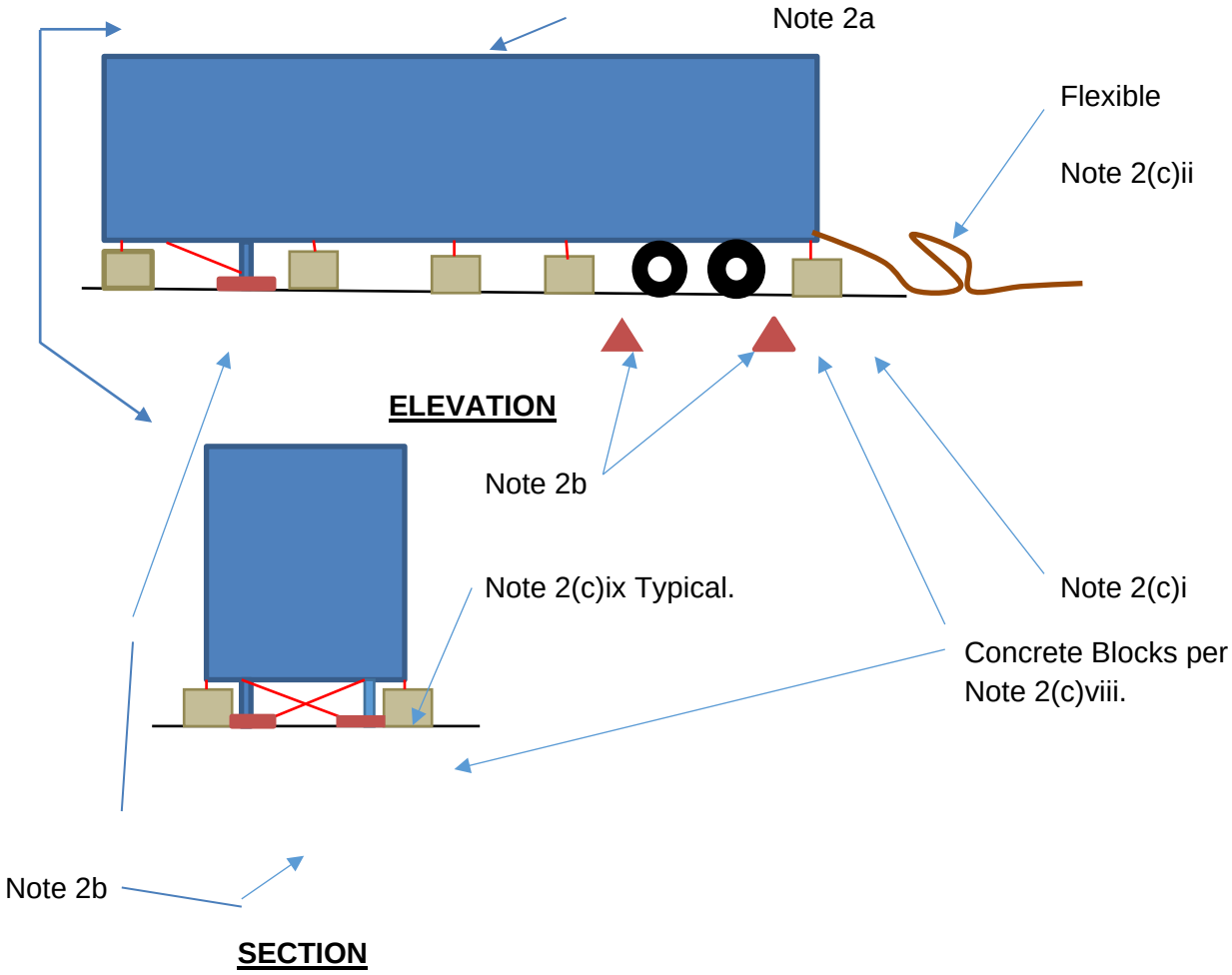
v. Sliding may be resisted using friction between (1) trailer tires (rubber) and asphalt or concrete (parking lot surface), and (2) jack stands and asphalt or concrete.

vi. Friction between any combination of rubber, concrete and asphalt may be used to resist sliding using a static coefficient of friction equal to 0.5.

vii. Friction resisting force may be calculated by multiplying the static coefficient of friction by the operating weight of trailer plus the least weight of counter weights on one side of the trailer.

viii. Overturning may be resisted utilizing counter weights such as concrete blocks. Connections shall not be slack wires.

SAMPLE



8. Facilities intending to use modular unit(s) for either interim or final placement of sterile compounding must ensure that the modular units meet all the requirements listed in this *Advisory Guide* as well as all applicable codes related to construction, remodeling and alteration of hospital buildings and structures as noted in OSHPD CAN-1.

9. Hospitals with less than 100 beds operating under a Hospital Pharmacy Permit Exemption shall provide all basic pharmaceutical services and be licensed by the Board of Pharmacy. Exempt hospitals shall have less than 100 licensed beds, and may not have a full-time pharmacist, nor be eligible for a sterile compounding license. See *Appendix C.*

APPENDIX A

OSHPD PROJECT #: _____ **DATE** _____

FACILITY NAME: _____ **FACILITY #** _____

[OSHPD-1]

STERILE COMPOUNDING PHARMACIES

CHECKLIST

CLEAR FORM

Compliance Guide for CBSC Requirements
Title 16 §1735 & §1751, and UPS <797> & <800>
ARCHITECTURAL, MECHANICAL & ELECTRICAL COMMENTS

PROJECT SCOPING			
		Compliance	
			Sheet/Det
1.	**Purpose:** The project is required to achieve compliance with the BoP requirements.	☐	
2.	**Basic Service:** Pharmaceutical Service is a Basic Service for licensure of a General Acute Care Hospital. Sterile compounding must be located within a compliant licensed hospital building. This means, such service(s) shall be located in a "Hospital Building" with a rating of SPC-2 or higher. Although it is preferred to locate the compounding facilities within the Pharmacy Department, existing hospitals may locate them elsewhere within the hospital when existing conditions make placement within the department infeasible. Refer to 1751(B) and/or 1735.1(af) for restrictions regarding placement. Remote placement will be subject to BoP and CDPH approval.	☐	
3.	**Functional Program:** Projects associated with alterations to existing pharmacies and creation of new pharmaceutical service space must include a clear and thorough Functional Program per California Administrative Code (CAC) section 7-119. The Functional Program must additionally include:	☐	
	a) Description of Interim Provisions for maintaining operations during construction, when applicable for renovation of existing compounding facilities in their present location. Interim placement must also meet required standards for that specific use as defined by code and noted in this advisory guide. Indicate if construction is required to prepare interim space prior to use.	☐	

b) Project Timeline to include all phases of project implementation including all interim provisions and final scope of work. Timeline shall indicate for each phase:

i) Plan review and permitting

ii) Construction duration

iii) Licensing and Acceptance

4. Pharmacy Summary Checklist: Projects associated with alterations to existing sterile compounding pharmacies and creation of new sterile compounding pharmaceutical service space must include a Pharmacy Summary Checklist (see *Appendix B*). The Pharmacy Summary Checklist must be a standalone PDF and also include:

a) Overall floorplan identifying all department boundaries and the location of the project on the floor.

b) Enlarged floorplan of the compounding spaces/areas and HD storage if provided. This plan shall identify all provided components in the Pharmacy Summary Checklist.

Mechanical Systems: Mechanical support of these spaces must include intended International Standards Organization (ISO) air quality rating (e.g. ISO 5, ISO 7, and ISO 8), laminar airflow, pressure differential in relation to adjacent spaces, inches of water column, and air changes per hour. Identification of components must include any, and all, HEPA filtration, source of supply air, routing of return air, routing of required dedicated exhaust and roof termination at all impacted levels, duct material, etc.

GENERAL REQUIREMENTS – ALL ENVIRONMENT TYPES

	Compliance	
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5. Compounding Work Station *or* **"Primary Engineering Control" (PEC):**		
a) Coordinate with Pharmacist for specific type of PEC. All are to provide a minimum ISO Class 5 environment and provide ventilation/exhaust per the specific requirements of intended use. Type of PEC's to be identified later in the *Specific Environment Type* sections.		
b) Finishes – Subject to wet cleaning [1751.4(d) & (e)]		
(i) If not built against the wall, all sides of the work station must be accessible for cleaning and will require space to allow for reach behind the unit. If built against the wall, seal unit against wall to prevent intrusion of moisture, contaminants and bacteria growth.		
c) Accessibility – Employee Work Station [CBC *11B-203.9*]		
d) Electrical Power - Provide critical branch power source for engineering controls such as hoods, laminar airflow workbenches, biological safety cabinets, barrier isolators. [CEC 517.33(A)(3) & (4]		

e) Subject to certification and testing requirements. [1751.4(f)] ☐

f) All PEC stands/bases are required to be anchored and braced per ASCE 7-10, Sections 13.3, 13.4 and CBC Part 2, Section 1616A. Such anchorage and bracing shall be substantiated by engineering calculations and shall be submitted with the design/construction documents. ☐

Alternatively, OSHPD OPM(s) for the PEC Stand/bases may be referenced on the design documents in order to satisfy this requirement.

g) Equipment Anchorage – all roof mounted ventilation equipment must be anchored per ASCE 7-10, Sections 13.3 , 13.4 and CBC Part 2, Section 1616A. ☐

6. Buffer Room / Cleanroom (SEC) *and* Buffer Area / Clean Area (SCA):

a) Mechanical Equipment and Ventilation - ISO Class, pressure differentials, and additional ventilation/exhaust per the requirements of the specific environment types, indicated later in this document. ☐

(i) Laminar Air Flow - Designated area for the preparation of sterile products shall be ventilated in a manner not interfering with laminar airflow. [CMC 505.7 & 1751(b)] ☐

a. Air Supply - Air must be introduced through ceiling HEPA units. [USP <797> *Facility Design and Environmental Controls*] ☐

b. Low Return/Exhaust – Return and exhaust grilles should be low on the wall, creating a top-down dilution of area air with HEPA-filtered make-up air. Ceiling mounted returns are not recommended. [USP <797> *Facility Design and Environmental Controls*] ☐

i. One return/exhaust should be placed near the refrigerator's compressor. ☐

(ii) Electrical Power – Provide equipment branch power source for delayed automatic or manual connection. ☐

a. Fans [CEC 517.34(B)(1.1), CMC 321.4 (Table 4A for IV Prep, Pharmacy/Medicine)] ☐

b. Controls [CEC 517.34(B)(7), CMC 321.5] ☐

(iii) Equipment Anchorage – all roof mounted ventilation equipment must be anchored per ASCE 7-10, Sections 13.3, 13.4 and CBC Part 2, Section 1616A. ☐

b) Controlled room temperature of 20-24 degrees Celsius (68-75 degrees Fahrenheit) or cooler to be maintained for personnel. [1751.4(k)] ☐

c) Sealed-tight room with automatic/self-closing doors, similar to an Airborne infection isolation room [*1224.4.4.1.3*], except for Segregated Buffer Areas. ☐

(i) Controlled door operators shall be readily openable in the egress direction without the use of a key or special knowledge or effort. [1010.1.9] ☐

a. Doors opening forces shall comply with the requirements of CBC 1010.1.3 and 11B-404.2.9. ☐

(ii) Power operated doors shall comply with the requirements of CBC 1010.1.4.2 and 11B-404.3. ☐

(iii) Special purpose horizontal sliding, accordion or folding doors shall comply with the requirements of CBC 1010.1.4.3 and 11B-404.2.9. ☐

d) Finishes – Non-porous and cleanable surfaces, ceilings, walls, and floors, subject to wet cleaning [1751.4(d)] – The surfaces of ceilings, walls, floors, fixtures, shelving, counters, and cabinets in the buffer area shall be smooth, impervious, free from cracks and crevices, and non-shedding. The surfaces shall be resistant to damage by disinfectant agents. [USP <797>] Organic material or plastic laminate over organic core not acceptable on counters, casework, doors, etc. ☐

(i) 1250.4(2), 1735.6(e)(4), 1751.4(d) – Smooth, seamless, impervious, and non-shedding ☐

(ii) *1224.4.11.1.3 [Floor finishes] Wet Cleaning – not affected by cleaning solutions*. ☐

(iii) *1224.4.11.2.2 [Floors and Wall Bases] Wet Cleaning – coved. monolithic without joints (similar to Operating Room).* ☐

(iv) *1224.4.11.3 Wall finishes (similar to Sterile Supply) – washable, smooth, and able to withstand cleaning with chemicals.* ☐

(v) *1224.4.11.4.1 Ceiling finishes (restricted area) – monolithic, scrubbable, and able to withstand cleaning and/or disinfecting chemicals.* [USP <797>] Junctures of ceilings to walls shall be coved or caulked to avoid cracks and crevices where dirt can accumulate. ☐

(vi) [USP <797>] Work surfaces shall be constructed of smooth, impervious materials, such as stainless steel or molded plastic, so that they are easily cleaned and disinfected. ☐

(vii) [USP <797>] Carts should be of stainless steel wire, nonporous plastic, or sheet metal construction with good quality, cleanable casters to promote mobility. ☐

(viii) [USP <797>] Storage shelving, counters, and cabinets shall be smooth, impervious, free from cracks and crevices, nonshedding, cleanable, and disinfectable; their number, design, and manner of installation shall promote effective cleaning and disinfection. ☐

(ix) [USP <797>] The exterior lens surface of ceiling lighting fixtures should be smooth, mounted flush, and sealed. ☐

e) Sources of water (sinks) or floor drains are not permitted in the Buffer Room/Area. [1224.19.1.1, 1250.4, 1751(b)(3), USP <797>] ☐

f) Eyewash station - Required wherever there is compounding and mixing. May either be placed in Buffer Room or Ante-area. When placed in the Buffer Room, it should be located just inside the door and at least one meter from the rim of the sink to the (PEC). No drains are permitted within the Buffer Room/Area, thus the eyewash must be "dry", unless in use. (PEC). [CPC 416.0, 1735, 1751(b)(3), USP <800>, & OSHA 1910.151(c)] ☐

(i) When considering placement of eyewash within the Buffer Room, consideration should be given to weekly testing requirements. ☐

(ii) Water temperature to be tepid. ☐

(iii) Eyewash location to be in an accessible location that requires no more than 10 seconds to reach – refer to ISEA Z358.1.

g) Refrigerator on Essential Power required within the Buffer Room or Ante-area [1751(b)(4)]. ☐

(i) Provide critical branch power source. [517(A)(9)] ☐
(ii) If used for HD storage, refrigerator must be in negative pressure room [USP 800, 5.2]. ☐
(iii) Pass-through refrigerators are not permitted between a HD Buffer Room and any adjacent space. ☐

h) Dedicated environmental services (cleaning materials & supplies for Buffer Room & Anteroom) [1751.4(d)(4)] All cleaning materials, such as wipers, sponges, and mops, shall be nonshedding, preferably composed of synthetic microfibers, and dedicated to use in the buffer or clean area, ante-area, and segregated compounding areas and shall not be removed from these areas except for disposal. Floor mops may be used in both the buffer or clean area and ante-area, but only in that order. [USP <797>] ☐

i) Accessibility – Employee Work Station [11B-203.9] – Provide common use circulation, turning area & door clearance. ☐

j) Egress through intervening spaces [CBC 1016.2] - Sterile compounding pharmaceutical spaces located within "I-2" Occupancies are not considered "habitable rooms" and not subject to the requirements of CBC Section 407.4.1 regarding direct corridor access. [OSHPD CAN 2-407.4.1] ☐

7. Ante-area:

a) Mechanical Equipment and Ventilation - ISO Class, pressure differentials, and additional ventilation/exhaust per the requirements of the specific environment types, indicated later in this document.

(i) Electrical Power – Provide equipment branch power source for delayed automatic or manual connection. ☐

a. Fans [CEC 517.34(B)(1.1), CMC 321.4 (Table 4A for IV Prep, Pharmacy/Medicine)] ☐

b. Controls [CEC 517.34(B)(7), CMC 321.5] ☐

(ii) Equipment Anchorage – all roof mounted ventilation equipment must be anchored per ASCE 7-10, Sections 13.3, 13.4 and CBC Part 2, Section 1616A. ☐

b) Controlled room temperature of 20-24 degrees Celsius (68-75 degrees Fahrenheit) or cooler to be maintained for personnel. [1751.4(k)] ☐

c) Donning and Doffing Area

(iii) Refer to processes in 1751.5 *Sterile Compounding Attire*, and USP <797> *Garb and Glove Requirements* for non-Hazardous environment donning and doffing. ☐

(iv) Refer to processes in 1751.5 *Sterile Compounding Attire*, USP <797>, and USP <800>, *Section 6 Personal Protective Equipment* for Hazardous environment donning and doffing. ☐

- Seating and/or other provisions for gowning at Demarcation Line to restricted area ☐
- Storage for sterile gowns, gloves & booties ☐
- Storage for contaminated gown, gloves & booties ☐

d) Finishes – Non-porous and cleanable surfaces, ceilings, walls, and floors, subject to wet cleaning. Organic material or plastic laminate over organic core not acceptable on counters, casework, doors, etc.

(i) 1250.4(2), 1735.6(e)(4), 1751.4(d) – Smooth, seamless, impervious, and non-shedding ☐

(ii) *1224.4.11.1.3 [Floor finishes] Wet Cleaning – not affected by cleaning solutions* ☐

(iii) *1224.4.11.2.2 [Floors and Wall Bases] Wet Cleaning – coved. monolithic without joints (similar to Operating Room).* ☐

(iv) *1224.4.11.3 Wall finishes (similar to Sterile Supply) – washable, smooth, and able to withstand cleaning with chemical* ☐

(v) *1224.4.11.4.1 Ceiling finishes (restricted area) – monolithic, scrubbable, and able to withstand cleaning and/or disinfecting chemicals.* ☐

e) Scrub Sink (or handwashing fixture capable for scrubbing to elbows) [1224.19.1.1, 1751.(b)(3), & 797-3.2] ☐

f) Eyewash Station – Required wherever there is compounding and mixing. May either be placed in Buffer Room with restrictions as noted above, or Ante-area. [1751(b)(3), 797-5.3, CPC 416.0, OSHA 1910.151(c)] ☐

(i) Water temperature to be tepid. ☐

(ii) Eyewash location to be in an accessible location that requires no more than 10 seconds to reach – refer to ISEA Z358.1. ☐

g) Refrigerator on Essential Power required within the Buffer Room or Ante Room [1751(b)(4)]. Refrigerator to be in Ante area for Segregated environment. ☐

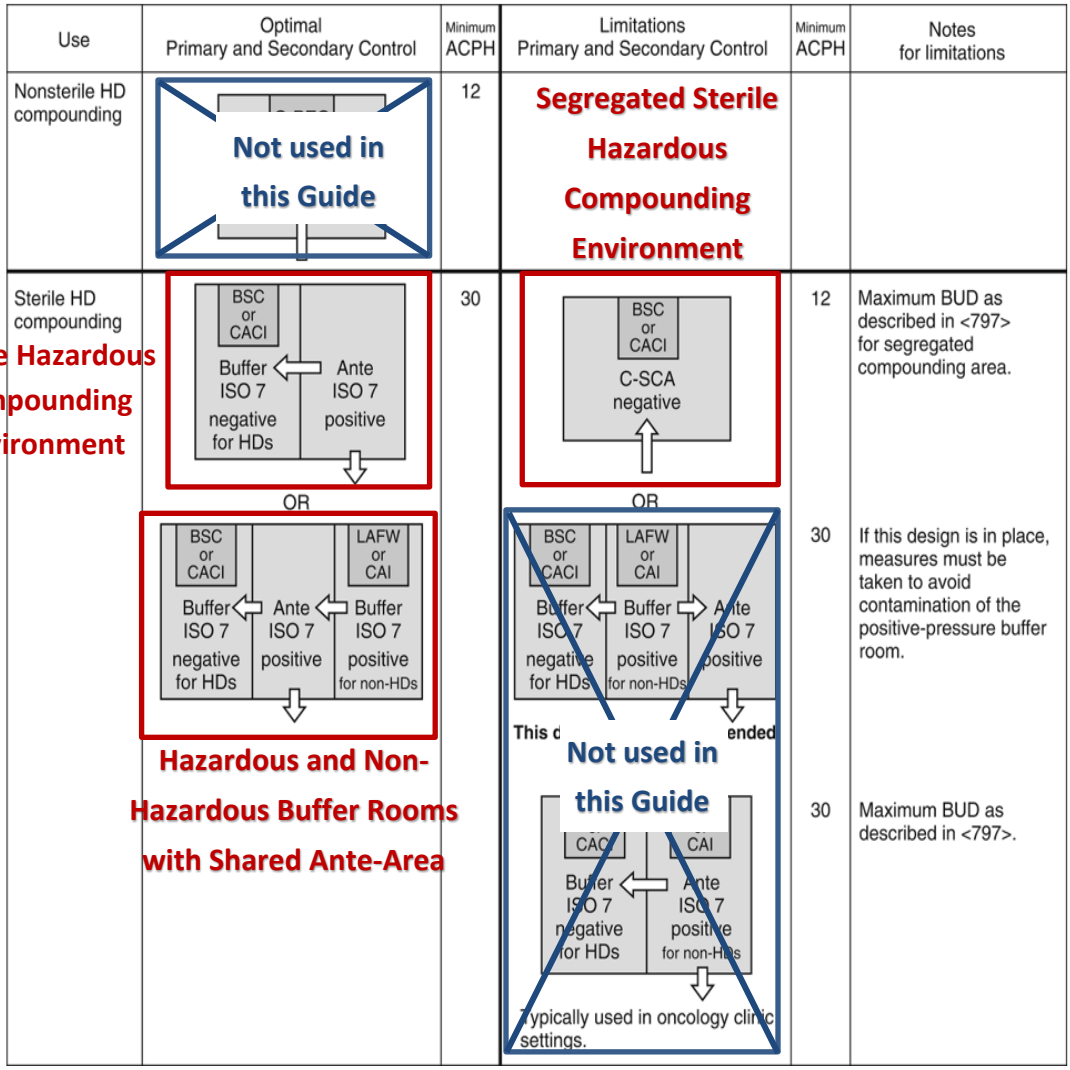
(i) Provide critical branch power source. [CEC 517(A)(9)] ☐
(ii) If used for HD storage, refrigerator must be in negative pressure room [USP 800, 5.2]. ☐
(iii) Pass-through refrigerators are not permitted between a HD Buffer Room and any adjacent space. ☐

h) Dedicated environmental services (cleaning materials & supplies for Buffer Room & Anteroom). All cleaning materials, such as wipers, sponges, and mops, shall be nonshedding, preferably composed of synthetic microfibers, and dedicated to use in the buffer or clean area, ante-area, and segregated compounding areas and shall not be removed from these areas except for ☐

	disposal. [1751.4(d)(4)] Floor mops may be used in both the buffer or clean area and ante-area, but only in that order. [USP <797>]		
i)	Accessibility – Employee Work Station [CBC 11B-203.9] – Common use circulation, turning area & door clearance.	☐	
j)	Egress through intervening spaces [CBC 1016.2] - Sterile compounding pharmaceutical spaces located within "I-2" Occupancies are not considered "habitable rooms" and not subject to the requirements of CBC Section 407.4.1 regarding direct corridor access. [OSHPD CAN 2-407.4.1]	☐	
	(v) Controlled door operators, if provided, shall be readily openable in the egress direction without the use of a key or special knowledge or effort. [CBC 1010.1.9]	☐	
	(vi) Exit travel distance limitations shall apply. Travel distance shall be in compliance with CBC Section 1017.	☐	
k)	Automatic/self-closing doors, if provided, shall meet the requirements listed in *Checklist* item 6c.	☐	

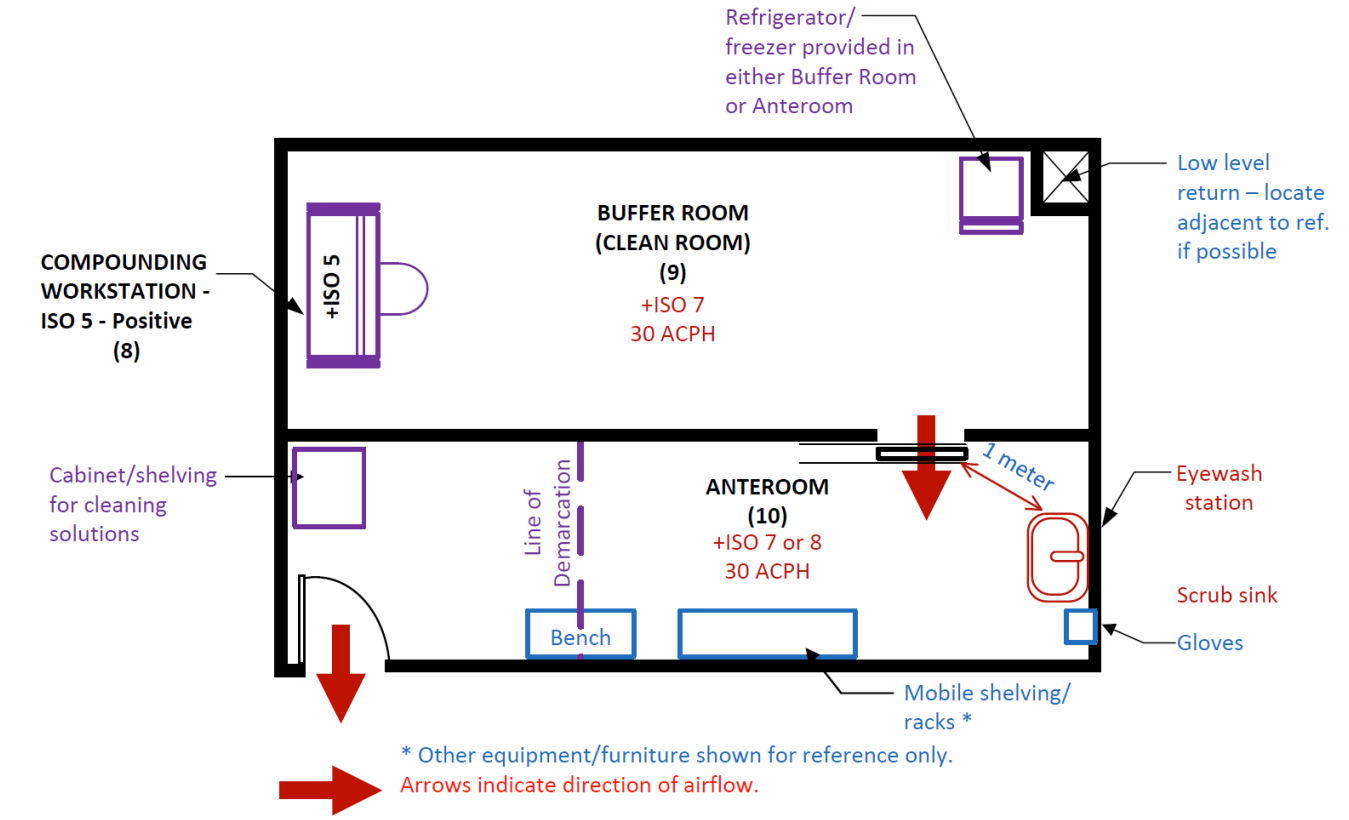
GENERAL ROOM RELATIONSHIPS – VARIOUS ENVIRONMENT TYPES

The following chart, referenced from <USP 800> regulations, provides a high-level overview of the required relationships between the various environments, and their associated allowable Beyond Use Dates (BUDs).



The illustrations on the following pages represent specific environment types to highlight unique requirements pertinent to the each. Illustrations are diagrammatic and for reference purposes only. The actual design is the responsibility of the design professional in responsible charge, to be developed in coordination with their client under the advisement of pharmacy staff.

SPECIFIC ENVIRONMENT TYPE – STERILE NON-HAZARDOUS



	Compliance	
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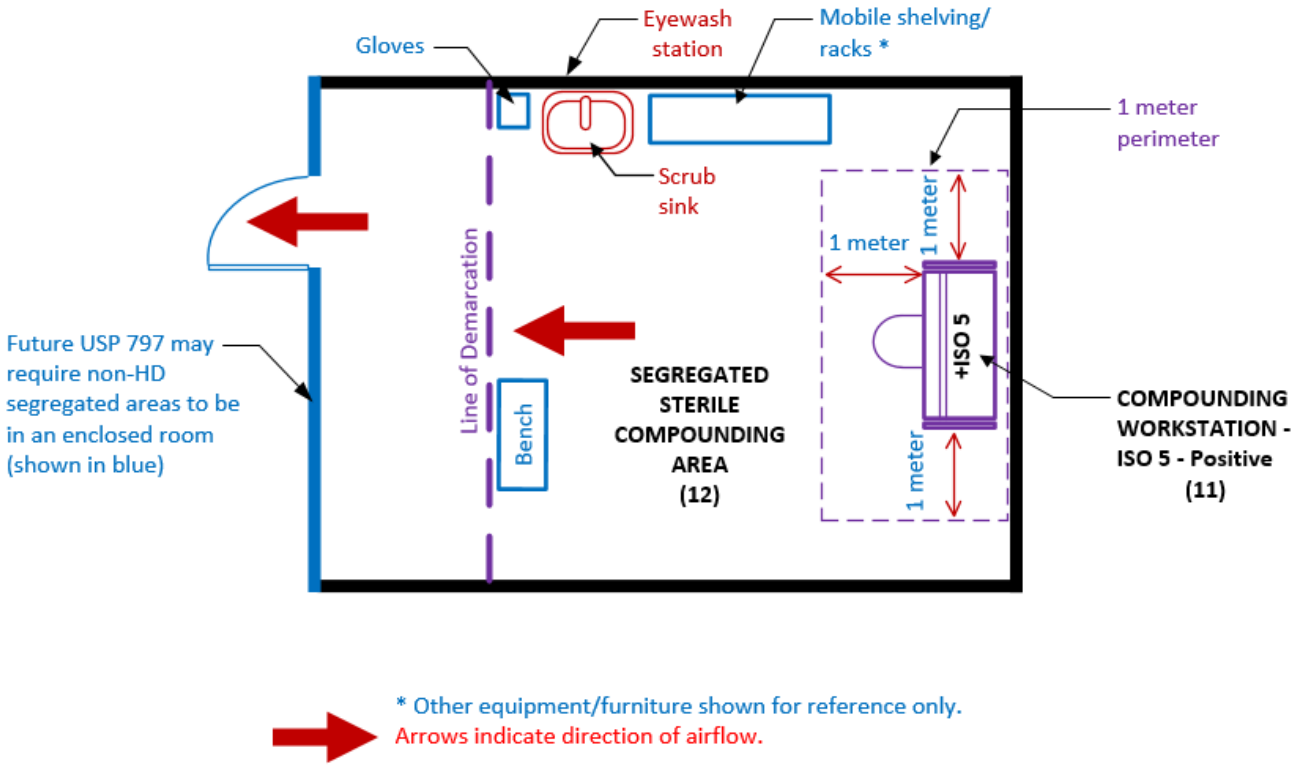
8. Compounding Work Station (PEC):		
a) Meets the general requirements of *Checklist* Item 5, above.	☐	
b) ISO Class 5 - Positive Pressure through non-turbulent, laminar-flow, HEPA-filtered "first air." [USP 797-4.1]. Coordinate with Pharmacist for specific type of PEC.	☐	
(i) LAFW [USP <797>]	☐	
(ii) CAI [1735.1(g)]	☐	
9. Buffer Room / Cleanroom (SEC):		
a) Meets the general requirements of *Checklist* Item 6, above.	☐	
b) ISO 7 - Positive Pressure HEPA-filtered [USP <797>4.1].	☐	
(i) Supply air to room to be minimum of 50% (i.e. 15 ACPH) HEPA-filtered air. Total ACPH may be augmented by the ISO Class 5 PEC not to exceed 50% (i.e. 15 ACHP). [USP <797> Facility Design and Environmental Controls]	☐	

(ii)	30 ACPH minimum [USP <797> Facility Design and Environmental Controls]	☐	
(iii)	Positive 0.02 to 0.05 in water column (w.c.) vs. all adjacent areas/spaces. [1735.1(e)(1), USP <797> Pressure Differential Monitoring]	☐	
(iv)	Continuous monitoring. [USP <797> Pressure Differential Monitoring]	☐	
10.	**Ante-area:**		
a)	Meets the requirements of *Checklist* Items 6a and 7, above.	☐	
b)	ISO Class 8 or better - <u>Positive Pressure</u> HEPA-filtered [1735.1(a) & USP <797> Facility Design and Environmental Controls]	☐	
(i)	30 ACPH minimum [USP <797> Facility Design and Environmental Controls]	☐	
(ii)	Continuous monitoring [USP <797> Pressure Differential Monitoring]	☐	

SPECIFIC ENVIRONMENT TYPE - SEGREGATED STERILE NON-HAZARDOUS (Limited to Beyond Use Date BUD < 12 hours)



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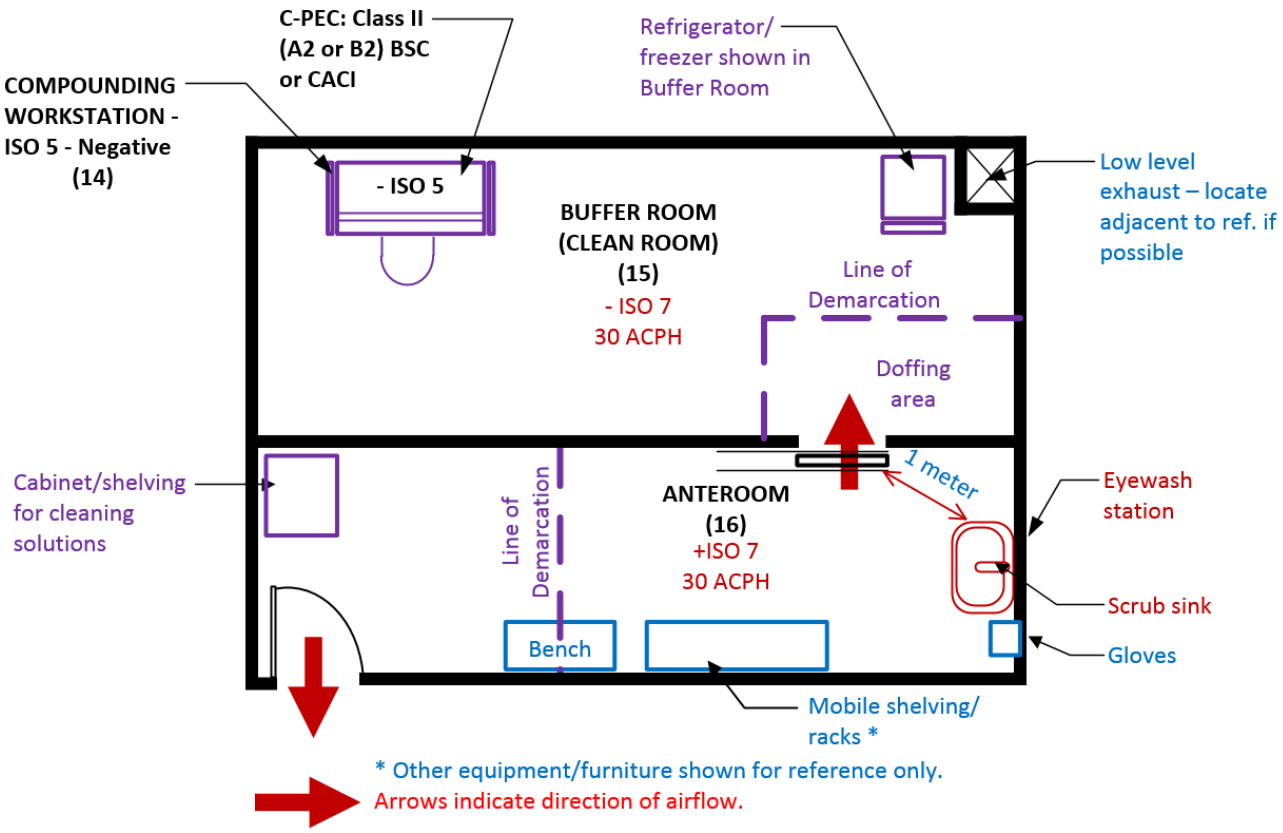
11. Compounding Work Station (PEC):		
a) Meets requirements of *Checklist* Item 8, above.	☐	
(iii) LAFW [USP <797>]	☐	
(iv) CAI [1735.1(g)]	☐	
12. Segregated Sterile Compounding Area (SCA):		
a) Meets the general requirements of *Checklist* Item 6 & 7, above, except as noted herein.	☐	
b) No ISO Class required - Unclassified.		
(i) Maintain airflows from clean to less clean areas. [CMC 407.4.1, 1735.1(a)]	☐	
c) Line of Demarcation shall be established to define Segregated Compounding Area if this area is not separated by a wall with a door. [1735.1(af), USP<797>]	☐	

d) The 1 meter perimeter around PEC shall not contain the sink. [1735.1(af), USP<797>] See item 6f for eyewash requirements.	☐	
e) Location shall not be in a location that has unsealed windows or doors that connect to the outdoors, in a location with high traffic flow, or in a location that is adjacent to construction sites, warehouses, or food preparation.	☐	
f) Item 6a)(i)a not required.	☐	
g) Item 6c not required.	☐	
h) Item 6d applicable within designated Segregated Compounding Area only.	☐	

SPECIFIC ENVIRONMENT TYPE – STERILE HAZARDOUS



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14. Compounding Work Station (PEC):		
a) Meets the general requirements of *Checklist* Item 5, above.	☐	
b) All compounding shall be conducted within a certified Class II Type A or Class II Type B vertical laminar airflow hood with bag in – bag out design. The pharmacy must ensure that contaminated air plenums that are under positive air pressure are leak tight. [CMC 505.7.1]	☐	
c) ISO Class 5 - Negative Pressure through non-turbulent, laminar-flow, HEPA-filtered "first air." [1735.6(e), 1751.4(g), USP <800> Appendix "A"] Must operate continuously. [USP <800>5.3]	☐	
(i) Biological Safety Cabinet (BSC) [1735.1(c)]	☐	
(ii) Containment Aseptic Compounding Isolator (CACI) [1735.1(f)]	☐	
d) Exhaust – 100% dedicated direct exhaust to exterior. Recommended one dedicated exhaust per each PEC. [1735.1(c), 1735.1(f) & 1735.6(e)(3), 1751.4(g) & USP 800-5.3].	☐	

(i) Termination of exhaust duct from HD PEC or HD buffer room shall be not less than 3 feet from a property line, 10 feet from a forced air inlet, and 3 feet from openings into the building. They shall not discharge onto a public walkway. [CMC 502.2.1] If the duct is conveying explosive or flammable vapors, fumes, or dusts it shall terminate not less than 30 feet from a property line, 10 feet from openings into the building, 6 feet from exterior walls or roofs, 30 feet from combustible walls or openings into the building that are in the direction of the exhaust discharge, and 10 feet above adjoining grade. Other product-conveying outlets shall terminate not less than 10 feet from a property line, 3 feet from exterior walls or roofs, 10 feet from openings into the building, and 10 feet above adjoining grade. [CMC 502.2.2] ☐

(ii) Ducts conveying fumes shall extend directly to the exterior of the building without entering other spaces and shall not extend into or through ducts and plenums. [CMC 505.1] ☐

(iii) Air contaminated with fumes, toxic gasses, or radioactive materials shall not be recirculated. [CMC 505.1.2] ☐

(iv) Exhaust fans shall be interlocked with PECs. [CMC 505.1.3] ☐

(v) Fire dampers shall not be installed where the material being exhausted is toxic. Exhaust ducts shall not pass through fire walls. [CMC 505.2] ☐

(vi) Class 5 ductwork required if corrosive vapors are being exhausted. [CMC 505.3] ☐

(vii) Dampers shall not be installed in exhaust ducts or exhaust duct systems. [CMC 512.1] ☐

15. Buffer Room / Cleanroom (SEC):

a) Hazardous drug compounding shall be completed in an externally vented physically separate room with fixed walls. [1735.6(e), USP <800>5.3, USP <800>5.3.2 for ISO Class 7 buffer room with ISO Class 7 ante-room] ☐

b) Meets the general requirements of *Checklist* Item 6, above. ☐

c) ISO 7 – <u>Negative</u> HEPA-filtered [USP 800-5.3.2]. ☐

(i) 30 ACPH minimum [1735.6(e)(1), USP <797>, USP <800>] ☐

(ii) <u>Negative</u> 0.01 to 0.03 in water column (w.c.) relative to the ante-room. [1735.6(e)(2), USP<797>, USP<800>5.3.2] ☐

(iii) Continuous monitoring. [USP <797> Pressure Differential Monitoring] ☐

d) Exhaust – 100% exhaust to exterior. [USP <800>, 1735.6(e)] ☐

(i) Termination of exhaust duct from HD PEC or HD buffer room shall be not less than 3 feet from a property line, 10 feet from a forced air inlet, and 3 feet from openings into the building. They shall not discharge onto a public walkway. [CMC 502.2.1] If the duct is conveying explosive or flammable vapors, fumes, or dusts it shall terminate not less than 30 feet from a property line, 10 feet from openings into the building, 6 feet from exterior walls or roofs, 30 feet from combustible walls or openings into the building that are in the direction of the exhaust discharge, and 10 feet above adjoining grade. Other product-conveying outlets shall terminate not less than 10 feet from a property line, 3 feet from exterior walls or roofs, 10 feet from openings into the building, and 10 feet above adjoining grade. [CMC 502.2.2] ☐

(ii) Ducts conveying fumes shall extend directly to the exterior of the building without entering other spaces and shall not extend into or through ducts and plenums. [CMC 505.1] ☐

(iii) Air contaminated with fumes, toxic gasses, or radioactive materials shall not be recirculated. [CMC 505.1.2] ☐

(iv) Exhaust fans shall be interlocked with PECs. [CMC 505.1.3] ☐

(v) Fire dampers shall not be installed where the material being exhausted is toxic. Exhaust ducts shall not pass through fire walls. [CMC 505.2] ☐

(vi) Class 5 ductwork required if corrosive vapors or being exhausted. [CMC 505.3] ☐

(vii) Dampers shall not be installed in exhaust ducts or exhaust duct systems. [CMC 512.1] ☐

16. Ante-area:

a) Must have fixed walls. [USP <800>5.3.2] ☐

b) Meets the requirements of *Checklist* Items 6a and 7, above. ☐

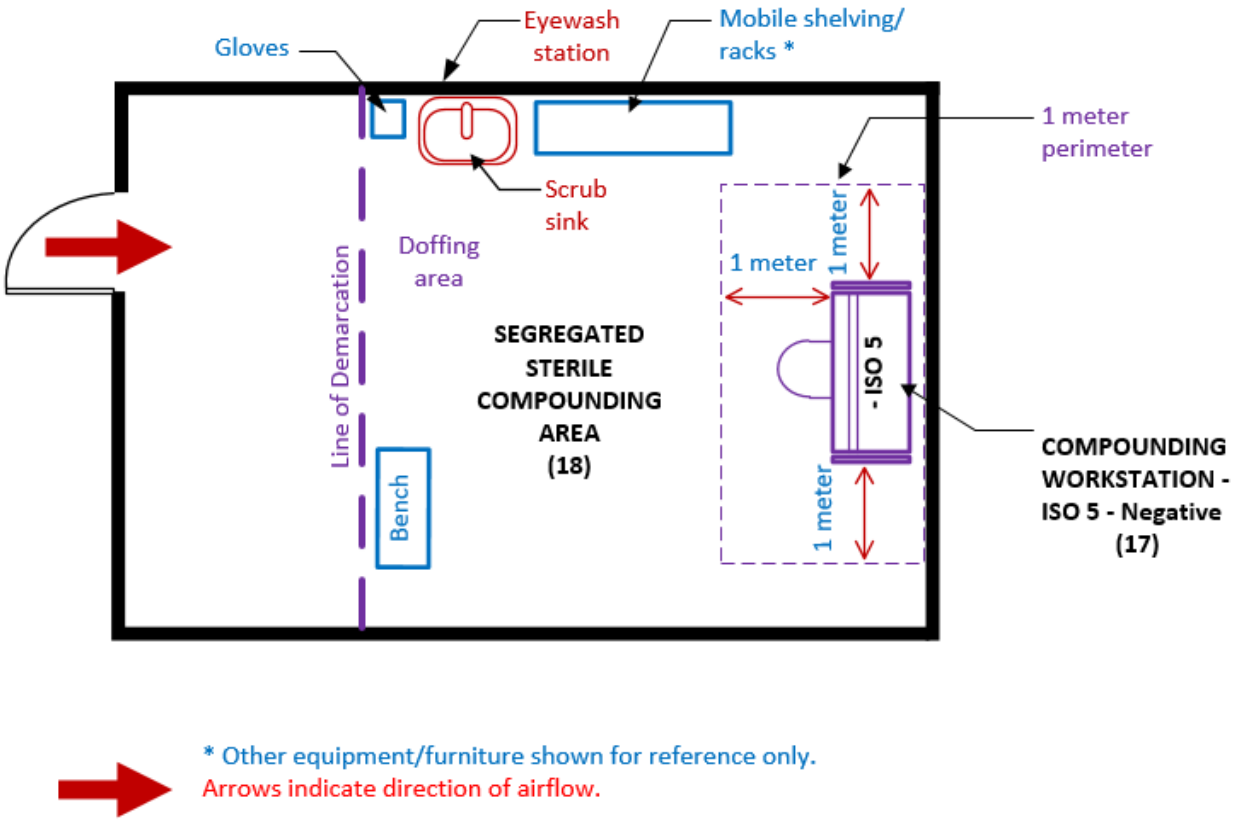
c) ISO Class 7 - Positive Pressure HEPA-filtered [1735.1(a), USP <800>5.3.2] ☐

(i) 30 ACPH minimum [USP <800>5.3.2] ☐

(ii) Positive at least 0.02 in water column (w.c.) relative to all adjacent unclassified areas. [USP<800>5.3.2] ☐

(iii) Continuous monitoring. [USP <797> Pressure Differential Monitoring]	☐	
d) Handwash sink capable of washing up to elbows shall be at least one meter away from the door to the Buffer Room. [USP <800>5.3.2]	☐	

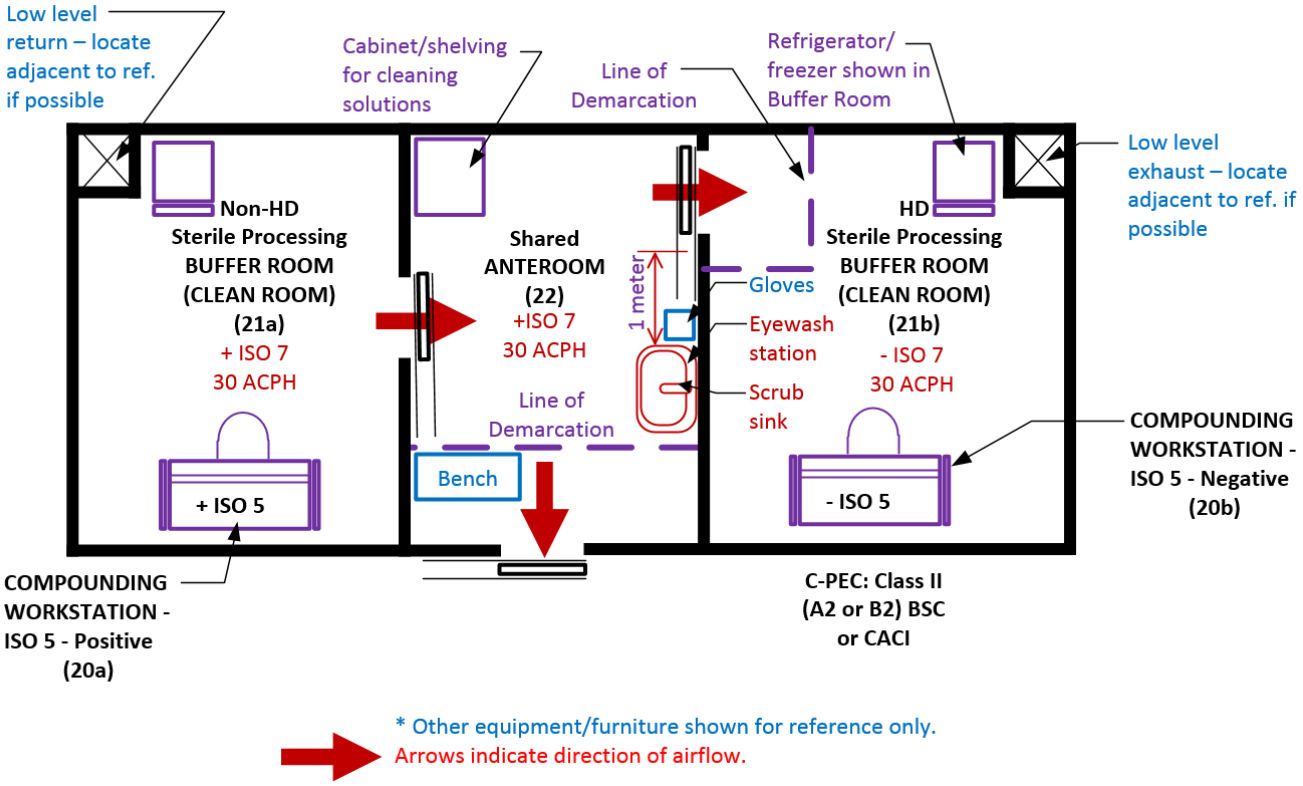
SPECIFIC ENVIRONMENT TYPE - SEGREGATED STERILE HAZARDOUS (Limited to Beyond Use Date BUD < 12 hours)



	Compliance	
		Sheet/Det
17. Compounding Work Station (PEC):		
a) Meets the requirements of *Checklist* item 14, above, except as noted herin.	☐	
b) ISO Class 5 - Negative Pressure through non-turbulent, laminar-flow, HEPA-filtered "first air." [USP 797-4.1]. Must operate continuously. [USP <800>5.3]	☐	
(i) Biological Safety Cabinet (BSC) [1735.1(c)]	☐	
(ii) Containment Aseptic Compounding Isolator (CACI) [1735.1(f)]	☐	
18. Segregated Sterile Compounding Area (SCA):		
a) Hazardous drug compounding shall be completed in an externally vented physically separate room with fixed walls. [1735.6(e), USP <800>5.3, USP <800>5.3.2 for C-SCA]	☐	

b)	Meets the requirements of *Checklist* item 15, above, except as noted herein.	☐	
	(i) Item 15 c) not required.	☐	
	(ii) Item 6 a)(i)a not required.	☐	
	(iii) Item 6 c) not required.	☐	
c)	Unclassified – Negative pressure. [USP <800>5.3.2]	☐	
	(i) 12 ACPH minimum [1735.6(e)(1), USP <797>, USP <800>]	☐	
	(ii) Negative 0.01 to 0.03 in water column (w.c.) relative to all adjacent spaces. [1735.6(e)(2), USP<797>, USP<800>5.3]	☐	
	(iii) Continuous monitoring. [USP <797> Pressure Differential Monitoring]	☐	
	(iv) Maintain airflows from clean to less clean areas. [CMC 407.4.1, 1735.1(a)]	☐	
d)	Line of Demarcation shall be established to define Segregated Compounding Area if this area is not separated by a wall with a door. [1735.1(af), USP<797>]	☐	
e)	The 1 meter perimeter around PEC shall not contain the sink. [1735.1(af), USP<797>] See item 6f for eyewash requirements.	☐	

SPECIFIC ENVIRONMENT TYPE - HAZARDOUS & NON-HAZARDOUS BUFFER ROOMS WITH SHARED ANTEROOM



	Compliance	
		Sheet/Det
20. Compounding Work Station (PEC):		
a) For non-hazardous compounding refer to *Checklist* item 8, above.	☐	
b) For hazardous compounding refer to *Checklist* item 14, above.	☐	
21. Buffer Room / Cleanroom (SEC):		
a) For non-hazardous compounding refer to *Checklist* item 9, above.	☐	
b) For hazardous compounding refer to *Checklist* item 15, above.	☐	
22. Ante-area:		
a) Consideration should be given to separate dedicated Ante-areas for HD and Non-HD Buffer Rooms, so that contamination affecting one Ante-area allows the other to remain in use.	☐	

Pharmacy Summary Checklist

Appendix B

Facility:
OSHPD Number:
Date:

Provide simplified overall plan identifying all department boundaries and location of project on the floor ❑
Provide diagram (see sample attached) identifying all compounding components below ❑

General

Intended Compounded Sterile Products (CSP's) - check all that apply:

Non-Hazardous CSP's
❑ Low risk CSP's
❑ Medium risk CSP's
❑ High risk CSP's

Hazardous CSP's
❑ Low risk CSP's
❑ Medium risk CSP's
❑ High risk CSP's

❑ Radiopharmaceutical CPS's

Beyond Use Date (BUDs)

❑ Equal to or less than 12 hours
❑ Greater than 12 hours

Design supports the BUDs to be assigned? No Yes NR
Room names identified? No Yes NR
Pressure arrows (negative/positive). NA No Yes NR

Ante-area NA
Positive pressure to general environment (0.02 min)? NA No Yes NR
ISO 8 unless connected to HD buffer, then ISO 7. NA No Yes NR
ISO 7 then 30 ACPH. NA No Yes NR
Sink type and location (greater than 1 meter from entrance to HD buffer area). NA No Yes NR
Line of Demarcation. NA No Yes NR
Refrigerator(s). NA No Yes NR
Pass through's (if applicable). NA No Yes NR

Pharmacy Summary Checklist

Appendix B

Facility:
OSHPD Number:
Date:

Buffer Area NA
ISO 7 or better. NA No Yes NR
Positive pressure to ante-area (0.02 min). NA No Yes NR
30 ACPH minimum (no more than half from hoods). NA No Yes NR
Type(s) of Primary Engineering Control (PEC) Workstations (include cut sheets)? NA No Yes NR
Pressure monitoring devices noted. NA No Yes NR

Hazardous buffer area (C-SEC) NA
Externally vented, room and C-PEC. NA No Yes NR
ISO 7 or better. NA No Yes NR
Negative pressure to ante-area (-0.01 to -0.03). NA No Yes NR
30 ACPH minimum. NA No Yes NR
Type(s) of Primary Engineering Control (PEC) Workstations (include cut sheets)? NA No Yes NR
Does not include a pass-through refrigerator (not allowed). NA No Yes NR
Chemo PPE don/doff area inside the room, next to the entrance. NA No Yes NR
Refrigerator(s). NA No Yes NR
Pressure monitoring devices noted. NA No Yes NR

Segregated compounding area (non-hazardous) NA
Placed in an appropriate area of the hospital. NA No Yes NR
Area is defined. NA No Yes NR
Sink (greater than 1 meter from hood). NA No Yes NR

Segregated compounding area (C-SCA) (hazardous) NA
Enclosed by walls and a door. NA No Yes NR
Externally vented room and hood. NA No Yes NR
12 ACPH minimum. NA No Yes NR
Negative pressure to general area (-0.01 to -0.03). NA No Yes NR
Chemo PPE don/doff area inside the room, next to the entrance. NA No Yes NR
Sink (greater than 1 meter from hood). NA No Yes NR

One room with ante and buffer area, no dividing wall and door NA
Line of demarcation. NA No Yes NR
AF 40 ft/min, wall to wall and ceiling to floor, across the line. NA No Yes NR

CAI located in worse than ISO 7 NA
Does the hood meet the bullet points for location outside an ISO 7 buffer? NA No Yes NR

Pharmacy Summary Checklist

Appendix B

Facility:
OSHPD Number:
Date:

Hazardous drug storage area NA
Externally vented room. NA No Yes NR
Negative pressure. NA No Yes NR
12 ACPH. NA No Yes NR

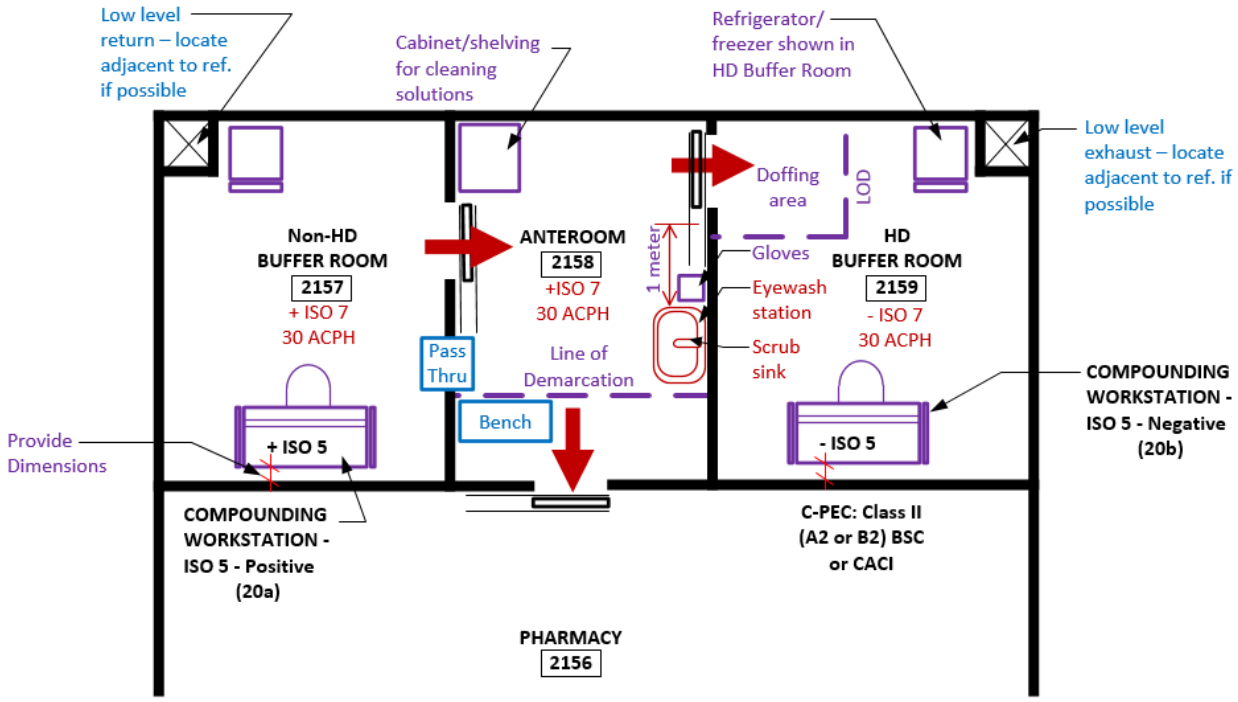
NA=not applicable, No=does not meet standard, Yes=meets standard, NR=insufficient information to review

Appendix B

Facility:

OSHPD Number:

Date:



Provide schematic diagram showing all rooms and components identified in Appendix B

Arrows indicate direction of airflow.

SAMPLE ONLY

Appendix C

- ***Less than 100-bed Pharmacy Permit Exemption.*** *Hospitals under a Hospital Pharmacy Permit Exemption shall provide all basic pharmaceutical services and be licensed by the Board of Pharmacy. Exempt hospitals shall have less than 100 licensed beds, and may not have a full-time pharmacist, nor be eligible for a sterile compounding license. Exempt hospitals may purchase drugs at wholesale for administration and shall provide the following pharmacy service space:*
    - *Drug Room: Licensed pharmaceutical space with drug distribution under the supervision of a physician and be monitored by a pharmacist consultant. The drug room shall include the following:*
        - *A room or area for receiving, breakout, and inventory control of drugs used in the hospital.*
        - *Cleanable work counters and space for automated and/or manual dispensing activities.*
        - *Reserved*
        - *An area for reviewing and recording*
        - *An area for storage, exchange, and restocking of carts*
        - *Security provisions for drugs and personnel in the dispensing counter area*
    - *A hand-washing station shall be provided immediately accessible to the area where medication(s) are handled.*
    - *Cabinets, shelves, and/or separate rooms or closets shall be provided for the following:*
        - *Bulk storage*
        - *Active storage*
        - *Refrigerated storage*
        - *Storage for volatile fluids and alcohol in accordance with applicable fire safety codes for the substances involved.*
        - *Secured lockable storage for controlled drugs*
        - *Equipment and supply storage for general supplies and equipment not in use*

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ENFORCEMENT AND COMPOUNDING COMMITTEE REPORT
December 11, 2017

Allen Schaad, Licensee Member, Chair
Amy Gutierrez, PharmD, Licensee Member, Vice Chair
Greg Lippe, Public Member
Stan Weisser, Licensee Member
Valerie Muñoz, Public Member

I. Call to Order, Establishment of Quorum, and General Announcements

II. Public Comments on Items Not on the Agenda/Agenda Items for Future Meetings

Note: The board may not discuss or take action on any matter raised during this public comment section that is not included on this agenda, except to decide whether to place the matter on the agenda of a future meeting. [Government Code sections 11125, 11125.7(a)]

III. Discussion and Consideration of Possible Statutory Proposal Relating to the Use of Automated Drug Delivery Systems (ADDS)

Attachment 1

Relevant Law

CCR Section 1713 establishes the provisions for a pharmacy to use an ADDS machine to deliver previously dispensed medications.

