AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

2025 Annual Conference

Emergency Department Mass Casualty Incident Response Planning Workshop

Session Workbook

The goal of the Emergency Department Mass Casualty Incident Response Planning Workshop is to provide participants with a forum to discuss concepts and lessons-learned from the development of Mass Casualty Incident Response Plans that are specific to the Emergency Department. Please use this Workbook to participate in the session, take notes, and interact with others to help you develop a more comprehensive understanding of the role and function of the Emergency Department during an MCI.

The activities provided here highlight concepts and principles learned through several years and multiple versions of department-based response planning. Please free to ask questions, collaborate, or doodle during our session to help you better understand their basis and potential application at your facility.

Session Workbook

Space for General Session Notes…or the Proverbial "This Page is Left Intentionally Blank" Blank Page

Planning Points

Session Workbook

Let's say we are looking to develop an Emergency Department Mass Casualty Incident Response Plan that guides and supports proactive department setup and promotes patient throughput, what key point(s) do you think we should address in our plan?

Session Workbook

Stakeholders
Based off our identified 'Throughput' steps/stages and 'Lifelines', what hospital department(s) or position(s) do you think should have a seat at the table in the development of our Emergency Department Mass Casualty Incident Response Plan?
Resource Needs
What management processes and procedures can we pre-plan for and implement to help our staff better define what patient management (not patient treatment) resources may be required during a MCI response?

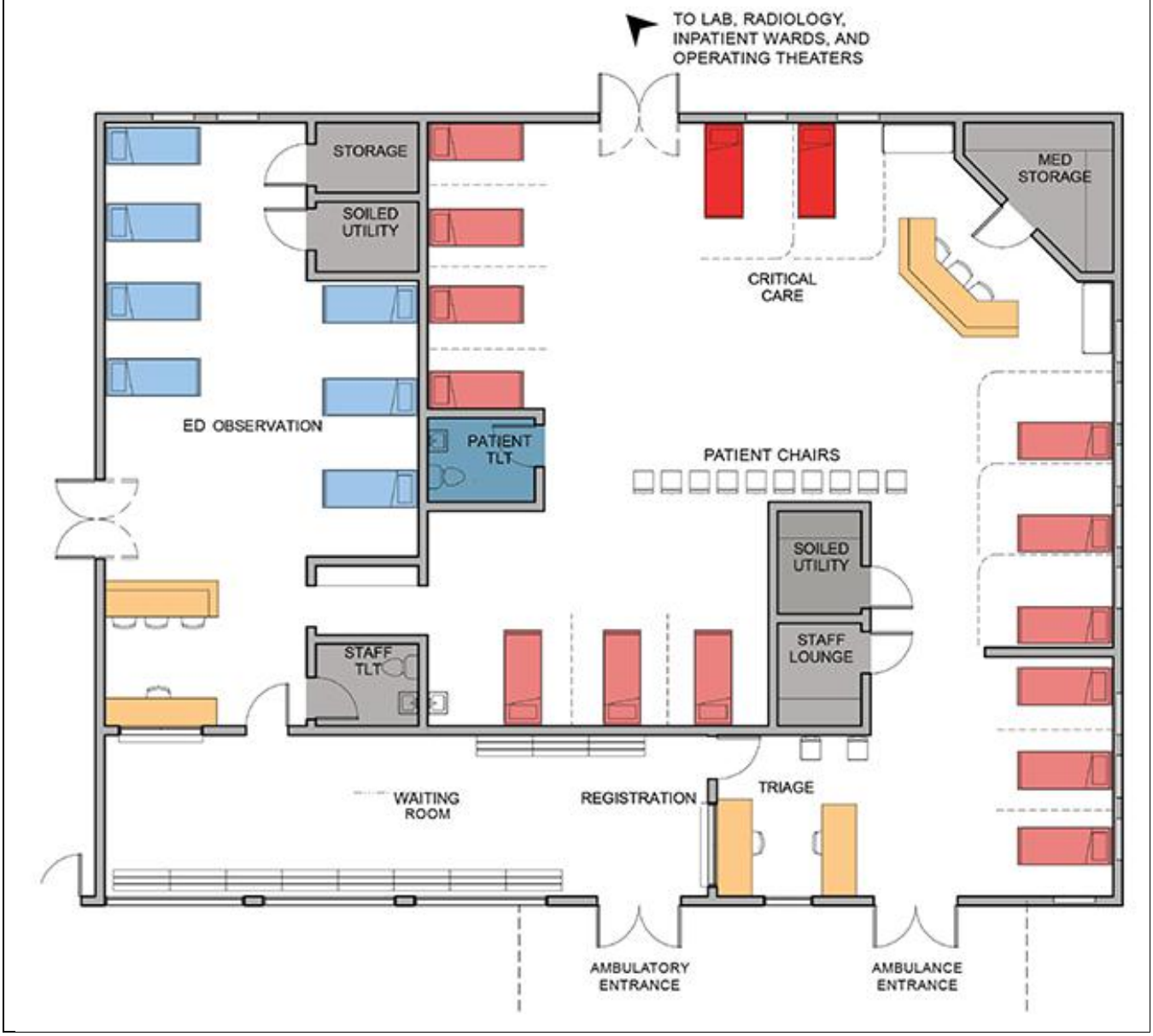
Session Workbook

Triage Algorithm
What considerations would you make to develop a 'hospital-based' MCI triage algorithm? What would your ideal triage algorithm look like?

Session Workbook

Area Setup

Based off this Emergency Department layout, how would you layout your Emergency Department to manage a MCI?



Session Workbook

Throughput
Based off what we've identified so far, what would your ideal patient throughput algorithm look like?

Session Workbook

Treatment Guidance

Working in groups, determine what kind of treatment would be suitable for the identified area

Area Designation	Scope of Practice / Type of Capability	Staffing
Red Treatment		
Yellow Treatment		
Green Treatment		
Black Treatment		
Critical Intake		
Adult Delayed Intake		
Pediatric Delayed Intake		
Main Treatment Area		

Session Workbook

Staffing Guidance

Working in groups, determine what kind of staff would be suitable for each of the identified areas

Area Designation	Scope of Practice / Type of Capability	Staffing
Red Treatment		
Yellow Treatment		
Green Treatment		
Black Treatment		
Critical Intake		
Adult Delayed Intake		
Pediatric Delayed Intake		
Main Treatment Area		

Session Workbook

Functions
Working in groups, determine what response functions are required to successfully manage a mass casualty incident response?

Session Workbook

Positions

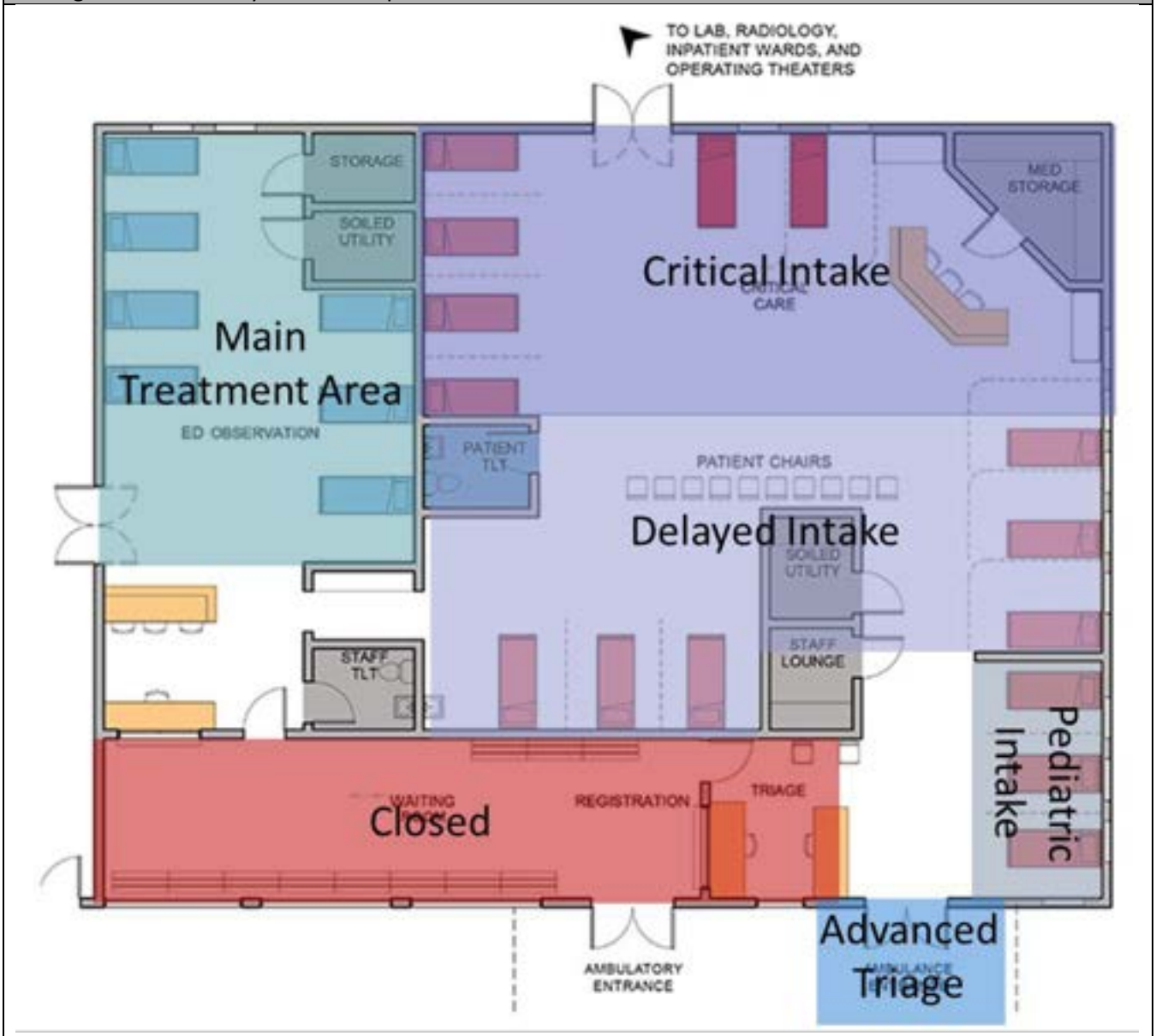
Working in groups and based off identified functions, determine what command roles are required to successfully manage a mass casualty incident response. Identify which available position would automatically assume the role during a response.

Incident Position	Suggest Assignment from Routine Staff

Session Workbook

Posts

Working in groups and based off identified functions, determine where posts would be to successfully manage a mass casualty incident response



Session Workbook

Posts

Working in groups and based off identified functions, determine where posts would be to successfully manage a mass casualty incident response

Incident Post	Suggested Location	Function

Session Workbook

Organization
Working in groups and based off identified roles, determine what your ideal organization structure looks like.

Session Workbook

Planning
Working in groups, determine what section headers you would want to include in your Emergency Department Plan.

Session Workbook

General Session Notes

PLAN DEVELOPMENT SUPPORT

Suggested Plan Outline

- Purpose
- Background
  - Plan Assumptions
- Scope
- Procedure
  - Activation
  - Overview of Modifications to Department Operations
  - Incident Command Structure/Positions [TABLE]
    - Emergency Department Command Post
    - Intake Area(s) [Divide into Critical and Delayed if staffing permits]
    - Pediatric Delayed Intake Area Section
    - Main Treatment Area(s) [Adult and Pediatric if space permits]
    - Advanced Triage Area
    - Decontamination Area
    - Resource Accountability Area
    - Patient Tracking
    - Registration
    - Table of Organization
  - Incident Area Designations
    - Emergency Department Command Post
    - Advanced Triage Area
    - Intake Area(s) [Divide into Critical and Delayed if staffing permits]
    - Pediatric Delayed Intake Area Section
    - Main Treatment Area(s) [Adult and Pediatric if space permits]
    - Resource Accountability Area
    - Decontamination Area
    - Registration Posts
  - Patient Dispositioning
  - Staffing
  - Equipment
  - Advanced Triage Operations
    - Disaster Triage Process
    - Documentation
    - Patient Identification
    - Triage of Behavioral Patients
    - Triage of a Minor
    - Companion Banding
  - Patient Registration
  - Patient Treatment and Tracking

        - Patient Flow
        - Patient Assignment
        - Documentation and Order Entry
        - Treatment and Diagnostics
        - Medication Distribution
        - Patient Tracking and Transport
            - Tracking
            - Transport
        - Patient Dispostioning
            - Intake Area(s)
            - Main Treatment Area(s)
    - Mass Casualty Decontamination
    - Patient Reunification in the Emergency Department
- Critical Incident Stress Debriefing for Staff

PLAN DEVELOPMENT SUPPORT

Incident Command Structure/Positions Table

Emergency Department Command Post	
Position	**Suggested Assignment**
Emergency Department Branch Director	Flex Registered Nurse, or most qualified Registered Nurse
Medical Officer	Senior Emergency Department Attending, or most qualified Attending
Responsibilities	

• Overall management of Emergency Department during EDERS activation unless specific responsibilities are otherwise assigned
• Establishment of incident management framework, including:
  ○ Assignment of all department incident leadership positions
  ○ Distribution of Command Staff equipment (i.e. radios, vests, documents, etc.)
• Communication with Hospital Command Center and external agencies related to resource management and situational awareness including updates from scene as well as department operations and patient dispositions
• Safety of all staff and patients within the ED, including:
  ○ Modifications to departmental lockdown procedures based on incident type
  ○ Determination of need for patient decontamination
  ○ Resource management	

Duplicate as appropriate for command positions

PLAN DEVELOPMENT SUPPORT

Incident Area Designation Table

Area Designation	Suggested Location	Operation
Emergency Department Command Post	ED Conference Room / EMS Breakroom	Determination of overall department operations including: • Safety • Objective Development • Communication

One line per identified area

Staffing Table

Staff Position	Suggested Assignment	Suggested Staff Capability
Advanced Triage Staff	Registered Nurse, Clinical Care Technician, Patient Transport, Access Management	Emergency Department
Critical Intake Area	Medical Provider (Physician, Physician's Assistant, Advance Practice Nurse), Registered Nurse, Clinical Care Technician, Pharmacy, Patient Transport, Access Management	Emergency Department or Critical Care

One line per identified area

EMORY HEALTHCARE

[Incident/ Exercise/ Event Name] – After Action Report

[Pick the date]

[Year]

[Author of the AAR]
Report Completed: [Date]

[Facility Name]

CONTENTS

EXPLANATION OF TERMS

Examples:

AAR	After Action Report
CMS	Centers for Medicaid/Medicare
EPP	Emergency Preparedness Program
EOP	Emergency Operations Plan
FSX	Full Scale Exercise
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise Evaluation Program
HVA	Hazard Vulnerability Assessment
IC	Incident Command
ICC	Incident Command Center
ICS	Incident Command System
IP	Improvement Plan
NIMS	National Incident Management System
TTX	Table-Top Exercise

INTRODUCTION

Include brief synopsis of incident here.

Sequence of events:

Include detailed sequence of events here, if available.

AFTER ACTION REPORT OVERVIEW

This report is a compilation of information from the different departments and staff who participated in the response to [*list incident/exercise/event here]*. The information was gathered by [*list departments here and various sources of information for the report]*

The recommendations in this AAR should be viewed with considerable attention to the needs for providing safe care to residents. Each department should review the recommendations and determine the most appropriate action and time needed for implementation.

The issues outlined in this AAR will be addressed in the Improvement Plan and will list corrective actions to complete. This Improvement Plan will serve as a summary of the AAR and as a guide for corrective action over the course of the following year's training program for staff.

Incident Overview:

[Insert incident/exercise name, event location, and summary here]

Scope:

[Insert incident/exercise event time, duration, and parameters]

Focus *(Check appropriate area(s) below)**:***

- ☐ Mitigation
- ☐ Preparedness
- ☐ Response
- ☐ Recovery

Hazard *(Check appropriate area(s) below)**:***

- ☐ Fire
- ☐ Severe Weather
- ☐ Hazardous Material Release
- ☐ Bomb Threat
- ☐ Medical Emergency
- ☐ Power Outage
- ☐ Evacuation
- ☐ Lockdown
- ☐ Special Event
- ☐ Exercise/Drill
- ☐ Other

Location:

[Insert incident/exercise/event location here]

Participating Organizations:

[Insert organizations here]

STRENGTHS

List strengths here.

AREAS OF IMPROVEMENT

List Areas of Improvement here.

RECOMMENDATIONS

List Recommendations here.

CONCLUSION AND IMPROVEMENT PLAN

Insert Conclusion here.

Issue/Area for Improvement	Corrective Action	Critical Area	Primary Responsible Party	Start Date	Completion Date

AHEPP

ASSOCIATION OF HEALTHCARE *EMERGENCY PREPAREDNESS* PROFESSIONALS

Serious Safety Events Tabletop Exercises:

Integrating Emergency Management into Key Hospital Initiatives


SPIRIT
Emergency Guy
INCLUDES:
Tactical Pants
Black shirt
Boots
Other Duties as Assigned
Also Included:
A guarantee no one knows exactly what it is you do.
ADULT
Size Costume
ONE SIZE FITS MOST

Healthcare Emergency Management Challenges

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Reshaping the EM Narrative

- Not a one-size fits all solution
- Influenced by organization priorities
- Hospitals want to improve patient safety and decrease serious safety events

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Serious Safety Event (SSE) Tabletop Exercise Program

- Visibility for EM Program
- Strategic Plan Integration
- Increases Collaboration across Multiple Disciplines
- Empowers Frontline Staff
- Promotes Patient Safety

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

The Catalyst…

Former nurse found guilty in accidental injection death of 75-year-old patient

MARCH 25, 2022 · 5:25 PM ET

FROM KFF Health News

By Brett Kelman

RaDonda Vaught and her attorney, Peter Strianse, listen as verdicts are read at her trial in Nashville, Tenn., on Friday, March 25. The jury found Vaught, a former nurse, guilty of criminally negligent homicide and gross neglect of an impaired adult in the death of a patient to whom she accidentally gave the wrong medication.

Nicole Hester/The Tennessean/AP

The American Society for Health Care Risk Management (ASHRM) stands united with the American Hospital Association (AHA) and the American Organization for Nursing Leadership (AONL) in response to the criminal verdict against Nurse RaDonda Vaught.

Robyn Begley, DNP, RN, chief nursing officer of the American Hospital Association, CEO of the American Organization for Nursing Leadership, and member of ASHRM's Executive Committee - March 29, 2022

The verdict in this tragic case will have a chilling effect on the culture of safety in health care. The Institute of Medicine's landmark report To Err Is Human concluded that we cannot punish our way to safer medical practices. We must instead encourage nurses and physicians to report errors so we can identify strategies to make sure they don't happen again. Criminal prosecutions for unintentional acts are the wrong approach. They discourage health caregivers from coming forward with their mistakes, and will complicate efforts to retain and recruit more people in to nursing and other health care professions that are already understaffed and strained by years of caring for patients during the pandemic.

ANA, TNA Release Statement on RaDonda Vaught Conviction

March 29, 2022

By Lindsay Fischer

Article

Together, the associations stated that, like many other nurses following this case, they were hoping for a different outcome.

Following the recent verdict of former nurse RaDonda Vaught, the American Nurses Association (ANA) and the Tennessee Nurses Association (TNA) have co-released a statement expressing regret about how this outcome might affect nursing professionals and patient outcomes.[1]

"Like many nurses who have been monitoring this case closely, we were hopeful for a different outcome," stated the associations. "It is a sad day for all of those who are involved, and the families impacted by this tragedy."

Furthermore, the associations added that, "The nursing profession is already extremely short-staffed, strained and facing immense pressure—an unfortunate multi-year trend that was further exacerbated by the effects of the pandemic. This ruling will have a long-lasting negative impact on the profession."

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Where's EM in all this?

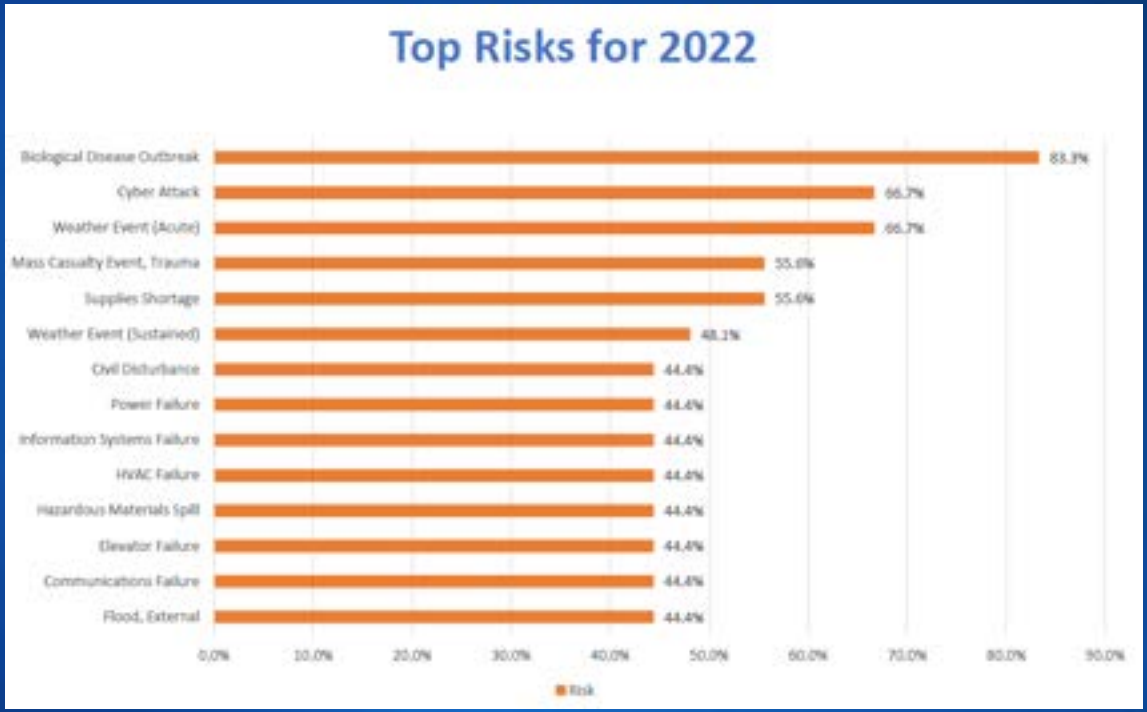
AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Starting Out…

- Great idea but how do we execute?
- Who can help?
- Where's the buy in?
- What is the scenario?

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Exercises Beyond the HVA



Speaking before a virtual audience of CommonSpirit Health employees, RaDonda Vaught, the former nurse who accidentally killed a patient by administering the wrong medication, listed the outside factors she claims contributed to her fatal error. Among them: a missing drug order, a faulty medication dispenser, and a hurricane that hampered the drug supply.

STAT Reporting from the frontiers of health and medicine

Rank	Event
1	Pandemic
2	IT System Outage
3	Active Shooter
4	Flood, Internal
5	Inclement Weather
6	Bomb Threat
7	Supply Chain Shortage/Failure
8	Water Disruption
9	Utility Failure
10	Flood External
11	Fire, Internal
12	Tornado

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Integration with Risk

Enterprise Risk Management

- Engage your risk partners
- Participate in ERM
- Find the areas of overlap

Reference	Risk	Risk movement
8	Cyber threats	↑
5	Strategic forecasting and planning	↑
13	Adverse PR	↔
10	Third party reliance	↑
7	Talent recruiting and retention	↔
6	Physical safety	↑
11	Supply chain disruptions	↔
2	Regulatory complexities	↑
1	Serious preventable patient harm event	↔

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Building the Team

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Creating the Scenario

US doctor removes wrong organ during surgery, man dies in surgery room: Report

By HT Trending Desk

Sep 04, 2024 10:14 PM IST

Read Now

A 70-year-old died after a surgical error in Florida. Surgeons removed his liver instead of spleen, leading to fatal complications.

Preventable errors have nearly doubled over the past decade in Minnesota hospitals, where staffing shortages and other pressures have left patients more vulnerable to disabling falls, assaults and surgical and laboratory mix-ups.

The 610 adverse events in the 12 months ending last October remain rare, considering that Minnesota hospitals perform roughly 567,000 surgeries and procedures each year. Still, health care leaders said they are troubled by the increase post-pandemic.

Sixteen patients died last year from reportable events, such as medication errors or device malfunctions, while another 222 suffered disabling injuries.

The Minnesota Star Tribune

The New York Times

Investigators Find Hospital Error Caused Mother's Death in Brooklyn

Christine Fields, a 30-year-old Black woman, bled to death after giving birth at Woodhull Medical Center in Brooklyn. State investigators said the cause was a doctor's mistake.

The patient in question was sent to CHI Saint Joseph Health Main in Lexington in June of 2022 because of a gastrointestinal bleed, according to documents released last summer in the Kentucky Board of Nursing's investigation into the incident.

The patient was set to be given a colonoscopy and was supposed to be given a bowel prep medication called GoLytely ahead of it, according to the documents.

Instead, the patient was given a dialysis liquid called NaturaLyte, according to the investigative reports by the boards of pharmacy and nursing. The patient died hours later.

According to an investigation by the Kentucky Board of Nursing, a series of errors led up to the patient's death. The dialysis solution was mistakenly left on the floor where the patient was being cared for by a dialysis team. The nurse then mistook the dialysis solution for the colonoscopy prep because the jugs look similar.

