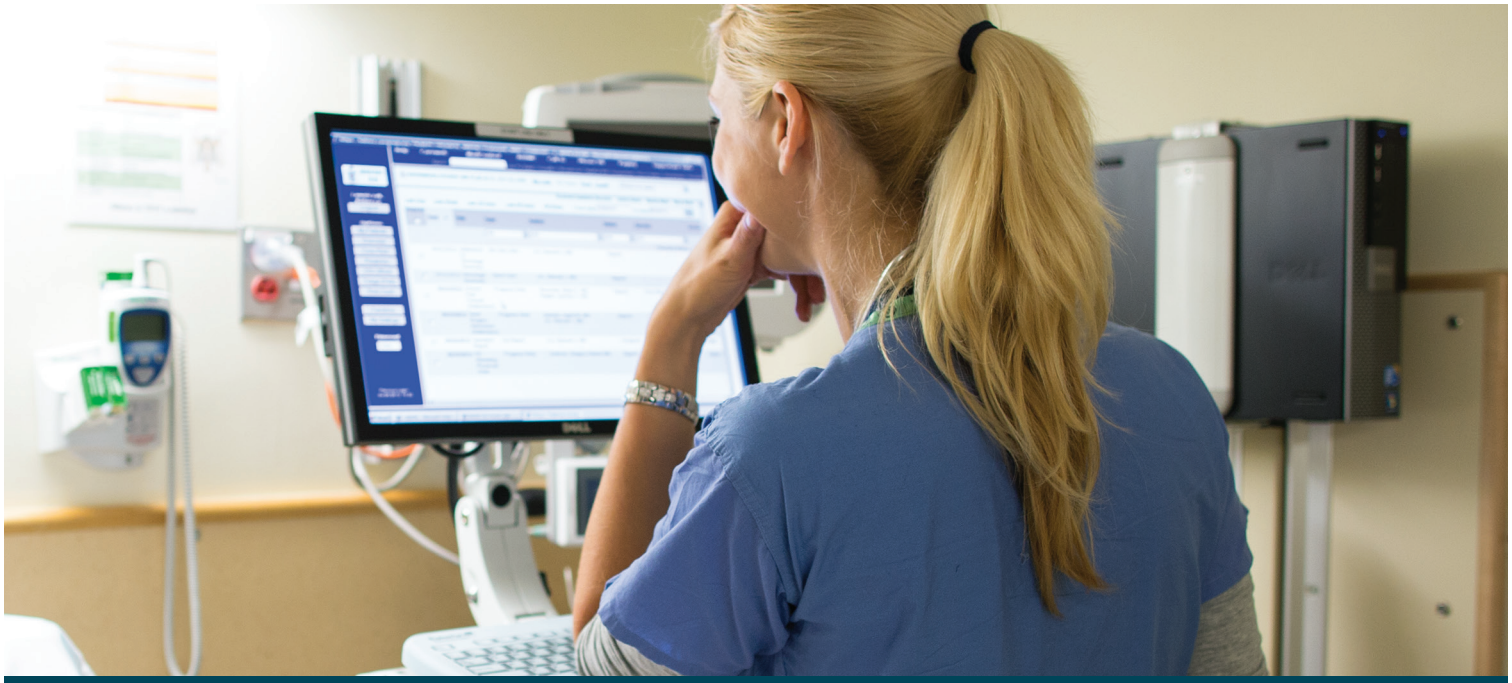

Patient Safety Guidance for

Electronic Health Record Downtime

RECOMMENDATIONS OF THE ELECTRONIC HEALTH RECORD DOWNTIME TASK FORCE

Created: 2017

AMC | PSO

ABOUT THIS DOCUMENT

The recommendations for Patient Safety Guidance for EHR Downtime were developed under the auspices of the Academic Medical Center Patient Safety Organization (AMC PSO) EHR Downtime Task Force. These consensus recommendations are for informational purposes only and should not be construed or relied upon as a standard of care. The AMC PSO recommends institutions review these guidelines and accept, modify, or reject these recommendations based on their own resources and patient populations. Additionally, institutions should continue to review and modify these recommendations as the field continues to evolve.

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Executive Summary

In 2016, at the request of its membership, the Academic Medical Center Patient Safety Organization (AMC PSO) convened the task force to develop a set of literature-supported, consensus-based guidelines addressing patient safety considerations during unplanned electronic health record (EHR) downtime events. This EHR Downtime Task Force reviewed the latest evidence, guidance, and opinion statements from relevant sources. Further insights were gathered from AMC PSO member subject matter experts in information technology, emergency preparedness, risk management, and patient safety.

What follows reflects the aim, mission and consensus opinion of the EHR Downtime Task Force. It offers guidance for patient safety leaders in their efforts to provide the safest care during unplanned EHR downtime and throughout the recovery phase.

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DEFINITIONS

Computerized Physician Order Entry (CPOE)
A system for providers to electronically order labs, imaging, and medications.