BPC Section 4105.5 establishes the requirements for use of an ADDS machine including registration, inventory management, and drug loss requirements.

BPC Section 4186 establishes the requirements for use of an ADDS machine in a community clinic.

HSC 1261.6 defines "automated drug delivery system" and establishes the requirements for use of such a delivery system.

Background

As the committee has previously discussed, there appears to be an increasing interest and demand for expanded use of ADDS in pharmacies, clinics and other environments to provide medications to patients. Generally, there are two major forms of these machines:

1. Storage of medication until a specific dose is needed for a patient (e.g., Pyxis machines in hospitals and skilled nursing facilities), where the medication is obtained by a health care provider after it has been ordered for a patient.
2. Storage of a full dosing regimen for a specific patient awaiting patient pick up (e.g., Asteres machine currently under study by UCSD.

As part of its work, a technology summit was convened earlier this year where the board learned about various forms of technology. This year in the California Legislature there are two proposals to allow for additional uses of the machines:

- A machine that can store medication in fire departments and EMSA offices to replenish ambulance supplies when convenient for the ambulance (sponsored by the board).
- A machine installed in clinics, operated by a pharmacy, to dispense 240B drugs to qualified patients. (This measure stalled in committee.)

Prior Committee Discussion

Most recently, during its September meeting, the committee requested that staff develop a statutory proposal to expand the conditions under which an ADDS machine could be used. The committee noted that ADDS benefit patients by increasing their access to medications, but that appropriate security measures must be in place and the board must be notified if any theft or diversion occurs. The committee also underscored the need for patient consultation when the ADDS machine is used to deliver the medication to the patient, the need for development of a self-assessment form addressing specifically the use of machines and that the locations where ADDS are placed needs to be inspected by the board.

The committee recommended creating separate requirements based on the two different types of machines (unit dose administered to a patient versus medications dispensed to a patient).

At the conclusion of its discussion, the committee authorized board staff to develop parameters with the committee chair to present at a subsequent meeting.

For Committee Discussion and Consideration

Provided below is the basic framework from which a legislative proposal could be secured. Under the proposal the existing statutes and regulations would be replaced and be incorporated within the below.

1. Definitions - Amend Article 2 by creating, by definition, a delineation of the two different types of systems ("unit dose administered" versus "dispensed to patient").
2. General Requirements – Amend Article 6 to create the basic licensing requirements to include:
    a. Limited to licensed pharmacies/hospitals located in California.
    b. The device must be licensed by the board to operate.
    c. Application and annual renewal of $200. Renewal will be synced with underlying pharmacy license. (Hospitals using unit dose machines for administration to inpatients would be exempt from licensure, however an ADDS machine for dispense would be required to secure licensure.)
    d. The ADDS license would be cancelled by operation of law if the underlying pharmacy license is cancelled or revoked.

e. Pharmacy must own the drugs and be responsible for the drugs (storage security, etc.) until the medication is either dispensed or administered.)
f. Pharmacy is responsible for delivery of the medications.
    i. Pharmacy staff must stock **dispensing** devices immediately upon delivery.
    ii. Pharmacy or identified staff may stock the **administration** device (consistent with current provisions). If the device is not immediately stocked, it must be stored in a segregated, secured area. Drugs may not be stored in this area for more than 48 hours.

3. Pharmacies – Amend Article 7 to specify where a device can be used.
    a. Any health facility licensed under HSC Section 1250, clinic licensed pursuant to BPC 4180 or 4190 or any medical office or clinic at which a patient receives health care services. (Note: The requirement to be located adjacent to the secured pharmacy area would eliminated.)
    b. All clinical services provided as part of the **dispensing** process must be provided by a California licensed pharmacist.
    c. Mandatory consultation on all drugs **dispensed.**
    d. All devices used for **dispensing** must have a posted notice providing the name of the pharmacy that operates the device.
    e. All devices used for **dispensing** must meet all prescription labeling requirements.

Existing requirements regarding inventory management, policies and procedures, security, quality assurance policies, patient consent, etc., would be incorporated.

In addition to discussing the proposal parameters outlines above, board staff are seeking input from the committee on the frequency of inspections for the location of the device as well as if the proposal should include a limit on the number of dispensing systems a pharmacy can operate.

Attachment 1 includes a copy of the relevant laws.

IV. Discussion and Consideration of Possible Board Policy Relating to Disclosure of Enforcement Actions Involving Board Members

On the Department of Consumer Affairs' list of the "Top 10 Traits of an Effective Board Member" is "Be aware of conflicts of interest" and clarifies that such conflicts could be real or perceived.

One area where board members should be transparent is in the area of enforcement actions (whether they are directly or indirectly involved). Board members should determine whether recusal should occur based on the real or possible appearance of self-interest. For example, an enforcement matter involving a board member could influence a member's objectivity in future decision making.

For this reason and in efforts to ensure greater transparency, President Gutierrez has requested a discussion of this item at this meeting to require the reporting of any enforcement action affecting a board member. Examples of items that would trigger this reporting would be disciplinary or administrative action.

V. Discussion and Consideration of FDA Draft Guidance for Industry Relating to *"Grandfathering Policy for Packages and Homogenous Cases of Product Without a Product Identifier"*

Attachment 2

Background

The Drug Supply Chain Security Act (DSCSA), signed into law in November 2013, established the federal track and trace requirements. The requirements encompass the entire drug supply chain and are phased in over a period of 10 years.

The FDA previously released a guidance delaying some provisions of the DSCSA. Specifically, the FDA indicated that it did not intend to take action against manufacturers who do not add a product identifier to each package and homogenous case intended to be introduced into commerce before November 27, 2018. (That represented a one-year delay in implementation of the requirement.)

For Committee Discussion and Consideration

In November 2017, the FDA issued a draft guidance detailing the circumstances under which it would exempt packages and homogenous cases of product to be sold that are not labeled with the required product identifier. Such products may be grandfathered if there is documentation that it was packaged by a manufacturer or repackager prior to November 27, 2018.

The guidance also highlights the resulting changes throughout the remaining partners in the supply chain. Similar wholesaler requirements regarding the sale of products without the required product identifier will be delayed until November 27, 2019 and the related dispenser requirements will be delayed until November 27, 2020.

The board has previously discussed its concern with delays in implementing the track and trace requirements. A copy of the draft guidance is provided in **Attachment 2**.

VI. Discussion and Consideration of *"CURES 2.0 Survey of California Physicians' and Pharmacists' Experience with and Attitudes about CURES 2.0"*

Attachment 3

Background

In September 2013, California enacted a new law to update the Controlled Substance Utilization Review and Evaluation System (CURES). This law (SB-809) provided a dedicated funding source for CURES. It also required CURES to streamline the registration process and mandated registration for dispensers and DEA-licensed prescribers.

As part of the upgrade, CURES personnel added the following new features: streamlined electronic registration process, automatic alerts for certain high risk prescribing practices, ability to send peer-to-peer messages within CURES, ability to flag patient-provider agreements in CURES, and ability for CURES users to identify delegates who can initiate CURES patient reports. The bundle of upgrades authorized by SB-809 is collectively referred to as "CURES 2.0."

As approved by the Board at the July 2016 meeting, the Board participated in assisting researchers from the University of California, Davis in surveying pharmacists. Questions were designed to learn about their use, access to, likes, dislikes and concerns with CURES. Physicians also participated in a related survey at the same time. The results have recently been published and have shared with the board.

UC Davis researchers partnered with the California Department of Public Health to develop and conduct the survey. The survey was conducted from August 2016 to January 2017 and done in cooperation with the Medical Board of California (MBC) and the Osteopathic Medical Board of California (OMBC) in addition to the Board of Pharmacy.

Survey Summary

The survey also evaluated physicians' and pharmacists' attitudes about prescription drug misuse and abuse, prescribing practices, and expectations about using prescription drug monitoring programs when prescribing or dispensing controlled substances.

The survey was sent to a sample group comprised of a quasi-random sample of:

- one-twenty-fourth of all California pharmacists (*n* = 1626) ***{498 responded}***
- allopathic physicians (*n* = 5701)
- one-twelfth of all California osteopathic physicians (*n* = 577)

The survey received 1904 responses, for an overall response rate of 24%.

Some highlights of the responses are:

- Pharmacists listed information from CURES the most common reason for changes in their dispensing practices (63 percent)

- Nearly all pharmacists and 92 percent of physicians reported that they had heard of CURES.

- Among respondents who were required to register for CURES, 96 percent of pharmacists reported that they were either registered or in the process of registering for CURES.

- Pharmacists reported having used CURES for longer than physicians. Over half (54 percent) of pharmacists reported using CURES for more than a year, and 70 percent reported using CURES for 7 months or more. In contrast, only 33 percent of physicians

reported using CURES for more than a year, and 49 percent of physicians reported using CURES for 7 months or more.

- 32 percent of pharmacists rated registering for CURES as “difficult” or “very difficult” compared to 43 percent of physicians.

- 36 percent of pharmacists indicated that they check CURES for at least 50 percent of the controlled substance prescriptions they dispense or manage, while 28 percent of physicians indicated that they check CURES for least 50 percent of the patients to whom they prescribe controlled substances.

- For overall ease of use, 47 percent of pharmacists rated CURES 2.0 as an improvement over the prior system. For Patient Activity Reports, 52 percent of pharmacists reported that CURES 2.0 was an improvement over the prior system.

- When asked whether they felt they needed additional training or education about CURES, 40 percent of pharmacists responded affirmatively.

- A substantial majority of physicians (81 percent) and pharmacists (91 percent) agreed that their colleagues should check CURES when prescribing or dispensing a controlled substance.

- 39 percent of pharmacists supported mandatory CURES use for their colleagues.

The survey results suggest that access to CURES has a major effect on pharmacists dispensing practices, and that increased professional awareness of risks and benefits plays a major role in decreased prescribing /dispensing for both physicians and pharmacists. These survey results indicate that pharmacists have near perfect compliance with mandatory CURES registration.

A copy of the survey is provided in **Attachment 3.**

VII. Discussion and Consideration of Possible Statutory Proposal to Require E-Prescribing of Prescription Drugs

Attachment 4

Relevant Law

Since at least 1994, California was positioned to allow e-prescribing for dangerous drugs and controlled substances; however, for prescribing controlled substances, California had to wait for the DEA to finish its federal requirements in 2010.

The DEA's Final Rule for Electronic Prescriptions for Controlled Substances (EPCS) was published on March 31, 2010 at 75 FR 16236-16319 and became effective on June 1, 2010. These regulations paved the way for controlled substance prescriptions to be issued electronically.

Background

Prescription medications may be prescribed on paper, verbally or electronically. Controlled medications, a subset of prescription medication, have special restrictions that specify conditions for oral or written prescriptions and electronic prescriptions must comply with federal requirements. Additionally in California, if written, the prescriptions must generally be written on prescription forms printed by DOJ-licensed printers with 14 specific features. Schedule II controlled medications, with rare exceptions, cannot be orally ordered or refilled.

Over the past decade, the abuse of pharmaceutical drugs, both controlled and noncontrolled has skyrocketed in the United States and has led to the current opioid epidemic throughout the country.

In California specifically, through this system of paper prescriptions, criminal organizations have been able to take advantage of weaknesses and lack of oversight of the printing program resulting in their ability to counterfeit prescriptions. This has led to the diverting of the most dangerous and addictive drugs prescribed. As recently as November 29, 2017 a member of a drug trafficking organization that illegally acquired and distributed at least 50,000 oxycodone tablets valued at $1.5 million using counterfeit security form prescriptions during a three-year span was convicted in federal court in San Diego.

Some patients who have become addicted to drugs or simply want to divert drugs alter prescriptions to increase the quantity prescribed, add additional drugs, or add refills. Some steal entire prescription pads from prescribers, which are sold to criminal organizations or used by addicts to fill the drugs of their choice. Prescribers routinely report losing their pads to the Board of Pharmacy as well as to other agencies.

Currently, there are seven states that have passed legislation on e-prescribing. Laws already exist in three states (NY, MN, and ME) while the remaining four will become effective in 2018. Of the three states with active laws, Minnesota's requires prescribers, pharmacies and health systems to have the capabilities to e-prescribe but does not mandate its use. However, NY and ME mandate the use of e-prescribing as the primary means of prescribing medication.

According to Surescripts data, 98 percent of retail pharmacies were able to accept e-prescriptions, 45.3 million prescriptions for controlled substances were delivered electronically in 2016, a 256 percent increase from the 12.81 million controlled substance e-prescriptions in 2015.

In New York, which has had a mandate since March 2016 for both controlled and non-controlled prescriptions to be e-prescribed:

- 98.1 percent of pharmacies were EPCS-enabled,
- 72.1 percent of prescribers were EPCS-enabled (one year ago, only 47% of New York prescribers could use EPCS) and
- 91.9 percent of controlled substance prescriptions were sent electronically,

(according to Surescripts).

The use of e-prescribing in California is increasing because e-prescribing helps to

- Reduce overall mistakes made in interpreting physicians' handwriting,
- Allow for the prescription information to auto populate in the pharmacy without staff input,
- Reduce patients' wait times for filling prescriptions,
- Enable fast retrieval of records,
- Save space saving by e-storage of records,
- Substantially reduce the opportunities for persons to steal, alter, "doctor shop," or counterfeit prescriptions thus decreasing unsupervised access to medication.

For Committee Discussion and Consideration

Board staff recommends sponsoring legislation to require e-prescribing as the primary mode for ordering controlled and other prescription drugs in CA. Staff notes that the proposal would need to allow for exemptions to the e-prescribing requirements to address some scenarios, e.g., for terminally ill patients, or when the electronic system is not available. There would still be a need for paper prescriptions and existing patient-care exemptions, etc.

As part of its discussion the committee may also want to consider when such provisions would take effect. [In NY, the mandate to use e-prescribing was three years after enactment of their regulations and their full implementation data being 2016 (several other exemptions are still being phased into e-prescribing).]

Attachment 4 includes the DEA press release regarding the criminal arrest.

VIII. Discussion and Consideration of Noncompliant California Security Prescription Forms

The California Health and Safety Code contains specific provisions for California Security Forms, which are the specialized prescription forms for prescribing controlled substances in California. There are 14 security features that are required to appear on the form, and the California Department of Justice licenses the printers who are authorized to print these forms.

Over the last year, the board has identified noncompliant security forms in use. When identified, the board typically cites and fines the pharmacy, and advises the prescribing board that one of its practitioners is using noncompliant form. Sometimes the board also identifies fraudulent security forms in use for which are handled differently and more aggressively.

In early November, two pharmacy chains began to stop filling noncompliant security forms. Later when speaking with the Department of Justice at the end of November, the board learned that in October a DOJ audit of California licensed security printers identified 12

companies that were producing forms that were not compliant with California's Health and Safety Code.

In order to resolve the problem without harm to patients, the executive officer released the following subscriber alert. This information is being provided to you for informational purposes.

California Health and Safety Code section 11162.1 contains 14 elements that must appear on California Security Forms, the forms used to prescribe controlled substances in California. These elements were first enacted in 2003 when the triplicate prescription form was discontinued. The law also requires that California Security Forms must be printed by CA Department of Justice licensed printers. In 2006, the law was amended again to make several changes that took effect in January 2007. Finally legislation enacted in 2011 required that the California Security Forms in use must be fully compliant with all requirements of the Health and Safety Code by July 1, 2012.*

Here is a link to the required elements in the Health and Safety Code (go to page 357): http://www.pharmacy.ca.gov/laws_regs/lawbook.pdf

In recent years, the board has continued to identify noncompliant California Security Forms in use that have been filled by California pharmacies, in violation of the Health and Safety Code requirements. The board's response upon identification of noncompliant forms having been used to dispense controlled drugs is to educate the licensee, and to cite and fine the pharmacy/pharmacists involved. Typically the licensing board for the prescriber is advised as well.

Recently some pharmacies have begun to refuse to fill prescriptions written on noncompliant forms where item 11162.1(a)(10) is not fully compliant with the required elements. One of these elements is " Check boxes shall be printed on the form so that the prescriber may indicate the number of refills ordered." There are also additional elements missing on some forms, including lack of a watermark on the reverse of the form.

The board recently has received complaints from patients or prescribers whose patients have been denied medication from the pharmacy because of the noncompliant forms.

Interim Solutions

- *Prescribers and dispensers need to become familiar with the 14 required elements of the security prescription forms.*
- *Prescribers with noncompliant forms should reorder compliant forms from a DOJ-licensed security printer.*
- *Prescribers with noncompliant forms should consider using e-prescribing for controlled substances.*

Additionally:

1. *Schedule III -V controlled substances may be filled (and refilled) if the pharmacist treats the prescription as an oral prescription and verifies orally with the prescriber the number of any refills ordered with notations on the security form.*
2. *California law provides that Schedule II drugs cannot generally be orally prescribed, nor can they be refilled using a California Security Prescription. However, when there is no alternative except to prescribe a Schedule II controlled medication using a noncompliant California Security Form to allow patients to receive their pain medications timely, prescribers and dispensers should communicate about why a noncompliant California Security Form is being used on a temporary basis.*

**Please note this exception to the security forms requirements: controlled substances prescriptions written for patients with a terminal illness may be written on ordinary prescription forms pursuant to section 11159.2 of the Health &Safety Code – here is a link (see page 352):*
http://www.pharmacy.ca.gov/laws_regs/lawbook.pdf

IX. Update on Emergency Regulation to Amend California Code of Regulations, Title 16 Section 1735.2, Relating to Compounding Beyond Use Dates

Attachment 5

During its July 2017 Board Meeting, the board voted to pursue an emergency regulation to amends Section 1735.2. The emergency rulemaking was recently approved by the department and was released for the five-day comment period on December 1, 2017. The packaged can be filed with the Office of Administrative Law on December 11, 2017. OAL will have 10 calendar days to complete its review. If approved by OAL the regulation will be effective for 180 days, during which the regular rulemaking must be promulgated to make the changes permanent. Two 90-day readoptions of the emergency regulation are allowed if the board is making progress towards adopting the permanent regulations.

The regular rulemaking file is currently undergoing pre-review by the department.

Attachment 5 includes a copy of the proposed emergency regulation language and the proposed permanent regulation language.

X. Discussion and Consideration of Draft Frequently Asked Questions Relating to Compounding Requirements, California Code of Regulations, Title 16, Sections 1735 et seq. and 1751 et seq.

Attachment 6

For several meetings the committee has considered requested changes to the board's compounding requirements. Some of the requested changes were accepted and are included in the board's emergency rulemaking and/or the permanent rulemaking referenced above.

When considering some other requested changes, members determined that a change to the regulation was not necessary but additional guidance should be provided in the form on a FAQ.

Attachment 6 includes draft FAQs in the following areas:

- Electronic monitoring of refrigerator and freezer temperatures
- Definition of Sterility
- Definition of Stability
- Identical as applied CCR Section 1735.2(i)(4)
- Quality assurance minimum testing requirements

XI. Discussion and Consideration of Requested Changes to Board Compounding Regulations, California Code of Regulations, Title 16, Sections 1735 et seq. and 1751 et seq., Including Presentation Regarding Beyond Use Date Testing

Attachment 7

As included on the agenda, during the meeting a presentation on testing used for establishing beyond use dates.

Relevant Law

CCR Section 1735 et seq., and CCR section 1751 et seq., establish the requirements for compounding drug preparation.

Business and Professions Code section 4127.1 requires the board to adopt regulations to establish policies, guidelines and procedures to implement Article 7.5, Sterile Drug Products, and further requires the board to review any formal revisions to General Chapter 797 of the United States Pharmacopeia and the National Formulary (USP-NF) relating to the compounding of sterile preparations not later than 90 days after the revision becomes official.

Background

Since adoption of the board's current compounding regulations, the committee and board have received public comment regarding the impact of the regulations on patient populations, principally for oral compounded preparations, including animals.

The committee held meetings on June 2, 2017, and July 11, 2017, to consider both written and verbal comments and requested changes offered by board staff and members of the public. As noted in prior agenda items, the board initiated an emergency and regular rulemaking to update its regulations in response to some of the request changes considered by the committee.

During the September 2017 committee meeting, it was requested that the committee continue its consideration of additional requested changes offered by stakeholders during previous meetings.

For Committee Discussion

During the meeting, the committee will have the opportunity to review additional outstanding items and make recommendations as it deems appropriate. Below is a brief summary of the requested change and relevant information.

Proposed Change to CCR 1735(b) regarding the use of compounding kits
The committee previously considered a change that would exempt from the definition of compounding the combining of nonhazardous ingredients from prepackaged kits supplied by an FDA registered manufacturer for nonsterile preparations. In response to public comment, board staff was directed to contact the FDA to determine the level of regulatory oversight these kits have. Staff has been advised that the FDA is not aware of any FDA approved applications for compounding kits and the FDA has not conducted premarket review of any instructions provided with product or any premarket review of the manufacturer's assignment of BUDs. The FDA also advised board staff that it is currently reviewing its policy in this area.

Given the review being undertaken by the FDA, rather than exempting compounding kits from the definition of compounding, an alternative approach may be to exempt such compounding from some of the regulation requirements such as the compounding log.

Based on the direction from the committee, staff can develop language to facilitate implementation.

Proposed Change to CCR Section 1735.1(r) regarding the board's current definition of "hazardous drug"
The committee previously considered a request to change the board's definition of "hazardous drug" to mirror the definition provided in USP <800>. In late September 2017 USP announced the postponement of the official date of Chapter <800> until December 1, 2019 to coincide with the anticipated update to Chapter <797>. Consistency between the board's definition of hazardous and USP <800> would be beneficial to the board's regulated public. However, given the postponement of the relevant USP Chapter, it seems appropriate for the committee to provide guidance on its preference for reconciling the two definitions.

Below is language that could be used to update the board's definition of hazardous to coincide with the effective date of USP <800>:

…

(r) Until December 1, 2019, "~~H~~hazardous" means all anti-neoplastic agents identified by the National Institute for Occupational Safety and Health (NIOSH) as meeting the criteria for a hazardous drug and any other drugs, compounds, or materials identified as hazardous by the pharmacist-in-charge. Effective December 1, 2019, "hazardous" means any drug identify by NIOSH and that exhibit as at least one of the following six criteria:

(1) Carcinogenicity

(2) Teratogencitiy of developmental toxicity

(3) Reproductive toxicity in humans

(4) Organ toxicity in low doses in human or animals

(5) Genotoxicity

(6) New drugs that mimic existing hazardous drugs in structure or toxicity.

…

Proposed Change to CCR Section 1735.2(a), regarding documentation of prescriber's authorization to compound

During prior discussions, the committee considered if it would be appropriate to remove the requirement to document a prescriber's authorization to compound a product and requested additional research to be conducted by board staff. Without documentation neither the pharmacy nor the board will have any record that the prescriber authorized use of a compounded product. Public comment previously contemplated that such a requirement could result in a delay in therapy. A slight revision to the language or an FAQ could be developed to specify that the documentation could be made after the compounded preparation is dispensed.

Proposed Change to CCR Section 1735.2(i)(2)-(4), regarding BUDs for sterile drug products

During prior discussions, the committee considered if changes were necessary to the requirements for the establishment of a BUD for sterile products. (BUD requirements for nonsterile products are currently undergoing changes through the emergency rulemaking.) At the time of its last discussion, the committee was anticipating changes to USP <797> would be in place in 2018. Given the delay in those changes, it may be appropriate consider if board requirements should be updated now and reassessed after USP completes it work.

Below is recommended language which may more clearly align with current USP <797> requirements for the committee's consideration should it decide updates are appropriate.

…

(2) For sterile compounded drug preparations, the beyond use date shall not exceed any of the following:

(A) The shortest expiration date or beyond use date of any ingredient in the sterile compounded drug product preparation,

(B) The chemical stability of any one ingredient in the sterile compounded drug preparation,

(C) The chemical stability of the combination of all ingredients in the sterile compounded drug preparation, ~~and~~

(D) The beyond use date assigned for sterility in section 1751.8~~.~~, or

(~~3~~E) ~~Extension of a beyond use date is only allowable when supported by the following:~~ A beyond use date established by a pharmacist using his or her professional judgment after conducting research and analysis and preparing documentation. The pharmacist's documentation must demonstrate that:

(~~A~~ i) The beyond use date is supported by a USP <671> compliant Method Suitability Test,

(~~B~~ii) The beyond use date is supported by a USP <1191> Container Closure Integrity Test, ~~and~~

(~~C~~iii) The beyond use date is supported by Stability Studies, and

(4iv) ~~In addition to the requirements of paragraph three (3),~~ T~~t~~he drugs or compounded drug preparations tested and studied shall be identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation.

…

Proposed Change to CCR Section 1735.6(e), regarding the venting requirements for hazardous drug compounding.

The board's current regulations require such compounding (among other requirements) must be completed in an externally vented, physically separated room and that each PEC in the room shall also be externally vented. [This is one of two provisions where the board has established the authority for a pharmacy to secure a temporary waiver to complete construction necessary to comply.] Board staff received questions about the venting requirements and was recently advised that the board's application of the requirement (which allows a single venting system for both the PEC and the room) is consistent with OSHPD's. Specifically, OSHPD advised the board staff that there is nothing in the code or USP that prevents a designer from venting the room through the hood and noted that the key is to ensure that the design would not violate the hood's listing requirements to be able to maintain its ISO-5 environment.

During prior discussions, the committee considered if alternative containment strategies for hazardous drugs could be considered. Given the statements from OSHPD on this item, board staff does not believe such a change is appropriate.

Recently, board staff was advised that the board's requirements should be placed in the Building Standards Code. Board staff will be working with legal counsel to determine if such a change is necessary and if so, the best strategy for implementation.

Proposed Change to CCR Section 1751.4(d) regarding where decontamination requirements and cleaning frequency.

In response to questions submitted previously, it was suggested that the board should consider detailing contamination requirements as well as reconsider the frequency of cleaning some surfaces and areas that must be cleaned. Below is suggested language that could be used to update such requirements.

…

(d) Cleaning shall be done using a germicidal detergent ~~and sterile water~~. The use of a sporicidal agent is required to be used at least monthly. When hazardous drugs are being compounded, decontamination with an inactivating agent shall take place before each cleaning. Any dilution of the germicidal detergent, sporicidal agent, or inactivating agent shall only be done with sterile water.

(1) All ISO Class 5 surfaces, work table surfaces, carts, counters, and the cleanroom floor shall be cleaned at least every 48 hours and at minimum must be cleaned each day prior to compounding.~~at least daily~~. After each cleaning, disinfection using a suitable sterile agent shall occur on all ISO Class 5 surfaces, work table surfaces, carts, and counters.

(2) Walls, ceilings, storage, shelving, tables, stools, and all other items in the ISO Class 7 or ISO Class 8 environment, and the segregated sterile compounding areas shall be cleaned at least monthly.

(3) Cleaning shall also occur after any unanticipated event that could increase the risk of contamination.

(4) All cleaning materials, such as wipers, sponges, and mops, shall be non-shedding and dedicated to use in the cleanroom, or ante-area, and segregated sterile compounding areas and shall not be removed from these areas except for disposal.

…

Proposed Change to CCR Section 1751.7(e)(1) regarding alternative testing methods and end product testing requirements

The committee has previously considered whether a rapid microbial test method may be appropriate to consider. Such testing, when used and applied appropriately can provide test results much more quickly than current testing requirements which could address some concerns raised about delays in therapy. Below is suggested language that could be used to allow for the use of rapid microbial method testing for batch-produced sterile drug programs.

…

(e)(1) Batch-produced sterile drug preparations compounded from one or more non-sterile ingredients, except as provided in paragraph (2), shall be subject to documented end product testing for sterility and pyrogens and shall be quarantined until the end product testing confirms sterility and acceptable levels of pyrogens. Sterility testing shall be USP chapter 71 compliant unless a validated rapid microbial method (RMM) test is performed and pyrogens testing shall confirm acceptable levels of pyrogens per USP chapter 85 limits, before dispensing. Validation studies (method suitability) for each formulation using a RMM test shall be kept in a readily retrievable form at the licensed location. This requirement of end product testing confirming sterility and acceptable levels of pyrogens prior to dispensing shall apply regardless of any sterility or pyrogen testing that may have been conducted on any ingredient or combination of ingredients that were previously non-sterile. Exempt from pyrogen testing are topical ophthalmic and inhalation preparations.

…

Also related to this section, the committee has previously considered if the board should expand its current exception for end product testing of non-sterile to sterile batch preparations. Given that pharmacies need to provide compounded preparations when a drug is in short supply, a limited exception for such instances may be appropriate. Below is language that could be used to create such an exception.

…

(2) The following non-sterile-to-sterile batch drug preparations do not require end product testing for sterility and pyrogens:

(A) Preparations for self-administered ophthalmic drops in a quantity sufficient for administration to a single patient for 30 days or less pursuant to a prescription.

(B) Preparations for self-administered inhalation in a quantity sufficient for administration to a single patient for 5 days or less pursuant to a prescription.

(C) Preparations noted as “Currently in Shortage” on the FDA website for a single patient on a one-time basis for 21 days or less pursuant to a prescription. The pharmacy shall retain a copy of the documentation of the shortage and the specific medical need as part of the pharmacy record.

…

In addition to the above items, it is anticipated that public comment may also be provided on other provisions of the board's compounding regulations. Board staff recently began receiving emails regarding the board's compounding regulations. The emails appear very similar in content.

Attachment 7 includes a copy of each of the above regulation sections showing the full regulation text for each section, a paper entitled, "*Strength and Stability Testing for Compounded Preparations,*" and a sample of the comments sent via email. During the meeting a printout of the emails received through Friday will be available for committee members to review as well as a copy available for the public.

XII. Status Report on Waivers Issued for Compounding Construction Compliance Delays Pursuant to California Code of Regulations, Title 16, Sections 1735.6 and 1751.4

Relevant Law

Title 16 of California Code of Regulations (CCR) section 1735.6 (f) states that where compliance with California's compounding regulations requires physical construction or alteration to a facility or physical environment, the board may grant a waiver for a period of time to permit the required physical changes. There is a related provision in CCR section 1751.4 which provides the same allowances for sterile compounding facilities.

Overview of Process

An application for any waiver must be made in writing, identify the provisions requiring physical construction or alteration, and provide a timeline for any such changes. The board is able to grant the waiver for a specified period when, in its discretion, good cause is demonstrated for the waiver.

Initial review of the waiver is performed by staff led by the executive officer, who approves or denies the waiver request. Approval or denial of a waiver is provided to facilities in writing. If a waiver is denied by the executive officer, there is an appeal process that will be reviewed by two board members, currently Board Members Schaad and Law.

The goal of the construction waiver process is to secure full compliance at the earliest possible time.

Facilities that have been denied a waiver have been made aware that there is an appeal process. Such waiver appeals go to the subcommittee of Mr. Schaad and Mr. Law. There have been no additional appeals made since July 1, 2017.

Most request waiver from sections are 1735.6(e) and 1751.4(g) for the external venting requirement for compounding hazardous drugs.

Update

The waiver review process is ongoing as pharmacies continue to seek extensions or

modifications (often due to construction delays) in their facilities to comply with <USP> 800. During the November 2017 Board Meeting, the recent delay in USP <800> to December 1, 2019, was discussed. The board directed staff to continue to evaluate waivers and monitor progress toward compliance with the board's regulation. The board granted authority to the executive officer to grant waivers through November 30, 2019.

The board's continued monitoring of progress is consistent with USP, which is "…encouraging early adoption and implementation of Chapter <800> to help ensure a safe environment and protection of healthcare practitioners and others when handling hazardous drugs."

Since the waiver process began, 415 waivers have been approved. Board staff continues to receive a relatively low number of new requests. However, as implementation of the waivers transitions to a monitoring phase, board staff is now undertaking review of status reports that are documenting progress of an entity to achieving compliance.

XIII. Enforcement Statistics

Enforcement statistics for the first five months of FY 2017/18 will be provided during the meeting.

XIV. Future Committee Meeting Dates

Below are the committee dates for 2018.

- March 28, 2018
- June 7, 2018
- September 5, 2018
- December 13, 2018

Attachment 1

1713. Receipt and Delivery of Prescriptions and Prescription Medications Must Be to or from Licensed Pharmacy

(a) Except as otherwise provided in this Division, no licensee shall participate in any arrangement or agreement, whereby prescriptions, or prescription medications, may be left at, picked up from, accepted by, or delivered to any place not licensed as a retail pharmacy.

(b) A licensee may pick up prescriptions at the office or home of the prescriber or pick up or deliver prescriptions or prescription medications at the office of or a residence designated by the patient or at the hospital, institution, medical office or clinic at which the patient receives health care services. In addition, the Board may, in its sole discretion, waive application of subdivision (a) for good cause shown.

(c) A patient or the patient's agent may deposit a prescription in a secure container that is at the same address as the licensed pharmacy premises. The pharmacy shall be responsible for the security and confidentiality of the prescriptions deposited in the container.

(d) A pharmacy may use an automated delivery device to deliver previously dispensed prescription medications provided:

(1) Each patient using the device has chosen to use the device and signed a written consent form demonstrating his or her informed consent to do so.

(2) A pharmacist has determined that each patient using the device meets inclusion criteria for use of the device established by the pharmacy prior to delivery of prescription medication to that patient.

(3) The device has a means to identify each patient and only release that patient's prescription medications.

(4) The pharmacy does not use the device to deliver previously dispensed prescription medications to any patient if a pharmacist determines that such patient requires counseling as set forth in section 1707.2(a)(2).

(5) The pharmacy provides an immediate consultation with a pharmacist, either in-person or via telephone, upon the request of a patient.

(6) The device is located adjacent to the secure pharmacy area.

(7) The device is secure from access and removal by unauthorized individuals.

(8) The pharmacy is responsible for the prescription medications stored in the device.

(9) Any incident involving the device where a complaint, delivery error, or omission has occurred shall be reviewed as part of the pharmacy's quality assurance program mandated by Business and Professions Code section 4125.

(10) The pharmacy maintains written policies and procedures pertaining to the device as described in subdivision (e).

(e) Any pharmacy making use of an automated delivery device as permitted by subdivision (d) shall maintain, and on an annual basis review, written policies and procedures providing for:

(1) Maintaining the security of the automated delivery device and the dangerous drugs within the device.

(2) Determining and applying inclusion criteria regarding which medications are appropriate for placement in the device and for which patients, including when consultation is needed.

(3) Ensuring that patients are aware that consultation with a pharmacist is available for any prescription medication, including for those delivered via the automated delivery device.

(4) Describing the assignment of responsibilities to, and training of, pharmacy personnel regarding the maintenance and filing procedures for the automated delivery device.

(5) Orienting participating patients on use of the automated delivery device, notifying patients when expected prescription medications are not available in the device, and ensuring that patient use of the device does not interfere with delivery of prescription medications.

(6) Ensuring the delivery of medications to patients in the event the device is disabled or malfunctions.

(f) Written policies and procedures shall be maintained at least three years beyond the last use of an automated delivery device.

(g) For the purposes of this section only, "previously-dispensed prescription medications" are those prescription medications that do not trigger a non-discretionary duty to consult under section 1707.2(b)(1), because they have been previously dispensed to the patient by the pharmacy in the same dosage form, strength, and with the same written directions.

Authority cited: Sections 4005, 4075, and 4114 Business and Professions Code. Reference: Sections 4005, 4052, 4116 and 4117 Business and Professions Code.

State of California

BUSINESS AND PROFESSIONS CODE

Section 4105.5

4105.5. (a) For purposes of this section, an "automated drug delivery system" has the same meaning as that term is defined in paragraph (1) of subdivision (a) of Section 1261.6 of the Health and Safety Code.

(b) Except as provided by subdivision (e), a pharmacy that owns or provides dangerous drugs dispensed through an automated drug delivery system shall register the automated drug delivery system by providing the board in writing with the location of each device within 30 days of installation of the device, and on an annual basis as part of the license renewal pursuant to subdivision (a) of Section 4110. The pharmacy shall also advise the board in writing within 30 days if the pharmacy discontinues operating an automated drug delivery system.

(c) A pharmacy may only use an automated drug delivery system if all of the following conditions are satisfied:

(1) Use of the automated drug delivery system is consistent with legal requirements.

(2) The pharmacy's policies and procedures related to the automated drug delivery system to include appropriate security measures and monitoring of the inventory to prevent theft and diversion.

(3) The pharmacy reports drug losses from the automated drug delivery system to the board as required by law.

(4) The pharmacy license is unexpired and not subject to disciplinary conditions.

(d) The board may prohibit a pharmacy from using an automated drug delivery system if the board determines that the conditions provided in subdivision (c) are not satisfied. If such a determination is made, the board shall provide the pharmacy with written notice including the basis for the determination. The pharmacy may request an office conference to appeal the board's decision within 30 days of receipt of the written notice. The executive officer or designee may affirm or overturn the prohibition as a result of the office conference.

(e) An automated drug delivery system operated by a licensed hospital pharmacy as defined in Section 4029 for doses administered in a facility operated under a consolidated license under Section 1250.8 of the Health and Safety Code shall be exempt from the requirements of subdivision (b).

(Added by Stats. 2016, Ch. 484, Sec. 18. (SB 1193) Effective January 1, 2017.)

State of California

BUSINESS AND PROFESSIONS CODE

Section 4186

4186. (a) Automated drug delivery systems, as defined in subdivision (h), may be located in any clinic licensed by the board pursuant to Section 4180. If an automated drug delivery system is located in a clinic, the clinic shall develop and implement written policies and procedures to ensure safety, accuracy, accountability, security, patient confidentiality, and maintenance of the quality, potency, and purity of drugs. All policies and procedures shall be maintained at the location where the automated drug system is being used.

(b) Drugs shall be removed from the automated drug delivery system only upon authorization by a pharmacist after the pharmacist has reviewed the prescription and the patient's profile for potential contraindications and adverse drug reactions. Drugs removed from the automated drug delivery system shall be provided to the patient by a health professional licensed pursuant to this division.

(c) The stocking of an automated drug delivery system shall be performed by a pharmacist.

(d) Review of the drugs contained within, and the operation and maintenance of, the automated drug delivery system shall be the responsibility of the clinic. The review shall be conducted on a monthly basis by a pharmacist and shall include a physical inspection of the drugs in the automated drug delivery system, an inspection of the automated drug delivery system machine for cleanliness, and a review of all transaction records in order to verify the security and accountability of the system.

(e) The automated drug delivery system used at the clinic shall provide for patient consultation pursuant to Section 1707.2 of Title 16 of the California Code of Regulations with a pharmacist via a telecommunications link that has two-way audio and video.

(f) The pharmacist operating the automated drug delivery system shall be located in California.

(g) Drugs dispensed from the automated drug delivery system shall comply with the labeling requirements in Section 4076.

(h) For purposes of this section, an "automated drug delivery system" means a mechanical system controlled remotely by a pharmacist that performs operations or activities, other than compounding or administration, relative to the storage, dispensing, or distribution of prepackaged dangerous drugs or dangerous devices. An automated drug delivery system shall collect, control, and maintain all transaction information to accurately track the movement of drugs into and out of the system for security, accuracy, and accountability.

(Added by Stats. 2001, Ch. 310, Sec. 1. Effective January 1, 2002.)

State of California

HEALTH AND SAFETY CODE

Section 1261.6

1261.6. (a) (1) For purposes of this section and Section 1261.5, an "automated drug delivery system" means a mechanical system that performs operations or activities, other than compounding or administration, relative to the storage, dispensing, or distribution of drugs. An automated drug delivery system shall collect, control, and maintain all transaction information to accurately track the movement of drugs into and out of the system for security, accuracy, and accountability.

(2) For purposes of this section, "facility" means a health facility licensed pursuant to subdivision (c), (d), or (k), of Section 1250 that has an automated drug delivery system provided by a pharmacy.

(3) For purposes of this section, "pharmacy services" means the provision of both routine and emergency drugs and biologicals to meet the needs of the patient, as prescribed by a physician.

(b) Transaction information shall be made readily available in a written format for review and inspection by individuals authorized by law. These records shall be maintained in the facility for a minimum of three years.

(c) Individualized and specific access to automated drug delivery systems shall be limited to facility and contract personnel authorized by law to administer drugs.

(d) (1) The facility and the pharmacy shall develop and implement written policies and procedures to ensure safety, accuracy, accountability, security, patient confidentiality, and maintenance of the quality, potency, and purity of stored drugs. Policies and procedures shall define access to the automated drug delivery system and limits to access to equipment and drugs.

(2) All policies and procedures shall be maintained at the pharmacy operating the automated drug delivery system and the location where the automated drug delivery system is being used.

(e) When used as an emergency pharmaceutical supplies container, drugs removed from the automated drug delivery system shall be limited to the following:

(1) A new drug order given by a prescriber for a patient of the facility for administration prior to the next scheduled delivery from the pharmacy, or 72 hours, whichever is less. The drugs shall be retrieved only upon authorization by a pharmacist and after the pharmacist has reviewed the prescriber's order and the patient's profile for potential contraindications and adverse drug reactions.

(2) Drugs that a prescriber has ordered for a patient on an as-needed basis, if the utilization and retrieval of those drugs are subject to ongoing review by a pharmacist.

(3) Drugs designed by the patient care policy committee or pharmaceutical service committee of the facility as emergency drugs or acute onset drugs. These drugs may

be retrieved from an automated drug delivery system pursuant to the order of a prescriber for emergency or immediate administration to a patient of the facility. Within 48 hours after retrieval under this paragraph, the case shall be reviewed by a pharmacist.

(f) When used to provide pharmacy services pursuant to Section 4119.1 of the Business and Professions Code, the automated drug delivery system shall be subject to all of the following requirements:

(1) Drugs removed from the automated drug delivery system for administration to a patient shall be in properly labeled units of administration containers or packages.

(2) A pharmacist shall review and approve all orders prior to a drug being removed from the automated drug delivery system for administration to a patient. The pharmacist shall review the prescriber's order and the patient's profile for potential contraindications and adverse drug reactions.

(3) The pharmacy providing services to the facility pursuant to Section 4119.1 of the Business and Professions Code shall control access to the drugs stored in the automated drug delivery system.

(4) Access to the automated drug delivery system shall be controlled and tracked using an identification or password system or biosensor.

(5) The automated drug delivery system shall make a complete and accurate record of all transactions that will include all users accessing the system and all drugs added to, or removed from, the system.

(6) After the pharmacist reviews the prescriber's order, access by licensed personnel to the automated drug delivery system shall be limited only to drugs ordered by the prescriber and reviewed by the pharmacist and that are specific to the patient. When the prescriber's order requires a dosage variation of the same drug, licensed personnel shall have access to the drug ordered for that scheduled time of administration.

(7) (A) Systems that allow licensed personnel to have access to multiple drugs and are not patient specific in their design, shall be allowed under this subdivision if those systems have electronic and mechanical safeguards in place to ensure that the drugs delivered to the patient are specific to that patient. Each facility using such an automated drug system shall notify the department in writing prior to the utilization of the system. The notification submitted to the department pursuant to this paragraph shall include, but is not limited to, information regarding system design, personnel with system access, and policies and procedures covering staff training, storage, and security, and the facility's administration of these types of systems.

(B) As part of its routine oversight of these facilities, the department shall review a facility's medication training, storage, and security, and its administration procedures related to its use of an automated drug delivery system to ensure that adequate staff training and safeguards are in place to make sure that the drugs delivered are appropriate for the patient. If the department determines that a facility is not in compliance with this section, the department may revoke its authorization to use automated drug delivery systems granted under subparagraph (A).

(g) The stocking of an automated drug delivery system shall be performed by a pharmacist. If the automated drug delivery system utilizes removable pockets, cards,

drawers, similar technology, or unit of use or single dose containers as defined by the United States Pharmacopoeia, the stocking system may be done outside of the facility and be delivered to the facility if all of the following conditions are met:

(1) The task of placing drugs into the removable pockets, cards, drawers, or unit of use or single dose containers is performed by a pharmacist, or by an intern pharmacist or a pharmacy technician working under the direct supervision of a pharmacist.

(2) The removable pockets, cards, drawers, or unit of use or single dose containers are transported between the pharmacy and the facility in a secure tamper-evident container.

(3) The facility, in conjunction with the pharmacy, has developed policies and procedures to ensure that the removable pockets, cards, drawers, or unit of use or single dose containers are properly placed into the automated drug delivery system.

(h) Review of the drugs contained within, and the operation and maintenance of, the automated drug delivery system shall be done in accordance with law and shall be the responsibility of the pharmacy. The review shall be conducted on a monthly basis by a pharmacist and shall include a physical inspection of the drugs in the automated drug delivery system, an inspection of the automated drug delivery system machine for cleanliness, and a review of all transaction records in order to verify the security and accountability of the system.

(i) Drugs dispensed from an automated drug delivery system that meets the requirements of this section shall not be subject to the labeling requirements of Section 4076 of the Business and Professions Code or Section 111480 of this code if the drugs to be placed into the automated drug delivery system are in unit dose packaging or unit of use and if the information required by Section 4076 of the Business and Professions Code and Section 111480 of this code is readily available at the time of drug administration. For purposes of this section, unit dose packaging includes blister pack cards.

(Amended by Stats. 2016, Ch. 484, Sec. 54. (SB 1193) Effective January 1, 2017.)

Attachment 2

Grandfathering Policy for Packages and Homogenous Cases of Product Without a Product Identifier

Guidance for Industry

DRAFT GUIDANCE

This guidance document is being distributed for comment purposes only.

Comments and suggestions regarding this draft document should be submitted within 60 days of publication in the *Federal Register* of the notice announcing the availability of the draft guidance. Submit electronic comments to https://www.regulations.gov. Submit written comments to the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

For questions regarding this draft document contact (CDER) Office of Compliance at 301-796-3100 or (CBER) Office of Communication, Outreach and Development, 800-835-4709 or 240-402-8010, or drugtrackandtrace@fda.hhs.gov.

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)
Office of Regulatory Affairs (ORA)

November 2017
Procedural

Grandfathering Policy for Packages and Homogenous Cases of Product Without a Product Identifier

Guidance for Industry

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Food and Drug Administration
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Grandfathering Policy for Packages and Homogenous Cases of Product Without a Product Identifier Guidance for Industry[1]

This draft guidance, when finalized, will represent the current thinking of the Food and Drug Administration (FDA or Agency) on this topic. It does not establish any rights for any person and is not binding on FDA or the public.[2] You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations. To discuss an alternative approach, contact the FDA staff responsible for this guidance as listed on the title page.

I. INTRODUCTION

This draft guidance addresses product distribution security provisions in section 582 of the Federal Food, Drug, and Cosmetic Act (FD&C Act) (21 U.S.C. 360eee). Section 582 was added by the Drug Supply Chain Security Act (DSCSA) (Title II of Public Law 113-54) and facilitates the tracing of products through the pharmaceutical distribution supply chain by requiring trading partners[3] (manufacturers, repackagers, wholesale distributors, and dispensers) to exchange transaction information, transaction history, and a transaction statement (product tracing information) when engaging in transactions involving certain prescription drug products. In addition, section 582 requires manufacturers and repackagers to start affixing or imprinting a product identifier to each package[4] and homogenous case[5] of product no later than November 27, 2017 (for manufacturers) and November 27, 2018 (for repackagers).[6]

[1] This guidance has been prepared by the Center for Drug Evaluation and Research (CDER) in cooperation with the Center for Biologics Evaluation and Research (CBER) and the Office of Regulatory Affairs (ORA) at the Food and Drug Administration.

[2] This sentence does not apply to the discussion regarding the circumstances under which packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582 of the FD&C Act shall be exempted from the requirements of section 582.

[3] For this guidance, *trading partner* is defined as described in section 581(23)(A) of the FD&C Act (21 U.S.C. 30eee(23)(A)). Although third-party logistics providers are also considered trading partners under section 581(23)(B) (21 U.S.C. 30eee(23)(B)) of the FD&C Act, they are not subject to the same product tracing requirements of section 582.

[4] *Package* is defined in section 581(11) of the FD&C Act.

[5] *Homogeneous case* is defined in section 581(7) of the FD&C Act. The terms "homogeneous" and "homogenous" are used interchangeably throughout the DSCSA. FDA has chosen to use only the term "homogenous" throughout this guidance.

[6] See section 582(b)(2)(A) and 582(e)(2)(A)(i) of the FD&C Act. See also FDA's draft guidance, *Product Identifier Requirements Under the Drug Supply Chain Security Act – Compliance Policy* (explaining, among other things, that FDA does not intend to take action against manufacturers who do not affix or imprint a product identifier to each package and homogenous case of products intended to be introduced in a transaction into commerce before November 26, 2018).

We are issuing this guidance to help trading partners understand their compliance obligations under section 582 for packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582. This guidance, which is required by section 582(a)(5)(A) of the DSCSA, specifies whether and under what circumstances such packages and homogenous cases of product shall be exempted, as grandfathered, from certain requirements of section 582. It also briefly discusses the distinctions between the grandfathering policy provisions of this guidance with the draft guidance, *Product Identifier Requirements Under the Drug Supply Chain Security Act – Compliance Policy*.[7]

In general, FDA's guidance documents do not establish legally enforceable responsibilities. Instead, guidances describe the Agency's current thinking on a topic and should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidances means that something is suggested or recommended, but not required.

An exception to that framework derives from section 582(a)(5)(A) of the FD&C Act, wherein Congress granted authorization to FDA to issue guidance specifying whether and under what circumstances packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582 shall be exempted from the requirements of section 582. Accordingly, insofar as this guidance specifies such circumstances, this document is not subject to the usual restriction in FDA's good guidance practice regulations that guidances not establish legally enforceable responsibilities. See 21 CFR 10.115(d). Therefore, when finalized, the portion of this guidance that specifies the circumstances under which packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582 shall be exempted from the requirements of section 582 will have binding effect, as indicated by the use of the words *must*, *shall*, or *required*.

II. BACKGROUND

A. Drug Supply Chain Security Act

The DSCSA (Title II of Public Law 113-54) was signed into law on November 27, 2013. Section 202 of the DSCSA added section 582 to the FD&C Act, which established product tracing requirements for manufacturers, repackagers, wholesale distributors, and dispensers of most prescription drugs in a finished dosage form for administration to a patient without

[7] When final, this guidance will represent the FDA's current thinking on this topic. For the most recent version of a guidance, check the FDA Drugs guidance web page at https://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/default.htm or FDA Biologics guidance web page at https://www.fda.gov/BiologicsBloodVaccines/GuidanceComplianceRegulatoryInformation/Guidances/default.htm.

substantial further manufacturing (products).[8] The DSCSA phases in its new requirements over a period of 10 years.

A critical component of the product tracing scheme outlined in the DSCSA is the product identifier.[9] Section 582 requires that each package and homogenous case of product in the pharmaceutical distribution supply chain bear a product identifier that is encoded with the product's standardized numerical identifier, lot number, and expiration date by specific dates. Under the statute, manufacturers are required to begin affixing or imprinting (adding) a product identifier to each package and homogenous case of a product intended to be introduced into commerce no later than November 27, 2017.[10] Repackagers are required to do the same no later than November 27, 2018.[11]

Sections 582(c)(2), (d)(2), and (e)(2)(A)(iii) of the DSCSA restrict trading partners' ability to engage in transactions involving packages and homogenous cases of product that are not labeled with a product identifier after specific dates. Beginning November 27, 2018, repackagers may not receive or transfer ownership of a package or homogenous case of a product that is not encoded with a product identifier.[12] Similar restrictions go into effect for wholesale distributors and dispensers on November 27, 2019, and November 27, 2020, respectively.[13]

Section 582(a)(5)(A) gives FDA the authority to exempt packages and homogenous cases of product without a product identifier from the product tracing requirements discussed above. We are required to issue guidance that specifies whether and under what circumstances we will exercise this authority. Only packages and homogenous cases of product that are "in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of [section 582]" are eligible for an exemption under section 582(a)(5)(A).

The draft guidance *Product Identifier Requirements Under the Drug Supply Chain Security Act – Compliance Policy* (Product Identifier Compliance Policy or compliance policy) explains that FDA does not intend to take action against manufacturers who do not add a product identifier to each package and homogenous case of product intended to be introduced in a transaction into commerce before November 27, 2018. This represents a 1-year delay in enforcement of section 582(b)(2)(A) of the FD&C Act. The Product Identifier Compliance Policy also explains that FDA does not intend to take action against manufacturers and other trading partners who transact such product or verify it for investigatory purposes or saleable returns without using the product identifier. The grandfathering policy in this guidance should be read in conjunction with the Product Identifier Compliance Policy, which is currently a draft guidance, but which the agency plans to finalize after considering comments received.

[8] Certain prescription drugs are excluded from the product tracing requirements of section 582. See section 581(13) of the FD&C Act for the definition of the term *product*.

[9] *Product identifier* is defined in section 581(14) of the FD&C Act.

[10] See section 582(b)(2)(A) of the FD&C Act. See also FDA's draft guidance, *Product Identifier Requirements Under the Drug Supply Chain Security Act – Compliance Policy*.

[11] See section 582(e)(2)(A)(i) of the FD&C Act.

[12] See section 582(e)(2)(A)(iii) of the FD&C Act.

[13] See sections 582(c)(2), (d)(2) of the FD&C Act.

B. Scope of This Guidance

This guidance specifies the circumstances under which packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582, including saleable returned packages and homogenous cases of product, shall be exempted, as grandfathered, from certain requirements of section 582. This guidance does not address products or transactions for which a waiver, exception, or exemption has been granted under section 582(a)(3) of the DSCSA from the requirement to bear a product identifier on packages and homogenous cases. FDA intends to address waivers, exceptions, and exemptions under section 582(a)(3) in a separate guidance.

III. INTERPRETATION OF SECTION 582(a)(5)(A) OF THE DSCSA

Under section 582(a)(5)(A), packages and homogenous cases of product that are not labeled with a product identifier are eligible to be exempted from the requirements of section 582 if they are "in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of this section [(i.e., section 582)]." For the purposes of this guidance, a package or homogenous case of product is "in the pharmaceutical distribution supply chain" if it was packaged by the product's manufacturer before November 27, 2018. We interpret "the effective date of the requirements of this section" as referring to the date set forth in section 582(e)(2)(A)(i) of the DSCSA regarding when repackagers must begin adding product identifiers to packages and homogenous cases of product (i.e., no later than November 27, 2018).

Consequently, a package or homogenous case of product that is not labeled with a product identifier is eligible for an exemption under section 582(a)(5)(A) as described in this guidance only if the product's manufacturer packaged the product before November 27, 2018.

IV. GRANDFATHERING POLICY[14]

FDA has determined that there are circumstances under which it would be appropriate to exempt packages and homogenous cases of product meeting the conditions of section 582(a)(5)(A) of the FD&C Act (i.e., the packages and homogenous cases of product that are not labeled with a product identifier and are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582) from certain requirements of section 582. Those circumstances, and the statutory requirements from which packages and homogenous cases of product without a product identifier shall be exempted, as grandfathered, are set forth below. Our policy for saleable returned packages and homogenous cases of product meeting the conditions of section 582(a)(5)(A) is also described below.

[14] Insofar as section IV of this guidance specifies the circumstances under which packages and homogenous cases of product that are not labeled with a product identifier and that are in the pharmaceutical distribution supply chain at the time of the effective date of the requirements of section 582 of the FD&C Act shall be exempted from the requirements of section 582, it will have binding effect, once finalized.

A. Grandfathering Exemption[15] from Certain Transaction-Related Requirements of Section 582

1. Scope of Grandfathering Exemption

A package or homogenous case of product that is not labeled with a product identifier shall be exempted from certain requirements in section 582 (i.e., grandfathered) where there is documentation that it was packaged by a manufacturer before November 27, 2018. For example, if a package or homogenous case of product not labeled with a product identifier is accompanied by transaction information or a transaction history that includes a sale before November 27, 2018, that trading partner can reasonably conclude the product was packaged by a manufacturer before that date.

If the transaction information or transaction history does not include a sale before November 27, 2018, and absent other indicia that a product may be suspect or illegitimate, the transaction statement is one indication that the product was in the pharmaceutical distribution supply chain before that date.[16] Furthermore, manufacturers retain packaging date information in the ordinary course of business and as a part of batch recordkeeping, and they should provide the packaging date to subsequent trading partners if they request it.

2. Trading Partner Requirements under the Grandfathering Exemption

The specific requirements of section 582 from which a grandfathered product is exempted are set forth below. To assist trading partners in understanding how the grandfathering exemption applies to their activities, the requirements for trading partners are addressed separately below.

- Manufacturer Requirements

  Manufacturers are exempted from two requirements of section 582 in situations where there is documentation that the product involved in the transaction was in the pharmaceutical distribution supply chain before November 27, 2018.

  - First, in those circumstances, manufacturers investigating suspect product without a product identifier to determine whether that product is illegitimate are exempted from that part of section 582(b)(4)(A)(i)(II) which requires that they verify product at the package level using the product identifier beginning November 27, 2017; specifically, manufacturers shall not be required to verify the product at the package level using the product identifier. However, a manufacturer must still validate any applicable transaction history and transaction information in its possession and otherwise investigate the product

[15] As used in this guidance, the term *grandfathering exemption* refers to an exemption from the requirements of section 582 that is established by this guidance under the authority of section 582(a)(5)(A) of the FD&C Act.
[16] Per section 581(27)(d) of the FD&C Act, the transaction statement indicates that an owner did not knowingly ship a suspect or illegitimate product.

to determine if it is illegitimate in accordance with section 582(b)(4)(A)(i)(II); the exemption does not extend to these requirements.

- Second, in those circumstances, manufacturers are exempted from that part of section 582(b)(4)(C) of the DSCSA which, beginning November 27, 2017, requires that upon request from an authorized trading partner in possession or control of a product that believes is from the manufacturer, such manufacturer verifies[17] a product at the package level using the product identifier. However, a manufacturer must still follow all other steps as described in 582(b)(4)(C).

Manufacturers must comply with all other applicable requirements of section 582 when engaging in transactions pursuant to this exemption.

- Wholesale Distributor Requirements

Wholesale distributors are exempted from two requirements of section 582 in situations where there is documentation that the product involved in the transaction was in the pharmaceutical distribution supply chain before November 27, 2018.

- First, in those circumstances, wholesale distributors are exempted from section 582(c)(2), which requires that they engage in transactions involving only product encoded with a product identifier beginning November 27, 2019.

- Second, in those circumstances, wholesale distributors are exempted from that part of section 582(c)(4)(A)(i)(II) of the DSCSA which requires that they undertake certain activities to determine whether a product is illegitimate. Specifically, wholesale distributors shall not be required to verify the product at the package level using the product identifier beginning November 27, 2019. However, wholesale distributors must still validate any applicable transaction history and transaction information in their possession and otherwise investigate the suspect product to determine if it is illegitimate. The exemption does not extend to these requirements of section 582(c)(4)(A)(i)(II).

Wholesale distributors must comply with all other applicable requirements of section 582 when engaging in transactions pursuant to this exemption.

- Dispenser Requirements

Dispensers are exempted from two requirements of section 582 in situations where there is documentation that the product involved in the transaction was in the pharmaceutical distribution supply chain before November 27, 2018.

[17] *Verify* is defined in section 581(28) of the FD&C Act.

- First, in those circumstances, dispensers are exempted from section 582(d)(2) of the DSCSA, which requires that they engage in transactions involving only product encoded with a product identifier beginning November 27, 2020.

- Second, in those circumstances, dispensers are exempted from section 582(d)(4)(A)(ii)(II), which requires that they verify the product identifier of a portion of packages beginning November 27, 2020, as part of an investigation conducted to determine whether a product is illegitimate. However, dispensers must still verify the lot number of a suspect product as described in section 582(d)(4)(A)(ii)(I), validate any applicable transaction history and transaction information in their possession as described in section 582(d)(4)(A)(ii)(III), and otherwise investigate the product to determine if it is illegitimate as required by section 582(d)(4)(A)(ii)(IV). The exemption does not extend to these requirements of section 582(d)(4)(A)(ii) of the DSCSA.

Dispensers must comply with all other applicable requirements of section 582 when engaging in transactions pursuant to this exemption.

- Repackager Requirements

  FDA has also determined that the grandfathering exemption applies to certain repackager activities in situations where there is documentation that the product involved in the transaction was in the pharmaceutical distribution supply chain before November 27, 2018.

