driving readiness in dynamic times

Disaster Planning for California Hospitals

CALIFORNIA HOSPITAL ASSOCIATION

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driving readiness in dynamic times

Disaster Planning for California Hospitals

EHR Downtime and IT Triage — Strategies for Response and Recovery

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EHR Downtime

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Objectives

- Describe alternative electronic strategies developed for managing system outages
- Demonstrate procedure variations in emergency department and inpatient system outages
- Identify lessons learned from downtime implementation strategies

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About UC Davis Medical Center

VIDEO

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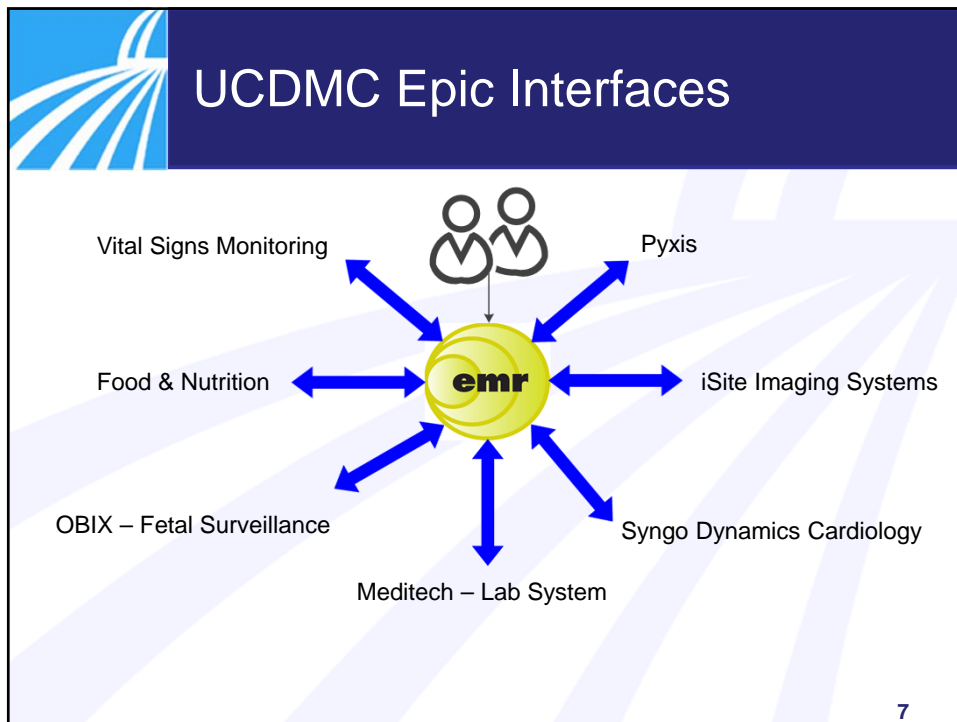## About UC Davis Medical Center (cont.)

Emergency Department (ED)

64 licensed beds

2015 census: 79,355 patients

30% of ED patients arrive via EMS daily

26% of ED patients require inpatient admit

Labor & Delivery (L&D)

15 inpatient beds / 8 outpatient beds

2 operating room suites

1,790 births (fiscal year 2015-16)

4,729 triage visits (fiscal year 2015-16)

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UCDMC Epic Interfaces

Vital Signs Monitoring

Pyxis

Food & Nutrition

emr

iSite Imaging Systems

OBIX – Fetal Surveillance

Syngo Dynamics Cardiology

Meditech – Lab System

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EHR Downtime Preparation

- Type of downtime
- Communication plans
- Current and scheduled patients
- New patient arrivals
  - Emergency Department
  - Labor and Delivery
  - Laboratory – separate system

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Types of Downtime

Scheduled

- Pause – 1 to 3 minutes, scheduled 22:00 (low electronic medical record (EMR) utilization)
- Scheduled maintenance – typically monthly 02:00 – 05:00

Unscheduled

- EHR
- Supporting systems (e.g., network, server)

Scheduled Communication Plan

- Managed by IT EHR Lead and Technology Operations Center (TOC)