Electronic Health Record (EHR)
A computerized repository of information regarding the health of an individual. It is also a generic term for all electronic patient care systems. EHRs imply a level of interoperability beyond the capability of an EMR (electronic medical record), but are similar in terms of the information stored and the purpose for the system.

eMAR
Electronic medication administration record

Hotwash
An immediate after-action discussion and evaluation of performance following an exercise, training, or event with the purpose of identifying strengths and areas of improvement.

Office of the National Coordinator (ONC)
The Office of the National Coordinator is the principal federal entity within the U.S. Department of Health and Human Services charged with coordination of nationwide efforts to implement and use health information technology and the electronic exchange of health information.

SBAR
A communication tool consisting of four elements: Situation, Background, Assessment and Recommendation.

SOAP Notes
A method for documenting notes in a patient's chart using the format of Subjective, Objective, Assessment, and Plan.

TigerText/SendWordNow
Examples of cloud-based instant messaging/communication applications available.

Warm Handoff
The transfer of information (along with authority and responsibility) during transitions in care across the continuum; to include an opportunity to ask questions, clarify, and confirm.

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Preparing for EHR Downtime

A. CREATING REDUNDANT SYSTEMS

Patient Safety Priority

- Patient Safety and Information Technology (IT) engage to establish redundant systems that ensure that no harm occurs to patients during a downtime event
- There is routine participation of IT in multidisciplinary safety event reviews. Feedback loops ensure that trending and analysis of downtime-related safety events inform system redesign for future planned and unplanned downtime events

Action Plan Checklist

- ☐ Cloud/web-based solutions provide alternate pathways to key information and processes
  - ○ Data
  - ○ Communication (e.g., SendWordNow, TigerText)
- ☐ Failsafe computer terminals on key units capture critical downtime clinical information
  - ○ Staff are trained and drilled on the use of redundant systems

We had recently installed TigerText, a secure text messaging platform, to allow our clinical team to communicate patient care information efficiently with offsite providers. We soon appreciated other efficiencies, such as real time confirmation of subtle EKG findings and a rapid disposition of a patient to the cardiac cath lab.

The web-hosted communication platform demonstrated its true potential one holiday weekend when the senior leadership team was dispersed across the state. The single feed 220V main power line to the server data closet had 'melted down' under a concrete floor. Initially patchy, it had taken 30 minutes for the in-house team to appreciate the extent of the failure, as battery back-up power units had kicked in prior to the entire EHR and communications network suddenly going off line when the units lost charge.

Independent of our servers, TigerText allowed the in-house supervisor to communicate with IT, maintenance, and senior leadership. We were able to rapidly assess the situation as a team by group text message and dispatch senior leaders closest to the hospital to round and reassure staff. Maintenance was able to reach the electrician, and the team was provided with encrypted updates at predetermined intervals until the circuit was patched.

—Hospital vice president

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Preparing for EHR Downtime

B. PERFORMING A SYSTEM INVENTORY AND WORKFLOW RISK ASSESSMENT

Patient Safety Priority

- System and application roadmaps are developed to create organizational awareness of the inter-dependencies of EHR functionality
- Department leaders are able to identify what processes and documentation workflows are affected by specific systems and applications, so that paper-based alternatives can be created
- A process exists for downtime reporting of safety events, such that past downtime safety events inform future safety efforts

Action Plan Checklist

- ☐ There is awareness of the "hidden dangers" of systems that are no longer talking to each other (e.g. Lab-Pharmacy; CPOE-Decision Support; Problem List-Discharge Instructions)
- ☐ EHR and paper documentation are aligned
  - ○ Education reflects staff turnover rates
- ☐ Consider unique situations—patient death, organ/tissue donation, MedFlight coordination, transfer of image files between institutions, access to safety reporting systems, etc.

A patient with a vascular history was admitted with a DVT during an EHR downtime. The patient's home medications included a lipid lowering agent. The patient was placed on IV blood thinners and then bridged to Coumadin. When the provider ordered Coumadin, there was no alert about a home medication potentiating the effects of Coumadin. Related to the downtime, lab work took longer than usual to come back. The patient developed a GI bleed.

This event highlighted the impact on patients and providers of a loss of clinical decision support during an EHR downtime. Our pharmacy took corrective action and implemented downtime workflows to closely monitor high-alert medications.

—Staff nurse

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Preparing for EHR Downtime

C. CONDUCTING DOWNTIME DRILLS

Patient Safety Priority

- Patient Safety is notified of all planned downtimes and is involved in ***all*** disaster drills
- Leverage each disaster drill to probe IT vulnerabilities

Action Plan Checklist

- ☐ Conduct drills across different shifts, workdays and weekends
- ☐ Providers and staff are adequately prepared for an extended downtime and transitioning to paper-based processes
- ☐ An orientation to unit downtime carts and procedures is included in the on-boarding of new staff

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Activating EHR Downtime

A. DOWNTIME ALERT AND NOTIFICATION

Patient Safety Priority

- There is timely activation of an initial downtime emergency assessment process
- There is timely notification of key stakeholders (including Patient Safety) about downtime activation
- Patient Safety has a pre-established, documented downtime role; considerations include:
  - repurpose staff consistent with skillset
  - monitor safety events… without technology!
  - deploy to high risk areas (blood bank, lab, universal protocol, Pyxis, failsafe computers)