  - First, in those circumstances, repackagers are partially exempted from the requirement of section 582(e)(2)(A)(iii) of the DSCSA to only engage in transactions of product encoded with a product identifier beginning November 27, 2018; specifically, repackagers may ***accept*** ownership of packages or homogenous cases of product without a product identifier after November 27, 2018. However, if a repackager wishes to ***transfer*** ownership of a package or homogenous case of product without a product identifier on or after November 27, 2018, it must, in accordance with section 582(e)(2)(A)(i), first add a product identifier to the package or homogenous case of product.

  - Second, in those circumstances, repackagers investigating suspect product without a product identifier to determine whether that product is illegitimate are also exempted from that part of section 582(e)(4)(A)(i)(II) which requires that they verify product at the package level using the product identifier beginning November 27, 2018; specifically, repackagers shall not be required to verify the product at the package level using the product identifier. However, a repackager must still validate any applicable transaction history and transaction information in its possession and otherwise investigate the product to determine if it is illegitimate in accordance with section 582(e)(4)(A)(i)(II); the exemption does not extend to these requirements.

- Third, if a repackager initially repackaged and sold product without a product identifier before November 27, 2018, it is exempted from that part of section 582(e)(4)(C) of the DSCSA which, beginning November 27, 2018, requires that upon request from an authorized trading partner in possession or control of a product it believes is from the repackager, such repackager verifies the product using the product identifier. However, a repackager must still follow all other steps as described in 582(e)(4)(C).

Repackagers must comply with all other applicable requirements of section 582 when engaging in transactions pursuant to this exemption.

Trading partners may engage in transactions involving products exempted as grandfathered per the conditions of the grandfathering policy until product expiry, regardless of when the transaction occurs. Although there is no sunset date for the grandfathering exemption, FDA expects there to be relatively few, if any, of these packages and homogenous cases of product without a product identifier in the pharmaceutical distribution supply chain by November 27, 2023.[18]

The FDA guidance *Drug Supply Chain Security Act Implementation: Identification of Suspect Product and Notification* notes that a package missing product tracing information is a scenario that could significantly increase the risk of a suspect product entering the drug supply chain.[19] As product identifier requirements are implemented over time, trading partners should be diligent when engaging in a transaction of a package or homogenous case of product without a product identifier to ensure it is subject to the grandfathering policy, other type of exemption, or a compliance policy.

FDA emphasizes that trading partners must comply with all other applicable requirements of section 582 when engaging in transactions covered by the exemption established by this guidance. For example, a wholesale distributor that transfers ownership of a package or homogenous case of product without a product identifier after November 27, 2019 that is subject to the grandfathering exemption must provide the subsequent owner with the product's transaction information, transaction history, and transaction statement prior to, or at the time of, the transaction.

B. Saleable Returned Packages and Homogenous Cases of Product

Section 582 addresses trading partners' ability to accept and redistribute product that is returned to them in saleable condition. Manufacturers, wholesale distributors, and repackagers are required under sections 582(b)(4)(E), (c)(4)(D), and (e)(4)(E), respectively, to verify the product identifier of a saleable returned package or sealed homogenous case of product that is intended for further distribution. This requirement goes into effect on November 27, 2017 (per the

[18] We note that the enhanced drug distribution security provisions of section 582(g) go into effect on November 27, 2023.

[19] See guidance for industry at https://www.fda.gov/downloads/drugs/guidances/ucm400470.pdf.

statute) for manufacturers, November 27, 2018, for repackagers, and November 27, 2019, for wholesale distributors. [20]

For returns[21] of saleable packages and homogeneous cases of product without product identifiers that were in the pharmaceutical distribution supply chain before November 27, 2018, manufacturers, wholesale distributors, and repackagers are exempted from the requirements of sections 582(b)(4)(E), (c)(4)(D), and (e)(4)(E), respectively, to verify the product identifier of a saleable returned package or sealed homogenous case of product that is intended for further distribution. Manufacturers are exempted from the requirements of 582(b)(2)(A) to add product identifiers before redistributing such product. Repackagers are exempted from the requirements of 582(e)(2)(A)(i) and (e)(2)(A)(iii) to add product identifiers before redistributing such product if they initially repackaged and sold the product without a product identifier before November 27, 2018. Trading partners must comply with all other applicable requirements of section 582 when engaging in returns. For example, wholesale distributors must still meet the requirements of section 582(c)(1)(B)(i)(II) and only accept returned product from a dispenser or repackager beginning November 27, 2019, if they can associate the returned product with the transaction information and transaction statement for that product.

V. DISTINCTIONS BETWEEN THE GRANDFATHERING POLICY AND THE COMPLIANCE POLICY FOR PRODUCT IDENTIFIER REQUIREMENTS UNDER THE DSCSA

The grandfathering and compliance policies have different legal statuses and apply in different scenarios. Under the grandfathering policy, eligible packages and homogenous cases of product are exempted, as grandfathered, from certain DSCSA requirements. The Product Identifier Compliance Policy, by contrast, describes FDA's intention not to take action against certain trading partners in certain circumstances; the DSCSA requirements remain in effect, but the Agency intends to exercise discretion in how it enforces the law.

[20] See also FDA's draft guidance, *Product Identifier Requirements Under the Drug Supply Chain Security Act – Compliance Policy*.

[21] *Return* is defined in section 581(17) of the FD&C Act.

Attachment 3

California's Controlled Substance Utilization Review and Evaluation System

CURES 2.0

Survey of California Physicians' and Pharmacists' Experience with and Attitudes about CURES 2.0

September 2017

California's Controlled Substance Utilization Review and Evaluation System (CURES 2.0)

Survey of California Physicians' and Pharmacists' Experience with and Attitudes about CURES 2.0

September 2017

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EXECUTIVE SUMMARY

In 2013, California enacted a new law that provided dedicated funding for California's Controlled Substance Utilization, Review and Evaluation System (CURES), authorized an update and expansion of the CURES database and functionality, and mandated CURES registration for pharmacists and controlled substance prescribers. As part of a comprehensive evaluation of these updates (collectively known as "CURES 2.0"), a statewide, representative survey of California physicians and pharmacists was conducted to assess attitudes and beliefs about CURES and controlled substance use, and to identify areas for further improvement of CURES.

The survey was conducted with cooperation from the California State Board of Pharmacy, the Medical Board of California, and the Osteopathic Medical Board of California. The overall survey response rate was 24% (n = 1904). Comparison of aggregate data on responders and non-responders indicated that responders appear to be representative of California physicians and pharmacists.

Response patterns were broadly similar for pharmacists and physicians. Compared to physicians, pharmacists generally expressed more positive attitudes about CURES, were more likely to register for and use CURES, were more concerned about prescription drug abuse, and expressed a greater sense of professional obligation to use CURES. Pharmacists reported near perfect compliance with mandatory CURES registration (which took effect a few months prior to survey deployment), compared to approximately 82% compliance among DEA-licensed physicians. An additional 12% of physicians reported that they planned to register within the next 3 months. Physicians most frequently cited the time required to register and lack of importance as reasons for not registering; technical problems with CURES were rarely cited as a reason for not registering.

Thirty-one percent of physicians and 20% of pharmacists reported a recent decrease in the number of controlled substances they prescribed and dispensed, respectively. Survey data indicated that access to data from CURES, increased professional awareness of controlled substance risks and benefits, and new clinical guidelines all played major roles in decreasing prescribing and dispensing.

Twenty-eight percent of physicians indicated that they check CURES for least 50% of the patients to whom they prescribe controlled substances. Thirty-six percent of pharmacists indicated that they check CURES for at least 50% of the controlled substance prescriptions they dispense. Sixty percent of physicians and 80% of pharmacists agreed that CURES was helpful. Thirty-two percent of physicians and 59% of pharmacists agreed that CURES was easy to use. Among physicians and prescribers who had used both CURES 1.0 and CURES 2.0, more than 90% rated CURES 2.0 as the same or better than CURES 1.0 across all categories. Forty-seven percent of physicians and 40% of pharmacists reported a need for additional training on how to

use CURES. The most commonly identified needs for additional training related to the new advanced features of CURES 2.0, such as peer-to-peer messaging.

A substantial majority of physicians (81%) and pharmacists (91%) felt that their peers should check CURES when prescribing or dispensing a controlled substance, respectively. Nineteen percent of physicians and 36% of pharmacists felt that their peers ought to be using CURES 100% of the time when prescribing or dispensing controlled substances. In contrast, only 23% of physicians felt that physicians should be required to check CURES when prescribing. The corresponding value for pharmacists was 39%, indicating that nearly two-fifths of pharmacists supported mandatory CURES use for pharmacists. Over two-thirds of pharmacists (69%) agreed that checking CURES was considered standard of care, compared to 40% of physicians.

When asked to give open-ended suggestions or comments, many physicians and pharmacists felt that CURES was not relevant to their practice, particularly those who did not practice in California. Some physicians who rarely prescribed controlled substances and pharmacists who worked in hospital settings also felt that CURES was not relevant to their practice. Finally, several pharmacists recommended improving the accuracy and timeliness of CURES data, including adding data from federal pharmacies in California.

INTRODUCTION AND BACKGROUND

Prescription Drug Monitoring Programs (PDMPs) are considered an important, but under used, tool for combating the ongoing epidemic of prescription opioid abuse and overdose.[1,2] Preliminary evidence suggests that PDMP use may be associated with changes in prescribing behaviors;[3-5] however, important knowledge gaps remain around PDMPs. Each state has a separate PDMP, so the administration, technical details, strengths, and weakness of PDMPs vary widely across states. Thus, to a large extent, the strengths, weaknesses, and effectiveness of PDMPs must be evaluated on a state-by-state basis, because suggestions for improving PDMPs in one state may not be applicable to PDMPs in other states.

On the other hand, all PDMPs share the same general characteristics and so findings related to general PDMP attributes (e.g., ease of registration and use, data accuracy and timeliness) do likely generalize across states. In addition, social and professional norms (i.e., physicians' and pharmacists' beliefs and attitudes about PDMPs) are also likely to be an important determinant of PDMP use and effectiveness, but these concepts have so far been relatively unexplored. Most prior research on barriers to PDMP use has focused on state-specific technical and logistical barriers (e.g., website design, registration processes, etc).[6-9]

California has the nation's oldest prescription drug monitoring program. CURES was established in 1939. An electronic interface that prescribers and pharmacists could search in real time was implemented in 2009, but the CURES program was de-funded in 2011 due to state budget cuts. In September 2013, California enacted a new law to update CURES. This law (SB-809) provided a dedicated funding source for CURES. It also required CURES to streamline the registration process and mandated registration for dispensers and DEA-licensed prescribers. The bill did not specifically define all of the features that needed to be part of the CURES upgrade. Nevertheless, as part of the upgrade, CURES personnel added the following new features: streamlined electronic registration process, automatic alerts for certain high risk prescribing practices, ability to send peer-to-peer messages within CURES, ability to flag patient-provider agreements in CURES, and ability for CURES users to identify delegates who can initiate CURES patient reports. The bundle of upgrades authorized by SB-809 is collectively referred to as "CURES 2.0." The current CURES home page can be accessed at the following web address: https://oag.ca.gov/cures.

To evaluate the impacts of CURES 2.0, a representative, statewide survey of California physicians and pharmacists was conducted by University of California, Davis researchers in collaboration with the California Department of Public Health. The survey focused on physicians and pharmacists because these two professions comprise over 80% of all CURES users and because they represent the two primary categories of CURES users, prescribers and dispensers. Surveys were completed between August 2016 and January 2017. Data collection started after California implemented mandatory CURES registration (July 1, 2016), in order to ensure that all

respondents had a chance to register for CURES prior to the survey. The primary survey goals were as follows:

- To assess attitudes and beliefs about controlled substance misuse and abuse among California physicians and pharmacists
- To assess compliance with mandatory CURES registration
- To evaluate the impact of changes made as part of CURES 2.0
- To evaluate beliefs, attitudes, and social and professional norms related to using CURES
- To elicit suggestions and identify priority areas for further improvement of CURES

This report provides a detailed account of the survey methodology and a descriptive account of survey results. More detailed analysis of predictors of intent to use CURES and of the responses to an open-ended survey question will be published separately. The intended audience for this report includes the California Departments of Justice and Public Health, California state licensing and regulatory boards, California physicians and pharmacists, as well as researchers and public health officials in other states.

FUNDING AND ACKNOWLDGEMENTS

This survey was funded by the Harold Rogers Prescription Drug Monitoring Program (BJA cooperative agreement 2015-PM-BX-K001 awarded to the California Department of Justice) and the Prevention for States program (CDC cooperative agreement 1U17CE002747 awarded to the California Department of Public Health). Neither funding agency had any input into the design or conduct of this survey, or into the analysis of results. The final decision about what to publish in this report rested solely with the listed report authors.

The authors gratefully acknowledge the advice, cooperation and in-kind support provided by staff from the California State Board of Pharmacy, the Medical Board of California, and the Osteopathic Medical Board of California, without which this survey would not have been possible.

METHODS

Survey development

This survey was developed and conducted by the University of California Davis in collaboration with the California Department of Public Health, and with cooperation from the California State Board of Pharmacy, the Medical Board of California (MBC), and the Osteopathic Medical Board of California (OMBC).

Survey questions assessed the following topics: demographics and prescribing / dispensing practice patterns, concern about prescription drug misuse and abuse, beliefs about CURES effectiveness, CURES registration status, barriers to CURES registration and use, beliefs about professional norms, social norms, and moral obligations regarding CURES, questions about

specific features of CURES 2.0, need for additional training on how to use CURES, and comparing CURES 2.0 versus CURES 1.0. Survey questions were informed in part by reviewing previously published PDMP surveys.[6-9] Questions for allopathic and osteopathic physicians were identical; questions for pharmacists were very similar to questions for physicians, but asked about dispensing or managing rather than prescribing controlled substances. In order to reduce respondent fatigue, skip logic was used so that, to the extent possible, prescribers only answered questions relevant to their practice. For example, physicians who reported not having a DEA license (and so were not eligible to register for CURES) did not answer questions about CURES, and physicians who reported not being registered for CURES did not answer questions about how often they checked CURES. An open-ended question asking "Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations)" was also included. The survey was web-based and was hosted by Qualtrics (Provo, UT), an online survey program. The complete physician and pharmacist surveys are shown in Appendix A and B, respectively.

Survey questions were reviewed by the study team and approved by the 3 regulatory boards. Community physicians and pharmacists not related to the study pilot tested the survey to identify any ambiguous questions and technical problems with the web interface. This project was reviewed by the University of California Davis Institutional Review Board and deemed to be program evaluation rather than human subjects research.

Sampling strategy

The survey sample was all pharmacists and allopathic physicians with licenses expiring on November 30, 2016 and all osteopathic physicians with licenses expiring on December 31, 2016. Licenses in California must be renewed every 2 years and expire at the end of the licensee's birth month; for osteopathic physicians, licenses must be renewed every 2 years and expire 6 times a year based on licensee birth month. Therefore, the sample comprised a quasi-random sample of one-twenty-fourth of all California pharmacists (n = 1626) and allopathic physicians (n = 5701) and one-twelfth of all California osteopathic physicians (n = 577).

Initial survey invitations were mailed from each regulatory board between August and October, 2016 and were included in the same envelope as the licensee's license renewal paperwork. One or two additional reminders were sent by mail from the survey team; an additional reminder letter was mailed from each regulatory board using envelopes showing that board's return address. Allopathic physicians also received several email reminders. The OMBC and the State Board of Pharmacy do not maintain licensee email addresses and so could not send out email reminders. All survey materials included the logos of both the University of California Davis and the applicable regulatory board. A detailed timeline of the survey reminder schedule for each survey is shown in Appendix C. All surveys were closed on January 31, 2017. Licensees were advised that participation was voluntary and that their individual responses would not be shared with the regulatory boards. All surveys were completed on the web. Respondents could access the survey by typing in a short web address, scanning a QR code on their cell phone, or clicking on a survey link on the appropriate regulatory board's web page. Licensees were required to type

in their license number before starting the survey. This approach prevented licensees from taking the survey multiple times, restricted respondents to licensees in the sample, and allowed us to keep track of respondents in order to avoid sending reminders to licensees who had already completed the survey.

Statistical analysis

All surveys opened with 2 items assessing respondents' concern about prescription drug misuse and abuse. Because physicians without a DEA license were screened out after these 2 items, physicians who completed these 2 survey items were considered responders for purposes of calculating overall survey response rate. To assess for response bias, the demographic and training characteristics of responders and non-responders were compared using aggregate data obtained from each regulatory board. Descriptive statistics (means and standard deviations for continuous measures, proportions for ordinal and Likert-type items) were calculated for each survey item. Responses from allopathic and osteopathic physicians were combined for all analyses; differences between allopathic and osteopathic physicians were not investigated.

Path analysis

A subset of items was also used to conduct a *path analysis* to identify factors associated with physicians' and pharmacists' intent to use CURES during the next 3 months. Path analysis is a statistical method for modeling and evaluating causal associations between variables.[10] Full details of this analysis will be published elsewhere, and so are not repeated in this report.

Qualitative analysis

Responses to the open-ended survey question were analyzed using content analysis followed by thematic analysis. For the content analysis, two investigators independently reviewed responses to identify content categories that emerged from the data. Investigators met weekly to discuss provisional categories, refine definitions, and discuss challenging cases. Codes were developed and reviewed jointly to ensure coding consistency while minimizing investigator bias. Disagreements were resolved by discussion, resulting in a final list of 18 codes. Both investigators independently coded responses using the final list of codes and compared results until they could apply codes reliably with high levels of agreement on a 5% sample of all open-ended responses. The remaining responses were each coded by one investigator; both investigators reviewed all comments where coding was considered ambiguous. The prevalence of each content category was assessed separately for physicians and pharmacists; the final list of codes was identical for both groups of respondents. Open-ended responses varied in length from a few words to a few paragraphs; therefore, coding categories were exhaustive but not mutually exclusive. For example, if a single response mentioned three different categories, that response was assigned to all three categories.

For the thematic analysis, investigators reviewed responses for each code to identify categories and themes that occurred within the responses. Crosscutting categories and themes were identified and discussed. Based on this analysis, codes were collapsed into larger themes.

RESULTS AND DISCUSSION

Response rate and sample representativeness

The survey received 1904 responses, for an overall response rate of 24%. As shown in Table 1, the response rate for pharmacists was substantially higher than rates for physicians. Detailed comparison of survey responders versus non-responders is shown in Table 2. Overall, characteristics for responders and non-responders were similar. Compared to non-responders, responders were older and more likely to be white or Asian / Pacific Islander. Physician responders were more likely to report psychiatry or emergency medicine as their primary specialty and to have a California address of record. Pharmacist responders were more likely to have a BS degree than a PharmD degree; this difference likely reflects the age difference between responders and non-responders, because PharmD became the required entry-level pharmacist degree in 2003.

Table 1. Survey response rates

Item	Pharmacists	MBC	OMBC	All physicians	Total
Responses	498	1289	117	1406	1904
Invitees[a]	1626	5701	577	6278	7904
Response rate (%)	30.6	22.6	20.3	22.4	24.1

[a]Pharmacy and MBC samples included licensees with out of state addresses. OMBC sample included only licensees with California addresses.

A major strength of this survey was collaboration with and support from the State Board of Pharmacy, OMBC, and MBC. Cooperation from these boards made it possible to survey a representative, statewide sample of physicians and pharmacists, to achieve a higher response rate than prior web-based surveys of prescription drug monitoring programs,[8,11] and to compare characteristics of responders and non-responders to assess sample representativeness and possibility of response bias. As shown in Table 2, physician responders were slightly more likely to report specialties that commonly prescribe controlled substances (e.g., emergency medicine, psychiatry, internal medicine, family medicine, and anesthesiology). However, responders and non-responders were otherwise similar, suggesting that the sample is likely to be representative of California pharmacists and physicians despite a response rate that is lower than traditional paper surveys delivered by U.S. mail.

Table 2. Comparison of responder and non-responder characteristics.

	Physicians					Pharmacists[f]			
	Responders		Non-Responders			Responders		Non-Responders	
Item Response	n = 1406		n = 4872			n = 497		n = 1119	
Gender (n, %)[a]					Gender (n, %)				
Male	908	64.6	3152	64.7	Male	207	41.7	439	39.2
Female	498	35.4	1719	35.3	Female	290	58.4	680	60.8
Mean age, Years (SD)[b]	56.7	(13.0)	52.7	(14.1)	Mean age, Years (SD)	48.9	(13.6)	44.8	(13.8)
Foreign medical graduate (n,%)[c]	289	22.4	1065	24.1					
Race and ethnicity (n, %)[d]					Degree type (n, %)[g]				
White	672	47.8	1843	37.8	PharmD	332	66.8	868	77.6
Black	40	2.8	126	2.6	BS	165	33.2	251	22.4
Asian/Pacific Islander	389	27.7	1571	32.2					
Hispanic	40	2.8	226	4.6	Pharmacy school (n, %)				
Other	16	1.1	26	0.5	Foreign school	61	12.3	89	8.0
Decline to state	198	14.1	764	15.7	US school	436	87.7	1030	92.1
Missing	51	3.6	316	6.5	California school	251	50.5	644	57.6
Primary specialty (n, %)[e]									
Internal medicine	186	13.2	589	12.1					
Family medicine	175	12.4	503	10.3					
Psychiatry	116	8.3	250	5.1					
Emergency medicine	93	6.6	185	3.8					
Anesthesiology	78	5.5	228	4.7					
OBGYN	55	3.9	207	4.2					
Pediatrics	84	6.0	295	6.1					
Pain medicine	10	0.7	23	0.5					
Radiology	53	3.8	241	4.9					
Current license	1390	98.9	4450	91.3					
California address[c]	1123	87.1	3419	77.5	California address	444	89.2	974	86.4

[a]1 missing value; [b]weighted average of osteopathic and allopathic physician data; [c] Reported for allopathic physicians only (1,289 responders; 4,412 non-responders); [d] Categories not mutually exclusive; [e] Categories are mutually exclusive; only results for the most common specialty categories are shown; [f] Data missing for 10 pharmacists; [g] PharmD became the required entry-level degree in 2003.

Respondent characteristics

All California pharmacists were required to register for CURES by July 1, 2016. According to California's mandatory CURES registration law (SB-809), only physicians authorized to prescribe controlled substances (i.e., physicians who are licensed in California and who have a DEA license assigned to a California address) are required to register for CURES. Of the physicians surveyed, 91% (n = 1275) reported having a DEA license to prescribe controlled substances, and 78% (n = 995) of physicians with a DEA license reported currently prescribing controlled substances in their practice. Physicians who self-reported not having a DEA license did not answer any further survey questions, because they are not eligible to register for or use CURES. The survey did not prompt physicians to specify whether their DEA license was assigned to an address in California. Thus, it is not possible to determine exactly how many physician respondents had DEA licenses associated with a California address and so were required to register for CURES under SB-809.

Analysis of answers to the open-ended survey question indicated that a large proportion of the 22% of physicians who reported not prescribing controlled substances were retired or not in active clinical practice. Nineteen percent of all physician respondents commented that that they felt CURES was not relevant to their practice, and about half of these responses indicated that this lack of relevance was due to the physician being retired or working outside of California.

Table 3 shows respondent demographics (excluding physicians who reported not having a DEA license to prescribe controlled substances). Physician respondents were predominantly male and white; pharmacist respondents were predominantly female. Pharmacists were 47% Asian and 42% white. Physicians were slightly older than pharmacists.

Table 3. Respondent demographics

	Physicians n = 1275[a]		Pharmacists n = 482	
Item Response	n	%	n	%
Gender				
Male	734	63.9	193	43.3
Female	407	35.4	251	56.3
Other	8	0.7	2	0.4
Did not respond	126		36	
Ethnicity				
Not Hispanic or Latino	1034	93.0	421	97.7
Hispanic or Latino	78	7.0	10	2.3
Did not respond	163		51	
Race and Ethnicity				
American Indian or Alaskan Native	6	0.5	4	0.9
Asian	272	24.6	206	47.1
Black or African American	34	3.1	9	2.1
Hawaiian or Pacific Islander	14	1.3	5	1.1
White	694	62.7	184	42.1
Other	86	7.8	29	6.6
Did not respond	169		45	
	Mean	SD	Mean	SD
Respondent age (years)	55	12.9	49	13.4
Did not respond (n)	152		45	
Years in practice	23	13.2	21	13.7
Did not respond (n)	139		37	

[a]Physicians who reported having a DEA license

Table 4 shows physician-reported specialty and pharmacist-reported practice location. The most common physician specialties were adult primary care (i.e., internal medicine and family medicine) and surgical specialties. The most common pharmacist practice location was chain pharmacy (31%), followed by hospital (26%). Nine percent of pharmacists reported not being involved in patient care. Twelve percent of pharmacists noted in the open-ended survey question that CURES was not relevant to their practice, and many of these specified that CURES was not relevant to their practice because they only dispensed controlled substances in the hospital setting.

Table 4. Practice specialties and dispensing sites of survey respondents

	Physicians n = 1275[a]		Pharmacists n = 482	
Item Response	n	%	n	%
Specialty				
Anesthesiology and pain medicine	81	7.2		
Emergency medicine	98	8.7		
Pediatrics	94	8.3		
Adult primary care	454	40.1		
Psychiatry	110	9.7		
Surgical specialty	166	14.7		
Other	128	11.3		
Did not respond	144			
Dispensing Site				
Chain pharmacy			137	30.8
Hospital			116	26.1
Independent pharmacy			67	15.1
Mass merchandiser			3	0.7
Supermarket			21	4.7
Other patient care practice			60	13.5
Other non-patient care			41	9.2
Did not respond			37	

[a]Demographic counts available for physicians who reported having a DEA license

Prescribing and dispensing practices

The survey included several items designed to gauge how often respondents prescribed or dispensed controlled substances. Based on respondents' description of their clinical practice patterns, physicians who reported prescribing any controlled substances were estimated to prescribe to a mean of 55 patients per month (median=35, interquartile range 22-65). Pharmacists were estimated to dispense or manage a mean of 760 controlled substance prescriptions per month (median=522, IQR 196-1044).

Respondents were also asked about changes in their prescribing and dispensing practices over the past 3 months. As shown in Table 5, 31% of physicians and 20% of pharmacists reported prescribing / dispensing fewer controlled substances, respectively. Very few respondents indicated that they had prescribed / dispensed more controlled substances over the past 3 months.

Table 5. How have your prescribing / dispensing practices changed in the last 3 months?

	Physicians n = 1275[a]		Pharmacists n = 482	
Item Response	n	%	n	%
Prescribe (dispense) far fewer controlled substances	137	11.6	24	5.4
Prescribe (dispense) fewer controlled substances	231	19.6	65	14.7
No change	800	68.0	321	72.5
Prescribe (dispense) more controlled substances	8	0.7	31	7.0
Prescribe (dispense) far more controlled substances	0	0.0	2	0.5
Did not respond	99		39	

[a]Physicians who reported having a DEA license.

Respondents who reported any change in practice were then asked about the reasons for this change (Table 6). For physicians, increased professional awareness of risks and benefits was by far the most commonly cited reason for changes in prescribing, and was endorsed by 65% of physicians who reported a recent change in their prescribing practices. Other common reasons cited by physicians were new clinical guidelines (47%) and increased patient awareness of risks and benefits (37%). The majority of pharmacists (55%) also cited increased professional awareness. For pharmacists, information from CURES was the most common reason endorsed for changes in their dispensing practices (63%); only 25% of physicians endorsed this factor. Other commonly cited reasons pharmacists endorsed for changing dispensing habits were increased professional awareness of risks and benefits (55%) and new clinical guidelines (35%). Among physicians who endorsed "other" reasons, most cited either increased concern about opioid risks or working in a setting that did not involve controlled substance prescribing. *These results suggest that access to CURES has a major effect on pharmacist dispensing practices, and that increased professional awareness of risks and benefits plays a major role in decreased prescribing /dispensing for both physicians and pharmacists.*

Table 6. What factors led you to change your prescribing / dispensing practices [Check all that apply]?

	Physicians n = 376[a]		Pharmacists n = 122[a]	
Item Response	n	%	n	%
Change in practice location or patient mix	90	24.1	36	28.8
Increased professional awareness of risks, benefits, and other solutions	243	65.2	67	54.9
New clinical guidelines and recommendations	175	46.9	43	35.2
CURES providing greater access to patient prescription drug history	94	25.2	77	63.1
Increased patient awareness of risks and benefits	136	36.5	38	31.1
Medico-legal ramifications	103	27.6	14	11.5
Other	55	14.8	14	11.5

[a]Respondents who reported a change in their prescribing or dispensing habits were eligible to answer this question.

Attitudes about use, misuse, and abuse of controlled substances

The first two survey items assessed respondents' attitudes about prescription drug misuse and abuse. Table 7 shows that 87% of physicians and 93% of pharmacists reported being at least moderately concerned about prescription drug misuse and abuse in California; 44% of physicians and 62% of pharmacists were extremely concerned about prescription drug misuse and abuse in California. Overall, respondents were slightly less concerned about prescription drug misuse in their local community compared to the state overall, and pharmacists were substantially more concerned about prescription drug misuse and abuse than physicians.

Table 7. How concerned are you about prescription drug misuse and abuse among patients in:

	Physicians n = 1401[a]				Pharmacists n = 482[a]			
	California		Practice Community		California		Practice Community	
Item Response	n	%	n	%	n	%	n	%
Not concerned at all	42	3.0	65	4.7	2	0.4	9	1.9
Slightly concerned	137	9.8	230	16.5	34	7.1	60	12.6
Moderately concerned	603	43.4	570	41.0	148	30.8	147	30.9
Extremely concerned	609	43.8	525	37.8	296	61.7	260	54.6
Did not respond	10		11		2		6	

[a]All respondents were eligible to answer these items, including physicians who reported that they did not have a DEA license.

The survey also included items about the perceived benefits and risks of controlled substances in California (Figures 1 and 2). Physicians and pharmacists provided similar estimates about perceived benefits and risks for California overall. Based on the responses shown in Figures 1 and 2, the mean estimate for both physicians and pharmacists was that about one-third of patients taking controlled substances in California misused or abused them, whereas fewer than 60% of patients taking controlled substances in California benefited from them

Figure 1. Percent of California patients perceived to misuse or abuse controlled substance medications

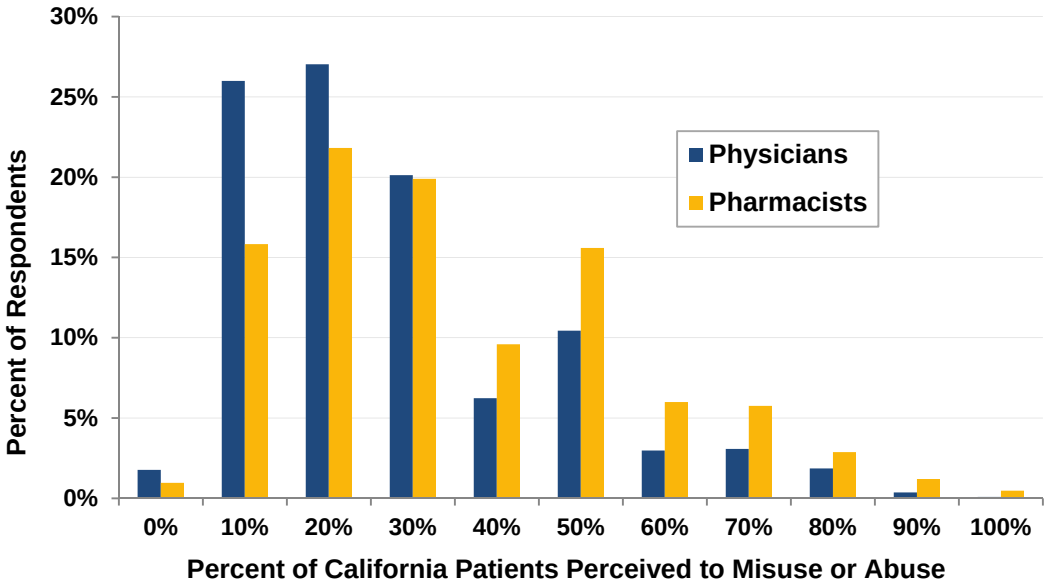
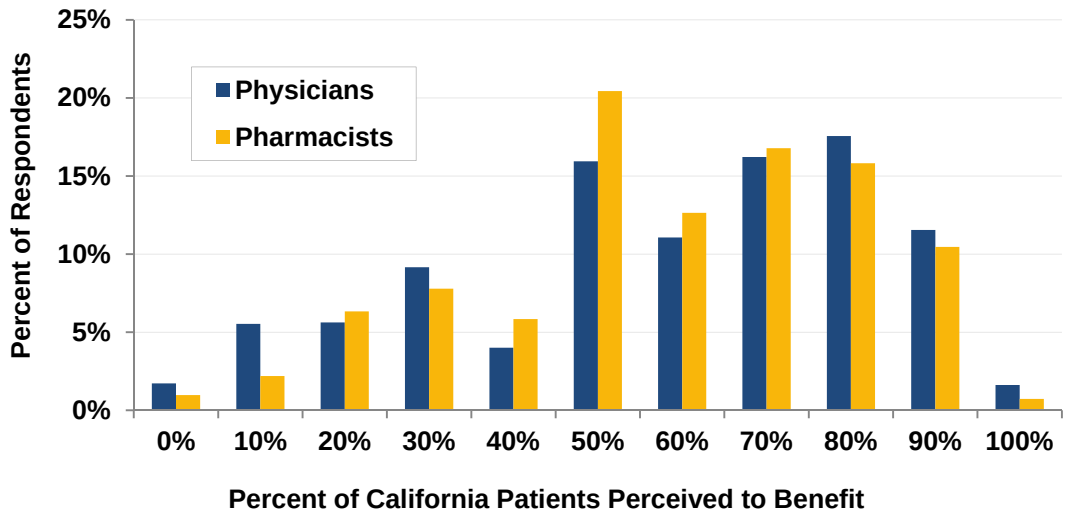


Figure 2. Percent of California patients perceived to benefit from controlled substance medications



Respondents were then asked these same questions specifically about their own patients. Both physicians and pharmacists estimated that the rate of misuse and abuse was substantially lower among their patients compared to all California patients (Figures 3 and 4). This difference may indicate that respondents think their own patients have lower risk of misuse or abuse, or that respondents consider themselves to have safer or more cautious prescribing habits than typical physicians and pharmacists in California.

Figure 3. Physicians: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel misuse or abuse them?

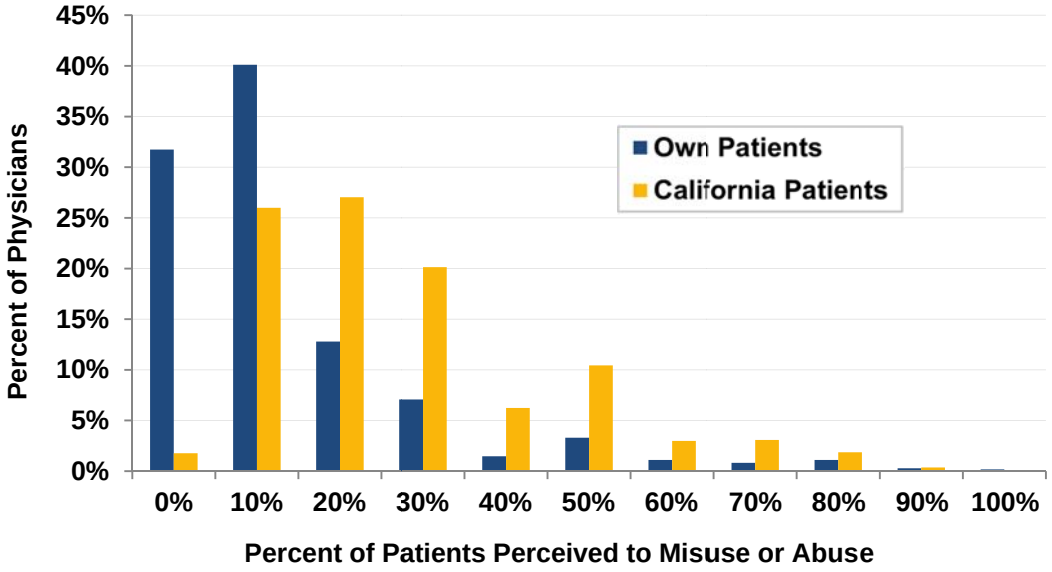
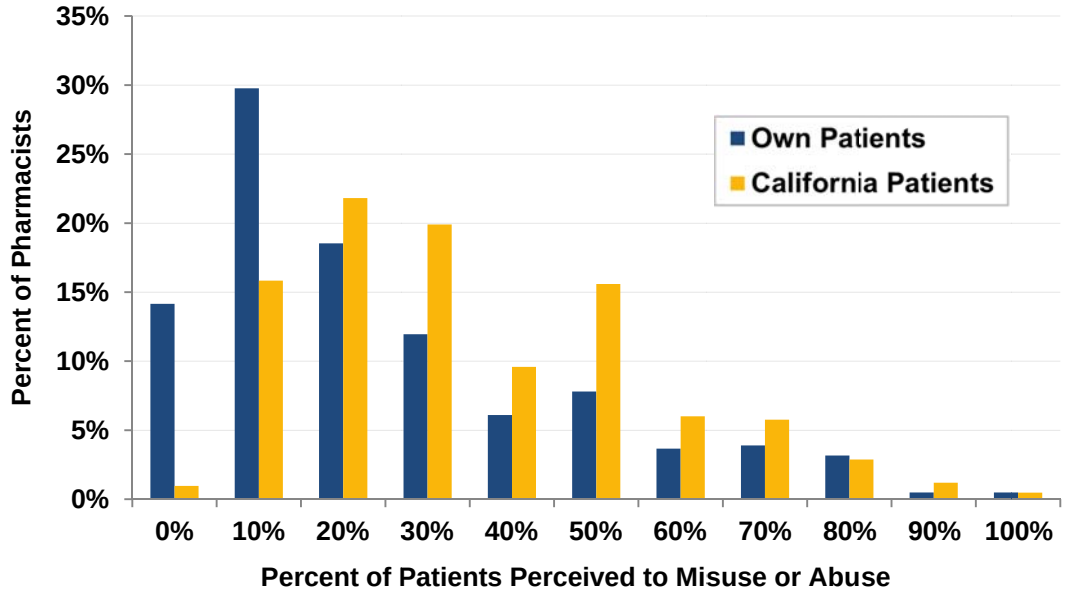
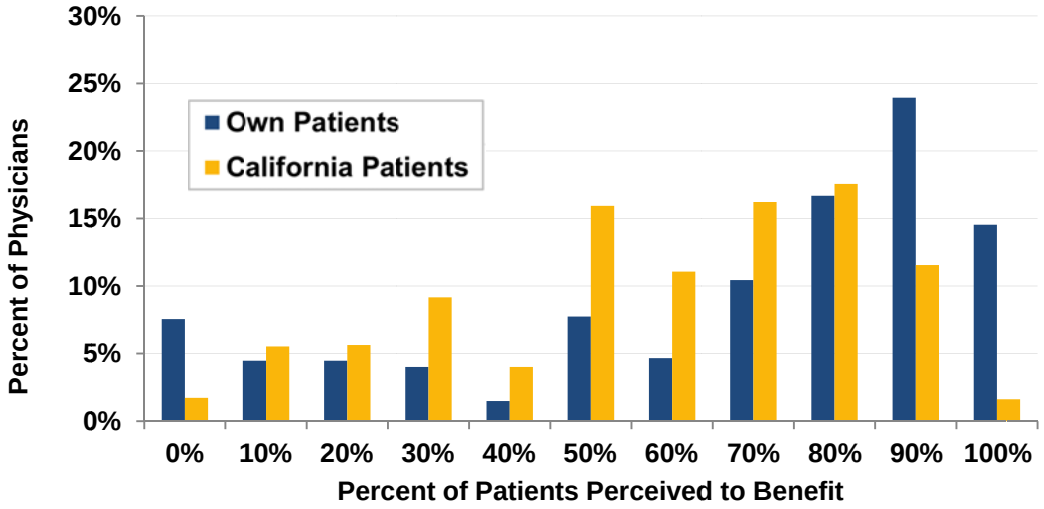


Figure 4. Pharmacists: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel misuse or abuse them?



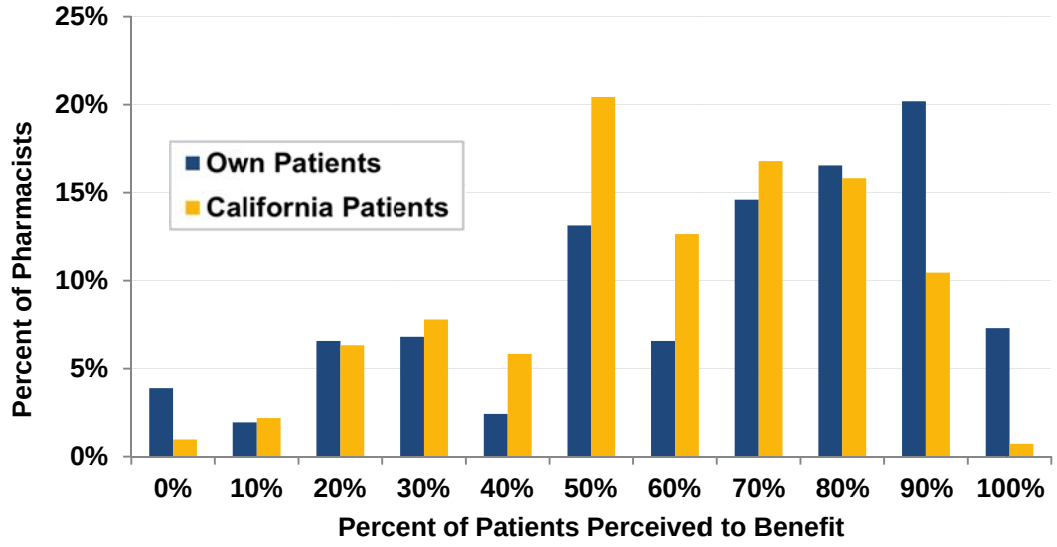
When asked about patient benefit, physicians estimated that a higher proportion of their patients benefited from controlled substances compared to the state average (Figure 5).

Figure 5. Physicians: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel benefit from them?



In contrast, pharmacists estimated that a lower proportion of their patients benefited compared to the state average (Figure 6). This difference between pharmacists and physicians may be due to the fact that physicians have more detailed clinical information on their patients (compared to pharmacists) or that physicians are more inclined to presume that prescriptions they write are helping their patients.

Figure 6. Pharmacists: What percent of your own patients (compared with California patients) taking controlled substance medications do you feel benefit from them?



Awareness of CURES and CURES registration requirement

Tables 8 and 9 show rates of awareness of CURES and CURES registration status, respectively. Nearly all pharmacists and 92% of physicians reported that they had heard of CURES. Among respondents who were required to register for CURES, 82% of physicians and 96% of pharmacists reported that they were either registered or in the process of registering for CURES. Only 18 pharmacists were not registered or in the process of registering, and 16 of these reported that they were likely or very likely to register for CURES in the next 3 months. Of the 231 physicians who were not registered, 70% reported that they were likely or very likely to register for CURES in the next 3 months. *These results indicate that pharmacists have near perfect compliance with mandatory CURES registration. In contrast, only about 82% of DEA-licensed physicians reported compliance with mandatory CURES registration*, though 94% of physicians were either registered or indicated that they were likely to register in the next 3 months.

Table 8. Have you heard of CURES?

	Physicians n = 1275[a]		Pharmacists n = 482	
Heard of CURES?	n	%	n	%
Yes	1156	92.0	464	98.5
No	101	8.0	7	1.5
Did not respond	18		11	

[a]Physicians who reported having a DEA license.

Table 9. Are you registered for CURES?

	Physicians n = 1275[a]		Pharmacists n = 482	
CURES Registration	n	%	n	%
Yes	988	78.7	445	94.7
No	128	10.2	11	2.3
Registration in process	37	2.9	7	1.5
Do not know	103	8.2	7	1.5
Did not respond	19		12	

[a]Physicians who reported having a DEA license.

Tables 10 and 11 show additional information for respondents who had not yet registered for CURES, or who did not know their registration status. Among non-registered physicians, the majority (71%) were not aware that CURES registration was mandatory for DEA-licensed physicians. Separately, 71% of non-registered physicians reported that they were likely to register for CURES in the next 3 months. Among DEA-licensed physicians who were not registered and who reported being unlikely or very unlikely to register for CURES in the next 3

months, nearly half had addresses outside of California (46%; n = 31 of 68). Many physicians with addresses outside California likely also have DEA licenses with non-California addresses, and so are not covered by the mandatory CURES registration requirement.

Table 10. Are you aware that registering for CURES is mandatory for…?

	Physicians[a] n = 231		Pharmacists[a] n = 18	
CURES Registration	n	%	n	%
Yes	65	28.8	8	52.9
No	161	71.2	9	47.1
Did not respond	5		1	

[a]Respondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.

Table 11. How likely are you to register for CURES within the following month?

	Physicians[a] n = 231		Pharmacists[a] n = 18	
Item Response	n	%	n	%
Extremely unlikely	35	15.5	1	6.3
Unlikely	33	14.6	1	6.3
Likely	76	33.6	5	31.3
Extremely likely	82	36.3	9	56.3
Did not respond	5		2	

[a]Respondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.

Past and future CURES use

Table 12 shows how long respondents reported having used CURES. Based on the timing of survey administration, those who had been using CURES for 7 months or more likely registered at least a few months prior to implementation of mandatory registration on July 1, 2016. Overall, pharmacists reported having used CURES for longer than physicians. Over half (54%) of pharmacists reported using CURES for more than a year, and 70% reported using CURES for 7 months or more. In contrast, only 33% of physicians reported using CURES for more than a year, and 49% of physicians reported using CURES for 7 months or more. Forty percent of physicians indicated they had been using CURES for 6 months or less, suggesting that physicians were more likely to register at or near the mandatory registration deadline. *These results indicate that pharmacists have been using CURES longer than physicians and were more likely to have registered for CURES before mandatory registration went into effect.*

Table 12. How long have you been using CURES?

	Physicians[a] n = 988		Pharmacists[a] n = 445	
Item Response	n	%	n	%
Less than 3 months	287	29.4	70	15.8
4 to 6 months	210	21.5	61	13.7
7 months to 1 year	158	16.2	75	16.9
More than 1 year	321	32.9	238	53.6
Did not respond	12		1	

[a]Respondents who reported they had registered were eligible to answer this item.

Table 13 indicates respondents' expected likelihood of using CURES at least once in the next 3 months. Overall, pharmacists were much more likely than physicians to report planned use of CURES in the next 3 months. Some of this difference may be due to physicians' and pharmacists' different roles regarding controlled substances.

Table 13. How likely are you to use CURES at least once in the next 3 months?

	Physicians[a] n = 1025		Pharmacists[a] n = 452	
Item Response	n	%[b]	n	%
Extremely unlikely	233	23.1	93	20.7
Unlikely	238	23.6	76	16.9
Likely	240	23.8	75	16.7
Extremely likely	296	29.4	205	45.7
Did not respond	18		3	

[a]Respondents who reported they had registered, or were in process, were eligible to answer this item.

Barriers to CURES registration and use

Table 14 describes barriers to registration among physicians and pharmacists who were not already registered for CURES. Most physicians reported that they knew how to register for CURES; however, 29% indicated that they had more important things to do than registering for CURES and only 19% reported that the registration process takes little time, indicating *that lack of importance and time required for registration were the most commonly reported barriers to registration for physicians.* In contrast, only 13% of physicians reported encountering technical problems when trying to register. Given the small number of pharmacists not registered for CURES, it is difficult to draw meaningful conclusions about barriers to registration among pharmacists.

Table 14. Please indicate the extent to which you agree with the following:

	Physicians[a] n = 231		Pharmacists[a] n = 18	
Item Response	n	%[b]	n	%[b]
I have other problems that are more important than registering for CURES	65	29.4	7	43.8
I know how to go about registering for CURES	123	55.1	7	43.8
Every time I try to register for CURES, something goes wrong	29	13.2	6	37.6
Registering for CURES takes little time	41	18.7	4	35.1
I don't have access to a computer or the internet where I practice	10	4.4	2	12.5

[a]Respondents who reported they had not registered, or did not know if they were registered, were eligible to answer this item.
[b]Percent of respondents indicating they 'somewhat agree' or 'strongly agree' with item.

For respondents who reported being registered for CURES, the survey included several items related to the logistics of accessing and checking CURES. Table 15 shows results for items related to accessing CURES. Overall, physicians reported more difficulty accessing CURES than did pharmacists. For example, 43% of physicians rated registering for CURES as "difficult" or "very difficult" compared to 32% of pharmacists. Other than CURES registration, pharmacist and physicians indicated that remembering security questions was the most common barrier to accessing CURES, with 31% of physicians and 29% of pharmacists indicating that remembering passwords was difficult or very difficult. In the open-ended question, 7% of all physician respondents and 5% of all pharmacist respondents commented on barriers to accessing CURES, such as difficulties with registration and the time required to access CURES.

Table 15. How difficult are the following in CURES?

	Physicians n = 1025[a]		Pharmacists n = 452[a]	
Item Response	n	%[b]	n	%[b]
Registering for CURES	427	42.8	145	32.3
Logging in to CURES	275	28.3	55	12.53
Resetting your password	291	30.4	105	23.92
Remembering security questions	301	31.4	128	28.96

[a]Respondents who reported they had registered, or were in process, were eligible to answer this item.
[b]Percent of respondents indicating item was 'difficult' or 'very difficult'.

Table 16 shows results of items designed to assess non-logistical barriers to using CURES. One quarter (25%) of pharmacists and nearly one-third (32%) of physicians agreed or strongly agreed that CURES was not relevant to their practice. Pharmacists who were practicing in a hospital, a non-clinical setting, or some "other patient care practice" (see Table 4 above) were more likely to agree or strongly agree that CURES was not relevant to their practice than pharmacists working in retail settings (i.e., chain, supermarket, independent or mass merchandiser). Compared to pharmacists, physicians were more likely to agree that CURES was not easy to use, and to agree that they did not know how to use CURES. Very few physicians (9%) and pharmacists (2%) agreed that CURES is not helpful.

Table 16. Please indicate the extent to which you agree with the following:

	Physicians n = 988[a]		Pharmacists n = 445[a]	
Item Response	n	%[b]	n	%[b]
CURES is helpful	594	60.1	356	80.0
CURES is not relevant to my practice	302	30.6	108	24.2
CURES is easy to use	320	32.4	264	59.3
I don't know how to use CURES	194	19.7	31	6.9
CURES is checked by someone else in the office	107	10.8	60	13.5
I have limited or no access to CURES while I practice	112	11.3	45	10.1

[a]Respondents who reported they had registered for CURES were eligible to answer this item.
[b]Percent of respondents indicating they 'agree' or 'strongly agree' with item.

Patterns of CURES use

Table 17 shows frequency of CURES use reported by respondents. Pharmacists reported using CURES more often than physicians. Only 30% reported that they had never used CURES during the past 3 months, and 48% indicated that they used CURES at least daily. In comparison, 44% of physicians reported that they never used CURES, and only 14% reported using CURES at least

daily. These results are consistent with the general finding that pharmacists are more likely to register and use CURES than are physicians.

Table 17. On a typical day when you prescribe (dispense or manage) medications, how many times do you use CURES to look up a patient's controlled substance medication history?

	Physicians n = 1025[a]		Pharmacists n = 452[a]	
Item Response	n	%	n	%
Never	431	44.5	129	29.6
Less than once a day	398	41.1	98	22.5
1-2 times a day	104	10.7	120	27.5
3-5 times a day	24	2.5	36	8.3
6+ times a day	11	1.1	53	12.2
Did not respond	57		16	

[a]Respondents who reported they had registered for CURES, or that their registration was in process, were eligible to answer this item.

The survey included several items asking respondents the percentage of time they checked CURES when prescribing or dispensing a controlled substance, for those who report checking CURES at least once in the last 3 months. Figure 7 shows these results graphically for physicians and pharmacists. For physicians, 28% indicated that they check CURES for least 50% of the *patients* to whom they prescribe controlled substances. For pharmacists, 36% indicated that they check CURES for at least 50% of the controlled substance *prescriptions* they dispense or manage. Although the question did not distinguish between short-term and long-term opioid use, the pattern of CURES use reported by physicians is likely below what would be observed when CURES use becomes mandatory for prescribers in 2018.

Figure 7. When a controlled substance was prescribed, for what percentage of patient visits (physicians) or prescription fills (pharmacists) did you review CURES information (last 3 months)?

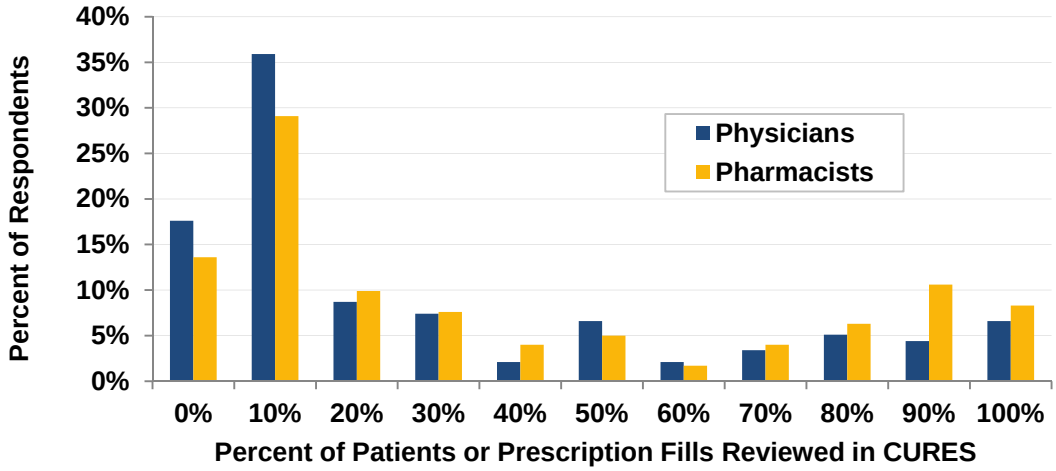
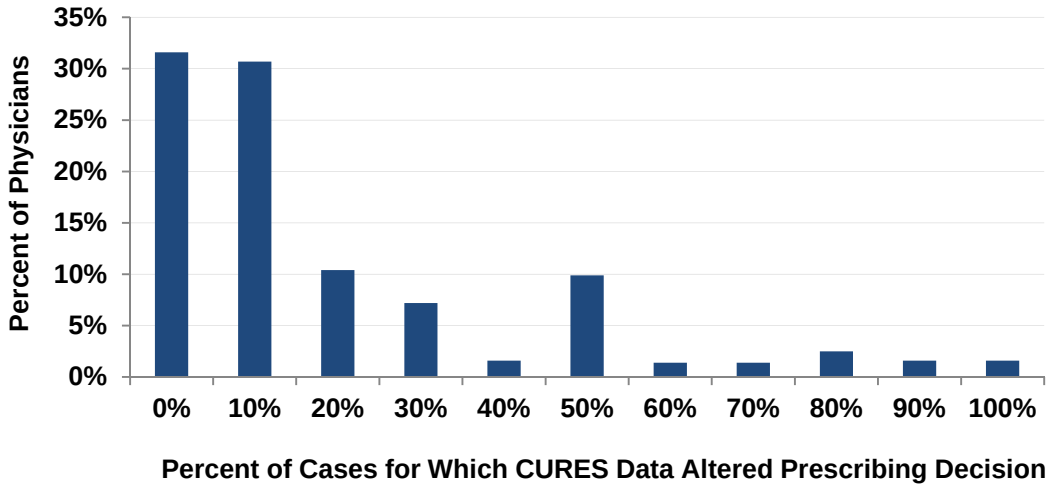


Figure 8 shows physician responses to items asking them to indicate the proportion of time that checking CURES altered their prescribing decision.

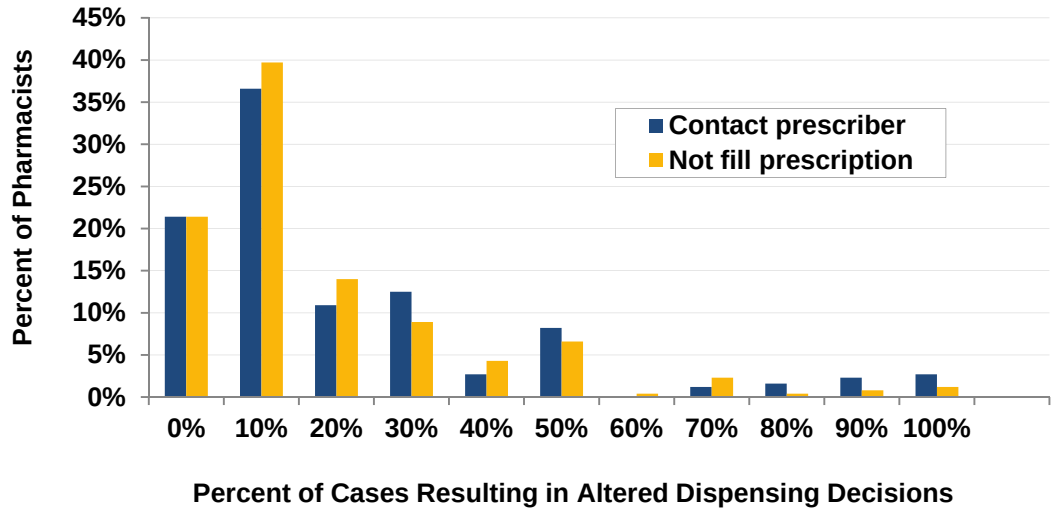
Figure 8. What percent of the time did the information you obtained from CURES alter your prescribing decision (during the past 3 months)?



Overall, results suggest that checking CURES regularly but infrequently caused physicians to change their prescribing decisions. Two-thirds (68%) of physicians reported changing a prescribing decision at least once during the past 3 months based on information they obtained from CURES; however, 63% of physicians reported that checking CURES only affected their prescribing decision in 10% or fewer of the times when they checked CURES. On the other hand, 18% indicated that information obtained from CURES affected their prescribing decision at least 50% of the time that they checked CURES. Of note, these responses do not account for how often physicians checked CURES. In the open-ended response item at the end of the survey, 4% of physicians indicated that CURES should be checked based on physician or pharmacist judgement about the patient. Thus, some physicians likely checked CURES only when they did not know a patient or when they suspected prescription drug misuse or observed unusual patient behavior. It is likely that physicians who reported changing prescribing decisions 50% or more of the time did not check CURES for every patient to whom they prescribed controlled substances, and only checked CURES when they already had a high suspicion for prescription drug misuse.

Figure 9 shows analogous survey results for pharmacists, who were asked to estimate the proportion of time that checking CURES caused them to either contact the prescriber for more information, or to refuse to dispense a controlled substance.

Figure 9. Percent of cases for which pharmacists reviewed patient information in CURES (past 3 months) and altered dispensing decisions.



Response patterns were qualitatively similar to physician responses; 86% and 79% of pharmacists reported that checking CURES caused them to contact the prescriber or refuse to dispense a prescription, respectively, at least once in the prior 3 months. On the other hand, 42% of physicians and 61% of pharmacists reported that checking CURES caused them to contact the prescriber or refuse to dispense, respectively, in 10% or fewer of the times when they checked CURES. As with the physicians, these responses do not account for how often pharmacists checked CURES, so pharmacists who reported contacting the prescriber in most of the cases likely checked CURES only when they had a high suspicion for prescription drug misuse.

Attitudes about the usefulness of CURES

Table 18 lists the reasons that respondents cited for checking CURES. More than three-quarters of physicians and pharmacists endorsed checking CURES prior to prescribing or dispensing a controlled substance in order to look for "doctor shopping." Many respondents also reported checking CURES in order to monitor patients on controlled substances or to improve their communication with patients. Respondents who answered "other" were given the opportunity to type in additional reasons. Many respondents used this open-ended response to note that they do not practice in California or that they work only in inpatient settings. Other reasons provided by respondents included checking on new patients who request controlled substances, evaluating the status of supposedly missing or unfilled prescriptions, helping patients who cannot remember their medications, and to review the fill dates of prior prescriptions.

Table 18. What are your reasons for checking CURES? [Check all that apply]

	Physicians n = 988[a]		Pharmacists n = 445[a]	
Item Response	n	%	n	%
To check on patients prior to dispensing or managing a controlled substance	418	78.0	277	89.4
To look for evidence of "drug seeking"	465	86.9	257	82.9
To monitor patients on controlled substances	365	68.1	246	79.4
To improve my communication with patients regarding controlled substances	258	48.1	187	60.3
Other	35	3.5	28	9.0

[a]Respondents who reported they had registered for CURES were eligible to answer this item.

