The True Cost of EMR and IT System Downtime
Agenda

The True Cost of EMR and IT System Downtime

+ Introduction and housekeeping

+ Trisha Swfit on the importance of being a high-reliability hospital and the far reaching impact of EMR downtime

+ Vincent Geffray on IT incident response best practices for EMR outages

+ Audience Q&A
Housekeeping

Webinar Functions

USE THE Q&A FUNCTION TO SUBMIT QUESTIONS
Introduction

Our Presenters

Trisha Swift DNP, RN, CPHQ, CPPS
Managing Partner, MeritLinkx Healthcare Consulting

Vincent Geffray
Sr. Director, Product Marketing
Everbridge
Closing the Gaps with EMR Downtime: Identify - Knowing - Doing

Trisha Swift DNP, MSN, RN, CPHQ, CPPS
Agenda

- Overview of Modern Medicine
  - Care Model and Rules

- What is High Reliability?

- The Impact of EMR Downtime
  - A Real Life Case Study

- Putting It All Together
Macro – Meso – Micro System: Patient Centered Care Model

MACROSYSTEM
+ Payers, Joint Ventures, Community Resources, and Partnerships

MESOSYSTEM
+ Provider Networks, Care Delivery Model, IT Infrastructure, Hospital Leadership and Divisions

MICROSYSTEM
+ The real, hands on, value added, and patient centered care (i.e. GEMBA)
+ Includes acute hospital unit/s and PCP

Patient & Family
The New Rules of Medicine

<table>
<thead>
<tr>
<th>Traditional Model</th>
<th>Modern Care Model</th>
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<tbody>
<tr>
<td>Care is based on visits</td>
<td>Care is based on continuous healing relationships</td>
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<tr>
<td>Professional autonomy drives variability</td>
<td>Care is customized to the patients needs</td>
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<tr>
<td>Information is a record</td>
<td>Knowledge and information flows freely</td>
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<tr>
<td>Decisions are based off of training and experience</td>
<td>Decision making is evidence based</td>
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<tr>
<td>Do no harm is an individual responsibility</td>
<td>Safety is a system priority</td>
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<tr>
<td>Preference is given to professional roles</td>
<td>Integration among clinicians is a priority (team based care)</td>
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<tr>
<td>Secrecy is necessary</td>
<td>Transparency is necessary</td>
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</table>
Becoming a High Reliability Organization

Simply stated...high reliability is a state of mind, an attitude, and a cultural feature

Requirements

1. Competent & Engaged Leaders
2. Culture of Safety
3. Robust Process Improvement

Behaviors
- Sensitivity to Operations
- Preoccupation with Failure
- deference to Expertise
- Reluctance to Simplify
- Resiliency

State of Mind
- Acute Awareness

Organization Impact
- Highly Reliable Processes

Ultimate Outcome
- Exceptionally Safe & Consistently High Quality Healthcare
Expectations for Patient Centered Care

Meeting Expectations with New Rules

New Rules Change Behavior

High Reliability Attitude

Safe Care Delivery & Workflows

Communication Knowledge Information

Tool Box for Success
EMR Downtime

The Impact on Patient Care, Outcomes, Experience, and Cost
State of the Union: Healthcare

- Communication is an essential part of team based collaboration models; therefore, when team members do not effectively communicate patient safety is at risk, due to:
  - Lack of critical information, misinterpretation of information, unclear orders, overlooked changes in status
- If medical errors appeared on the National Center for Health Statistic’s list of the top 10 causes of death in the United States, they would rank 5th.
  - Ahead of accidents, diabetes, Alzheimer’s disease, AIDS, breast cancer, and gunshot wounds
- Communication failures are the leading root cause of the sentinel events reported to the Joint Commission from 1995 to 2015.
  - Number 1 root cause for things such as medication errors and delays in treatment.
  - Number 2 cited root cause for operative and postoperative events and fatal falls.
The primary mode of communication and information sharing in the hospital setting is the Electronic Medical Record.