LEX18

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Developing Objectives

Demonstrate a plausible scenario of medical error resulting in severe harm/death to patient (sentinel event)

Identify key Points of Failure

Address Legal Priorities

Validate the Serious Safety Event Response Process

Discuss any public information concerns and public messaging

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Determining the Participants

- AOC
- Biomed
- Emergency Department
- House supervisors
- Human Resources
- Legal
- Marketing/Communications
- Patient Safety
- Peer Support
- Pharmacy
- Security
- Risk

Observers from other system hospitals

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Conducting the Exercise

- Two Sessions
  - Different Weeks/Days
  - Morning/Late Afternoon Offerings
  - 2 hour block
- No advance knowledge of the scenario
- Representation from multiple disciplines in both
- Limited attendance
- Injects that would engage all participants
- Emphasize safe space for open dialogue

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Conducting the Exercise

June 13, 2023, 5:16 pm

- Scenario Overview
  - It is 5:16 pm and WVU Medicine Children's Hospital ED status is currently at CAT 3 and under yellow diversion.
  - The ED is notified that there are three P3 trauma patients enroute from a two-car collision on I-79 and an anaphylactic shock patient about 10 minutes out.
  - The ED team is working quickly to triage and treat patients to keep up with the influx and have requested additional staffing support.

- Scenario Overview Continued…
  - Pat is a new nurse in the ED and is caring for multiple patients, including a 7-month-old. Both parents are present at bedside.
  - Pat receives orders to administer an antibiotic and potassium to the 7-month-old for presumed sepsis and hypokalemia. Nurse Pat puts the baby on cardiac monitoring.
  - The nurse started preparing the administration through an infusion pump to deliver both medications. The patient was being held in the mothers' arms because she was irritable.

- Scenario Overview Continued…
  - The RN had another RN complete a dual sign off in Epic. The infusion rate was set higher for the potassium and was a much lower rate programmed for the antibiotic administration.
  - About 15 minutes into the infusion, the infant became bradycardic and then became unconscious
  - The code team responded, and all appropriate interventions were started but the infant was not successfully revived.

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Exercise Engagement

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

What'd We Learn?

- We had a lot of gaps in our processes/thinking
- We had created policies that worked on paper but hadn't been well implemented
- We operated in silos
- We hadn't thought through this scenario as much as we needed to
- We were inconsistent at closing the loop with the frontline staff

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Was the SSE TTX Effective?

86% Indicated it helped identify key points of failure

93% Reported the exercise validated the serious safety event process

93% Agreed it increased their familiarity with application of appropriate polices and procedures

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

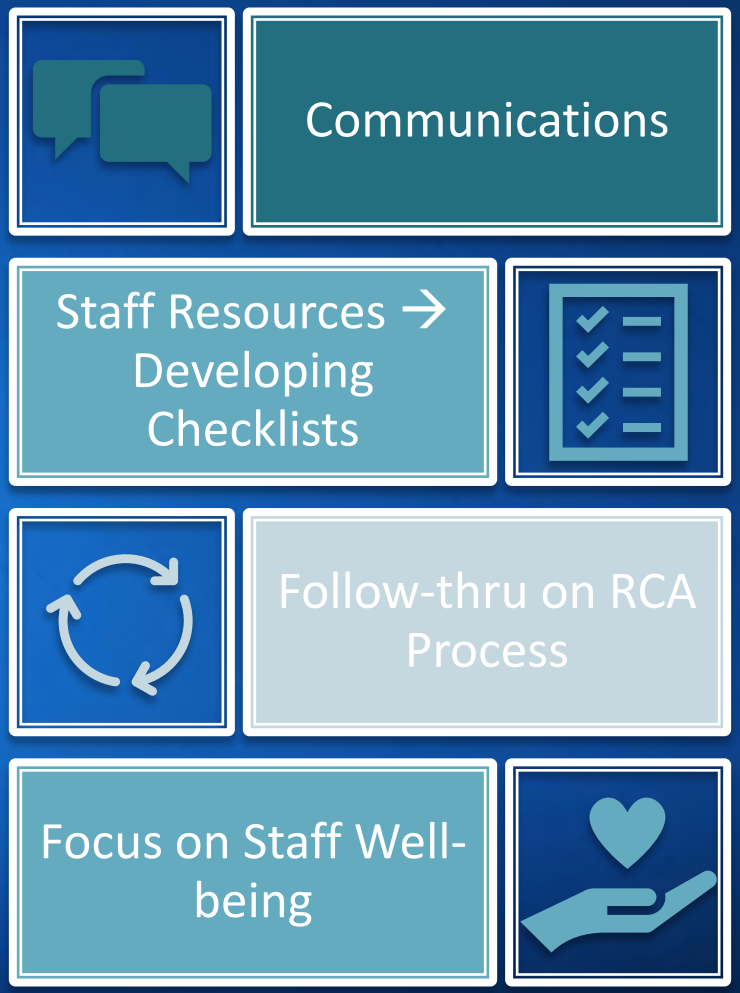
Participant Feedback

What did you like most about the event/exercise?

Learning who to contact in crisis
All departments in one location
I liked that different groups came together to discuss
Identifying gaps
the collaboration from multiple disciplines
I think it's good to think through these scenarios with calm heads in a training environment so we can be more prepared in the adrenaline of the incident
Realistic scenario, brainstorming.
The conversations and critically thinking through how it would be handled in real time
Multiple disciplines in the room and questioning attitude by most of the facilitators
Liked that the exercise was multidisciplinary
Learning from other disciplines
It was based off a situation that could potentially happen in an ED setting
Collaboration with others I hadn't necessarily encountered before.
The open discussion and dialogue between the participants. I find it useful to hear things from other people's perspectives
The open forum

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

What'd We Improve?



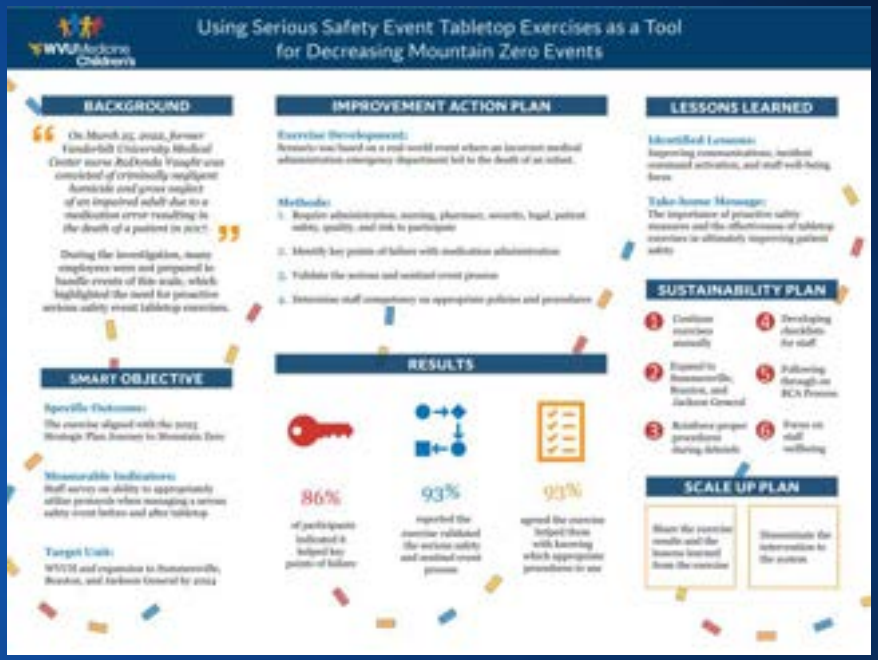
AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

How did we Build?

- **Strategic Plan Alignment:**

  "Patient Safety and Quality, Risk Management and Emergency Management teams collaborated to develop a Serious Safety Event: Medication Error Tabletop Exercise. The exercise aligned with 2023 Strategic Plan Journey to Mountain Zero by contributing to a 5% decrease in Mountain Zero events and providing training in leadership methods."

- **Poster Presentation at Annual Health System QI Fair**



AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Sustained Growth of the Program

- Three additional hospitals requested SSE TTXs in 2024
- Tabletop Exercise format adopted by Patient Advocates as a learning tool
- Completed two additional exercises in 2024

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Recommendations for Getting Started

Strategic Plan

- Patient Safety/Reduction in Harm Goal
- Employee Satisfaction & Retention
- Quality Improvement Measures

Engage the Right Stakeholders

- Risk
- Quality
- Patient Safety
- Pharmacy
- Regulatory

Use the Data

- ERM
- Patient Safety Survey
- Hospital Patient Safety Reports
- State Patient Safety Trends
- National Patient Safety Trends
- Current Events

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Additional Resources

- **Leapfrog Safety Ratings**
  https://ratings.leapfroggroup.org/
- **National Patient Safety Goals**
  https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2025/hap-npsg-chapter-2025.pdf
- **Enhancing Patient Safety Culture in Hospitals**
  https://pmc.ncbi.nlm.nih.gov/articles/PMC10811440/
- **Patient Safety Movement**
  https://psmf.org/
- **Agency for Healthcare Research and Quality**
  https://www.ahrq.gov/

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

"AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE"

BENJAMIN FRANKLIN

Elizabeth M. Garrasi, MS, CHEP, CEDP, HcEM-P
Director, Institutional Continuity
St. Jude Children's Research Hospital

AHEPP ASSOCIATION OF HEALTHCARE EMERGENCY PREPAREDNESS PROFESSIONALS

Planning for the 'Party'
- Lessons Learned from the RNC

LISA HASS-PETERS, RN NHDP-C, CHEC, CIP
EMERGENCY PREPAREDNESS COORDINATOR
FROEDTERT MEMORIAL LUTHERAN HOSPITAL

2025

Froedtert & Medical College of Wisconsin

Conflict of Interest

- I do not have any real or perceived conflict of interest.

Objectives

1. Identify strategies for public safety and the private sector to effectively collaborate during the planning and response of a critical incident.
2. Explain the process used to coordinate and disseminate information to staff, patients, visitors, and the media.
3. Identify strategies and evaluation for training of staff, including leadership during the planning and response for the RNC.

Froedtert & Medical College of Wisconsin

Froedtert Hospital

- **Froedtert Memorial Lutheran Hospital**
  - Froedtert/ThedaCare Health System
  - 2.8 million square feet
  - 89 external doors
  - 766 beds and building more
    - 119 ICU
  - Level 1 Trauma Center
  - Academic Medical Center
  - 80,000 Emergency Department visits
    - Fifth highest acuity in the Nation
  - 1 million outpatient visits
  - Students
    - 1,000+
  - Staff
    - 8,000 staff
    - 2,700 nurses
    - 1,900 physicians

Froedtert & Medical College of Wisconsin

Background

- **Milwaukee Regional Medical Center (MRMC)**
  - 250 acres
  - 21,000 employees
  - 2.8 million outpatient visits
  - Thermal Plant
  - **Members**
    - Froedtert Hospital
    - Children's Wisconsin
    - Medical College of Wisconsin (MCW)
    - Versiti Blood Center
    - Curative Rehabilitation

Froedtert & Medical College of Wisconsin

Potential Impact

Region and campus

- Influx of 80K+ people (majority from out-of-state) from July 12-19, 2024
- Security checkpoints and restricted access
- Highway and street closures throughout greater metro area
- Demonstrations/protests expected

System impact

- Increased Emergency Department, Urgent Care routine volumes from out-of-state visitors
- Congestion and security may impede employee, patient access to on-campus and off-campus locations
- As Level 1 Trauma Centers and Secret Service protectorate receiving facility, MRMC may have become focal point if any events result in injury/illness
- Media attention

The Progression

- Started in 2020
  - DNC
    - Wash and repeat?
    - Changes in leadership
    - Changes in house
    - Changes on campus
    - COVID

Progression continued

- Planning
  - 18 months
  - Multiple committees
    - Internal
    - External
    - Increased cadence
  - Response plans
  - Presentations
    - Departmental
    - Leadership
    - External
  - Interviews

Progression continued

- On call
  - Dentist
  - Ophthalmology
  - Plastics
- Tours
  - Secret Service
  - Capitol Police
  - Radiological sources
  - Response
- Requests
  - Elective Surgeries
  - Syndromic Surveillance
  - Medical tents
  - Open room

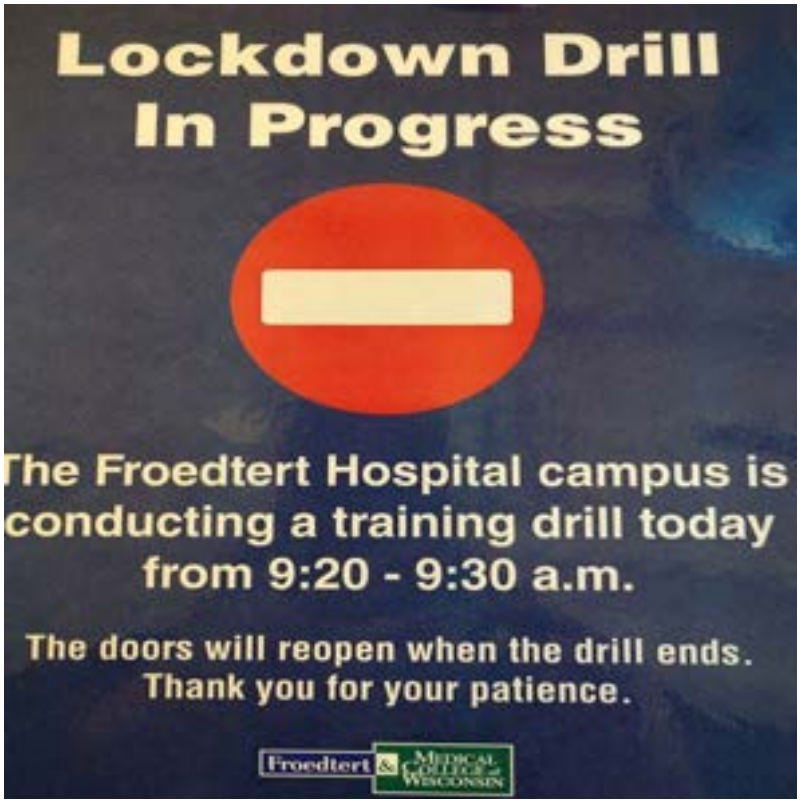
Progression continued

- Training
  - Internal
    - Decontamination
    - Mass Casualty Response
    - Surge Capacity
    - Incident Command
  - External
    - Points of Dispensing
    - Disaster Preparedness for Healthcare within the Community Infrastructure
    - Medical Preparedness and Response for a Bombing Incident
    - Medical Management for CBRNE
    - Pediatric Disaster Response
    - Technical Days

Froedtert & Medical College of Wisconsin

Progression continues

- Exercises
  - November 2023-June 2024
    - Active Shooter
    - Lockdown
    - Mass Casualty Incident
    - Consequence Management
    - Medical Surge Readiness
    - Chemical Surge
    - Decontamination
    - Severe Weather
    - Paging/notification
    - Protectorate Admission



Froedtert & Medical College of Wisconsin

Progression continued

- Heightened Security Response
  - Lockdown
  - Lanes blocked
  - Parking
- Construction
  - Impact
  - Parking
  - No dig
- Scheduled events
  - All scheduled events
  - Impact

Progression continued

- Mass Casualty Incident
  - Community
- Communications
  - Venues
    - Internal
    - External
  - Frequency
    - White Noise
  - Frequently Asked Questions
  - Notification exercises
  - Policies
    - Scripting/Talking Points

Communications

Channel	Audience	Date/Timing	Responsibility	Notes
FMLH Breakout Session	FMLH leaders	Tuesday, June 11	Gyldnis King	
Workplace's "Froedtert Hospital News" group	All staff	Monday, June 24	Glydnis King tag Lisa Hass Peters	
Scout News Feed	All staff	Monday, June 24	Automates	
MCW comms channels	Partner staff	Monday, June 24	AF to share	Heather Tate, Laura Hanson, Tony Braza and Karri Stock
WDL comms channels	Partner staff	Monday, June 24	AF to share	Aaron Bledsoe Aaron.Bledsoe@wisconsindiagnostic.com
Scout Headers	All staff	Monday, July 8	Comms Team	

Communications

Froedtert Hospital prepares for Republican National Convention July 15-18
Froedtert Hospital (FMLH) teams are working closely with the Milwaukee Regional Medical Center (MRMC) and local law enforcement ahead of the Republican National Convention (RNC) July 15-18. Several drills and tabletop exercises are happening before the RNC to test emergency preparedness protocols.

What you should know:
- As with any large event, there is a possibility of potential impacts to our staff and patients.
- In the event of an actual emergency, communication channels including e-mails, Workplace posts, Scout and text messages would be used. In Case of Emergency (ICOE) booklets detailing policies and responses are also available for review.
- On July 11, a decontamination tent to treat chemical exposure will be set-up on the sidewalk outside the Emergency Department (ED) and Specialty Clinics.

What you need to do:
- Expect traffic delays getting to FMLH and allow extra travel time for scheduled shifts.
- Watch for construction alerts in the Froedtert Hospital News group on Workplace and online.
- Review policies on tardiness and discuss with your leader.
- Check the RNC FAQ resource guide for further information.
- Assist and accommodate patients whenever possible. Traffic and congestion may cause patients to run late to appointments more than usual.

Reminders and resources:
- Searching Epic for high-profile patients, unless they are under your care, is grounds for termination.
- Non-work-related literature is prohibited across the health network, per the Solicitation and Distribution policy (FH-HR.003).
- Staff violating our Harassment Free Workplace, Public Display with Social Media, Code of Corporate Ethics, Solicitation and Distribution or any other Froedtert Health policies are subject to corrective action, including employment termination.

Response Planning

- Syndromic surveillance
  - System
- EPIC
  - Break the Glass
- Response Plans
  - RNC Response Team
  - Secondary Trauma Resuscitation Room
  - Childrens Wisconsin

Show Time!

- Briefings
  - Froedtert
  - MRMC
  - HERC
- Staffing
- Agents
  - 24 hours
  - Access

Froedtert & Medical College of Wisconsin

Lessons Learned

- Uneventful
  - Peaceful protesting
  - Minimal impact
- Traffic
  - Multiple closures
  - Blood
  - Physician response
- Syndromic Surveillance
  - Built into EPIC for the system
  - Talking Points
    - Due to the increased number of visitors in our community, we are asking all patients: Are you here to work at or attend a convention?
  - Education for staff
  - Data results

Lessons Learned - continued

- EPIC
  - VIPs
  - Break the Glass
  - Implementation
  - Reports
- Secondary Resuscitation Room
  - Communication
  - EPIC
  - Education
  - Exercises
  - Staging
  - Interruptions
  - Children's Wisconsin

Lessons Learned - continued

- Training
  - Was it enough?
- Scheduled outages
  - Notification
  - Prescriptive
- Construction
  - No dig
  - No planned outages
  - Parking!

Froedtert & Medical College of Wisconsin

Questions?

The names of the patients whose lives we save can never be known. Our contribution will be what did not happen to them. And, though they are unknown, we will know that mothers and fathers are at graduations and weddings they would have missed, and that grandchildren will know grandparents they might never have known, and holidays will be taken, and work completed, and books read, and symphonies heard, and gardens tended that, without our work, would never have been.

Donald M. Berwick, MD, MPP, President Emeritus, Institute for Healthcare Improvement

Thank you

Lisa Hass-Peters, RN NHDP-C
Froedtert Hospital
414.805.9357
Lisa.hass-peters@froedtert.com

Froedtert & Medical College of Wisconsin

Cyber Crisis Rx: Tools for Healthcare Resilience

Andrew Dahl, Vice President, Emergency Preparedness and Response
Nicole Ziogas, Senior Project Manager, Emergency Preparedness and Response

GREATER NEW YORK HOSPITAL ASSOCIATION
Over 100 years of helping hospitals deliver the finest patient care in the most cost-effective way.

Purpose of Today's Presentation

Leverage the *Cyber Disruption Toolkit* in your operations to ensure continuity of patient care

Agenda

- Background on Greater New York Hospital Association (GNYHA)
- GNYHA *Cyber Disruption Toolkit*
- Cyber Disruption Scenario
  - Activating Teams & Managing a Patient Arrival
  - Patient Movement & Full Scale Activation
  - Med/Surg to Discharge & Other Hospital Operation Considerations

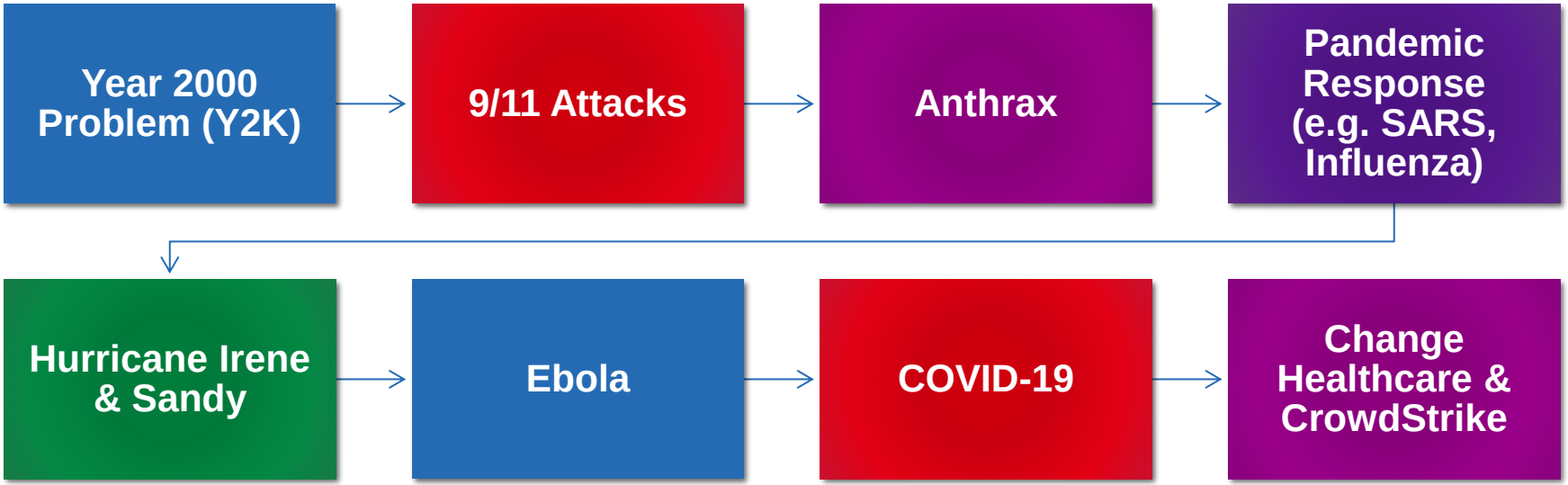
Greater New York Hospital Association

Overview

Greater New York Hospital Association

- Trade association based in New York City
- 250 Hospital and Continuing Care Members
- Focus on Programming, Advocacy, and Response

GNYHA's History in Emergency Response



GNYHA's Approach to Cyber Disruptions

Legal & Regulatory

HIT

Emergency Preparedness and Response

GNYHA's Cyber Disruption Toolkit

Cyber Disruption Toolkit Overview

Goal: Help hospitals continue operations and patient care throughout a cyber disruption

- **Preparedness → Response → Recovery**
- **Case Studies**
- **Operational Templates**
- **Special Considerations**
- **Additional Resources**

HPH Cyber Performance Goals

- Collaboration between HHS, CISA, and HSCC
- Released in January 2024
- Voluntary goals
- Relationship to proposed HIPAA Security Rule

APPLICABLE CYBER PERFORMANCE GOALS

Essential Goals → Basic Cybersecurity Training
Ensure organizational users learn and perform more secure behaviors (see page 14).

Essential Goals → Revoke Credentials for Departing Workforce Members, Including Employees, Contractors, Affiliates, and Volunteers
Prevent unauthorized access to organizational accounts or resources by former workforce members, including employees, contractors, affiliates, and volunteers by removing access promptly (see page 29).

Essential Goals → Basic Incident Planning and Preparedness
Ensure safe and effective organizational responses to, restoration of, and recovery from significant cybersecurity incidents (see page 7).

Enhanced Goals → Centralized Incident Planning and Preparedness
Ensure organizations consistently maintain, drill, and update cybersecurity incident response plans for relevant threat scenarios (see page 7).

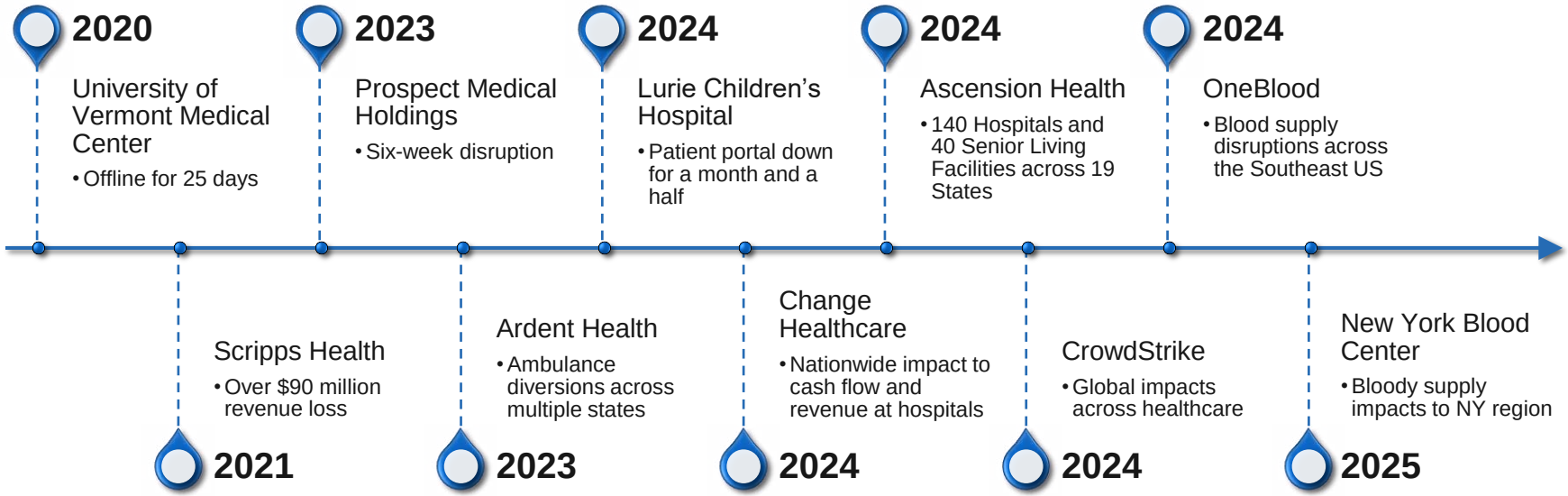
Toolkit Resource: pg.46

Event vs Attack vs Disruption

Cybersecurity Event (National Institute of Standards and Technology)	An event that has been determined to have impacted an organization, prompting the need for response and recovery.
Cyber Attack (National Institute of Standards and Technology)	Any kind of malicious activity that attempts to collect, disrupt, deny, degrade, or destroy information system resources or the information itself.
Cyber Disruption	**Used to categorize any interruption or disruption of technology, whether malicious or non-malicious, occurring at a health care facility.**

Toolkit Resource: pg.2

Notable Cyber Disruptions



Setting the Stage

Applying the Toolkit to a Scenario

Roadmap

Clinical Perspective

- Direct Patient Care
- Unit Management
- Continuity between departments

Operational

- Engaging Executive Leadership
- Convening Departments Heads
- Escalating Response

Spotlight: Highlighting specific sections of the toolkit and how it applies to the given scenario

Scenario Part 1

Activating Teams

Managing a Patient Arrival

Imagine this Scenario…

It's an early morning on a Sunday….