- Group email sent to predetermined clinical managers at least two weeks prior

- Pre-prepared response reminders

Unscheduled Communication Plan

- Managed by TOC
- Pre-prepared response actions personalized for current event

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Portal Notification

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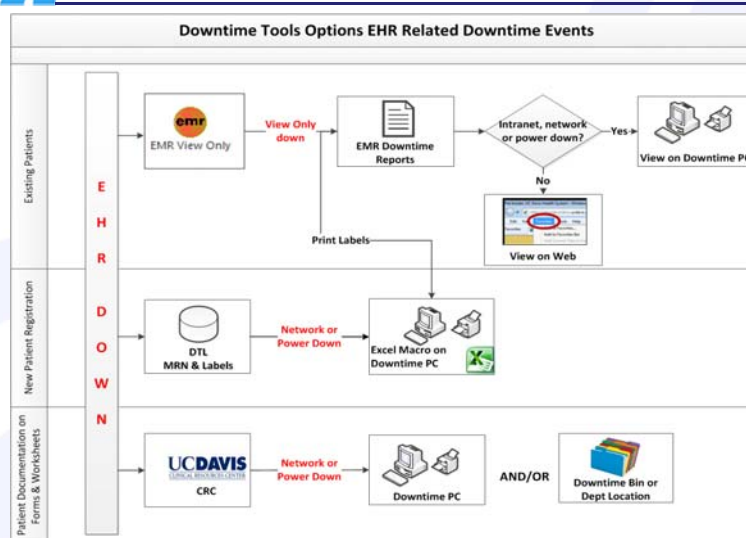## EHR Downtime Response Strategies

- Current and scheduled patients
- New patient arrivals
  - Emergency Department
  - Labor and Delivery
  - Laboratory – separate system

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Downtime Response Overview

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Current and Scheduled Patients – Primary Strategy

EMR View-Only

ELECTRONIC MEDICAL RECORD

Epic

Epic 2012 Shadow

User ID:
Password:

OK   Exit

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Additional copyrights apply. CPT®, copyright AMA. SNOMED CT® copyright IHTSDO. More

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Current and Scheduled Patients – Secondary Strategy

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Current and Scheduled Patients – Anytime Access to Reports

When EMR View Only isn't available, patient information available via the intranet.

Hospital   Ambulatory

UC DAVIS
HEALTH SYSTEM
Business Continuity Web Access

Please use your EMR Hyperspace login credentials to log in

User ID:
Password:
[Log In]

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New Patient Arrival System

Downtime Label Printing
PROD

Home || Search Patients || Add a New Patient || Reports

[Search Patients]   [Add a New Patient]   [Reports]

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New Patient – Label Printing

When All Else Fails

EHR Downtime Procedures

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Downtime Forms and Worksheets

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Downtime Response Process

Downtime Forms Available:
- Online Clinical Resource Center
- Downtime computers
- Bins/drawers for specialty forms

Paper orders labeled by unit and called/sent to fulfilling department

Pyxis machines on override, so manual registration required

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Results During Downtime

- Critical labs called
- All labs auto-faxed to unit (some exceptions)
- Images available via Citrix Images icon

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Department Variations

EMR Downtime

LABOR AND
DELIVERY

UCDAVIS
HEALTH SYSTEM

February 1st, 2016

EMR Downtime

EMERGENCY
DEPARTMENT

UCDAVIS
HEALTH SYSTEM

February 1st, 2016

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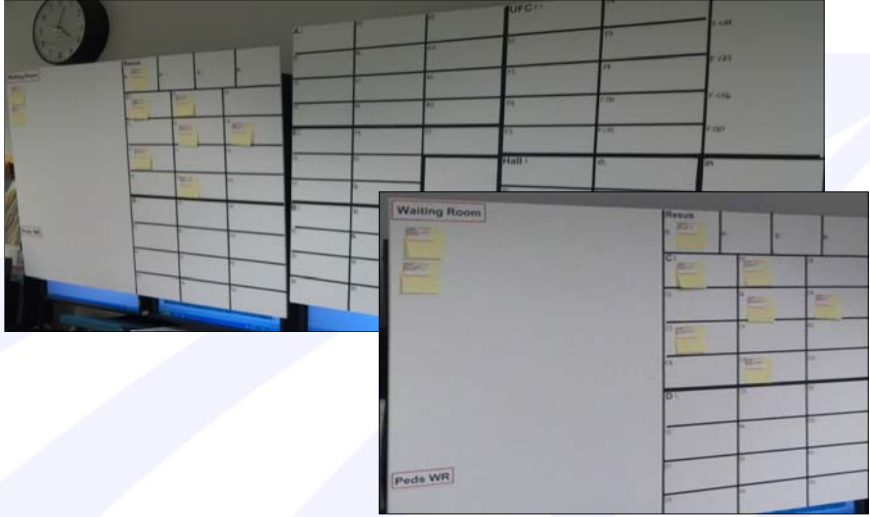
Internal Triage Monitors