Current state is already error prone, so what happens when the EMR is not available???
CASE Study: Unscheduled EMR Downtime
A Large Integrated Healthcare System Perspective
The Situation

- 8 hospital system in southern Texas
- A virus struck 5 servers that supported clinical documentation, CPOE, lab, and pharmacy modules
- 6 hospitals of the 8 hospital system were “down” simultaneously
- Patient tracker and dietary interfaces were not bidirectional, therefore admission location, transfers, and diet information was also impacted
- Total down time lasted just over 3 days
- Information was backed up every 24 hours at midnight, so the overwrite was from the day prior

“The longest unplanned downtime in our history outside of Hurricane Katrina.”
~ EMR Vendor, 2011
Immediate Issues

• Communication Platform
  • Who, what, when, where...??

• Admissions & Patient Lists (Locations)
  • Where is everyone?

• Sequenced Lab Orders
  • HgB, Vanco Levels, K+

• Pharmacy Deliveries
  • Again, where is everyone?

• MAR Documentation
  • What is a paper MAR?

• Diets and Food Trays
  • Seriously, where is everyone?
Tier 2 Issues

• Clinical Decision Support
  • No more rules!

• Notes, Flowsheets, & CPOE (Physician Documentation)
  • “This is exactly why I didn’t go to CPOE training…”
  • Resurrection of a Respiratory Flow Sheet from 1992!

• Charge Reconciliation
  • Capturing products use, procedures, or interventions was nearly impossible

• Required Reporting
  • Core Measures, Line Days, Discharge Instructions, etc.
Lessons Learned

Technology Doesn’t Replace Common Sense

• Timeline Trigger for Command Center Activation
• Stand Alone Functionality for Interfaced/Legacy Systems
  • Admissions and Dietary
• Paper Documentation Education
• Frequent Back Ups
• Order-sets, Flow Sheets, Protocols, and Pathways
  • Standardize, available in hard copy, and compliant review cycles
• IT Contingency Planning
  • Prevention, prevention, prevention
IT Contingency Planning

Phase I

- Duplicate hardware that run applications critical to the organizations operations
- Make available a generator and sufficient fuel to support an extended downtime
- Keep at least 8 hours of paper forms that replace key functions of every business unit
- Backup mission-critical patient data and EHR system configuration to allow system restoration to a "pre-failure" state with minimal data loss

Business Continuity

Build the Structure: Safe Health IT
IT Contingency Planning

Business Continuity

**Build the Structure: Safe Health IT**

**Reliable Processes: Using IT Safely**

**Phase II**

- Train and test staff on how to do their work on paper
  - Example: Conduct downtime drills
- Be prepared to communicate without the computer
- Create policies & procedures for downtime processes and recovery to ensure critical business operations are clearly outlined
- Clearly differentiate the user interface of the locally maintained back up/read only EMR system from the production/live system
IT Contingency Planning

Business Continuity

Build the Structure: Safe Health IT

Reliable Processes: Using IT Safely

Secure Optimal Outcomes: Monitoring Safety

Phase III

Comprehensive testing and monitoring strategies to *prevent* and/or minimize the impact of *technology failures*.

Examples:
- Maintain a log of all testing activities
- Regularly monitor and report on system response times
Putting It All Together

**Structure** = Creating the Ability to **Identify** Risks

- IT Contingency Plan
- Downtime Policies
- Culture of Safety
- Empowered to Act
- Employees
- Tools for Communication

**Process** = **Knowing** What to Do

- Free Flowing Information
- Real Time Decision Making
- Seamless Communication
- 5 Behaviors of High Reliability
- Team Based Care Models
- Down Time Preparedness
- Competencies

**Outcomes** = **Doing**

- Error Free Practice
- Environment
- Optimal Customer Experience
- IT Safety & Awareness
- Resiliency
- Exceptionally Safe and High Quality Patient Care

High Reliability & ZERO HARM
Trisha Swift DNP, MSN, RN, CPHQ, CPPS

Thank you!