Your tertiary care hospital is hoping for a quiet, low-volume day…

Early Hours…

Characterizing Incident in ED

- Unable to access EHR
- Patient access struggling to register patients
- Phone systems are spotty

Decision: Charge RN chooses to move the ED to downtime and sends a Help Desk ticket to IT

Receiving Notification of IT Issues

- On-call IT Downtime Manager receives an alert
- Multiple reports of inaccessible systems

Decision: Check-in with the Administrator On Call

Moving to Downtime

ED Downtime Process

- Accessing BCA computer
- Retrieve downtime forms
- Conducting a patient census
- Establishing paper charts

Toolkit Resource: pg.21 (Downtime Checklist)

Engagement of Administrator on Call

- Follow normal EOP procedures
- Engage Cyber Disruption Incident Response Team

Spotlight: Frontline Staff Huddle Drills

- Overall goal: Improve frontline staff preparedness
- How to respond to a cyber disruption
- HRO Huddles

STAFF HUDDLE DRILL *SAMPLE*

Scenario: You are working on the patient floor when you go to document a patient order at your workstation. Your workstation seems unresponsive, and your attempt to use another gives the same result. You quickly report this to your supervisor, who just received word that all systems are down and tells you to revert to downtime procedures.

- What resources are available on the unit/in your department that you can use during downtime (e.g., downtime box, downtime computer, manual forms)?
  - Where are these resources physically located?
- Besides your workstation, should you check any other critical equipment?
- Are there departments that you need to contact to continue your work?
- What are you communicating to patients and their families (if applicable)?
- What changes if systems remain down for 12-plus hours?

Debrief and discuss these questions, identifying any areas for improvement, including follow-up training or orientation to downtime resources.

Toolkit Resource: pg. 16-17 (Frontline Staff Drills)

Patient Care & Activating Hospital Response

Emergency Department

63 y/o male presenting with chest pain

- Manual charting of patient info
- Ordering a complete lab workup
- Use BCA computer to gain patient medical history
- 12-Lead EKG Device Failure

Decision: Recognized this to be a ST-Elevation Myocardial Infarction (STEMI)

Cyber Disruption Incident Response Team

Key Department Representatives:

- IT Downtime Manager
- Emergency Manager
- Administrator on Call
- Nursing Administration
- Clinical IT

Toolkit Resource: pg. 20 (Team Activation: Cyber Disruption Incident Response Team)

Internal Notifications & System Checks

Activation of Cath Lab

Problem: Unable to activate team as VoIP is now inaccessible

- How do you plan to notify the Cath lab?
- How are you getting critical lab results?

Core System Checklist

- Perform a ‘systems check’ of IT systems
- Includes critical applications and devices

Toolkit Resource: pg. 21 (Hospital Core System Status Checklist)

Spotlight: Clinical Communication Failures

Communication Failure	Potential Workarounds
Notification for Cath Lab Activation	Radios, Mass Notification and overhead announcements
Pneumatic Tube System/ Communicating with Laboratory	Runners, radios
Critical Lab Results	Runners, fax machines
Patient Movement & Communication with Transport Services	Radios

Toolkit Resource: pg. 38 (Communication Impacts Table)

Clinical Support Services & Engaging Leadership

Cath Lab and Radiology Downtime

- PACS is unavailable
- Patient safety and quality checks being done manually
- Manual documentation of patient chart

Decision: Request for STEMI diversion

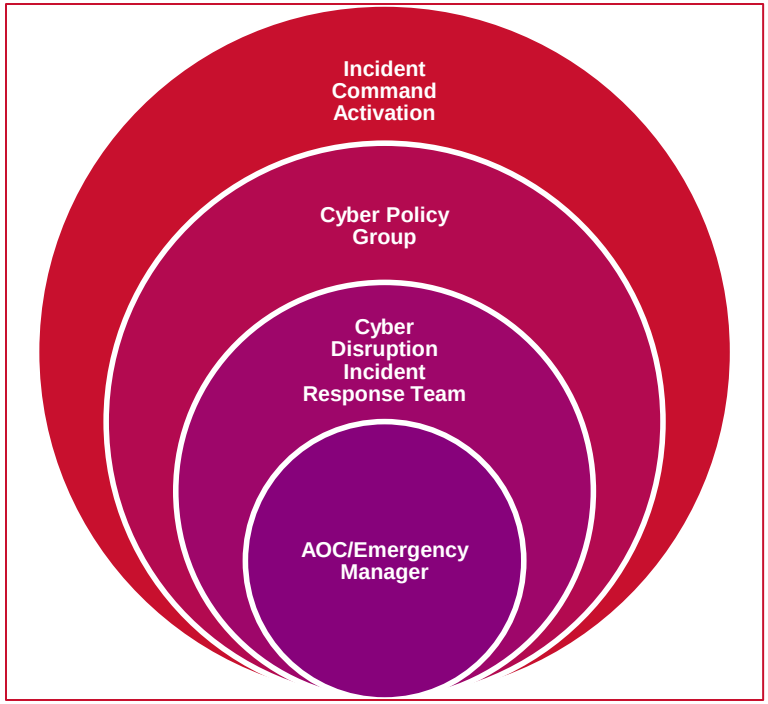
Toolkit Resource: pg.34 (Radiology Workflow)

Cyber Policy Group

- **Key Decisions:**
  - Hospital Status & Diversion
  - Proactive shutdown of IT systems
  - Cyber Counsel and Third-Party Support
  - Communications
- How will leadership connect and discuss?

Toolkit Resource: pg. 23-24 (Team Activation: Cyber Policy Group)

Spotlight: Escalating Response



Continuity of Operations is Key

- Need for redundant communication
- Alternate contact information
- Need to be present in-person

Cyber Response Needs to be Integrated in Emergency Operations Plan

- Leverage the same stakeholders, cadence, and response structure

Scenario Part 2

HICS is Activated

Managing Patient from Cath Lab to ICU

Patient Movement

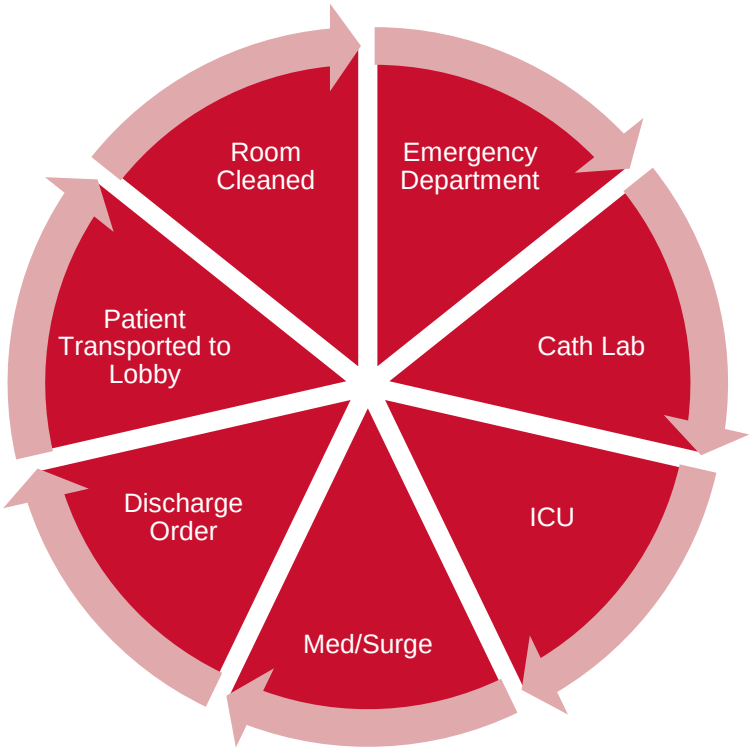
Patient Movement and Placement in ICU

- Bed placement and management is EHR dependent
- How are you determining bed availability in the ICU?

Spotlight: Processes Across Departments

Each individual department may have different downtime procedures

Toolkit Resource: pg.16 (Operational Exercises)



Full-Scale Activation

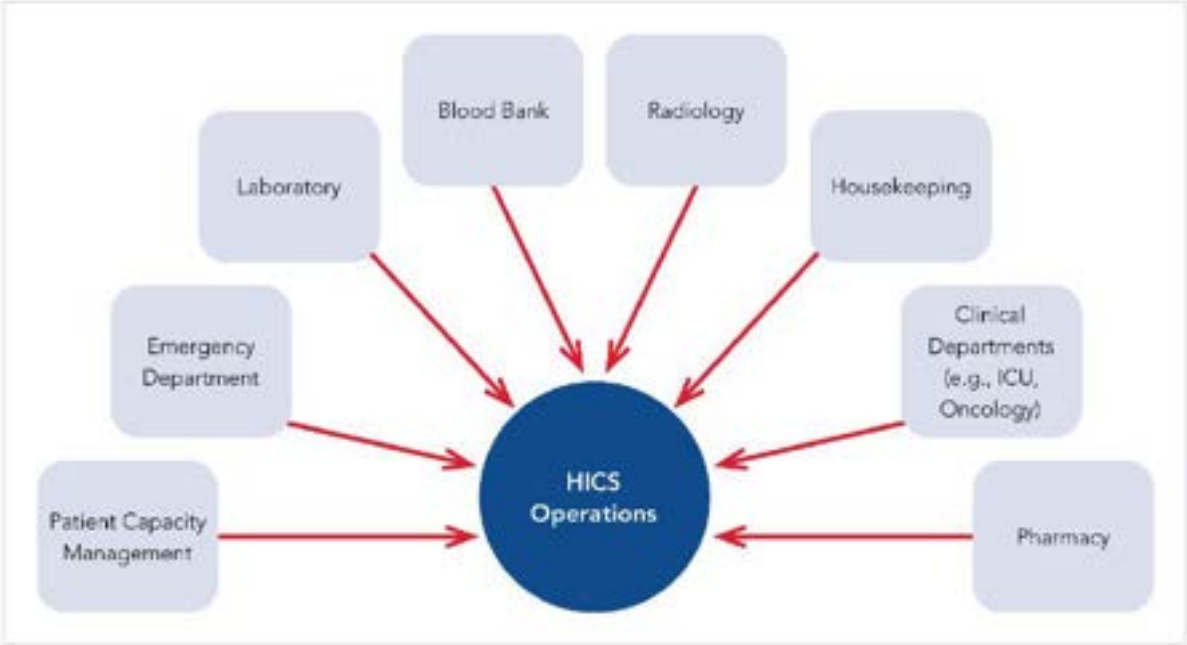
HICS Activation

- Cyber plans should adapt into your existing structures
- Liaisons in IT's command center
- Establish cadence of briefings and align with other department command centers

Toolkit Resource: pg. 25 (Full Scale Activation)

Spotlight: Department Command Centers

- Help support specific operations within different departments
- All feeds back into overall HICS operations



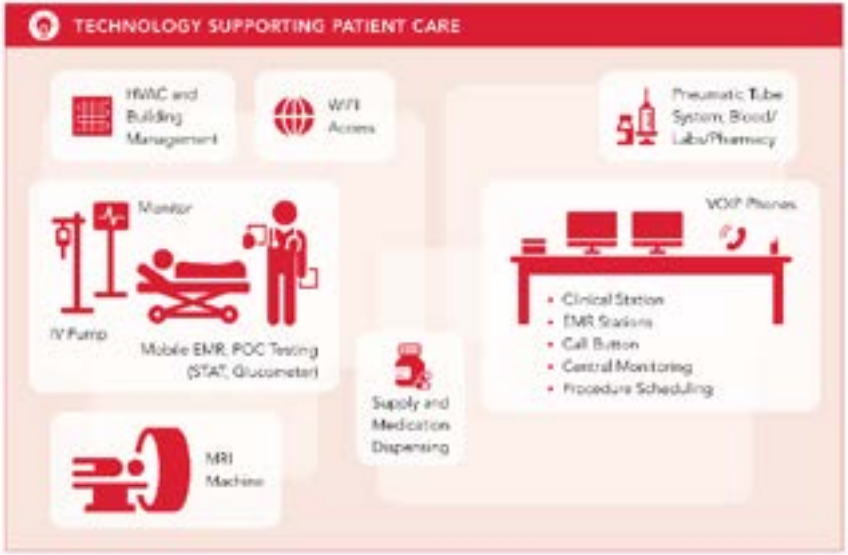
Toolkit Resource: pg.26 (Department Command Centers)

Direct Patient Care Implications

Intensive Care Unit

- Remote patient monitoring is unavailable
- How do you continuously monitor patient vitals?
- Keeping track of patient medications

Problem: Patient receives wrong medication



Toolkit Resource: pg. 30 (Clinical Downtime)

Spotlight: Clinical Decision Support Systems

- Integrated into EHR to provide real-time information to best inform patient care
- Examples:
  - Drug-drug interaction (DDI) alerts
  - Imaging decision systems
  - EHR order sets
- Workaround → UpToDate

Toolkit Resource: pg. 12-13 (Focus on Clinical Decision Support Systems)

Meet the Press

Public Facing Communications

- Media requests
- Hospital staff have spoken to local news
- Patient portal down

Spotlight: External Communications

Media Statement

The hospital is experiencing a potential cybersecurity threat that is impacting our IT systems. The hospital was alerted to the disruption on date/time. We are working to understand the full impact and to restore systems as quickly as possible. **The hospital remains fully open and our ability to provide patient care is unaffected**.

Toolkit Resource: pg. 40 (Sample Pre-Scripted Message Template)

Patient Portal

The hospital is currently experiencing a potential cybersecurity threat that is impacting our IT systems. This may interrupt access to your patient portal. We apologize for the inconvenience.

Scenario Part 3

Med/Surgical to Discharge

Other Hospital Ops Considerations

Continuity of Patient Care & Security/Safety Considerations

Med/Surge Unit

- Transfer of patient chart from ICU to Med/Surge Unit
- Remote/Central Monitoring remains down

Life Safety / Building Security

Key Considerations:

- Access Control, Cameras, Door Locks
- HVAC Systems, Airgas Management Systems
- Fire Alarm and Smoke Detector Systems

Toolkit Resource: pg. 28-29 (Physical Security Considerations and Building and Life Safety Systems)

Discharge to LTC & Other Considerations

Patient Discharge

- How do you plan to transfer patient chart to the long term care facility?
- Access to paper order forms
- Engaging social work
- Where are you storing the completed patient chart upon discharge from the hospital?

Toolkit Resource: pg. 35 (Discharging Patients to SNF or Home)

Business Considerations

- HR and Payroll Systems
- Supply Chain
- Revenue Cycle
  - Prior Authorization, Utilization Review, Timely Claims Filing

What else is in the toolkit?

- Cyber Threat Profile
- Critical Data Backups
- Downtime Forms and Reference Documents
- Clinical Support Services
- Labor Pools
- Communications with External Organizations
- Recovery Process and Strategies

Thank You

Andrew Dahl
Vice President, Emergency Preparedness and Response
Phone: 212-258-5314
Email: adahl@gnyha.org

Nicole Ziogas
Senior Project Manager, Emergency Preparedness and Response
Phone: 212-554-7728
Email: nziogas@gnyha.org

WHEN DISASTER STRIKES BACK-TO- BACK:
Lessons Learned From Emory Midtown Hospital

Kyesha Turner, MPA-EM

AGENDA

Introduction

“Fire in the ICU”

“Water Interruption”

“Network Interruption”

Lessons Learned

INTRODUCTION

Kyesha L. Turner, MPA, AEM

Director of Emergency Preparedness,

Alliant Health

LEARNING OBJECTIVES

Gain insight from:

- Lessons learned on how we managed hospital operations while maintaining continuity of care during a prolonged disaster
- Lessons learn on managing patient care and staff needs during prolonged disaster
- Learn some best practices for responding to and recovering from IT interruptions

“FIRE IN THE ICU”

Peachtree ICU Fire

May 30, 2024 – May 31, 2024

FIRE IN THE ICU

May 30, 2024

At approximately 9:35am an electrical fire broke out in an ICU on the 11th Floor of the Peachtree Building at Emory Midtown Hospital.

There were 11 patients on the unit!

FIRE IN THE ICU

Day 1

- Smoke is discovered coming from a storage closet
- Staff grab a fire extinguisher and pull the alarm
- Fire put out within minutes but unit has filled with smoke
- Fire sparked by an old Zebra Printer setting the room and walls on fire
- 10 ICU patients were evacuated and transferred (1 too sick to move)

FIRE IN THE ICU

Day 1

- Incident Command Center activated within 2 hours of incident
- Facilities Mgmt contacted vendor to clean ductwork and patch the wall
- EVS dispatched to conduct terminal cleaning after repairs
- Pharmacy consulted regarding medication needs
- Families contacted and notified

FIRE IN THE ICU

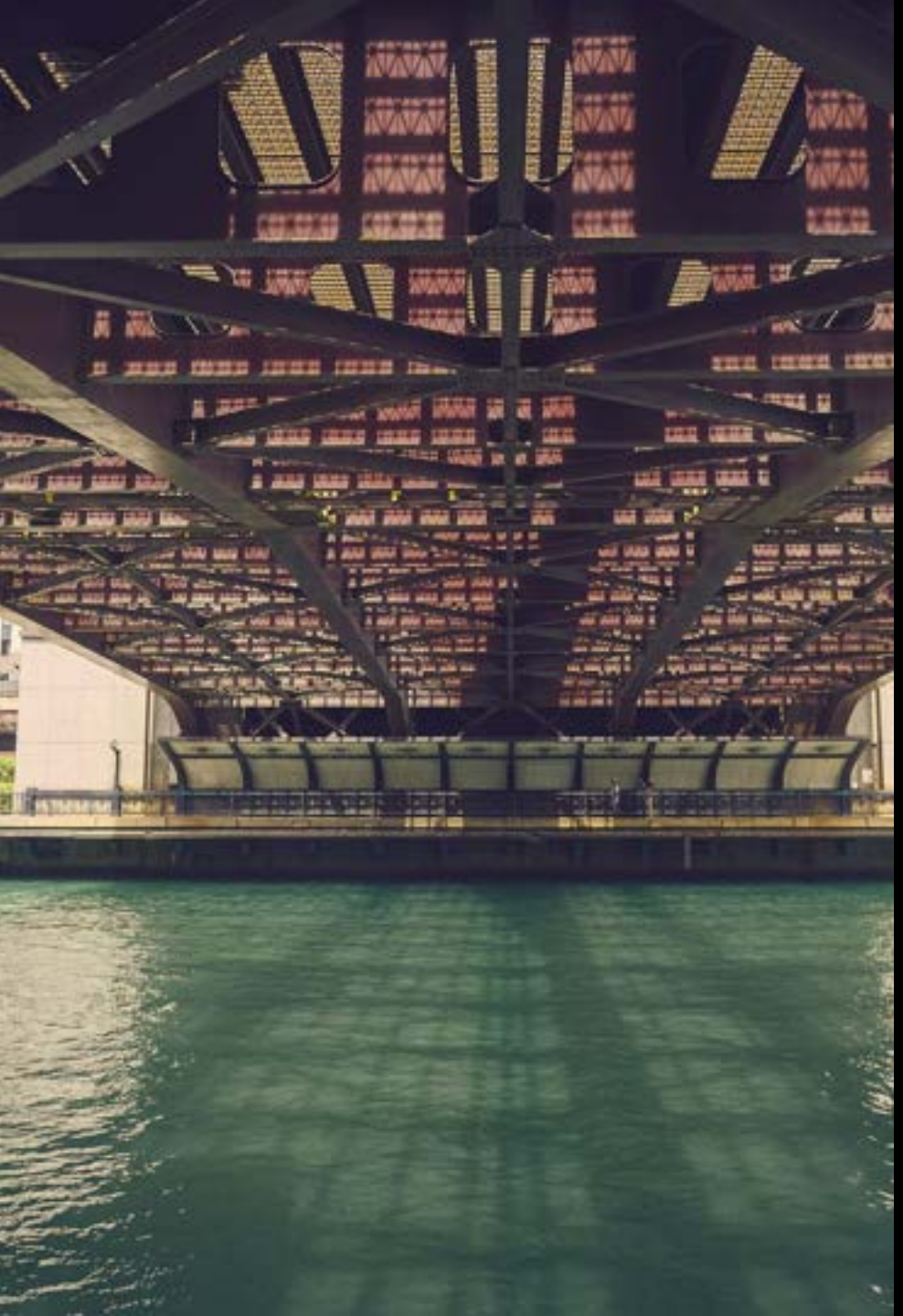
Day 2

- Storage room repairs complete
- Card readers reactivated
- Demobilized the Incident Command Center
- Transitioned to virtual activation via Zoom

WHAT WE LEARNED

- No Hospital Liaison for FD Command Post
- No one designated to direct traffic
- Staff who evacuated unsure of where to go
- Evacuees unsure when it was safe to re-enter building
- No one designated to direct staff who evacuated
- Staff in unaffected areas unsure if they should evacuate or wait
- Written Send/Receive Agreements

THIS HAPPENED!!!



“6 DAYS WITHOUT WATER”

Atlanta Watermain Break

May 31, 2024 – June 6, 2024

6 DAYS WITHOUT WATER

On the morning of May 31st, 2024, the City of Atlanta lost water pressure due to a major watermain break.

It started with one, then another, and another, and another.

Was this a terrorist attack?

How long before we lose water at Emory Midtown & Winship Cancer Center?