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Downtime Internal Triage Board

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EHR Recovery Process

Goal: minimize non-clinical (administrative) recovery period

Utilize email group and checklists

Group members
- Bed control
- Hospital access services
- Laboratory
- System integration
- EMR technical team (coordinates)

One hour allocated for standard monthly outages

Recovering.... Please Wait

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Recovery Phase I – Admissions/Discharges/Transfers

Recovery mode only available to select group of EHR users

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Recovery Phase II – Clinical

Clinical references

- System Unavailability Row in Vital Signs flow sheet
- System Unavailability Note in the Notes activity – information automatically populates within the note
- Ensures coders capture services for billing

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Recovery Phase II – Clinical (cont.)

Medications removed from Pyxis console reconciled with medication administration record (MAR)

Newborns may require manual linking to mother

Laboratory and imaging results auto-populate via interfaces

Scanned paper documentation available on the EMR Media tab – flags in system

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Recovery Phase II – Clinical (cont.)

ED visits that begin and complete during downtime are scanned

ED to L&D – ED visit recorded in EHR; downtime visit documented by L&D

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Lessons Learned
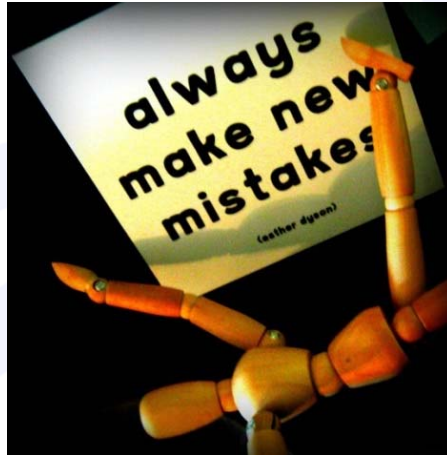
33

IT Triage: One-Stop Shop for Disaster Response and Recovery

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Objectives

- Identify factors incorporated into acuity level for an IT application
- Describe how to apply the database for everyday use and in all phases of emergency management
- Identify important data fields needed for your site and how they interrelate

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About Mercy Medical Center

- Located in Redding, California
- Level II Trauma Center
- 256 licensed beds
- 57,650 ER visits annually
- 190 applications
- 1,700 staff (hospital)
- Multiple off-site clinics

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Quote of the Day

If necessity is the mother of invention …

… confusion is frequently the offspring of disaster response.

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Show Me the Money

- IT downtime cost: $8,000+/minute*
- Average downtime cost: $740,000/outage*
- Average cost of home in California: $464,200[+]
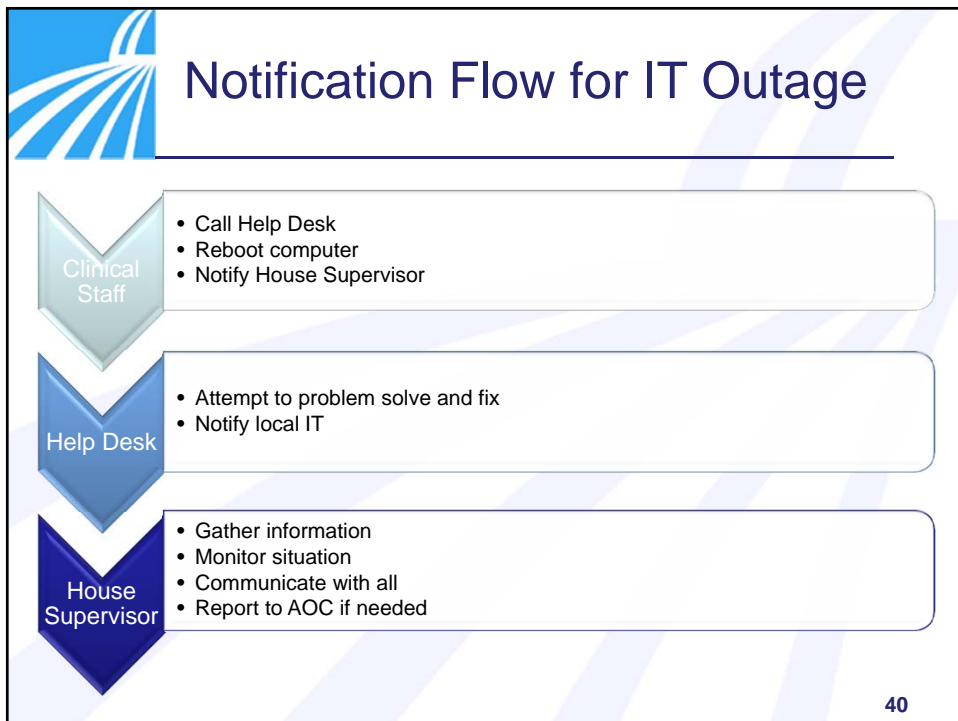- Three outages a year and you get …