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MeritLinkx Healthcare Consulting
Balanced Advice.
www.meritlinkx.com
By the end of **2014**

76%

of US **hospitals** had at least **basic EHR** Systems

Source: https://www.healthit.gov/sites/default/files/data-brief/2014HospitalAdoptionDataBrief.pdf
What Happens In Case of Critical EMR Failures?

Your Hospital IT Department
What Happens In Case of Critical EMR Failures?

- EMR partial or full outage
- Ransomware virus, cyber attack
- Network outage/performance issue
- Infrastructure failures/capacity issues
- Datacenter power outage
- Facility problem (AC, Weather related)
What Happens In Case of Critical EMR Failures?

Clinicians, Staff and Patients Are Getting Frustrated
What Happens In Case of Critical EMR Failures?

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Your IT Department Is Bombarded with Alerts
What Happens In Case of Critical EMR Failures?

Clinicians, Staff and Patients Are Getting Frustrated

Your IT Department Is Bombarded with Alerts

Your Patient Safety is at Risk
What Happens In Case of Critical EMR Failures?

Hospital Quality Level of Care is Jeopardized

Clinicians, Staff and Patients Are Getting Frustrated

Your IT Department is Bombarded with Alerts

Your Patient Safety is at Risk
The 10 Most Common Communication Workflow Inefficiencies
#1 – IT Alert Fatigue

- Alerts should be escalated to the right people and not the entire teams
- Messages should be targeted and written for the recipient
#2 – No Incident Response Plan in Place

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<tr>
<th>Urgency Definition</th>
<th>Impact Definition</th>
<th>Cause</th>
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<tbody>
<tr>
<td>Incident Management</td>
<td>Contained Vs. Widespread</td>
<td>Infrastructure Vs. Software Failure Vs. Network, 3rd Party</td>
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<td>2 3 4</td>
</tr>
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Impact Definitions:
- Immediate business interruption (High)
- Potential or future business interruption (Medium)
- No foreseeable interruption (Low)

Urgency Definitions:
- Outage affecting multiple users/executives
- Outage affecting one user or access/assistance needed
- Performance issue affecting multiple users or automated system
#3 – Don’t know what team to contact

At 3:18 AM who exactly are you calling?

- EMR Vendor
- Customer Support team?
- CIRT?
- Network team?
- Server team?
- Middleware team?
- DB teams
#4 – Don’t know who’s on-call and who’s not?

Are you sure you want to call Michelle at 3:22 AM?

- Is she the right person
- Is she on the right team?
- Is she not on PTO?
#5 – Not Using the right communication channel

Emails don’t wake people up!
#6 – It Takes Too Long to Get Everybody to Collaborate

- Can someone get the CIO on the line?
- What’s the PIN #
- Can you send me the number?
- What’s the dial-in?
- Is there a call?
- Is dev on the line?
#7 – Lack of Team Coordination

- Include the ability to confirm message receipt as well as to confirm acceptance of tasks

- EMR System Down!
  - I got it!
  - Fixing it now!
  - Give me 5
  - On my way
  - I'm busy
#8 – Lack Of Communication With Key Stakeholders
#9 – No Unified IT Communication Workflows
We keep running into the same issues when trying to get someone to respond to/fix an incident!

• Analyze incidents and response through after-action reporting
• Determine most effective communication paths and tactics
• Find out how long it takes to get confirmation from on-call staff
Four Key Takeaways

1. Standardize on Consistent and Repeatable Communication Workflows

2. Unify On-call Schedules and Set Automatic Escalation Processes

3. Provide Easy-to-Use Collaboration Tools

4. Communicate in real-time:
   - IT Experts
   - Key Stakeholders
Thank You

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www.ITAlerting.com
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