The survey included multiple items related to respondents' attitudes and beliefs about CURES. Table 19 shows items about the usefulness of CURES for various functions. Overall, pharmacists were more likely to report that CURES was useful or very useful than were physicians. Nearly 90% of pharmacy respondents indicated that CURES was useful or very useful for informing clinical decisions, for identifying "doctor shopping" or "pharmacy shopping," and for identifying patients who misuse or abuse prescriptions drugs. Physician responses in these categories ranged from 62% to 76%. A majority of pharmacists indicated that CURES was useful or very useful for helping manage patients with pain and for building trust with patients. In comparison, 46% of physicians felt that CURES was useful or very useful for helping them to manage patients with pain, and 37% felt that CURES was useful or very useful for helping them to build trust with patients. In the open-ended item at the end of the survey, 7% of all physician respondents and 4% of all pharmacist respondents noted that CURES was a useful or valuable tool. In contrast, 2% of physician respondents and 0.4% of pharmacist respondents used the open-ended item to convey skepticism that CURES was useful for curbing prescription drug abuse.

Table 19. How useful to you is CURES for the following:

	Physicians n = 1025[a]		Pharmacists n = 452[a]	
Item Response	n	%[b]	n	%[b]
Helping manage patients with pain	412	45.5	271	64.5
Helping build trust with patients	333	36.7	243	58.0
Informing decisions to prescribe, dispense, or manage controlled substances	556	61.6	363	86.4
Identifying patients filling prescriptions from multiple doctors and/or pharmacies	685	75.5	374	88.6
Identifying patients who misuse or abuse controlled prescription drugs	672	74.1	370	87.7

[a]Respondents who reported they had registered for CURES, or that their registration was in process, were eligible to answer this item.
[b]Percent of respondents indicating they 'useful' or 'very useful' with item.

Feedback on CURES 2.0

An important survey goal was to get feedback about changes made as part of CURES 2.0, in order to identify what is working well and to identify areas for further improvement. Respondents who reported having used the prior version of CURES were asked to compare CURES 2.0 to the prior version. *As shown in Table 20, more than 90% of respondents rated CURES 2.0 as the same or better across all categories.* For overall ease of use, 43% of physicians and 47% of pharmacists rated CURES 2.0 as an improvement over the prior system. For patient activity reports, 36% of physicians and 52% of pharmacists reported that CURES 2.0 was an improvement over the prior system.

Table 20. Compared to the old website, how would you rate the CURES website on the following characteristics:

	Physicians[a] n = 276						Pharmacists[a] n = 216					
Item Response	Worse		About the same		Better		Worse		About the same		Better	
	n	%	n	%	n	%	n	%	n	%	n	%
Overall ease of use	25	9.1	132	47.8	119	43.1	12	5.6	102	47.2	102	47.2
Login process	16	5.8	163	58.8	98	35.4	8	3.7	125	57.6	84	38.7
Patient activity reports	27	9.8	151	54.7	98	35.5	10	4.6	94	43.3	113	52.1
Help desk support	19	7.3	181	69.1	62	23.7	11	5.2	141	66.8	59	28.0

[a]Respondents who reported they had used the previous version of CURES were eligible to answer this item.

Respondents were also asked about several specific features that were new to CURES 2.0: the ability to send secure peer to peer messages within CURES, the ability to designate delegates to access CURES on one's behalf, automatic alerts for high risk patients, and the ability to flag patients with whom a physician has signed a controlled substance agreement ("compact"). As shown in Table 21, most respondents had never heard of these new features. Only 3% of pharmacists reported having used each of these new features at least once. Similarly, very few physicians reported having used the messaging function (2%), the ability to flag controlled substance agreements (3%), the delegate function (5%), or the automatic alerts (5%) at least once.

Table 21. Are you aware of the following new features in CURES?

	Physicians n = 988[a]		Pharmacists n = 452[a]	
Item Response	n	%[b]	n	%[b]
Sending secure peer-to-peer messages about specific patients	755	77.7	308	70.6
Giving delegates the ability to access to CURES on your behalf	665	68.5	331	76.3
Automatic alerts for high risk patients	721	74.3	319	73.3
The ability to flag patients who have patient-provider agreements	671	69.1	Not Applicable	

[a]Respondents who reported they had registered for CURES were eligible to answer this item.
[b]Percent of respondents indicating they never heard of the feature.

When asked whether they felt they needed additional training or education about CURES, 47% of physicians and 40% of pharmacists responded affirmatively. The most commonly identified need for additional training related to the new advanced features of CURES 2.0. As shown in Table 22, physicians most commonly indicated needing additional training or education about flagging patients with controlled substance agreements (63%), sending secure messages (54%), and running patient activity reports (57%). Pharmacists most commonly indicated needing additional training about how automatic reports are generated (68%), sending secure messages (76%), and using the delegate feature (55%).

Table 22. What would you like additional training on? [Check all that apply]

	Physicians n = 949[a]		Pharmacists n = 205[a]	
Item Response	n	%[b]	n	%[b]
Registering for CURES	158	24.7	29	13.2
CURES passwords and security questions	134	20.9	33	15.0
Running patient activity reports	362	56.6	108	49.1
Identifying and using CURES delegates from my account	301	47.0	121	55.0
Sending secure messages	345	53.9	167	75.9
How automatic reports are generated	317	49.5	149	67.7
Flagging patients who have patient-provider agreements	400	62.5	Not Applicable	
Other topics	58	9.1	15	6.8

[a]Respondents who indicated a need for additional training or education about CURES (or skipped the item) were eligible to answer this item.
[b]Percent of respondents identifying the topic as needed.

Professional attitudes and beliefs related to CURES

Respondents who reported being registered for CURES had similar responses related to social norms, or respondents' beliefs about their colleagues' use of CURES. Both physicians (Figure 10) and pharmacists (Figure 11) tended to think that the proportion of their colleagues using CURES at least weekly was lower than the proportion of their colleagues who *ought* to be using CURES weekly. In other words, respondents felt that some of their colleagues who should be using CURES regularly were not doing so.

Figure 10. Physicians: What percentage of your colleagues do you feel are (or ought to be) using CURES at least weekly?

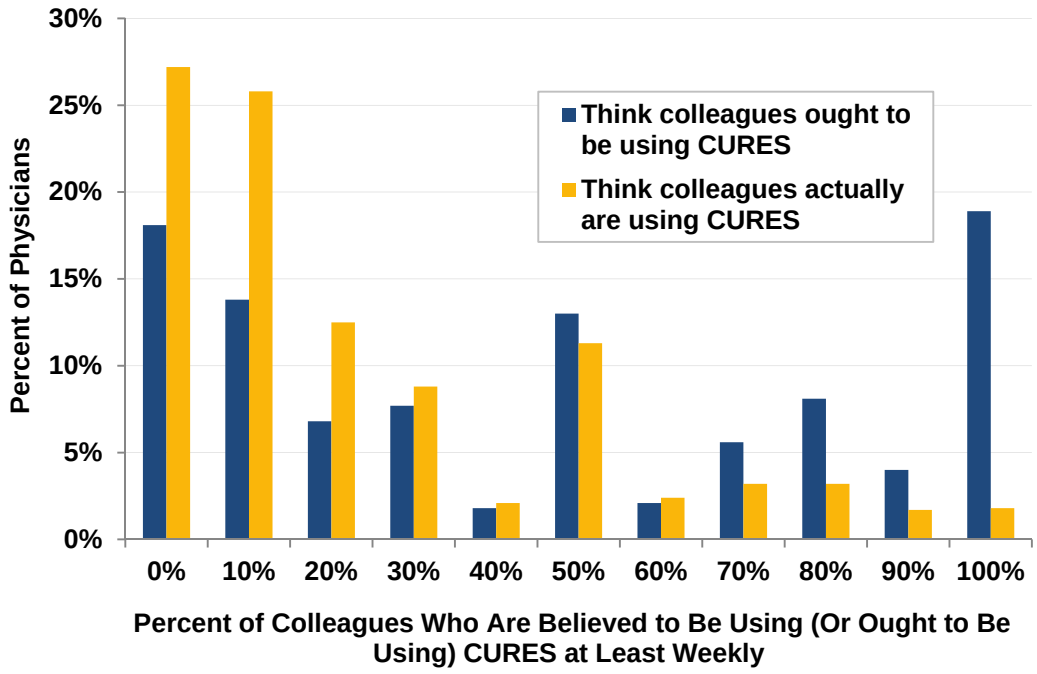


Figure 11. Pharmacists: What percentage of your colleagues do you feel are (or ought to be) using CURES at least weekly

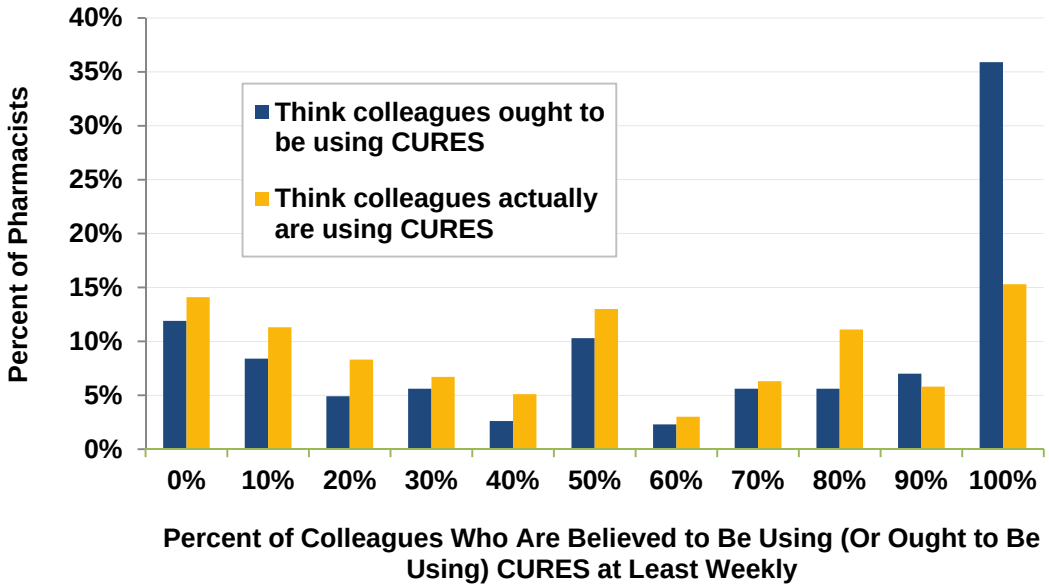


Table 23 summarizes information from Figures 8 and 9 and shows that, on average, pharmacists' estimates of the proportion of their colleagues *using* CURES were higher than physicians' estimates (means = 49% and 24%, respectively). Similarly, pharmacists had higher estimates than physicians for proportion of their colleagues who *ought* to be using CURES (means = 62% and 47%, respectively). As shown in Figures 8 and 9, 19% of physicians and 36% of pharmacists felt that their colleagues ought to be using CURES 100% of the time when prescribing or dispensing controlled substances.

Table 23. What percent of your colleagues do you feel… ?

	Physicians n =1275[a]		Pharmacists n = 482[b]	
	Mean	SD	Mean	SD
Item Response	%	%	%	%
Use CURES at least weekly	23.8	25.9	48.9	35.3
Ought to be using CURES at least weekly	46.5	37.3	61.6	38.1

[a]Of 1275 total DEA-licensed physicians eligible to answer this question, question 1 (n = 1100) and question 2 (n = 1088).
[b]Of 482 total pharmacists, question 1 (n = 432) and question 2 (n = 429).

The questions in Table 24 relate to beliefs about CURES use and regulation. *A substantial majority of physicians (81%) and pharmacists (91%) agreed that their colleagues should check CURES when prescribing or dispensing a controlled substance, respectively. In contrast, only 23% of physicians felt that physicians should be required to check CURES when prescribing. The corresponding value for pharmacists was 39%, indicating that about two-fifths of pharmacists supported mandatory CURES use*

for their colleagues. The survey did not directly ask pharmacists about requirements for physicians (or vice versa). In the open-ended question, 3% of pharmacists commented that prescribers should use CURES more often.

Table 24. Should physicians / pharmacists…

	Physicians n = 1275[a]		Pharmacists n = 482[a]	
Item Response	n	%[b]	n	%[b]
Check CURES when prescribing / dispensing a controlled substance?	728	80.6	367	91.3
Be *required* to check CURES when prescribing / dispensing a controlled substance	218	22.6	152	39.2

[a]Total DEA-licensed physicians and pharmacists eligible to answer.
[b]Percent of respondents who answered "yes" to this item

While the survey was being administered, California passed a new law that, when implemented, will require physicians (and other prescribers) to use CURES when prescribing controlled substances (SB-482). Some survey reminders to physicians mentioned this new law in order to increase physician survey response rates. To evaluate whether passage of the new law (or the survey reminders mentioning the new law) affected results, we analyzed survey responses to the items in Table 24 based on the date that physician respondents took their survey. Seventy-six percent of physicians who took the survey before the Governor signed SB-482 agreed that physicians should check CURES prior to prescribing a controlled substance, compared to 83% of physicians who took the survey after the Governor signed SB-482. Only 19% of physicians who took the survey before the new law was signed agreed that physicians should be required to check CURES prior to prescribing a controlled substance, compared to 25% of physicians who took the survey after the new law was signed. Thus, we found no evidence of a "backlash" by physicians in response to SB-482. In contrast, physicians who took the survey after the new law was signed were more likely to agree that physicians should be required to check CURES before prescribing controlled substances.

Table 25 shows results for survey items relating to respondents' professional and moral obligations to use CURES. Pharmacists indicated greater obligations to use CURES than did physicians, though a majority of physicians did agree that they had a professional responsibility to check CURES and that checking CURES when prescribing controlled substances is the right thing to do. *Over two-thirds of pharmacists (69%) agreed that checking CURES was considered standard of care, compared to 40% of physicians.* In contrast relatively few respondents agreed with negatively worded items on this topic.

Table 25. Please indicate the extent to which you agree with the following…[a]

Item Response	Physicians n = 1275[a]		Pharmacists n =482[a]	
	n	%[b]	n	%[b]
I have a professional responsibility to check CURES when prescribing /dispensing controlled substances	623	52.6	353	77.6
Checking CURES when prescribing / dispensing controlled substances is the right thing to do	710	60.0	368	80.7
Using CURES when prescribing / dispensing controlled substances is considered standard of care	446	37.9	310	68.7
Prescribing / dispensing controlled substances without checking CURES would be morally wrong	190	16.2	142	31.5
Checking CURES when prescribing /dispensing controlled substances is NOT a necessary part of my job	290	24.7	59	13.1

[a]Physicians who reported having a DEA license (valid denominator n per item ranged from 1171-1184) and pharmacist respondents (valid denominator n per item ranged from 451-456) were eligible to answer this item.
[b]Percent of respondents indicating they "agree" or "strongly agree" with item.

Content analysis of responses to the open-ended survey question

Table 26 shows results of the content analysis performed on a single open-ended survey question, "Is there anything else you would like to tell us about CURES (e.g., problems, recommendations)?" Sixty-three percent (n = 597 of 1275) of DEA-licensed physicians and 56% (n = 270 of 482) of pharmacists provided responses to the question. Thus, responses were received from approximately half (49%, n=867 of 1757) of all survey respondents who were eligible to answer the open-ended question.

For both physicians and pharmacists, the most common response category was "relevance," indicating that respondents felt that CURES was not relevant to their practice. Many of the comments in this category indicated that the respondent was retired or no longer working in California. However, many other respondents indicated that they felt CURES was not relevant to them because they rarely prescribed controlled substances or because the respondents were confident that none of their patients were "doctor shopping" or misusing controlled substances. Several physicians commented that they only checked CURES for new patients. After "relevance," the second most common category for pharmacists was "data." Thirty-four pharmacists (7% of all pharmacist respondents) complained about the quality and accuracy of CURES data, with several indicating that they felt CURES data accuracy should be improved and/or that the time lag between dispensing prescriptions and data showing up in CURES reports was too long. This category of responses also included comments about the lack of Veterans Health Administration or out of state prescriptions in CURES. Pharmacists typically dispense many more controlled substances than physicians, which likely explains why pharmacists were more attuned to the need for improved CURES data quality than were

physicians. For physicians, the second most common categories included difficulty accessing (7%) or using (8%) CURES, along with positive statements indicating that CURES had value or was useful to physicians (7%). Comments about difficulty using CURES most often related to the amount of time needed to access CURES and run patient reports while working in clinic.

Table 26. Definitions and frequency of content codes derived from the open-ended survey question[a]

Code	Definition	Physicians n =1275[b]		Pharmacists n =482	
		n	%	n	%
Access	Problems with registration, login, password or security questions, help desk, customer service	85	6.7	27	5.4
Difficulty	Difficulty using CURES, including time consuming, website not user friendly, difficult to generate reports,	99	7.8	14	2.8
Regulation	Loss of physician autonomy, micromanaging patient care, social control by state/ medical board / DOJ, red tape	39	3.1	5	1.0
Relevance	CURES not relevant to respondent due to various reasons, including out of state, retired, specialty, practice patterns, or patient population	240	18.8	61	12.1
Data	Limitations related to CURES data, including timeliness of data, absence of out of state prescriptions, other data quality problems	32	2.5	34	6.8
Laws	Comments about whether CURES should or should not be legally required, either laws for mandatory CURES registration or mandatory CURES use	47	3.7	8	1.6
Value	Positive statements about CURES indicating that it is valuable, helpful, or useful in some way	87	6.8	22	4.4
Skepticism	Statements that CURES is not effective or not useful for curbing drug abuse	19	1.5	2	0.4
Training	Statements about needing training or help to use CURES or better use CURES	21	1.6	8	1.6
Misinform	Statements that are factually incorrect	2	0.2	1	0.2
Suggestion	Concrete suggestions for making CURES better not covered in other categories	51	4.0	31	6.2
Care	Comments that CURES impacts quality of care or patient care	27	2.1	2	0.4
Pharmacist	Comments about how pharmacists should use CURES (physicians only)	11	0.9	0	n/a
Prescriber	Comments about how prescribers / physicians should use CURES (pharmacists only)	0	n/a	16	3.2
Judgment	Comments that using CURES should be based on physician/pharmacist judgment	55	4.3	5	1.0
Aware	Comments that person is not aware of CURES or doesn't know how to use it	21	1.6	3	0.6
Cost	Cost of CURES license fee; productivity costs that mention money	3	0.2	4	0.8
Misc	Any response that does not fit in any of the above categories	58	4.5	46	9.1
None	Respondent left question blank	671	52.6	270	53.7

[a]Responses could be counted in multiple categories.
[b]Physicians who reported having a DEA license were eligible to answer this question

Qualitative analysis of responses to the open-ended survey question

Forty-nine percent (n=867) of sample respondents (n=1757) answered the open-ended question, "Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations)." A qualitative analysis of responses revealed four major themes illustrating attitudes and perceptions of CURES among physicians and pharmacists: (1) cost of using CURES (2) interference with professionalism (3) shifting responsibility and (4) benefits and future direction of CURES. These four major themes are explained in detail in the sections below. Overall, responses from physicians and pharmacists were similar with some exceptions. Pharmacists expressed more positive perceptions of CURES, but were more likely than physicians to report limitations including timeliness and accuracy of data as well as lack of inclusion of data from federal pharmacies in California, such as Veterans Health Administration pharmacies. The qualitative analysis also collected general and specific recommendations that respondents gave for increasing the use and utility of CURES among California physicians and pharmacists.

Cost of using CURES

Costs of using CURES comprise the time required to routinely access and enter patient information as well as the actual monetary cost associated with registration. Both groups of participants expressed that using CURES requires a significant amount of time which reduces the quality of the patient/customer interaction and thus negatively impacts the quality of care provided. A few physicians also expressed a decreased willingness to prescribe opioids due perceived barriers.

> *"…checking CURES has to fit efficiently into a busy primary care workflow, or else providers will burn out and choose not to prescribe opioids to anyone, even if indicated. The decision to prescribe opioids to patients is already a challenging process."* (Physician)

> *"I strongly disagree that pharmacists be required legally to check CURES before dispensing because it is a legal burden. Pharmacists should be encouraged and fully trained without a fee to use CURES, but not required."* (Pharmacist)

> *"CURES is a great resource, but too much CURES will interfere with clinical care. Time should be spent with the patient, not with the database."* (Physician)

Interference with professionalism

While physicians were slightly more likely to express lack of autonomy, professional judgement, and relevance as reasons for not mandating the use of CURES, pharmacists also shared concerns about relevance; some pharmacists who worked in hospital settings indicated that CURES was not relevant to their daily work. Many physicians reported that CURES was irrelevant to their

practice for a variety of reasons including: prescribing patterns, trust and established relationship with patients, medical specialty, pharmacy practice location, and the fact that they use professional judgement. Physicians who rarely, if ever, prescribe controlled substances believed that they should be exempt from using CURES along with pharmacists who work outside of retail settings.

> "*I work in an inpatient setting. CURES, for the most part, is irrelevant to my practice. Perhaps I need further training on how it applies to my work*." (Pharmacist)

> "*An astute physician knows when to check with CURES or prior colleagues treating his patients…*" (Physician)

> "*As it is I generally only use it CURES when someone is demonstrating drug seeking behavior.*" (Physician)

Shifting responsibility

Perceptions of who should be responsible for consulting CURES were contingent on one's role in health care. Many physicians hold pharmacists accountable for using CURES because pharmacists dispense medications. At the same time, some pharmacists shifted responsibility to physicians, noting that physicians have the prescription writing privileges and so have greater responsibility for preventing prescription drug misuse.

> *"I think all prescribers of controlled substances should be required to check CURES before they write prescriptions. The sole responsibility of should not be with pharmacists."* (Pharmacist)

> "*Pharmacists should check on all patients and send notice to us [physicians*]." (Physician)

> "*Unless MDs are forced to buy in you are making me the policeman…unless there are consequences for the MD by the Medical Association nothing will ever change."* (Pharmacist)

> *"Pharmacy involvement should be greater in monitoring patients that reflect misuse."* (Physician)

Benefits of CURES and future directions

While both groups reported various concerns regarding CURES, they also expressed many benefits and suggestions for improving the process. An appreciation for the underlying philosophy of CURES was evident in the open-ended responses.

> *"CURES is a wonderful contribution to help identify patients who are 'doctor shopping' for opioids (Physician).*

> *"CURES is very helpful in ensuring honesty from patients in the patient-pharmacist relationship." (Pharmacist)*

A variety of recommendations was suggested by both physicians and pharmacists and includes: increased training and advertisement around CURES, data updates in real time, and expansion to include out-of-state patient information. Some of these recommendations (e.g., the ability to save commonly-used patient searches) actually already exist in CURES 2.0, while others (e.g., including out-of-state prescriptions and decreasing data lag time) would require new state legislation.

> *"*CURES *should be part of a network like insurance DUR system, so without logging in pharmacists get prompted about prescriptions filled at other places."* (Pharmacist)

> *"Great program. Needs to be promoted more along with further training. Would be good if there were an incentive for less than conscience physicians to use the program."* (Physician)

> *"Some of the chains [pharmacies] have firewalls when it comes to resetting passwords and when trying to reset on a mobile device it does not work. Fixing this problem would be very helpful."* (Pharmacist)

General recommendations made in open-ended responses

- Offer incentives to encourage physicians and pharmacists to use CURES
- Promote CURES to increase awareness and visibility
- Provide additional CURES training
- Improve usability of CURES (including use on mobile devices)

Specific recommendations made in open-ended responses:

- Provide access to out-of-state prescription information
- Store patient names in memory bank to save time on repeat patient searches
- Alert pharmacists when patients get prescriptions filled at other pharmacies
- Update data in real time (currently CURES has a 1-week submission lag time).
- Track and report over-prescribers
- Link registered aliases and legal name changes
- Track identify theft and fraud in conjunction with prescriptions drugs

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Appendix A CURES MBC survey

Q52 How concerned are you about prescription drug misuse and abuse among:

	Not concerned at all (0)	Slightly concerned (1)	Moderately concerned (2)	Extremely concerned (3)
Patients in California (1)	❍	❍	❍	❍
Patients in the community where you practice (2)	❍	❍	❍	❍

Q2 Do you currently have a DEA license to prescribe controlled substances?
- ❍ Yes (1)
- ❍ No (0)

If No Is Selected, Then Skip To End of Survey

Q4 Do you currently prescribe controlled substances in your practice?
- ❍ Yes (1)
- ❍ No (0)

Q8 Now we would like you to think about the last 3 months.

Q9 On average, how many days a week do you see patients?

Q10 On average, how many patients do you see per day?

Display This Question:
If Do you currently prescribe controlled substances in your practice? Yes Is Selected

Q11 On average, for how many of the patients that you see per day do you prescribe a controlled substance?

Q5 Now we'd like to ask you some questions about California's Controlled Substance Utilization Review and Evaluation System (CURES). CURES is California's online, computer-based system for monitoring the prescribing of all Schedule II, III and IV controlled substances dispensed in California. Have you heard of CURES?
- ❍ Yes (1)
- ❍ No (0)

Q7 Are you registered for CURES?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Registration in process (3)
- ❍ Do not know (4)

Q12 Are you aware that registering for CURES is mandatory for DEA-licensed physicians?
- ❍ Yes (1)
- ❍ No (0)

Q13 How likely are you to register for CURES within the following month?
- ❍ Extremely unlikely (1)
- ❍ Unlikely (2)
- ❍ Likely (3)
- ❍ Extremely likely (4)

Q14 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I have other problems that are more important than registering for CURES. (2)	❍	❍	❍	❍	❍
I know how to go about registering for CURES. (3)	❍	❍	❍	❍	❍
Every time I try to register for CURES, something goes wrong. (5)	❍	❍	❍	❍	❍
Registering for CURES takes little time. (4)	❍	❍	❍	❍	❍
I don't have access to a computer or the internet where I practice. (6)	❍	❍	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q34 How long have you been using CURES?
- ❍ Less than 3 months (1)
- ❍ 4 to 6 months (2)
- ❍ 7 months to 1 year (3)
- ❍ More than 1 year (4)

Q17 How likely are you to use CURES at least once in the next 3 months?
- ❍ Extremely unlikely (1)
- ❍ Unlikely (2)
- ❍ Likely (3)
- ❍ Extremely likely (4)

Q15 How difficult are the following in CURES?

	Very difficult (5)	Difficult (4)	Average (3)	Easy (2)	Very easy (1)
Registering for CURES (1)	❍	❍	❍	❍	❍
Logging in to CURES (2)	❍	❍	❍	❍	❍
Resetting your password (3)	❍	❍	❍	❍	❍
Remembering security questions (4)	❍	❍	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q16 Now we would like you to think about the last 3 months.On a typical day when you see patients, how many times do you use CURES to look up a patient's controlled substance medication history?
- ❍ Never (1)
- ❍ Less than once a day (5)
- ❍ 1-2 times a day (2)
- ❍ 3-5 times a day (3)
- ❍ 6+ times a day (4)

Q18 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly Agree (5)
CURES is helpful (2)	❍	❍	❍	❍	❍
CURES is not relevant to my practice (3)	❍	❍	❍	❍	❍
CURES is easy to use (4)	❍	❍	❍	❍	❍
I don't know how to use CURES (5)	❍	❍	❍	❍	❍
CURES is checked by someone else in the office (6)	❍	❍	❍	❍	❍
I have limited or no access to CURES while I practice (7)	❍	❍	❍	❍	❍

Display This Question:
If We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q19 What are your reasons for checking CURES? [Check all that apply]
- ❑ To check on patients prior to prescribing a controlled substance. (1)
- ❑ To look for evidence of “drug seeking.” (5)
- ❑ To monitor patients on controlled substances. (2)
- ❑ To improve my communication with patients regarding controlled substances. (7)
- ❑ Other (6) _____

Display This Question:
If We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q20 Thinking about the past 3 months, for what percentage of patient visits that resulted in a prescription for controlled substances did you review CURES information?
- ❍ 0% (0)
- ❍ 10% (1)
- ❍ 20% (2)
- ❍ 30% (3)
- ❍ 40% (4)
- ❍ 50% (5)
- ❍ 60% (6)
- ❍ 70% (7)
- ❍ 80% (8)
- ❍ 90% (9)
- ❍ 100% (10)

Display This Question:
If Thinking about the past 3 months, for what percentage of patient visits that resulted in a prescr... 0% Is Not Selected
And We would like you to think about the last 3 months. On a typical day when you see patients, how m... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q21 Consider the patient visits for which you have reviewed CURES in the past 3 month period. For what percent of these cases did the information you obtained from CURES alter your prescribing decision?
- ❍ 0% (0)
- ❍ 10% (1)
- ❍ 20% (2)
- ❍ 30% (3)
- ❍ 40% (4)
- ❍ 50% (5)
- ❍ 60% (6)
- ❍ 70% (7)
- ❍ 80% (8)
- ❍ 90% (9)
- ❍ 100% (10)

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q28 How useful to you is CURES for the following:

	Very Useful (4)	Useful (3)	A little useful (2)	Not useful at all (1)
Helping manage patients with pain (1)	❍	❍	❍	❍
Helping build trust with patients (2)	❍	❍	❍	❍
Informing decisions to prescribe controlled substances. (4)	❍	❍	❍	❍
Identifying patients filling prescriptions from multiple doctors and/or pharmacies (5)	❍	❍	❍	❍
Identifying patients who misuse or abuse controlled prescription drugs (6)	❍	❍	❍	❍

Q27 Are you aware of the following new features in CURES?

	Never heard of it (0)	Heard of it, but never use it (1)	Used it at least once (2)
Sending secure peer-to-peer messages about specific patients (2)	❍	❍	❍
Giving delegates the ability to access to CURES on your behalf (4)	❍	❍	❍
The ability to flag patients who have patient-provider agreements (3)	❍	❍	❍
Automatic alerts for high risk patients (5)	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q31 Did you use the previous version of CURES in your practice?

❍ Yes (1)
❍ No (0)

Display This Question:
If Did you use the previous version of CURES in your practice? Yes Is Selected
And Are you registered for CURES? Yes Is Selected

Q32 Compared to the old website, how would you rate the new CURES website on the following characteristics?

	Much worse (-2)	Somewhat worse (-1)	About the same (0)	Somewhat better (1)	Much better (2)
Overall ease of use (1)	❍	❍	❍	❍	❍
Login process (2)	❍	❍	❍	❍	❍
Patient Activity Reports (3)	❍	❍	❍	❍	❍
Help Desk support (4)	❍	❍	❍	❍	❍

Q29 Do you feel that you need additional training or education about CURES?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Display This Question:
If Do you feel that you need additional training or education about CURES? Yes Is Selected
Or Do you feel that you need additional training or education about CURES? Don't know Is Selected

Q30 What would you like additional training on? [Check all that apply]
- ❑ Registering for CURES (1)
- ❑ CURES passwords and security questions (2)
- ❑ Running patient activity reports (3)
- ❑ Identifying and using CURES delegates from my account (4)
- ❑ Sending secure messages (5)
- ❑ How automatic reports are generated (6)
- ❑ Flagging patients who have patient-provider agreements (7)
- ❑ Other topics (8) _____

Q33 Now we would like to ask you some general questions about monitoring patient's controlled substance medications using systems such as CURES.

Q54 Should physicians check CURES prior to writing a prescription for a controlled substance?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Q55 Should physicians be required to check CURES prior to writing a prescription for a controlled substance?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Q56 What percentage of your colleagues do you think use CURES at least weekly?
- ❍ 0% (1)
- ❍ 10% (2)
- ❍ 20% (3)
- ❍ 30% (4)
- ❍ 40% (5)
- ❍ 50% (6)
- ❍ 60% (7)
- ❍ 70% (8)
- ❍ 80% (9)
- ❍ 90% (10)
- ❍ 100% (11)

Q57 What percentage of your colleagues do you feel ought to be using CURES at least weekly?
- ❍ 0% (1)
- ❍ 10% (2)
- ❍ 20% (3)
- ❍ 30% (4)
- ❍ 40% (5)
- ❍ 50% (6)
- ❍ 60% (7)
- ❍ 70% (8)
- ❍ 80% (9)
- ❍ 90% (10)
- ❍ 100% (11)

Q35 I have a professional responsibility to check CURES when prescribing controlled substances.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q36 Checking CURES when prescribing controlled substances is the right thing to do.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q37 Using CURES when prescribing controlled substances is considered standard of care.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q38 Prescribing controlled substances without checking CURES would be morally wrong.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q39 Checking CURES when prescribing controlled substances is NOT a necessary part of my job.
- ❍ Strongly agree (1)
- ❍ Agree (2)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (4)
- ❍ Strongly disagree (5)

Q40 Now we would like to ask you some questions regarding your prescribing practices more generally.

Q41 How have your prescribing practices changed in the last 3 months?
- ❍ I prescribe FAR FEWER controlled substances (-2)
- ❍ I prescribe FEWER controlled substances (-1)
- ❍ No change (0)
- ❍ I prescribe MORE controlled substances (1)
- ❍ I prescribe FAR MORE controlled substances (2)

If No change Is Selected, Then Skip To End of Block

Q42 What factors led you to change your prescribing practices? [Check all that apply]
- ❑ Change in practice location or patient mix (1)
- ❑ Increased professional awareness of risks, benefits, and other solutions (3)
- ❑ New clinical guidelines and recommendations (4)
- ❑ CURES providing greater access to patient prescription drug history (6)
- ❑ Increased patient awareness of risks and benefits (7)
- ❑ Medico-legal ramifications (8)
- ❑ Other reason (10) _____

Q44 What percent of patients in California taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Benefit from them (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q43 What percent of your patients taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Benefit from them (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q45 Is there anything else you would like to tell us about CURES? (e.g., problems, recommendations)

Q46 Which gender do you identify with?
- ❍ Male (0)
- ❍ Female (1)
- ❍ Other (2) _____

Q47 Please indicate your age in years:

Q51 Please indicate whether you consider yourself
- ❍ Hispanic or Latino (1)
- ❍ Not Hispanic or Latino (2)

Q48 Which one of the following groups do you most identify with?
- ❍ American Indian or Alaskan Native (1)
- ❍ Asian (2)
- ❍ Black or African American (3)
- ❍ Native Hawaiian or Other Pacific Islander (4)
- ❍ White (5)
- ❍ Other (please specify) (6) _____

Q49 How long have you been practicing in years:

Q50 Please choose the specialty that best describes your current practice:

- ❍ Allergy and Immunology (24)
- ❍ Anesthesiology (1)
- ❍ Colon and Rectal Surgery (2)
- ❍ Dermatology (3)
- ❍ Emergency Medicine (4)
- ❍ Family Medicine (5)
- ❍ Internal Medicine (general) (6)
- ❍ Internal Medicine (subspecialty) (7)
- ❍ Medical Genetics (25)
- ❍ Neurology (8)
- ❍ Neurosurgery (26)
- ❍ Nuclear Medicine (27)
- ❍ Obstetrics and Gynecology (9)
- ❍ Ophthalmology (10)
- ❍ Orthopaedic Surgery (17)
- ❍ Otolaryngology (28)
- ❍ Pathology (29)
- ❍ Pain Medicine (11)
- ❍ Pediatrics (general) (12)
- ❍ Pediatrics (subspecialty) (30)
- ❍ Physical Medicine and Rehabilitation (31)
- ❍ Plastic Surgery (14)
- ❍ Preventive Medicine (32)
- ❍ Psychiatry (15)
- ❍ Radiology (13)
- ❍ Surgery (general) (34)
- ❍ Surgery (subspecialty) (35)
- ❍ Thoracic and Cardiac Surgery (33)
- ❍ Urology (16)

Q51 As part of the effort to understand prescribing practice and CURES usage, some of your colleagues have volunteered to participate in a follow up survey. May we contact you in the future regarding your prescribing practices and usage of CURES?

- ❍ Yes (1)
- ❍ No (0)

If No Is Selected, Then Skip To End of Survey

Q58 Thank you for your participation. Please provide your email address so we may contact you at a later date.

Appendix B CURES pharmacist survey

Q52 How concerned are you about prescription drug misuse and abuse among:

	Not concerned at all (0)	Slightly concerned (1)	Moderately concerned (2)	Extremely concerned (3)
Patients in California (1)	❍	❍	❍	❍
Patients in the community where you practice (2)	❍	❍	❍	❍

Q8 Now we would like you to think about the last 3 months.

Q9 On average, how many days a week do you dispense or manage medications?

Q10 On average, how many prescriptions do you dispense or manage per day?

Q11 On average, how many controlled substance substance prescriptions do you dispense or manage per day?

Q5 Now we'd like to ask you some questions about California's Controlled Substance Utilization Review and Evaluation System (CURES). CURES is California's online, computer-based system for monitoring the dispensing of all Schedule II, III and IV controlled substances dispensed in California. Have you heard of CURES?

❍ Yes (1)
❍ No (0)

Q7 Are you registered for CURES?

❍ Yes (1)
❍ No (2)
❍ Registration is in process (3)
❍ Don't know (4)

Q12 Are you aware that registering for CURES is mandatory for pharmacists?

❍ Yes (1)
❍ No (0)

Q13 How likely are you to register for CURES within the following month?

❍ Extremely unlikely (1)
❍ Unlikely (2)
❍ Likely (3)
❍ Extremely likely (4)

Q14 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I have other problems that are more important than registering for CURES. (2)	❍	❍	❍	❍	❍
I know how to go about registering for CURES. (3)	❍	❍	❍	❍	❍
Every time I try to register for CURES, something goes wrong. (5)	❍	❍	❍	❍	❍
Registering for CURES takes little time. (4)	❍	❍	❍	❍	❍
I don't have access to a computer or the internet where I practice. (6)	❍	❍	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q34 How long have you been using CURES?
- ❍ Less than 3 months (1)
- ❍ 4 to 6 months (2)
- ❍ 7 months to 1 year (3)
- ❍ More than 1 year (4)

Q17 How likely are you to use CURES at least once in the next 3 months?
- ❍ Extremely unlikely (1)
- ❍ Unlikely (2)
- ❍ Likely (3)
- ❍ Extremely likely (4)

Q15 How difficult are the following in CURES?

	Very difficult (5)	Difficult (4)	Average (3)	Easy (2)	Very easy (1)
Registering for CURES (1)	❍	❍	❍	❍	❍
Logging in to CURES (2)	❍	❍	❍	❍	❍
Resetting your password (3)	❍	❍	❍	❍	❍
Remembering security questions (4)	❍	❍	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q16 Now we would like you to think about the last 3 months.On a typical day when you dispense or manage medications, how many times do you use CURES to look up a patient's controlled substance medication history?
- ❍ Never (1)
- ❍ Less than once a day (5)
- ❍ 1-5 times a day (2)
- ❍ 6-9 times a day (3)
- ❍ 10+ times a day (4)

Q18 Please indicate the extent to which you agree with the following:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly Agree (5)
CURES is helpful (2)	❍	❍	❍	❍	❍
CURES is not relevant to my practice (3)	❍	❍	❍	❍	❍
CURES is easy to use (4)	❍	❍	❍	❍	❍
I don't know how to use CURES (5)	❍	❍	❍	❍	❍
CURES is checked by someone else in the office (6)	❍	❍	❍	❍	❍
I have limited or no access to CURES while I practice (7)	❍	❍	❍	❍	❍

Display This Question:
If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q19 What are your reasons for checking CURES? [Check all that apply]
- ❑ To check on patients prior to dispensing or managing a controlled substance. (1)
- ❑ To look for evidence of “drug seeking.” (5)
- ❑ To monitor patients on controlled substances. (2)
- ❑ To improve my communication with patients regarding controlled substances. (7)
- ❑ Other (6) _____

Display This Question:
If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q20 Thinking about the past 3 months, for what percentage of controlled substance fills did you review CURES information?

- ❍ 0% (6)
- ❍ 10% (7)
- ❍ 20% (8)
- ❍ 30% (9)
- ❍ 40% (10)
- ❍ 50% (11)
- ❍ 60% (12)
- ❍ 70% (13)
- ❍ 80% (14)
- ❍ 90% (15)
- ❍ 100% (16)

Display This Question:
If On a typical day when you dispense or manage medications, how many times do you use CURES to look... Never Is Not Selected
And Thinking about the past 3 months, for what percentage of controlled substance fills did you revie... 0% Is Not Selected
And Are you registered for CURES? Yes Is Selected

Q21 Consider the prescriptions for which you have reviewed CURES in the past 3 month period. For what percent of these prescriptions did the information you obtained from CURES prompt you to...

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
contact the prescriber for more information? (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
not to fill the prescription? (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q28 How useful to you is CURES for the following

	Very Useful (4)	Useful (3)	A little useful (2)	Not useful at all (1)
Helping manage patients with pain (1)	❍	❍	❍	❍
Helping build trust with patients (2)	❍	❍	❍	❍
Informing decisions to dispense or manage controlled substances (4)	❍	❍	❍	❍
Identifying patients filling prescriptions from multiple doctors and/or pharmacies (8)	❍	❍	❍	❍
Identifying patients who misuse or abuse controlled prescription drugs (6)	❍	❍	❍	❍

Q27 Are you aware of the following new features in CURES?

	Never heard of it (0)	Heard of it, but never use it (1)	Used it at least once (2)
Sending secure peer-to-peer messages about specific patients (2)	❍	❍	❍
Giving delegates the ability to access CURES on your behalf (4)	❍	❍	❍
Automatic alerts for high-risk patients (5)	❍	❍	❍

Display This Question:
If Are you registered for CURES? Yes Is Selected

Q31 Did you use the previous version of CURES in your practice?
- ❍ Yes (1)
- ❍ No (0)

Display This Question:
If Did you use the previous version of CURES in your practice? Yes Is Selected
And Are you registered for CURES? Yes Is Selected

Q32 Compared to the old website, how would you rate the new CURES website on the following characteristics?

	Much worse (-2)	Somewhat worse (-1)	About the same (0)	Somewhat better (1)	Much better (2)
Overall ease of use (1)	❍	❍	❍	❍	❍
Login process (2)	❍	❍	❍	❍	❍
Patient Activity Reports (3)	❍	❍	❍	❍	❍
Help Desk support (4)	❍	❍	❍	❍	❍

Q29 Do you feel that you need additional training or education about CURES?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Display This Question:
If Do you feel that you need additional training or education about CURES? Yes Is Selected
Or Do you feel that you need additional training or education about CURES? Don't know Is Selected

Q30 What would you like additional training on? [Check all that apply]
- ❑ Registering for CURES (1)
- ❑ CURES passwords and security questions (2)
- ❑ Running patient activity reports (3)
- ❑ Identifying and using CURES delegates from my account (4)
- ❑ Sending secure messages (5)
- ❑ How automatic reports are generated (6)
- ❑ Other topics (8) _____

Q33 Now we would like to ask you some general questions about monitoring patient's controlled substance medications using systems such as CURES.

Q51 Should pharmacists check CURES prior to dispensing or managing a controlled substance?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Q52 Should pharmacists be required to check CURES prior to dispensing or managing a controlled substance?
- ❍ Yes (1)
- ❍ No (0)
- ❍ Don't know (2)

Q54 What percentage of your colleagues do you think use CURES at least weekly?
- ❍ 0% (1)
- ❍ 10% (2)
- ❍ 20% (3)
- ❍ 30% (4)
- ❍ 40% (5)
- ❍ 50% (6)
- ❍ 60% (7)
- ❍ 70% (8)
- ❍ 80% (9)
- ❍ 90% (10)
- ❍ 100% (11)

Q56 What percentage of your colleagues do you feel ought to be using CURES at least weekly?
- ❍ 0% (1)
- ❍ 10% (2)
- ❍ 20% (3)
- ❍ 30% (4)
- ❍ 40% (5)
- ❍ 50% (6)
- ❍ 60% (7)
- ❍ 70% (8)
- ❍ 80% (9)
- ❍ 90% (10)
- ❍ 100% (11)

Q35 I have a professional responsibility to check CURES when dispensing or managing controlled substances.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q36 Checking CURES when dispensing or managing controlled substances is the right thing to do.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q37 Using CURES when dispensing or managing controlled substances is considered standard of care.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q38 Dispensing or managing controlled substances without checking CURES would be morally wrong.
- ❍ Strongly agree (5)
- ❍ Agree (4)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (2)
- ❍ Strongly disagree (1)

Q39 Checking CURES when dispensing or managing controlled substances is NOT a necessary part of my job.
- ❍ Strongly agree (1)
- ❍ Agree (2)
- ❍ Neither agree nor disagree (3)
- ❍ Disagree (4)
- ❍ Strongly disagree (5)

Q40 Now we would like to ask you some questions regarding your dispensing and managing practices more generally.

Q41 How have your dispensing or managing practices changed in the last 3 months?
- ❍ I dispense/manage FAR FEWER controlled substances (-2)
- ❍ I dispense/manage FEWER controlled substances (-1)
- ❍ No change (0)
- ❍ I dispense/manage MORE controlled substances (1)
- ❍ I dispense/manage FAR MORE controlled substances (2)

If No change Is Selected, Then Skip To End of Block

Q42 What factors led you to change your prescribing practices? [Check all that apply]
- ❑ Change in practice location or patient mix (1)
- ❑ New professional standards and protocols where I practice (2)
- ❑ Increased professional awareness of risks, benefits, and other solutions (3)
- ❑ New clinical guidelines and recommendations (4)
- ❑ Increased law enforcement activity (5)
- ❑ CURES providing greater access to patient prescription drug history (6)
- ❑ Increased patient awareness of risks and benefits (7)
- ❑ Medico-legal ramifications (8)
- ❑ Other reason (10) _____

Q43 What percent of patients in California taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (4)	40% (5)	50% (6)	60% (7)	70% (8)	80% (9)	90% (10)	100% (11)
Misuse/Abuse them (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Benefit from them (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q44 What percent of your patients taking controlled substance medications do you feel:

	0% (1)	10% (2)	20% (3)	30% (12)	40% (13)	50% (14)	60% (15)	70% (16)	80% (17)	90% (18)	100% (19)
Misuse/Abuse them (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Benefit from them (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q45 Is there anything else you would like to tell us about CURES? (e.g. problems, recommendations)

Q46 Which gender do you identify with?
- ❍ Male (0)
- ❍ Female (1)
- ❍ Other (2) _____

Q47 Please indicate your age in years:

Q50 Please indicate whether you consider yourself
- ❍ Hispanic or Latino (1)
- ❍ Not Hispanic or Latino (2)

Q48 Which one of the following groups do you most identify with?
- ❍ American Indian or Alaskan Native (1)
- ❍ Asian (2)
- ❍ Black or African American (3)
- ❍ Native Hawaiian or Other Pacific Islander (4)
- ❍ White (5)
- ❍ Other (please specify) (6) _____

Q49 How long have you been practicing in years:

Q50 Please identify the choice that best describes your primary practice site?
- ❍ Independent pharmacy (1)
- ❍ Chain pharmacy (2)
- ❍ Hospital (3)
- ❍ Supermarket (4)
- ❍ Mass merchandiser (5)
- ❍ Other patient care practice (6)
- ❍ Other (non patient care) (7)

Q51 As part of the effort to understand clinical practice and CURES usage, some of your colleagues have volunteered to participate in a follow up survey. May we contact you in the future regarding your clinical practice and usage of CURES?
- ❍ Yes (1)
- ❍ No (0)

If No Is Selected, Then Skip To End of Survey

Q57 Thank you for your participation. Please provide your email address so we may contact you at a later date.

Appendix C. Timeline of survey deployment and reminders

	Medical Board	Pharmacy Board[a]	Osteopathic Board[a]
Initial fliers mailed	8/10/2016	9/6/2016	10/6/2016
Email #1 sent	8/23/2016	--	--
Post card #1 mailed	8/27/2016	9/26/2016	--
SB-482 signed[b]	9/27/2016		
Tri-fold reminder #1	--	--	10/19/2016
Email #2 sent	10/18/2016	--	--
Reminder letter mailed from Board of Pharmacy	--	10/12/2016**	--
Postcard #2 mailed	--	--	12/5/2016
Email #3 sent	11/9/2016	--	--
Email #4 sent	11/16/2016	--	--
Email #5 sent	11/30/2016	--	--
Reminder letter mailed from MBC	11/21/2016	--	--
Reminder letter mailed from OMBC	--	--	12/19/2016
Survey closed	1/31/2017	1/31/2017	1/31/2017

[a]Email reminders were not possible for Pharmacy Board and OMBC.

[b]SB-482, a state law mandating eventual CURES use by prescribers, was signed during the survey period. Some physician reminders sent out after this date mentioned SB-482 in order to encourage participation.

Attachment 4

OFFICE OF THE UNITED STATES ATTORNEY

SOUTHERN DISTRICT OF CALIFORNIA

San Diego, California

United States Attorney

Adam Braverman

For Further Information, Contact:

Assistant U. S. Attorney Orlando Gutierrez (619) 546-6958

For Immediate Release

Oxycodone Trafficker Convicted by Federal Jury

NEWS RELEASE SUMMARY – November 29, 2017

SAN DIEGO – Edwin Fuller, a member of a drug trafficking organization that illegally acquired and distributed at least 50,000 oxycodone tablets valued at $1.5 million during a three-year span, was convicted by a federal jury today following a three-day trial.

Fuller was part of what is believed to be the San Diego region's most prolific and well-organized oxycodone ring. The organization acquired oxycodone via fraudulent prescriptions and phony California identification cards and distributed the pills across the country. One significant seizure involved 7,000 pills sent by this organization to Columbus, Ohio.

Fuller is the fourth key member of the organization that has been convicted in the case so far. The investigation is ongoing.

Two coconspirators testified at trial that Fuller was a recruiter and a "filler" who walked into pharmacies to get bogus prescriptions filled. Fuller received the oxycodone and distributed it to others. Evidence at trial proved that over a six-month period Fuller was able to successfully acquire more than 11,000 30-milligram tablets of oxycodone. The traffickers obtained pills for about $2 each from the pharmacies and then sold them for a street value of up to $30 each.

One coconspirator testified that she was "thankful" for being arrested because she would have died as a result of her addition to oxycodone.

U.S. Attorney Adam Braverman said prosecution of this organization and others like it is a priority for this office because their greed is feeding the addiction crisis in California and other regions of the United States.

"Just yesterday I heard from parents who tragically lost their son to opiate addiction. This case demonstrates that we are holding pill peddlers accountable for the havoc they are wreaking on our country," said U.S. Attorney Adam

Braverman. “We will not tolerate drug trafficking rings that seek to profit by exploiting and endangering people who struggle with substance use disorder.”

Earlier today, Attorney General Jeff Sessions announced new resources and stepped up efforts to address the drug and opioid crisis, including over $12 million in grant funding to assist law enforcement in combating illegal manufacturing and distribution of methamphetamine, heroin, and prescription opioid and a directive to all U.S. Attorneys to designate an Opioid Coordinator to work closely with prosecutors, and with other federal, state, tribal, and local law enforcement to coordinate and optimize federal opioid prosecutions in every district.

Fuller is scheduled to be sentenced on February 15, 2018 at 2:15 p.m. before U.S. District Judge Gonzalo Curiel.

This case is the result of the ongoing efforts by the Organized Crime Drug Enforcement Task Force (OCDETF) a partnership that brings together the combined expertise and unique abilities of federal, state and local law enforcement agencies. The principal mission of the OCDETF program is to identify, disrupt, dismantle and prosecute high level members of drug trafficking, weapons trafficking and money laundering organizations and enterprises.

DEFENDANTS **Case Number 16cr0867**

Edwin Fuller Age: 39 Los Angeles

SUMMARY OF CHARGES

Conspiracy to Possess with Intent to Distribute Controlled Substance – Title 21, U.S.C., Section 841(a) (1) and 846

Maximum penalty: 20 years in prison and $1 million fine

AGENCIES

U.S. Drug Enforcement Administration

California Department of Health Care Services

Kelly Thornton

Director of Media Relations

Office of the U.S. Attorney

Southern District of California

619.546.9726

Attachment 5

Title 16. Board of Pharmacy

Changes made to the current regulation language are shown by strikethrough for deleted language and underline for added language. Additionally, [Brackets] indicates language that is not being amended.

Amend section 1735.2, subdivision (i) in Article 4.5 of Division 17 of Title 16 California Code of Regulations to read as follows:

1735.2. Compounding Limitations and Requirements; Self-Assessment.

[…..]

(i) Every compounded drug preparation shall be given beyond use date representing the date or date and time beyond which the compounded drug preparation should not be used, stored, transported or administered, and determined based on the professional judgment of the pharmacist performing or supervising the compounding.

(1) For non-sterile compounded drug preparation(s), the beyond use date shall not exceed any of the following:

(A) the shortest expiration date or beyond use date of any ingredient in the compounded drug preparation,

(B) the chemical stability of any one ingredient in the compounded drug preparation;

(C) the chemical stability of the combination of all ingredients in the compounded drug preparation,

(D) ~~180 days~~ for non-aqueous formulations, 180 days or an extended date established by the pharmacist's research, analysis, and documentation,

(E) ~~14 days~~ for water-containing oral formulations, 14 days or an extended date established by the pharmacist's research, analysis, and documentation, and

(F) ~~30 days~~ for water-containing topical/dermal and mucosal liquid and semisolid formulations, 30 days or an extended date established by the pharmacist's research, analysis, and documentation.

(G) A pharmacist, using his or her professional judgment may establish an extended date as provided in (D), (E), and (F), if the pharmacist researches by consulting and applying drug-specific and general stability documentation and literature; analyzes such documentation and literature as well as the other factors set forth in this subdivision, and maintains documentation of the research, analysis and conclusion. The factors the pharmacist must analyze include:

(i) the nature of the drug and its degradation mechanism,

(ii) the dosage form and its components,

(iii) the potential for microbial proliferation in the preparation,

(iv) the container in which it is packaged,

(v) the expected storage conditions, and

(vi) the intended duration of therapy.

Documentation of the pharmacist's research and analysis supporting an extension must be maintained in a readily retrievable format as part of the master formula.

(2) For sterile compounded drug preparations, the beyond use date shall not exceed any of the following:
  (A) The shortest expiration date or beyond use date of any ingredient in the sterile compounded drug product preparation,
  (B) The chemical stability of any one ingredient in the sterile compounded drug preparation,
  (C) The chemical stability of the combination of all ingredients in the sterile compounded drug preparation, and
  (D) The beyond use date assigned for sterility in section 1751.8.

(3) For sterile compounded drug preparations, ~~E~~ extension of a beyond use date is only allowable when supported by the following:
  (A) Method Suitability Test,
  (B) Container Closure Integrity Test, and
  (C) Stability Studies

(4) In addition to the requirements of paragraph three (3), the drugs or compounded drug preparations tested and studied shall be identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation.

(5) Shorter dating than set forth in this subsection may be used if it is deemed appropriate in the professional judgment of the responsible pharmacist.

[…..]

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

Title 16. Board of Pharmacy

Changes made to the current regulation language are shown by strikethrough for deleted language and underline for added language. Additionally, [Brackets] indicate language that is not being amended.

Amend section 1735.1(c) and (f) in Article 4.5 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1735.1. Compounding Definitions.

[…..]

(c) "Biological Safety Cabinet (BSC)" means a ventilated cabinet for compounding sterile drug preparations, having an open front with inward airflow for personnel protection, downward HEPA-filtered laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection. Where hazardous drugs are prepared, the exhaust air from the biological safety cabinet shall be appropriately removed by properly designed external building ~~ventilation~~ exhausting. This external ~~venting~~ exhaust should be dedicated to one BSC or CACI.

(d) "Bulk drug substance" means any substance that, when used in the preparation of a compounded drug preparation, processing, or packaging of a drug, is an active ingredient or a finished dosage form of the drug, but the term does not include any intermediate used in the synthesis of such substances.

(e) "Cleanroom or clean area or buffer area" means a room or area with HEPA-filtered air that provides ISO Class 7 or better air quality where the primary engineering control (PEC) is physically located.
   (1) For nonhazardous compounding a positive pressure differential of 0.02- to 0.05-inch water column relative to all adjacent spaces is required.
   (2) For hazardous compounding at least 30 air changes per hour of HEPA-filtered supply air and a negative pressure of between 0.01 to 0.03 inches of water column relative to all adjacent spaces is required.

(f) "Compounding Aseptic Containment Isolator (CACI)" means a unidirectional HEPA-filtered airflow compounding aseptic isolator (CAI) designed to provide worker protection from exposure to undesirable levels of airborne drug throughout the compounding and material transfer processes and to provide an aseptic environment for compounding sterile preparations. Air exchange with the surrounding environment should not occur unless the air is first passed through a microbial retentive filter (HEPA minimum) system capable of containing airborne concentrations of the physical size and state of the drug being compounded. Where hazardous drugs are prepared, the exhaust air from the isolator shall be appropriately removed by properly designed external building ~~ventilation~~ exhaust. This external ~~venting~~ exhaust should be dedicated to one BSC or CACI. Air within the CACI shall not be recirculated nor turbulent.

[…..]

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

Amend section 1735.2(i) in Article 4.5 of Division 17 of Title 16 California Code of Regulations to read as follows:

1735.2. Compounding Limitations and Requirements; Self-Assessment.

[…..]

(i) Every compounded drug preparation shall be given beyond use date representing the date or date and time beyond which the compounded drug preparation should not be used, stored, transported or administered, and determined based on the professional judgment of the pharmacist performing or supervising the compounding.

(1) For non-sterile compounded drug preparation(s), the beyond use date shall not exceed any of the following:

(A) the shortest expiration date or beyond use date of any ingredient in the compounded drug preparation,

(B) the chemical stability of any one ingredient in the compounded drug preparation;

(C) the chemical stability of the combination of all ingredients in the compounded drug preparation,

(D) ~~180 days~~ for non-aqueous formulations, 180 days or an extended date established by the pharmacist's research, analysis, and documentation,

(E) ~~14 days~~ for water-containing oral formulations, 14 days or an extended date established by the pharmacist's research, analysis, and documentation, and

(F) ~~30 days~~ for water-containing topical/dermal and mucosal liquid and semisolid formulations, 30 days or an extended date established by the pharmacist's research, analysis, and documentation.

(G) A pharmacist, using his or her professional judgment may establish an extended date as provided in (D), (E), and (F), if the pharmacist researches by consulting and applying drug-specific and general stability documentation and literature; analyzes such documentation and literature as well as the other factors set forth in this subdivision, and maintains documentation of the research, analysis and conclusion. The factors the pharmacist must analyze include:

(i) the nature of the drug and its degradation mechanism,

(ii) the dosage form and its components,

(iii) the potential for microbial proliferation in the preparation,

(iv) the container in which it is packaged,

(v) the expected storage conditions, and

(vi) the intended duration of therapy.

Documentation of the pharmacist's research and analysis supporting an extension must be maintained in a readily retrievable format as part of the master formula.

(2) For sterile compounded drug preparations, the beyond use date shall not exceed any of the following:

(A) The shortest expiration date or beyond use date of any ingredient in the sterile compounded drug product preparation,

(B) The chemical stability of any one ingredient in the sterile compounded drug preparation,
(C) The chemical stability of the combination of all ingredients in the sterile compounded drug preparation, and
(D) The beyond use date assigned for sterility in section 1751.8.

(3) For sterile compounded drug preparations, ~~E~~ extension of a beyond use date is only allowable when supported by the following:
(A) Method Suitability Test,
(B) Container Closure Integrity Test, and
(C) Stability Studies

(4) In addition to the requirements of paragraph three (3), the drugs or compounded drug preparations tested and studied shall be identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation.

(5) Shorter dating than set forth in this subsection may be used if it is deemed appropriate in the professional judgment of the responsible pharmacist.

[…..]

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

Amend section 1735.6(e) in Article 4.5 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1735.6. Compounding Facilities and Equipment.

[…..]

(e) Hazardous drug compounding shall be completed in an externally vented physically separate room with the following requirements:

(1) Minimum of 30 air changes per hour except that 12 air changes per hour are acceptable for segregated compounding areas with a BSC or CACI when products are assigned a BUD of 12 hrs or less or when non sterile products are compounded; and

(2) Maintained at a negative pressure of 0.01 to 0.03 inches of water column relative to all adjacent spaces (rooms, above ceiling, and corridors); and

(3) Each ~~PEC~~ BSC in the room shall also be externally vented except that a BSC used only for nonsterile compounding may also use a redundant-HEPA filter in series; and

(4) All surfaces within the room shall be smooth, seamless, impervious, and non-shedding.

(f) Where compliance with the January 1, 2017 amendments to Article 4.5 or Article 7, requires physical construction or alteration to a facility or physical environment, the board or its designee may grant a waiver of such compliance for a period of time to permit such physical change(s). Application for any waiver shall be made by the licensee in writing, and the request shall identify the provision(s) requiring physical construction or alteration, and the timeline for any such change(s). The board or its designee may grant the waiver when, in its discretion, good cause is demonstrated for such waiver.