Action Plan Checklist

- ☐ Rapidly assemble an initial assessment team of critical stakeholders
  - ○ iDART/DART model (See Appendix)
- ☐ Establish thresholds and parameters for notification/activation of downtime procedures
  - ○ Disaster Plan: "Code Technology"
  - ○ Plan for contingencies such as a complete IT shutdown (eliminating telecom, email, etc.)
- ☐ Patient Safety has established downtime priorities for the department based on *"What are the two or three priority tasks you would do in a downtime?"*

We recently had an eight-hour EHR downtime that impacted our safety event reporting system. It wasn't until three days after the downtime that we learned that a patient had been given an incorrect medication requiring intervention. There was no predefined safety reporting process for an extended downtime, and no paper version of our safety reporting forms. Risk Management was ultimately able to perform a harm-level assessment and verify that a timely disclosure to the patient had occurred within required regulatory reporting windows. The event highlighted a vulnerability that we were able to address!

—Institutional risk manager

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Activating EHR Downtime

B. COMMAND CENTER ACTIVATION AND OPERATIONS

Patient Safety Priority

- Every member of the EHR downtime response team knows their role, scope of responsibility, and tasks
- The expertise of Patient Safety is leveraged to mitigate risk and decrease workload
- Patient Safety has an active role in monitoring and evaluating emerging safety and regulatory issues
- Plan for required regulatory notifications
- *Actively encourage patient safety event reporting*

Action Plan Checklist

- ☐ Take a "recovery starts at downtime" approach
- ☐ Make critical decisions prior to change of shift
- ☐ Leadership is visible to frontline staff and proactively rounds on units
- ☐ Anticipate regulatory agency visits (DPH)
- ☐ Consider needs of other stakeholders (researchers, caretakers, etc.)
- ☐ Patient Safety evaluates options to mitigate risk and decrease workload - limit services, discharge management, use of outside contractors (e.g. lab), cancel elective procedures

C. ESTABLISHING SITUATIONAL AWARENESS

Patient Safety Priority

- Critical information sharing and notification occurs on a timely basis across all levels of the organization
- Initial communications are coordinated and clear
- Patient Safety has sufficient information to assess regulatory implications and to evaluate the need for any associated agency waivers

Action Plan Checklist

- ☐ Avoid delaying decisive action, which can add to confusion, frustration, and risk
- ☐ Initial communications focused on what systems are not impacted can be as important as communicating what systems are impacted
- ☐ What Patient Safety needs to know:
  - ○ What systems are affected?
  - ○ What are the known clinical impacts?
  - ○ What are the known non-clinical impacts?
  - ○ What remediation actions are currently in process?
  - ○ What is the estimated time to recovery?
  - ○ When is the next update?

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Communication & Messaging Strategies

A. INTERNAL COMMUNICATIONS

Patient Safety Priority

- Patient Safety is kept informed
- Patient Safety and Patient Relations efforts are coordinated
- Clear, targeted downtime communications and updates reach providers and staff
- Structured communication tools, such as SBAR, convey concise, clear information
- Guard against email fatigue

Action Plan Checklist

- ☐ Institute continuous leadership rounding on high-risk units
- ☐ Initiate huddles and tiered messaging at key times on each shift—communicate early and often
  - ○ Patient Safety attends key huddles and serves as a liaison to the staff
- ☐ Create simple, clear, visual, and standardized downtime status updates
- ☐ Leverage alternate technologies:
  - ○ Secure texting, pagers, PeopleSoft, screen savers, digital media, email, flipcharts, posters, signs
  - ○ Craft an institutional approach to internal messaging and status updates

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Communication & Messaging Strategies

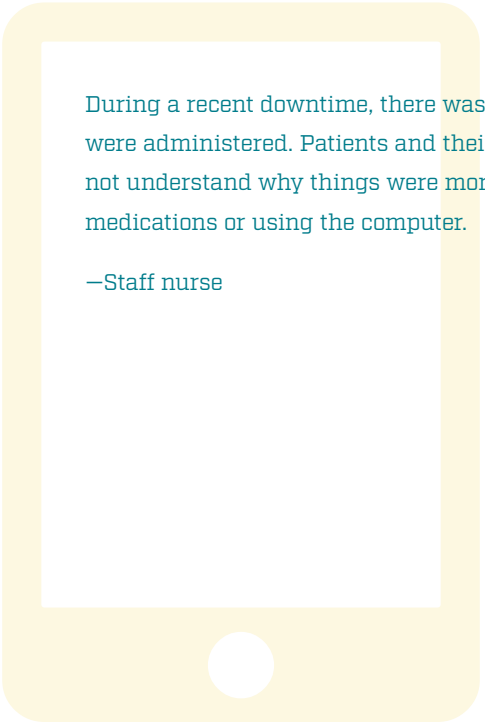
B. EXTERNAL COMMUNICATIONS

Patient Safety Priority

- A clear, consistent, and well-coordinated messaging strategy supports patients, families, and staff
- Consider engaging the Patient Family Advisory Council in the development of communication templates and strategies
- Ensure that key clinical affiliates and off-site staff/providers are continuously updated on the status of the downtime