6 DAYS WITHOUT WATER

Day 1

- Activated Incident Command Center
- Discussed units for possible evacuation (ex. Dialysis & Mother Baby Units)
- Submitted resource requests for supplies and equipment
- Scaled down services: canceled appts and elective surgeries
- Non-essential staff sent home

NO WATER PRESSURE

Day 1

- Emergency Dept and L & D placed on diversion
- Water pressure & brown water triggered Facility Alert Utility Interruption code for entire campus
- 1:25pm shut down Sterile Processing and shifted to Winship Cancer Ctr
- Temps rise in our Core Lab and all areas are experiencing water loss
- 6000 Gal Water Tanker ordered for Water Chiller
- Water for toilets distributed w/instructions of manual flushing

6 DAYS WITHOUT WATER

Day 1

- Safety Management initiated a “Fire Watch”
- 75 Spot coolers were ordered to keep patients cool
- “Out of Order” Signs placed on ice/coffee machines
- Staged pallets of water and delivered where needed
- ED Transferred emergency cases
- Send specimens & instruments to Core Lab sister hospital (EUH)

6 DAYS WITHOUT WATER

Day 2

- Suspended MRI/Dialysis patients transferred to EUH
- Coordinated w/hospital in our system for Vaginal/ C-Sect trays
- Toilets not flushing manually/Close public bathrooms
- Patient fall due to water on floor
- ATL issues boil water advisory
- Temps on the units rising

6 DAYS WITHOUT WATER

Day 3

- Brown water reported
- Situational awareness Letters sent to patients and family
- Food & Nutrition on limited menu
- Sterile Processing back up at Winship Cancer Center
- Equipment Failure in Fire Pump Room causes Ground FL to flood
- CHOA & Grady Hospital also experiencing low/no water pressure

NO WATER PRESSURE

Day 4

- Food & Nutrition on limited menu
- Water & ICE running low
- PSI fluctuating & more toilets not flushing
- Water leaking from the ceiling in 11 ICU (where the fire was)
- Staffing question water expiration date
- City of Atlanta lifts BWA but not for us

6 DAYS WITHOUT WATER

Day 5

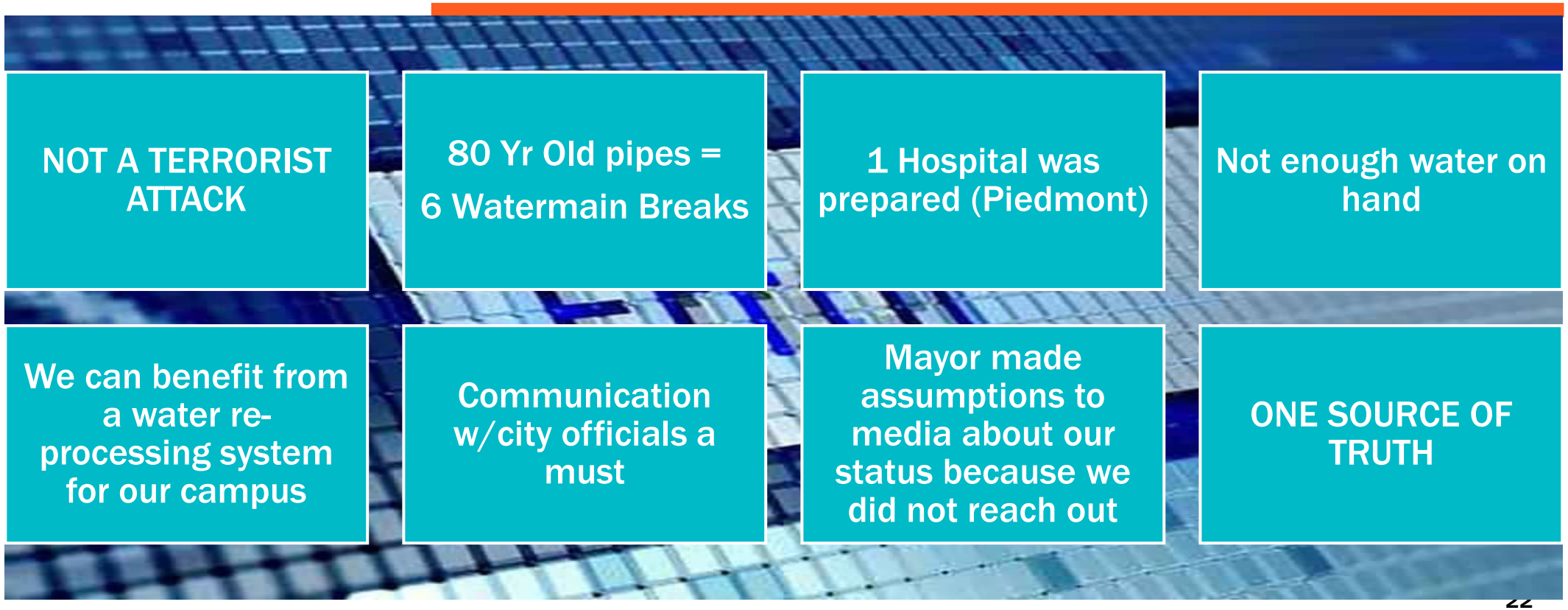
- Daily briefings
- Units still experiencing low pressure and/or brown water
- Repairs finally underway in Atlanta
- Sister hospital (EDH) can no longer accommodate Women's Health instrumentation

6 DAYS WITHOUT WATER

Day 6

- CT Scan out of Helium & Argon
- Running low of potable water in main building
- Reached 50 psi
- Boil water advisory is lifted
- Recovery begins

WHAT WE LEARNED



WHAT WE LEARNED

- Inform your Healthcare Coalition
- Improve communications w/Physician Leaders & Leaders @ Winship
- Need more efficient process for scaling down services for a complex incident (assumptions were made)
- No “line of sight” on resources across our healthcare system (no inventory system)
- Make sure the right people are at the Incident Command Center at the onset
- We didn’t have enough replacement water filters for Ice/Coffee Machines…prolonged our recovery
- FREE Employee parking during disaster can prevent delay in essential staff arrival.
- Don’t miss the party! Make sure all essential leaders report to the ICC. Pre-assign ICS Roles.

ONE SOURCE OF TRUTH

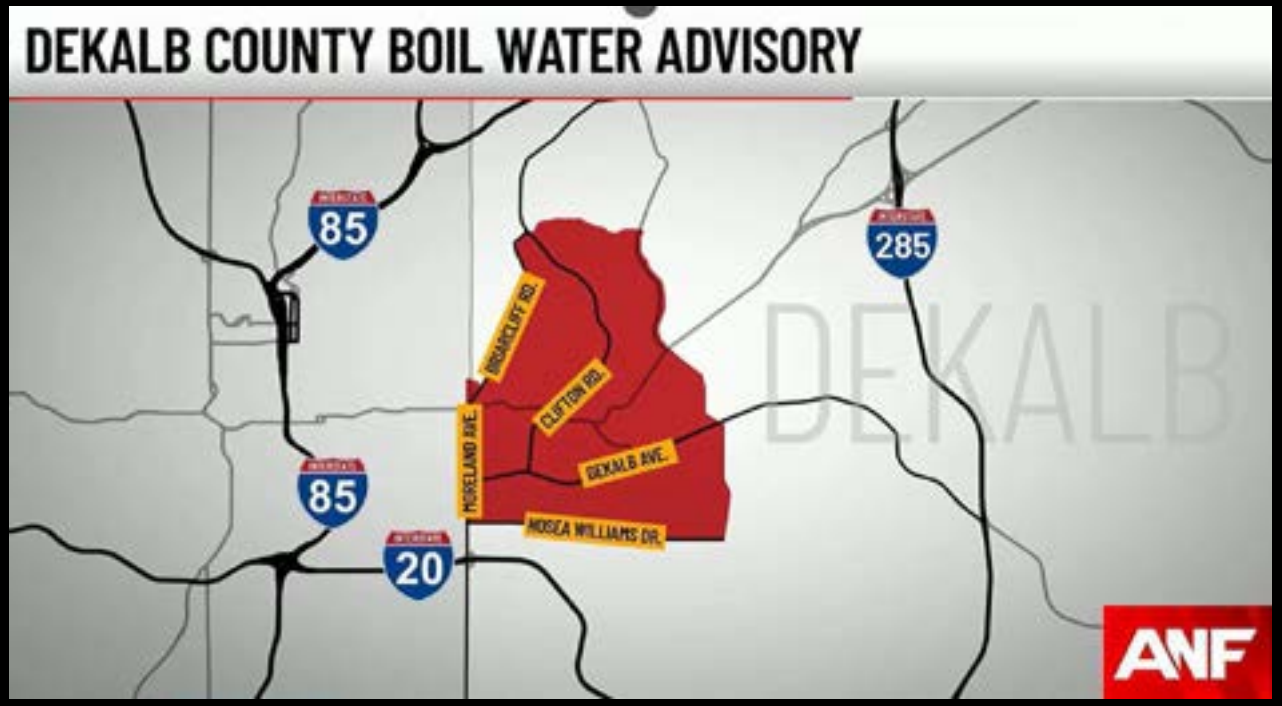
watershed management

SERVICE ALERT: WATER SERVICE RESTORED!

WATER SERVICE RESTORED AND PEACHTREE RD. PARTIALLY OPEN.

AS OF 8 A.M., WATER SERVICE HAS BEEN FULLY RESTORED TO THE 734 IMPACTED RESIDENTS AND BUSINESSES.

CREWS FROM THE DEPARTMENT OF WATERSHED MANAGEMENT WORKED OVERNIGHT TO REPLACE A 16-INCH PIPE. THROUGHOUT THE PROCESS, WE MAINTAINED CONSTANT COMMUNICATION WITH PIEDMONT HOSPITAL, SHEPHERD CENTER, AND A NEARBY SENIOR FACILITY TO ENSURE THERE WAS NO DISRUPTION IN SERVICE.



“CROWDSTRIKE”

Network Interruption

July 19, 2024 – July 22, 2024

“CROWDSTRIKE OUTAGE”

On Friday July 19th, 2024, the cybersecurity firm “Crowdstrike” pushed out a **system update** to its clients. The update caused a **Microsoft Windows failure** resulting in *outages to devices around the world*. Airlines, hospital, and business devices include computers, workstations on wheels, and medication dispensing devices (ex. Omnicell) were impacted. “Crowdstrike” responded with a fix. Some computer responded but many devices did not accept the update. Phones not affected.

WHAT WE DID

- Kept staff informed thru company email system
- Initiated “Down-time” Procedures
- Provided clear instructions to help staff reboot their own computers
- Trained volunteers to help reboot computers
- Warned staff about phishing schemes/scammers taking advantage of the disaster
- Added a “Downtime” Flag into EPIC for patient charts impacted by the event
- Provided a “TIP SHEET”
- Utilized emails to update staff of progress and thank them for their efforts

WE SHALL OVERCOME

...and we DID!

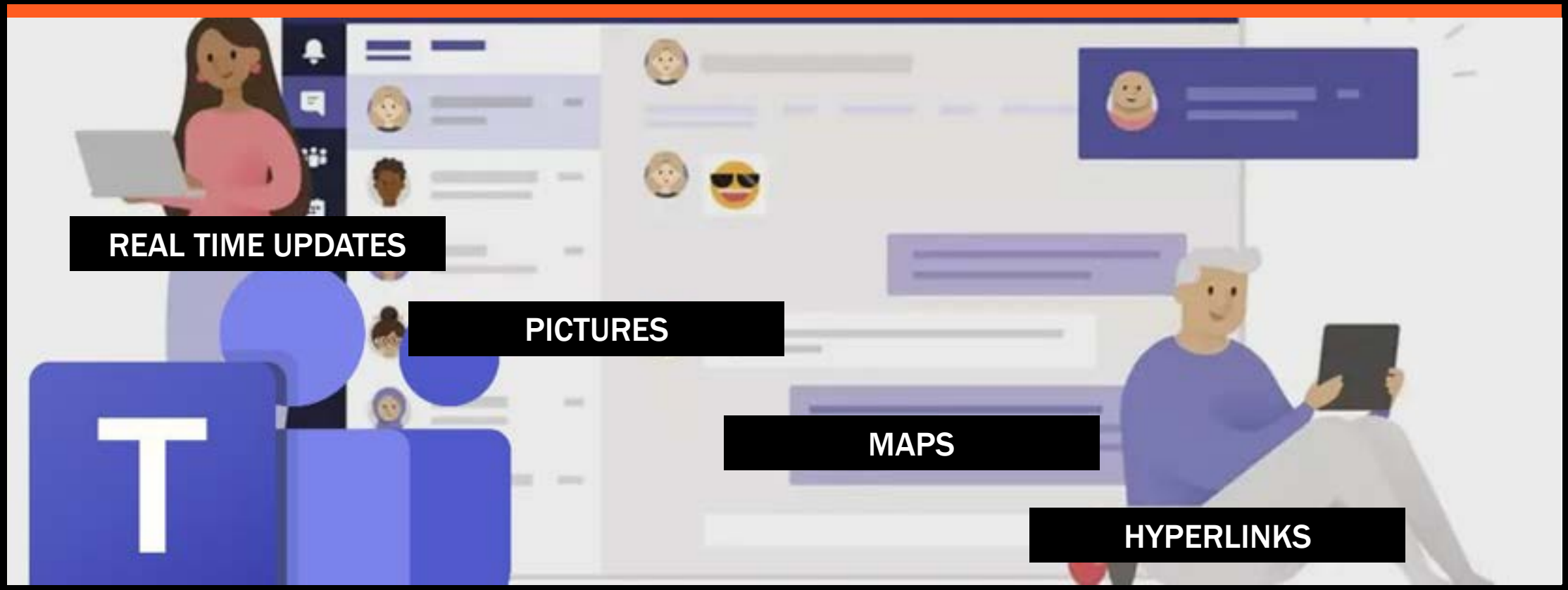


THE POWER OF COMMUNICATION

SUCCESSFUL COMMUNICATION

ONE SOURCE OF TRUTH

MICROSOFT TEAMS CHAT



COMMUNICATION is King!

Messages From Incident Command

“Watermain Break”

Team EUHM,

This morning, several significant water main breaks have occurred in our area that have resulted in a loss of water supply across many areas of Emory University Hospital Midtown (EUHM). It is also impacting the Emory Clinics on our campus, as well as Grady Hospital and surrounding businesses.

Please note the following key actions to take at this time:

- If water is still working in your area, please minimize use to essentials.
- We are distributing bottled water throughout the hospital. Please prioritize this for patient care use.
- For hand hygiene, we recommend using hand sanitizer for general hand hygiene and reserve water to clean visibly soiled hands.
- Supplemental water can be used for clearing toilets (see attached instructions).
- The Incident Command Center has been opened in the Glenn Classrooms. The phone number is 404-686-1968 for any urgent issues that need to be escalated.

We will share additional updates via email as we have them.

Thank you for your support.

DEAR COLLEAGUES

STOP BEFORE YOU FLUSH!

Please follow these instructions for flushing toilets without a water supply:

1. Don't use the handle!
2. Use jugged water.
3. Lift the toilet seat and lid.
4. Dump the water into the bowl with one pour. Pour with as much force as possible to create a strong flush.
5. Repeat until the bowl is clean of any residue.

EMORY HEALTHCARE

May 31, 2024

Valued patient and care partner(s),

This morning, the Midtown Atlanta area experienced two water main breaks that have resulted in very little to no water pressure across our hospital. We apologize in advance for the inconvenience this may cause.

Please know that our team is prepared to safely get us through this with minimal impact to your care. In fact, the safety of you – our patients – is the most important thing to us and we take it very seriously.

- **Water consumption and personal care needs:** We have plenty of bottled water on hand for drinking, toothbrushing and other personal care needs. Please do not use water from the tap until your care team says you can do so.
- **Toileting:** Because of a lack of water, toilets will not flush as normal. Please avoid using the handles to flush the toilets. Instead, please ask for instructions for how to flush using jugs of supplemental water.
- **Food preparation:** Our Food Services staff is following all CDC guidelines for ensuring safe food preparation.
- **Ice:** Our ice machines have been shut off; please work with your care team to get ice if needed.
- **Coffee makers:** All coffee makers have been shut off of labeled "do not use," as the water may be unsafe to consume.

If you need anything, just ask your care team. They are here to help you and make this temporary inconvenience as smooth as possible. Thank you for your patience and flexibility and for trusting us with your care.

DEAR COLLEAGUES

STOP BEFORE YOU FLUSH!

Please follow the
flushing toilets w

1. Don't use th
2. Use jugged water.
3. Lift the toilet seat and lid.
4. Dump the water into the bowl with one pour. Pour with as much force as possible to create a strong flush.
5. Repeat until the bowl is clean of any residue.

Don't "assume" they know...tell them anyway!

EMORY HEALTHCARE

May 31, 2024

Valued patient and care partner(s),

This morning, the Midtown Atlanta area experienced two water main breaks that have resulted in very little to no water pressure across our hospital. We apologize in advance for the inconvenience this may cause.

Please know that our team is prepared to safely get us through this with minimal impact to your care. In fact, the safety of you – our patients – is the most important thing to us and we take it very seriously.

- **Water consumption and personal care needs:** We have plenty of bottled personal care needs. team says you can

ush as normal. Please lease ask for l water.

all CDC guidelines for ensuring safe food preparation.

- **Ice:** Our ice machines have been shut off; please work with your care team to get ice if needed.

- **Coffee makers:** All coffee makers have been shut off of labeled "do not use," as the water may be unsafe to consume.

If you need anything, just ask your care team. They are here to help you and make this temporary inconvenience as smooth as possible. Thank you for your patience and flexibility and for trusting us with your care.

DEAR COLLEAGUES

Messages From Incident Command

“Watermain Break”

Team EUHM,

Thank you for your patience and flexibility while we navigate through the impacts of this water main break.

We will remain on a boil water advisory at EUHM overnight while repairs continue with Atlanta Watershed Management. As active issues stabilize, we are going to convert to a virtual Incident Command Center overnight. Bottled water distribution will remain stocked at the following locations: Elevator Lobby Outside the PICU, 3rd Floor Peachtree Corridors outside 31 ICU, 3rd Floor Woodruff/Davis-Fischer Connector near Unit 32 and Central Service on the Ground Floor of Winship at Emory Midtown.

For any urgent issues overnight, contact the House Supervisors at 404-360-5646 or 404-217-3867.

Please continue to note the following:

- Do not use ice machines or coffee makers, due to the risk of contamination.
- Use bottled water for drinking and prioritize this for patient care use. We are working to distribute more bottles to all areas as quickly as possible.
- Use hand sanitizer for general hand hygiene and reserve water to clean visibly soiled hands.

Thank you for your continued support.

Don’t promise what you cannot guarantee!

Messages From Incident Command

“Watermain Break”

Manage Expectations

Team EUHM,

Thank you for your continued patience as we navigate through the impacts of the water main breaks impacting our hospital.

We remain on a boil water advisory at EUHM while repairs continue with Atlanta Watershed Management. We do not know at this time when we will be able to resume normal operations.

Please note the following updates:

- We stopped all hemodialysis treatments yesterday and are testing capability today. We are not able to perform MRI studies.
- We remain able to perform urgent and emergent procedures but may have to postpone non-time sensitive procedures as we evaluate our ongoing sterile processing capabilities.
- There may be delays in the results of some laboratory tests due to processing off-site at EUH

Please continue to note the following:

- Do not use ice machines or coffee makers, due to the risk of contamination, until they have been cleared for use by Facilities staff.
- Use bottled water for drinking and prioritize this for patient care use. Bottled water distribution will remain stocked at the following locations: Elevator Lobby outside the PICU, 3rd Floor Peachtree corridors outside 31 ICU, 3rd floor Woodruff/Davis Connector near Unit 32 and Central Service on the ground floor of Winship at Emory Midtown.
- Do not use eye wash stations until the boil water advisory is lifted. Use portable eye wash or bottled water in an emergency.
- Tap water if available or jugged water can be used for clearing toilets (see attached instructions)

ottled water to clean

monitoring the situation

Thank you for your support.

Show appreciation during disaster

DEAR COLLEAGUES

Messages From Incident Command

"CrowdStrike"

Large-scale computer outages

This message is sent on behalf of the I[illegible]nt Command Center

Dear Colleagues,

Earlier this morning, CrowdStrike, a cybersecurity firm, pushed out a system update to all its clients, one of which is Microsoft Windows. The update caused Microsoft Windows to fail, creating outages to devices at organizations across the world. Airlines and businesses have been impacted globally, including Emory Healthcare (EHC) and Emory University. Devices impacted at EHC include computers, WOWs and Omnicell. Cell phones, landlines and paging have not been impacted.

CrowdStrike has since pushed a fix to the update. Many computers accepted the new update and are functioning properly. Others did not, and when logging on are displaying a blue screen. Some of these computers are responding after being rebooted (it may take up to three times). Others are not responding, and our Digital teams are assessing the issues for a fix. Omincell is now on manual override.

Until devices are functioning across the system, we will remain on Epic downtime procedures. More information will be shared as available. Thank you for your patience.

Be transparent… never downplay

Messages From Incident Command

"CrowdStrike"

At Emory Healthcare, more than 29,000 of our devices remained non-functioning on Friday morning. We stood up a command center to assess the situation and employ solutions to bring our workstations back online. This included deploying hundreds of volunteers, Emory Digital and OIT staff over the weekend to all our hospital and clinic locations to implement manual fixes to the non-functioning computers. We are thrilled to share that **80% of our devices have been fixed,** and we continue to work toward repairing the remaining devices. Despite the disruption and due to the extraordinary effort of our volunteers, **we expect to work a full schedule tomorrow (Monday, July 22) and be fully operational tomorrow morning.** Our deepest gratitude to the team members who have literally worked around-the-clock the past few days. Our overwhelming priority remains to provide safe, exceptional care to our patients. Thanks to our dedicated teams, we will be able to operate as anticipated tomorrow.

Please read below for a few reminders and what you can expect Monday morning.

- **Phishing**: Be vigilant about emails claiming they have a CrowdStrike fix. Only use information that is confirmed to be from Emory and on our SharePoint site.
- **Up-to-date information:** Please visit the Emory Digital SharePoint site to get the latest information about recovering the remaining CrowdStrike affected workstations on-site and at home. On the SharePoint, you will find information about:
  - **On-campus devices:** If your on-site computer has a blue screen and is non-functioning, you can download the following instructions to help you recover your workstation (here) and report back using this online form.
  - **Work-from-home devices**: If you work from home and your computer has a blue screen and is non-functioning, you can download the following instructions to help you recover your home computer (here) and report back using this online form.

Note that each operating unit will have an on-site incident command center with Emory Digital support in place, should you need it.

We are incredibly grateful for your patience and perseverance the past three days. This incident has created a significant disruption to our work and yet you have demonstrated flexibility, resilience and commitment to our patients and each other. Thank you.

DEAR COLLEAGUES

Messages From Incident Command

“CrowdStrike”

We greatly appreciate your patience as we navigate the worldwide computer outage caused by the CrowdStrike issue. We are happy to report that we’re having success with our recovery processes and have reduced the number of impacted devices from 22,000 to 13,000.

We are creating a team who will be on-site at each operating unit over the weekend to help us reach our goal of resuming optimal performance by Monday, July 22.

Please note the following:

- Be hypervigilant of any emails you receive that claim to have a CrowdStrike fix. Bad actors are taking advantage of this incident and sending emails that look like they come from Emory. **Be sure to check the email address and if you get a phishing email that you are suspicious of, report it to your leader and do not share the information.**
- Leaders are currently prioritizing workstations within the hospitals and clinics for teams to work on over the weekend.
- Almost half of the devices for remote users are now working. Any team member still having issues will be contacted by Emory Digital.
- If you have a patient impacted by today’s events, a flag called “Downtime July 19” has been added to Epic. The flag can be added by physicians, APPs, administrators, HIM, revenue, IP/OP clinicians and clerks, lab, and ADT/registration. Click here for a tip sheet.
- If your workstation is down, you can attempt a fix by rebooting the computer. Physically pull the power cord from the outlet and wait 30 seconds before plugging the cord back in and turning on the device. Try multiple times if it does not work the first time.
- Use Epic as you normally would if you have access to Epic on a recovered or unaffected device.
- Proceed with OR cases if lab, blood bank, intra-operative imaging and anesthesia are available, and you can safely operate.
- Continue using Mac, mobile devices (Haiku and Rover) and BCA computers as a backup.
- The originally planned Disaster Recovery exercise for Friday, July 19 and Sunday, July 21 has been canceled.

A tremendous thank you to all who quickly mobilized to address this incident. In times like these, we are reminded just how powerful we are when we work together. Thank you for your continued patience with this situation, and we will continue to provide updates as necessary.

DEAR COLLEAGUES

Messages From Incident Command

"Crowdstrike"

Outstanding progress on device recovery

This message is sent on behalf of the Incident Command Center

Dear Colleagues,

Thanks to the tireless work of hundreds of volunteers, Emory Healthcare hospitals, clinics and business offices returned to normal operations today. **More than 90% of our devices are back online**, and we are working to address the approximately 3,000 remaining on-site and remote computers that are not functioning. This is a huge testament to the outstanding team we have!

As we continue in the final stages of the recovery phase, please keep the following in mind:

- **Non-functioning devices:** CrowdStrike provided a global fix that is proving to be successful. If your device still is not working, try rebooting it a couple of times to apply the fix. If this does not work after multiple attempts, please submit a request for assistance using the EHC Service Portal.
    - **On-campus devices:** Use the Onsite Workstation Blue Screen Issue form. Note: you may be prompted to enter your network ID and password.
    - **Work-from-home devices**: Use the Work from Home Blue Screen Issue form. Note: you may be prompted to enter your network ID and password.
- **Phishing:** Remember to always be on the lookout for phishing emails that could compromise our organization. Do not click on emails claiming they have a CrowdStrike fix. If you receive a message you suspect is a phishing attempt, click the "Report Phishing" button in Outlook.

Thank you for your commitment to ensuring the delivery of safe, quality patient care despite the challenges we have faced the past few days.



THE POWER OF COORDINATION

HOW WE DID IT

Coordinated response efforts thru of the use of MS Team Chat for communication

Coordinated w/System Level IMT to obtain resources & help from unaffected hospitals

Ensure transferred pts received their meds from Pharmacy

Ensured Materials Management did not restock the evacuated unit/moved supplies where needed

Coordinated w/Fire Department during the ICU Fire to ensure they had access to impacted areas

Coordinated w/ volunteer agencies to obtain help with rebooting computers

Coordinated w/various departments to prioritize needs and scale down of services

Coordinated w/internal leadership and staff to enact an efficient response & recovery effort



THE POWER OF COOPERATION

THE POWER OF COMMUNITY

“IT TAKES A VILLAGE”

Get to Know Yours!

- Agriculture & Natural Resources
- American Red Cross
- Communications
- DOT
- Dept. of Public Health
- EPA
- Energy
- Fire Department/EMS
- Fish & Wildlife
- Healthcare Coalitions
- Local Elected Officials
- Police Department
- Public Works
- Telephone Company
- Volunteers
- Watershed

BEST PRACTICES

Figure out what works & standardize it

- Plan ahead for evacuation: discuss need for before the need arises
- Plan ahead for sterilization loss: Transport dirty instruments to alternate site to be cleaned and returned
- Pre-assign & train staff in ICS Role
- Keep inventory of supplies & exp dates across your healthcare system
- Figure out what you need & how much
- Create a back-up plan in case vendors can't meet your need
- DBL your workforce w/volunteers to assist with recovery
- Standardize Communications Method: Ensure all key leaders have access, test regularly & update as needed
- Inform appropriate depts about evacuated units & transferred patients (Pharmacy, Dietary, Supply Manager, etc.)
- Store water for flushing in large garbage bins with a bucket on unit vs gal jugs or 5-gallon drums
- Keep template or pre-drafted letters to patients/family regarding disaster

QUESTIONS

THANK YOU!

Kyesha Turner, MPA-EM
Director of Emergency Preparedness
Kyesha.Turner@allianthealth.org
(678) 892-3855

Watermain Break After Action Report

May 31

2024

Kyesha Turner, Emory Healthcare June 10, 2024

Emory Midtown

CONTENTS

EXPLANATION OF TERMS

Examples:

AAR	After Action Report
CEPAR	Office of Critical Events and Preparedness
CDU	Clinical Decision Unit
CHOA	Children's Hospital of Atlanta
CMS	Centers for Medicaid/Medicare
EDH	Emory Decatur Hospital
EOP	Emergency Operations Plan
EPP	Emergency Preparedness Program
EPD	Emory Police Department
EUH	Emory University Hospital
EUHM	Emory Midtown Hospital
FMD	Facilities Management Department
FSX	Full Scale Exercise
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise Evaluation Program
HVA	Hazard Vulnerability Assessment
IC	Incident Command
ICS	Incident Command System
IP	Improvement Plan
MOT	Medical Office Tower
NIMS	National Incident Management System
PIO	Public Information Officer
SPD	Sterile Processing Department
TTX	Table Top Exercise
WEM	Winship at Emory Midtown

INTRODUCTION

Include brief synopsis of incident here.