Note: Authority cited: Sections 4005 and 4127, Business and Professions Code.

Reference: Sections 4005, 4036, 4037, 4051, 4052 and 4127, Business and Professions Code.

Amend section 1751.1(a)(5) in Article 7 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1751.1. Sterile Compounding Recordkeeping Requirements.

(a) In addition to the records required by section 1735.3, any pharmacy engaged in any compounding of sterile drug preparations shall maintain the following records, which must be readily retrievable, within the pharmacy:
  (1) Documents evidencing training and competency evaluations of employees in sterile drug preparation policies and procedures.
  (2) Results of hand hygiene and garbing assessments with integrated gloved fingertip testing.
  (3) Results of assessments of personnel for aseptic techniques including results of media-fill tests and gloved fingertip testing performed in association with media-fill tests.
  (4) Results of viable air and surface sampling.
  (5) Biannual ~~V~~ video of smoke studies in all ISO Class 5 certified spaces.
  (6) Documents indicating daily documentation of room, refrigerator, and freezer temperatures appropriate for sterile compounded drug preparations consistent with the temperatures listed in section 1735.1 for:
    (A) Controlled room temperature.
    (B) Controlled cold temperature.
    (C) Controlled freezer temperature.

[…..]

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

Amend section 1751.4(k) in Article 7 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1751.4. Facility and Equipment Standards for Sterile Compounding.

[…..]

(k) The sterile compounding area in the pharmacy shall have a comfortable and well-lighted working environment, which includes a room temperature of ~~20~~ 24 degrees Celsius (~~68~~ 75 degrees Fahrenheit) or cooler to maintain comfortable conditions for compounding personnel when attired in the required compounding garb.
(l) A licensee may request a waiver of these provisions as provided in section 1735.6(f).

Note: Authority Cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052 and 4127, Business and Professions Code; and Section 18944, Health and Safety Code.

Attachment 6

Frequently Asked Questions - Board Compounding Regulations

Question: Can an electronic monitoring system be used to comply with the daily monitoring requirements established to maintain refrigerator and freezer temperatures?

Answer: Yes, if it fulfills all requirements. For example, if the electronic monitoring system collects and maintains temperature readings for the refrigerator and freezer, and could create a report documenting the temperature, and that report is available and can be provided upon request.

Question: What is "sterility?"

Answer: The definition of this term will ultimately be determined by professional standard of practice in the context where it is used. As guidance, however, USP <1211> (*Sterilization and Sterility Assurance of Compendial Articles*) provides a general description of the concepts and principles involved in the quality control of articles that must be sterile. The introduction to Chapter <1211> notes that any modifications of, or variations in, sterility test procedures from those described under *Sterility Tests* <71> should be validated. For additional information on sterility, refer to these and other relevant chapters of USP.

Question: What is "stability?"

Answer: The definition of this term will ultimately be determined by professional standard of practice in the context where it is used. As guidance, however, USP <1150> (*Pharmaceutical Stability*) indicates that the term "stability" refers to the chemical and physical integrity of the dosage unit and, when appropriate, the ability of the dosage unit to maintain protection against microbiological contamination. For additional information on stability, refer to this and other relevant chapters of USP.

Question: How is "identical" applied in CCR, title 16, section 1735.2(i)(4)?

Answer: A pharmacist must use his or her professional judgment to determine if the drugs or compounded drug preparations tested and studied are identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation. For example, a drug or preparation from different manufacturers may be considered identical if the pharmacist determines that the formulation components, amounts, and parameters (such as pH and dilution) are the same. Preparations may have the same formulations, however, if the parameters (such as pH and dilution) differ, the pharmacist may not be able to consider the preparations to be identical. Where a pharmacist exercises such judgment, the standard of practice in the industry may require that documentation be maintained to support the conclusion reached.

Question: What is the minimum testing frequency required to comply with the quality assurance plan requirements established in CCR, title 16, Section 1735.8?

Answer: The board's regulation requires testing a minimum of two specified compounded drug preparations. A pharmacist, using his or her professional judgment, should determine the appropriate testing schedule and frequency for the pharmacy.

Attachment 7

Possible Amendments to compounding regulations as specified below in red ink

To Amend § 1735.1 in Article 4.5 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1735.1. Compounding Definitions.

(a) "Ante-area" means an area with ISO Class 8 or better air quality where personnel hand hygiene and garbing procedures, staging of components, and other high-particulate-generating activities are performed, that is adjacent to the area designated for sterile compounding. It is a transition area that begins the systematic reduction of particles, prevents large fluctuations in air temperature and pressures in the cleanroom, and maintains air flows from clean to dirty areas. ISO Class 7 or better air quality is required for ante-areas providing air to a negative pressure room.

(b) "Beyond use date" means the date, or date and time, after which administration of a compounded drug preparation shall not begin, the preparation shall not be dispensed, and the preparation shall not be stored (other than for quarantine purposes).

(c) "Biological Safety Cabinet (BSC)" means a ventilated cabinet for compounding ~~sterile~~ drug preparations, having an open front with inward airflow for personnel protection, downward HEPA-filtered laminar airflow for product protection, and HEPA-filtered exhausted air for environmental protection. Where hazardous drugs are prepared, the exhaust air from the biological safety cabinet shall be appropriately removed by properly designed external building ~~ventilation~~ exhausting. This external ~~venting~~ exhaust should be dedicated to one BSC or CACI.

(d) "Bulk drug substance" means any substance that, when used in the preparation of a compounded drug preparation, processing, or packaging of a drug, is an active ingredient or a finished dosage form of the drug, but the term does not include any intermediate used in the synthesis of such substances.

(e) "Cleanroom or clean area or buffer area" means a room or area with HEPA-filtered air that provides ISO Class 7 or better air quality where the primary engineering control (PEC) is physically located.

(1) For nonhazardous compounding a positive pressure differential of 0.02- to 0.05-inch water column relative to all adjacent spaces is required.

(2) For hazardous compounding at least 30 air changes per hour of HEPA-filtered supply air and

a negative pressure of between 0.01 to 0.03 inches of water column relative to all adjacent spaces is required.

(f) “Compounding Aseptic Containment Isolator (CACI)” means a unidirectional HEPA-filtered airflow compounding aseptic isolator (CAI) designed to provide worker protection from exposure to undesirable levels of airborne drug throughout the compounding and material transfer processes and to provide an aseptic environment for compounding sterile preparations. Air exchange with the surrounding environment should not occur unless the air is first passed through a microbial retentive filter (HEPA minimum) system capable of containing airborne concentrations of the physical size and state of the drug being compounded. Where hazardous drugs are prepared, the exhaust air from the isolator shall be appropriately removed by properly designed external building ~~ventilation~~ exhaust. This external ~~venting~~ exhaust should be dedicated to one BSC or CACI. Air within the CACI shall not be recirculated nor turbulent.

(g) “Compounding Aseptic Isolator (CAI)” means a form of isolator specifically designed for non-hazardous compounding of pharmaceutical ingredients or preparations while bathed with unidirectional HEPA-filtered air. It is designed to maintain an aseptic compounding environment within the isolator throughout the compounding and material transfer processes. Air exchange into the isolator from the surrounding environment should not occur unless the air has first passed through a microbial retentive filter (HEPA minimum) system capable of containing airborne concentrations of the physical size and state of the drug being compounded. Air within the CAI shall not be recirculated nor turbulent.

(h) “Controlled cold temperature” means 2 degrees to 8 degrees C (35 degrees to 46 degrees F).

(i) “Controlled freezer temperature” means -25 degrees to -10 degrees C (-13 degrees to 14 degrees F) or at a range otherwise specified by the pharmaceutical manufacturer(s) for that product.

(j) “Controlled room temperature” means 20 degrees to 25 degrees C (68 degrees to 77 degrees F).

(k) “Copy or essentially a copy” of a commercially available drug product includes all preparations that are comparable in active ingredients to commercially available drug products, except that it does not include any preparations in which there has been a change, made for an identified individual patient, which produces for that patient a clinically significant

difference, as determined by a prescribing practitioner, between that compounded preparation and the comparable commercially available drug product.

(l) "Daily" means occurring every day the pharmacy is operating, except when daily monitoring of refrigerator and freezer temperature are required, then daily means every 24 hours.

(m) "Displacement airflow method" means a concept which utilizes a low pressure differential, high airflow principle to maintain segregation from the adjacent ante-area by means of specific pressure differentials. This principle of displacement airflow shall require an air velocity of 40 ft per minute or more, from floor to ceiling and wall to wall, from the clean area across the line of demarcation into the ante-area. The displacement concept may not be used to maintain clean area requirements for sterile compounds which originate from any ingredient that was at any time non-sterile, regardless of intervening sterilization of the ingredient, or for hazardous compounds.

(n) "Dosage unit" means a quantity sufficient for one administration to one patient.

(o) "Equipment" means items that must be calibrated, maintained or periodically certified.

(p) "First air" means the air exiting the HEPA filter in a unidirectional air stream that is essentially particle free.

(q) "Gloved fingertip sampling" means a process whereby compounding personnel lightly press each fingertip and thumb of each hand onto appropriate growth media, which are then incubated at a temperature and for a time period conducive to multiplication of microorganisms, and then examined for growth of microorganisms.

(r) Until December 1, 2019, "~~H~~hazardous" means all anti-neoplastic agents identified by the National Institute for Occupational Safety and Health (NIOSH) as meeting the criteria for a hazardous drug and any other drugs, compounds, or materials identified as hazardous by the pharmacist-in-charge. Effective December 1, 2019, "hazardous" means any drug identify by NIOSH and that exhibit as at least one of the following six criteria:

(1) Carcinogenicity

(2) Teratogencitiy of developmental toxicity

(3) Reproductive toxicity in humans

(4) Organ toxicity in low doses in human or animals

(5) Genotoxicity

(6) New drugs that mimic existing hazardous drugs in structure or toxicity.

(s) “Integrity” means retention of potency until the beyond use date provided on the label, so long as the preparation is stored and handled according to the label directions.

(t) “Lot” means one or more compounded drug preparation(s) prepared during one uninterrupted continuous cycle of compounding from one or more common active ingredient(s).

(u) “Media-fill test” means a test used to measure the efficacy of compounding personnel in aseptic techniques whereby compounding procedures are mimicked using a growth-based media and then the resulting preparation is evaluated for sterility. The media-fill test must mimic the most complex compounding procedures performed by the pharmacy.

(v) “Non-sterile-to-sterile batch” means any compounded drug preparation containing two (2) or more dosage units with any ingredient that was at any time non-sterile, regardless of intervening sterilization of that ingredient.

(w) “Parenteral” means a preparation of drugs administered in a manner other than through the digestive tract. It does not include topical, sublingual, rectal or buccal routes of administration.

(x) “Personal protective equipment” means clothing or devices that protect the employee from exposure to compounding ingredients and/or potential toxins and minimize the contamination of compounded preparations. These include shoe covers, head and facial hair covers, face masks, gowns, and gloves.

(y) “Potency” means active ingredient strength within +/- 10% (or the range specified in USP37-NF32, 37th Revision, Through 2nd Supplement Effective December 1, 2014) of the labeled amount. Sterile injectable products compounded solely from commercially manufactured sterile pharmaceutical products in a health care facility licensed under section 1250 of the Health and Safety Code are exempt from this definition. For those exempt, the range shall be calculated and defined in the master formula.

(z) “Preparation” means a drug or nutrient compounded in a licensed pharmacy; the preparation may or may not be sterile.

(aa) "Prescriber's office" or "prescriber office" means an office or suite of offices in which a prescriber regularly sees patients for outpatient diagnosis and treatment. This definition does not include any hospital, pharmacy, or other facility, whether or not separately licensed, that may be affiliated with, adjacent to, or co-owned by, the prescriber’s practice environment.

(ab) “Primary Engineering Control (PEC)” means a device that provides an ISO Class 5 or better environment through the use of non-turbulent, unidirectional HEPA-filtered first air for compounding sterile preparations. Examples of PEC devices include, but are not limited to, laminar airflow workbenches, biological safety cabinets, sterile compounding automated robots, compounding aseptic isolators, and compounding aseptic containment isolators.

(ac) “Process validation” means demonstrating that when a process is repeated within specified limits, the process will consistently produce preparations complying with predetermined requirements. If any aspect of the process is changed, the process would need to be revalidated.

(ad) “Product” means a commercially manufactured drug or nutrient evaluated for safety and efficacy by the FDA.

(ae) “Quality” means the absence of harmful levels of contaminants, including filth, putrid, or decomposed substances, the absence of active ingredients other than those listed on the label, and the absence of inactive ingredients other than those listed on the master formula document.

(af) “Segregated sterile compounding area” means a designated space for sterile-to-sterile compounding where a PEC is located within either a demarcated area (at least three foot perimeter) or in a separate room. Such area or room shall not contain and shall be void of activities and materials that are extraneous to sterile compounding. The segregated sterile compounding area shall not be in a location that has unsealed windows or doors that connect to the outdoors, in a location with high traffic flow, or in a location that is adjacent to construction sites, warehouses, or food preparation. The segregated sterile compounding area shall not have a sink, other than an emergency eye-washing station, located within three feet of a PEC. The segregated sterile compounding area shall be restricted to preparation of sterile-to-sterile compounded preparations.

(1) The BUD of a sterile drug preparation made in a segregated sterile compounding area is limited to 12 hours or less as defined by section 1751.8(d).

(2) When the PEC in the segregated sterile compounding area is a CAI or a CACI and the documentation provided by the manufacturer shows it meets the requirements listed in section 1751.4(f)(1)-(3), the assigned BUD shall comply with section 1751.8(a-b) or (d).

(ag) “Strength” means amount of active ingredient per unit of a compounded drug preparation.

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

To Amend § 1735.2 in Article 4.5 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1735.2. Compounding Limitations and Requirements; Self-Assessment.

(a) Except as specified in (b) and (c), no drug preparation shall be compounded prior to receipt by a pharmacy of a valid prescription for an individual patient where the prescriber has approved use of a compounded drug preparation either orally or in writing. Where approval is given orally, that approval shall be noted on the prescription prior to compounding.

(b) A pharmacy may prepare and store a limited quantity of a compounded drug preparation in advance of receipt of a patient-specific prescription where and solely in such quantity as is necessary to ensure continuity of care for an identified population of patients of the pharmacy based on a documented history of prescriptions for that patient population.

(c) A “reasonable quantity” that may be furnished to a prescriber for office use by the prescriber as authorized by Business and Professions Code section 4052, subdivision (a)(1), means that amount of compounded drug preparation that:

(1) Is ordered by the prescriber or the prescriber’s agent using a purchase order or other documentation received by the pharmacy prior to furnishing that lists the number of patients seen or to be seen in the prescriber’s office for whom the drug is needed or anticipated, and the quantity for each patient that is sufficient for office administration; and

(2) Is delivered to the prescriber’s office and signed for by the prescriber or the prescriber’s agent; and

(3) Is sufficient for administration or application to patients solely in the prescriber's office, or for furnishing of not more than a 120-hour supply for veterinary medical practices, solely to the prescriber's own veterinary patients seen as part of regular treatment in the prescriber's office, as fairly estimated by the prescriber and documented on the purchase order or other documentation submitted to the pharmacy prior to furnishing; and

(4) That the pharmacist has a credible basis for concluding it is a reasonable quantity for office use considering the intended use of the compounded medication and the nature of the

prescriber's practice; and

(5) With regard to any individual prescriber to whom the pharmacy furnishes, and with regard to all prescribers to whom the pharmacy furnishes, is an amount which the pharmacy is capable of compounding in compliance with pharmaceutical standards for integrity, potency, quality and strength of the compounded drug preparation; and

(6) Does not exceed an amount the pharmacy can reasonably and safely compound.

(d) No pharmacy or pharmacist shall compound a drug preparation that:

(1) Is classified by the FDA as demonstrably difficult to compound;

(2) Appears on an FDA list of drugs that have been withdrawn or removed from the market because such drugs or components of such drugs have been found to be unsafe or not effective; or

(3) Is a copy or essentially a copy of one or more commercially available drug products, unless that drug product appears on an ASHP (American Society of Health-System Pharmacists) or FDA list of drugs that are in short supply at the time of compounding and at the time of dispense, and the compounding of that drug preparation is justified by a specific, documented medical need made known to the pharmacist prior to compounding. The pharmacy shall retain a copy of the documentation of the shortage and the specific medical need in the pharmacy records for three years from the date of receipt of the documentation.

(e) A drug preparation shall not be compounded until the pharmacy has first prepared a written master formula document that includes at least the following elements:

(1) Active ingredients to be used.

(2) Equipment to be used.

(3) The maximum allowable beyond use date for the preparation, and the rationale or reference source justifying its determination.

(4) Inactive ingredients to be used.

(5) Specific and essential compounding steps used to prepare the drug.

(6) Quality reviews required at each step in preparation of the drug.

(7) Post-compounding process or procedures required, if any.

(8) Instructions for storage and handling of the compounded drug preparation.

(f) Where a pharmacy does not routinely compound a particular drug preparation, the master formula record for that preparation may be recorded on the prescription document itself.

(g) The pharmacist performing or supervising compounding is responsible for the integrity, potency, quality, and labeled strength of a compounded drug preparation until the beyond use date indicated on the label, so long as label instructions for storage and handling are followed after the preparation is dispensed.

(h) All chemicals, bulk drug substances, drug products, and other components used for drug compounding shall be stored and used according to compendia and other applicable requirements to maintain their integrity, potency, quality, and labeled strength.

(i) Every compounded drug preparation shall be given beyond use date representing the date or date and time beyond which the compounded drug preparation should not be used, stored, transported or administered, and determined based on the professional judgment of the pharmacist performing or supervising the compounding.

(1) For non-sterile compounded drug preparation(s), the beyond use date shall not exceed any of the following:

(A) the shortest expiration date or beyond use date of any ingredient in the compounded drug preparation,

(B) the chemical stability of any one ingredient in the compounded drug preparation~~;~~~~,~~

(C) the chemical stability of the combination of all ingredients in the compounded drug preparation,

(D) ~~180 days~~ for non-aqueous formulations, 180 days or an extended dated established by a pharmacist's research, analysis and documentation,

(E) ~~14 days~~ for water-containing oral formulations, 14 days or an extended date established by a pharmacist's research, analysis and documentation, and

(F) ~~30 days~~ for water-containing topical/dermal and mucosal liquid and semisolid formulations~~.~~, 30 days or an extended date established by a pharmacist's research, analysis and documentation.

(G) A pharmacist, using his or her professional judgment may establish an extended date as provided in (D), (E), and (F), if the pharmacist researches by consulting and applying drug-specific and general stability documentation and literature; analyzes such documentation and literature as well as the other factors set forth in this subdivision, and maintains documentation and research, analysis and conclusion. The factors the pharmacist must analyze include:

(i) the nature of the drug and its degradation mechanism,

(ii) the dosage form and its components,

(iii) the potential for microbial proliferation in the preparation,

(iv) the container in which it is packaged,

(v) the expected storage conditions, and

(vi) the intended duration of therapy.

Documentation of the pharmacist's research and analysis supporting an extension must be maintained in a readily retrievable format as part of the master formula.

(2) For sterile compounded drug preparations, the beyond use date shall not exceed any of the following:

(A) The shortest expiration date or beyond use date of any ingredient in the sterile compounded drug product preparation,

(B) The chemical stability of any one ingredient in the sterile compounded drug preparation,

(C) The chemical stability of the combination of all ingredients in the sterile compounded drug preparation, ~~and~~

(D) The beyond use date assigned for sterility in section 1751.8~~.~~, or

(~~3~~E) ~~Extension of a beyond use date is only allowable when supported by the following:~~ A beyond use date established by a pharmacist using his or her professional judgement after conducting research and analysis and preparing documentation. The pharmacist's documentation must demonstrate that:

(~~A~~ i) The beyond use date is supported by a USP <671> compliant Method Suitability Test,

(~~B~~ii) The beyond use date is supported by a USP <1191> Container Closure Integrity Test, ~~and~~

(~~C~~iii) The beyond use date is supported by Stability Studies, and

(~~4~~iv) ~~In addition to the requirements of paragraph three (3),~~ T~~t~~he drugs or compounded drug preparations tested and studied shall be identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation.

(~~5~~3) Shorter dating than set forth in this subsection may be used if it is deemed appropriate in the professional judgment of the responsible pharmacist.

(j) The pharmacist performing or supervising compounding is responsible for the proper preparation, labeling, storage, and delivery of the compounded drug preparation.

(k) Prior to allowing any drug product preparation to be compounded in a pharmacy, the pharmacist-in-charge shall complete a self-assessment for compounding pharmacies developed by the board (Incorporated by reference is "Community Pharmacy & Hospital Outpatient Pharmacy Compounding Self-Assessment" Form 17M-39 Rev. 02/12.) as required by Section 1715 of Title 16, Division 17, of the California Code of Regulations. That form contains a first section applicable to all compounding, and a second section applicable to sterile injectable compounding. The first section must be completed by the pharmacist-in-charge before any compounding is performed in the pharmacy. The second section must be completed by the pharmacist-in-charge before any sterile compounding is performed in the pharmacy. The applicable sections of the self-assessment shall subsequently be completed before July 1 of each odd-numbered year, within 30 days of the start date of a new pharmacist-in-charge or change of location, and within 30 days of the issuance of a new pharmacy license. The primary purpose of the self-assessment is to promote compliance through self-examination and education.

(l) Packages of ingredients, both active and inactive, that lack a supplier's expiration date are subject to the following limitations:

(1) such ingredients cannot be used for any non-sterile compounded drug preparation more than three (3) years after the date of receipt by the pharmacy.

(2) such ingredients cannot be used for any sterile compounded drug preparation more than one (1) year after the date of receipt by the pharmacy.

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

To Amend § 1751.4 in Article 7 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1751.4. Facility and Equipment Standards for Sterile Compounding.

(a) No sterile drug preparation shall be compounded if it is known, or reasonably should be known, that the compounding environment fails to meet criteria specified in the pharmacy's written policies and procedures for the safe compounding of sterile drug preparations.

(b) During the compounding of sterile drug preparations, access to the areas designated for

compounding must be limited to those individuals who are properly attired.

(c) All equipment used in the areas designated for compounding must be made of a material that can be easily cleaned and disinfected.

(d) Cleaning shall be done using a germicidal detergent ~~and sterile water~~. The use of a sporicidal agent is required to be used at least monthly. When hazardous drugs are being compounded decontamination with an inactivating agent shall take place before each cleaning. Any dilution of the germicidal detergent, sporicidal agent, or inactivating agent shall only be done with sterile water.

(1) All ISO Class 5 surfaces, work table surfaces, carts, counters, and the cleanroom floor shall be cleaned at least every 48 hours and at minimum must be cleaned each day prior to compounding.~~at least daily~~. After each cleaning, disinfection using a suitable sterile agent shall occur on all ISO Class 5 surfaces, work table surfaces, carts, and counters.

(2) Walls, ceilings, storage, shelving, tables, stools, and all other items in the ISO Class 7 or ISO Class 8 environment, and the segregated sterile compounding areas shall be cleaned at least monthly.

(3) Cleaning shall also occur after any unanticipated event that could increase the risk of contamination.

(4) All cleaning materials, such as wipers, sponges, and mops, shall be non-shedding and dedicated to use in the cleanroom, or ante-area, and segregated sterile compounding areas and shall not be removed from these areas except for disposal.

(e) Disinfection, using a suitable sterile agent, shall also occur on all surfaces in the ISO Class 5 PEC frequently, including:

(1) At the beginning of each shift;

(2) At least every 30 minutes when compounding involving human staff is occurring or before each lot;

(3) After each spill; and

(4) When surface contamination is known or suspected.

(f) Pharmacies preparing sterile compounded preparations require the use of a PEC that provides ISO Class 5 air or better air quality. Certification and testing of primary and secondary engineering controls shall be performed no less than every six months and whenever the device or area designated for compounding is relocated, altered or a service to the facility is performed

that would impact the device or area. Certification must be completed by a qualified technician who is familiar with certification methods and procedures in accordance with CETA Certification Guide for Sterile Compounding Facilities (CAG-003-2006-13, Revised May 20, 2015), which is hereby incorporated by reference. Certification records must be retained for at least 3 years. Unidirectional compounding aseptic isolators or compounding aseptic containment isolators may be used outside of an ISO Class 7 cleanroom if the isolator is certified to meet the following criteria:

(1) Particle counts sampled approximately 6-12 inches upstream of the critical exposure site shall maintain ISO Class 5 levels during compounding operations.

(2) Not more than 3520 particles (0.5 um and larger) per cubic meter shall be counted during material transfer, with the particle counter probe located as near to the transfer door as possible without obstructing transfer.

(3) Recovery time to achieve ISO Class 5 air quality shall be documented and internal procedures developed to ensure that adequate recovery time is allowed after material transfer before and during compounding operations.

Compounding aseptic isolators that do not meet the requirements as outlined in this subdivision or are not located within an ISO Class 7 cleanroom may only be used to compound preparations that meet the criteria specified in accordance with subdivision (d) of Section 1751.8 of Title 16, Division 17, of the California Code of Regulations.

(g) Pharmacies preparing sterile hazardous agents shall do so in accordance with Section 505.5.1 of Title 24, Chapter 5, of the California Code of Regulations, requiring a negative pressure PEC. Additionally, each PEC used to compound hazardous agents shall be externally vented. The negative pressure PEC must be certified every six months by a qualified technician who is familiar with CETA Certification Guide for Sterile Compounding Facilities (CAG-003-2006-13, Revised May 20, 2015), which is hereby incorporated by reference. Any drug preparation that is compounded in a PEC where hazardous drugs are prepared must be labeled as hazardous, regardless of whether the drug ingredients are considered hazardous.

(1) During the hazardous drug compounding that is performed in a compounding aseptic containment isolator, full hand hygiene and garbing must occur. Garbing shall include hair cover, facemask, beard cover (if applicable), polypropylene or low shedding gown that closes in the back, shoe covers, and two pairs of sterile ASTM D6978-05 standard gloves.

(h) If a compounding aseptic isolator is certified by the manufacturer to maintain ISO Class 5 air quality during dynamic operation conditions during compounding as well as during the transfer of ingredients into and out of the compounding aseptic isolator, then it may be placed into a non-ISO classified room. Individuals that use compounding aseptic isolators in this manner must ensure appropriate garbing, which consists of donning sterile gloves over the isolator gloves immediately before non-hazardous compounding. These sterile gloves must be changed by each individual whenever continuous compounding is ceased and before compounding starts again.

(i) Compounding aseptic isolator and compounding aseptic containment isolator used in the compounding of sterile drug preparations shall use non-turbulent unidirectional air flow patterns. A smoke patterned test shall be used to determine air flow patterns.

(j) Viable surface sampling shall be done at least every six months for all sterile-to-sterile compounding and quarterly for all non-sterile-to-sterile compounding. Viable air sampling shall be done by volumetric air sampling procedures which test a sufficient volume of air (400 to 1,000 liters) at each location and shall be done at least once every six months. Viable surface and viable air sampling shall be performed by a qualified individual who is familiar with the methods and procedures for surface testing and air sampling. Viable air sampling is to be performed under dynamic conditions that simulate actual production. Viable surface sampling is to be performed under dynamic conditions of actual compounding. When the environmental monitoring action levels are exceeded, the pharmacy shall identify the CFUs at least to the genus level in addition to conducting an investigation pursuant to its policies and procedures. Remediation shall include, at minimum, an immediate investigation of cleaning and compounding operations and facility management.

(k) The sterile compounding area in the pharmacy shall have a comfortable and well-lighted working environment, which includes a room temperature of 20~~–24~~ degrees Celsius (68~~–75~~ degrees Fahrenheit) or cooler to maintain comfortable conditions for compounding personnel when attired in the required compounding garb.

(l) A licensee may request a waiver of these provisions as provided in section 1735.6(f).

Note: Authority Cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052 and 4127, Business and Professions Code; and Section 18944, Health and Safety Code.

To Amend § 1751.7 in Article 7 of Division 17 of Title 16 of the California Code of Regulations to read as follows:

1751.7. Sterile Compounding Quality Assurance and Process Validation.

(a) Any pharmacy engaged in compounding sterile drug preparations shall maintain, as part of its written policies and procedures, a written quality assurance plan including, in addition to the elements required by section 1735.8, a documented, ongoing quality assurance program that monitors personnel performance, equipment, and facilities. The end product shall be examined on a periodic sampling basis as determined by the pharmacist-in-charge to assure that it meets required specifications. The quality assurance program shall include at least the following:

(1) Procedures for cleaning and sanitization of the sterile preparation area.

(2) Actions to be taken in the event of a drug recall.

(3) Documentation justifying the chosen beyond use dates for compounded sterile drug preparations.

(b)(1) The pharmacy and each individual involved in the compounding of sterile drug preparations must successfully demonstrate competency on aseptic technique and aseptic area practices before being allowed to prepare sterile drug preparations. The validation process shall be carried out in the same manner as normal production, except that an appropriate microbiological growth medium is used in place of the actual product used during sterile preparation. The validation process shall be representative of the types of manipulations, products and batch sizes the individual is expected to prepare and include a media-fill test. The validation process shall be as complicated as the most complex manipulations performed by staff and contain the same amount or greater amount of volume transferred during the compounding process. The same personnel, procedures, equipment, and materials must be used in the testing. Media used must have demonstrated the ability to support and promote growth. Completed medium samples must be incubated in a manner consistent with the manufacturer's recommendations. If microbial growth is detected, then each individual's sterile preparation process must be evaluated, corrective action taken and documented, and the validation process repeated.

(2) Each individual's competency must be revalidated at least every twelve months for sterile to sterile compounding and at least every six months for individuals compounding sterile

preparations from non-sterile ingredients.

(3) The pharmacy's validation process on aseptic technique and aseptic area practices must be revalidated whenever:

(A) the quality assurance program yields an unacceptable result,

(B) there is any change in the compounding process, the Primary Engineering Control (PEC), or the compounding environment. For purposes of this subsection, a change includes, but is not limited to, when the PEC is moved, repaired or replaced, when the facility is modified in a manner that affects airflow or traffic patterns, or when improper aseptic techniques are observed.

(4) The pharmacy must document the validation and revalidation process.

(c) All sterile compounding personnel must successfully complete an initial competency evaluation. In addition, immediately following the initial hand hygiene and garbing procedure, each individual who may be required to do so in practice must successfully complete a gloved fingertip (all fingers on both hands) sampling procedure (zero colony forming units for both hands) at least three times before initially being allowed to compound sterile drug preparations.

(d) Re-evaluation of garbing and gloving competency shall occur at least every 12 months for personnel compounding products made from sterile ingredients and at least every six months for personnel compounding products from non-sterile ingredients.

(e)(1) Batch-produced sterile drug preparations compounded from one or more non-sterile ingredients, except as provided in paragraph (2), shall be subject to documented end product testing for sterility and pyrogens and shall be quarantined until the end product testing confirms sterility and acceptable levels of pyrogens. Sterility testing shall be USP chapter 71 compliant unless a validated rapid microbial method (RMM) test is performed and pyrogens testing shall confirm acceptable levels of pyrogens per USP chapter 85 limits, before dispensing. Validation studies (method suitability) for each formulation using a RMM test shall be kept in a readily retrievable form at the licensed location. This requirement of end product testing confirming sterility and acceptable levels of pyrogens prior to dispensing shall apply regardless of any sterility or pyrogen testing that may have been conducted on any ingredient or combination of ingredients that were previously non-sterile. Exempt from pyrogen testing are topical ophthalmic and inhalation preparations.

(2) The following non-sterile-to-sterile batch drug preparations do not require end product testing for sterility and pyrogens:

(A) Preparations for self-administered ophthalmic drops in a quantity sufficient for administration to a single patient for 30 days or less pursuant to a prescription.

(B) Preparations for self-administered inhalation in a quantity sufficient for administration to a single patient for 5 days or less pursuant to a prescription.

(C) Preparations noted as "Currently in Shortage" on the FDA website for a single patient on a one time basis for 21 days or less pursuant to a prescription. The pharmacy shall retain a copy of the documentation of the shortage and the specific medical need as part of the pharmacy record.

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052, and 4127, Business and Professions Code.

STRENGTH AND STABILITY TESTING FOR COMPOUNDED PREPARATIONS[i]

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ABSTRACT

Tests for strength are designed to determine how much of an active ingredient is in a sample. Stability tests are used to determine an expiration date of a product or a beyond-use date of a preparation. Being able to understand the difference between strength testing versus stability testing is the key to using the proper method to determine strength or stability. To determine strength, a method may or may not be stability indicating. When determining stability, the method must be stability-indicating. When using a stability-indicating method, both strength and stability can be determined. It is important that compounding practitioners understand the difference between strength and stability tests and how they are determined. Quality assurance programs are essential to establishing standards for compounded preparations.

INTRODUCTION

The terms “strength” and “potency” are often used interchangeably, with “potency” being used more by the general public and “strength” being used more by practitioners and within the official compendia. “What is the difference between strength (potency) and stability?” This seems like a rather simple question, and in some respects, it is. However, the cost of a full stability test for a formulation is considerably higher than that of a strength-overtime-test. To answer this question, one must understand the methods used to analyze the strength and stability of a compound.

The most common flaw in determining stability is failure to use an analytical method that has been demonstrated to be a stability-indicating method. The most important aspects of determining strength and stability are the methods used in the process. A stability-indicating method must be used to determine stability. Although stability-indicating methods have the capability of also determining strength, the reverse is not so—not all strength tests are capable of determining stability. The purpose of this communication is to explain the difference between strength and stability, why they are of importance, and how they are determined. The method used to determine the concentration of the active pharmaceutical ingredient (API) is the most critical step in the process and takes into account other variables, such as solubility, polymorphic forms, and others.

STRENGTH

Strength can be described as the concentration of the drug in a product or preparation. Strength tests are known as quantitative tests and are designed to determine how much of an API is in a sample. High-performance liquid chromatography (HPLC) is the typical methodology used in determining strength. HPLC is a preferred method because it is specific and efficient. Although HPLC can be used in stability-indicating methods, not all HPLC procedures are stability indicating—and they must not be assumed to be so.

Other methods used to test strength include titration, which uses the principles of chemistry, and microbial assays, which are sometimes used to test antibiotics. Titration is based upon a known chemical reaction with the desired drug. A microbial assay is performed by using bacteria and the antibiotic of choice and by examining the "zones of inhibition". Ultraviolet (UV)-visible spectrophotometry also can be used to determine strength, but when used alone (without chromatography), UV-visible spectrophotometry can determine strength only for single analytes in solutions. Multiple compounds could interfere with UV absorption, resulting in erroneous results when UV-visible spectrophotometry is used alone. When performing a strength test, the methods used determine whether one will be able to determine stability as well.

The purpose of strength, or potency, testing is to establish or verify the concentration (strength, potency) of the API in the compounded preparation. USP has established that the acceptable range of most compounded preparations is typically ±10%, or within the range of 90.0%–110.0%. The issue is that many "strength" tests do not separate the intact drug from the degradation products, and the degradation products show up under one peak in the chromatogram, thus giving the false information that the drug concentration has not changed, when it actually has. A stability-indicating assay, properly performed, will separate the degradation products/peaks and show the intact drug peak as it decreases in area or height, reflecting a change in the concentration of the intact drug.

STABILITY, INSTABILITY, AND INCOMPATIBILITY

Stability is the extent to which a product retains, within specified limits and throughout its period of storage and use, the same properties and characteristics that it possessed at the time of its manufacture. The *United States Pharmacopeia 36/National Formulary 31 (USP 36/NF 31)*, in the table within general information chapter <1191> *Stability Considerations in Dispensing Practice*, provides definitions for five general types of stability:

- **Chemical:** Each active ingredient retains its chemical integrity and labeled potency, within the specified limits.
- **Physical:** The original physical properties, including appearance, palatability, uniformity, dissolution, and suspendability, are retained.
- **Microbiological:** Sterility or resistance to microbial growth is retained according to the specified requirements. Antimicrobial agents that are present retain effectiveness within the specified limits.
- **Therapeutic:** The therapeutic effect remains unchanged.
- **Toxicological:** No significant increase in toxicity occurs.

Instability describes chemical reactions that are "...incessant, irreversible, and result in distinctly different chemical entities (degradation products) that can be both therapeutically inactive and possibly exhibit greater toxicity".

Incompatibility is different from instability but must be considered in the overall stability evaluation of a preparation. Incompatibility generally refers to visually evident and "...physicochemical phenomena such as concentration-dependent precipitation and acid–base reactions, with the products of reaction manifested as a change in physical state, including protonation–deprotonation equilibria".

Example

Some compounding practitioners have misconceptions about extending beyond-use dates, based for example on the notion of contracting with analytical laboratories to conduct a strength (potency) test that does not use stability-indicating methods, running assays at time 0, at 30 days, and at 60 days. Take for example a target concentration of the compound intended to be 10 mg/mL. The test result was one that indicated only strength, not stability, because the test did not use a stability-indicating method. In other words, at those predefined time points of day 0, 30 days, and 60 days, the lab analyzed only how much of the compound was present. The lab could not, however, differentiate the compound of interest from degradants or excipients in the preparation that may have been "co-eluting" in the chromatogram. The results might be reported that the compounded preparation was at a concentration of 10 mg/mL at each time point.

The results cannot be interpreted to determine a stability of 60 days, because in the analysis there could have been degradants or excipients that were present but not detected (again assuming that a stability-indicating method was not used in the analysis). To put it into numbers, the actual concentration of the active ingredient could have been 6 mg/mL, with 3 mg/mL of degradants and 1 mg/mL of excipients. The most important point to realize in this scenario is that strength but not stability can be determined, because stability-indicating methods were not used. Had stability-indicating methods been used to determine strength, then the results could have been used to determine a beyond-use date, otherwise referred to as stability. Using the previous example, if the concentration at time 60 days was 10 mg/mL and stability-indicating methods were used, one could be sure of looking at only the active ingredient.

Figure 1 represents a chromatogram of a nonstability-indicating HPLC method that can be used to quantitate the analyte of interest. *Figures 2* and *3* represent a chromatogram of a nonstability-indicating HPLC method containing analyte and degradant sample peaks that are not resolved. All that can be concluded is that there are degradants present in the sample at the time of the analysis. In *Figures 2* and *3*, no conclusions can be made about strength or stability. As for strength, the peaks are not resolved, which does not allow one to properly quantitate the analyte of interest. Stability cannot be determined, because stability-indicating methods were not used.

STABILITY TESTING

Stability testing includes method development, method validation, and a stability study. Method development will separate the active ingredient from its degradants and impurities, as well as any

other excipients in the preparation. This is done by force-degrading the active ingredient and inactive ingredients to ensure that no degradants are interfering with the analysis. In the process of forced degradation, high heat and humidity, UV radiation, acid exposure, base exposure, and peroxide exposure are performed on the compound. It is this step that is different from a simple strength test. *Figure 4* shows an example of a chromatogram of a stability-indicating HPLC method containing analyte and degradant peaks that are fully resolved from one another. When looking at this chromatogram, it is important to notice that the active ingredient, or analyte, is completely separated from its degradants and excipients. Stability can be determined from this type of study, because stability-indicating methods were used in the analysis.

The method validation confirms that the method meets certain criteria. The typical analytical characteristics used in method validation include accuracy, precision, specificity, detection limit, quantitation limit, linearity, range, and ruggedness, as outlined in general information chapter <1225> *Validation of Compendial Procedures*.

The stability study includes storing the preparation in stability chambers, testing the preparation at predetermined time points, and then determining its stability. These time points can be specified by the compounder or may be limited based on the particular compound. Once again, it is crucial to understand that the methods used to determine stability must be stability-indicating. Equally important to understand is that a strength test that uses stability-indicating methods can determine strength as well as stability.

HPLC DIODE–ARRAY DETECTORS

The PDA (photodiode array) detector is a device that scans from about 200 nm up to 400 nm in the UV range (and can reach 700 nm in the visible range in some instruments). The full array scans the eluent coming from the HPLC every second or so. The software starts at the beginning of a peak and makes scans (basically by “slicing” it into pieces) and then completes the scan instantly. The scans are compared (overlaid), and any change is identified. By using an algorithm, the software calculates the “peak purity” by comparing the middle peak scans with those of the leading and trailing tails. If the scans overlay perfectly, then the peak purity will be 100%. If the scans do not overlay perfectly, then the result is a calculated percentage. The issue with this approach is that a UV scan is not necessarily specific, and small changes in a drug molecule can occur that may not be detected by the scan but may alter the drug strength, although based on the assay, the strength may not have changed. The molecule contains “chromophores” that absorb the UV light at different wavelengths and efficiencies. If a molecule degrades but the change is not in a strong chromophore, then the change will not appear in the scan, and the strength will not be determined accurately.

Peak purity evaluation should be performed during validation as part of the specificity test of the forced-degradation samples. The peak purity test helps to ensure that the method can separate degradation products during a stability study, and “strength” of the API can be assessed versus the reference standard. One can apply peak purity analysis to compounded preparations for routine strength testing and maybe time point testing, as part of the beyond-use date of the compounded preparations. But the method itself still needs to be validated to become a standard monograph method. The PDA method for peak purity determination can be used to “supplement or support” a stability-indicating analytical method but should not be used in place of it.

SUMMARY

In summary, the practitioner who extemporaneously compounds must ensure the strength, quality, identity, and purity of compounded preparations. An outsourced analytical laboratory can assist by providing quality control and quality assurance. Determination of strength or concentration is invaluable in maintaining good preparations that are accurate and precise. A stability-indicating method must be used to determine the beyond-use date of a compounded preparation.

FIGURES[1]

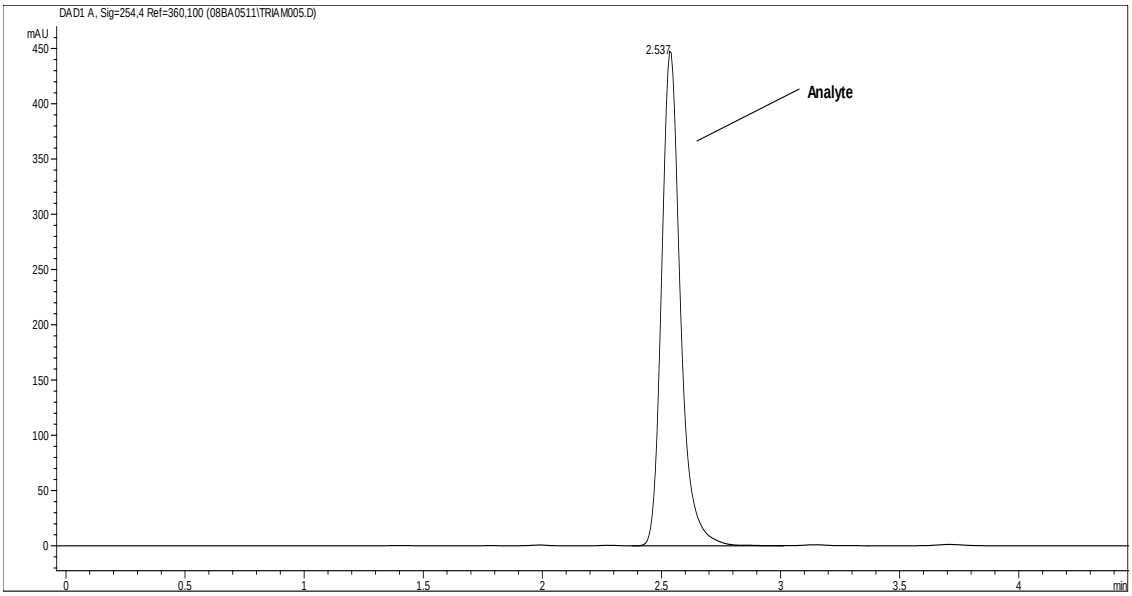

Figure 1. An example chromatogram of a nonstability-indicating HPLC method that evaluates the potency of a single analyte.

[1] Figures reproduced with permission from Kupiec TC, Skinner R, Lanier L. Stability Versus Potency Testing: The Madness is in the Method. Int J Pharm Compd. 2008 Jan/Feb; 12(1): 50-53.

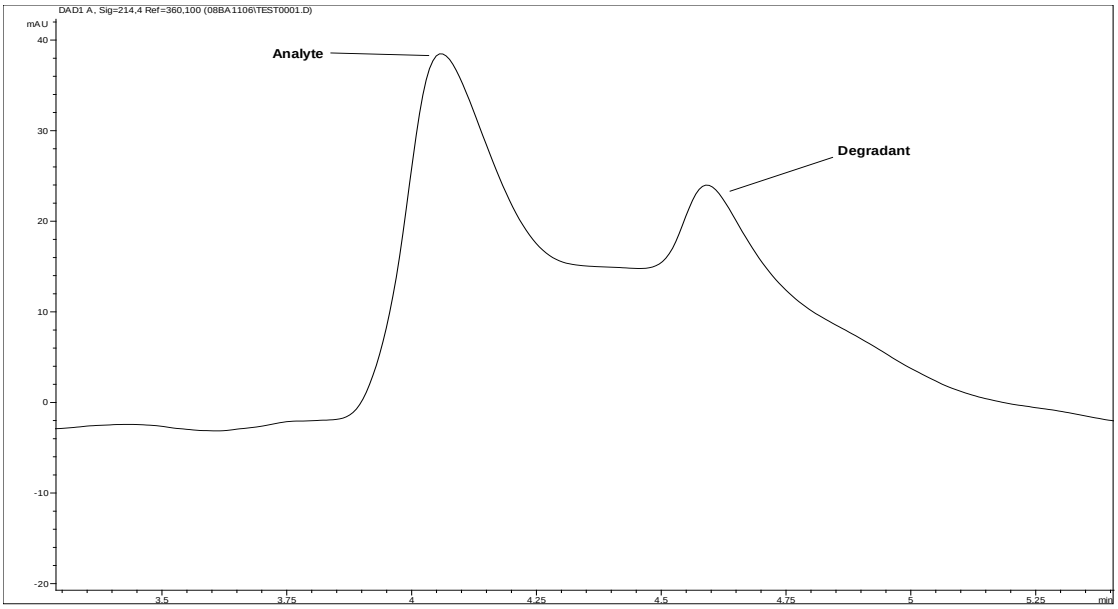

Figure 2. An example chromatogram of a nonstability-indicating HPLC method that evaluates the analyte and degradant sample peaks.

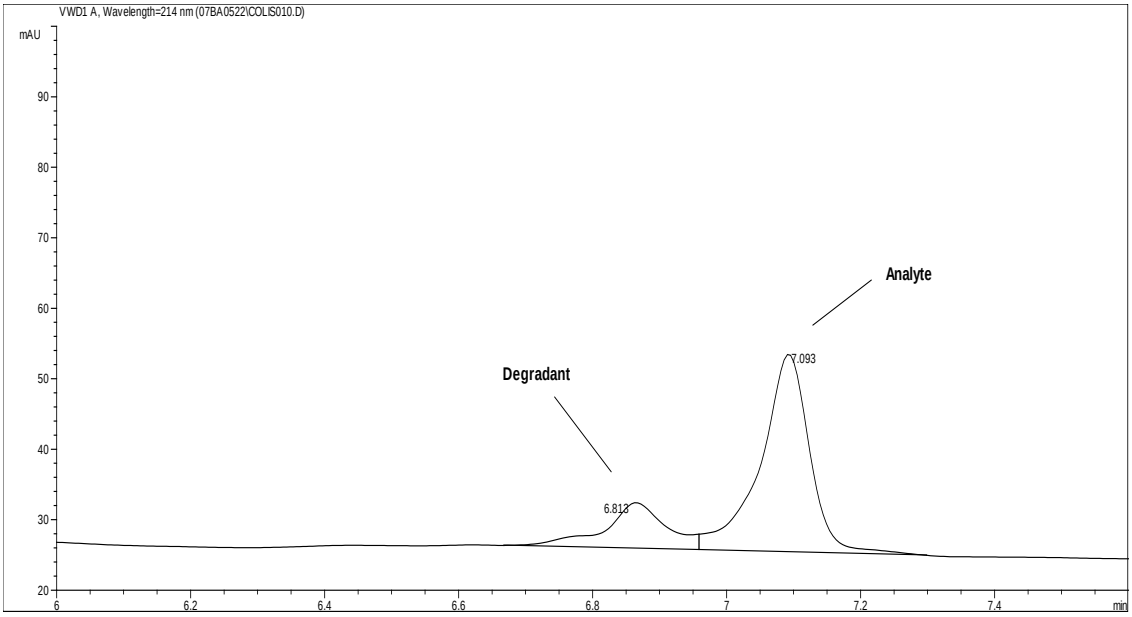

Figure 3. An example chromatogram of a nonstability-indicating HPLC method that evaluates the analyte and degradant peaks that are not fully resolved from one another.

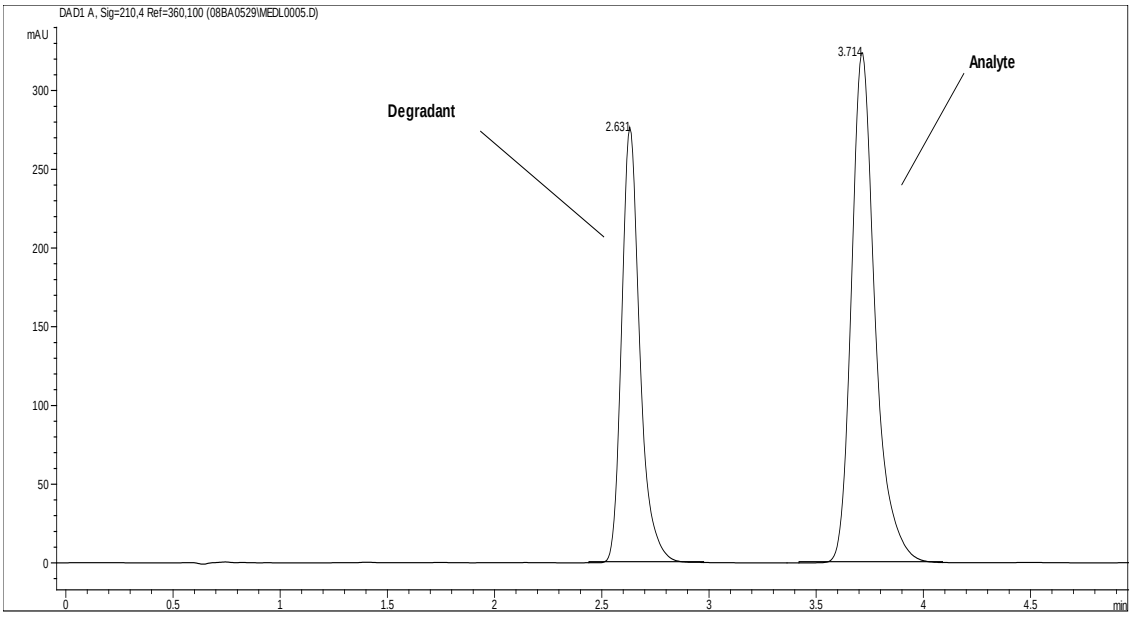

Figure 4. An example chromatogram of a stability-indicating HPLC method that evaluates the analyte and degradant peaks that are fully resolved from one another.

[i] Published January 13, 2014. Revised May 11, 2015 [added footnote to Figures].

Damoth, Debbie@DCA

From: Sarah Townsend <stownsend88@gmail.com>
Sent: Wednesday, December 6, 2017 1:16 PM
To: Sodergren, Anne@DCA
Subject: Excessive Regulations Are Affecting My Patients Therapy

Sarah Townsend
1060 Reed Avenue #43
Sunnyvale, CA 94086

December 6, 2017

Dear Anne Sodergren,

Despite objections from prescribers, patients and pharmacists throughout the state, the California Board of Pharmacy continues to require stability studies to extend the Beyond Use Dates of sterile compounded preparations. These studies are time consuming, expensive, and far in excess of the requirements of any other state or accrediting board. Furthermore, many pharmacies that have been compounding sterile products for years, without mishap, have ceased to do so because they are unable to comply with the current rules.

Recent weather disasters in Texas, Florida and Puerto Rico along with regulatory delays and production problems have caused severe shortages in critical injectable medications like Fentanyl, Hydromorphone, Morphine and Diazepam. Because of the state's extreme BUD testing requirements, compounding pharmacies that are able to supply these items to veterinarians in other states are unable to provide them to veterinarians in California.

On July 25, the California Board of Pharmacy approved Emergency Regulations to amend and relax the requirements necessary to establish Beyond Use Dates (BUDs) for non-sterile compounded preparations. The same Emergency Regulations must be applied to compounded sterile preparations as well. These amendments would not change the requirements for sterility and endotoxin testing, and therefore, would not compromise patient safety.

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California’s regulations requiring stability tests to extend Beyond Use Dates (BUDs) are excessive, unnecessary and not in the best interests of patient care or patient access to compounded medications. The California Board of Pharmacy recently approved Emergency Rulemaking to relax the requirements necessary to establish Beyond Use Dates (BUDs) for non-sterile compounded products. It is critical that the Board extend the same standards for sterile compounded products as they have for non-sterile. Too many patients and pet owners are suffering needlessly in the interim.

Sincerely,
Sarah Townsend

Damoth, Debbie@DCA

Subject: RE: Excessive Regulations Are Affecting My Patients Therapy

Crystal Garnett

December 6, 2017

Dear Anne Sodergren,

Despite objections from prescribers, patients and pharmacists throughout the state, the California Board of Pharmacy continues to require stability studies to extend the Beyond Use Dates of sterile compounded preparations. These studies are time consuming, expensive, and far in excess of the requirements of any other state or accrediting board. Furthermore, many pharmacies that have been compounding sterile products for years, without mishap, have ceased to do so because they are unable to comply with the current rules.

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I am a board certified oncologist and my terminally in patients require pain control to assist in the relief of discomfort in the hospice care setting. No animal should be forced to undergo undo stress, in particular due to limitations on using pain relieving medications, especially not those suffering from cancer.

California’s regulations requiring stability tests to extend Beyond Use Dates (BUDs) are excessive, unnecessary and not in the best interests of patient care or patient access to compounded medications. The California Board of Pharmacy recently approved Emergency Rulemaking to relax the requirements necessary to establish Beyond Use Dates (BUDs) for non-sterile compounded products. It is critical that the Board extend the same standards for sterile compounded products as they have for non-sterile. Too many patients and pet owners are suffering needlessly in the interim.

Sincerely,
Crystal Garnett

Damoth, Debbie@DCA

From: Kristina Burling <kristinaburling@yahoo.com>
Sent: Wednesday, December 6, 2017 9:44 AM
To: Sodergren, Anne@DCA
Subject: My Patients Need Compounded Medications

Kristina Burling
Animal Eye Specialists, Inc.
Campbell, CA 95008

December 6, 2017

Dear Anne Sodergren,

Despite objections from prescribers, patients and pharmacists throughout the state, the California Board of Pharmacy continues to require stability studies to extend the Beyond Use Dates of sterile compounded preparations. These studies are time consuming, expensive, and far in excess of the requirements of any other state or accrediting board. Furthermore, many pharmacies that have been compounding sterile products for years, without mishap, have ceased to do so because they are unable to comply with the current rules.

Recent weather disasters in Texas, Florida and Puerto Rico along with regulatory delays and production problems have caused severe shortages in critical injectable medications like Fentanyl, Hydromorphone, Morphine and Diazepam. Because of the state's extreme BUD testing requirements, compounding pharmacies that are able to supply these items to veterinarians in other states are unable to provide them to veterinarians in California.

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My animal patients rely on compounded ophthalmic medications and pain medications and the recent changes by the California Board of Pharmacy in 2017 have been very difficult.

Both patients (animal or human) and Doctors (MD or DVM) need to have confidence in the medications that they take or are prescribe. We understand the goal of protection of the public and assurance of quality in medications, but the CA Board of Pharmacy has moved the process of product quality control too far.

In ophthalmology specifically and veterinary medicine in general - many products for animal use are not available consistently or have no commercial product available (Tacrolimus drops for treatment of Keratoconjunctivitis Sicca for example). Many pain medications and specific drugs (antibiotics, anti-fungals) are not available in the correct dosing via commercial sources or are constantly on and off back orders. These medications are critical to the health of our non-human family members! As veterinarians and ophthalmologists we rely on the availability of these medications from compounders!

The new rules and regulations have threatened the availiblity of these critical medications, increased costs, and compromised good patient care.

For years our practice had been able to source for our patients a group of quality compounded ophthalmic products, that had good clinical efficacy, from a trusted California compounder.

The new and difficult regulations have put this compounder out of business for compounded ophthalmics, by making the cost of business so high and the process so complicated.

Our ability to provide needed medications threatening our ability to provide and prescribe needed medications in a timely fashion for our patients.

Please revist the current regulations and at a minimum approve the Emergency Rulemaking to sterile compounded producs as well. Good patient care is in jeopardy.

California's regulations requiring stability tests to extend Beyond Use Dates (BUDs) are excessive, unnecessary and not in the best interests of patient care or patient access to compounded medications. The California Board of Pharmacy recently approved Emergency Rulemaking to relax the requirements necessary to establish Beyond Use Dates (BUDs) for non-sterile compounded products. It is critical that the Board extend the same standards for sterile compounded products as they have for non-sterile. Too many patients and pet owners are suffering needlessly in the interim.

Sincerely,
Kristina Burling DVM

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2017

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Medication Safety Toolkit

SUMMARY

The CHA Medication Safety Toolkit resource site has been added to the CHA website. It can be found at https://www.calhospital.org/general-information/medication-safety-toolkit.

Several finalized tools have been added.

1. Anticoagulant Tool Part I and Part II
2. Insulin Safe Practice
3. Reducing Controlled Substance Diversion

Other items have also been added:

1. Drug Product Shortages
2. Medication Reconciliation
3. Reducing Adverse Drug Events (ADEs)

The following tool are outstanding:

1. ED Medication Management
2. Track and Trace Law FAQs
3. Sterile Compounding Grids/Tools
4. Improving Safe Opioid Use
5. Sterile Compounding Matrices
6. Nursing Sterile Compounding
7. SB 1039 Implementation

ACTION REQUESTED

- Please finalize outstanding tools to add to tool kit and recommend additional resources for future additions.

BJB:br

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Education/Next Steps for Sterile Compounding

SUMMARY

CHA and the Medication Safety Committee have implemented two successful sterile compounding webinars: Meeting New Requirements for Sterile Compounding Webinar, June 28, 2016 and Sterile Compounding Pharmacies – Planning, Construction and Licensing Guidance Webinar, April 21, 2017 With additional information unfolding and requests for FAQ's, should the committee consider an additional webinar on activity and issues to date? Potential topics could include:

1. Non-pharmacy SC issues
2. Rural hospital considerations
3. USP 800, BOP SC gap analysis
4. Environmental monitoring
5. Staff medical surveillance and monitoring
6. Use of sterile compounding matrices
7. Construction waiver process

There also seems to be inconsistency with the surveyors and the educational webinar may be helpful to them as well:

1. CCR 1751.3, 1735.5 (22), Pharmacist Pre-Check - prior to compounding pharmacist required to document sign-off
2. CCR 1735.3 Compounding Log Elements – Equipment interpretation (syringe and needles lot number and Exp)
3. CCR 1250.4 Alcohol Wipe Test – Testing for non-porous walls
4. CCR 1751.4 Rotation (how often daily weekly etc…) of Germicidal and Sporicidal cleaning agent
5. CCR 1751.8 and 1735.4 BUD on Label versus on the bag
6. CCR 1735.3 Compounding logs need to include diluent quantities (subdivision E)
7. CCR 1735.3 Compounding logs need to include unique reference or lot number (subdivision G) (each bag needs a unique number versus all bags having same unique number).
8. CCR 1735.2 (e) Master formulas need to include equipment used on the form (define equipment does that mean hood, syringes, needles, pumps etc…).
9. CCR ?? Training on new device at start up.
10. Training and testing on ALL hoods?
11. Maintaining an "immediate" use hood in pharmacy?
12. "Cross contamination" plan if both hoods in same segregated area?

13. Viable particle testing had to be done by TSS using a volumetric study
14. "Smoke test" dynamic conditions? Simulated compounding?

The attachment from the Board of Pharmacy Enforcement and Compounding Committee lists draft FAQ's for the following areas:

- Electronic monitoring of refrigerator and freezer temperatures
- Definitions of sterility and stability
- Identical as applied CCR Section 1735.2(i)(4)
- Quality Assurance

ACTION REQUESTED

- Discussion on next steps for sterile compounding education

DISCUSSION QUESTIONS

1. How do we keep members updated on latest issues with sterile compounding?
2. How do we assure all involved are educated and updated on new regulations and how to survey to them?
3. Are there additional issues that need to be discussed?