Action Plan Checklist

- ☐ Leverage caregivers, Patient Safety, and Patient Relations to deliver the message
  - ○ Use scripting to help caregivers convey the message
  - ○ Create a "just in time" training for communicating with patients, families, and visitors
- ☐ Communicate with and update families early and often
  - ○ Reassure patients and families that staff are being supported
- ☐ Flipboards, flat screen TVs, signs, and posters at key entrances can alert patients and visitors
- ☐ Engage Communications to notify external partners and off-site employees



During a recent downtime, there was a lot of uncertainty about the last time medications were administered. Patients and their families were uninformed and many seemed to not understand why things were more chaotic than usual and why we were not scanning medications or using the computer.

—Staff nurse

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Communication & Messaging Strategies

C. UNINTENDED COMMUNICATIONS: CONTROLLING AND LEVERAGING SOCIAL MEDIA

Patient Safety Priority

- The appropriate use of social media fosters trust in the organization's ability to provide safe care during the downtime event
- Social media is used effectively in conjunction with other communication technologies to reach all audiences
- Providers and staff understand social media policies

Action Plan Checklist

- ☐ Involve Public Relations and Communications departments early to craft a messaging strategy
- ☐ Consider how social media and other communication methods are being used
- ☐ Recognize and engage social media early on
- ☐ Be transparent
- ☐ Reinforce social media policies to providers and staff

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From Electronic to Paper-based Systems

A. PAPER DOCUMENTATION STRATEGIES AND LOGISTICS

Patient Safety Priority

- An EHR to paper-based conversion plan is in place
- Conversion from EHR to paper work flows facilitates seamless patient care with minimal disruption to staff productivity
- Paper forms reflect current patient care and EHR workflows (beware of version control)
- Consider human management of downtime and the risks associated with some providers remaining logged in while others are logged out and on paper
  - *"Plan ahead—consider how to make sure providers log off in time"*

Action Plan Checklist

- ☐ Perform an institutional "paper forms cleanup campaign"
- ☐ Consider the use of unit-based "downtime carts" that contain downtime forms, requisitions, labels, wristbands, reference materials, etc.
- ☐ Create clinical documentation teams to review, prioritize, update, and develop unit-specific, paper-based forms
  - ○ Engage staff who will be comfortable with typing and printing notes from local desktops/ non-network printers when designing downtime documentation workflows
- ☐ Include Utilization Review and Billing staff on teams
- ☐ Develop paper forms that align with actual processes and EHR workflows
- ☐ Consider key regulatory and reimbursement documentation needs
- ☐ Balance documentation needs with provider/staff time; consider simplified documentation (SOAP progress notes)
- ☐ There is a process for warm handoffs

continued

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From Electronic to Paper-based Systems

A. PAPER DOCUMENTATION STRATEGIES AND LOGISTICS

Patient Safety Priority [continued]

- Providers and staff are comfortable converting to paper and know where to access supplies
- Charts are complete and contain essential information for safe patient care, coding, regulatory, and billing purposes
- Charts are compiled, transported, and processed by Health Information Management in a timely manner

Action Plan Checklist [continued]

- ☐ Training:
  - ○ Use drills to identify gaps in paper-based workflow/documentation
  - ○ Perform annual downtime documentation training
  - ○ Create alternate training methods – Just in Time training modules, mentorship, learning labs, visuals, etc.
- ☐ During a downtime response, employ tenured providers and staff familiar with paper charting (SOAP notes) as mentors

Downtime Cart

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

1. Pharmacy and Medication Administration

Patient Safety Priority

- Patients receive medications in a safe manner (see Institute for Safe Medication Practices, www.ismp.org)
- Medication orders are transcribed, filled, and dispensed accurately on a timely basis
  - *Staff are not accustomed to manual checks for paper-based transcription errors*
- Processes are in place to minimize the impact of lost EHR decision support, drug administration guidelines (DAG), and alert systems (allergies, contraindications, dosages, etc.)
- Keep hard copies of key medication texts/references
  - Including a paper copy of licensed independent practitioners' National Provider Identifier (NPI) and Drug Enforcement Agency (DEA) numbers
- There is adequate staff to support providers, the pharmacy, and medication order fulfillment and delivery processes
  - *Limited ability to use outside staff (licensure) resulting in insufficient staff to meet demands*
  - *Staffing supports paper-based processes—the number of transactions far exceeds staff capacity to process manual workflows*
- Efforts are made to mitigate the risk of an increase in medication errors
  - *Assume that the transition from Computerized Physician Order Entry (CPOE) to paper (and vice versa) results in a lack of clarity on what medication orders were initiated, received, filled, delivered, or administered*