*Source: Ponemon Institute, Jan. 2016
+Source: zillow.com

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What Led Us Here

Enterprise Outage

New Kids on the Block

Hot Wash

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Notification Flow for IT Outage

Clinical Staff
- Call Help Desk
- Reboot computer
- Notify House Supervisor

Help Desk
- Attempt to problem solve and fix
- Notify local IT

House Supervisor
- Gather information
- Monitor situation
- Communicate with all
- Report to AOC if needed

40
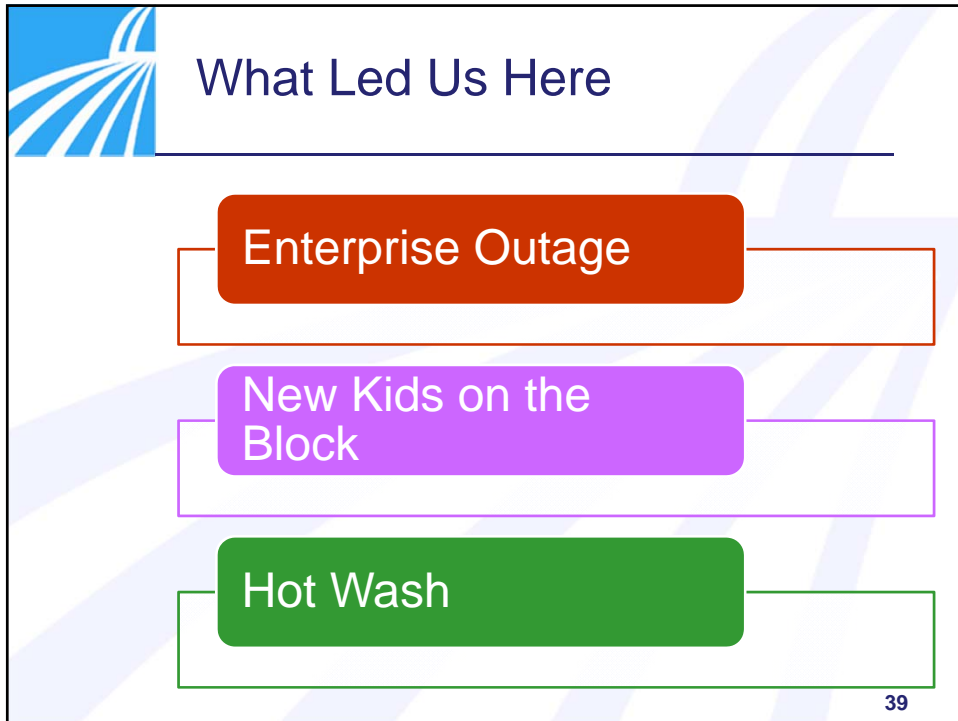
Original State

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Design Collaboration

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Database Development Objectives

Ease of Use

Acuity

Output

43

Tool Selection

Spreadsheet

Database

Powerful

Efficient

Easy

Multi-User

Known

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IT Triage vs. Clinical Triage

Cerner → **Critical** ← Cardiac Arrest

Teletracking → **High** ← Respiratory Distress

IKnowMed → **Medium** ← Abdominal Pain

Cures → **Low** ← Toe Pain

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Factors that Affect Acuity Level

Patient Care + Safety + # of patients + Interface = Acuity

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Technical Overview

SharePoint

SQL

Excel

App Database

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Axioms to Live By …

Simple is Good

If Not Up-to-Date, Why Do It?

Always Available: Period!

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Mercy Redding's Solution

Let's Take a Look!