Loss of water in the City of Atlanta due to several water main breaks throughout the city requiring repair impacted EUHM, Grady, government buildings, residents, restaurants, and other local businesses. EUHM is experiencing low to no pressure in multiple areas including: MOT, Woodruff, Preachtree, ED, CDU, and SPD (MOT) with some areas seeing brown water. The highest floors were impacted first with the remainder of the campus gradually experiencing a loss of water pressure or total loss of water including Winship.

Sequence of events: *Include detailed sequence of events here, if available.*

5/31/2024

11:30	IMT at EUHM Activated in Glenn Classroom. System ICC activated virtually
12:00	ICC was stood up and 1st operational period began. Zoom call initiated and led by CEPAR (Sam Shartar). Safety/EM arrived to the ICC with supplies and HICS forms.
12:10	The following ICS roles were assigned. IC: Nick Iannitti, Deputy IC: Tawanda Austin, Safety Officer: Aaron Preston, Public Information/Liaison Officer: Adam Webb, Med/Tech Spec: Sam Shartar. Ops Section Chief: Nicole Bansavage, Planning Chief: Kyesha Turner, Logistics Chief: Milton Wiley
12:25	Materials Management arrived. Informed that we need list of what has been requested & ETA.
	Mother Baby initiated planning for possible patient evacuation.
	ED patient count at 140. Concerns expressed with ICU pts.
	No impacts to Food and Nutrition (Dishwashing not impacted). Contingency plan for lunch is to use disposables.
12:52	Alerted that Grady Hospital started to cancel cases. Trauma care impacted.
13:05	Bad odors reported in the ED due to loss of flushing capabilities. EVS bringing sanitizer spray (normal deodorizers require water).
13:21	Winship Clinics, Cardiology, PGP clinics canceled. Non-essential staff sent home
13:25	MOT SPD began shutting down ops. Shifting functions to WEM. Facility Alert Utility Interruption called for entire campus. Notification made to GCC
13:27	Stroke called to ask about diversion. Ans: EUHM is only on L & D diversion
	EVS cannot complete cleaning of rooms. Can change linen but toilets unable to flush toilets
	Fire Watch in effect. Public safety will man doors. Safety Team will put up signs
	No water pressure in Woodruff 42, 52, 62 or 71 ICU. Procedural areas in MOT impacted
	CDU/ED cannot flush toilet. Sanitizer received.
	SPD seeing brown water. Question: Is there a boil water advisory?
	Eyewash stations will need filters changed when water is restored
	Advance planning for Dialysis patients that may need to be transferred.
	Update: PERIOP has 10 Cases left and OR has 1 case.
13:37	8FL MOT (CT) has no water. Have to move pts and send dirty instruments to WEM
	Hematology is down. Specimens to be sent to WEM
	Temp and Humidity is a concern in the lab. Plan to transfer pts to EUH.
14:07	Chemistry is still up and running
	EUH provided jugs of water
	Under a boil water advisory as per the city
	Patient Communication and Signage: Letters being provided to Units Supervisors to inform pts about the incident. Instructional Flyers regarding flushing and Out of Order signs for Ice/Coffee machines provided to Unit leads to disperse throughout their patient care areas.
14:30	MM began to distribute potable water
15:03	Temps rising in Core Lab (Woodruff), Peachtree, Winship (losing water pressure)
	Safety Teams disseminated FIRE WATCH signs throughout the campus and on all fire doors.
	75 spot coolers onsite (rely on water but not completely empty) - tanker trucks on the way. Checking PSI Q15

15:07	Current stock of water and location confirmed by Nick Iannitti
15:34	Pressure rising to 44 PSI
	Water Trucks arrived
	Pallets of water being staged and delivered to areas of need
16:07	Grady cancels all cases
16:13	At 5pm or 6pm EUHM Core Lab and WEM Lab will begin sending specimens to EUH
16:34	MRI units reached critical pressure levels. Planning to suspend Inpatient MRI operations
17:07	Pts complaining about rising temps on the unit. Some pts did not receive "Patient Letter" until after complaint.
17:08	Chillers filled.
19:39	Total loss of water pressure at WEM. Sterilizers and washers down.
22:16	The water for flushing the toilets are not pallets but a huge Trash can filled with water--along with a smaller dipping bucket to flush toilets--The water location will be changed from the Diagnostic reception waiting room to the Diagnostic Control room. The large Trash Can of water can be rolled to the location of the Restroom in use. Any questions Please call Diagnostic Radiology @ 404-686-5998.

6/1/2024

07:00	2nd Operational Period Brief
	Consideration: DOT regulations for transporting biohazardous soiled instrumentation (to be discussed on the System ICC Call)
08:13	ED still seeking transfer for emergency cases
08:50	Coordination with EDH for C/section and Vaginal trays
08:56	ED Psi only at 15 (must be min of 45 PSI to perform dialysis)
09:34	All leaders, updated communication is going out by email from EUHM Communications with an updated patient letter as well. Please ask any units or patient facing departments to print copies to distribute to patients and families.
	Reports of PSI fluctuations in the low range.
12:00	Virtual ICC Incident Brief: • No ETA on a fix time • Still have bottle water supplies • Working on a process for sterilization – (Emory Decatur) • Truck in route from Chattanooga Tenn. To carry biohazard instruments to Decatur location • People are continuing to flush toilets, needs to send out new message that toilets should be manually flushing • ED is closing CDU and moving patients to ED • Food and nutrition is prepped for cold meals through Sunday dinner • FMD reported several doors still propped (4FL D&T) in preparation for the ATF Repair (postponed) • Chillers being maintained
12:57	Dialysis suspending treatment
13:07	Concerns about CO2 build-up showing on the Hybrid 1 gauge. RT to rounding to check.
14:07	ED diversion for EMS arrivals (excludes walk-ins)
14:23	Bags of ice requested. 38 bags to be delivered by House Supervisors
15:03	WEM staff requesting 2-3 cases of water
	Woodruff toilets not flushing manually.
18:00	Virtual ICC Incident Brief • Truck have arrived from Tenn. To pick up instruments • The public restrooms throughout the campus is in bad shape • All dialysis patients for next 24 hours will be transfer to other Emory locations • Visitor fell on Unit 61 due to water on the floor, the visitor was wearing flipflop. No injury reported • Looking to close all public restrooms • Chillers #5 and #6 (Peachtree, Woodruff and Davis Fisher buildings) was shut down to be refilled. • Will deploy spot coolers • Letters will be sent to patients and family on updates of the situation
19:27	Don't have water available to flush with on L&D, APU, NICU , Unit 54, 42 or Unit 22. Only buckets

6/2/14	
06:35	PSI at 57
07:00	Virtual ICC Incident Brief
11:00	F & N on a limited menu. Water and ice update: Currently, we have 22 bags of 20lb ice bags remaining out of the 40 bags, in the Nutritional Services freezer, that was delivered on Friday. We will receive additional bags of ice tomorrow. There is an entire pallet of drinking water on the Peachtree Lobby corridor, 1/2 pallet of drinking water on the 3rd floor Peachtree corridor and a full pallet on the 3rd floor Davis/Fisher hallway by the freight elevator. We have a total of 13 pallets of drinking water at Midtown/Wem Campus. Please reach out to Central Service 404-686-8926 or myself at 404-788-2245 for additional assistance. Thanks
11:20	Food Nutrition Service will continue to serve limited menu on disposable service ware to patients through out the boil water advisory. The default meals are the daily specials listed on the printed menu. Patients who call the call center may have 1-2 additional entree options but we can't run the full menu currently. With more production support during the week we will try to expand options. I will update daily if we can resume normal ordering process. We have enough bottled water and disposables to support kitchen functions through Monday, with more coming in the morning. The cafe will remain open to visitors and staff but the menu will be modified from what is posted online. Please reach out to me about any specific patients to visit for service recovery 270-625-3582 or email.
17:08	SPD at WEM is up and running, with the exception of being able to process GI scopes. We anticipate full functionality by mid-day tomorrow. MOT remains down until the boil order is lifted
23:04	A seal in the Fire Pump Room in the basement of Winship failed. Flooding throughout the ground floor. They have shut the water down inside the room.
23:50	Sam Shartar just reported that COA is experiencing water pressure drop on the water line that was impacting EUHM. Grady's pressure has dropped to 49 psi and ours is at 41 psi currently. Facilities will continue to monitor pressure tonight.
6/3/24	
	Fluctuating PSI 15-45
	Ice and Coffee Machine filters need to be changed once the Boil Water Advisory (BWA) is lifted.
	WEM SPD washers just passed their tests.
	Toilets in Orr (at least upper floors) are not flushing.
	Leak in the back hallway of 11ICU coming down from the ceiling
	Today, we will receive 10 more pallets of drinking water for WEM and Midtown to share as needed. We have 15 each Styrofoam coolers and we will receive another shipment from our Clarkston warehouse, hopefully later today. We have 5 cooler in the WEM Bldg. Central Service Dept. and 10 each at the Midtown Central Service Dept.
	Food Nutrition Service will resume our normal patient dining menu tomorrow, June 4th. Meals will continue to be served on disposable service ware through the boil water advisory. The default meals are the daily specials listed on the printed menu.
	The City Of Atlanta just lifted the boil advisory for some areas of ATL but EUHM is just outside of that area,
6/4/24	
	Repairs underway in ATL. Water system estimated to return to normal operations between 7-11am (Wed 6/5)
	EDH can no longer accommodate Women's Health instrumentation needs.
6/5/24	
	No Helium or Argon for CT. "Break in the process. RT manages these gases, and CT is supposed to let us know the day prior how when those special gases will be needed."
	Peachtree 3FL requesting more potable water (down to less than 2 cases)
16:50	Reached 50 PSI
19:26	Boiled water advisory has been lifted. – RECOVERY OFFICIALLY BEGINS!

AFTER ACTION REPORT OVERVIEW

This report is a compilation of information from the different departments and staff who participated in the response to THE WATERMAIN BREAK. The information was gathered by EMERGENCY & SAFETY MANAGEMENT.

Incident Overview:

[Insert incident/exercise/event location here]

Loss of water in the City of Atlanta due to several water main breaks throughout the city requiring repair impacted EUHM, Grady, government buildings, residents, restaurants, and other local businesses. EUHM is experiencing low to no pressure in multiple areas including: MOT, Woodruff, Preachtree, ED, CDU, and SPD (MOT) with some areas seeing brown water. The highest floors were impacted first with the remainder of the campus gradually experiencing a loss of water pressure or total loss of water including Winship.

Duration:

[Insert incident/exercise /event time]

May 31-June 5

Focus *(Check appropriate area(s) below)**:***

- ☐ Prevention
- ✓ Response
- ☐ Recovery
- ☐ Other

Activity or Scenario *(Check appropriate area(s) below)**:***

- ☐ Fire
- ☐ Severe Weather
- ☐ Hazardous Material Release
- ☐ Bomb Threat
- ☐ Medical Emergency
- ☐ Power Outage
- ☐ Evacuation
- ☐ Lockdown
- ☐ Special Event
- ☐ Exercise/Drill
- ✓ Other – WATER OUTAGE

Six Critical Areas Addressed during RESPONSE *(Check all that apply)* ***:***

- ✓ Communication
- ✓ Resources and Assets
- ✓ Safety and Security
- ✓ Staff responsibilities
- ✓ Utilities Management
- ✓ Patient clinical and support activities

Location:

550 Peachtree Rd. Atlanta, GA

Participating Organizations:

Emory Healthcare: EUH, EDH, EUHM, WEM

CEPAR

STRENGTHS – WHAT DID WE DO WELL?

List strengths here.

Communication

- Activated and followed the Incident Command System (ICC) efficiently and effectively
- Utilization of MS Teams to keep lines of communication open
- Leaderships rounds: teams were calm, great communication, collaboration, patient care
- Information flowed continuously
- MS Teams chat helped keep staff informed about the incident
- Successfully maintained operations
- In person ICC was helpful for exchanging information and coordination
- Quick and smart decision making because we had information to make informed decisions
- Activating incident command allowed staff to see how the ICC operate
- Facilities provided regular updates on the PSI levels
- Emails to night shift providers/updates given every 4-6 hours were helpful

Resource Management

- Management of resources, sourcing supplies from vendors
- Able to leverage system resources quickly and efficient pivoting functions to other OUs successfully (had not been done before) with the help of the System ICC
- Provided water quickly
- Successfully sent instruments offsite throughout the system and received them back/shifting instruments worked
- Movement of resources and decision making as timely
- Repurposing signage for faster dissemination

Staff Responsibility

- IP involvement helped in advising on regulations around clean/dirty instruments
- Staff knowledge about regulations
- Staff response was strong, staff knew what they were responsible for and stepped in to assist where needed
- Using the Glenn building for the ICC was easily accessible for staff and easy to find

Safety and Security

- Planning and coordination for dialysis patients done well and efficiently

Utilities Management

- Turning on spot coolers (turned on immediately)
- Checking areas and assisting staff with manual flushing
- Replacing filters after the boil water advisory

- Assisting staff with replacing eyewash station filters
- Facilities and EVS swift response

Patient Clinical and Support Activities

- Manpower within Emory Healthcare. Drivers moved dirty instruments out and brought clean ones in to keep operations going
- Planning and coordination for dialysis patients done well and efficiently
- Proactive planning/not waiting to make a decision

AREAS OF IMPROVEMENT – WHERE DID WE STRUGGLE?

List Areas of Improvement here.

- Some staff not on the teams chat did not receive the information timely
- Break down in communication in some areas (pages not received or did not go out)
- Understanding what to do within out facility while the city was trying to make repairs (did not know whether to continue to stop manually flushing)
- PERIOP: Unable to utilize WEM for sterilization/staff unaware
- Communication with city officials was lacking
- Need to improve or streamline top down communications
- Media was not informed and send out misinformation about hospital status
- WEM leadership was provided second hand information about cancellations/need to improve coordination with the outpatient cancer center
- Struggled with water availability across the organization. Did not have enough water on hand
- Concerns about deodorizers used (staff complained of headaches)
- Not prepared for the replacement of filters (many units did not have any on hand or enough)
- Some patients did not get the letter about the water until after they complained

RECOMMENDATIONS – WHAT DO WE NEED TO FIX FOR NEXT TIME?

List Recommendations here.

- Check on redundancies on sourcing 3rd part supplies.
- Look into a campus filtration system (like Piedmont) that would allow us to continue water use even if the city water is out (water re-processing system)
- Add medical directors to teams chat
- Audit teams chat
- Standard work around what is appropriate for Teams chat and what should not be posted there

- Take a proactive approach with media and keep them informed
- Keep letters and signage templates to allow for quick dissemination during disaster
- Ensure patients get the “letter” upon receipt so they are informed about incidents
- Need a better process for scaling down or cancelling services during a complex incident to improve communication with physician leaders so we can stay what needs to happen for an ICC standpoint
- More preplanning for special needs populations (dialysis, NICU, etc.)
- More planning and discussion about cascading disasters
- Discussion on what we have on hand and what we need
- Standardize water distribution areas
- Need a process for dismissal or reassignment of non-essential staff
- Inventory of supplies so we can keep the right amount on hand
- Parking in Beacon during disaster (weekend staff unable to get thru)
- Include and inform GHA (Region D HCC) when we have incidents like this one

CONCLUSION AND NEXT STEPS

Insert Conclusion here.

Response to this incident was efficient and effective due to the use of the Incident Command System and activation of the ICC which allowed for better communication, coordination, resource management, patient and staff support, security, and utility management. Communication can be improved from the top down and via teams by ensuring all key leaders have been added to the group. Critical functions were prioritized and continuity of patient care was maintained without negative impact to the hospital.

- Finalize the AAR and send to leadership for review
- Staff should send any additional pertinent information or corrections to Adam Webb
- System ICC to review completed AAR.

Issue/Area for Improvement	Corrective Action	Critical Area	Primary Responsible Party	Start Date	Completion Date
MS Teams Chat	Audit Teams chat and add missing key staff and medical directors	Communication	ICC MS Teams Owner	6/10/2024	9/1/2024
Media Management	Provide regular updates to media and a staging area onsite	Communication	PIO/Liaison Officer	Open	Open
Water shortage	Take inventory of water supplies used during incident and adjust amts	Resources and Assets	Logistics/ Materials Management	6/10/2024	8/31/2024
Systemwide Resources	We need to know what resources are available across Emory	Resources and Assets	System ICC	Open	Open

Peachtree ICU Fire After Action Report

May 30

2024

Kyesha Turner, Emory Healthcare June 9, 2024

Emory Midtown

CONTENTS

EXPLANATION OF TERMS

Examples:

AAR	After Action Report
CEPAR	Office of Critical Events and Preparedness
CDU	Clinical Decision Unit
CHOA	Children's Hospital of Atlanta
CMS	Centers for Medicaid/Medicare
EDH	Emory Decatur Hospital
EOP	Emergency Operations Plan
EPP	Emergency Preparedness Program
EPD	Emory Police Department
EUH	Emory University Hospital
EUHM	Emory Midtown Hospital
FMD	Facilities Management Department
FSX	Full Scale Exercise
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise Evaluation Program
HVA	Hazard Vulnerability Assessment
IC	Incident Command
ICS	Incident Command System
IP	Improvement Plan
MOT	Medical Office Tower
NIMS	National Incident Management System
PIO	Public Information Officer
SPD	Sterile Processing Department
TTX	Table Top Exercise
WEM	Winship at Emory Midtown

INTRODUCTION

Include brief synopsis of incident here.

At 9:35am, small electrical fire broke out in 11 ICU in room 1133 (Respiratory Storage - "Blood/gas Lab"). Cause of fire resulted from an old Zebra label printer. Fire was extinguished by an employee. 10 patients had to be evacuated, including 1 being transferred to EUH. Patients moved to PACU and 31 ICU.

Sequence of events: *Include detailed sequence of events here, if available.*

5/30/2024

0935	Small electrical fire brought out in storage room 1133 in 11 ICU Fire alarm was pulled Staff used a fire extinguisher to put out the fire
1145	ICC Activated in Glenn Classroom
1155	Sign In and Assignment of Roles
1200	Operational Period 1 Briefing
	Objectives established and resources needs discussed
	Tasks assigned
	Facilities Management reached out to EPIC (patching hole, cleaning)
	EVS: Will be responsible for terminal cleaning of impacted areas on 11 ICU
	Nursing: Requested a sticky mat
	Pharmacy needs to be consulted regarding meds
1300	End of operational period 1
1400	Operational Period 2 Briefing
1405	Zoom opened (Tier 3 link)
	Reviewed progress on previous objectives
	Nursing to follow up on staff needs (Tawanda Austin)
	EVS terminal cleaning pending EPIC
	Duct work will be initiated (update: Cleaning of ducts completion expected by 5-6pm 5/31
	Safety Management to meet with 11ICU team to review evacuation plans and debrief
	Peachtree 11 ICU secured. Card Readers reactivated
	Communication with patient family complete by Nursing
	Assess Cardiology schedule for 5/31/2024
	11 ICU Patient transfer to EUH complete
	Materials Management needs to be informed not to stock 11 ICU tonight but will need to restock patients – Dennis Valone will make contact
	Next briefing by Zoom (Tier 3 Link) at 1800 hours.
1430	End

AFTER ACTION REPORT OVERVIEW

This report is a compilation of information from the different departments and staff who participated in the response to THE PEACHTREE 11 ICU FIRE. The information was gathered by EMERGENCY & SAFETY MANAGEMENT.

Incident Overview:

Small electrical fire on 11 ICU of the Peachtree building ignited by label printer and extended to the interior walls of a small storage room.

Duration:

May 30, 2024

Focus *(Check appropriate area(s) below)**:***

- ☐ Prevention
- ✓ Response
- ☐ Recovery
- ☐ Other

Activity or Scenario *(Check appropriate area(s) below)**:***

- ✓ Fire
- ☐ Severe Weather
- ☐ Hazardous Material Release
- ☐ Bomb Threat
- ☐ Medical Emergency
- ☐ Power Outage
- ☐ Evacuation
- ☐ Lockdown
- ☐ Special Event
- ☐ Utility Failure (Water Outage)
- ☐ Exercise/Drill

Six Critical Areas Addressed during RESPONSE *(Check all that apply)* ***:***

- ✓ Communication
- ✓ Resources and Assets
- ✓ Safety and Security
- ✓ Staff responsibilities
- ✓ Utilities Management
- ✓ Patient clinical and support activities

Location:

550 Peachtree Street. Atlanta, GA 30308

Participating Organizations:

EUHM

STRENGTHS – WHAT DID WE DO WELL?

- Staff took immediate action and was able to put the fire out using a fire extinguisher
- Alert was called and heard over the overhead paging system
- Unit was secured and area blocked off to prevent further injury
- Fire Dept arrived in a timely manner and cleared the
- Safety, EM, EVS, and Facilities assessed the damage and worked together to determine needs and next steps towards recovery
- Critical care patients were safely transferred to other units
- In person incident command was established and the ICC stood up

AREAS OF IMPROVEMENT – WHERE DID WE STRUGGLE?

- Did not have anyone outside to Liaison with FD at their Command Post
- Did not have anyone outside to direct traffic and staff
- A number of staff were unsure where to go
- Staff were unaware when it was safe to go back inside
- Staff on the patient care units (not directly impacted by the fire) were unsure if and when they should evacuate their units and were waiting for guidance from leadership or approval

RECOMMENDATIONS – WHAT DO WE NEED TO FIX OR CONSIDER FOR NEXT TIME?

- Alternate care sites within our hospital when partial evacuation is necessary. The question was raised “are we admitting patients to PACU”
- Pre-planning or discussion with Pharmacy, Linen, Food & Nutrition, and other departments when plans are made to move patients, we need to discuss with critical departments where patient care may be impacted
- Have to account for patients meds when moving to an alternate space
- Communication with materials management about where to stock supplies when a unit has been evacuated.

CONCLUSION AND NEXT STEPS

- AAR to be sent to leadership for review

Issue/Area for Improvement	Corrective Action	Critical Area	Primary Responsible Party	Start Date	Completion Date
Staff training	Staff need more training on fire response and the policy needs to be reviewed to determine who can make the decision to evacuate a unit	Staff responsibility	Safety Management/ Senior Leadership (VP of Operations)	6/10/2024	12/31/2024

Texas Children's Hospital®

An Introspective Analysis of the March 22, 2024 Deadly Children's Bus Crash in Austin, Texas

Donald Denson II BS, BSEM, MS, CHEP, CHSP
EHS | Organizational Resilience Officer
North Austin Campus
Austin, Texas

Today's Objectives

- Discuss notification of the Mass Casualty Bus Crash
- Discuss Hospital activation to the MCI Plan and Family Reunification Plan
- Returning hospital to normal operations and impacts to hospital response plans

Texas Children' Hospital North Austin Campus

Timeline of Hospital

- 2018 Texas Children's Hospital expands to Austin, Texas.
- May 14, 2021- North Austin Campus (NAC) groundbreaking occurs on a 365,000 sq ft hospital with 52 inpatient beds
- February 05, 2024 - North Austin Campus Ambulatory Outpatient Building Opens
- February 22, 2024 - North Austin Campus Hospital Opens
- March 22, 2024 - Deadly Bastrop Bus Crash occurs

March 22, 2024

Day of Deadly Bastrop Bus Crash Timeline

- March 22, 2024 A Bastrop ISD School Bus carrying 44 Tom Green Elementary pre-K students and 11 adults returning from a field trip to the Bastrop County Zoo was traveling on SH 21 near Caldwell Rd.
- 1:58:45 pm a concrete truck driven driver Jerry Hernandez of Concrete Pumping Company crosses the double yellow line into the oncoming path of the school bus striking the school bus and a third car following the school bus.
- 1:58:47 pm the School bus verse off the road and rolls over in the median. There are no seatbelts for students on the bus.
- 1:58:53 pm the School Bus comes to a stop and lands upright from the impact.
- 1:59 pm Austin Travis County EMS is notified of the collision.

March 22, 2024

Day of Deadly Bastrop Bus Crash

- 2:03 pm Austin Travis County EMS is notified of the collision with multiple injuries and possible fatalities.
- 2:27 pm Central Austin Trauma Regional Advisory Council (CATRAC) sends MCI Poll Information- Reports of MCI need report of TCH Receiving status. Information: There are reports of a potential mass causality incident. Emergency Departments - please indicate your red/yellow/green capacity. Location: Caldwell Co, Location: Caldwell, TX Caldwell. Organizational Resilience identifies location data is listed incorrectly in the initial message to hospitals.
- 2:40 pm MCI poll is closed and event location is updated in message to hospitals.
- 2:44 pm CATRAC notifies a total of 53 patients are being evaluated.

March 22, 2024

Day of Deadly Bastrop Bus Crash

- Two deceased patients are identified on site. One adult and one child. Five patients have been airlifted to the local Pediatric Level 1 trauma center.
- 3:00 pm CATRAC creates Pulsara Incident and notifies all area hospitals that all patient information should be updated in Pulsara and linked to incident.
- 3:00 pm CATRAC notified the NAC can receive eighteen green, six yellow, two red patients.
- 3:11 pm Situational update received and THC-NAC is notified facility will be receiving patients.
- 3:30 pm Hospitals across four separate counties receive official notice of in coming patients.