Attachment: Board of Pharmacy, Enforcement and Compounding Committee Report, December 11, 2017 – Attachment 6

BJB:br

Frequently Asked Questions - Board Compounding Regulations

Question: Can an electronic monitoring system be used to comply with the daily monitoring requirements established to maintain refrigerator and freezer temperatures?

Answer: Yes, if it fulfills all requirements. For example, if the electronic monitoring system collects and maintains temperature readings for the refrigerator and freezer, and could create a report documenting the temperature, and that report is available and can be provided upon request.

Question: What is "sterility?"

Answer: The definition of this term will ultimately be determined by professional standard of practice in the context where it is used. As guidance, however, USP <1211> (*Sterilization and Sterility Assurance of Compendial Articles*) provides a general description of the concepts and principles involved in the quality control of articles that must be sterile. The introduction to Chapter <1211> notes that any modifications of, or variations in, sterility test procedures from those described under *Sterility Tests* <71> should be validated. For additional information on sterility, refer to these and other relevant chapters of USP.

Question: What is "stability?"

Answer: The definition of this term will ultimately be determined by professional standard of practice in the context where it is used. As guidance, however, USP <1150> (*Pharmaceutical Stability*) indicates that the term "stability" refers to the chemical and physical integrity of the dosage unit and, when appropriate, the ability of the dosage unit to maintain protection against microbiological contamination. For additional information on stability, refer to this and other relevant chapters of USP.

Question: How is "identical" applied in CCR, title 16, section 1735.2(i)(4)?

Answer: A pharmacist must use his or her professional judgment to determine if the drugs or compounded drug preparations tested and studied are identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation. For example, a drug or preparation from different manufacturers may be considered identical if the pharmacist determines that the formulation components, amounts, and parameters (such as pH and dilution) are the same. Preparations may have the same formulations, however, if the parameters (such as pH and dilution) differ, the pharmacist may not be able to consider the preparations to be identical. Where a pharmacist exercises such judgment, the standard of practice in the industry may require that documentation be maintained to support the conclusion reached.

Question: What is the minimum testing frequency required to comply with the quality assurance plan requirements established in CCR, title 16, Section 1735.8?

Answer: The board's regulation requires testing a minimum of two specified compounded drug preparations. A pharmacist, using his or her professional judgment, should determine the appropriate testing schedule and frequency for the pharmacy.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Medication Reconciliation Next Steps

SUMMARY

The CHA Medication Safety Committee continues to discuss how we can leverage pharmacy staff to prevent harm from inaccurate medication lists and medication transactions between transitions of care. Last meeting, the Hospital Quality Institute reported on work with adverse drug events. HQI and the HIIN are not addressing medication reconciliation as a separate specific topic, but part of a care process on readmissions. The CHA Medication Safety subcommittee continues to brainstorm on how to encourage and move this initiative forward.

The attached medication infographics has been added to the CHA website medication safety toolkit. The subcommittee had discussed moving forward with a survey of California pharmacists to understand how many pharmacists and pharmacist techs are now involved in medication lists and medication reconciliation across the continuum.

ACTION REQUESTED

- Continued discussion on how to improve medication accuracies that cause harm to patients and high costs.

DISCUSSION QUESTIONS

1. Does a pharmacist survey help us understand how many pharmacists/techs are already involved with medication list maintenance and reconciliation? Would this information assist us with additional knowledge in which to move forward?
2. How do we lead the way on positive changes with medication lists and reconciliation?

Attachment: Medication List infographic
Improving Admission Medication Reconciliation with Pharmacists or Pharmacy Technicians in the Emergency Department: a Randomized Controlled Trial
The Enhanced Care Program

BJB:br

Information from Rita Shane: As a follow up to our discussion regarding next steps to illustrate the business case for ensuring accurate medication lists in our high risk patients, we have put together the attached infographic. I have also cut and pasted some relevant language from the State Board law below. I know LoriAnn was also looking at regulatory language with respect to CDPH and potentially CMS new requirements. Look forward to our discussion at the October meeting. Thank you.

State Board Language
Could we insert something like the following:

In health systems, the pharmacist is responsible for ensuring the accuracy of the medication profile for high risk patients upon admission and discharge

1707.1.
Duty to Maintain Medication Profiles (Patient Medication Records).
(a) A pharmacy shall maintain medication profiles on all patients who have prescriptions filled in that pharmacy except when the pharmacist has reasonable belief that the patient will not continue to obtain prescription medications from that pharmacy.
(1) A patient medication record shall be maintained in an automated data processing or manual record mode such that the following information is readily retrievable during the pharmacy's normal operating hours.
(A) The patient's full name and address, telephone number, date of birth (or age) and gender;
(B) For each prescription dispensed by the pharmacy:
(1). The name, strength, dosage form, route of administration, if other than oral, quantity and directions for use of any drug dispensed;
(2). The prescriber's name and where appropriate, license number, DEA registration number or other unique identifier;
(3). The date on which a drug was dispensed or refilled;
(4). The prescription number for each prescription; and
(5). The information required by section 1717.
(C) Any of the following which may relate to drug therapy: patient allergies, idiosyncrasies, current medications and relevant prior medications including nonprescription medications and relevant devices, or medical conditions which are communicated by the patient or the patient's agent.
(D) Any other information whichthe pharmacist, in his or her professional judgment, deems appropriate.

1707.3.
Duty to Review Drug Therapy and Patient Medication Record Prior to Delivery.
Prior to consultation as set forth in section 1707.2, a pharmacist shall review a patient's drug therapy and medication record before each prescription drug is delivered. The review shall include screening for severe potential drug therapy problems.

Up to 70% of Patients Have Errors on Their Medication Lists

Leveraging pharmacy staff prevents harm and increases clinician time for patient care functions

Problem

- ❑ 20% of admissions are medication-related[1]
- ❑ High risk patients have 8 errors on admission medication lists.[2]
- ❑ Only 5.3% of patients 65 year or older on ≥5 medications have accurate lists[3]
- ❑ One third of inpatient orders have errors and 85% originate from the medication history[4]
- ❑ Up to 59% of errors can cause harm[5]
- ❑ Up to 80% of patients have at least 1 medication error at discharge[6]

Solution

On admission, studies demonstrate increased accuracy of medication lists obtained by pharmacy staff vs usual care

- ❑ Accuracy rates: Nurses, 20%; Hospitalists, 50%; Technicians, 100% [7]
- ❑ Nurses 14% vs pharmacy technicians 94% ($p<0.0001$)[8]

At discharge, pharmacists identified errors in medication lists in 49% of patients and problems in an additional 16% vs usual care[9]

Business Case

Cost of Harm

- ❑ Cost of adverse drug event (ADE): $2,262- $5,790[7,10-13]
- ❑ Increased length of stay due to ADE: 3.1 days[13]
- ❑ Cost/readmission ~ $12,300-13,800[14]

Benefits

- ❑ 75% reduction in ADEs[7]
- ❑ 41 minutes of nursing time saved/patient [16]
- ❑ Cost-effective to utilize technicians for medication histories; $830,000[7]
- ❑ Patients have an accurate medication list upon discharge
- ❑ Reduced readmissions
- ❑ Enables clinicians to practice at the highest level of their license and training

Recommendation: For high risk patients, pharmacy will ensure the accuracy of the medication list at admission and discharge

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Improving admission medication reconciliation with pharmacists or pharmacy technicians in the emergency department: a randomised controlled trial

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ABSTRACT

Background Admission medication history (AMH) errors frequently cause medication order errors and patient harm.

Objective To quantify AMH error reduction achieved when pharmacy staff obtain AMHs before admission medication orders (AMO) are placed.

Methods This was a three-arm randomised controlled trial of 306 inpatients. In one intervention arm, pharmacists, and in the second intervention arm, pharmacy technicians, obtained initial AMHs prior to admission. They obtained and reconciled medication information from multiple sources. All arms, including the control arm, received usual AMH care, which included variation in several common processes. The primary outcome was severity-weighted mean AMH error score. To detect AMH errors, all patients received reference standard AMHs, which were compared with intervention and control group AMHs. AMH errors and resultant AMO errors were independently identified and rated by ≥2 investigators as significant, serious or life threatening. Each error was assigned 1, 4 or 9 points, respectively, to calculate severity-weighted AMH and AMO error scores for each patient.

Results Patient characteristics were similar across arms (mean±SD age 72±16 years, number of medications 15±7). Analysis was limited to 278 patients (91%) with reference standard AMHs. Mean±SD AMH errors per patient in the usual care, pharmacist and technician arms were 8.0±5.6, 1.4±1.9 and 1.5±2.1, respectively (p<0.0001). Mean±SD severity-weighted AMH error scores were 23.0±16.1, 4.1±6.8 and 4.1±7.0 per patient, respectively (p<0.0001). These AMH errors led to a mean±SD of 3.2±2.9, 0.6±1.1 and 0.6±1.1 AMO errors per patient, and mean severity-weighted AMO error scores of 6.9±7.2, 1.5±2.9 and 1.2±2.5 per patient, respectively (both p<0.0001).

Conclusions Pharmacists and technicians reduced AMH errors and resultant AMO errors by over 80%. Future research should examine other sites and patient-centred outcomes.

Trial registration number NCT02026453.

INTRODUCTION

Bates *et al* defined an adverse drug event (ADE) as an 'injury resulting from medical intervention related to a drug'.[1] The Institute of Medicine estimates that hospitalised US patients suffer from 400 000 preventable ADEs annually.[2] Among the most frequent causes of preventable ADEs are errors in admission medication histories (AMH).[3–5]

Using pharmacists to check AMHs reduces preventable ADEs.[6] Nonetheless, many organisations have encountered difficulties in disseminating pharmacist-led medication reconciliation interventions. We have previously attributed poor uptake of such interventions to the complexity of implementing medication reconciliation interventions, which affect multiple interacting workflows, and to the cost of employing pharmacists.[7]

To address both implementation complexity and cost, we modified this intervention by stationing pharmacists in the emergency department (ED) to obtain AMHs *before* admitting physicians place admission medication orders (AMO). This allows admitting physicians to work from an accurate AMH, which is especially important in an era when electronic health records (EHR) allow physicians to convert AMHs into AMOs with just a few mouse clicks, and when patients are often admitted by hospitalists unfamiliar with patients' home medication regimens.

To quantify the reduction in AMH errors achieved by pharmacists and pharmacist-supervised pharmacy technicians

The Enhanced Care Program: Impact of a Care Transition Program on 30-Day Hospital Readmissions for Patients Discharged From an Acute Care Facility to Skilled Nursing Facilities

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BACKGROUND: Increased acuity of skilled nursing facility (SNF) patients challenges the current system of care for these patients.

OBJECTIVE: Evaluate the impact on 30-day readmissions of a program designed to enhance the care of patients discharged from an acute care facility to SNFs.

DESIGN: An observational, retrospective cohort analysis of 30-day hospital readmissions for patients discharged to 8 SNFs between January 1, 2014, and June 30, 2015.

SETTING: A collaboration between a large, acute care hospital in an urban setting, an interdisciplinary clinical team, 124 community physicians, and 8 SNFs.

PATIENTS: All patients discharged from Cedars-Sinai Medical Center to 8 partner SNFs were eligible for participation.

INTERVENTION: The Enhanced Care Program (ECP) involved the following 3 interventions in addition to standard care: (1) a team of nurse practitioners participating in the care of SNF patients; (2) a pharmacist-driven medication reconciliation at the time of transfer; and (3) educational in-services for SNF nursing staff.

MEASUREMENT: Thirty-day readmission rate for ECP patients compared to patients not enrolled in ECP.

RESULTS: The average unadjusted, 30-day readmission rate for ECP patients over the 18-month study period was 17.2% compared to 23.0% among patients not enrolled in ECP ($P < 0.001$). After adjustment for sociodemographic and clinical characteristics, ECP patients had 29% lower odds of being readmitted within 30 days ($P < 0.001$). These effects were robust to stratified analyses, analyses adjusted for clustering, and balancing of covariates using propensity weighting.

CONCLUSIONS: A coordinated, interdisciplinary team caring for SNF patients can reduce 30-day hospital readmissions. *Journal of Hospital Medicine* 2017;12: XXX-XXX. © 2017 Society of Hospital Medicine

Public reporting of readmission rates on the Nursing Home Compare website is mandated to begin on October 1, 2017, with skilled nursing facilities (SNFs) set to receive a Medicare bonus or penalty beginning a year later.[1] The Centers for Medicare & Medicaid Services (CMS) began public reporting of hospitals' 30-day readmission rates for selected conditions in 2009, and the Patient Protection and Affordable Care Act of 2010 mandated financial penalties for excess readmissions through the Hospital Readmission Reduction Program.[2] In response, most hospitals have focused on patients who return home following discharge. Innovative interventions have proven successful, such as the Transitional Care model developed by Naylor and Coleman's Care Transitions Intervention.[3-5] Approximately 20% of Medicare beneficiaries are discharged from hospitals to SNFs, and these patients have higher readmission rates than those discharged home. CMS reported that in 2010, 23.3% of those with an SNF stay were readmitted within 30 days, compared with 18.8% for those with other discharge dispositions.[6]

Some work has been undertaken in this arena. In 2012, the Center for Medicare and Medicaid Innovation (CMMI) and the Medicare-Medicaid Coordination Office jointly launched the Initiative to Reduce Avoidable Hospitalizations among Nursing Facility Residents.[7] This partnership established 7 Enhanced Care and Coordination Provider organizations and was designed to improve care by reducing hospitalizations among long-stay, dual-eligible nursing facility residents at 143 nursing homes in 7 states.[8] At the time of the most recent project report, there were mixed results regarding program effects on hospitalizations and spending, with 2 states showing strongly positive patterns, 3 states with reductions that were consistent though not statistically strong, and mixed results in the remaining states. Quality measures did not show any pattern suggesting a program effect.[9] Interventions to Reduce Acute Care Transfers (INTERACT) II was a 6-month, collaborative, quality-improvement project implemented in 2009 at 30 nursing homes in 3 states.[10] The project evaluation found a statistically significant, 17% decrease in self-reported hos-

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pital admissions among the 25 SNFs that completed the intervention, compared with the same 6 months in the prior year. The Cleveland Clinic recently reported favorable results implementing its Connected Care model, which relied on staff physicians and advanced practice professionals to visit patients 4 to 5 times per week and be on call 24/7 at 7 intervention SNFs.[11] Through this intervention, it successfully reduced its 30-day hospital readmission rate from SNFs from 28.1% to 21.7% ($P < 0.001$), and the authors posed the question as to whether its model and results were reproducible in other healthcare systems.

Herein, we report on the results of a collaborative initiative named the Enhanced Care Program (ECP), which offers the services of clinical providers and administrative staff to assist with the care of patients at 8 partner SNFs. The 3 components of ECP (described below) were specifically designed to address commonly recognized gaps and opportunities in routine SNF care. In contrast to the Cleveland Clinic's Connected Care model (which involved hospital-employed physicians serving as the SNF attendings and excluded patients followed by their own physicians), ECP was designed to integrate into a pluralistic, community model whereby independent physicians continued to follow their own patients at the SNFs. The Connected Care analysis compared participating versus nonparticipating SNFs; both the Connected Care model and the INTERACT II evaluation relied on pre–post comparisons; the CMMI evaluation used a difference-in-differences model to compare the outcomes of the program SNFs with those of a matched comparison group of nonparticipating SNFs. The evaluation of ECP differs from these other initiatives, using a concurrent comparison group of patients discharged to the same SNFs but who were not enrolled in ECP.

METHODS

Setting

Cedars-Sinai Medical Center (CSMC) is an 850-bed, acute care facility located in an urban area of Los Angeles. Eight SNFs, ranging in size from 49 to 150 beds and located between 0.6 and 2.2 miles from CSMC, were invited to partner with the ECP. The physician community encompasses more than 2000 physicians on the medical staff, including private practitioners, nonteaching hospitalists, full-time faculty hospitalists, and faculty specialists.

Study Design and Patients

This was an observational, retrospective cohort analysis of 30-day same-hospital readmissions among 3951 patients discharged from CSMC to 8 SNFs between January 1, 2014, and June 30, 2015. A total of 2394 patients were enrolled in the ECP, and 1557 patients were not enrolled.

ECP Enrollment Protocol

Every patient discharged from CSMC to 1 of the 8 partner SNFs was eligible to participate in the program. To respect the autonomy of the SNF attending physicians and to facilitate a collaborative relationship, the decision to enroll a patient in the ECP rested with the SNF attending physician. The ECP team maintained a database that tracked whether each SNF attending physician (1) opted to automatically enroll all his or her patients in the ECP, (2) opted to enroll patients on a case-by-case basis (in which case an ECP nurse practitioner [NP] contacted the attending physician for each eligible patient), or (3) opted out of the ECP completely. When a new SNF attending physician was encountered, the ECP medical director called the physician to explain the ECP and offer enrollment of his or her patient(s). Ultimately, patients (or their decision-makers) retained the right to opt in or out of the ECP at any time, regardless of the decision of the attending physicians.

Program Description

Patients enrolled in the ECP experienced the standard care provided by the SNF staff and attending physicians plus a clinical care program delivered by 9 full-time NPs, 1 full-time pharmacist, 1 pharmacy technician, 1 full-time nurse educator, a program administrator, and a medical director.

The program included the following 3 major components:

1. Direct patient care and 24/7 NP availability: Program enrollment began with an on-site, bedside evaluation by an ECP NP at the SNF within 24 hours of arrival and continued with weekly NP rounding (or more frequently, if clinically indicated) on the patient. Each encounter included a review of the medical record; a dialogue with the patient's SNF attending physician to formulate treatment plans and place orders; discussions with nurses, family members, and other caregivers; and documentation in the medical record. The ECP team was on-site at the SNFs 7 days a week and on call 24/7 to address questions and concerns. Patients remained enrolled in the ECP from SNF admission to discharge even if their stay extended beyond 30 days.
2. Medication reconciliation: The ECP pharmacy team completed a review of a patient's SNF medication administration record (MAR) within 72 hours of SNF admission. This process involved the pharmacy technician gathering medication lists from the SNFs and CSMC and providing this information to the pharmacist for a medication reconciliation and clinical evaluation. Discrepancies and pharmacist recommendations were communicated to the ECP NPs, and all identified issues were resolved.
3. Educational in-services: Building upon the INTERACT II model, the ECP team identified high-yield, clinically relevant topics, which the ECP nurse educator turned into monthly educational sessions for the SNF nursing staff at each of the participating SNFs.[10]

Primary Outcome Measure

An inpatient readmission to CSMC within 30 days of the hospital discharge date was counted as a readmission, whether the patient returned directly from an SNF or was readmitted from home after an SNF discharge.

TABLE 1. Distribution of Patient Characteristics

Patient Characteristics	Total n = 3951	ECP n = 2394 (60.6%)	Comparison n = 1557 (39.4%)
Mean age at index discharge, years (SD)	78.1 (12.3)	78.1 (12.6)	78.2 (12.0)
<65 years	12.8	13.3	12.0
65-84 years	51.4	50.5	52.9
≥85 years	35.8	36.2	35.1
Male gender	40.8	39.7	42.4
Race and/or ethnicity			
Non-Hispanic white	72.3	74.3[a]	69.3[a]
Black or African American	19.1	18.0[a]	20.8[a]
Hispanic and/or Latino	5.1	4.3[b]	6.3[b]
Asian	2.9	3.1	2.8
Other	0.6	0.4	0.9
Preferred language			
English	74.8	81.6[b]	64.4[b]
Russian	9.2	6.7[b]	13.2[b]
Farsi	8.4	5.0[b]	13.6[b]
Spanish	3.4	2.8[a]	4.3[a]
Other	4.2	3.9	4.6
Payer			
Medicare fee for service	45.9	52.9[b]	35.0[b]
Dual eligible	42.9	35.1[b]	55.0[b]
Other	11.2	12.0	10.0
Hospital clinical service line			
Orthopedic surgery	25.7	28.7[b]	21.1[b]
General internal medicine	20.6	20.1	21.4
General surgery	8.5	9.1	7.7
Cardiology, medical	8.3	7.4[b]	9.7[b]
Cardiology, interventional	2.0	2.1	1.9
Gastroenterology	7.0	6.1[a]	8.2[a]
Pulmonary	7.4	6.0[b]	9.7[b]
Neurology	6.1	5.9	6.6
Other surgical	7.9	9.2[b]	5.8[b]
Psychiatry	0.5	0.5	0.6
Other service	5.6	5.1[b]	7.4[b]
APR-DRG severity of illness	(n = 3946)	(n = 2389)	(n = 1557)
Minor	8.1	8.7	7.1
Moderate	27.1	26.8	27.7
Major	43.2	42.9	43.6
Extreme	21.6	21.6	21.6
Index discharge length of stay in days (SD)	8.04 (8.45)	8.28 (8.94)	7.66 (7.62)
Index hospitalization length of stay			
1 to 3 days	25.1	24.6	26.0
4 to 5 days	24.4	23.8	25.4
6 to 9 days	26.9	26.9	26.9
>9 days	23.6	24.8[a]	21.7[a]

[a]Percentages between the ECP and comparison differ at $P < .05$.

[b]Percentages differ at $P < .001$.

NOTE: Values are percentages unless otherwise indicated. Totals may not add to 100% due to rounding. Unless otherwise indicated, n = 3951. Abbreviations: APR-DRG, All Patients Refined Diagnosis Related Group; ECP, Enhanced Care Program; SD, standard deviation.

Data

ECP patients were identified using a log maintained by the ECP program manager. Non-ECP patients discharged to the same SNFs during the study period were identified from CSMC's electronic registry of SNF discharges. Covariates known to be associated with increased risk of 30-day readmission were obtained from CSMC's electronic data warehouse, including demographic information, length of stay (LOS) of index hospitalization, and payer.[12] Eleven clinical service lines represented patients' clinical conditions based on Medi-

TABLE 2. Multivariable Logistic Regression: Odds of 30-day Same-Hospital Readmission From SNFs

Patient Characteristics	Odds Ratio	95% CI	*P* Value
ECP participation	0.71	0.60-0.85	<.001
Age category			
<65 years	1.25	0.95-1.64	.105
65-84 years	Reference	0.84-1.23	.845
≥85 years	1.02		
Gender			
Male	1.27	1.07-1.50	.005
Female	Reference		
Race			
White	Reference		
Black or African American	1.07	0.86-1.33	.559
Hispanic and/or Latino	0.54	0.30-0.97	.041
Asian	0.90	0.52-1.52	.667
Other	Dropped	NA	NA
Preferred Language			
English	Reference		
Russian	0.79	0.56-1.12	.192
Farsi	0.82	0.58-1.15	.242
Spanish	1.83	0.96-3.50	.069
Other	1.62	1.05-2.48	.028
Payer			
Medicare fee-for-service	Reference		
Dual eligible	1.37	1.10-1.69	.004
Other	0.96	0.69-1.34	.818
Hospital clinical service line			
Orthopedic surgery	Reference		
General internal medicine	1.35	1.01-1.79	.042
General surgery	1.11	0.78-1.58	.562
Cardiology, medical	1.89	1.35-2.65	<.001
Cardiology, interventional	1.31	0.71-2.41	.381
Gastroenterology	1.91	1.33-2.73	<.001
Pulmonary	1.66	1.16-2.37	.005
Neurology	1.12	0.74-1.69	.590
Other surgical	0.98	0.67-1.42	.901
Psychiatry	1.01	0.28-3.63	.986
Other service	1.53	1.04-2.25	.031
APR-DRG severity			
Minor	1.35	0.89-2.06	.158
Moderate	Reference	1.42-2.30	<.001
Major	1.81	1.66-2.97	<.001
Extreme	2.22		
Index hospital length of stay			
1 to 3 days	0.68	0.53-0.89	.004
4 to 5 days	0.81	0.64-1.03	.092
6 to 9 days	Reference	1.16-1.82	.001
>9 days	1.45		

NOTE: Abbreviations: APR-DRG, All Patients Refined Diagnosis Related Group; CI, confidence interval; ECP, Enhanced Care Program; NA, not applicable, SNF, skilled nursing facility.

care-Severity Diagnosis-Related groupings. The discharge severity of illness score was calculated using 3M All Patients Refined Diagnosis Related Group software, version 33.[13]

Analysis

Characteristics of the ECP and non-ECP patients were compared using the χ^2 test. A multivariable logistic regression model with fixed effects for SNF was created to determine the program's impact on 30-day hospital readmission, adjusting for patient characteristics. The Pearson χ^2 goodness-of-fit test and the link test for model specification were used to evaluate model specification. The sensitivity of the results to

differences in patient characteristics was assessed in 2 ways. First, the ECP and non-ECP populations were stratified based on race and/or ethnicity and payer, and the multivariable regression model was run within the strata associated with the highest readmission rates. Second, a propensity analysis using inverse probability of treatment weighting (IPTW) was performed to control for group differences. Results of all comparisons were considered statistically significant when $P < 0.05$. Stata version 13 was used to perform the main analyses.[14] The propensity analysis was conducted using R version 3.2.3. The CSMC Institutional Review Board (IRB) determined that this study qualified as a quality-improvement activity and did not require IRB approval or exemption.

RESULTS

The average unadjusted 30-day readmission rate for ECP patients over the 18-month study period was 17.2%, compared to 23.0% for patients not enrolled in ECP ($P < 0.001$) (Figure 1). After adjusting for patient characteristics, ECP patients had 29% lower odds (95% confidence interval [CI], 0.60-0.85) of being readmitted to the medical center within 30 days than non-ECP patients at the same SNFs. The characteristics of the ECP and comparison patient cohorts are shown in Table 1. There were significant differences in sociodemographic characteristics: The ECP group had a higher proportion of non-Hispanic white patients, while the comparison group had a higher proportion of patients who were African American or Hispanic. ECP patients were more likely to prefer speaking English, while Russian, Farsi, and Spanish were preferred more frequently in the comparison group. There were also differences in payer mix, with the ECP group including proportionately more Medicare fee-for-service (52.9% vs 35.0%, $P < 0.001$), while the comparison group had a correspondingly larger proportion of dual-eligible (Medicare and Medicaid) patients (55.0% vs 35.1%, $P < 0.001$).

The largest clinical service line, orthopedic surgery, had the lowest readmission rate. The highest readmission rates were found among patients with medical cardiology hospitalizations, pulmonary diseases, and gastroenterology conditions. There was a significant monotonic relationship between quartiles of index hospital LOS and 30-day readmission (Supplemental Table 1).

The largest clinical differences observed between the ECP and non-ECP groups were the proportions of patients in the clinical service lines of orthopedic surgery (28.7% vs 21.1%, $P < 0.001$), medical cardiology (7.4% vs 9.7%, $P < 0.001$), and surgery other than general surgery (5.8% vs 9.2%, $P < 0.001$). Despite these differences in case mix, no differences were seen between the 2 groups in discharge severity of illness or LOS of the index hospitalization. The distribution of index hospital LOS by quartile was the same, with the exception that the ECP group had a higher proportion of patients with longer LOS.

Results of the multivariable logistic regression analysis are shown in Table 2. Males had 27% higher odds of readmission

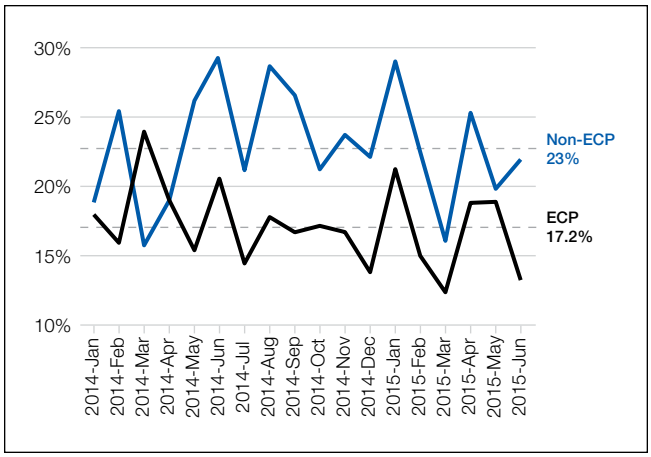

FIG 1. Monthly rate of 30-day readmissions to CSMC, ECP vs Non–ECP.

Abbreviations: CSMC, Cedars-Sinai Medical Center; ECP, Enhanced Care Program; Non-ECP, Non—Enhanced Care Program

(95% CI, 1.07-1.50), and patients who were dually eligible for Medicare and Medi-Cal (California's Medicaid program) had 37% higher odds of readmission (95% CI, 1.10-1.69). Compared with patients who had orthopedic surgery, the clinical service lines with significantly higher rates of readmission were gastroenterology (odds ratio [OR] 1.91; 95% CI, 1.33-2.73), medical cardiology (OR 1.89; 95% CI, 1.35-2.65), and pulmonary (OR 1.66; 95% CI, 1.16-2.37). Severity of illness at discharge and index hospital LOS were both positively associated with readmission in the adjusted analysis.

Sensitivity Analyses

The results were robust when tested within strata of the study population, including analyses limited to dual-eligible patients, African American patients, patients admitted to all except the highest volume facility, and patients admitted to any service line other than orthopedic surgery. Similar results were obtained when the study population was restricted to patients living within the medical center's primary service area and to patients living in zip codes in which the proportion of adults living in households with income below 100% of the poverty level was 15% or greater (see Supplementary Material for results).

The effect of the program on readmission was also consistent when the full logistic regression model was run with IPTW using the propensity score. The evaluation of standardized cluster differences between the ECP and non-ECP groups before and after IPTW showed that the differences were reduced to <10% for being African American; speaking Russian or Farsi; having dual-eligible insurance coverage; having orthopedic surgery; being discharged from the clinical service lines of gastroenterology, pulmonary, other surgery, and other services; and having an index hospital LOS of 4 to 5 days or 10 or more days (results are provided in the Supplementary Material).

Figure 2 displays the 30-day readmission rate for all Cedars-Sinai patients discharged to any SNF in the 3 years

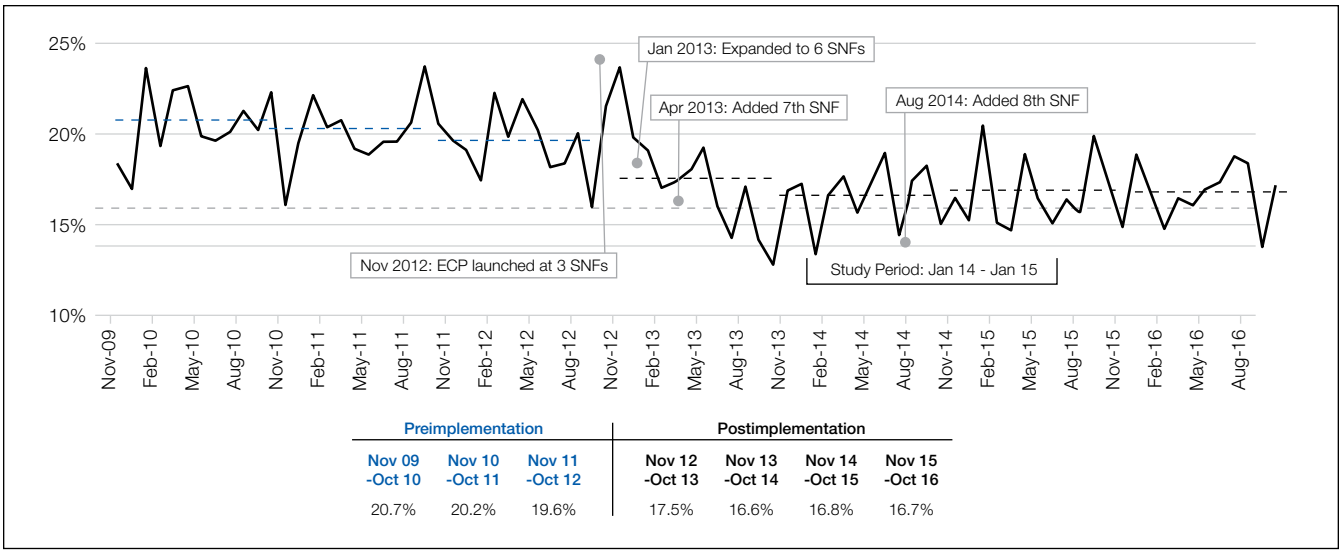

FIG 2. Mean 12 month same-hospital readmission rates of all patients discharged to SNF, pre- and postimplementation of ECP.

Abbreviations: ECP, Enhanced Care Program; SNF, skilled nursing facility.

preceding and 4 years following the intervention. The readmission rate in the 12-month period immediately prior to the launch of the ECP was 19.6%. That rate dropped significantly to 17.5% in the first 12-month period postimplementation ($P = 0.016$) and to 16.6% in the next 12 months ($P > 0.001$ for the overall decline). During the study period, 66% of all Cedars-Sinai patients who were discharged to a SNF were admitted to 1 of the 8 participating SNFs. More than half of those patients (representing approximately 40% of all CSMC SNF discharges) were enrolled in the ECP.

DISCUSSION

Hospitals continue to experience significant pressure to manage LOS, and SNFs and hospitals are being held accountable for readmission rates. The setting of this study is representative of many large, urban hospitals in the United States whose communities include a heterogeneous mix of hospitalists, primary care physicians who follow their patients in SNFs, and independent SNFs.[15] The current regulations have not kept up with the increasing acuity and complexity of SNF patients. Specifically, Medicare guidelines allow the SNF attending physician up to 72 hours to complete a history and physical (or 7 days if he or she was the hospital attending physician for the index hospitalization) and only require monthly follow-up visits. It is the opinion of the ECP designers that these relatively lax requirements present unnecessary risk for vulnerable patients. While the INTERACT II model was focused largely on educational initiatives (with an advanced practice nurse available in a consultative role, as needed), the central tenet of ECP was similar to the Connected Care model in that the focus was on adding an extra layer of direct clinical support. Protocols that provided timely initial assessments by an NP (within 24 hours), weekly NP rounding (at a minimum), and 24/7 on-call availability all contributed to helping patients stay on track. Although the ECP had patients visited less frequently than the Connected Care model, and the Cleveland Clinic started with a higher baseline 30-day readmission rate from SNFs, similar overall reductions in 30-day readmissions were observed. The key point from both initiatives is that an increase in clinical touchpoints and ease of access to clinicians generates myriad opportunities to identify and address small issues before they become clinical emergencies requiring hospital transfers and readmissions.

Correcting medication discrepancies between hospital discharge summaries and SNF admission orders through a systematic medication reconciliation using a clinical pharmacist has previously been shown to improve outcomes.[16-18] The ECP pharmacy technician and ECP clinical pharmacist discovered and corrected errors on a daily basis that ranged from incidental to potentially life-threatening. If the SNF staff does not provide the patient's MAR within 48 hours of arrival, the pharmacy technician contacts the facility to obtain the information. As a result, all patients enrolled in the ECP during the study period received this intervention (unless they were rehospitalized or left the SNF before the process was completed), and 54% of ECP patients required some form of intervention after medication reconciliation was completed (data not shown).

This type of program requires hospital leadership and SNF administrators to be fully committed to developing strong working relationships, and in fact, there is evidence that SNF baseline readmission rates have a greater influence on patients' risk of rehospitalization than the discharging hospital itself.[19-21] Monthly educational in-services are delivered at the partner SNFs to enhance SNF nursing staff knowledge and clinical acumen. High-impact topics identified by the ECP team include the following: fall prevention, hand hygiene, venous thromboembolism, cardiovascular health, how to report change in condition, and advanced care planning, among others. While no formal pre–post assessments of the

SNF nurses' knowledge were conducted, a log of in-services was kept, subjective feedback was collected for performance improvement purposes, and continuing educational units were provided to the SNF nurses who attended.

This study has limitations. As a single-hospital study, generalizability may be limited. While adherence to the program components was closely monitored daily, service gaps may have occurred that were not captured. The program design makes it difficult to quantify the relative impact of the 3 program components on the outcome. Furthermore, the study was observational, so the differences in readmission rates may have been due to unmeasured variables. The decision to enroll patients in the ECP was made by each patient's SNF attending physician, and those who chose to (or not to) participate in the program may manifest other, unmeasured practice patterns that made readmissions more or less likely. Participating physicians also had the option to enroll their patients on a case-by-case basis, introducing further potential bias in patient selection; however, <5% of physicians exercised this option. Patients may have also been readmitted to hospitals other than CSMC, producing an observed readmission rate for 1 or both groups that underrepresents the true outcome. On this point, while we did not systematically track these other-hospital readmissions for both groups, there is no reason to believe that this occurred preferentially for ECP or non-ECP patients.

Multiple sensitivity analyses were performed to address the observed differences between ECP and non-ECP patients. These included stratified examinations of variables differing between populations, examination of clustering effects between SNFs, and an analysis adjusted for the propensity to be included in the ECP. The calculated effect of the intervention on readmission remained robust, although we acknowledge that differences in the populations may persist and have influenced the outcomes even after controlling for multiple variables.[22-25]

In conclusion, the results of this intervention are compelling and add to the growing body of literature suggesting that a comprehensive, multipronged effort to enhance clinical oversight and coordination of care for SNF patients can improve outcomes. Given CMS's plans to report SNF readmission rates in 2017 followed by the application of financial incentives in 2018, a favorable climate currently exists for greater coordination between hospitals and SNFs.[26] We are currently undertaking an economic evaluation of the program.

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(PSPT) obtaining AMHs in the ED, we conducted a three-arm randomised controlled trial comparing these providers with usual care processes in a population of medically complex patients. To better understand the effect on more downstream outcomes, including preventable ADEs occurring in the hospital and after discharge, we also compared rates of AMO errors resulting from AMH errors.

METHODS

Trial design overview

We conducted a three-arm randomised controlled trial. Intervention arms used pharmacists or PSPTs to obtain AMHs before AMOs were placed. The Cedars-Sinai Medical Center (CSMC) Institutional Review Board agreed that informed consent of patients should be waived in this randomised allocation of services that had heretofore been allocated via operational convenience.

Setting and study population

CSMC is a large university-affiliated hospital. Providers placing orders for trial patients included community, hospitalist, and resident physicians, as well as nurse practitioners and physician assistants. Pharmacists included licensed resident pharmacists.

Eligible participants were medically complex patients admitted to CSMC through the ED. Enrolment screening occurred Mondays through Thursdays from approximately 11:00 to 20:00 beginning 7 January 2014 through 14 February 2014. Enrolment ceased at the end of the first day on which the intended sample size was exceeded. Screening was occasionally paused when pharmacy staff were otherwise occupied with clinical or research duties. Inclusion criteria were: ≥10 active chronic prescription medications in the EHR, history of acute myocardial infarction or congestive heart failure in the EHR problem list, admission from a skilled nursing facility (SNF), history of transplant, or active anticoagulant, insulin or narrow therapeutic index medications (online supplementary appendix). Patients were excluded if they had previously been enrolled in the study, or if admitted to paediatric or trauma services or transplant services with pharmacists.

Randomisation

Investigators reviewed the EHR to identify ED patients for whom providers had already placed an admission order. Upon identifying trial candidates, investigators reviewed inclusion/exclusion criteria. After enrolling patients meeting criteria, investigators used RANDI2 randomisation software to randomise each patient.[8] Each block of six consecutively enrolled patients was allocated in a 2:2:2 distribution across the three study arms (figure 1). Patients who left the ED before an AMH could be obtained and patients not ultimately admitted (despite an initial decision to admit) were considered lost to follow-up. Because the number of patients assessed for eligibility on 30 January 2014 was lost, we substituted the mean assessed patient count using all other enrolment days.

Interventions

Patients were randomly allocated to usual care or to one of two intervention arms in which either a pharmacist or a PSPT had primary responsibility for obtaining the AMH. Obtaining the initial AMH usually began with reviewing the medication regimen present in the EHR if one was available from a prior encounter. Next, patients, families and caregivers present in the ED were interviewed. Pill bottles, medication lists and SNF medication administration records were also reviewed. In cases where sources matched convincingly, no further efforts were undertaken. However, in most cases, other sources including family, pharmacies and/or providers were contacted until questions were resolved. This is consistent with a published protocol for obtaining a 'best possible medication history'.[4] Pharmacists and PSPTs attempted to complete all intervention-arm AMHs soon after the ED decision to admit was made and before any AMOs were placed, such that the workflow of admitting physicians would not be affected, and that there would be no need to contact and convince admitting physicians to fix AMHs or AMOs retroactively.

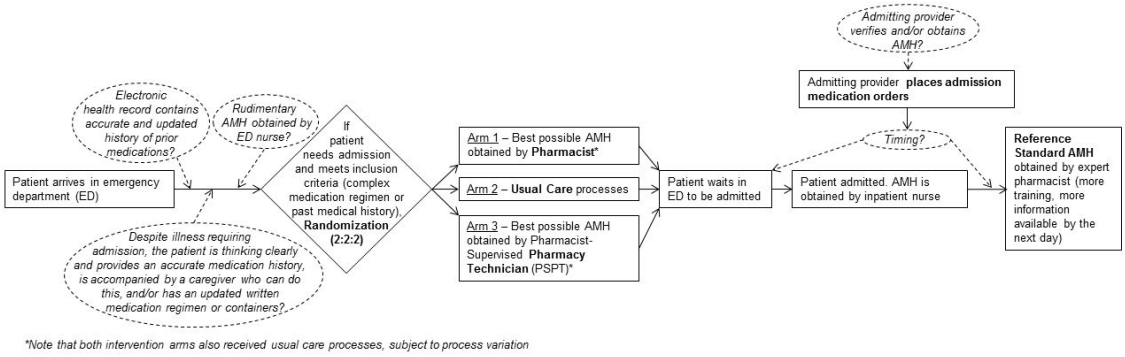

Figure 1 Workflow diagram of admission medication history (AMH) processes occurring during usual care and study randomisation. Common usual care process variations italicised and circumscribed by dotted lines.

PSPTs presented their AMHs to a supervising pharmacist to allow the pharmacist to decide whether data sources needed further review, or whether the AMH was ready to be entered into the EHR. Requiring pharmacists to enter PSPTs' AMHs into the EHR ensured that pharmacists reviewed all medications in the AMH, and constituted the pharmacist supervision of PSPTs.

Didactic and experiential training of pharmacists and pharmacy technicians

All pharmacists and pharmacy technicians underwent standardised training in obtaining AMHs. Didactic training generally took 8–16 hours and included: review of background publications; review of locally created general and ED-specific medication reconciliation manuals with detailed guides of AMH workflows, the patient interview and EHR utilisation; and a didactic training evaluation. Experiential training included observing ≥5 AMHs obtained by an expert pharmacist, followed by the trainee obtaining ≥5 AMHs under the proctoring of an expert pharmacist. Training continued until proctors deemed trainees competent.

Usual care

All arms received usual care for patients admitted from the ED, which commonly involves multiple process variations. EHR-derived medication regimen accuracy is subject to variation in the knowledge and efforts of prior providers, which are often driven by patient acuity and patient care priorities. Patients and caregivers' recall of medication regimens varies over time and across patients. Nurse and physician contributions likely vary in accordance with their pharmacological training and with competing obligations, including patients' requests for home medications. Finally, physicians may place AMOs before or after patients have had their AMH obtained by an inpatient nurse (dotted lines and italicised text highlight common process variations in figure 1). To minimise unnecessary overlap, inpatient pharmacists and nurses were advised not to initiate new efforts to improve upon pharmacist-approved AMHs. However, they were able to address any concerning AMH or AMO data that arose during clinical care.

Outcome measurement

Reference standard AMHs

As per prior studies, we attempted to obtain reference standard AMHs from patients in all arms on the day following admission.[4] When a reference standard AMH was not obtained, patients were considered lost to follow-up. Reference standard AMHs were more comprehensive than initial AMHs in several ways. First, pharmacists obtaining reference standard AMHs started with initial AMH data. As such, study arm could not be masked. Second, reference standard AMHs were only obtained by pharmacists considered to be 'expert' in this clinical skill based on their previous experience in obtaining medication histories. These pharmacists were advised to take additional time and to consider additional information (eg, previous hospital discharge orders) as necessary. Third, these pharmacists often had new information available to them (eg, medication lists brought in after admission, improved patient mental status). Finally, these pharmacists identified errors that arose during clinical care prior to the reference standard AMH. Some of these pharmacists were study authors. To maximise patient benefit from the study, reference standard AMH findings, including any impact on AMOs, were communicated to the appropriate clinician.

Primary outcome: mean severity-weighted AMH error score

In obtaining reference standard AMHs, expert pharmacists identified AMH errors in the initial AMHs and classified each error according to a previously developed taxonomy as significant, serious or life threatening.[1] Error severity weights of $1^2=1$, $2^2=4$ and $3^2=9$, respectively, were chosen to reflect the relative capacity of each error type to cause patient harm. A second pharmacist reviewed classifications, and a physician adjudicated disagreements. Because the reference standard pharmacist obtained their AMH while the patients were still hospitalised and used contemporaneous information (eg, conversations with patients and family members), study arm could not be masked. Because of the vast amount of complex information that might be consulted in determining error severity, we also chose not to mask study arm with case summaries for other reviewers.

For each patient, we calculated a severity-weighted AMH error score. We used this novel error score because it provides a single, severity-weighted measure of error for each AMH. This allowed our power analysis to account for the different potential clinical consequences of different error severities. For each trial arm, we calculated a mean severity-weighted AMH error score.

Secondary outcome: mean severity-weighted AMO error score

For each AMH error identified, two physicians independently reviewed the relevant medications ordered at hospital admission in the context of the clinical chart. They classified each AMH error as either resulting in no AMO error, or an AMO error of significant, serious or life-threatening severity. In cases where the admitting physician's knowledge of an AMH error was unclear and where the resultant orders were clinically reasonable (eg, the AMH erroneously omitted hydrocodone and it was not ordered at admission, but where it may have been intentionally held for altered mental status, rather than unintentionally omitted), we determined that the AMH error did not clearly lead to any AMO error. A third physician adjudicated disagreements. All adjudicating physicians were study authors. Because all AMO determinations began with

a previously identified AMH error, we did not address AMO errors unrelated to AMH errors.

Tertiary outcomes

Kruskal-Wallis and Fisher's exact tests were used to compare the three arms in terms of patients' mean length of stay and the per cent of patients readmitted to Cedars-Sinai Medical Center within 30 days, respectively. The study was not powered to detect differences in these tertiary outcomes.

Statistical analysis

Using single-factor analysis of variance (ANOVA), we determined that a sample of 300 patients would achieve 80% power to detect absolute error score differences of at least 11.2 using the Tukey-Kramer (pairwise) multiple comparison test with an alpha of 0.05.[9 10] Based on pilot data, we expected patients in the usual care group to have a mean severity-weighted error score of 20.7, with an SD of 16.2. A difference of 11.2 units is clinically significant, representing 1 life threatening, almost 3 severe, or 11 significant AMH errors.

Clinical and demographic variables were summarised using mean or count. Error counts per patient and error scores per patient were summarised by study arm using mean. In accordance with the a priori analysis plan for this randomised trial, we used linear regression models to compare primary outcome and secondary measures across study arms (ANOVA). Because baseline characteristics were balanced across study arms, the linear regression models were not adjusted for any other variables. Post hoc pairwise comparisons between study arms used a Tukey-Kramer adjustment for multiple testing. The outcomes were transformed for the models due to outliers in the distributions. To test whether results were robust to the unknown outcomes of patients admitted but lost to follow-up, we conducted a sensitivity analysis where all such intervention patients were assumed to have the worst AMH error score measured for any patient, and where all such usual care patients were assumed not to have any AMH errors.

To minimise the effect of outliers in the distributions of error counts and scores, a rank transformation was applied to the outcomes in the regression models. The results of hypothesis testing for transformed and non-transformed outcomes were similar, but the residuals in the rank-transformed data better fit the model assumptions as the variance of the outcomes in the usual care group was larger than the other two groups. The following variables were compared across study arms with Kruskal-Wallis tests: number of medications, zip code median income, weighted Charlson comorbidity score and length of stay. Insurance type, race, ethnicity and readmission rate were analysed across study arms using Fisher's exact test. Analyses used SAS V.9.3.

RESULTS

Enrolment and baseline characteristics

We enrolled 306 patients. Patient characteristics, including age, sex, race, ethnicity, insurance, number of medications, income and comorbidities, were similar across study arms (table 1). The mean±SD patient age was 72±12 and number of medications present in the EHR prior to obtaining an AMH was 15±7.

Of 103 and 102 patients randomised to the pharmacist and PSPT arms, only 5 (5%) and 9 (9%) did not receive the intervention, respectively. These patients and 14 others for whom a reference standard AMH was not obtained were classified as dropouts (figure 2). The primary outcome was not measurable for these 28 (9.2%) patients lacking a reference standard AMH. Therefore, except for the sensitivity analyses, further results are based on the 278 remaining patients.

Identification and adjudication of AMH errors and resultant AMO errors

Pharmacist raters found that 192 (69%) of 278 patients had 1016 AMH errors. They determined that 399 (39%) AMH errors were significant, 605 (60%) were serious and 12 (1%) were life-threatening errors. These errors occurred in the AMHs of 138, 164 and 11 patients, respectively.

Physician raters agreed that 419 (41%) of these AMH errors clearly led to an AMO error. The 419 AMO errors occurred among 142 (74%) of the 192 patients who had an AMH error. Raters found that 261 (62%) AMO errors occurring among 117 patients were significant, 155 (37%) among 84 patients were serious and 3 (1%) among 3 patients were life-threatening errors. Examples of AMH and AMO errors identified are detailed in online supplementary table 1.

Outcome comparisons across arms

There was a mean±SD of 8.0±5.6 AMH errors per patient in the usual care arm versus 1.4±1.9 and 1.5±2.1 AMH errors per patient in the pharmacist and PSPT arms, respectively (pairwise t-tests, $p<0.0001$) (table 2). When we accounted for error severity via the primary outcome of severity-weighted AMH error score, patients in the usual care arm had a mean±SD severity-weighted AMH error score of 23.0±16.1 versus scores of 4.1±6.8 and 4.1±7.0 in the pharmacist and PSPT arms, respectively ($p<0.0001$).

Our sensitivity analysis, which assumed that all intervention patients lost to follow-up had the worst measured AMH severity score (100), but that usual care patients lost to follow-up had no AMH errors, resulted in the usual care arm having a mean±SD severity-weighted AMH error score of 22.0±16.4 versus scores of 9.0±22.1 and 13.8±29.8 in the pharmacist and PSPT arms, respectively ($p<0.0001$).

Patients in the usual care arm had a mean±SD of 3.2±2.9 AMO errors per patient versus 0.6±1.1 and 0.6±1.1 AMO errors per patient in the pharmacist and PSPT arms, respectively ($p<0.0001$). Accounting for

Table 1 Baseline characteristics of patients

Characteristic	Admission medication history obtained via: Usual care (n=101)		Usual care plus pharmacist (n=103)		Usual care plus pharmacist-supervised pharmacy technician (n=102)	
Age, mean (SD), year	71	18	72	16	71	16
Female (n, %)	48	(48%)	54	(52%)	55	(54%)
Latino (n, %)	7	(7%)	5	(5%)	5	(5%)
Race (n, %)						
White	66	(65%)	75	(73%)	65	(64%)
Black	22	(22%)	28	(28%)	25	(26%)
Asian	5	(5%)	6	(6%)	6	(6%)
Other	0	(0%)	0	(0%)	1	(1%)
Insurance (n, %)						
Commercial	14	(14%)	14	(14%)	17	(17%)
Medicaid only	7	(7%)	12	(12%)	9	(9%)
Medicare	78	(77%)	76	(74%)	75	(74%)
Other	2	(2%)	1	(1%)	1	(1%)
Inclusion criteria, accessed via EHR (n, %)*						
>10 active chronic prescription medications	65	(64%)	71	(69%)	71	(70%)
History of acute myocardial infarction or congestive heart failure	42	(42%)	34	(33%)	38	(37%)
Admission from skilled nursing facility	16	(16%)	12	(12%)	17	(17%)
History of transplant	2	(2%)	4	(4%)	3	(3%)
Anticoagulant, insulin or other narrow therapeutic index medication	81	(80%)	97	(94%)	91	(89%)
Other						
Number of active medications in EHR at randomisation (mean, SD)	15	7	15	7	15	6
Neighbourhood household income, median (IQR), annual US$†	66 063	(42 615, 71 132)	66 063	(43 202, 77 165)	66 063	(42 615, 79 233)
Weighted Charlson comorbidity score, mean (SD)	3.1	(2.4)	3.5	(2.8)	3.6	(2.6)
Inpatient stay within 3 months prior to admission (n, %)	40	(40%)	42	(41%)	40	(40%)
>2 encounters with PCP or internal medicine consultants within 3 months prior to admission (n, %)	49	(49%)	41	(40%)	51	(50%)

*Many patients qualified for multiple inclusion criteria, such that the percentages sum to more than 100%.
†Neighbourhood household income was estimated by linking patients' zip codes to 2010 US Census median household income data.
EHR, electronic health record; PCP, primary care physician.

error severity showed that patients in the usual care arm had a mean±SD severity-weighted AMO error score of 6.9±7.2 vs 1.5±2.9 and 1.2±2.5 in the pharmacist and PSPT arms, respectively (p<0.0001).

Using Cohen's d to standardise the magnitude of the measured effect revealed that for the primary outcome of AHM error score, the effect size for each intervention was 1.5 (table 3). For the more downstream outcome of severe or life-threatening AMO errors, the effect size for each intervention was approximately 0.8. These measurements are accepted to represent very large and large effect sizes, respectively.[11] Although this trial was not designed to test for non-inferiority, we found no differences in any outcomes between pharmacists and PSPTs.

Of 183 patients randomised to either intervention, 29 (16%) had a serious or life-threatening AMO. Compared with 56 (59%) of 95 control patients with such errors, this represents a number needed to treat of 3 (point estimate 2.3, 95% CI 1.8 to 3.2). This number underestimates the intervention's impact because many patients had multiple serious AMO errors. Although there were no statistically significant differences in utilisation outcomes across arms, point estimates for length of stay were approximately 1 day longer in the intervention arms (p=0.13), and point estimates for 30-day readmission rates were approximately 10% lower in the intervention arms (p=0.16).

DISCUSSION

In this three-arm randomised controlled trial, adding AMH interviews by pharmacists or PSPTs to usual care processes reduced AMH errors by over 80%. The most downstream and clinically meaningful result was reducing the severe and life-threatening AMO error rate from 1.2 per patient in the usual care arm to 0.2 per patient in the intervention arms. Preventing AMOs should allow patients to avoid ADEs, which are known to increase length of stay, cost, morbidity and mortality.[2 12]

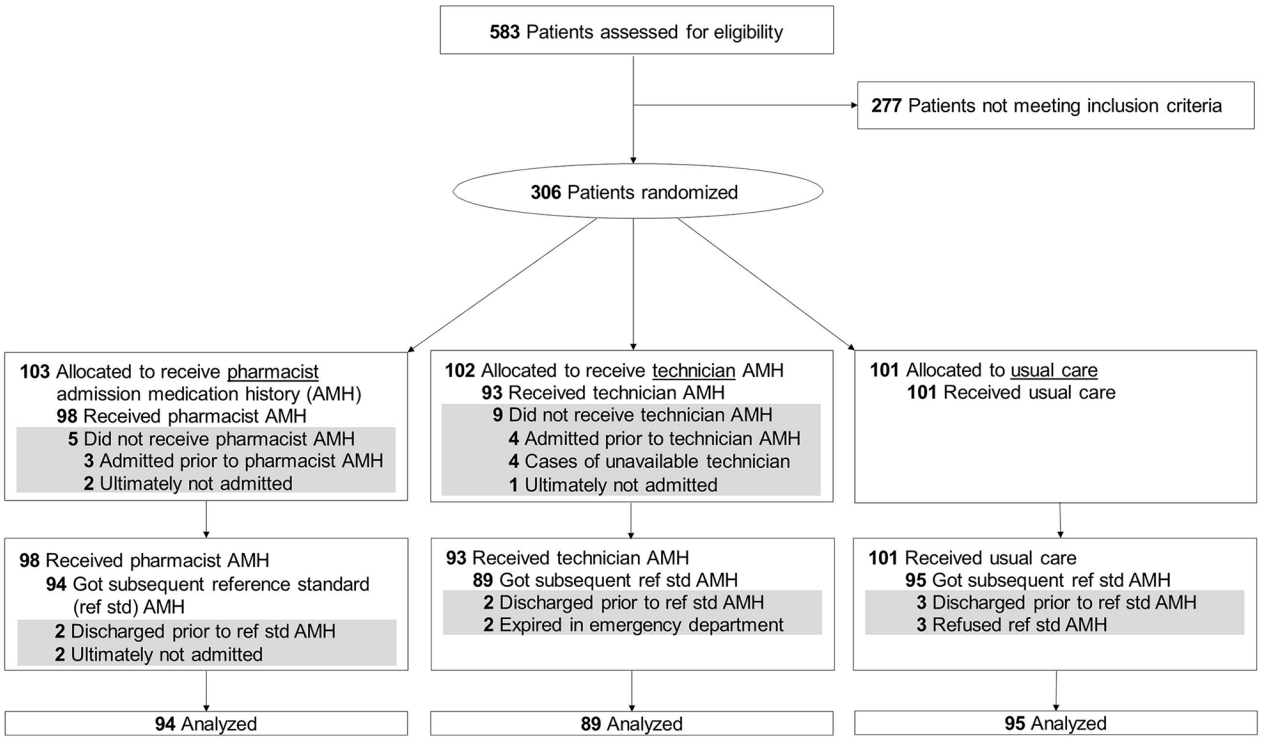

Figure 2 Consort flow diagram.

We found a much larger benefit than prior research. Many prior studies checked AMHs after AMOs were placed, thus resembling our usual care arm. For example, one systematic review found that the median study only identified (and in some cases addressed) 0.35 clinically significant unintentional medication discrepancies per patient.[13] In contrast, our usual care arm reference standard AMHs identified a mean of 1.2 severe or life-threatening AMO errors per patient, which translated to a much greater opportunity for reductions.

We attribute the high baseline error rate to the medically complex patient population we studied, which resulted from our inclusion criteria. Two prior systematic reviews had conflicting findings regarding targeting interventions at high-risk patients. One review found

Table 2 Outcomes of 278 patients with reference standard AMH

Result	Usual care (n=95)		Usual care plus pharmacist (n=94)		Usual care plus pharmacist-supervised pharmacy technician (n=89)		p Value*
Mean AMH error outcomes (95% CI)							
AMH errors per patient	8.0	(6.8 to 9.1)	1.4	(1.0 to 1.8)	1.5	(1.0 to 1.9)	<0.0001
AMH errors per patient, severe or life threatening only	4.6	(3.8 to 5.3)	0.8	(0.49 to 1.1)	0.7	(0.45 to 1.1)	<0.0001
AMH error score per patient†	23.0	(19.7 to 26.2)	4.1	(2.7 to 5.5)	4.1	(2.6 to 5.6)	<0.0001
Mean AMO error outcomes (95% CI)							
AMO errors per patient	3.2	(2.6 to 3.8)	0.6	(0.42 to 0.85)	0.6	(0.41 to 0.97)	<0.0001
AMO errors per patient, severe or life threatening only	1.2	(0.85 to 1.5)	0.2	(0.12 to 0.36)	0.1	(0.06 to 0.24)	<0.0001
AMO error score per patient	6.9	(5.5 to 8.4)	1.5	(0.89 to 2.1)	1.2	(0.67 to 1.7)	<0.0001
Mean utilisation outcomes							
Length of stay (95% CI)	5.2	(4.3 to 6.1)	6.5	(5.1 to 7.9)	6.2	(5.0 to 7.3)	0.13
Readmission within 30 days (%)	27	(27%)	17	(17%)	19	(19%)	0.16

*Rank-transformed analysis of variance F-test.
†Primary outcome.
AMH, admission medication history; AMO, admission medication order.