continued

Action Plan Checklist

- ☐ Increase the number of fax machines to handle orders
  - ○ At the start of a downtime, closed-loop testing of faxes should be performed with all units returning an acknowledgement fax
- ☐ Create streamlined medication request forms
- ☐ Establish a pharmacy hotline and dedicated fax for STAT orders and requests
- ☐ Download reports for patients with active medication plans from failsafe computers
- ☐ Ensure availability of calculators and web-based references (Epocrates, etc.) on personal devices
- ☐ Key/Common/Complex medication Order Sets are available in hard copy format to guide providers in ordering (i.e., used as check sheets)
- ☐ Draw on the labor pool to support additional pharmacy staffing
- ☐ Use runners to pick up medication orders, renewals, missing doses, and to deliver medications
- ☐ Consider implementing judicious ordering of medications
- ☐ Manual verification steps are added at appropriate points (e.g., peers check each other's work)
- ☐ Patient Safety monitors and advocates for sufficient resources across the medication delivery spectrum for the entirety of the event

continued

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

1. Pharmacy and Medication Administration

Patient Safety Priority [continued]

- *In planned downtimes, consider bringing down CPOE in advance of bringing down pharmacy order verification and eMAR so that all medications ordered electronically can be verified, administered, and reconciled prior to fully bringing down all systems*

- Reconciliation processes and interfaces to automated dispensing units (Pyxis, Omnicell) may be affected
  - *Monitor stock and par levels*
- Consider regulatory issues and risk of drug diversion
- Establish a backup plan for ePrescribing
- Plan for the medication needs of essential staff and personnel
  - *Establish a process for prescribing and supplying routine medication to essential staff*

Action Plan Checklist [continued]

- ☐ If possible, limit CPOE access prior to bringing down reconciliation and eMAR systems
- ☐ Make critical decisions prior to change of shift
- ☐ Processes are implemented to minimize errors in the absence of barcode verification
- ☐ Perform a risk analysis to determine where in the process to insert manual checks
- ☐ Assess the implications of increased medication overrides and loss of patient profiling functionality on Pyxis/Omnicell
- ☐ Supply a list of materials needed during downtime (labels, pens, etc.) with a plan in place on how they will be re-stocked
- ☐ Create a tracking system for the distribution and collection of prescription pads

In contributing to this EHR Downtime Guide, I went back to my pharmacy to assess critical content for a pharmacy "unit downtime cart." The team suggested file folders arranged by patient room/bed number. We decided that we would need to file the most current version of individual patient lab results in the folders in order to adjust dosing for renal clearance.

When I logged on to our Summit Disaster Recovery local back-up computer in the pharmacy, I realized that the pharmacy had not been granted administrative logon access to the lab module! A quick fix and lesson learned through downtime drills.

—Hospital pharmacist

I was rounding on a critical unit after a planned downtime. An RN told me that labs had been reported on a wrong patient…the error did not reach the patient, as the nurse realized that this particular patient had had no labs drawn. He said, "Don't worry, I didn't put in an event. This kind of thing is bound to happen when the computer goes down!"

A mini RCA revealed that the staff wasn't hand labeling the blood tubes during the downtime. With the label printer down, the assumption was that tubes didn't have to be labeled/bar coded and that one hand written label on the biohazard transport bag was sufficient.

—Hospital risk manager

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

2. Lab and Pathology

Patient Safety Priority

- Patients get the right laboratory and pathology diagnostic tests, results, and treatments in a timely and safe manner
- There is adequate staff to support paper-based processes
  - *The number of transactions far exceeds staff capacity to process manual workflows—establish an awareness of baseline lab volume*
- There is judicious ordering of lab tests
- Determine which labs will be considered "critical"
  - Establish tiers of testing panels that will be prioritized and/or deferred during a downtime. It is challenging to recover from a backlog of tests. Planning for and staying ahead of a mounting backlog of 'non-essential' tests will help assure timely provision of essential lab services.
- Tracking and system checks are in place to prevent lost, delayed and mislabeled specimens
  - *Staff who are not accustomed to working without EHR data-based decision support and alerts (specimen labeling, patient/test identification, etc.) may need guidance*
- Results are communicated to the right providers in a timely manner

Action Plan Checklist

- ☐ If possible, limit CPOE access prior to bringing down labeling, reconciliation, and resulting modules
- ☐ Consider a formal memorandum of understanding and business continuity plan with an outside contractor
- ☐ Design downtime-specific laboratory staff roles: cross-train, look at assembly line format, limit multi-tasking, etc.
- ☐ Consider curtailing the lab test menu and non-essential lab tests
- ☐ Create streamlined paper requisition forms with a limited downtime menu
  - ○ Don't forget to get old requisitions out of circulation
- ☐ Identify the most frequently used diagnosis-based order sets and the decision supports that are associated with them
  - ○ Hard copy paper order sets (hepatitis panel, etc.)
  - ○ Have pocket guides available
  - ○ Mobile applications
- ☐ Work with nursing to develop a standardized process for specimen collection and the delivery of results
  - ○ Reinforce the need to continue standard operating procedures re: patient identification/labeling
  - ○ Manual reports and downtime forms should include reference ranges

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

3. Blood Bank

Patient Safety Priority

- Blood product orders are received, specimens cross-matched, and products safely administered to patients with minimal delays and without error
  - *Anticipate increased burden and time delays related to paper-based processes and manual delivery of orders*
  - *Staff not used to working without EHR data-based decision support and alerts (Blood Bank cross-checks) may need guidance*