March 22, 2024

Day of Deadly Bastrop Bus Crash

- 4:00 pm Local new channels begin broadcasting news stories regarding the event. The news report reports Helicopters and AMBUS are on scene.
- 4:22 pm CATRAC contacts NAC to expect six patients and to have Emergency Center Staff to check Pulsara for triage status.
- 4:32 pm NAC is notified that the children were traveling out of county when accident occurred and they will be unaccompanied minors. The EC manager officially request the activation of the Family reunification center, requested PR be contacted, and Security and Williamson County Sheriffs Department set up security for incoming patients.
- 4:33 pm CATRAC staff member arrives on property to assist facility with incoming patient.
- 4:35 CATRAC staff advises nine total patients are being transported via AMBUS to the facility.

March 22, 2024

Deadly Bastrop Bus Crash Distance From Hospital

56 min (51.6 miles)

via US-290 W

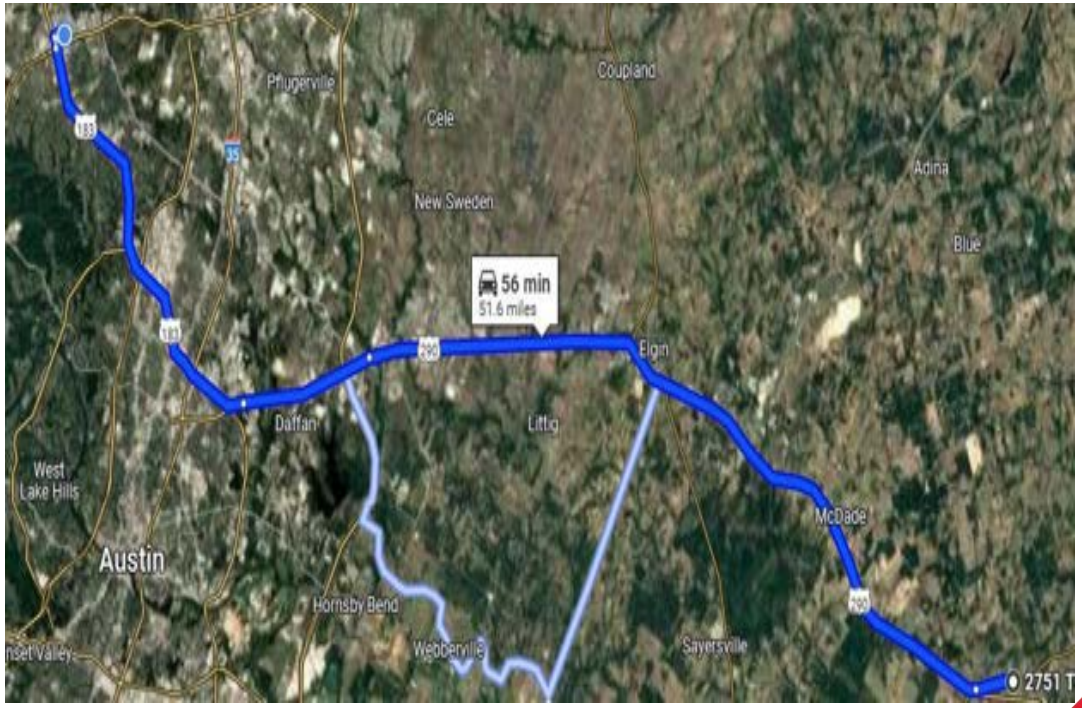
Fastest route, the usual traffic

⚠ **This route has tolls.**

2751 TX-21
Paige, TX 78659

- Take US-290 W and US-183 N to N Hwy 183/Research Blvd in Austin. Take the exit toward US-183/Lakeline Mall Dr from US-183 N
  52 min (50.8 mi)
- Take Lakeline Mall Dr to your destination
  3 min (0.7 mi)

9835 N Lake Creek Pkwy
Austin, TX 78717



March 22, 2024

Day of Deadly Bastrop Bus Crash

- 4:35 CATRAC staff advises Nine total patients are being transported via AMBUS to the facility.
- 4:46 pm NAC contacts the Hays County reunification center and confirms the process for parent arrival and reunification.
- 5:20 pm NAC Security notifies EC of AMBUS arrival on campus.
- 5:21 pm Nine patients arrive by AMBUS. All patients are triaged as green prior to arrival and information is updated in Pulsara.
- 5:22 pm All patients are walking under their own volition. Patients are moved to both trauma bays and regular treatment rooms.

March 22, 2024

Day of Deadly Bastrop Bus Crash Patient Arrival and Diagnosis

- "1. C, A, 5 y/o M, Dx: contusion of scalp, contusion of auricle of left ear, multiple abrasions, Admitted to EC at 1724
- 2. G, G, 4y/o M, Dx: MVA, closed head injury, injury of the left lower extremity
- 3. H, E, 4 y/0 M, Dx: MVA, multiple abrasions, Admitted to EC at 1721
- 4. H, A, 5 y/o F, Dx: MVA, closed fracture of shaft of right clavicle, abrasions of multiple sites, Admitted to EC at 1721
- 5. L, I, 4 y/o F, Dx: MVA, abrasions of multiple sites, glass foreign body in skin, Admitted to EC at 1720
- 6. M, S, 4 y/o F, Dx: contusion of face, contusion of right hand, multiple abrasions, MVA, Admitted to EC at 1726
- 7. M, D, 4 y/o F, Dx: MVA, contusion of scalp, abrasion to face, foreign body of scalp, Admitted to EC at 1723
- 8. P R, 5 y/o M, Dx: MVA, contusion of intraoral surface of lip, multiple abrasions, contusion of right upper arm, Admitted to EC at 1720
- 9. R, S, 4 y/o F, Dx: MVA, Admitted to EC at 1726"

March 22, 2024

Day of Deadly Bastrop Bus Crash

- 6:00 pm The first patient family arrives and is reunified with their child.
- 6:40 pm Four of the Nine Families are been reunified.
- 6:56 pm Six of the Nine Families are been reunified.
- 6:59 pm Eight of the Nine Families are reunified.
- 7:29 pm First patient is discharged home
- 7:40 pm All Nine Families are reunified.
- 9:21 pm All MCI patients are reunified.

Always plan for the fact that no plan ever goes according to plan.

March 22, 2024

Communications -What went right

- Teams in EC communicated well with those present and made action plan for triaging patients.
- House supervision and leadership came to EC and communicated resources.
- Regular updates from Organizational Resilience and CATRAC
- EPIC chat utilized for EC staff logged into that group.
- Multiple resources and personnel available to assist EC-Chaplain, Childlife, EVS, multiple interpreters, physicians from multiple different specialties and too many more to mention.
- Advanced notice allowed EC to prepare triage areas and assign roles: 4 mini “trauma teams” and rooms prepped to receive sicker patients.
- Due to advanced notice, pharmacy able to stock EC with NS/LR.

March 22, 2024

Communications – What went wrong

- No mass messaging went out via Everbridge, Pagers, or EPIC secure chat. A Teams Incident Command Group message was created, but it did not reach all groups.
- Most hospital leaders and staff heard about the incident through word of mouth.
- Information received from our local trauma advisory council was inaccurate during the beginning of the event. Due to the fluid nature of the event this often happens.
- Multiple leaders worked outside of the Incident Command Structure leading to confusion and questions of who's communicating with who?
- Some staff had emergency radio's but there was no plan for who received radios. Furthermore, those with radio's didn't know what channel the event was handled on.
- EC main phone was inundated with phone calls pulling needed staff away from patient care.

March 22, 2024

Emergency Center – What went right

- Multidisciplinary Teams collaborated well helping them to pivot when changes occurred with the number of incoming patients.
- Multiple resources and personnel available to assist EC-Chaplain, Childlife, EVS, and multiple interpreters for incoming patients.
- Physicians from multiple specialties came to the EC to offer help and prepare for patients.
- Advanced notice allowed EC to prepare triage areas and assign roles: 4 mini “trauma teams” and rooms prepped to receive sicker patients
- Due to advanced notice, pharmacy able to stock EC with NS/LR
- Teamwork-after shift change, staff still coming down from other units to see if they could help in any way

March 22, 2024

Emergency Center – What went wrong

- There was no muster location for incoming staff away from EC. Due to this personnel reported directly to EC to help. This created an overcrowding of staff in the EC, foot traffic, and noise in the area.
- No MCI triage kit existed. (Vest, stickers, triage tags, and marking panels for green, red, or yellow triage areas.)
- Patient all arrived at once creating a bottle neck at initial planned triage site.
- WOWs could not map patient armbands to printer in EC when WOWs came from other units.
- No approved site MCI plan was present. This led to EC Doctors, reviewing the EC layout and making triage zones on the fly.
- No Job Action Sheets were present to assist with everyone understanding their roles.

March 22, 2024

Family Reunification – What's the plan?

- When the Hospital opened all of the Emergency Management plans were based upon facilities in the Houston area. No prior tabletop or exercise of the plan was conducted.
- There was no clear plan as to where the FDC would be located.
- Leaders struggled to identify who would set up and lead the FRC.
- An on-the-fly decision was made to use the Hospital Urgent Care Clinic for parents to await reunification.
- No flow process existed as to what was needed for the FRC or how to facilitate reunification.

March 22, 2024

Family Reunification

- Questions arose regarding who will stay with a child that is alone until parents arrive?
- When trying to reunify patients with parent's the children did not know their parent's first of last names.
- No scripting existed to assist staff with explaining to parents why they had "C-collar, monitor, IV, splints, etc."
- No designated area existed to provide parental consultation away from the EC area.
- No designated room existed for potential death notification.
- No phone bank existed to help reroute calls away from the EC area.

March 22, 2024

Family Reunification

- Re-unification area away from EC, (down by stairs, lab?)
- Signage/greeters to help guide traffic
- Identification of the leaders
- Utilizing 1st floor conference room as ICS or muster location
- Floating unit clerk from another area to help assist with phone calls
- Where to have parents wait? Urgent care empty at this time, but cannot plan on that in the future
- Who will stay with child that is alone until parents arrive? Child life able to help with this this time, but may need to be pulled to other areas

Back To The Drawing Board

After The Event

- After the events of March 22, 2024, the Organizational Resilience Department and Hospital Leadership sat down to review the prior plan and work through it step by step.
- A new plan was written from the ground up. All Family Reunification Center positions were identified and assigned.
- The new Family Reunification Plan has all areas of use identified to include rehabilitation and sunset rooms.
- FRC Manager has a response box prepared and ready for future use in an accessible location.
- Directional signage for the FRC were created in English and Spanish.
- An MCI checklist for EVS was created to assist EVS with rapidly turning over rooms for new patients.

After The Event

- A single point of contact with our local Trauma Advisor Counsel (CATRAC) was identified.

- Food Service developed options for serving food during alternate hours for after hours events. during an MCI. Food Service also identified what extra services will be available and how extra water and supplies can be accessed after hours.

- A location was Identified for the triage tent set up. Staff are under going training on how to deploy the tent for future events.

- A plan is in the final development stage to direct phone calls for information away from the EC and other treatment areas to alleviate unnecessary interruptions during an incident.

After The Event G7 Exercise

- After the event the North Austin Campus participated in a table top exercise as part of the G7 Pediatric Operations Freefall exercise.

- The scenario: A severe storm with a microburst causes significant damage to an elementary school resulting in many casualties requiring pediatric specialty care. Patients are transported to Texas Children's Hospital. Family members and news media personnel begin arriving at the hospital seeking information on patients and reunification.

- During the drill the hospital had a chance to work through the new Family Reunification Plan. Something which would come into play very soon….

November 22, 2024

November 22, 2024

Bastrop Bus Crash

Eight months to the day of the deadly Bastrop Bus Crash another bus crash occurred. 11 students taken to hospital after crash involving Bastrop ISD bus

November 22, 2024

Bastrop Bus Crash

- 11/22/2024 - A Bastrop ISD bus carrying students was involved in a crash at the intersection of Highway 71 and Blue Flame Road. This location is exactly one mile from the deadly bus crash on March 22, 2024.
- This is the third school bus crash in the area since October of 2018.
- According to the Texas Department of Public Safety, a pickup truck was traveling west when it hit the back right side of the school bus, which was crossing the highway toward Blue Flame Road.
- The school bus was forced off the road and hit a live electrical pole. Students could not be evaluated or evacuated until Bluebonnet Electrical Cooperative cut the power to the pole.

November 22, 2024

Bastrop Bus Crash Time Line

- 7:05 am Bastrop ISD Bus is struck by a pickup truck from behind forcing the bus off the road causing a crash into a electrical pole.
- 7:32 am Bluebonnet Electric arrives on scene to de-energize the electrical pole and power lines.
- 7:40 am EMS begins evaluating bus passengers for injuries.
- 7:51 am CATRAC sends message stating. There are reports of a potential mass causality incident involving School Bus. Unknown number of patients or Pt acuity Emergency Departments - please indicate your red/yellow/green capacity. Associate patients to Pulsara Incident.
- 7:53 NAC Organizational Resilience begins event and notifies EC of MCI event.
- 8:06 am CATRAC sends updated message regarding event. School bus crash with minor damage. 45 initial patients with possible 12 pediatric transports and 1 adult.

November 22, 2024

Bastrop Bus Crash Time Line

- 8:13 am EC Physician designates Organizational Resilience member as liaison with CATRAC.
- 8:15 am All departments are notified and begin preparations for incoming patients. Staging area for extra personnel is set outside of the EC.
- 8:27 am All departments report they are ready to receive incoming patients. The waiting game begins.
- 8:31 am North Austin Campus is notified they will receive two patients.
- 8:59 am CATRAC sends update 2: MCI Bus Crash Bastrop County. All patients transported. Hospital, please view Pulsara for all inbound notifications and update all patients in Pulsara Incident "Bastrop County Bus Crash“
- 9:04 am NAC receives Pulsara update notifying the facility will be receiving three patients at this time.

November 22, 2024

Bastrop Bus Crash Time Line

- 9:06 am All triage teams are ready and treatment rooms have been identified.
- 9:11 am First patient arrives on campus.
- 9:15 am Second patient arrives on campus.
- 9:21 am All patients have arrived on campus and are receiving treatment.
- 9:30 am Family Reunification Plan is implemented; patients are asked unique identifying information. What's your favorite color? Do you have a pet and if so, what kind is it and what is their name? All information is uploaded into Pulsara to assist Bastrop ISD with reunification.
- 9:48 am First parent arrives on campus and is reunification begins. Two of the patients are related.

November 22, 2024

Bastrop Bus Crash Time Line

- 10:03 Second parent arrives on campus to begin the reunification process.
- 10:12 All parents have arrived on campus and are reunified with their children.
- At 10:32, CATRAC sent an updated Event Notice stating that the MCI Event has Concluded. The MCI Bus crash in Bastrop County ended on 11/22/2024 at 10:31 CST.
- 11:09 First patient is discharged from hospital.
- 12:35 All patients are discharged from the hospital.

Lessons Learned

Lessons Learned

- Emergency Management Plans should be reviewed, checked, table topped, and exercised to make sure the plan actually works.
- Communications are the key to navigating events without everything imploding. Pre-designate emergency radio channels for events. Set up prefilled mass notification messages for events.
- Exercise setting up your full Incident Command Center. Designate areas for your Labor Pool check in.
- Have a Mass Casualty Kit which includes vest, triage marking panels, triage tags, and other supplies readily available.
- Review your Family Reunification Plan and conduct tabletops, and exercise the plan.
- Make sure to have a FRC Plan go box with supplies, directional signage, and a copy of the plan with an easy-to-read diagram for FRC set up. Include information on surrounding hotels, shopping, and other essential information for extended reunification events.

Lessons Learned

- Work with staff on all parents' days, nights, and weekends to make sure they are trained to set up the FRC if needed.
- Develop descriptive questions for pediatric patients that will assist you with reunifying with their families. This is especially important when dealing with Preschool age children.
- Most won’t know their parent's names, their address, or phone number.
- They will know their pets name, their favorite color, what their favorite toy is.
- Work with your local Trauma Advisory Council and have them participate in your tabletops to allow them to understand how your facility will respond to an incident.

Lessons Learned

- Test your mass notification system to make sure it works, that numbers are correct, and that your messaging is correct.
- Verify your equipment works outside of its normal area. This can lead to delays and frustration in a response.
- Designate where your MCI triage areas will be when you exercise your plan.
- Don’t be afraid to voice your improvements or what went well. Your input is critical and it could lead to the change needed.

Closing Comments

Donald Denson II,
EHS | Organizational Resilience
dhdenson@texaschildrens.org
210-867-5390

VIOLENT THREATS IN HEALTHCARE

MULTIDISCIPLINARY RESPONSE TEAM APPROACH

SANFORD HEALTH

OVERVIEW

Reason to develop a Threat Assessment Team

What led to developing our Threat Assessment Team

How we developed

What is a Threat Assessment Team?

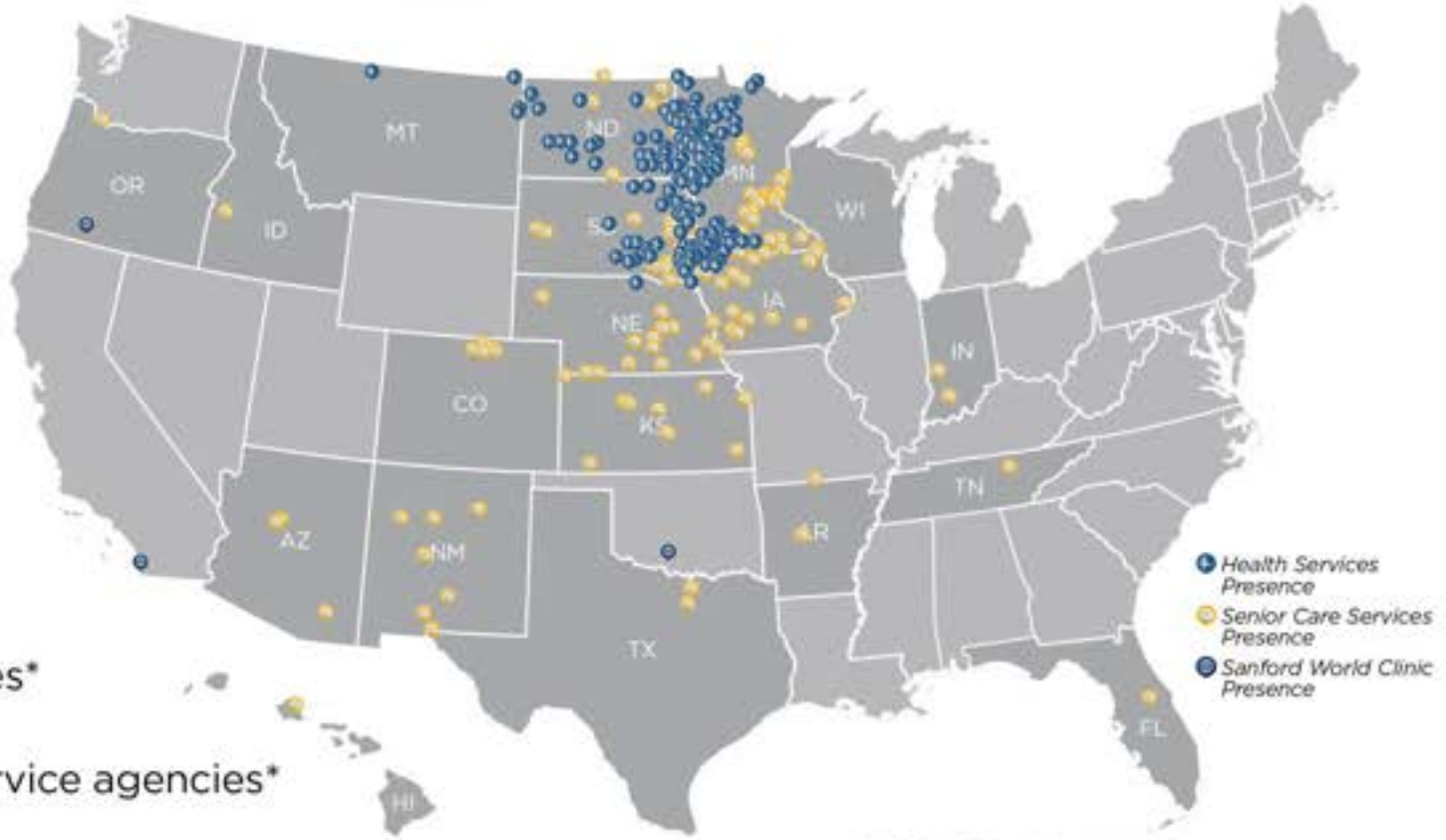
Example Activation

Our Threat Assessment Team

Resources

SANFORD HEALTH

- **45** medical centers*
- **$7.2 billion** in annual revenue
- **211** clinic locations*
- **168** senior living centers*
- **122** skilled nursing and rehab facilities*
- **50** home- and community-based service agencies*
- **195,593** Sanford Health Plan members
- **1,553** physicians, **1,395** advanced practice providers and **8,291** registered nurses delivering care in more than **80** specialty areas
- **42,775** employees



* Facilities include owned, managed, leased and affiliate facilities.
** As of January 1, 2024. Approved by Data Governance Committee.

SANFORD HEALTH SERVICES DIVISION

In 2023, Sanford Health physicians provided outreach services to **381** locations

1 BEMIDJI

- **155** beds
- Total population **85,993**
- 5-year population growth projection **2.1%**
- Median household income **$57,059**
- Unemployment rate **2.5%**
- Population over 65 years **20.6%**

2 BISMARCK

- **248** beds
- Total population **247,178**
- 5-year population growth projection **5.1%**
- Median household income **$73,993**
- Unemployment rate **2.0%**
- Population over 65 years **15.9%**

3 FARGO

- **891** beds
- Total population **534,505**
- 5-year population growth projection **3.4%**
- Median household income **$66,420**
- Unemployment rate **1.8%**
- Population over 65 years **16.7%**

4 SIOUX FALLS

- **872** beds
- Total population **578,328**
- 5-year population growth projection **4.9%**
- Median household income **$68,489**
- Unemployment rate **1.9%**
- Population over 65 years **16.0%**

DISCLAIMER

Not an expert in threats or security

Still relatively new to us and have opportunities to expand

Not a perfect process but hopefully you can learn

STATISTICS

The Bureau of Labor Statistics reports that the rate of injuries from violent attacks against medical professionals grew by 63% from 2011 to 2018 (1)

In a survey this spring by National Nurses United, the nation's largest union of registered nurses, 48% of the more than 2,000 responding nurses reported an increase in workplace violence — more than double the percentage from a year earlier (2)

In a survey of physicians conducted by researchers at four schools of medicine in Chicago, published last year, 23% reported “being personally attacked on social media.” (3)

WHY YOU SHOULD HAVE A THREAT ASSESSMENT TEAM

SANFORD HEALTH

HYPOTHETICAL SCENARIO

A patient calls into the clinic and is asking about medications. During the conversation, the patient gets upset and the conversation begins to escalate.

The patient ends the conversation saying “I’m so done with all of you. I’m going to shoot your clinic up”.

The patient hangs up the phone.

WHAT NOW?

Should next steps be up to just one department?

- A few individuals?

Do you do nothing?

Do you try and do everything?

WHAT LED TO OUR DEVELOPMENT

SANFORD HEALTH

INCREASE AND INCONSISTENCY

Several years of increasing violent threats towards staff and our facilities

Handled these threats differently each time

- Not a streamlined, procedural process

Tipping point scenario…

DEVELOPMENT

This incident raised many questions in our after-action process

- No structured response to these threats
  - Who does what?
- Typically led by one team (security)
  - Difficult to manage
- No structured support to staff
  - Staff support was given, but no formal process to follow

HOW WE DEVELOPED OUR TEAM

SANFORD HEALTH

EMERGENCY MANAGEMENT IN THREAT RESPONSE

How emergency management got involved…

- We know a little about a lot
- Experts in bringing a team together to solve a common goal
- Experts in facilitation

DEVELOPMENT

Convened core group of departments that responded to most of the threats

-Security + Clinical Risk + Emergency Management

All sought a guided, structured response to these violent threats

Creation of our ‘Threat Assessment Team’

WHAT IS A THREAT ASSESSMENT TEAM?

SANFORD HEALTH

WHAT IS A THREAT ASSESSMENT TEAM?

This team activates when a violent threat has been made to an employee, patient, visitor, or facility

This team follows a standard process to evaluate identify the threat, assess the behavior, and implement and manage intervention strategies

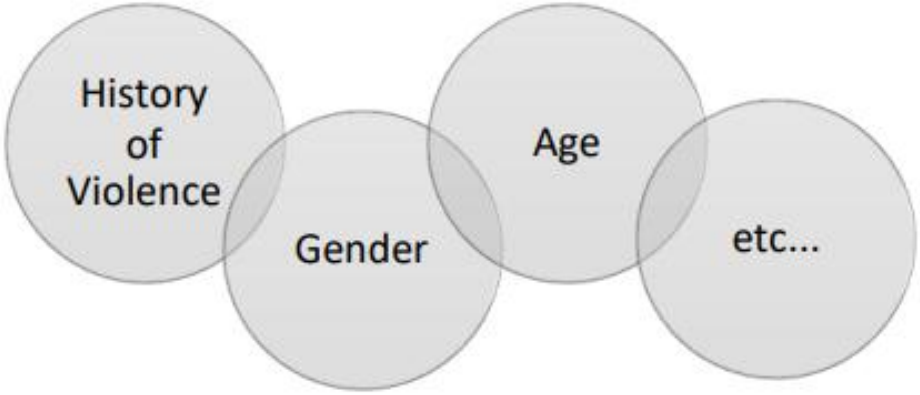
DHS THREAT ASSESSMENT GUIDANCE

Implementing an effective Threat Assessment and Management Team involves a constant process of:

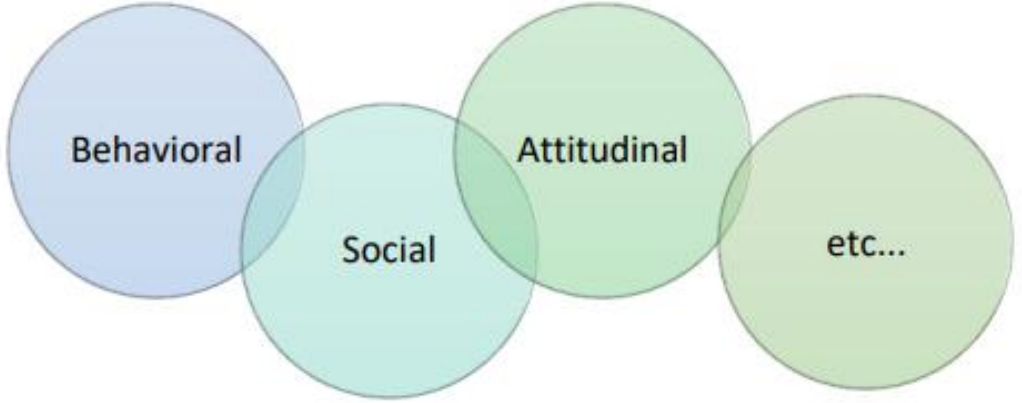
1. **Identifying** any concerning behaviors of the individual and any changes in those behavior.
2. **Assessing** the individual's behavior to determine the level of concern.
3. **Implementing and managing** intervention strategies for individuals to be directed towards the appropriate support services for case management, before the individual commits an act of violence.