Table 3 Comparing AMH error and AMO error rates across study arms

Result	Usual care minus pharmacist (n=95, 94)			Pharmacist minus pharmacist-supervised pharmacy technician (n=94, 89)			Usual care minus pharmacist-supervised pharmacy technician (n=95, 89)		
Mean AMH error outcomes	**Δ**	**pSD**	**C**	**Δ**	**pSD**	**C**	**Δ**	**pSD**	**C**
AMH errors per patient	*6.6**	4.2	1.6	−0.08	2.0	−0.04	*6.5**	4.2	1.5
AMH errors per patient, severe or life threatening only	*3.8**	2.9	1.4	0.04	1.5	0.03	*3.8**	2.8	1.4
AMH error score per patient†	*18.8**	12.4	1.5	0.05	6.8	0.01	*18.9**	12.4	1.5
Mean AMO error outcomes									
AMO errors per patient	*2.5**	2.2	1.2	−0.002	1.1	−0.002	*2.5**	2.2	1.2
AMO errors per patient, severe or life threatening only	*0.92**	1.2	0.76	0.10	0.55	0.17	*1.0**	1.2	0.85
AMO error score per patient	*5.4**	5.5	0.99	0.29	2.7	0.11	*5.7**	5.4	1.1

*p<0.0001 (pairwise comparison with Tukey-Kramer adjustment for multiple testing).
†Primary outcome.
Δ, difference in means; AMH, admission medication history; AMO, admission medication order; C, Cohen's d calculated as difference in means divided by pooled SD of the two groups; pSD, pooled SD.

such targeting in 13 of 26 studies, and deemed it to be a 'key aspect of successful interventions'.[14] The other review found such targeting in 7 of 20 interventions, and determined that 'commonly used criteria for selecting high-risk patients do not consistently improve the effect of medication reconciliation.'[13] Our study patients had a mean of 15 medications present at enrolment versus prior study population means ranging from 7 to 11 medications.[15] The strong effect of our intervention suggests that targeting may be helpful if it is used to identify these patients at extremely high risk for ADEs. Such patients are already prevalent at CSMC, and this cohort is growing quickly throughout the developed world due to population ageing and increasing prescription drug use.[16]

The second factor likely contributing to the strong effect, and likely related to the high-risk patient population, is the substantial time spent by the pharmacist and PSPTs who conducted the intervention. In a time and motion study reported elsewhere, we found that they spent 58.5 and 79.4 min per patient, respectively (p=0.14).[17] Although one other study reported similar results,[18] this represents substantially more time than the 20–40 min reported in several prior studies conducted on younger, healthier patients.[19 20] Beyond these substantial time requirements, these interventions also require pharmacy personnel to be stationed in the ED and able to attend to AMHs as soon as a determination to admit a patient has been made—before AMOs are placed. As such, these interventions may be best suited to large hospitals with sufficient ED patient volume to justify stationing pharmacy personnel in the ED.

To better understand the potential impact of the studied interventions, we consulted previous literature showing that 0.9% of AMO errors result in an ADE during hospitalisation.[21] Critically, the studied interventions have potential advantages that we did not evaluate. The intervention workflows should be more efficient than using pharmacists to retrospectively check usual care processes and to contact and convince ordering physicians to request changes before errors cause harm. Furthermore, it seems likely that the interventions streamlined physicians' workflows and saved them time by allowing them to order from accurate AMHs, to minimise downstream pharmacist contacts and to reduce the need for corrections. Finally, and most importantly, prior research has shown the greatest benefit of reducing AMH errors to be a reduction in postdischarge prescription errors and resultant ADEs.[4] Future research should endeavour to evaluate these hypothesised benefits.

Because one sought-after benefit of using PSPTs is to reduce costs, it is notable that we found no difference in the benefit provided by PSPTs versus pharmacists. This is consistent with other similar studies.[22 23] However, our aforementioned time and motion analysis also did not find intervention costs to be lower in the PSPT arm, as compared with the pharmacist arm, once the costs of pharmacist supervision were included.[17] Nonetheless, the current study may allay concerns of effectiveness that have hindered PSPT adoption. With effectiveness established, these results point to an opportunity to improve PSPT efficiency, through altered work processes and the use of electronic pharmacy claims data (EPCD), which could make PSPT both a better and less expensive intervention.

Generalisability is a known gap in medication reconciliation intervention research.[7] Beyond embracing an intervention that we thought would improve efficiency and reduce implementation complexity, we also designed our trial to be pragmatic. In contrast to prior work,[15] we included many patients admitted by community physicians. Because the interventions did not require physician workflow changes, many physicians were unaware of the trial entirely. We included

resident pharmacists to ensure that experience was unnecessary. We minimised biases associated with requiring patients to opt-in. All of these factors should contribute to strong external validity.

The findings must be interpreted in the context of limitations. First, the study was powered on intermediate endpoints, rather than on patient-centred outcomes (PCO). Although there is an established linkage between AMH errors and PCO,[1] it would be useful to study PCO directly, especially because systematic reviews have drawn conflicting conclusions about whether previously studied medication reconciliation interventions affect PCO.[6 13 15 24] Second, we only used one site. Third, not all aspects of randomisation were masked from study personnel. Because block size was not masked, selection bias could have occurred. Furthermore, we could not practicably mask arm allocation. Fortunately, we were able to increase objectivity by leveraging accepted methodology, which used agreement of independent raters to identify and rate the severity of AMH and AMO errors.[4] Finally, study providers could not access EPCD. Because EPCD is likely now available in most US hospitals, and because it has good potential to reduce AMH errors and to reduce the time needed to obtain AMHs, it will be important to retest these interventions with EPCD.[25]

CONCLUSIONS

Among medically complex older adults, pharmacists and pharmacist-supervised pharmacy technicians reduced admission medication history errors and resultant admission medication order errors by over 80% by obtaining admission medication histories in the ED. This effect was robust to severity weighting, and thus shows promise for reducing patient harm. We attribute the strong effect to a high-risk patient population and an intensive intervention. Future research should test whether these results generalise to other settings and affect patient-centred outcomes, and whether hypothesised efficacy and efficiency benefits are indeed demonstrable.

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Contributors JP had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Concept and design: JP, CN, CJ, KP, RS, AR, MB, DB. Acquisition, analysis or interpretation of data: JP, CN, CJ, KP, RS, GCW, AR, MB, OR, DS, BD, AD, DB. Drafting of the manuscript: JP, CN, GCW. Critical revision of the manuscript for important intellectual content: JP, CN, CJ, KP, RS, GCW, AR, OR, BD, DB. Statistical analysis: JP, CJ, GCW, AR. Administrative, technical or material support: JP, CN, KP, RS, MB, OR, DS, DB. Study supervision: JP, CN, KP, RS, DB.

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Competing interests JP currently receives funding from the American Society for Health-System Pharmacists Research and Education Foundation to design a toolkit for pharmacists to use in postdischarge medication management.

Ethics approval Cedars-Sinai Medical Center Institutional Review Board.

Provenance and peer review Not commissioned; externally peer reviewed.

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CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: IV Minibag shortage

SUMMARY

CHA continues to work with the FDA and AHA to monitor the status of the IV minibag shortage. See attached CHA news stories, along with CHA letter sent to FDA and a slide presentation given to AHA members in December on the status of the shortage at the time.

ACTION REQUESTED

- Committee discussion and next steps

DISCUSSION QUESTIONS

1. What is your present status?
2. What remediation measures have you been using?
3. Are there other areas we need to address?

Attachments: CHA Letter to FDA – November 10, 2017
AHA Webinar with FDA and ASPR – December 5, 2017
CHA Urges FDA to Resolve Shortage
FDA Updates Hospitals on IV Fluid Shortage

BJB:br

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

November 10, 2017

Scott Gottlieb, MD
Commissioner
Food and Drug Administration
10903 New Hampshire Avenue
Silver Spring, MD 20993

Dear Dr. Gottlieb:

The California Hospital Association (CHA), representing over 400 hospitals and health systems, is writing to strongly urge the Food and Drug Administration (FDA) to take any and all steps possible to expedite the resolution of worsening shortages of small-volume intravenous (IV) solutions, which are an essential standard for parenteral treatment and patient care delivery in hospitals.

CHA is concerned that the shortage of these widely used critical products will continue in the aftermath of recent hurricanes. Baxter, one of the largest manufacturers of small-volume IV bags, has three plants located in Puerto Rico that continue to have issues with communications, transportations systems, and inadequate personnel during recovery efforts. These continued challenges threaten not only our present supply cache, but also future inventory needs — particularly with upcoming seasonal illnesses such as influenza. Therefore, we call on the FDA to vigorously pursue strategies with current manufacturers to take all steps necessary to address current and future shortages of these essential life-saving products. The current shortfall is unacceptable; when contingency efforts are used over longer periods of time, the risk for error is heightened.

California hospitals and health systems have strategically deployed a vast array of contingencies to compensate for the shortfall and preserve the highest standards of patient care delivery. Many of these contingencies include activities such as converting to oral hydration when possible; purchasing frozen solutions; and using alternate methods and modes of drug treatment such as buretrols, syringes and intravenous push administration. While these strategies have helped mitigate the problem to date, CHA is concerned that an exacerbated lengthy shortage will lead to devastating effects — not only to the small-volume IV solution supply, but also to the ancillary supply chain of items now being used to fill the void, such as syringes and buretrols.

CHA is working closely with our hospitals and the American Hospital Association to make sure our members are apprised of current activity and actions taken at the state and federal levels to assist with the shortage. We appreciate the work you have done with Baxter to grant regulatory discretion for temporary special importation of products from facilities in Ireland, Australia, Canada and Mexico. Hospitals routinely check the FDA drug shortage website for new

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1215 K Street, Suite 800, Sacramento, CA 95814 • *Telephone:* 916.443.7401 • *Facsimile:* 916.552.7596 • www.calhospital.org
Corporate Members: Hospital Council of Northern and Central California, Hospital Association of Southern California, and Hospital Association of San Diego and Imperial Counties

information and consult other reliable resources such as the American Society for Health System Pharmacists. CHA is in constant communication with our hospital and health system pharmacists as well as the California Board of Pharmacy, which is closely monitoring the safety and efficacy of 503b compounders who may be newly entering the market to provide needed supplies. The California Board of Pharmacy is providing close oversight to prevent illicit production; we urge the FDA to do so as well. The most expedient solution to this problem is to assist present manufacturers in whatever efforts are needed to return to previous production levels as soon as possible. If additional compounding pharmacies or manufacturers are entering the market to assist with production efforts, we appreciate the FDA's efforts to ensure that the rigorous quality standards are met and to prevent contaminated or unlawful supplies into the system.

CHA understands and appreciates the FDA's work to address the current shortage. However, we strongly urge the FDA to assist present manufacturers to not only continue to produce these products at their maximum capacity, but to over-manufacture to prevent the gaps these shortages have created. FDA must move quickly to seek out and approve new domestic suppliers, but do so cautiously to avoid the unintended consequence of potential illicit supply production. This will help make the market more resilient in light of future demands and unexpected manufacturing challenges.

CHA and our hospitals stand ready to work with the FDA on these issues and appreciate your consideration of our urgent requests. If you have any questions, please do not hesitate to contact me at akeefe@calhospital.org or (202) 488-4688.

Sincerely,

/s/
Alyssa Keefe
Vice President, Federal Regulatory Affairs

Critical Hospital IV Solution Shortages: FDA and ASPR Actions

Dec. 5, 2017

American Hospital Association

Agenda

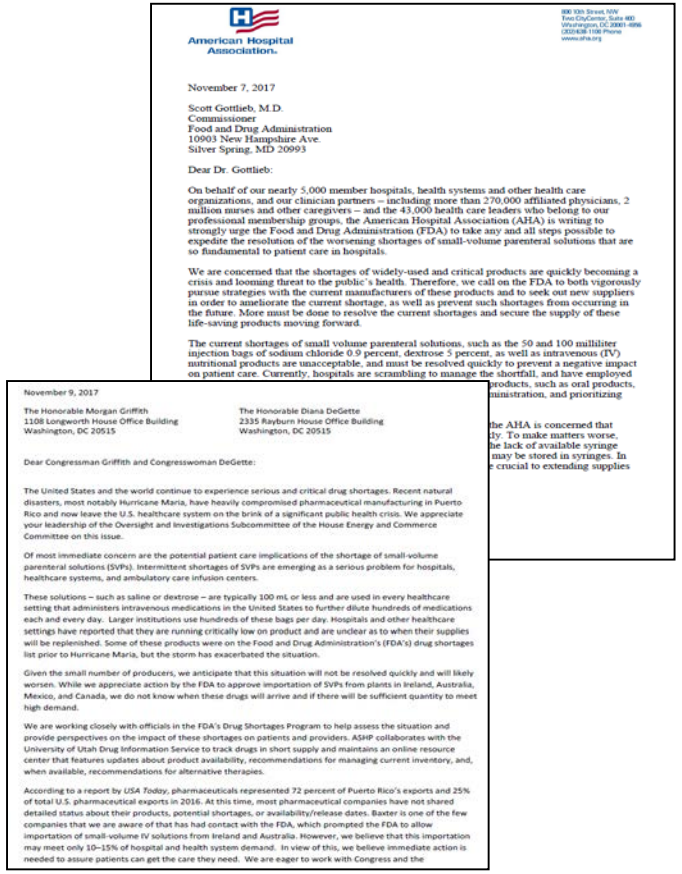
- **Background and AHA Advocacy: *Roslyne Schulman, Director, Policy***
- **FDA Update on Drug Shortages: *CAPT Valerie Jensen R.Ph., Associate Director, Drug Shortage Staff, FDA, Center for Drug Evaluation and Research***
- **ASPR Healthcare and Public Health Sector Supply Chain Preparedness and Response: *Laura Kwinn Wolf, Ph.D., Branch Chief, Critical Infrastructure Protection, ASPR, Office of Emergency Management***

American Hospital Association

Shortages of Small-volume IV Solutions

AHA urges FDA and Congress to Act to Address Critical Drug Shortages

- **Existing shortages of small-volume IV solutions**
  - **Made worse due to impact of Hurricane Maria on Puerto Rico's drug manufacturing plants**
- **These shortages are quickly becoming a crisis and looming threat to the public's health**
- **The AHA is urging FDA and Congress to take immediate action to expedite the resolution of these shortages**



American Hospital Association

November 7, 2017

Scott Gottlieb, M.D.
Commissioner
Food and Drug Administration
10903 New Hampshire Ave.
Silver Spring, MD 20993

Dear Dr. Gottlieb:

On behalf of our nearly 5,000 member hospitals, health systems and other health care organizations, and our clinician partners – including more than 270,000 affiliated physicians, 2 million nurses and other caregivers – and the 43,000 health care leaders who belong to our professional membership groups, the American Hospital Association (AHA) is writing to strongly urge the Food and Drug Administration (FDA) to take any and all steps possible to expedite the resolution of the worsening shortages of small-volume parenteral solutions that are so fundamental to patient care in hospitals.

We are concerned that the shortages of widely-used and critical products are quickly becoming a crisis and looming threat to the public's health. Therefore, we call on the FDA to both vigorously pursue strategies with the current manufacturers of these products and to seek out new suppliers in order to ameliorate the current shortage, as well as prevent such shortages from occurring in the future. More must be done to resolve the current shortages and secure the supply of these life-saving products moving forward.

The current shortages of small volume parenteral solutions, such as the 50 and 100 milliliter injection bags of sodium chloride 0.9 percent, dextrose 5 percent, as well as intravenous (IV) nutritional products are unacceptable, and must be resolved quickly to prevent a negative impact on patient care. Currently, hospitals are scrambling to manage the shortfall, and have employed

November 9, 2017

The Honorable Morgan Griffith
1108 Longworth House Office Building
Washington, DC 20515

The Honorable Diana DeGette
2335 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Griffith and Congresswoman DeGette:

The United States and the world continue to experience serious and critical drug shortages. Recent natural disasters, most notably Hurricane Maria, have heavily compromised pharmaceutical manufacturing in Puerto Rico and now leave the U.S. healthcare system on the brink of a significant public health crisis. We appreciate your leadership of the Oversight and Investigations Subcommittee of the House Energy and Commerce Committee on this issue.

Of most immediate concern are the potential patient care implications of the shortage of small-volume parenteral solutions (SVPs). Intermittent shortages of SVPs are emerging as a serious problem for hospitals, healthcare systems, and ambulatory care infusion centers.

These solutions – such as saline or dextrose – are typically 100 mL or less and are used in every healthcare setting that administers intravenous medications in the United States to further dilute hundreds of medications each and every day. Larger institutions use hundreds of these bags per day. Hospitals and other healthcare settings have reported that they are running critically low on product and are unclear as to when their supplies will be replenished. Some of these products were on the Food and Drug Administration's (FDA's) drug shortages list prior to Hurricane Maria, but the storm has exacerbated the situation.

Given the small number of producers, we anticipate that this situation will not be resolved quickly and will likely worsen. While we appreciate action by the FDA to approve importation of SVPs from plants in Ireland, Australia, Mexico, and Canada, we do not know when these drugs will arrive and if there will be sufficient quantity to meet high demand.

We are working closely with officials in the FDA's Drug Shortages Program to help assess the situation and provide perspectives on the impact of these shortages on patients and providers. ASHP collaborates with the University of Utah Drug Information Service to track drugs in short supply and maintains an online resource center that features updates about product availability, recommendations for managing current inventory, and, when available, recommendations for alternative therapies.

According to a report by *USA Today*, pharmaceuticals represented 72 percent of Puerto Rico's exports and 25% of total U.S. pharmaceutical exports in 2016. At this time, most pharmaceutical companies have not shared detailed status about their products, potential shortages, or availability/release dates. Baxter is one of the few companies that we are aware of that has had contact with the FDA, which prompted the FDA to allow importation of small-volume IV solutions from Ireland and Australia. However, we believe that this importation may meet only 10–15% of hospital and health system demand. In view of this, we believe immediate action is needed to assure patients can get the care they need. We are eager to work with Congress and the

American Hospital Association

FDA Updates on Drug Shortages

CAPT Valerie Jensen RPh.

American Hospital Association

FDA UPDATES ON DRUG SHORTAGES

CAPT Val Jensen RPh.
Associate Director
FDA/CDER/Drug Shortage Staff (DSS)

December 5, 2017

FDA Updates on Drug Shortages

- FDA's Drug Shortage Process and Effects of Notification
- Current shortages – hurricane update
- New initiatives at FDA and future of shortages – what's still needed

FDA Drug Shortage Staff (DSS)

Drug Shortage Staff: **The program office that is designated by FDA to oversee and facilitate the resolution of all drug shortage situations**

DSS serves to support FDA's mission of ensuring that safe and effective drugs are available to patients

- Facilitate temporary and long-term strategies to address shortages
- Coordinate for timely and comprehensive risk/benefit decisions
- Distribute information (web posting, professional organizations)

Often working across suppliers, facilities, and issues – multiple moving parts, urgency

→ Maintain availability while minimizing risk to patients

Manufacturers Report on Potential Impact to Supply

At the time of any change in manufacturing that may lead to a reduction in supply of a product*, e.g.:

- Plans for upgrade or remediation
- **Manufacturing issues at CMO**
- API batch failures
- Media fill failure

FDA asking manufacturers to notify FDA ahead, not as, or after, they are unable to fill orders or unable to meet expected demand

*Note, product refers to a specific strength, dosage form, and route of administration

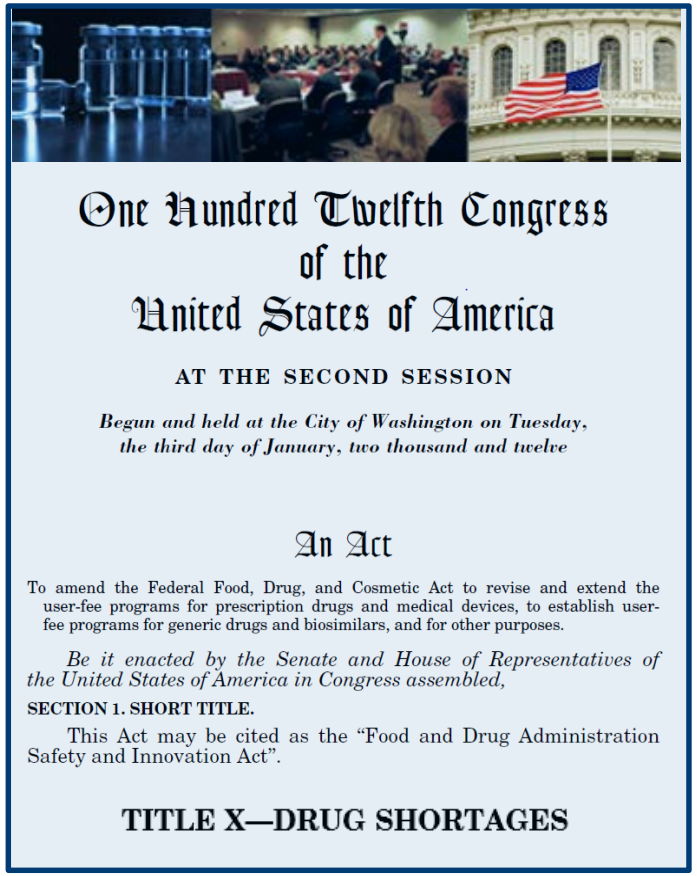
Best Practices

"We have placed the following product(s) on hold pending an investigation. Due to the investigation being in progress and the completion date being not estimated at this time, we wanted to inform Drug Shortage of this potential for a supply interruption."

Requirements to Industry For Early Notifications Under Section 506C of the FD&C Act (2012)

Manufacturers are required to notify the FDA of "**a change in production** that is reasonably likely to lead to a reduction in the supply" of a covered drug in the United States

- "At least 6 months in advance of…but in no case later than 5 business days after the…interruption in manufacturing occurs"
- Not limited to medically necessary products
- Regardless of market share, or number of companies marketing, or wholesaler volumes



One Hundred Twelfth Congress
of the
United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Tuesday, the third day of January, two thousand and twelve

An Act

To amend the Federal Food, Drug, and Cosmetic Act to revise and extend the user-fee programs for prescription drugs and medical devices, to establish user-fee programs for generic drugs and biosimilars, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Food and Drug Administration Safety and Innovation Act".

TITLE X—DRUG SHORTAGES

FDA Drug Shortage Staff – Toolbox

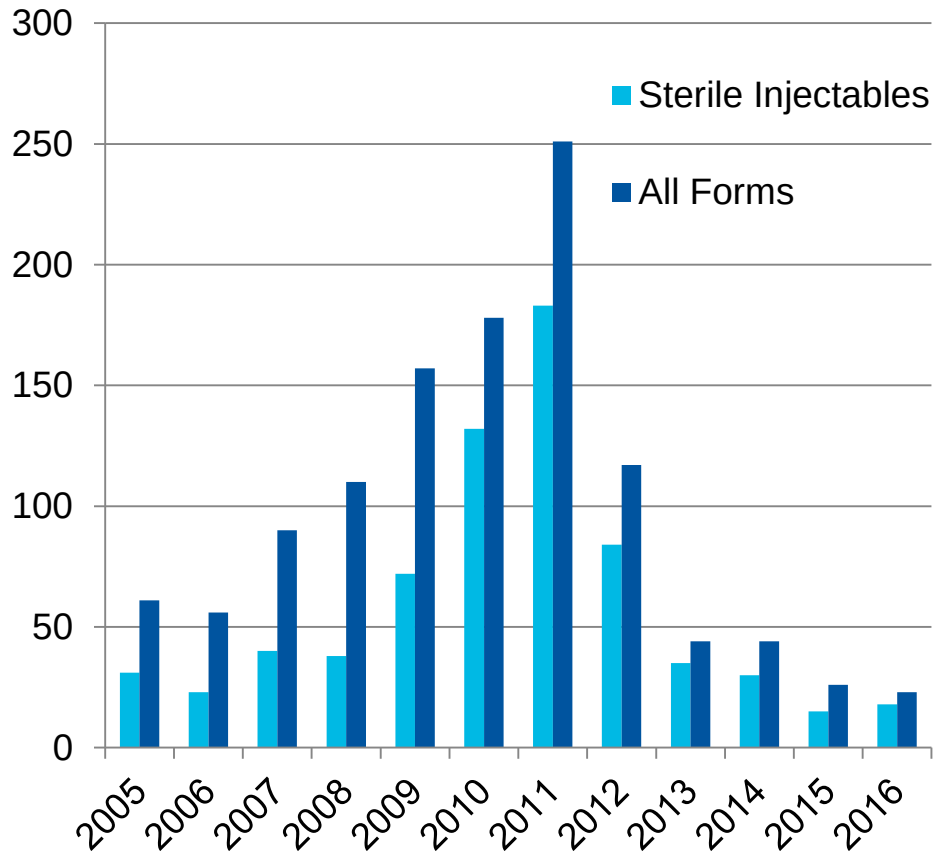
If there is a critical shortage concern, then DSS can:

- **Request expedited FDA review and inspection** of all pending applications to prevent shortage or to assist with demand, as well as facilitate pre-submission advice
- **Contact all manufacturers for status of supply, extent and timing for manufacturing capacity or constraints**
- Inquire on allocation plans or emergency reserves
- Assist with import requests for ongoing marketed supply
- Coordinate with manufacturers in their efforts to address root cause or to minimize shutdowns or delays
- Prioritize drugs of critical patient need
- Coordinate on risk mitigation measures
- Facilitate consideration for regulatory discretion

Manufacturers coordinate with DSS in order to prevent, mitigate, and resolve potential and existing drug shortages

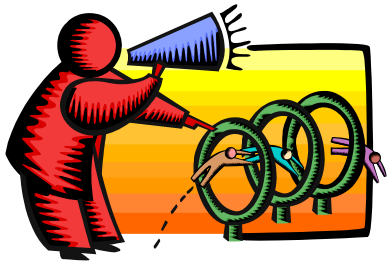
Impact of Early Notifications to the FDA

- Ongoing dialogue/work with industry – high numbers of prevented shortages continue (115 in 2016)
- New shortages have decreased, however there have been ongoing shortages that have been difficult to resolve.



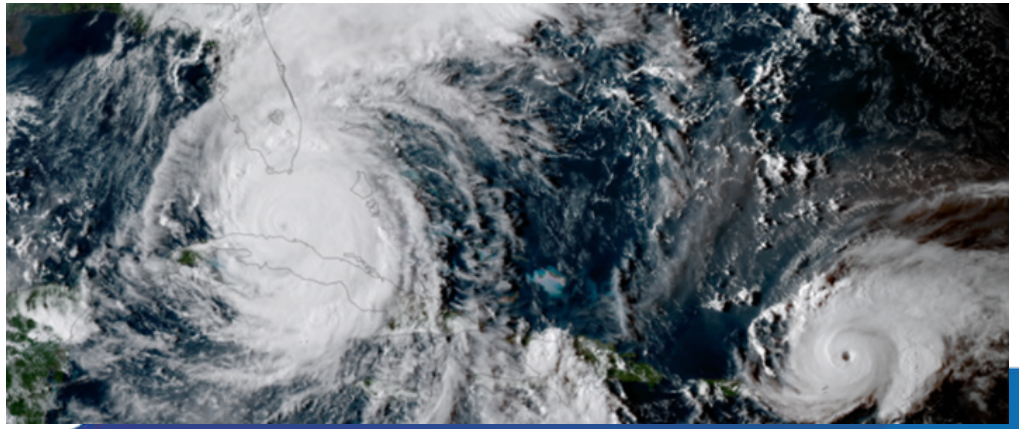
Total New US Drug Shortages Per Year

FDA Drug Shortage Staff – Key Communications



Hurricane Impact

- Hurricane Maria affected multiple manufacturers in Puerto Rico – FDA working closely with the firms to mitigate shortage impact
- Baxter has experienced shortages related to Hurricane Maria and currently IV fluids (dextrose and saline) in multiple sized bags as well as amino acids are critical as well as several others - imports being initiated from 6 different Baxter sites, and FDA expediting review of applications for new suppliers, and working with other manufacturers to help resolve these shortages.



IV Fluids Shortage

-Began in 2014 – increased demand and tight capacity

-FDA expedited review of 2 new manufacturers Fresenius Kabi and Laboratorios Grifols

-B. Braun reported slowing of production in fall 2017 from their approved facility. Currently importing from a German facility.

-Baxter PR site impacted by Hurricane Maria – now back in production and imports continuing from 4 Baxter sites

-FDA will continue to monitor supplies and continue imports as long as they are needed to meet patient needs.

Opportunities and Challenges to Assist with Shortages

FDA will work closely with manufacturers to address problems

- We can advise, assist, and expedite, but the manufacturer must fix the problem



What we CAN require:

- Notification by manufacturers (FDASIA)
  - Supply disruptions
  - Delays
  - Discontinuations
- Notification of manufacturing changes

What we CANNOT require:

- A company to make a drug
- A company to make more of a drug
- How much and to whom the drug is distributed

FDA Drug Shortage and Other Initiatives

- Establish the FDA Drug Shortage Assistance Award
- Drug Competition and Action Plan announced in June 2017 by Commissioner Scott Gottlieb

What's still needed?

- Companies need to have a Drug Shortage Plan in place – build better inventories of finished product and raw materials and components, have a plan for when things fail
- Redundancy in manufacturing and suppliers –encouraging industry to have "warm" lines and components and supplies at the ready for critical drugs
- Better notifications - some firms still do not provide more than the minimum amount of information and provide it at the last possible minute
- More capacity, additional manufacturers making critical drugs

Email: valerie.jensen@fda.hhs.gov or 301-796-0737

General Email: drugshortages@fda.hhs.gov

Phone: (240) 402-7770

THANK YOU!

References

Federal Food, Drug, and Cosmetic Act (FD&C Act), Section 506C (21 USC 356c, as amended by the Food and Drug Administration Safety and Innovation Act (FDASIA, 2012), Title X–Drug Shortages), Public Law 112-144: https://www.gpo.gov/fdsys/pkg/BILLS-112s3187enr/pdf/BILLS-112s3187enr.pdf

Federal Register Final Rule, 80 FR 38915 (July 8, 2015), Permanent Discontinuance or Interruption in Manufacturing of Certain Drug or Biological Products. https://federalregister.gov/a/2015-16659**.** *See also* **21 CFR 310.306, 314.81, and 600.82.**

CDER MAPP 4190.1 Rev. 2, Drug Shortage Management (11/1995; Rev. 1, 9/2006; Rev. 2, 9/2014): https://www.fda.gov/downloads/AboutFDA/CentersOffices/CDER/ManualofPoliciesProcedures/ucm079936.pdf

Executive Order 13588 (October 31, 2011), Reducing Prescription Drug Shortages: https://obamawhitehouse.archives.gov/the-press-office/2011/10/31/executive-order-13588-reducing-prescription-drug-shortages. On October 31, 2011, FDA also sent a letter to drug and biologic manufacturers, encouraging them to voluntarily report potential shortages to FDA.

Healthcare and Public Health Sector Supply Chain Preparedness and Response

Laura K. Wolf, Ph.D.

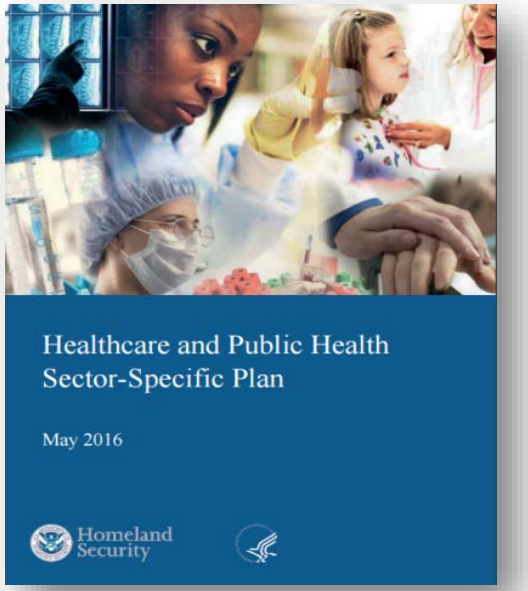
American Hospital Association

HEALTHCARE AND PUBLIC HEALTH SECTOR SUPPLY CHAIN PREPAREDNESS AND RESPONSE

Laura K. Wolf, PhD
Branch Chief, Critical Infrastructure Protection
HHS Office of the Assistant Secretary for Preparedness and Response

Healthcare and Public Health Sector Critical Infrastructure Partnership

- **By providing a venue for public and private sector partners to collaborate, we**
  - Promote risk management activities;
  - Share threat information;
  - Socialize best practices; and
  - Develop useful tools and policies;



to mitigate impacts of disasters and enhance resilience of the entire health care system to minimize disruptions in care for all Americans

Resilient People. Healthy Communities. A Nation Prepared.

Healthcare and Public Health Sector Critical Infrastructure Partnership

2017-2018 Priorities

- Supply Chain
- Cybersecurity
- Risk Assessment
- Response/Exercises

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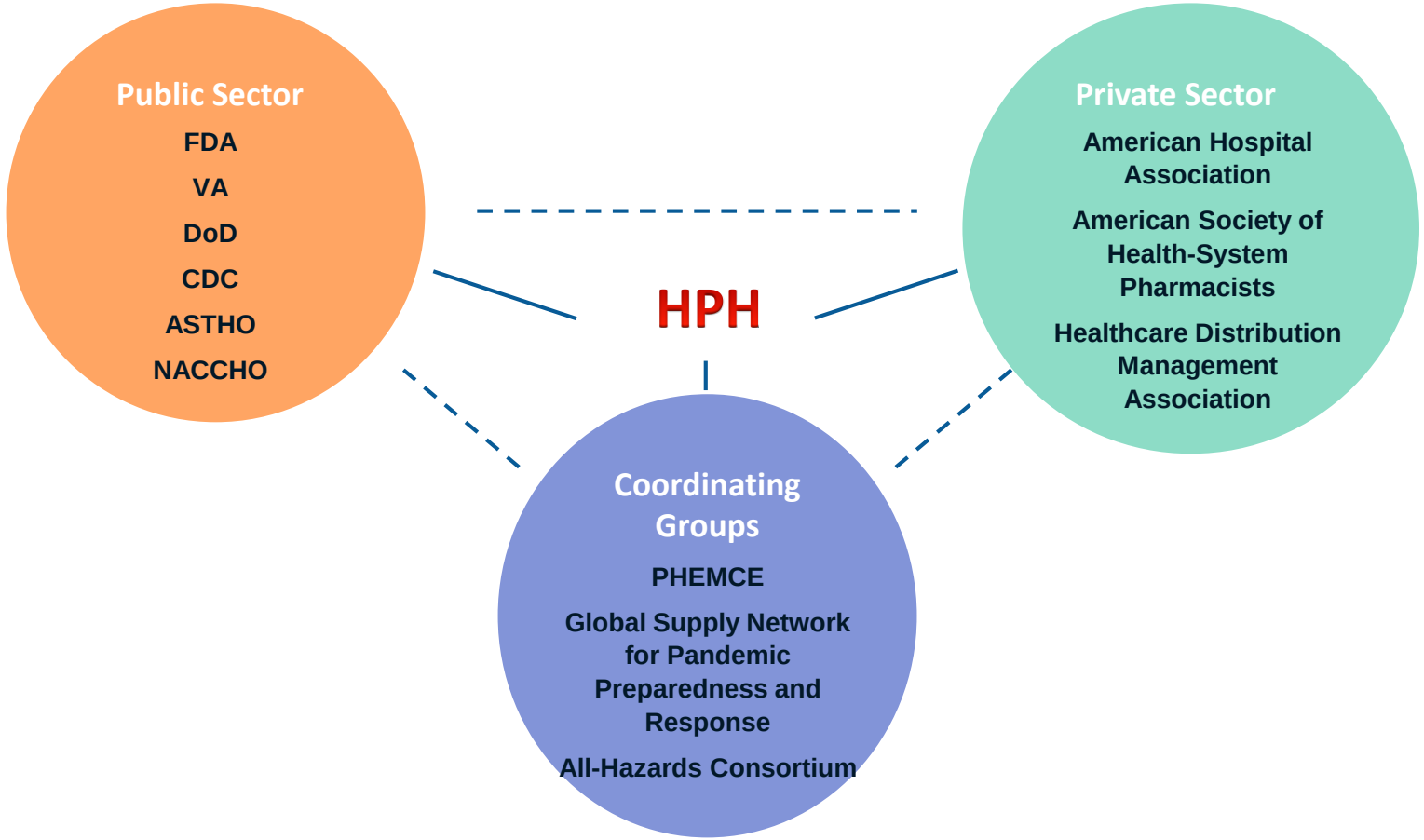
Partnering to respond to evolving threats



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Role in Response

- CIP supports national ESF-8 response
  - Sits in HHS Secretary's Operations Center
  - Sector-wide calls daily during events
  - Coordination with trade association partners
  - Outreach to affected organizations
  - Coordinated messaging across sector
  - Partner reach has expanded into the hundreds of thousands
- Coordinating with FEMA to support private sector

HHS/FEMA support to Puerto Rico

- CIP considers all healthcare industry and public health in response efforts, not just hospitals, and advocates for support
  - DHS/FEMA generally does not provide assistance for for-profit companies
  - For-profit companies are critical to Puerto Rico's recovery and to national healthcare
  - Partnered with FDA to prioritize available resources for manufacturing
  - Ongoing challenges
    - Power restoration
    - Medical gas availability

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Supply Chain Preparedness Activities

- Support to supply chain resilience more broadly
  - Working with government partners to identify additional authorities that can support FDA Drug Shortage Program efforts to
    - Prepare for;
    - Prevent; and
    - Respond to shortages
  - American Society for Health-System Pharmacists and Association of State and Territorial Health Systems
    - Recommendations
  - Private sector partners- engaging with industry to provide tools to better help them prepare for disasters

ASPR's TRACIE

- ASPR TRACIE: asprtracie.hhs.gov
  - **T**echnical **R**esources, **A**ssistance **C**enter, and **I**nformation **E**xchange
  - Wide variety of information resources
  - Drug Shortages page
    - https://asprtracie.hhs.gov/technical-resources/53/pharmacy/47#drug-shortages

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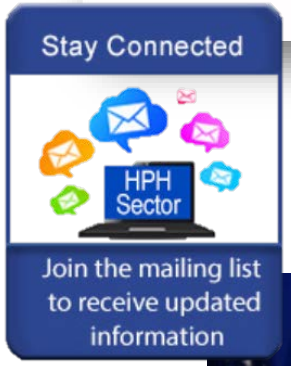
Partnership Engagement

- Weekly Highlights Newsletter
- Innovation Seminar Series
- Bi-annual Public-Private Partnership Meetings
- Response Coordination
- Phe.gov (ASPR) twitter, facebook
- ASPR blog posts
- Response/incident communications
- Pilot: Podcast



[Phe.gov/cip](Phe.gov/cip)

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American Hospital Association

CHA Urges FDA to Resolve Shortage of Small-Volume Intravenous Solutions

NOVEMBER 14, 2017 | ALYSSA KEEFE | BJ BARTLESON, RN, MS, NEA-BC

CHA continues to monitor the ongoing shortage of intravenous fluid mini-bags resulting from Hurricane Maria in Puerto Rico. Last week, CHA sent the attached letter to the Food and Drug Administration, urging the agency to take “any and all steps possible” to expedite the shortage’s resolution.

CHA continues to monitor the ongoing shortage of intravenous fluid mini-bags resulting from Hurricane Maria in Puerto Rico. Last week, CHA sent the attached letter to the Food and Drug Administration, urging the agency to take “any and all steps possible” to expedite the shortage’s resolution. In the letter, CHA noted that the current shortage threatens not only current supplies, but also future inventory needs. CHA also emphasized the importance of close oversight of new manufacturers entering the market to assist with production efforts, stating that rigorous quality standards must be maintained to prevent contaminated or unlawful supplies from entering the system.

CALIFORNIA HOSPITAL ASSOCIATION
Leadership in Health Policy and Advocacy

FOR MEMBERS

FDA Updates Hospitals on Intravenous Fluid Shortages

Baxter back up and running in Puerto Rico

DECEMBER 6, 2017 | ALYSSA KEEFE

Yesterday, the American Hospital Association convened a call with Capt. Valerie Jensen, R.Ph., associate director, drug shortages staff in the Center for Drug Evaluation and Research at the Food and Drug Administration, and Laura Quinn Wolf, Ph.D, branch chief, Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response, to discuss the critical intravenous solution shortages that have resulted largely from a disruption in production caused by Hurricane Maria. The complete presentation, attached, provides valuable information on the Food and Drug Administration's current authority to intervene in these shortages, the progress made to date and plans going forward.

The agency reported that Baxter, a primary manufacturer, is back online in Puerto Rico. However, the agency continues to import from other countries and has expedited approvals of two additional manufacturers; additional manufactures are still encouraged to enter the market. B. Braun, another pharmaceutical company, has reported that it is importing from Germany. Notably, these suppliers will pause manufacturing in December as part of an annual process that is critical for quality assurance and patient safety. The Food and Drug Administration did not provide an expected timeline as to when the shortage would be alleviated, and directed hospitals to seek additional resources online.

CHA continues to work with its Medication Safety Committee, state agencies and the American Hospital Association to develop best practices for hospitals as well as policy recommendations that address these ongoing and persistent shortages.

Sacramento Bee: Hospitals are rationing saline solution. Patients are starting to worry

BY CATHIE ANDERSON AND MOLLY SULLIVAN
canderson@sacbee.com
NOVEMBER 21, 2017

Sacramento resident Charis Hill was caught off guard by the tiny bottle of saline solution hanging from the intravenous pole when she went for the latest infusion of medication that helps her avoid crippling pain. Accustomed to seeing a much larger bag of fluid, she immediately asked staff about the change.

That's when she learned that, since Hurricane Maria devastated Puerto Rico, key U.S. pharmaceutical plants on the island are experiencing manufacturing delays and distribution holdups that have caused unprecedented shortages of the widely used and critical fluid. Intravenous infusions of saline solution are used to hydrate patients during treatment or to dilute drugs during infusions, and Hill said she's worried about whether there will be enough of the fluids when she arrives for her next treatment in six weeks.

Perhaps the best indicator of the dearth of saline solution is that patients such as Hill have begun to take notice. Earlier this month, leaders of both the American Hospital Association and the California Hospital Association sent letters about the scarcity of supplies to the U.S. Food and Drug Administration, asking Commissioner Scott Gottlieb to take any and all steps to resolve the worsening shortages. The treatments, they said, are essential to patient care in hospitals.

"Baxter, one of the largest manufacturers of small-volume IV bags, has three plants located in Puerto Rico that continue to have issues with communications, transportation systems, and inadequate personnel during recovery efforts," wrote Alyssa Keefe, the vice president for federal regulatory affairs at the California Hospital Association. "These continued challenges threaten not only our present supply cache, but also future inventory needs – particularly with upcoming seasonal illnesses such as influenza."

Local health systems are taking various steps to ensure that patient care is not affected by the shortage. At UC Davis Health, for instance, the medical team is now giving drugs directly rather than diluting them with a minibag, said UC Davis Health spokesman Charles Casey. This takes more time for a nurse, Casey said, but it probably doesn't substantially increase costs.

"Since 2013," he said, "we have increased the amount (of saline minibags) that we purchase, but right now we cannot purchase any," said Casey, adding that the shortage of saline minibags deeply concerns the system's pharmacy leaders.

The medical team at Dignity Health is conserving as much of its saline solution supply as possible. Sutter Health said representatives from its pharmacy and clinical teams have worked together with inventory managers to find distributors that can supply what they need and to seek alternatives.

Hill, who suffers from a debilitating form of arthritis known as ankylosing spondylitis, snapped a picture of the little bottle of saline solution, just 50 cubic centimeters, at the top of the IV pole at her station, and she posted it on Facebook, noting that usually a much larger bag typically hung there.

“I asked if they had saline in reserve and are using it up, but no, they ordered this,” she said. “It’s the second order since the hurricane, and this shipment had smaller bottles than the last.”

Hill said she’s worried that the shortage will affect the supply at her clinic. If she has to go to a hospital, she said, she’s uncertain that her Medi-Cal plan will cover it.

“I won’t have any choice but to go without it,” she said. “The drug builds up in your system over six months. If I miss a dose I have to build it up again, and if I go too long without it, I’ll be in severe pain and have to be bed-bound.”

Thomas P. Nickels, who manages government relations for the American Hospital Association, said hospitals are switching patients to appropriate alternatives such as oral products, changing how they administer IV drugs and prioritizing patients based on clinical factors.

“We strongly urge FDA to do more by pushing current manufacturers to not only continue to produce these products at their maximum capacity but also to make investments to ensure an increasing supply for the future,” Nickels wrote in his letter to the FDA commissioner. “We also encourage FDA to seek out and approve new domestic suppliers of these products in locations that are not prone to natural disasters.”

Cathie Anderson: 916-321-1193, @CathieA_SacBee

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Hospice Facility and Use of ADD

SUMMARY

Hospital members have expressed interest in using ADD in nontraditional settings. The topic was discussed at the December 11th, Board of Pharmacy Enforcement and Compounding meeting.

Background

As the committee has previously discussed, there appears to be an increasing interest and demand for expanded use of ADDS in pharmacies, clinics and other environments to provide medications to patients. Generally, there are two major forms of these machines:

1. Storage of medication until a specific dose is needed for a patient (e.g., Pyxis machines in hospitals and skilled nursing facilities), where the medication is obtained by a health care provider after it has been ordered for a patient.
2. Storage of a full dosing regimen for a specific patient awaiting patient pick up (e.g., Asteres machine currently under study by UCSD.

This year in the California Legislature there are two proposals to allow for additional uses of the machines:

1. A machine that can store medication in fire departments and EMSA offices to replenish ambulance supplies when convenient for the ambulance (sponsored by the board).
2. A machine installed in clinics, operated by a pharmacy, to dispense 240B drugs to qualified patients. (This measure stalled in committee.)

Prior Committee Discussion

Most recently, during its September meeting, the committee requested that staff develop a statutory proposal to expand the conditions under which an ADDS machine could be used. The committee noted that ADDS benefit patients by increasing their access to medications, but that appropriate security measures must be in place and the board must be notified if any theft or diversion occurs. The committee also underscored the need for patient consultation when the ADDS machine is used to deliver the medication to the patient, the need for development of a self-assessment form addressing specifically the use of machines and that the locations where ADDS are placed needs to be inspected by the board. The committee recommended creating separate requirements based on the two different types of machines (unit dose administered to a patient versus medications dispensed to a patient). At the conclusion of its discussion, the committee authorized board staff to develop parameters with the committee chair to present at a subsequent meeting.

For Committee Discussion and Consideration

Provided below is the basic framework from which a legislative proposal could be secured. Under the proposal the existing statutes and regulations would be replaced and be incorporated within the below.

1. Definitions - Amend Article 2 by creating, by definition, a delineation of the two different types of systems ("unit dose administered" versus "dispensed to patient").
2. General Requirements – Amend Article 6 to create the basic licensing requirements to include:
    a. Limited to licensed pharmacies/hospitals located in California.
    b. The device must be licensed by the board to operate.
    c. Application and annual renewal of $200. Renewal will be synced with underlying pharmacy license. (Hospitals using unit dose machines for administration to inpatients would be exempt from licensure, however an ADDS machine for dispense would be required to secure licensure.)
    d. The ADDS license would be cancelled by operation of law if the underlying pharmacy license is cancelled or revoked. Enforcement and Compounding Committee Chair Report – December 11, 2017 Page 3 of 18
    e. Pharmacy must own the drugs and be responsible for the drugs (storage security, etc.) until the medication is either dispensed or administered.)
    f. Pharmacy is responsible for delivery of the medications.
        i. Pharmacy staff must stock dispensing devices immediately upon delivery.
        ii. Pharmacy or identified staff may stock the administration device (consistent with current provisions). If the device is not immediately stocked, it must be stored in a segregated, secured area. Drugs may not be stored in this area for more than 48 hours.
3. Pharmacies – Amend Article 7 to specify where a device can be used.
    a. Any health facility licensed under HSC Section 1250, clinic licensed pursuant to BPC 4180 or 4190 or any medical office or clinic at which a patient receives health care services. (Note: The requirement to be located adjacent to the secured pharmacy area would eliminated.) dispensing process must be provided by a California licensed pharmacist.
    b. Mandatory consultation on all drugs dispensed
    c. All devices used for dispensing must have a posted notice providing the name of the pharmacy that operates the device.
    d. All devices used for dispensing must meet all prescription labeling requirements. Existing requirements regarding inventory management, policies and procedures, security, quality assurance policies, patient consent, etc., would be incorporated.

In addition to discussing the proposal parameters outlines above, board staff are seeking input from the committee on the frequency of inspections for the location of the device as well as if the proposal should include a limit on the number of dispensing systems a pharmacy can operate.

ACTION REQUESTED

- Committee Discussion

Attachment: Board of Pharmacy, Enforcement and Compounding Committee Report, December 11, 2017 – Attachment 1

BJB:br

1713. Receipt and Delivery of Prescriptions and Prescription Medications Must Be to or from Licensed Pharmacy

(a) Except as otherwise provided in this Division, no licensee shall participate in any arrangement or agreement, whereby prescriptions, or prescription medications, may be left at, picked up from, accepted by, or delivered to any place not licensed as a retail pharmacy.

(b) A licensee may pick up prescriptions at the office or home of the prescriber or pick up or deliver prescriptions or prescription medications at the office of or a residence designated by the patient or at the hospital, institution, medical office or clinic at which the patient receives health care services. In addition, the Board may, in its sole discretion, waive application of subdivision (a) for good cause shown.

(c) A patient or the patient's agent may deposit a prescription in a secure container that is at the same address as the licensed pharmacy premises. The pharmacy shall be responsible for the security and confidentiality of the prescriptions deposited in the container.

(d) A pharmacy may use an automated delivery device to deliver previously dispensed prescription medications provided:

(1) Each patient using the device has chosen to use the device and signed a written consent form demonstrating his or her informed consent to do so.

(2) A pharmacist has determined that each patient using the device meets inclusion criteria for use of the device established by the pharmacy prior to delivery of prescription medication to that patient.

(3) The device has a means to identify each patient and only release that patient's prescription medications.

(4) The pharmacy does not use the device to deliver previously dispensed prescription medications to any patient if a pharmacist determines that such patient requires counseling as set forth in section 1707.2(a)(2).

(5) The pharmacy provides an immediate consultation with a pharmacist, either in-person or via telephone, upon the request of a patient.

(6) The device is located adjacent to the secure pharmacy area.

(7) The device is secure from access and removal by unauthorized individuals.

(8) The pharmacy is responsible for the prescription medications stored in the device.

(9) Any incident involving the device where a complaint, delivery error, or omission has occurred shall be reviewed as part of the pharmacy's quality assurance program mandated by Business and Professions Code section 4125.

(10) The pharmacy maintains written policies and procedures pertaining to the device as described in subdivision (e).

(e) Any pharmacy making use of an automated delivery device as permitted by subdivision (d) shall maintain, and on an annual basis review, written policies and procedures providing for:

(1) Maintaining the security of the automated delivery device and the dangerous drugs within the device.

(2) Determining and applying inclusion criteria regarding which medications are appropriate for placement in the device and for which patients, including when consultation is needed.

(3) Ensuring that patients are aware that consultation with a pharmacist is available for any prescription medication, including for those delivered via the automated delivery device.

(4) Describing the assignment of responsibilities to, and training of, pharmacy personnel regarding the maintenance and filing procedures for the automated delivery device.

(5) Orienting participating patients on use of the automated delivery device, notifying patients when expected prescription medications are not available in the device, and ensuring that patient use of the device does not interfere with delivery of prescription medications.

(6) Ensuring the delivery of medications to patients in the event the device is disabled or malfunctions.

(f) Written policies and procedures shall be maintained at least three years beyond the last use of an automated delivery device.

(g) For the purposes of this section only, "previously-dispensed prescription medications" are those prescription medications that do not trigger a non-discretionary duty to consult under section 1707.2(b)(1), because they have been previously dispensed to the patient by the pharmacy in the same dosage form, strength, and with the same written directions.

Authority cited: Sections 4005, 4075, and 4114 Business and Professions Code. Reference: Sections 4005, 4052, 4116 and 4117 Business and Professions Code.

State of California

BUSINESS AND PROFESSIONS CODE

Section 4105.5

4105.5. (a) For purposes of this section, an "automated drug delivery system" has the same meaning as that term is defined in paragraph (1) of subdivision (a) of Section 1261.6 of the Health and Safety Code.

(b) Except as provided by subdivision (e), a pharmacy that owns or provides dangerous drugs dispensed through an automated drug delivery system shall register the automated drug delivery system by providing the board in writing with the location of each device within 30 days of installation of the device, and on an annual basis as part of the license renewal pursuant to subdivision (a) of Section 4110. The pharmacy shall also advise the board in writing within 30 days if the pharmacy discontinues operating an automated drug delivery system.

(c) A pharmacy may only use an automated drug delivery system if all of the following conditions are satisfied:

(1) Use of the automated drug delivery system is consistent with legal requirements.

(2) The pharmacy's policies and procedures related to the automated drug delivery system to include appropriate security measures and monitoring of the inventory to prevent theft and diversion.

(3) The pharmacy reports drug losses from the automated drug delivery system to the board as required by law.

(4) The pharmacy license is unexpired and not subject to disciplinary conditions.

(d) The board may prohibit a pharmacy from using an automated drug delivery system if the board determines that the conditions provided in subdivision (c) are not satisfied. If such a determination is made, the board shall provide the pharmacy with written notice including the basis for the determination. The pharmacy may request an office conference to appeal the board's decision within 30 days of receipt of the written notice. The executive officer or designee may affirm or overturn the prohibition as a result of the office conference.

(e) An automated drug delivery system operated by a licensed hospital pharmacy as defined in Section 4029 for doses administered in a facility operated under a consolidated license under Section 1250.8 of the Health and Safety Code shall be exempt from the requirements of subdivision (b).

(Added by Stats. 2016, Ch. 484, Sec. 18. (SB 1193) Effective January 1, 2017.)

State of California

BUSINESS AND PROFESSIONS CODE

Section 4186

4186. (a) Automated drug delivery systems, as defined in subdivision (h), may be located in any clinic licensed by the board pursuant to Section 4180. If an automated drug delivery system is located in a clinic, the clinic shall develop and implement written policies and procedures to ensure safety, accuracy, accountability, security, patient confidentiality, and maintenance of the quality, potency, and purity of drugs. All policies and procedures shall be maintained at the location where the automated drug system is being used.

(b) Drugs shall be removed from the automated drug delivery system only upon authorization by a pharmacist after the pharmacist has reviewed the prescription and the patient's profile for potential contraindications and adverse drug reactions. Drugs removed from the automated drug delivery system shall be provided to the patient by a health professional licensed pursuant to this division.

(c) The stocking of an automated drug delivery system shall be performed by a pharmacist.

(d) Review of the drugs contained within, and the operation and maintenance of, the automated drug delivery system shall be the responsibility of the clinic. The review shall be conducted on a monthly basis by a pharmacist and shall include a physical inspection of the drugs in the automated drug delivery system, an inspection of the automated drug delivery system machine for cleanliness, and a review of all transaction records in order to verify the security and accountability of the system.

(e) The automated drug delivery system used at the clinic shall provide for patient consultation pursuant to Section 1707.2 of Title 16 of the California Code of Regulations with a pharmacist via a telecommunications link that has two-way audio and video.

(f) The pharmacist operating the automated drug delivery system shall be located in California.

(g) Drugs dispensed from the automated drug delivery system shall comply with the labeling requirements in Section 4076.

(h) For purposes of this section, an "automated drug delivery system" means a mechanical system controlled remotely by a pharmacist that performs operations or activities, other than compounding or administration, relative to the storage, dispensing, or distribution of prepackaged dangerous drugs or dangerous devices. An automated drug delivery system shall collect, control, and maintain all transaction information to accurately track the movement of drugs into and out of the system for security, accuracy, and accountability.

(Added by Stats. 2001, Ch. 310, Sec. 1. Effective January 1, 2002.)

State of California

HEALTH AND SAFETY CODE

Section 1261.6

1261.6. (a) (1) For purposes of this section and Section 1261.5, an "automated drug delivery system" means a mechanical system that performs operations or activities, other than compounding or administration, relative to the storage, dispensing, or distribution of drugs. An automated drug delivery system shall collect, control, and maintain all transaction information to accurately track the movement of drugs into and out of the system for security, accuracy, and accountability.

(2) For purposes of this section, "facility" means a health facility licensed pursuant to subdivision (c), (d), or (k), of Section 1250 that has an automated drug delivery system provided by a pharmacy.

(3) For purposes of this section, "pharmacy services" means the provision of both routine and emergency drugs and biologicals to meet the needs of the patient, as prescribed by a physician.

(b) Transaction information shall be made readily available in a written format for review and inspection by individuals authorized by law. These records shall be maintained in the facility for a minimum of three years.

(c) Individualized and specific access to automated drug delivery systems shall be limited to facility and contract personnel authorized by law to administer drugs.

(d) (1) The facility and the pharmacy shall develop and implement written policies and procedures to ensure safety, accuracy, accountability, security, patient confidentiality, and maintenance of the quality, potency, and purity of stored drugs. Policies and procedures shall define access to the automated drug delivery system and limits to access to equipment and drugs.

(2) All policies and procedures shall be maintained at the pharmacy operating the automated drug delivery system and the location where the automated drug delivery system is being used.

(e) When used as an emergency pharmaceutical supplies container, drugs removed from the automated drug delivery system shall be limited to the following:

(1) A new drug order given by a prescriber for a patient of the facility for administration prior to the next scheduled delivery from the pharmacy, or 72 hours, whichever is less. The drugs shall be retrieved only upon authorization by a pharmacist and after the pharmacist has reviewed the prescriber's order and the patient's profile for potential contraindications and adverse drug reactions.

(2) Drugs that a prescriber has ordered for a patient on an as-needed basis, if the utilization and retrieval of those drugs are subject to ongoing review by a pharmacist.

(3) Drugs designed by the patient care policy committee or pharmaceutical service committee of the facility as emergency drugs or acute onset drugs. These drugs may

be retrieved from an automated drug delivery system pursuant to the order of a prescriber for emergency or immediate administration to a patient of the facility. Within 48 hours after retrieval under this paragraph, the case shall be reviewed by a pharmacist.

(f) When used to provide pharmacy services pursuant to Section 4119.1 of the Business and Professions Code, the automated drug delivery system shall be subject to all of the following requirements:

(1) Drugs removed from the automated drug delivery system for administration to a patient shall be in properly labeled units of administration containers or packages.

(2) A pharmacist shall review and approve all orders prior to a drug being removed from the automated drug delivery system for administration to a patient. The pharmacist shall review the prescriber's order and the patient's profile for potential contraindications and adverse drug reactions.

(3) The pharmacy providing services to the facility pursuant to Section 4119.1 of the Business and Professions Code shall control access to the drugs stored in the automated drug delivery system.

(4) Access to the automated drug delivery system shall be controlled and tracked using an identification or password system or biosensor.

(5) The automated drug delivery system shall make a complete and accurate record of all transactions that will include all users accessing the system and all drugs added to, or removed from, the system.

(6) After the pharmacist reviews the prescriber's order, access by licensed personnel to the automated drug delivery system shall be limited only to drugs ordered by the prescriber and reviewed by the pharmacist and that are specific to the patient. When the prescriber's order requires a dosage variation of the same drug, licensed personnel shall have access to the drug ordered for that scheduled time of administration.

(7) (A) Systems that allow licensed personnel to have access to multiple drugs and are not patient specific in their design, shall be allowed under this subdivision if those systems have electronic and mechanical safeguards in place to ensure that the drugs delivered to the patient are specific to that patient. Each facility using such an automated drug system shall notify the department in writing prior to the utilization of the system. The notification submitted to the department pursuant to this paragraph shall include, but is not limited to, information regarding system design, personnel with system access, and policies and procedures covering staff training, storage, and security, and the facility's administration of these types of systems.

(B) As part of its routine oversight of these facilities, the department shall review a facility's medication training, storage, and security, and its administration procedures related to its use of an automated drug delivery system to ensure that adequate staff training and safeguards are in place to make sure that the drugs delivered are appropriate for the patient. If the department determines that a facility is not in compliance with this section, the department may revoke its authorization to use automated drug delivery systems granted under subparagraph (A).

(g) The stocking of an automated drug delivery system shall be performed by a pharmacist. If the automated drug delivery system utilizes removable pockets, cards,

drawers, similar technology, or unit of use or single dose containers as defined by the United States Pharmacopoeia, the stocking system may be done outside of the facility and be delivered to the facility if all of the following conditions are met:

(1) The task of placing drugs into the removable pockets, cards, drawers, or unit of use or single dose containers is performed by a pharmacist, or by an intern pharmacist or a pharmacy technician working under the direct supervision of a pharmacist.

(2) The removable pockets, cards, drawers, or unit of use or single dose containers are transported between the pharmacy and the facility in a secure tamper-evident container.

(3) The facility, in conjunction with the pharmacy, has developed policies and procedures to ensure that the removable pockets, cards, drawers, or unit of use or single dose containers are properly placed into the automated drug delivery system.

(h) Review of the drugs contained within, and the operation and maintenance of, the automated drug delivery system shall be done in accordance with law and shall be the responsibility of the pharmacy. The review shall be conducted on a monthly basis by a pharmacist and shall include a physical inspection of the drugs in the automated drug delivery system, an inspection of the automated drug delivery system machine for cleanliness, and a review of all transaction records in order to verify the security and accountability of the system.