Action Plan Checklist

- ☐ Use runners to pick up blood bank orders
- ☐ Create a manual cross-check blood verification system
- ☐ Wayfinding: ensure that staff know the physical location of the Blood Bank and other critical areas
- ☐ Consider accessibility/override for locked blood product storage refrigerators

4. Radiology and Imaging

Patient Safety Priority

- A system is in place to deliver or make available films or images
- Results are communicated to the right providers in a timely manner

Action Plan Checklist

- ☐ Review paper back-up systems and streamline processes
- ☐ There is a plan to save image files to CD-ROM
- ☐ Assess impact to electronic transmission of image files between institutions (e.g., LifeImage)
- ☐ Ensure adequate staffing—technical, clerical, and runners

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

5. Infant Security Systems

Patient Safety Priority

- There are redundant, non-EHR dependent infant security processes in place
- Parents are informed of, and report comfort with, the non-EHR infant security procedures
- Providers, staff, parents and family are educated on any paper-based changes to the infant security process
- Infants are secure and there are no infant misidentification nor Code Pink events as a result of the EHR downtime

Action Plan Checklist

- ☐ Determine which infant security procedures are EHR-based
- ☐ Perform an EHR downtime risk assessment on conversion to a paper-based (or other) method
- ☐ Consider alternative security-based applications
- ☐ Create security checklists, as needed

6. Oncology, Critical Care, Neonatal Intensive Care Unit, Transplant, and Nutrition Services

Patient Safety Priority

- Establish high reliability, paper-based workflows for complex, high-risk processes
- Availability of dose calculators, references, tables, and protocols

Action Plan Checklist

- ☐ Critical processes to consider:
  - ○ Patient identification
  - ○ Medication dose calculations
  - ○ Weight/body surface area
  - ○ Diet orders and food allergies
  - ○ Shift-to-shift warm handoff communication
- ☐ Paper order sets are developed and correspond to EHR CPOE order sets for parameter-based medication orders (vasopressors, etc.)
- ☐ Access to chemotherapy protocols
- ☐ Assess implications of centrally controlled smart pumps and monitors linked to servers
  - ○ Engage Biomedical Engineering in planning efforts and risk assessment

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From Electronic to Paper-based Systems

B. CLINICALLY VULNERABLE AREAS AND WORKFLOWS

7. Patient Access and Patient Identification

Patient Safety Priority

- There is an alternate, non-EHR, patient identification code generation system in place that can be reconciled with the EHR
  - *Prepare to work around the inability to access/update patient demographics or scheduling information globally across the institution*
- There are minimal delays in registration and patient wait times
- Providers and staff are trained and use alternate processes for EHR-based patient identification cross-checks
  - *The confirmation of patient identification is a specialized human communication skill that may be attenuated by reliance on electronic skills—educate staff on confirmation bias and avoidance of "leading questions" through just-in-time training, alerts, and unit downtime cart procedure references.*

Action Plan Checklist

- ☐ Develop unit-based "downtime carts"
- ☐ At recovery, there is careful merging of records
- ☐ Be aware of which EHR systems automatically transfer data to receiving units (i.e., vital sign monitors in Post Anesthesia Care Unit, Operating Room, Radiology, etc.)
  - ○ Staff should know how to print out monitoring data and stand-alone documentation templates to send with a patient at time of transfer

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Increasing Workforce Capacity & Capability

A. RECRUITING ADDITIONAL WORKFORCE TO MEET DOWNTIME NEEDS

Patient Safety Priority

- Surgical, procedural, and clinic schedules run efficiently
- Discharges are not delayed
- Mitigate concerns from patients and families about delays and failures to meet patient care needs
- Pharmacy and Lab departments are prioritized during recovery

Action Plan Checklist

- ☐ There are enough providers and staff in the current pool to cover downtime needs ***and*** recovery needs
- ☐ During recovery, Pharmacy and Lab may require up to 2–3 personnel hours for every downtime hour experienced

B. PROVIDING WORKFORCE SUPPORT FOR EXTENDED RESPONSE

Patient Safety Priority

- Providers, staff, and volunteers are able to meet both work and personal needs with minimal burnout
  - *Communicate awareness that extended downtime can generate low morale amongst providers / staff and contributes to significant overtime; both are associated with increased human-based error rates*

Action Plan Checklist

- ☐ The institution has a human resources support plan in place for both permanent and temporary providers and staff
- ☐ Leadership is visible to frontline staff and proactively rounds on units
- ☐ Consider medication needs (i.e., availability) of emergency staff and personnel working extended shifts

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Monitoring Patient Safety & Quality

A. SAFETY EVENT REPORTING AND RESPONSE

Patient Safety Priority

- A quality and safety reporting system is in place to actively track and respond to emerging risks during the EHR downtime
  - *Assist staff to ensure that reporting is not de-prioritized as clinicians may be fixated in "survival mode"*
  - *Anticipate that Quality, Patient Relations, and Risk Management may be challenged to prioritize and respond to an excess volume of reports*