Application Sample

NSSA Application Information Form

General Application Information

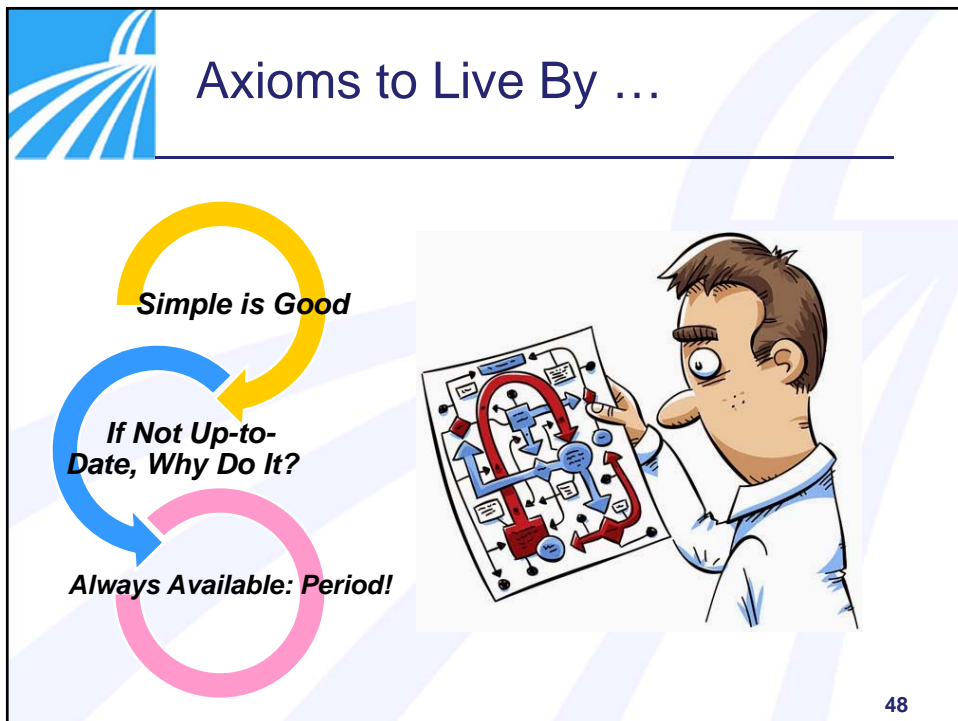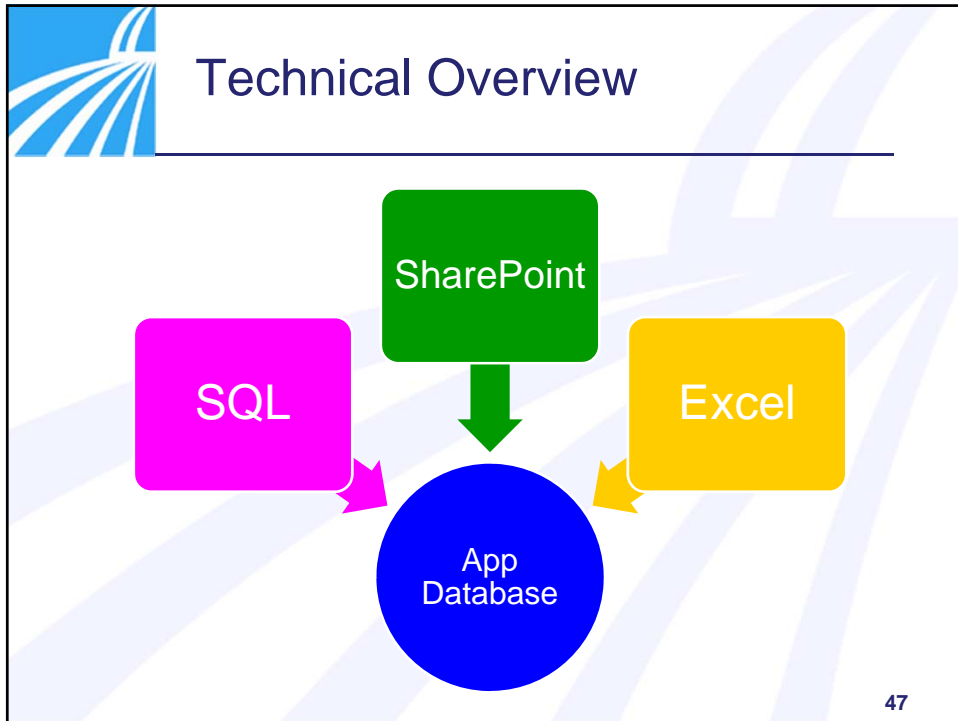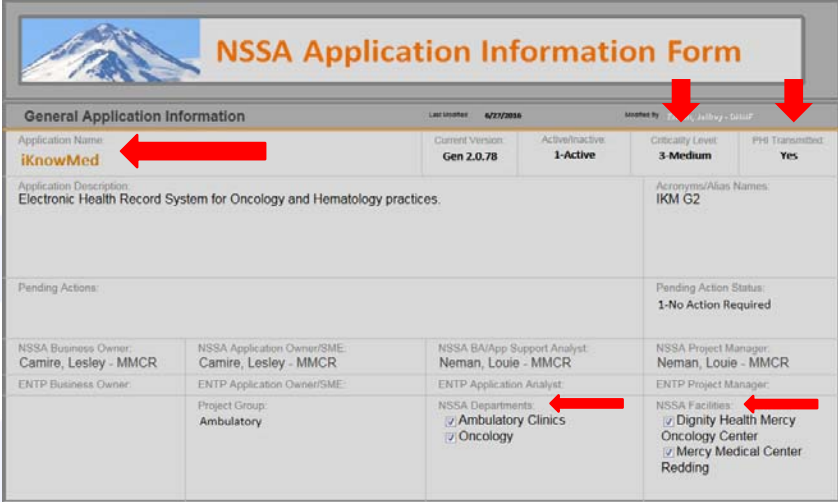|				
Application Name: **iKnowMed**		Current Version: **Gen 2.0.78**	Active/Inactive **1-Active**	Criticality Level: **3-Medium**	PHI Transmitted: **Yes**