(i) Drugs dispensed from an automated drug delivery system that meets the requirements of this section shall not be subject to the labeling requirements of Section 4076 of the Business and Professions Code or Section 111480 of this code if the drugs to be placed into the automated drug delivery system are in unit dose packaging or unit of use and if the information required by Section 4076 of the Business and Professions Code and Section 111480 of this code is readily available at the time of drug administration. For purposes of this section, unit dose packaging includes blister pack cards.

(Amended by Stats. 2016, Ch. 484, Sec. 54. (SB 1193) Effective January 1, 2017.)

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: 340B Drug Pricing Program

SUMMARY

On Dec. 29, a federal district court granted the government's motion to dismiss a lawsuit brought by the American Hospital Association and others seeking to prevent the payment cuts to hospitals participating in the 340B Drug Pricing Program. The payment cuts consequently became effective Jan. 1, reducing Medicare payments by nearly 30 percent, or $1.6 billion, to certain hospitals for outpatient drugs purchased under the 340B program. CHA and 32 other state and regional hospital associations had submitted an amicus (friend of the court) brief supporting the plaintiffs' claims.

The lawsuit argues that the 340B provisions of the Centers for Medicare & Medicaid Services' outpatient prospective payment system final rule violate the law and, therefore, should be set aside under the Administrative Procedure Act as unlawful and exceeding the Health and Human Services Secretary's statutory authority. The judge dismissed the case without ruling on the merits and instead held that he lacked jurisdiction because the plaintiffs did not exhaust their administrative remedies by first presenting the Department of Health and Human Services with a concrete claim for reimbursement.

The American Hospital Association, the Association of American Medical Colleges and America's Essential Hospitals said they will continue to pursue the lawsuit following the district court's decision. The court's decision permits the groups to refile the lawsuit once the cuts go into effect.

The court's decision is attached. CHA will continue to support both legislative and regulatory efforts to roll back this policy. In the interim, CHA encourages hospitals to review the recently released frequently asked questions related to the application of the required modifiers that became effective Jan. 1. (See attached).

ACTION REQUESTED

- Encourage 340B hospitals to review the FAQ's related to the application of the required modifiers that became effective Jan.1, 2018.

DISCUSSION QUESTIONS

1. How many of you are affected?

ATTACHMENT: Billing 340B Modifiers under the Hospital Outpatient Prospective Payment System

BJB:br

December 13, 2017

Medicare-FFS Program

Billing 340B Modifiers under the Hospital Outpatient Prospective Payment System (OPPS)

Frequently Asked Questions

Overview: The purpose of this document is to address frequently asked questions about billing 340B-acquired drugs under the OPPS in Calendar Year (CY) 2018.

General

1. **What is Medicare's payment policy for 340B-acquired drugs provided by a hospital outpatient department?**

   Beginning January 1, 2018, Medicare pays an adjusted amount of the average sales price (ASP) minus 22.5 percent for certain separately payable drugs or biologicals (hereafter referred to as drug or drugs) that are acquired through the 340B Program and furnished to a Medicare beneficiary by a hospital paid under the OPPS that is not excepted from the payment adjustment policy. For purposes of this policy, "acquired through the 340B Program" means the drug was purchased at or below the 340B ceiling price from the manufacturer and includes 340B drugs purchased through the Prime Vendor Program (PVP).

   Medicare will continue to pay for separately payable drugs that were not acquired through the 340B Program and furnished by a hospital paid under the OPPS at ASP+6 percent.

   For CY 2018, CMS designated rural sole community hospitals (SCHs), children's hospitals, and PPS-exempt cancer hospitals are excepted from the 340B payment adjustment. For more details about which hospitals are designated as rural SCHs, please refer to Question 4.

2. **What modifiers did CMS establish to report 340B-acquired drugs?**

   CMS established two Healthcare Common Procedure Coding System (HCPCS) Level II modifiers to identify 340B-acquired drugs:

   - Modifier "**JG**" *Drug or biological acquired with 340B drug pricing program discount*.
   - Modifier "**TB**" *Drug or biological acquired with 340B drug pricing program discount, reported for informational purposes*.

   When applicable, providers are required to report either modifier "JG" or "TB" on OPPS claims (bill type 13X) beginning January 1, 2018. Though modifier "TB" is an informational modifier, reporting is mandatory for applicable providers. See Question 8 below for additional information about these modifiers.

3. **Are Critical Access Hospitals (CAHs) subject to the 340B payment policy? Should CAHs report the informational modifier "TB"? What about hospitals located in Maryland that are paid under a cost containment waiver?**

   No, CAHs are not subject to the 340B payment policy because CAHs are not paid under the OPPS. Neither modifier "JG" nor modifier "TB" is required to be reported by CAHs. However, CAHs have the option of reporting informational modifier TB on a voluntary basis for drugs that were acquired under the 340B Program.

   Likewise, hospitals paid under the Maryland waiver are excluded from the OPPS and are not subject to the payment policy change. These hospitals, as well as any other hospitals that are excluded from the OPPS, are similarly not required to report the JG modifier, but have the option to report the TB modifier on a voluntary basis.

4. **How does CMS define rural sole community hospitals (SCHs)?**

   Rural SCHs receive a 7.1 percent add-on adjustment under the OPPS. These providers either meet the definition of an SCH under the regulations at 42 CFR § 412.92 or are EACHs (essential access community hospitals), which are considered to be SCHs under section 1886(d)(5)(D)(iii)(III) of the Act, and that meet the definition in the regulations at 42 CFR § 412.109. These providers must also be located in a rural area, as defined under section 412.64(b) of the regulations, or be treated as being located in a rural area under section 412.10 of the regulations.

   If a provider is unsure of its status as a Rural SCH, it may check with its Medicare Administrative Contractor (MAC) or review the CY 2018 OPPS final rule impact file to determine whether the hospital is designated a rural SCH under the OPPS for CY 2018. Rural SCHs are defined in the impact file where Rural Sole Community and Essential Access Hospitals indicator flag is '1' [column D] and where Urban/Rural Geographic Location is 'rural' [column G]. The CY 2018 OPPS impact file is available at https://www.cms.gov/apps/ama/license.asp?file=/Medicare/Medicare-Fee-for-Service-Payment/HospitalOutpatientPPS/Downloads/CMS-1678-FC-2018-OPPS-FR-Facility-Specific-Impacts.zip.

5. **My hospital has a dual designation such that it is listed in the HRSA database as a disproportionate share hospital (DSH) but paid under the OPPS as a rural SCH. Which designation determines whether my hospital is excepted or not excepted from the 340B payment policy in CY 2018?**

   The Medicare hospital type designation determines applicability of the 340B drug payment adjustment, regardless of how the hospital is enrolled in the 340B Program. For example, a hospital enrolled in the 340B program as a DSH but paid under the OPPS as a rural SCH would be excepted from the 340B payment reduction in CY 2018 and would bill the informational modifier "TB" for each 340B-acquired drug furnished to a hospital outpatient.

6. Are non-excepted off-campus provider-based departments of hospitals required to report modifier "TB" for 340B-acquired drugs?

Yes. Non-excepted off-campus provider-based departments of hospitals that are participating in the 340B Program are required to report modifier "TB" for 340B-acquired drugs in addition to modifier "PN" (*Nonexcepted service provided at an off-campus, outpatient, provider-based department of a hospital*).

As stated in the CY 2018 OPPS/ASC final rule with comment, we intend to consider changes to the payment policy for 340B-acquired drugs furnished in non-excepted off-campus provider-based departments of hospitals in CY 2019 rulemaking.

7. Are hospital-owned retail pharmacies that bill 340B eligible claims under Part B impacted by the 340B payment policy?

No. The 340B payment policy adopted in the CY 2018 OPPS/ASC final rule with comment period applies to certain hospitals paid under the OPPS. Pharmacies do not bill under the OPPS and therefore are not affected by this policy.

8. Which hospital types should report the modifier "JG"? Modifier "TB"?

The following chart describes the modifier a hospital should report depending upon its hospital type and the pertinent OPPS drug status indicator (SI) for the 340B-acquired drug being furnished.

Hospital Type (determined by CMS)	**Pass-through Drug (SI "G")**	**Separately Payable Drug (SI "K")**	**Vaccine (SI "F" "L" or "M")**	**Packaged Drug (SI "N")**
Not Paid under OPPS				
CAH	TB, Optional	TB, Optional	N/A	TB or JG, Optional
Maryland Waiver Hospital	TB, Optional	TB, Optional	N/A	TB or JG, Optional
Non-Excepted Off-Campus PBD	TB	TB	N/A	TB or JG, Optional
Paid under the OPPS, Excepted from the 340B Payment Adjustment for 2018				
Children's Hospital	TB	TB	N/A	TB or JG, Optional
PPS-Exempt Cancer Hospital	TB	TB	N/A	TB or JG, Optional

Rural Sole Community Hospital	TB	TB	N/A	TB or JG, Optional
Paid under the OPPS, Subject to the 340B Payment Adjustment				
DSH Hospital	TB	JG	N/A	TB or JG, Optional
Medicare Dependent Hospital	TB	JG	N/A	TB or JG, Optional
Rural Referral Center	TB	JG	N/A	TB or JG, Optional
Non-Rural Sole Community Hospital	TB	JG	N/A	TB or JG, Optional

N/A= Not Applicable

Billing

9. To which drugs does the 340B payment adjustment apply? How can a provider identify a drug that must be billed with modifier "JG"?

Beginning January 1, 2018, the 340B payment adjustment applies to separately payable OPPS drugs (assigned status indicator "K") that meet the definition of "covered outpatient drug" as defined in the section 1927(k) of the Act and that are acquired through the 340B Program or through the 340B PVP, but does not apply to vaccines (assigned status indicator "F", "L" or "M") and does not apply to drugs on pass-through payment status (assigned status indicator "G").

Providers should refer to the quarterly update of Addendum B for a listing of drugs paid under the OPPS and their assigned status indicator. The Addendum B updates are posted quarterly to the CMS website at https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalOutpatientPPS/Addendum-A-and-Addendum-B-Updates.html.

The 340B payment reduction does not apply to OPPS separately payable drugs (assigned status indicator "K") that are not acquired through the 340B Program. This means that if a participating 340B hospital did not purchase a 340B eligible drug at a 340B discounted price, then the hospital should not bill the drug with modifiers "JG" or "TB".

10. Will CMS accept modifier "JG" on packaged drugs (i.e., status indicator "N" drugs)?

Yes. For administrative ease, providers may report modifier "JG" on packaged drugs (assigned status indicator "N") although such modifier will not result in a payment

adjustment. However, modifier "JG" is not required to be reported for these packaged drugs.

11. Are hospitals required to bill the informational modifier "TB" for pass-through drugs?

Yes. The use of informational modifier "TB" for pass-through drugs (assigned status indicator "G") acquired with a 340B discount is required by all hospitals except for CAHs and Maryland Waiver Hospitals.

12. How are providers to bill using the "JG" and "TB" modifiers on claims?

Each separately payable, non-pass through 340B-acquired drug should be billed on a separate claim line with the appropriate 340B modifier. The use of modifier "JG" will trigger a drug payment rate of ASP minus 22.5 percent. The use of modifier "TB" will have no effect on the drug payment rate.

For a claim with multiple drug lines, the appropriate 340B modifier is required on each line of a 340B-acquired drug. A 340B modifier is not required on claim lines of a non 340B-accquired drug (regardless of status indicator), a vaccine (assigned status indicator "F", "L" or "M"), or a packaged drug (assigned status indicator "N"), but could be appended if a hospital chooses.

13. How are providers to bill for the discarded drug amount on 340B-acquired drugs? How does this affect modifiers that are already required for off-campus departments of a hospital?

The discarded drug amount should be billed on a separate claim line with the JW modifier and the appropriate 340B modifier. Modifier "PO" or "PN" is also required if the 340B-acquired drug is furnished in an off-campus outpatient provider-based department of a hospital, in which case three modifiers will be reported on the drug HCPCS line. For example, a 340B-acquired drug (assigned status indicator "K") furnished in an excepted off-campus department of a hospital, would bill one claim line with the drug HCPCS code and modifiers "JG" and "PO", and another claim line with the drug HCPCS code and modifiers "JG", "JW", and "PO". As a reminder, when multiple modifiers are reported, providers should report pricing modifiers first followed by descriptive modifiers.

Please refer to the JW modifier FAQ document for more information available at https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalOutpatientPPS/Downloads/JW-Modifier-FAQs.pdf.

14. What happens if a provider inadvertently does not use the "JG" modifier on claims that include 340B-acquired drugs? What happens if a provider mistakenly reports modifier "JG" instead of "TB"?

Providers are advised that reporting modifier "JG" on a claim line with an OPPS separately payable drug HCPCS code (assigned status indicator "G" or "K") will trigger a payment adjustment of ASP minus 22.5 percent. It is the provider's responsibility to submit correctly coded claims. We note again that there is no circumstance under which a provider should report the "JG" modifier on a claim line with status indicator "G;" although the provider should use the informational modifier "TB" on claims for pass-through drugs.

Federal law permits Medicare to recover its erroneous payments. Medicare requires the return of any payment it erroneously paid as the primary payer. Providers are required to submit accurate claims, maintain current knowledge of Medicare billing policies, and ensure all documentation required to support the validity of the services reported on the claim is available upon request.

15. Do hospitals need to report a 340B modifier if the drug or biological was purchased at wholesale acquisition cost (WAC) but not through the 340B program at a discounted rate?

We recognize that not all covered outpatient drugs acquired by a 340B hospital are purchased through the 340B Program. Participating 340B hospitals are responsible for knowing whether a 340B eligible drug was obtained under the 340B Program and for maintaining documentation. As discussed in Question 9 above, a 340B modifier is not required for a 340B-eligible drug that was not purchased under the 340B Program.

16. My hospital is unable to upgrade its billing software by January 1, 2018 to include modifiers "JG" and "TB" and because of cash flow concerns cannot hold claims. What recourse do I have?

Under section 1835(a) of the Act, providers have 12 months after the date of service to timely file a claim for payment. If a hospital believes that it will not be able to properly identify and bill accurately for 340B acquired drugs, it should contact its MAC to discuss whether holding claims or rebilling claims may be an option. Again, hospitals are required to be in compliance with all applicable 340B Program requirements and Medicare billing requirements.

17. How are providers to bill the 340B modifiers for drugs administered to dual-eligible beneficiaries? Is the "UD" modifier required for Medicaid?

When Medicare is either the primary or secondary payer, the appropriate 340B modifier is required in accordance with the OPPS 340B payment policy. Because Medicaid billing requirements vary by state, providers should contact the applicable State Medicaid Program for guidance on billing 340B drugs. Normal CMS policy and procedures and trading partner agreement requirements for coordination of benefits (COB) claims will be followed.

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

January 10, 2017

TO: CHA Medication Safety Committee

FROM: Debby Rogers, RN, MS, FAEN, Vice President, Clinical Performance and Transformation

SUBJECT: An Opportunity to Enhance Antibiotic Stewardship Programs

CDPH Health Care Associated Infection Supporting NHSN AU Module

California law requires hospitals to adopt and implement an antimicrobial stewardship policy in accordance with guidelines established by the federal government and professional organizations. The CDC Core Elements of Hospital Antibiotic Stewardship Programs recommend tracking antibiotic use to identify opportunities for improvement and assess the impact of antimicrobial stewardship efforts. The Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) supports an Antibiotic Use (AU) surveillance option to provide a mechanism for hospitals to track and analyze their antibiotic use data and compare to other U.S. hospitals. Benchmarking to national risk-adjusted data has been helpful in reducing hospital-acquired infections and may play an important role in antimicrobial stewardship.

To provide support to California hospitals for meeting this mandate, the California Department of Public Health (CDPH) Healthcare-Associated Infections (HAI) Program is offering health informatics technical assistance and training to hospitals interested in implementing the NHSN AU option. To learn more about available resources, please email the HAI Program at haiprogram@cdph.ca.gov.

DR:br

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Advanced Pharm Tech Role

SUMMARY

CHA has been asked to comment on identifying duties that a specifically trained and licensed advanced practice technician could perform in inpatient facilities and other health system environments. These would be duties they are unable to perform now. The Board of Pharmacy is contemplating legislation to create a classification of advanced practice technician in both community and health systems pharmacies to identify qualifications for those individuals, and to identify specific duties they would be authorized to perform. These items will be discussed at the Jan 16 Board of Pharmacy Licensing Committee Meeting.

Some suggestions:

- Medication storage area inspections

- Inspections of Emergency medications (e.g. crash carts)

- Oversight of unit-dose packaging of non-sterile, non-controlled Medications (This could be part of tech-check-tech program for hospitals with Clinical pharmacy services).

- Sterile compounding quality assurance program oversight (Serving as a designee of PIC). Duties including but not limited to environmental sampling, record keeping, staff training.

ACTION REQUESTED

- Committee Discussion

DISCUSSION QUESTIONS

1. What is the role of the Pharm Tech now?
2. Are they licensed or certified? And where are the regulations?
3. Why is this necessary?
4. What is the cost quality benefit?

BJB:br

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: AHA Leadership Summit

SUMMARY

Sarah Stephens, Kathy Ghomeshi and Rita Shane submitted abstracts to the AHA July Leadership Summit.

Rita submitted on Medication Lists/Reconciliation and Sarah and Kathy submitted on the California Sterile Compounding process.

ACTION REQUESTED

- Committee Information

BJB:br

CALIFORNIA HOSPITAL ASSOCIATION

Providing Leadership in Health Policy and Advocacy

DATE: January 10, 2018

TO: Medication Safety Committee Members

FROM: BJ Bartleson, MS, RN, NEA-BC, Vice President, Nursing & Clinical Services

SUBJECT: Emergency Regulation for Compounded Drug Preparations

SUMMARY

The Board of Pharmacy announces the adoption of an emergency regulation related to establishing beyond use dates (BUDs) for compounded drug preparations. The regulation took effect Dec. 19, 2017, and will remain in effect for 180 days. It will expire on June 19, 2018.

The emergency regulation amends section 1735.2, subdivision (i), of Article 4.5 of Division 17 of Title 16 of the California Code of Regulations. The emergency rule allows for an extension of BUDs of nonsterile compounded drug preparations. It also makes clear that stability studies and suitability and integrity tests are required to extend the BUDs only for sterile compounded drug preparations.

During the 180-day period of the emergency regulation, the board will proceed with a regular rulemaking action for compounding drug preparations. The regular rulemaking process will include a public comment period. Additional information about the regular rulemaking process will be posted under Pending Regulations at the board's website.

ACTION REQUESTED

- Committee Discussion

ATTACHMENT: Board of Pharmacy – 1735.2 Compounding Limitations and Requirements; Self-Assessment

BJB:br

Title 16. Board of Pharmacy

Changes made to the current regulation language are shown by strikethrough for deleted language and underline for added language. Additionally, [Brackets] indicates language that is not being amended.

Amend section 1735.2, subdivision (i) in Article 4.5 of Division 17 of Title 16 California Code of Regulations to read as follows:

1735.2. Compounding Limitations and Requirements; Self-Assessment.

[…..]

(i) Every compounded drug preparation shall be given beyond use date representing the date or date and time beyond which the compounded drug preparation should not be used, stored, transported or administered, and determined based on the professional judgment of the pharmacist performing or supervising the compounding.

(1) For non-sterile compounded drug preparation(s), the beyond use date shall not exceed any of the following:

(A) the shortest expiration date or beyond use date of any ingredient in the compounded drug preparation,

(B) the chemical stability of any one ingredient in the compounded drug preparation~~;~~ ~~,~~

(C) the chemical stability of the combination of all ingredients in the compounded drug preparation,

(D) ~~180 days~~ for non-aqueous formulations, 180 days or an extended date established by the pharmacist's research, analysis, and documentation,

(E) ~~14 days~~ for water-containing oral formulations, 14 days or an extended date established by the pharmacist's research, analysis, and documentation, and

(F) ~~30 days~~ for water-containing topical/dermal and mucosal liquid and semisolid formulations, 30 days or an extended date established by the pharmacist's research, analysis, and documentation.

(G) A pharmacist, using his or her professional judgment may establish an extended date as provided in (D), (E), and (F), if the pharmacist researches by consulting and applying drug-specific and general stability documentation and literature; analyzes such documentation and literature as well as the other factors set forth in this subdivision, and maintains documentation of the research, analysis and conclusion. The factors the pharmacist must analyze include:

(i) the nature of the drug and its degradation mechanism,

(ii) the dosage form and its components,

(iii) the potential for microbial proliferation in the preparation,

(iv) the container in which it is packaged,

(v) the expected storage conditions, and

(vi) the intended duration of therapy.

Documentation of the pharmacist's research and analysis supporting an extension must be maintained in a readily retrievable format as part of the master formula.

(2) For sterile compounded drug preparations, the beyond use date shall not exceed any of the following:
  (A) The shortest expiration date or beyond use date of any ingredient in the sterile compounded drug product preparation,
  (B) The chemical stability of any one ingredient in the sterile compounded drug preparation,
  (C) The chemical stability of the combination of all ingredients in the sterile compounded drug preparation, and
  (D) The beyond use date assigned for sterility in section 1751.8.

(3) For sterile compounded drug preparations, ~~E~~ extension of a beyond use date is only allowable when supported by the following:
  (A) Method Suitability Test,
  (B) Container Closure Integrity Test, and
  (C) Stability Studies

(4) In addition to the requirements of paragraph three (3), the drugs or compounded drug preparations tested and studied shall be identical in ingredients, specific and essential compounding steps, quality reviews, and packaging as the finished drug or compounded drug preparation.

(5) Shorter dating than set forth in this subsection may be used if it is deemed appropriate in the professional judgment of the responsible pharmacist.

[…..]

Authority cited: Sections 4005 and 4127, Business and Professions Code. Reference: Sections 4005, 4036, 4037, 4051, 4052~~,~~ and 4127, Business and Professions Code.

caused by compounded drugs is preventable, and the implementation of higher production standards (such as CGMP standards for outsourcing facilities and revised U.S. Pharmacopeia standards, once finalized, for other compounding pharmacies) will be essential to reducing harm associated with pharmaceutical compounding. All stakeholders have a role to play, including regulatory agencies such as the FDA and state boards of pharmacy, outsourcing facilities and other compounding pharmacies, and health care practitioners and systems that will need to make informed choices about prescribing and purchasing compounded drugs. Five years after the tragic fungal meningitis outbreak is a good time to reinvigorate efforts to ensure that the compounded drugs given to patients who need them are made in facilities that are held to appropriate production standards.

Disclosure forms provided by the authors are available at NEJM.org.

From the Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD.

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5. Guidance for industry: current good manufacturing practice — interim guidance for human drug compounding outsourcing facilities under section 503B of the FD&C Act (https://www.fda.gov/downloads/drugs/guidancecomplianceregulatoryinformation/guidances/ucm403496.pdf).

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Emergency Legal Authority and the Opioid Crisis

Lainie Rutkow, J.D., Ph.D., M.P.H., and Jon S. Vernick, J.D., M.P.H.

Opioid-overdose deaths in the United States have steadily increased for the past 15 years, with more than 33,000 such deaths reported in 2015.[1] The epidemic is unfolding on two fronts: use of prescription opioid pain relievers (OPRs) accounts for approximately half of opioid-overdose deaths, and deaths from heroin and synthetic opioids such as fentanyl, obtained illicitly, have increased dramatically during the past 5 years.

In the face of this public health crisis, various policies have been enacted — particularly at the state level — often to address OPR prescribing and limit opportunities for OPR diversion. For example, all 50 states have established prescription drug monitoring programs (PDMPs) that collect information about individuals' prescription-drug history in an electronic database. Eleven states have laws regulating pain-management clinics,[2] and several states have enacted laws to limit the dosage or duration of OPR prescriptions.

Recently, six states have taken the unusual step of using their legal authority to declare their opioid-overdose situation an emergency. When a government issues an emergency declaration, it can temporarily act to mitigate the emergency using powers and resources that might not otherwise be available to it. Typically, emergency declarations pertain to natural disasters or infectious disease outbreaks. The severity of the opioid-overdose crisis has led to some of the first emergency declarations for a noncommunicable health condition, though their impact remains unclear.

In July 2017, the President's Commission on Combating Drug Addiction and the Opioid Crisis called for a national declaration of emergency.[3] In its preliminary report, the commission stated that issuing such a declaration was its "first and most urgent recommendation," since doing so would potentially provide the impetus for the federal government's executive and legislative branches to respond to the crisis with additional resources and policies. On October 26, 2017, President Donald Trump directed the acting secretary of health

and human services to declare the opioid crisis a national public health emergency under the federal Public Health Services Act. The President has declined to declare a separate national emergency under a different federal law, the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

As the federal government determines the specific actions that will follow its declaration, and more individual states consider issuing their own emergency declarations, policymakers, health care providers, and emergency managers can learn from aspects of the state emergency declarations that have already been issued. Though the scope of these declarations has been limited, they could suggest helpful, additional responses to multiple facets of the crisis (e.g., problematic OPR prescribing and opioid use disorders), especially if emergency powers are used in new and innovative ways.

Every state has the legal authority to declare an emergency, disaster, or public health emergency, which are functionally similar.[4] State laws specify how these legal declarations are made, most often through an executive order issued by the governor, though some states use other mechanisms (e.g., a statement from the health commissioner). Many local governments have analogous systems in place.

Once an emergency declaration has been issued, a state government can take actions that are available only for the duration of the emergency. These declarations and their accompanying powers give states flexibility to respond to exigent circumstances, including by reallocating state funds, managing property, and mandating collaboration among public health and law-enforcement agencies.[5] Emergency declarations often facilitate coordination with other jurisdictions — including the federal government and other state governments — allowing the affected state to draw on human, financial, or other resources. Of course, any use of emergency powers must be balanced by respect for individuals' civil liberties and implemented with appropriate safeguards, including application of due process for anyone affected by the exercise of these powers.

The six state emergency declarations focused on opioid use are summarized in the table. In 2014, shortly after the Food and Drug Administration approved Zohydro, an extended-release opioid, Massachusetts declared the first opioid-related emergency. Virginia followed in 2016. In 2017, Alaska, Arizona, Florida, and Maryland issued emergency declarations, with Alaska and Maryland explicitly citing concerns about synthetic opioids such as fentanyl.

Five of the six declarations seek to improve access to the opioid antagonist naloxone, either through education and training (e.g., teaching law-enforcement officers to administer it) or through a standing order to allow pharmacists to dispense it without an individual prescription. The Arizona and Massachusetts declarations explicitly address opioid-prescribing practices, through the development of prescribing guidelines, regulations, or requirements for PDMP use.

Although the effects of these declarations are difficult to measure, it appears that their primary effect has been to communicate the severity of the opioid crisis to the public and improve naloxone access or awareness. These outcomes are important, but emergency declarations should be only a first step in facilitating other responses to mitigate the emergency. States can capitalize on the opportunity provided by these declarations to undertake innovative legal responses.

Perhaps the most immediate effect of an emergency declaration is to raise the public profile of an issue. By declaring that opioid-related morbidity and mortality constitute an emergency, government leaders can inform the public about the nature of the crisis. For example, emergency declarations provide an opportunity to frame the opioid crisis as a public health problem that affects communities and thus requires population-level solutions.

But beyond communicating, emergency declarations should facilitate measured, pragmatic actions to mitigate the emergency. State governments could use an emergency declaration to take concrete steps to address opioid use disorders. For example, using emergency legal powers, states could expand access to evidence-based medication-assisted treatment (MAT), such as buprenorphine therapy, through their Medicaid program. States vary in the extent to which they support MAT through Medicaid, and access could be improved by minimizing prior-authorization requirements or removing lifetime limits for MAT.

For expanded MAT access to be meaningful, providers must be trained in it. As part of an emergency declaration, states could enhance training opportunities for providers in conjunction with their

Opioid-Related Emergency Declarations by State.*

Date	State	Issued by	Duration (days)	Explicitly Promotes Access to Naloxone	Explicitly Addresses Opioid Prescribing	Mentions Synthetic Opioids
March 27, 2014	Massachusetts	Governor	Subject to governor's discretion	Yes	Yes	No
Nov. 21, 2016	Virginia	Health commissioner	None specified	Yes	No	No
Feb. 14, 2017	Alaska	Governor	30	Yes	No	Yes
March 1, 2017	Maryland	Governor	30	No	No	Yes
May 3, 2017	Florida	Governor	60	Yes	No	No
June 5, 2017	Arizona	Governor	90	Yes	Yes	No

* The portion of the Massachusetts declaration that prohibited prescribing of hydrocodone-only medications was enjoined by a U.S. district court in 2014. The governor of Maryland extended that state's declaration by an additional 30 days.

state medical licensing board or through continuing medical education. In addition, emergency powers could be used to temporarily waive state-specific licensure requirements for certain types of health care providers, allowing addiction medicine specialists to deploy to areas in greatest need of immediate MAT services.

Continued efforts to ease access to naloxone are critical, as demonstrated by the near-universal focus on naloxone in the extant opioid-related state emergency declarations. In particular, naloxone access and training for laypeople should be prioritized. By issuing a standing order in conjunction with an emergency declaration, states can allow pharmacists to dispense naloxone to people who have not previously obtained a prescription for it. With an emergency declaration, states can also allocate funds for community-based training in naloxone administration for laypeople or for the purchase of naloxone for distribution to schools or other state facilities.

An audio interview with Dr. Rutkow is available at NEJM.org

Although opioid-related morbidity and mortality present a public health challenge different from those in previously declared emergencies, the same underlying principles apply, including the need for due process, ongoing review, and other legal safeguards for vulnerable groups. The recent federal emergency declaration will supplement, not replace, state declarations. Federal emergency powers have the potential to cover different actions, such as deployment of providers from the Public Health Service or steps to reduce the price of key medications, including naloxone. For now, however, the front line of emergency response to the opioid epidemic remains the states. Emergency declarations are one tool that states can use as part of a multifaceted prevention and mitigation effort.

Disclosure forms provided by the authors are available at NEJM.org.

From the Department of Health Policy and Management and the Center for Injury Research and Policy, Johns Hopkins Bloomberg School of Public Health, Baltimore.

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HOSPITALS & HEALTH NETWORKS

ELEVATING THE PHARMACIST AS A STRATEGIC ASSET

In value-based care models, spurring greater physician-pharmacist collaboration can improve safety, cut costs, improve outcomes and provide a better patient experience.

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ELEVATING THE PHARMACIST AS A STRATEGIC ASSET

Provide a better patient experience

As hospitals and health systems continue with the transition toward value-based care, leveraging pharmacy as a strategic asset can help to enhance patient engagement, improve quality and outcomes, and reduce costs. As key members of the clinical team, pharmacists ensure advanced medication management, and collaborate with patients and families, primary care providers and community pharmacists to ensure smooth transitions from the inpatient setting. The American Hospital Association's Health Forum convened a group of hospital executives to explore the evolving roles of hospital and health system pharmacists. This panel highlights pharmacists' roles across the continuum of care and how they are helping to improve organizational sustainability and enhance patient care.

MODERATOR *(Bob Kehoe, American Hospital Association):* **How is pharmacy supporting value-based care delivery in your organizations today?**

PATRICE WEISS, M.D. *(Carilion Clinic):* The key to what we're doing is that the pharmacist assists physicians in developing a drug formulary that's both cost effective and evidence-based. We no longer just view pharmacists as dispensing medications. They're part of our clinical team. It's worked and they enjoy it. We're building that camaraderie where now you know the pharmacists and think nothing of picking up the phone and interacting with them.

We have pharmacists embedded in our emergency department, in surgery, as well as decentralized pharmacists who round daily with our physicians. We've incorporated pharmacists into our daily huddles and with many of our clinical teams because we realize their expertise is needed. We know that their role in both the clinical setting and medical homes is essential for care across the continuum. Pharmacists also aid in discharge planning and reducing readmissions.

PATRICK McGILL, M.D. *(Community Health Network):* We do all the things that Patrice described, but we have found that in a value-based world, a large portion of this is done in the ambulatory space. We have 20 pharmacists embedded in various clinics, based on the population or the panel size of the clinic. We try to get patients to discharge planning and to see the pharmacist in either the transitional care visit or when they come out of the hospital.

We've deployed pharmacists to perform annual wellness visits, including the Medicare annual wellness visit. Medicare says this visit can be done by any licensed professional, so we use residency-trained pharmacists. We started doing that because we found that 75 to 80 percent of the issues that come up in an annual wellness visit are medication-related – either cost, adherence, etc. – so, who better to manage that than the pharmacist? Pharmacists needed some training on the other aspects of an annual wellness visit – specifically, the risk-acuity coding and other areas, but that was an easy lift compared with training others on the medication aspect.

We also use pharmacists as physician extenders. In their treatment protocols, they manage diabetes, hypertension, cholesterol and asthma. In some cases, they run their own schedule in partnership with the physician. And we've found that pharmacists' outcomes, especially in diabetes management, are better than those of the physicians.

Finally, the pharmacist in the ambulatory space will hold Medicare Part D education sessions, which are free to the patient. The pharmacist can do an individual assessment with the patient to help him or her figure out which is the best plan for the conditions they have and the medications they need. Those sessions have been hugely successful. I heard a calculation yesterday that this has saved $1 million to $1.5 million out of patients' pockets for getting a more efficient, more comprehensive plan.

SUSAN HERMAN *(Adventist Health):* In California, we have advanced practice pharmacists. In the ambulatory space in our oncology clinic, we have a pharmacy practitioner who sees patients after the doctor has visited with them. In a complicated case, the doctor may spend 10 or 20 minutes with the patient and then a pharmacist will spend another 30 minutes with the patient. That's been a successful model.

GENTRY HUGHES *(Comprehensive Pharmacy Services):* Are either of you getting reimbursed for any of those visits?

HERMAN: No, we do not.

McGILL: Yes, the pharmacists bill independently for the wellness visit. If it's diabetes management, or if we use them in oncology as well, then they'll usually bill one or two visits depending on the situation. That's about all you can justify by the pharmacist because of the physical exam aspects that are needed for coding.

"Over the last three to five years, it's really been about how pharmacists assist with transitions in care and how we assist in the clinics."

– Greg Teale,
Saint Luke's Health System

GREG TEALE *(Saint Luke's Health System):* At St. Luke's, some sites are partnering with pharmacists to come in for 20 minutes of a 30-minute visit and will discuss what was learned with the provider, and then the provider will determine whether he or she agrees with the plan.

We've seen a shift from a focus on acute care. Over the last three to five years, it's really been about how pharmacists assist with transitions in care and how we assist in the clinics. The biggest obstacle is trying to figure out how you can get integrated in the clinic with the providers to deliver that assistance. We are starting to get pharmacists in the clinics, primarily led through our specialty pharmacy. And since we have a return on investment with specialty, then you can get into certain areas – oncology, hepatology, dermatology, etc. Then you show that value in the clinic, not having to necessarily bill for those services. Once you show the value, then you can work into other areas.

McGILL: That's difficult to do. In the ambulatory space, showing value is a barrier. At Community, we're still primarily fee for service even though we have a few managed contracts. We're in a Medicare Shared Savings Program. Pharmacists are the

"In the ambulatory space, showing value is a barrier."

– Patrick McGill, M.D.,
Community Health Network

most expensive ancillary service provider, so how do you show return on investment? We have this discussion frequently with our CFO and our financial and administrative folks. They're looking at revenue and expense, and it's hard to demonstrate ROI in value-based contracts.

HUGHES: It's about utilization, right? If they're only 50 to 60 percent utilized for that type of service, then you're going to get challenged. We see a lot of our clients looking at remote pharmacy solutions for these types of things – medication reconciliation, discharge planning and counseling. Then you're able to do that on an episodic basis, and you're getting 100 percent utilization out of the costs that you've applied to that effort. It's something to consider. You're talking about an expensive asset and it is difficult to show the direct return on it.

TAMMY HUSTER *(Virtua Health):* We partner with our pharmacists during progressions rounds. A significant benefit, since we initiated this partnership a little over a year ago, was looking closely at a patient's medication reconciliation to see how we could reduce our readmission rates. Through this process we found issues with accuracy and thoroughness, and now follow-up can be conducted throughout the course of their admission. That has been extremely beneficial. We've noted a reduction in our readmissions. Now, there's a much more collaborative relationship between our nursing staff and the pharmacists. That's where our value is.

SHEENA FERGUSON, R.N. *(University of New Mexico Hospitals):* We've seen that getting patients to a steady state through therapeutic targets significantly improves when we have pharmacists dedicated to that purpose. Our pharmacists are an integral part of our antibiotic stewardship initiatives and that extends to the outpatient setting.

A major focus for us has been on venous thromboembolusm and pulmonary embolism and getting to those steady states and targets quickly. It has been good for us to have the pharmacist there. Some other areas in which we really excelled by having a pharmacist on the team is documentation and making sure that it is coded correctly. Our pharmacists also do a significant amount of patient education so they understand the goals and why you're trying to get there. That's been invaluable.

JIM WEST *(PIH Health):* We're doing a lot of what everybody else is doing, but we're nowhere near as developed on the ambulatory side. Our pharmacists set up our coumadin clinic, but then we handed it over to a physician assistant for billing reasons. We're hoping that California gives pharmacists provider status, which would allow us to do a lot more.

About 20 percent of our business is capitated, and we have our own self-insured employee plan. Our chief medical officer runs our self-insured plan, along with our past pharmacy manager. Our focus is to

move people out to our home health agency, and patients have a lot of conversations with our clinical pharmacists to keep them from being readmitted.

We've done a lot of work around benefit design to keep our employees on the right meds at the lowest cost and to keep them out of the hospital. We were just told that we're about 20 percent below the benchmark in cost per member because of that. All of the work Pat's been doing on the ambulatory side makes sense. Economically in California, it's not feasible right now to stay in business and do it. And we do not have enough global-risk contracts to make it of value, but I think it's coming.

MODERATOR: How are your pharmacists working with patients to improve outcomes, particularly in those with complex diseases?

HERMAN: One of the things we do to prevent readmissions is to assign pharmacists to each of the units. We also started Meds-to-Beds so that our pharmacists work with outside pharmacies for outpatient drugs. If drugs come to the patient while they're in the hospital, then the pharmacist engages in discharge planning and education. Pharmacists make sure that patients understand

"Pharmacists make sure that patients understand their medications and that they have them in their hands, because readmissions come from people not adhering to their medication regimens."
– Susan Herman, Adventist Health

their medications and that they have them in their hands, because readmissions come from people not adhering to their medication regimens. In our community, transportation is often a problem, so we thought, "Let's bring the drugs to the patients." This is part of Meds-to-Beds. Upon discharge, the pharmacists place follow-up calls to patients to make sure they're taking their medications and to see if they have any questions. There's a lot of patient-centeredness activity going on to make sure patients – especially those with complex conditions – understand their medications.

McGILL: For our value-based contracts, we partner with a team. It's a three-party joint venture called Care Navigation. These teams interact with the top 5 percent of complex patients, and pharmacy is a member of that team. When patients come in for care navigation or chronic care management, they see a pharmacist for the first visit, along with a nurse and social worker, and a dietitian if necessary. If there are other pharmacy issues, then the patient will continue with the pharmacist afterward.

HUSTER: Our patients are afforded the opportunity to have their medications filled by a retail pharmacy prior to being discharged. It's been a great help to our patients. When the medications are delivered directly to the bedside, the pharmacist reviews the medications with the patient who has the opportunity to ask questions. And then on discharge, the nurses can reinforce what the pharmacist previously covered with the patient.

WEST: We have a partnership agreement with a health plan called CareMore that provides physician extensivists to help keep patients out of the hospital post-discharge. Upon discharge, patients go to a multidisciplinary clinic for follow-up care and interact with pharmacists there. CareMore essentially micromanages the patient population to make sure they get their visits. We've done a little of that ourselves and it works well. It keeps patient bed days per thousand in the low 800s, which is pretty spectacular for a very sick senior population. CareMore does a lot of the pharmaceutical protocols from a corporate level because the resources are hard to come by.

TEALE: All of these efforts make the most of our resources. We have the same pharmacists taking care of acute care patients and then transitioning them to the ambulatory setting. It's using the electronic health record to identify at-risk patients and developing post-acute solutions.

FERGUSON: In terms of programs that span the continuum, we have that in some of our high-risk populations, but not for everybody. The number of folks that never fill prescriptions is shocking. It's been really nice when we've had that acute-to-clinic span on some of the more complicated disease conditions.

WEST: That's a really important point. One of the things we've found is that patients aren't filling prescriptions because of cost. Through our work with CareMore, we found that our endocrinologists were prescribing the higher-cost insulins, and they didn't recognize the challenges that this may cause patients. There is a financial aspect. Health plans don't see that they might be setting up benefits in a way that preclude people from being able to afford their medications, and it's costing them on the back end on readmissions, extended hospital days or ED visits. It's a big problem that needs to be solved.

"The number of folks that never fill prescriptions is shocking. It's been really nice when we've had that acute-to-clinic span on some of the more complicated disease conditions."

– Sheena Ferguson, R.N., University of New Mexico Hospitals

"One of the things we've found is that patients aren't filling prescriptions because of cost."

– Jim West, PIH Health

WEISS: It's challenging in many areas of medicine to be able to truly tie and correlate an intervention to a direct clinical outcome. In all of our institutions, we think we can make a difference through certain interventions. In one area we've seen this by incorporating pharmacists into the continuum of care, particularly in those high-risk patients with hypertension or diabetes that's hard to control. By having pharmacists involved in that continuum, they can begin to understand each person's daily living activities at home and help with therapeutic adjustments.

HUGHES: A lot of this discussion has been about discharge planning, ambulatory care and starting to follow a patient further downstream in the continuum. What we see with many clients is that these are additive services for an already slim and diluted pharmacy staff. So, I think you must be a little more highly evolved when you say, "we've got it" from an acute care perspective, because many health systems still haven't completely figured it out due to challenges in recruiting pharmacists.

We see this push to try to move from production – dispensing medications – to a stronger, clinically oriented pharmacy department. There is an opportunity to look at adding resources, particularly clinical resources, and do that in a risk-type environment.

"We see this push to try to move from production – dispensing medications – to a stronger, clinically oriented pharmacy department."

– Gentry Hughes, Comprehensive Pharmacy Services

MODERATOR: How are you facilitating collaboration among physicians and pharmacists to build consensus around standardized pharmacy care and drug optimization?

HERMAN: Physicians work with pharmacists on what drugs should be in the order sets. There are also guidelines and protocols for the best drugs for some of the complex, chronic conditions. Antibiotic stewardship is a huge piece, and we extend into the community as well. We have a collaborative in our community to talk about antibiotic stewardship as a city and as a community concern.

WEISS: We're incorporating pharmacists into rounds and across the continuum of care. The other thing we've done is to put the appropriate pharmacists on selected committees. We ensure that there are providers on the committees as well so that the two groups are constantly interfacing. We also put into place a systemwide pharmacy and therapeutics committee covering our seven hospitals.

We actively engage the pharmacists in our order sets, our protocols and use evidence-based medicine. It's really about having multidisciplinary conversations and multidisciplinary communication and

"We actively engage the pharmacists in our order sets, our protocols and use evidence-based medicine."

- Patrice Weiss, M.D., Carilion Clinic

getting the right people at the table where things aren't being siloed by a physician or nurse but truly having a mixed group around the table.

HUGHES: I see a lot of upfront collaboration in developing and building the order sets. My question is, what about the collaboration in terms of adhering to what's in the order set? What we see in terms of the challenge with our clients is they did all this work and invested millions and millions of dollars in time and infrastructure and development, but then you start to veer away from adhering and complying to what's in the order set.

TEALE: That's something that we struggle with. Who holds the provider accountable for following the order set? What's the escalation plan? We're trying to map that out right now through our system pharmacy and therapeutics committee. We have nine pillars with nine different individuals who are in charge. If an oncologist goes outside of an order set and is not working with the pharmacists, who does that route to so that you have a provider-to-provider conversation rather than one from a pharmacist to provider?

WEISS: That's where physician leadership is key. We're an integrated clinic system, and we pride ourselves on physician leadership, whether it be that person's division chief, section chief or department chair. Clearly, we need buy-in at the top to adhere to these standards. And if there is a reason not to adhere, it had better be a good reason. There is a process, and physicians must effectively demonstrate the need before we go outside of the order set. Physicians need to hold physicians accountable. It's not fair to put other people in that spot.

HUSTER: We've had success in implementing our orthopedic order set. It's helped with other initiatives by being able to show success among a group of surgeons from our joint-replacement institute, showing how they are following a really concise set of instructions for their patients and the medications

"Having our pharmacist at various meetings, such as with our divisional surgical leadership, generates good dialogue, which helps."
- Tammy Huster, Virtua Health

that those patients will be taking. We're slowly being able to extend that into other areas, like urology. To the point about the pharmacy and therapeutics committee, I think that's one thing that we do really well. We have a collaborative group that holds active discussions, and they often debate about the medications that we are trying to implement and the benefits of certain medications.

Having our pharmacist at various meetings, such as with our divisional surgical leadership, generates good dialogue, which helps. These meetings are well-attended by our orthopedic surgeons. But now, we are seeing greater attendance by those from other surgical specialties, such as bariatrics, general surgery and urology. Being able to share the success is gaining interest and will lead to sustainability.

MODERATOR: Are you considering a strategy or have you already crafted one to manage specialty pharmaceuticals in your organization?

FERGUSON: As an academic medical center, we have internships or residencies that give students an opportunity to see if they're interested in a specialty area that they may not have been attracted to otherwise. When they have these great clinical experiences, they see an amazing team and realize how satisfying that it could be, and that we're developing the next group of people who may want to be part of that specialty. And that includes the physicians, who have done that for a while in their rotations. We've also done that with advanced practice nurses and with pharmacy residencies or pharmacy internships in specialty areas. That's worked really well for us. Again, if teams are going lead the way, we're going to have better outcomes.

WEST: We have a partnership agreement with the University of Southern California. It has a specialty pharmacy and we're looking to USC to help us. USC has a strong pharmacy presence and a good pharmacy program. Their residents have always come to our hospital, so that's our approach.

TEALE: About three years ago, we started to work on this with our employee plan through our retail pharmacies. We opened our specialty pharmacy in September 2016 that focused on oncology and hepatology. We've got a big cardiology group, so we're looking at some initiatives in that area. I'm pretty passionate about this because the three big pharmacy benefit-management companies control this market. And I see that these are our patients and there needs to be continuity of care. We're all talking about transitions of care. How does that translate with taking large, expensive drugs and outsourcing their management to somebody in Florida or New York or wherever the big specialty pharmacies are. The only reason that it's set up that way is because of the cost. From a patient care perspective, it's not there. There has to be a better way.

HUGHES: This is a hot topic right now across the country. I don't walk into a single meeting in a C-suite where this doesn't come up. There's a tremendous lack of awareness and understanding of specialty pharmacy. In the C-suite, for those who are making these decisions, it's incredibly complex. But Greg hit on the most important part. We sit here and talk about value-based care, managing a patient across the entire care continuum. You're effectively handing over this patient to a third party when you as a health system are in the absolute epicenter and should be the one managing this clinical episode with a, generally, high-cost patient.

KEY FINDINGS

1. **Identifying ways to foster greater collaboration among pharmacists and clinical teams in both the acute care and ambulatory settings can improve results throughout the care continuum, including discharge planning, medication reconciliation and reducing readmissions.**

2. **Although there are complex factors to consider, there is great value in taking the time and devoting the resources to developing and implementing a specialty pharmacy strategy. Executive leadership and involvement in this process is a critical success factor.**

3. **Pharmacists can play a valuable role in helping patients understand their medication regimens and the goals of the overall treatment plans. Likewise, pharmacists can extend value to the clinical team by helping patients with chronic conditions to understand which coverage plans may be the best choice from both a cost and value perspective.**

4. **Facilitating collaboration among physicians and pharmacists to build consensus around standardized pharmacy care and drug optimization can lead to improved outcomes and improved levels of patient engagement.**

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Perspective

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Toward Better-Quality Compounded Drugs — An Update from the FDA

Janet Woodcock, M.D., and Julie Dohm, J.D., Ph.D.

Five years ago, methylprednisolone acetate and other drugs compounded by the New England Compounding Center (NECC; Framingham, Mass.) and administered to patients throughout the United States caused a fungal meningitis outbreak involving more than 750 infections and at least 64 deaths. The extent of this episode drew widespread attention, but smaller clusters of infections and other adverse events caused by contaminated or otherwise improperly made drugs compounded by various U.S. pharmacies occurred before this outbreak and continue to occur. In 2013, in the wake of the NECC case, Congress passed the Drug Quality and Security Act, which created a new category of compounder, called an "outsourcing facility," that is held to higher production standards than other compounding facilities. Our experiences at the Food and Drug Administration (FDA) with pharmacy compounding since the passage of this law reinforce the ongoing need to improve the quality of compounded drugs, particularly those intended to be sterile.

The purpose of pharmacy compounding has traditionally been to allow a licensed pharmacist to customize a medication for an individual patient whose needs cannot be met by an FDA-approved drug. For example, a patient who is allergic to a certain dye in an FDA-approved drug may need a drug compounded without that ingredient. Similarly, a liquid-compounded drug may best meet the needs of a child or elderly patient who cannot swallow an FDA-approved tablet or capsule. Such prescription-based, individualized compounding by pharmacies continues to fill a niche that mass-produced pharmaceuticals cannot fill.

However, the conventional view of pharmacy compounding as a practice limited to a local pharmacy making a product for an individual patient is clearly at odds with the realities of modern drug-compounding practices, as the NECC episode illustrates. The tragic proportions of the NECC case were largely attributable to the company's large-scale, multistate distribution of an injectable drug intended to be sterile that had been prepared under inappropriate conditions. The FDA's experience in monitoring pharmacy compounding has demonstrated the need for further improvement in compounding practices.

Table 1. Actions Related to FDA Oversight of Compounding Facilities after Passage of the Drug Quality and Security Act.*

Actions	FY 2014	FY 2015	FY 2016	FY 2017 (Q1–Q3)	Total
Inspections	92	116	135	85	428
For-cause inspections	37	35	47	17	136
Warning letters	29	30	65	38	162
State referral letters	9	10	11	31	61
Recall events	25	38	51	30	144

* A for-cause inspection is an FDA inspection to investigate a specific problem that has come to the FDA's attention, such as an adverse event or a complaint about product quality or a facility's conditions. A warning letter is a notice of an important legal violation or violations that is intended to achieve voluntary compliance. A state referral letter is the FDA's referral of inspection findings to the state for further follow-up. FY denotes fiscal year.

Since the 2012 meningitis outbreak, the agency has conducted more than 425 inspections of compounding pharmacies. We have observed problematic conditions during the vast majority of these inspections and have overseen more than 140 recalls of compounded drugs (see Table 1). Examples of observations include dead insects in compounding areas designated for sterile processing, visible mold on ceiling tiles in compounding rooms, and dog beds and dog hairs in close proximity to compounding areas.[1]

The FDA has received reports of serious adverse events, including deaths, associated with improperly compounded drugs as recently as this year. In July, for example, the agency issued a statement concerning at least 43 patients who experienced diminished visual function, such as blurred vision and loss of color perception, after receiving intraocular injections of a compounded drug containing a combination of a steroid and an antiinfective agent.[2] In August, the FDA posted a compounding risk alert about two patients who had severe hypersensitivity reactions, one of them fatal, after receiving intravenous infusions of a compounded curcumin product containing an ungraded excipient, which would be suitable for industrial use or research purposes but typically is not considered suitable for human consumption or therapeutic use.[3]

In fact, the FDA has received a steady stream of reports of serious adverse events related to compounded drugs since 2012 (see Table 2). In 2016, three infants received a compounded morphine sulfate preparation at a strength nearly 25 times that indicated on its label. In 2013, bacterial bloodstream infections developed in 15 patients, and 2 patients died, after receiving contaminated infusions that the FDA subsequently found had been compounded under inappropriate conditions. Because the vast majority of compounding facilities do not report adverse events to the FDA, our records probably include only a small proportion of the adverse events that actually occur.

These problems emphasize the need to improve the quality of compounded drugs, and efforts to raise production standards are under way. The laws that govern production standards for compounding pharmacies vary from state to state. Many states have adopted, in whole or in part, standards established by the U.S. Pharmacopeia, which are currently undergoing substantial revision. In 2015, revisions to Chapter 797 (on sterile compounding) were proposed to help ensure that sterile compounded drugs are free from contaminants. Because these revised standards are still in draft form, however, states have not yet adopted them.

In 2016, in a complementary effort, the FDA published draft guidance that describes examples of "insanitary conditions" — involving the presence of filth or other conditions that could result in an injurious product — observed in compounding facilities and actions that companies should take if they identify such conditions at their facilities.[4] The FDA issued the draft guidance to assist compounding facilities in identifying and correcting insanitary conditions and to assist state regulatory agencies in assessing whether the conditions they observe during inspections would be considered insanitary.

We are also in the process of developing standards for the new category of outsourcing facilities created by the Drug Quality and Security Act. Under federal law, outsourcing facilities are subject to current good manufacturing practice (CGMP) requirements — the main benchmark used by the FDA for ensuring production of high-quality pharmaceuticals. Outsourcing facilities are intended to meet the needs of hospitals, freestanding outpatient surgery centers, clinics, and other health care fa-

Table 2. Examples of Adverse Events Associated with Drugs Prepared by Compounding Facilities over the Past 5 Years.

Year	Facility Location	Adverse Events
2017	Texas	At least 43 patients had adverse events, including vision loss, after receiving compounded steroid-and-antibiotic eye injections.
2017	California	Two patients had hypersensitivity reactions, and one died, after receiving an intravenous medication prepared with a compounded curcumin product.
2016	Indiana	Three infants had serious adverse events after receiving compounded morphine sulfate that was nearly 2500% as potent as it should have been.
2016	South Dakota	Seven patients had thyrotoxicosis after receiving superpotent compounded oral liothyronine products. Three patients were hospitalized in an intensive care unit.
2015	Florida	The FDA received several reports of adverse events possibly associated with compounded vitamin D_3 capsules that were approximately 300% as potent as they should have been.
2015	Texas	A patient died after using a compounded topical anesthetic cream. A court heard evidence that the cause of death was ketamine and cyclobenzaprine toxicity.
2015	Alabama	In five patients who received betamethasone sodium phosphate and betamethasone acetate, redness, swelling, and pain developed at the injection site. Three of the patients were hospitalized and had cultures that were positive for *Staphylococcus aureus*.
2014	Florida	At least 37 patients had serious adverse events after receiving intravitreal injections of repackaged Avastin (bevacizumab) or Lucentis (ranibizumab).
2014	Several states	The FDA received several reports of adverse events associated with compounded products that should have contained L-citrulline but instead contained a different active ingredient. Subpotent L-citrulline in patients with certain urea-cycle defects can lead to high ammonia levels, which is serious and potentially life-threatening.
2014	Indiana	Several neonates experienced oversedation after receiving superpotent compounded midazolam.
2014	Texas	A patient had severe flushing, stinging, and dizziness after an infusion of compounded magnesium sulfate in normal saline. The patient's blood had increased levels of magnesium.
2013	Tennessee	Twenty-six patients reported adverse events, including skin abscesses, after receiving injections of compounded methylprednisolone acetate that was contaminated.
2013	Texas	Bacterial bloodstream infections developed in 15 patients, and 2 died, after receiving infusions of compounded calcium gluconate contaminated with bacteria.
2013	Georgia	Five patients had endophthalmitis after receiving ophthalmic injections of repackaged Avastin.
2013	Texas	Six patients had adverse events, including fever and flulike symptoms, after receiving injections of compounded methylcobalamin.
2012	Massachusetts	Some 753 patients had fungal meningitis and other infections after receiving steroid injections that were contaminated with fungus. At least 64 patients died.

cilities for customized drugs and dosage forms that are not in high enough demand to be manufactured by pharmaceutical companies. Some clinicians want to keep a supply of these compounded drugs on hand so they can administer them to patients who present with an immediate need for them. At least in principle, these drugs are more safely prepared in centralized facilities subject to CGMP standards than in health care facilities. The FDA draft guidance proposes tailoring these standards to the scale and scope of outsourcing-facility operations.[5]

The outsourcing-facility sector is growing, although it is still young and must continue to adjust to tighter production standards. About 75 entities are currently registered with the FDA as outsourcing facilities, the majority of which had been compounding drugs for years before the passage of the Drug Quality and Security Act and are currently taking steps to conform to new production standards. Because outsourcing facilities are permitted to compound sterile drugs in large volumes and ship them anywhere in the United States without patient-specific prescriptions, the move toward CGMP adherence is critical. We intend to continue to work closely with key stakeholders to help outsourcing facilities throughout the country to meet CGMP standards.

Much of the patient harm

caused by compounded drugs is preventable, and the implementation of higher production standards (such as CGMP standards for outsourcing facilities and revised U.S. Pharmacopeia standards, once finalized, for other compounding pharmacies) will be essential to reducing harm associated with pharmaceutical compounding. All stakeholders have a role to play, including regulatory agencies such as the FDA and state boards of pharmacy, outsourcing facilities and other compounding pharmacies, and health care practitioners and systems that will need to make informed choices about prescribing and purchasing compounded drugs. Five years after the tragic fungal meningitis outbreak is a good time to reinvigorate efforts to ensure that the compounded drugs given to patients who need them are made in facilities that are held to appropriate production standards.

Disclosure forms provided by the authors are available at NEJM.org.

From the Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD.

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Emergency Legal Authority and the Opioid Crisis

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Opioid-overdose deaths in the United States have steadily increased for the past 15 years, with more than 33,000 such deaths reported in 2015.[1] The epidemic is unfolding on two fronts: use of prescription opioid pain relievers (OPRs) accounts for approximately half of opioid-overdose deaths, and deaths from heroin and synthetic opioids such as fentanyl, obtained illicitly, have increased dramatically during the past 5 years.

In the face of this public health crisis, various policies have been enacted — particularly at the state level — often to address OPR prescribing and limit opportunities for OPR diversion. For example, all 50 states have established prescription drug monitoring programs (PDMPs) that collect information about individuals' prescription-drug history in an electronic database. Eleven states have laws regulating pain-management clinics,[2] and several states have enacted laws to limit the dosage or duration of OPR prescriptions.

Recently, six states have taken the unusual step of using their legal authority to declare their opioid-overdose situation an emergency. When a government issues an emergency declaration, it can temporarily act to mitigate the emergency using powers and resources that might not otherwise be available to it. Typically, emergency declarations pertain to natural disasters or infectious disease outbreaks. The severity of the opioid-overdose crisis has led to some of the first emergency declarations for a noncommunicable health condition, though their impact remains unclear.

In July 2017, the President's Commission on Combating Drug Addiction and the Opioid Crisis called for a national declaration of emergency.[3] In its preliminary report, the commission stated that issuing such a declaration was its "first and most urgent recommendation," since doing so would potentially provide the impetus for the federal government's executive and legislative branches to respond to the crisis with additional resources and policies. On October 26, 2017, President Donald Trump directed the acting secretary of health

CHA Medication Safety Committee Action List – 10/11/17 meeting

A lot of information was covered during the Medication Safety Committee last week. Here are the various **ACTION** items between now and our next meeting on January 10, 2018. Please review and contact us if you have any questions.

Sarah Stephens:

- Send information regarding Nursing Sterile Compounding to CHA.

Jeannette Hanni:

- Med Safety Tool update: ED Medication Management

Dan Ross and Vicky Ferraresi:

- Med Safety Tool update: Improving Safe Opioid Use

Doug O'Brien:

- Med Safety Tool update: Track and Trace Law FAQs

BJ Bartleson:

- Discuss sterile compounding with Peggy Wheeler – share information with the Rural Healthcare Center.
- Contact AHA and HFMA to see if a CEO/CFO/Pharmacist dialog can be developed.
- Send out Hospital and Health Education information when available.
- Agenda item for January 2018 meeting – Fentayl patchs in ADDs.
- Med Safety Tool update:
    - Nursing Sterile Compounding
    - SB 1039 Implementation

Kathy Ghomeshi:

- Assist Rita Shane with the development of a survey – related to medication reconciliation.

Sterile Compounding Workgroup:

- Med Safety Tool update: Sterile Compounding Grids/Tools/Matrices

Barb Roth:

- Send CAU Process webinar information to committee.
- Send HQI HIIN url to committee.
- Add Medication Reconciliation infographic to Toolkit on CHA website.
- Add Kathy Ghomeshi to the Medication Reconciliation subcommittee.
- Advise committee when HQI Reducing Harm from Respiratory Depression toolkit is available on their website.

Committee:

- Continue to compile SC/USP 800 list (started by Candace Fong) to be sent to BoP.