Action Plan Checklist

- ☐ Develop alternate manual reporting processes that are streamlined and simple to use
- ☐ Patient Safety and Quality coordinates with the IT help desk to ensure that events are not "lost" in IT help desk reporting
  - ○ *The IT Help Desk may become overwhelmed by the sheer volume of reports and action items. A designated IT Help Desk/Emergency Management liaison can help support these workflow processes.*
- ☐ Consider time-saving reporting strategies:
  - ○ Have staff submit safety events via short emails (if using a HIPAA compliant system)
- ☐ Supply a reporting "short form" in unit downtime carts

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Monitoring Patient Safety & Quality

B. MANAGEMENT, QUALITY, & REGULATORY REPORTING

Patient Safety Priority

- Priority operational and regulatory reporting requirements are met
- There is coordination and collaboration between IT, Health Information Management, Quality, and leadership to ensure essential reporting elements are collected and tracked
  - *Anticipate that data elements necessary for reporting may not be documented consistently in paper charts or may not be readily available for abstraction*

Action Plan Checklist

- ☐ Define key points at which external reporting may be required and include those fields in paper forms
- ☐ Create an EHR downtime reporting team composed of key IT, Health Information Management, Quality, and Leadership to develop a downtime reporting plan
- ☐ Involve data and reporting analysts/abstractors in the downtime reporting team

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Planning for Recovery & Deactivation

A. SYSTEM RESTORATION STRATEGIES

Patient Safety Priority

- Chart restoration follows a deliberate process
- Sequencing of restoration of systems/modules is prioritized based on risk
- Clinical staff base medical decision-making on current data

Action Plan Checklist

- ☐ Consider restoring Pharmacy and Lab prior to restoring Computerized Physician Order Entry (CPOE)
- ☐ Validate content of eMAR and lab values to ensure that clinical information is current prior to releasing to clinical staff

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Planning for Recovery & Deactivation

B. ELECTRONIC HEALTH RECORD RESTORATION STRATEGIES

Patient Safety Priority

- Chart restoration strategies are based on length of downtime
  - Issues compound over multiple shifts—as such, approach may be different for a 24-hour vs. extended, multi-shift downtime
- There is adequate staffing for chart restoration and reconciliation
- Prioritize EHR recovery efforts
- There is a defined process for authentication of transcribed orders
- Establish categories and thresholds for order reconciliation:
  - Patients hospitalized prior to downtime
  - Patients admitted or with an ambulatory visit during downtime
  - Readmissions: patients discharged during a downtime who are readmitted prior to full system restoration
  - Patients discharged during downtime
  - Patients admitted and discharged during downtime

Action Plan Checklist

- ☐ Leverage a 24-hour labor pool with attention to transcription error risk
- ☐ Prioritize documentation that:
  - ○ Will remain on paper
  - ○ Will be scanned to the EHR
  - ○ Will be manually transcribed
- ☐ Establish a process for the authentication of transcribed orders, which may include the following:
  - ○ Refer to retained paper order
  - ○ Enter as verbal orders and queue for e-signature
  - ○ Use a physician proxy
  - ○ Use a pharmacist
- ☐ Prioritize and assign workflows to categories of medication orders
  - ○ Recurring medication orders
  - ○ New STAT and single dose medication orders
  - ○ Historical STAT and single dose medication orders
  - ○ Orders for patients who have been discharged
  - ○ Evaluate other orders, such as diet and lab orders

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Leveraging Lessons Learned

Patient Safety Priority

- Lessons learned are maximized and shared with all stakeholders

Action Plan Checklist

- ☐ Patient Safety is included in "Hotwash" and After Action Review
- ☐ Submit your analysis, deliberations, and lessons learned to the Patient Safety Organization (PSO) as Patient Safety Work Product
- ☐ Request a safe table convening of the AMC PSO, as needed

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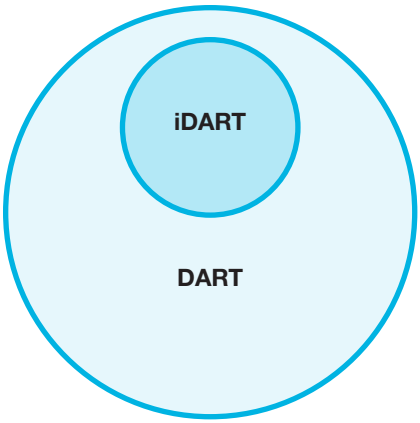
Appendix

INITIAL DOWNTIME ASSESSMENT AND RESPONSE TEAM (iDART)

The iDART process, developed by the Center for Disaster Medicine at Massachusetts General Hospital, allows a small group to assess whether a system downtime is a one-time anomaly, or an "event."