Application Description:
Electronic Health Record System for Oncology and Hematology practices.

Acronyms/Alias Names:
IKM G2

Pending Actions:

Pending Action Status:
1-No Action Required

NSSA Business Owner: Camire, Lesley - MMCR	NSSA Application Owner/SME: Camire, Lesley - MMCR	NSSA BA/App Support Analyst: Neman, Louie - MMCR	NSSA Project Manager: Neman, Louie - MMCR
ENTP Business Owner:	ENTP Application Owner/SME:	ENTP Application Analyst:	ENTP Project Manager:
	Project Group: Ambulatory	NSSA Departments: ☑ Ambulatory Clinics ☑ Oncology	NSSA Facilities: ☑ Dignity Health Mercy Oncology Center ☑ Mercy Medical Center Redding

Application Sample (cont.)

Application Support Information

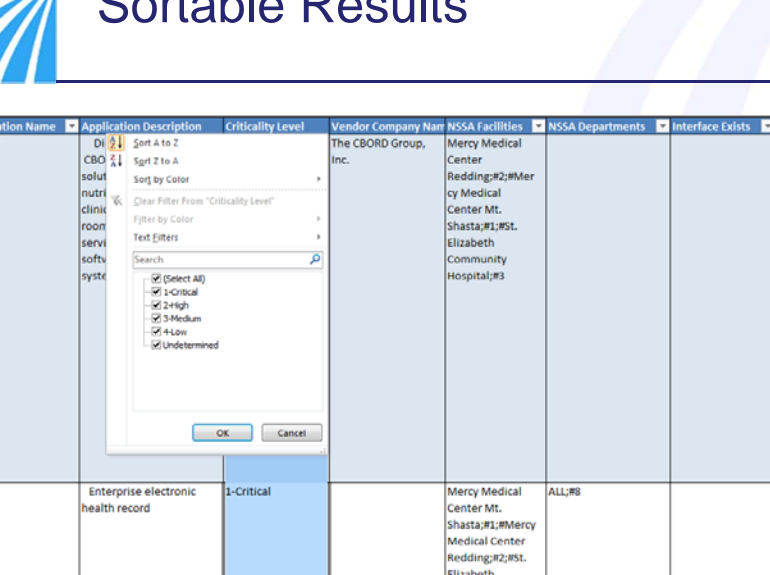| Support Type: ✓ Facility Support ✓ Vendor Support	Dignity Support Team Name: NSSA IT BA Team	Dignity Support Team Contact: NSSA-IT Analyst Team <NSSA-ITA...	Dignity Support Contact Phone: 530.247.341
	Vendor Support Phone: 888.338.8445	Vendor Support Hours: 24/7	Client ID:
	Vendor After Hours Support Phone: Same	Maintenance Agreement Exists: 1-Yes	Maintenance Agreement Term: 3 - Annual
Maintenance Agreement Start Date: 2/13/2014	Maint. Agreement End Date: 2/13/2016	Maintenance AU: 151.829340	Maintenance Costs:

Maintenance Notes:

Automatically renews yearly

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Application Sample (cont.)