THREAT ASSESSMENT TEAM CONSIDERATIONS (4)

Static factors (historical elements; factors that cannot be changed or change only in one direction) may be more useful in the prediction of long-term risk of general violence.



Dynamic factors are changeable and can fluctuate, and can include behavioral (drug abuse, stockpiling weapons, psychotic symptoms, etc.), social (number of close relationships, types of friends, etc.), and attitudinal (antigovernment sentiment, "us versus them," etc.).



Recommended partners and issues to consider:

- ✓ Multidisciplinary teams & support networks
- ✓ IT support for analysis of social media behaviors
- ✓ Law enforcement
- ✓ Training on topics like duty to warn, HIPAA, etc
- ✓ Tailoring team to the specific needs of the organization
- ✓ Scientific research on risk/protective factors
- ✓ Recognize limitations and barriers of capacity and resources within an organization

EXAMPLE ACTIVATION

SANFORD HEALTH

RECENT TEAM ACTIVATION

January 2025

Individual sends concerning EMR messages to provider

Individual begins sending concerning Facebook messages to provider

~20 minutes later, individual presents to the clinic and begins yelling at front desk staff

- Made threats to hoping and wanting everyone to be dead

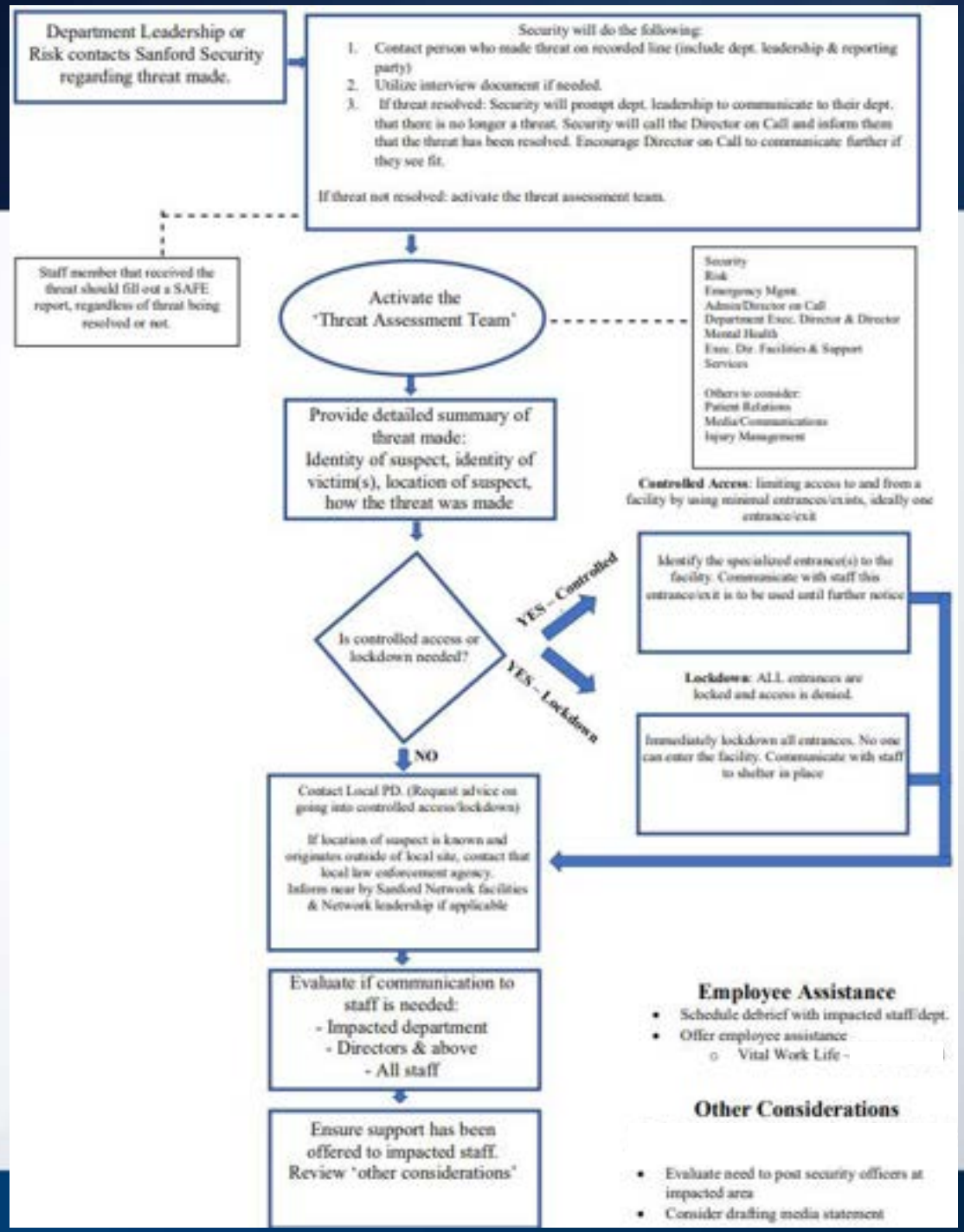
Panic button was triggered, sending additional staff to the front desk

- Once more staff presented, individual left the clinic

OUR THREAT ASSESSMENT TEAM RESPONSE

SANFORD HEALTH

THREAT ASSESSMENT TEAM ALGORITHM



THREAT IS MADE TO FACILITY, DEPT., OR STAFF MEMBER(S)

Department Leadership or Risk contacts Sanford Security regarding threat made.

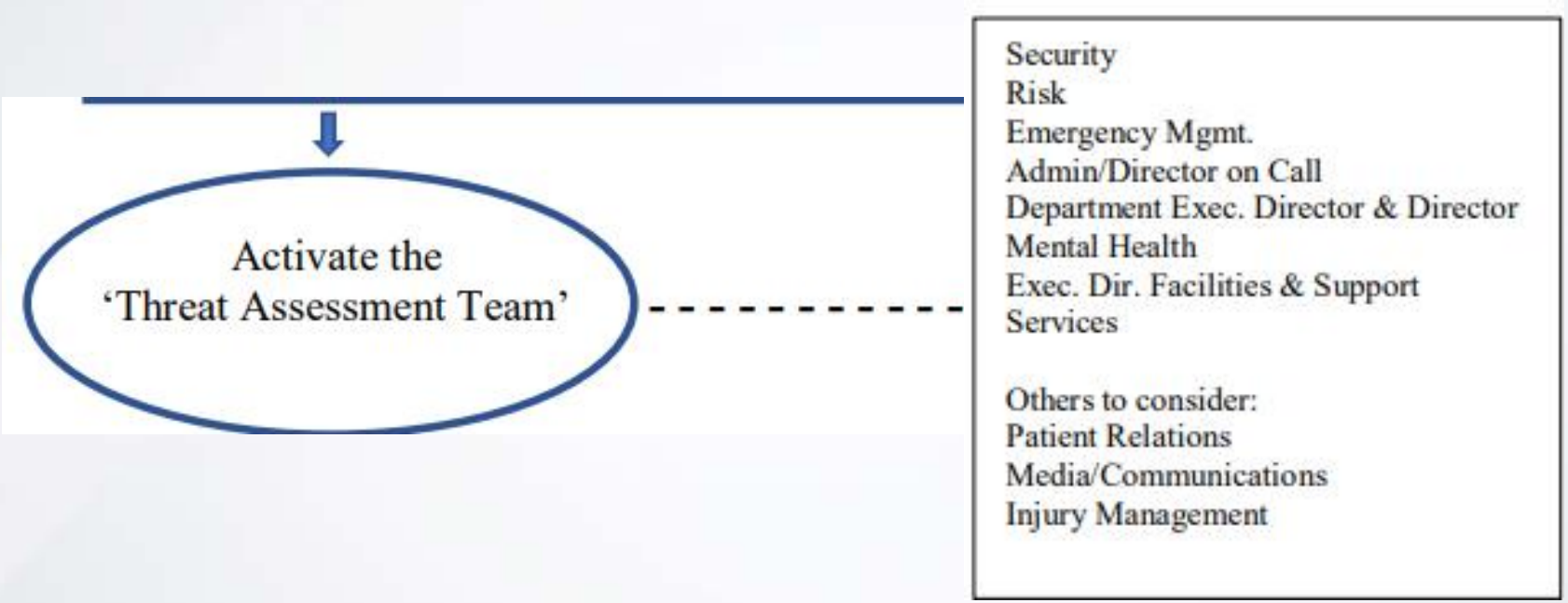
Security will do the following:

1. Contact person who made threat on recorded line (include dept. leadership & reporting party)
2. Utilize interview document if needed.
3. If threat resolved: Security will prompt dept. leadership to communicate to their dept. that there is no longer a threat. Security will call the Director on Call and inform them that the threat has been resolved. Encourage Director on Call to communicate further if they see fit.

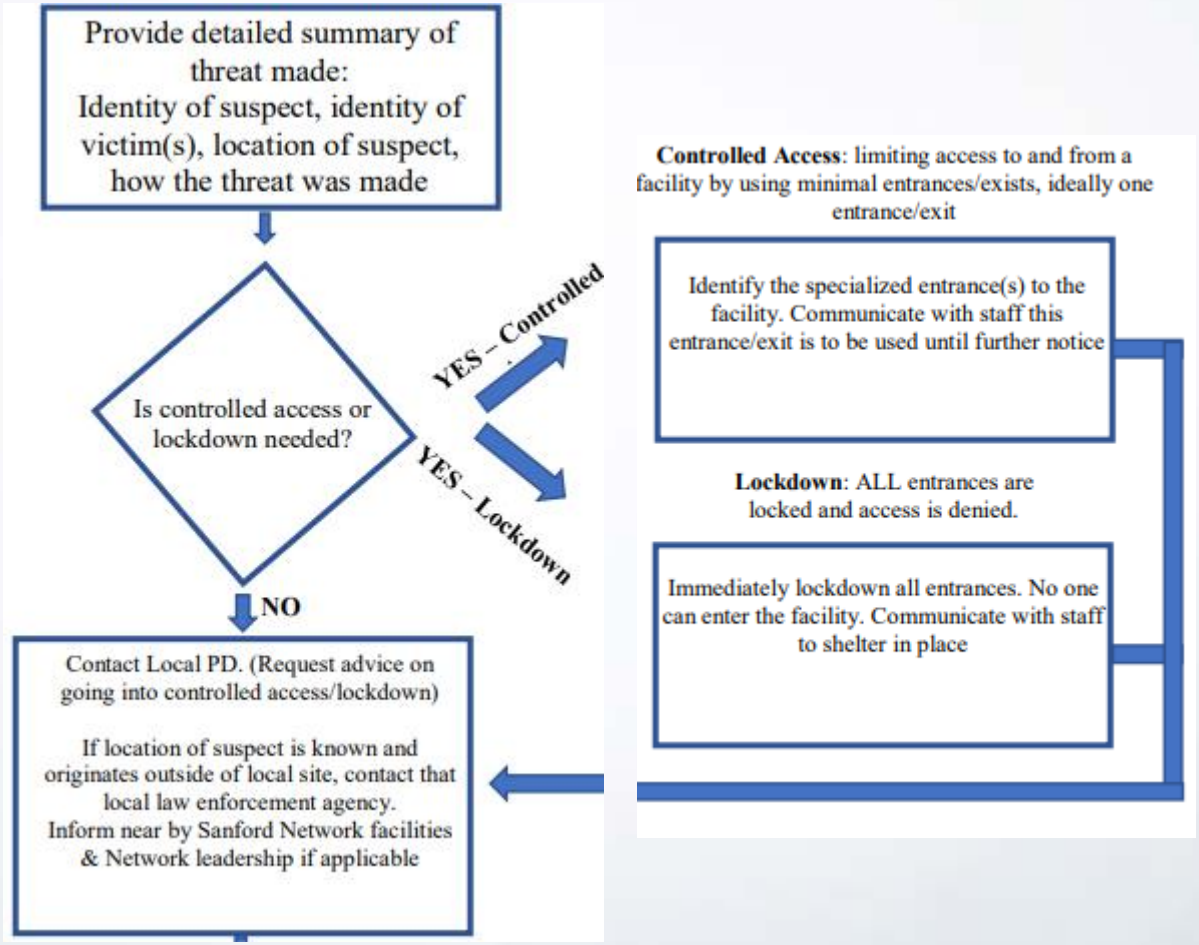
If threat not resolved: activate the threat assessment team.

Staff member that received the threat should fill out a SAFE report, regardless of threat being resolved or not.

THREAT ASSESSMENT TEAM MAKEUP



ONCE TEAM HAS CONVENED…



ONCE TEAM HAS CONVENED…

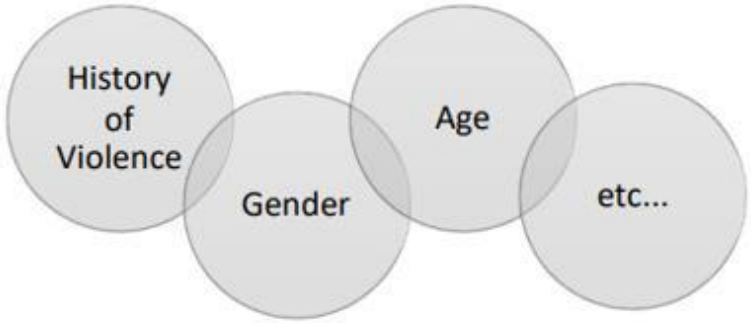
After/while speaking to local law enforcement

Evaluate

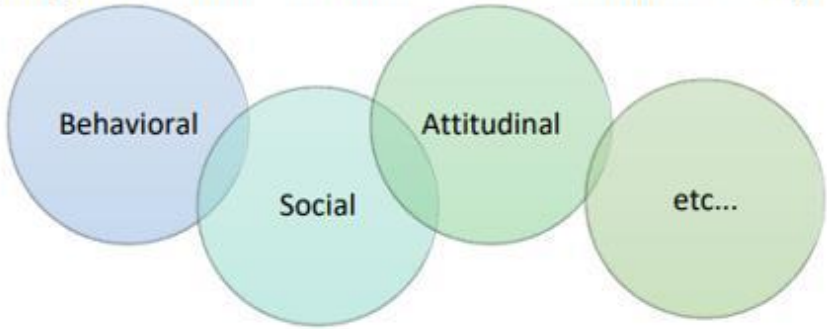
- Specific language used
- Physical actions
- Former history if a patient

Open forum for questions, comments, concerns, etc

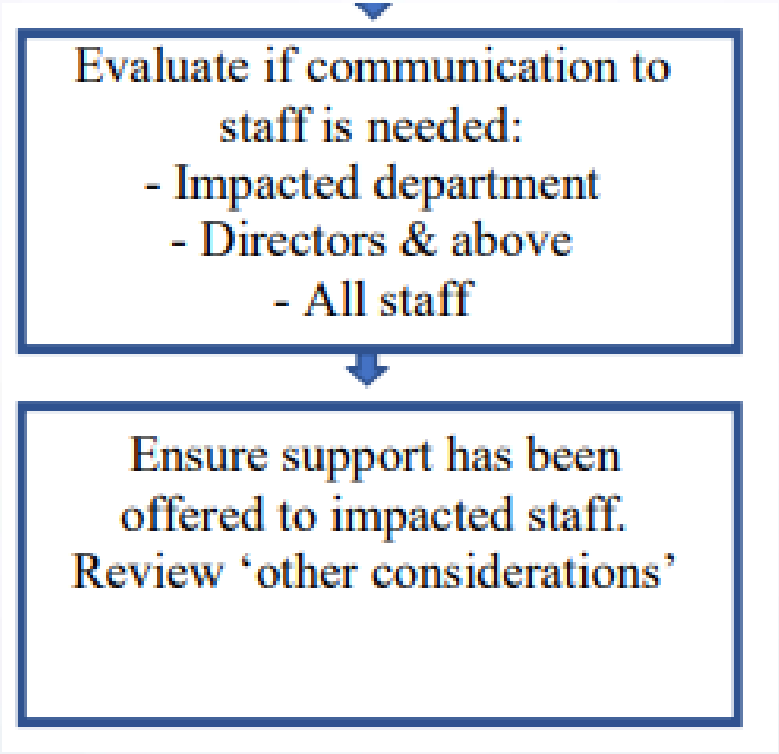
Static factors (historical elements; factors that cannot be changed or change only in one direction) may be more useful in the prediction of long-term risk of general violence.



Dynamic factors are changeable and can fluctuate, and can include behavioral (drug abuse, stockpiling weapons, psychotic symptoms, etc.), social (number of close relationships, types of friends, etc.), and attitudinal (antigovernment sentiment, "us versus them," etc.).



COMMUNICATION & SUPPORT



OTHER CONSIDERATIONS

Employee Assistance

Patient Termination?

Security Officer Presence

Media Statement

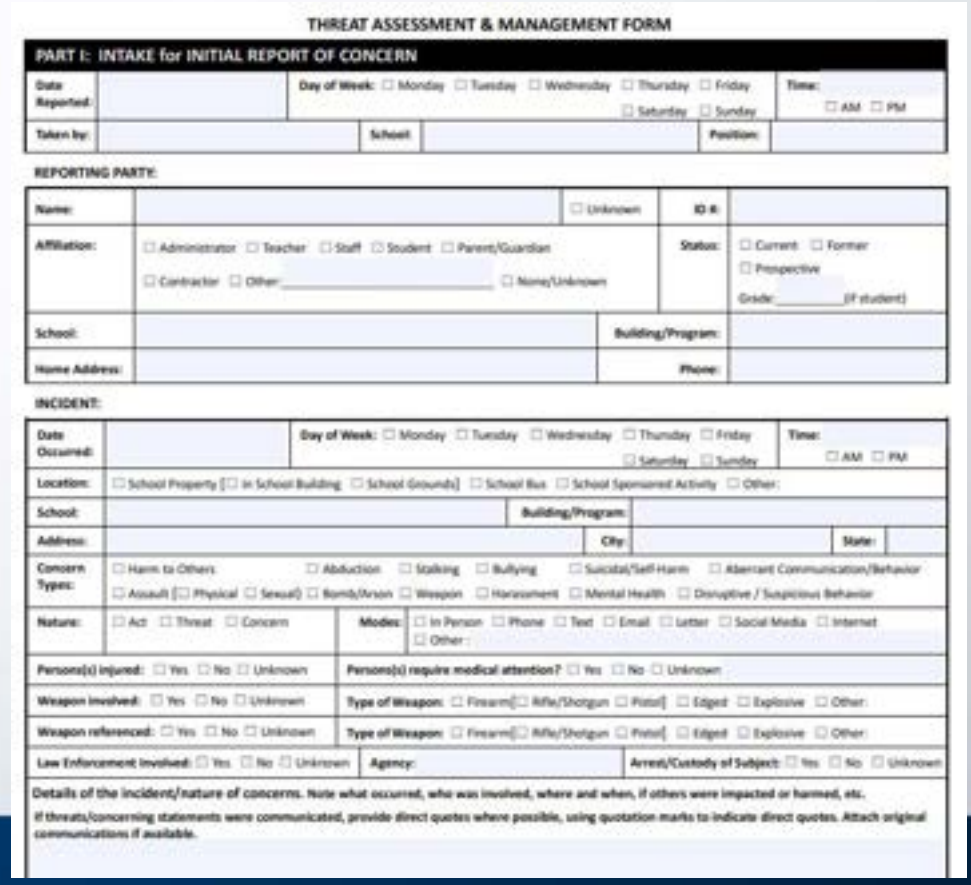
OTHER RESOURCES (5)

Utilize documentation

What other support documentation can assist?

- Interview questions
- Risk assessment
- Actions documented with timeline of events

Example form from Virginia Schools



THREAT ASSESSMENT & MANAGEMENT FORM

PART I: INTAKE for INITIAL REPORT OF CONCERN

Date Reported:		Day of Week: ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday		Time: ☐ AM ☐ PM	
Taken by:		School:		Position:	

REPORTING PARTY:

Name:	☐ Unknown	ID #:	
Affiliation:	☐ Administrator ☐ Teacher ☐ Staff ☐ Student ☐ Parent/Guardian ☐ Contractor ☐ Other:_____ ☐ None/Unknown	Status:	☐ Current ☐ Former ☐ Prospective Grade:_____(if student)
School:		Building/Program:	
Home Address:		Phone:	

INCIDENT:

Date Occurred:		Day of Week: ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday		Time: ☐ AM ☐ PM	
Location:	☐ School Property [☐ In School Building ☐ School Grounds] ☐ School Bus ☐ School Sponsored Activity ☐ Other:				
School:		Building/Program:			
Address:		City:		State:	
Concern Types:	☐ Harm to Others ☐ Abduction ☐ Stalking ☐ Bullying ☐ Suicidal/Self-Harm ☐ Aberrant Communication/Behavior ☐ Assault [☐ Physical ☐ Sexual] ☐ Bomb/Arson ☐ Weapon ☐ Harassment ☐ Mental Health ☐ Disruptive / Suspicious Behavior				
Nature:	☐ Act ☐ Threat ☐ Concern	Modes:	☐ In Person ☐ Phone ☐ Text ☐ Email ☐ Letter ☐ Social Media ☐ Internet ☐ Other:		
Persons(s) injured: ☐ Yes ☐ No ☐ Unknown		Persons(s) require medical attention? ☐ Yes ☐ No ☐ Unknown			
Weapon involved: ☐ Yes ☐ No ☐ Unknown		Type of Weapon: ☐ Firearm[☐ Rifle/Shotgun ☐ Pistol] ☐ Edged ☐ Explosive ☐ Other:			
Weapon referenced: ☐ Yes ☐ No ☐ Unknown		Type of Weapon: ☐ Firearm[☐ Rifle/Shotgun ☐ Pistol] ☐ Edged ☐ Explosive ☐ Other:			
Law Enforcement Involved: ☐ Yes ☐ No ☐ Unknown	Agency:	Arrest/Custody of Subject: ☐ Yes ☐ No ☐ Unknown			
Details of the incident/nature of concerns. Note what occurred, who was involved, where and when, if others were impacted or harmed, etc. If threats/concerning statements were communicated, provide direct quotes where possible, using quotation marks to indicate direct quotes. Attach original communications if available.					

Threat Assessment and Management Teams

Center for Prevention Programs and Partnerships

Resources

Many federal, state, and local governments have resources on threat assessment and management teams. Below are a few of these toolkits and educational materials that may help to provide examples and guidelines for developing such teams in your communities. While many are geared towards schools, they can be adapted for other organizations.