iDART & DART

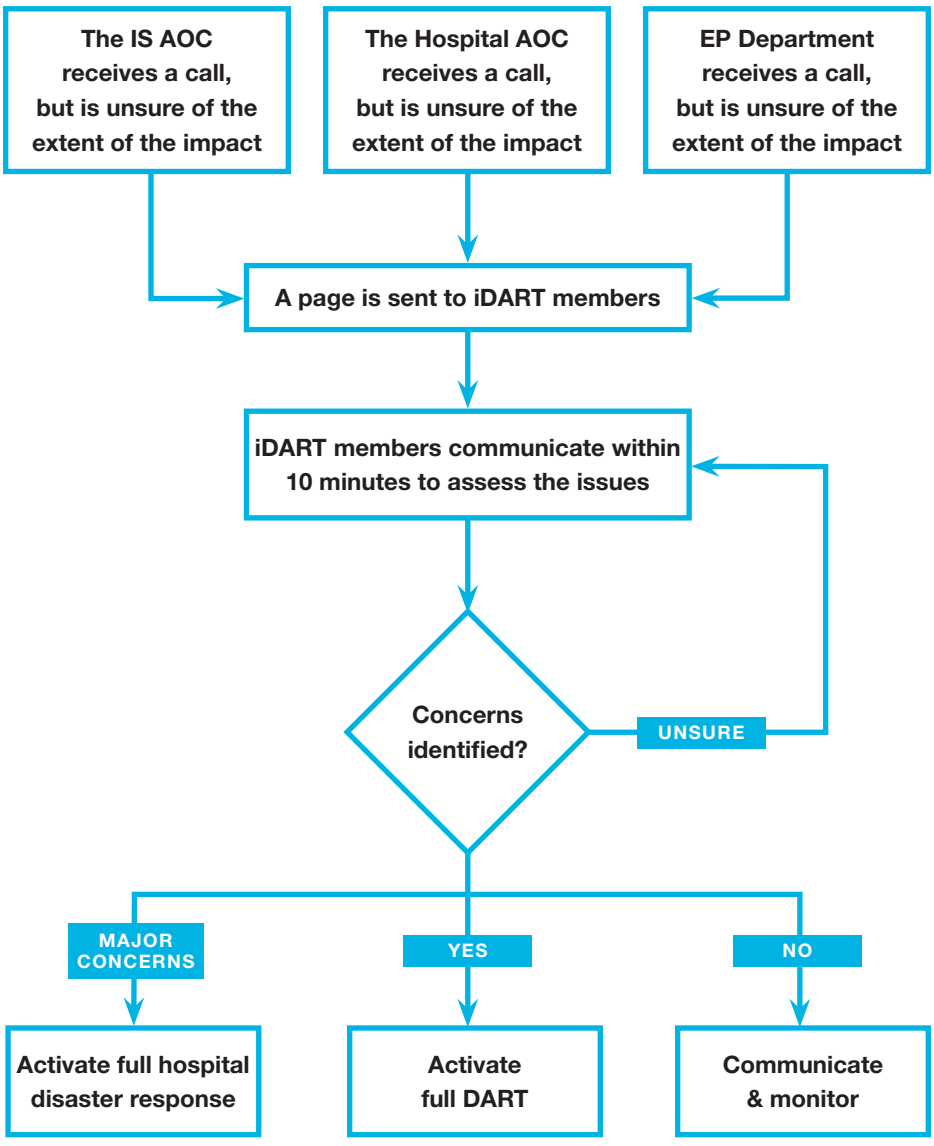
iDART membership is a subset of the full Downtime Assessment and Response Team (DART).



iDART Representation

- Information Systems (IS) Administrator on Call (AOC)
- Hospital AOC
- Core team representation by key stakeholders from:
  - Emergency Department
  - Admitting
  - Nurse and Physician Clinical Informatics (or Inpatient & Ambulatory Services)
  - Emergency Preparedness (EP) Department

iDART Process Flow



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About the AMC PSO

In 2009, the Patient Safety and Quality Improvement Act (PSQIA) was enacted to create a culture of safety by providing federal privilege and confidentiality protections for information that is assembled and reported to a PSO, or developed by a PSO, for the conduct of patient safety activities.

The act promotes the sharing of best practices and knowledge to continuously improve the quality of patient care. Before the PSQIA, legal protections for quality activities were limited in scope and existed only at the state level.

The PSQIA encourages voluntary reporting. Identification of common, systemic errors can be achieved more effectively through the aggregation of information reported from providers across the health care delivery system.

In 2010, the Risk Management Foundation of the Harvard Medical Institutions, Inc. formed a component entity, the Academic Medical Center Patient Safety Organization (AMC PSO) to function as a national convener of clinicians and health care organizations to collect, aggregate, and analyze data in a secure environment in an effort to identify and reduce the risks and hazards associated with patient care.

Our objectives:

- Create a bridge between themes driving malpractice activity and factors seen in real-time data with a particular focus on high-severity/high-significant events seen in root cause analysis (RCA)
- Convene member organizations in response to real-time events and bring context to patient safety issues by providing a secure venue for discussion
- Translate learnings gleaned from our convening sessions and data analyses into focused clinical interventions that can improve quality, reduce costs, and decrease liability
- Reach beyond data reporting and generate actionable responses that can inform the development of best practice recommendations
- Inform institutional patient safety efforts by pinpointing the areas of highest risk and vulnerability to help guide organizational patient safety initiatives

AMC | PSO

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Patient Safety Listed PSO Organization