Application Technical Information

Server Details:

Server Name:	Location:	Rack Location:	IP Address	OS:
PHX-VAPP-318	PHX EDC	VC-503 (Grid)	10.248.5.61	32 Bit 2007 Server Standard SP2

Server Notes: NSSA BA team has access into this Server. Lynx Mobile Interface Listenert that is installed on this server needs to continually run in order to receive data from IKM and IKM Hosting Location (ASP).

Test Server Details:

Server Name:	Location:	Rack Location:	IP Address	OS:
PHX-VAPP-321	PHX EDC	VC-503 (Grid)	10.248.5.233	32 Bit 2007 Server Standard SP2

Server Notes: NSSA BA Team has access into these servers. IKM only has one connection to hosting site so if Test System is turned on then that'll take down the Prod Environment

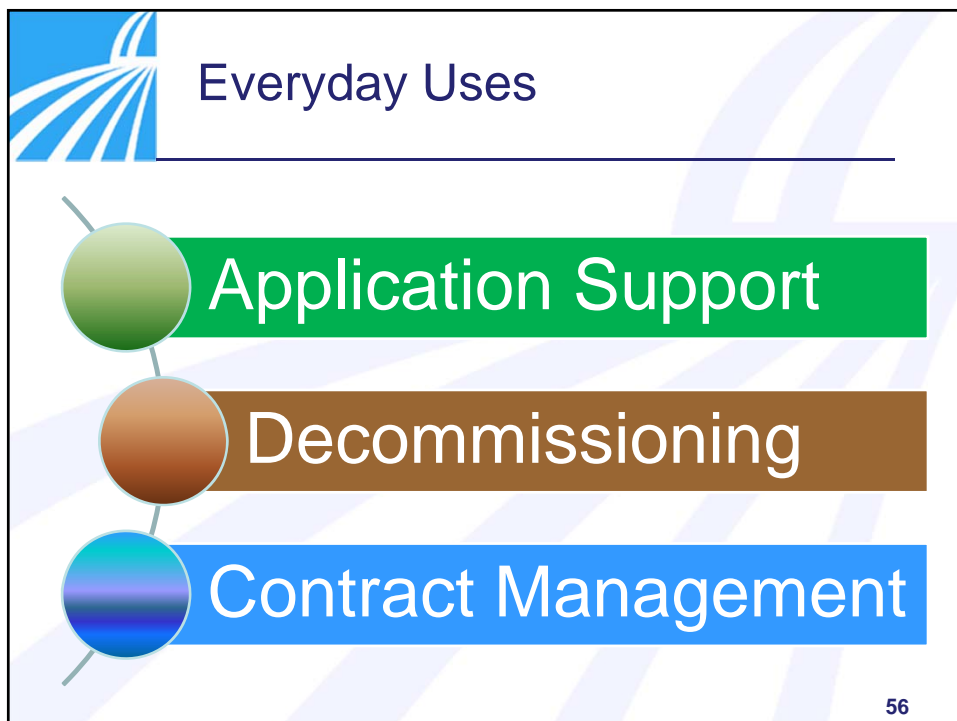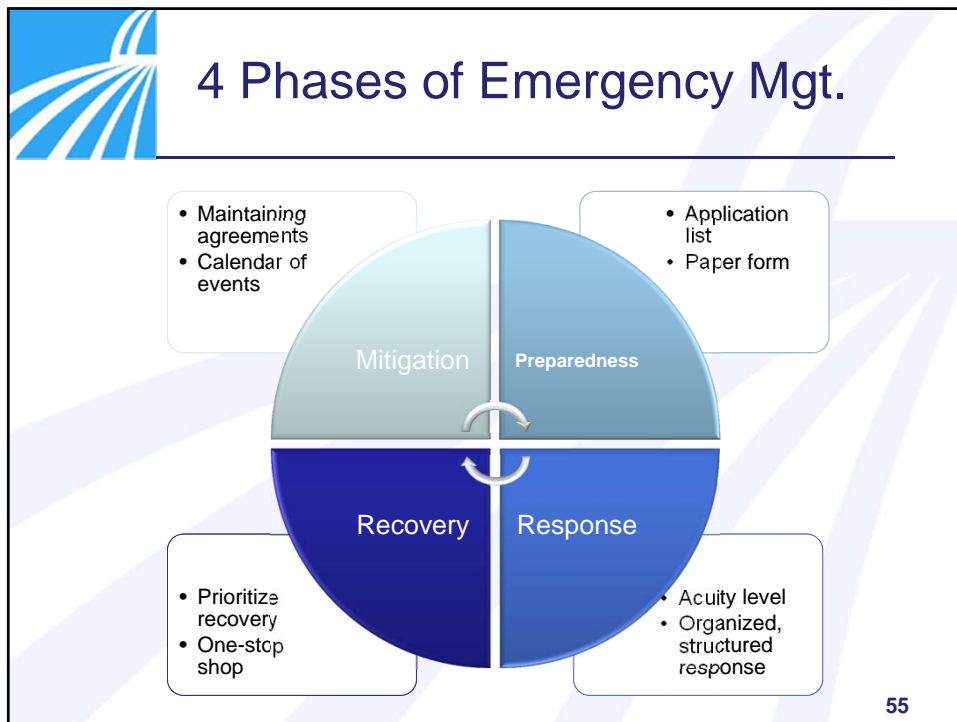| Interface Exists: 1-Yes	Interface Type: ✓ ADT ✓ HL-7	Source Application(s): ✓ Centricity Business ✓ PathNet ✓ RadNet	Destination Application(s): ✓ IKnowMed ✓ MobileMD

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Sortable Results

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Event Calendar

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4 Phases of Emergency Mgt.

- Maintaining agreements
- Calendar of events

- Application list
- Paper form

Mitigation

Preparedness

Recovery

Response

- Prioritize recovery
- One-stop shop

- Acuity level
- Organized, structured response

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Everyday Uses

Application Support

Decommissioning

Contract Management

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Remember This?

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Current State

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Keys to Your Success
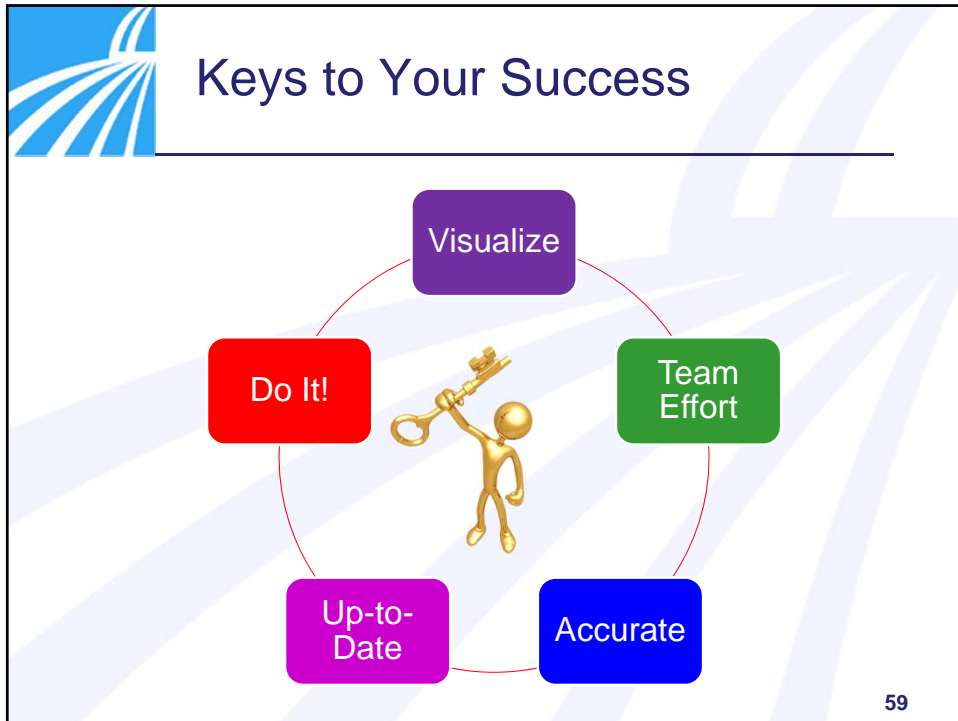

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Final Thought

"All great changes are preceded by chaos."

– *Deepak Chopra*

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Sources

- Ponemon Institute
  - www.emersonnetworkpower.com/en-US/Resources/Market/Data-Center/Latest-Thinking/Ponemon/Documents/2016-Cost-of-Data-Center-Outages-FINAL-2.pdf
- Zillow.com
  - www.zillow.com/ca/home-values/
- Mercy Redding Database Programmer
  - **Chad Webb, Project Manager III – Dignity Health**

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Questions?

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Thank You!

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