Resource	Description
National Threat Assessment Center (NTAC)'s **"Enhancing School Safety Using a Threat Assessment Model"**	NTAC's operational guide for preventing targeted school violence provides a comprehensive approach to risk management, threat assessment, suggestion for reporting mechanisms, and prevention and intervention as it relates to bullying in schools. https://www.secretservice.gov/sites/default/files/reports/2020-06/USSS_NTAC_Enhancing_School_Safety_Guide_7.11.18.pdf
FBI's **"Making Prevention a Reality: Identifying, Assessing, and Managing the Threat of Targeted Attacks"**	This report, a practical guide on assessing and managing the threat of targeted violence, contains concrete strategies to help communities prevent these types of incidents. It details the importance of awareness while developing a threat assessment, including significant research as well as potential barriers to successful engagement. The report also emphasizes creating a culture of shared responsibility in threat assessment and management teams. https://www.fbi.gov/file-repository/making-prevention-a-reality.pdf/view
Association of Threat Assessment Professionals (ATAP)	The ATAP is a nonprofit organization comprised of multidisciplinary professionals from aw enforcement to mental health professionals and provides members with extensive resources for best practices, certifications, trainings, and networking opportunities. https://www.atapworldwide.org/
Department of Education's (ED) **"Early Warning, Timely Response"**	This guide emphasizes an active and inclusive approach to identifying behavioral changes in youth and acknowledges the need for multidisciplinary involvement in identifying and assessing these changes. The report also reminds readers to view these behavioral changes within context and to avoid stigmatizing. https://www.ojp.gov/pdffiles1/172854.pdf
Department of Education's **Readiness and Emergency Management for Schools (REMS)**	The Readiness and Emergency Management for Schools Technical Assistance Center offers live and virtual trainings on school behavioral threat assessments. Audiences will learn about the effective elements of a school threat assessment and how to recognize online risks. The training is encouraged for not only school districts, but for community partners such as law enforcement, youth-serving organizations, and local mental/behavioral health. https://rems.ed.gov/Docs/Threat_Assessment_Website_Marketing_Flyer_508C.pdf
Coast Guard Investigative Service **Threat Management Unit**	The CGIS Threat management Unit is a prevention based behavioral analysis program. Their flyer provides important definitions of concerning behavior, lists common grievances, and may provide an example of best practices when communicating across organizations. https://www.dcms.uscg.mil/Portals/10/DOL/BaseSeattle/PSWL/docs/BehavioralRiskforCommands.pdf
Substance Abuse and Mental Health Services (SAMHSA) and DOE's **"Addressing the Risk of Violent Behavior in Youth"**	SAMHSA and the Department of Education created a 90-minute presentation to be presented to local communities as a general guide on risk and protective factors, as well as the warning signs that are associated with the risk of violent behavior. https://safesupportivelearning.ed.gov/addressing-risk-violent-behavior-youth-know-signs-youth-violence-and-how-identify-and-reduce-risk
FBI's **Behavioral Analysis Unit** (BAU), Behavioral Threat Assessment Center (BTAC)	The FBI's BTAC provides behaviorally-based investigative and operational support including case consultations, to law enforcement and threat assessment and management teams working on terrorism and targeted violence. BTAC's services can be secured via your local BAU Threat Management Coordinator (TMC). https://www2.fbi.gov/hq/isd/cirg/ncavc.htm#bau
ED and the U.S. Secret Service's **"Eleven Questions to Guide Data Collection in a Threat Assessment Inquiry"**	This worksheet provides a list of suggested questions to help guide a threat assessment and management team when evaluating an individual of concern. These questions may help direct the team in referring the individual to appropriate services. https://health.ess2.net/sites/Health/Files/u134/Eleven-Questions-to-Guide-Data-Collection-in-a-Threat-Assessment-Inquiry.pdf
The Ohio Attorney General's Office's **"Threat Assessment Training"**	The Ohio School Threat Assessment Training provides best practices in 10 chapters of video trainings, which includes emphasis on establishing a multidisciplinary team, determining an appropriate threshold for law enforcement intervention, and the need for training for all stakeholders involved. https://www.ohioattorneygeneral.gov/threatassessment

TAKEAWAYS

1. Respond with a multidisciplinary team
2. Have a plan/procedure/algorithm to follow
3. Develop resources/documentation material
4. Involve local law enforcement
5. Be open & transparent. Communication is key
6. Support your staff

REFERENCES

1 - U.S. Bureau of Labor Statistics. (n.d.). *Injuries, illnesses, and fatalities*. U.S. Department of Labor. https://www.bls.gov/iif/home.htm

2 - National Nurses United. (2023, January 18). *Survey reveals increases in unsafe staffing, workplace violence, and moral distress*. National Nurses United. https://www.nationalnursesunited.org/press/survey-reveals-increases-in-unsafe-staffing-workplace-violence-moral-distress

3 - Pendergrast TR, Jain S, Trueger NS, Gottlieb M, Woitowich NC, Arora VM. Prevalence of Personal Attacks and Sexual Harassment of Physicians on Social Media. *JAMA Intern Med.* 2021;181(4):550–552. doi:10.1001/jamainternmed.2020.7235

4 - U.S. Department of Homeland Security. (2021, December). *Threat assessment and management teams*. https://www.dhs.gov/sites/default/files/2021-12/Threat%20Assessment%20and%20Management%20Teams_0.pdf

5 - University of Virginia. (2019, July 27). *Comprehensive school threat assessment guidelines*. https://education.virginia.edu/documents/yvp-forms-comprehensive-school-threat-assessment-guidelines2019-07-27pdf

Corewell Health™

Designing and Expanding a Business Continuity Program for a Healthcare System

Julie Bulson DNP, MPA, RN, NE-BC, HcEM-M

FEBRUARY 26, 2025

01

Objectives / Agenda

Corewell Health™

Objectives

- Identify the **key steps and components** of a business continuity program for a healthcare system
- **Share best practices** and tools for engaging and collaborating with internal and external stakeholders in developing and implementing a business continuity program
- Recognize the **common challenges and pitfalls** of designing and expanding a business continuity program
- Identify **strategies and solutions** for enhancing the effectiveness and resilience of the business continuity program

Topics for Conversation

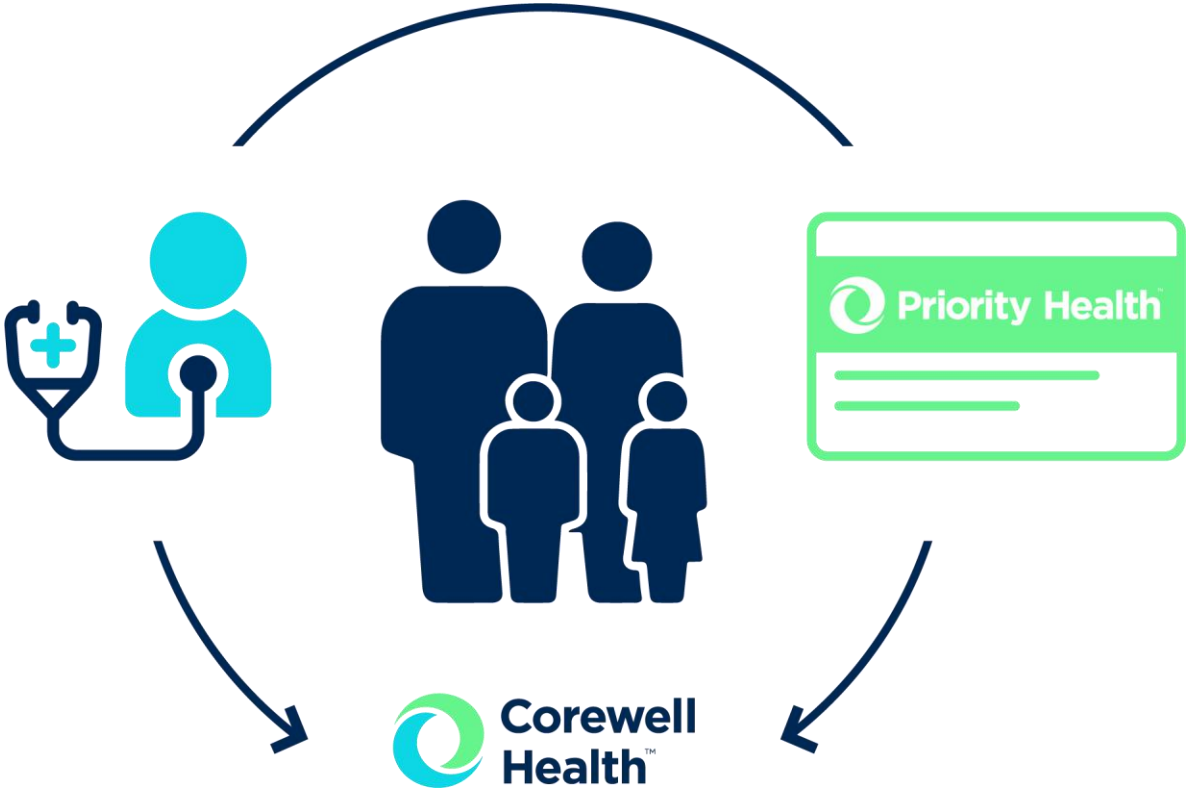
- Organizational overview – Context for our conversation
- Program development – Basic framework of business continuity
- Systematic approach – Corewell Health's design to complete the work
- Lessons learned during this process
- Conclusion / Opportunity for questions and further dialogue

02

Who Are We?

Corewell Health™

An Integrated System



Who We Are

65,000+
Team Members

300+
Ambulatory/Outpatient Locations

1.3+ Million
Health Plan Members

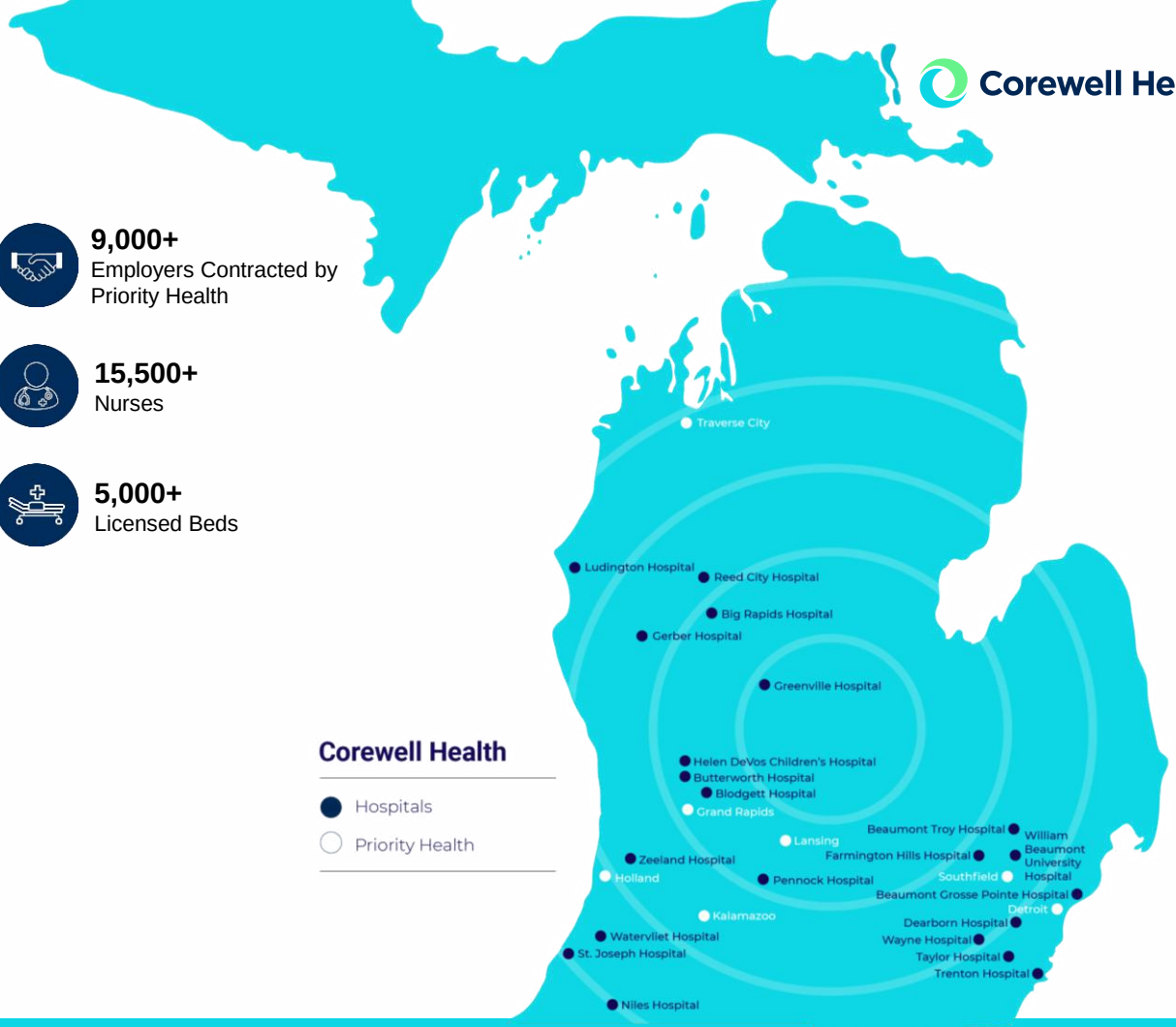
12,000+
Affiliated, Independent and Employed Physicians and Advanced Practice Providers

21
Hospital Facilities

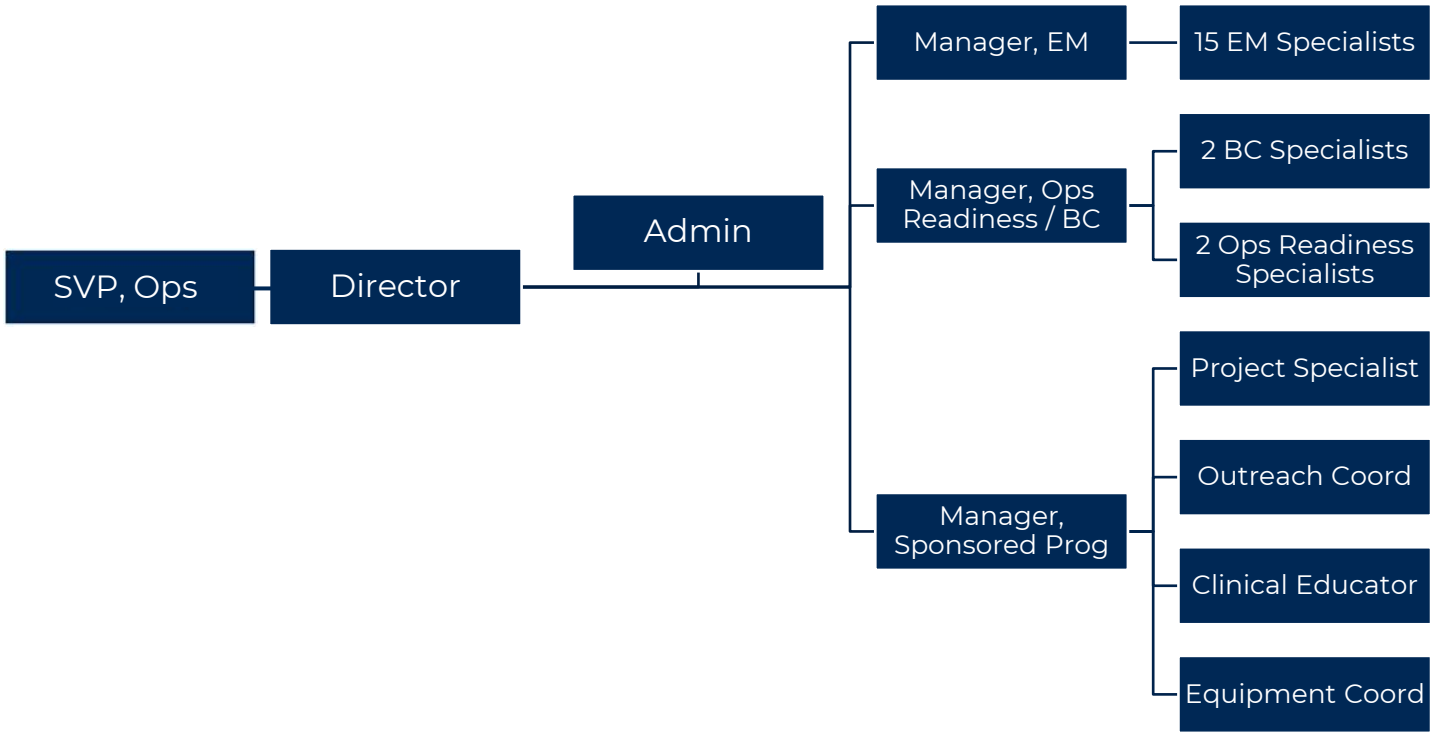
9,000+
Employers Contracted by Priority Health

15,500+
Nurses

5,000+
Licensed Beds



Business Assurance Structure



03

Program Development

Corewell Health™

Business continuity is the ability of an organization to maintain essential functions during and after a disaster or disruption

Anatomy of an Incident

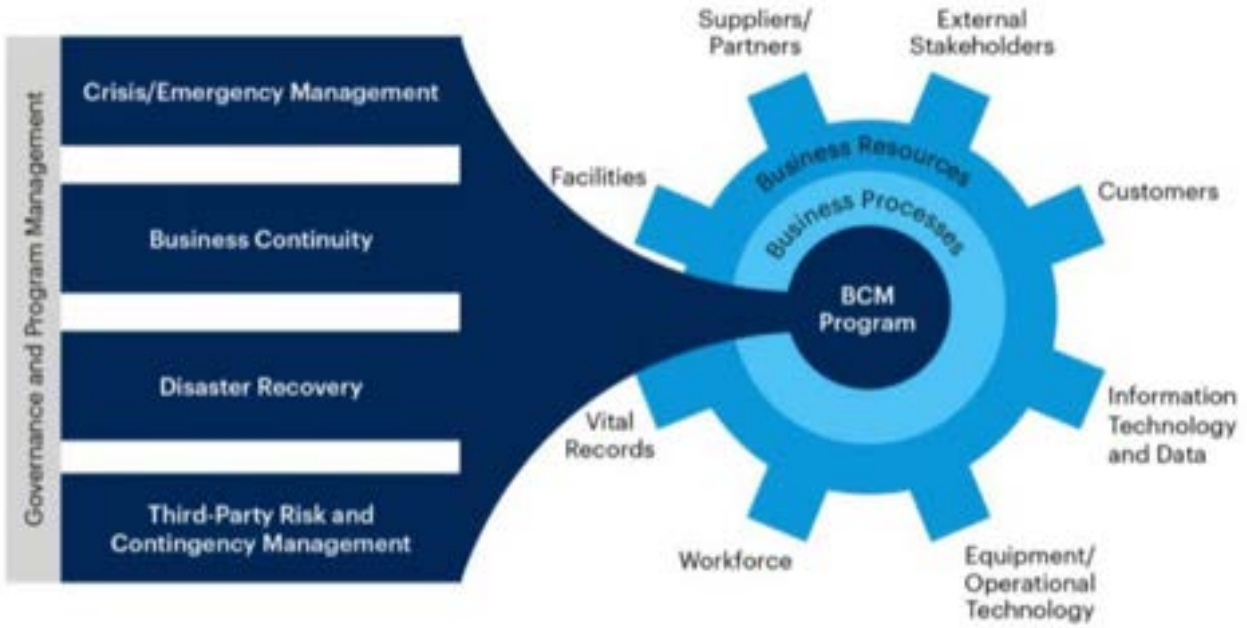
Emergency Response

- **Disaster plans** are used by operational teams for emergency response to unplanned incidents.
- Joint Commission requires all acute care facilities to have disaster plans and test them annually.
- Disaster plans for non-hospital ambulatory facilities and locations are not mandatory.

Business Recovery

- **Business continuity plans** are used to restore normal operations.
- Business continuity plans are an important risk management tool.

Business Continuity Program Overview



Source: Gartner
721164_C

What is Business Continuity Planning?

- Business Continuity Planning is a cyclical process
- Business Continuity Planning looks at:
  - Facilities
  - Departments
  - Processes
  - Applications – specifically those supporting departmental operations
- Often times this is department dependent
- There is no “Cookie Cutter” solution – everyone is different

What is a Business Continuity Planning?

Corewell Health™

A **Business Impact Assessment (BIA)** is a review of what departments do and how it is done.

- What does your department look like before an incident occurs.
- Identify what “things” you are dependent upon to complete your tasks. Dependencies can be internal and external to your department.
- Determine what risks and threats are conceivably present that potentially could impact an area.

A **Business Continuity Plan (BCP)** details how we are going respond to threats and continue to provide services during the incident**.**

Provides guidance on how we begin to put the organization back together.

We evaluate the effectiveness of the plan through routine testing and exercising.

Development of a **Business Continuity Playbook** as a portion of the Business Continuity Plan.

04

System Programmatic Approach – Introducing Project Oscar

What is Project Oscar?

Corewell Health™

We aim to develop a **robust readiness strategy** to respond to any unforeseen business disruptions such as a **major cybersecurity incident and/or ransomware attack**.

We need to prepare for a **significant, system-wide outage that lasts up to 30 days or longer**

This initiative will develop **disaster response and business continuity playbooks** to:

- Minimize our operational and financial impact
- Enhance patient safety and care delivery
- Allow us to restore our business systems and functions to normal

Named after the Oscar-winning movie *Everything, Everywhere All at Once*.

This project plans for a **worst-case scenario** where <u>all</u> systems and applications are impacted across the *entire* organization.

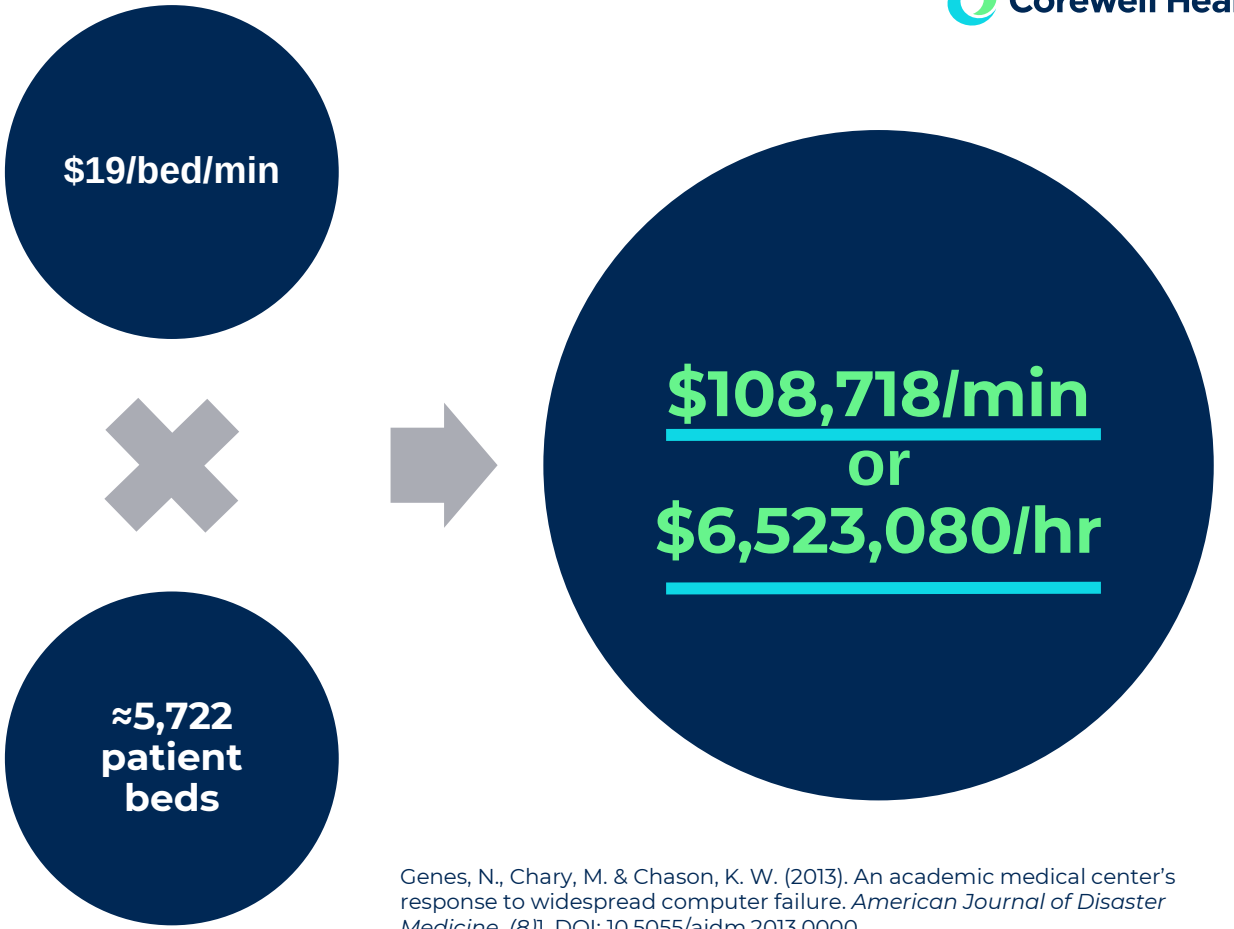
Why is this work important? Why now?

Corewell Health™

In the *past two years alone*, Corewell Health experienced:

- A **6-hour system-wide network outage** in August 2023.
- A **14-hour Workday outage** in November 2023.
- System challenges due to the **CrowdStrike outage**.
- Imaging issues with a recent **PACs outage**.
- Other recent **data breaches** related to third party vendors.
- Impact from other neighboring MI health care systems cybersecurity incidents

The financial impact to the organization if the *entire* system is in downtime would be:

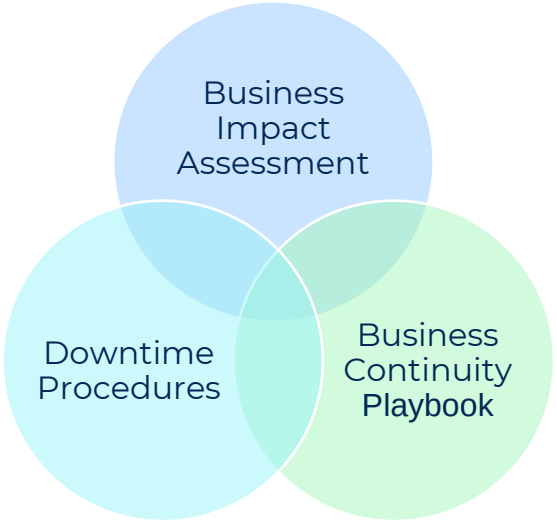


Genes, N., Chary, M. & Chason, K. W. (2013). An academic medical center's response to widespread computer failure. *American Journal of Disaster Medicine, (8)*1. DOI: 10.5055/ajdm.2013.0000

What are we hoping to accomplish?

Corewell Health™

1. **Completing a Business Impact Assessment (BIA)**
   - Define what resources and applications teams depend on
   - Prioritize resources based on criticality to operations
2. **Reviewing and enhancing current downtime plans and workflows**
   - Expand current downtime plans beyond 24/48 hours
   - Focus on how workflows change based on a day, week or 30+ day outage
3. **Creating a Business Continuity Playbook**



Corewell Health™

What does Project Oscar include?

Project Oscar consists of **three workstreams:**

Business Continuity

Develop 30-day downtime plans for operating during a system-wide network and application outage.

Disaster Response

Refine an incident command center structure, roles and responsibilities, communication plan, and staff education.

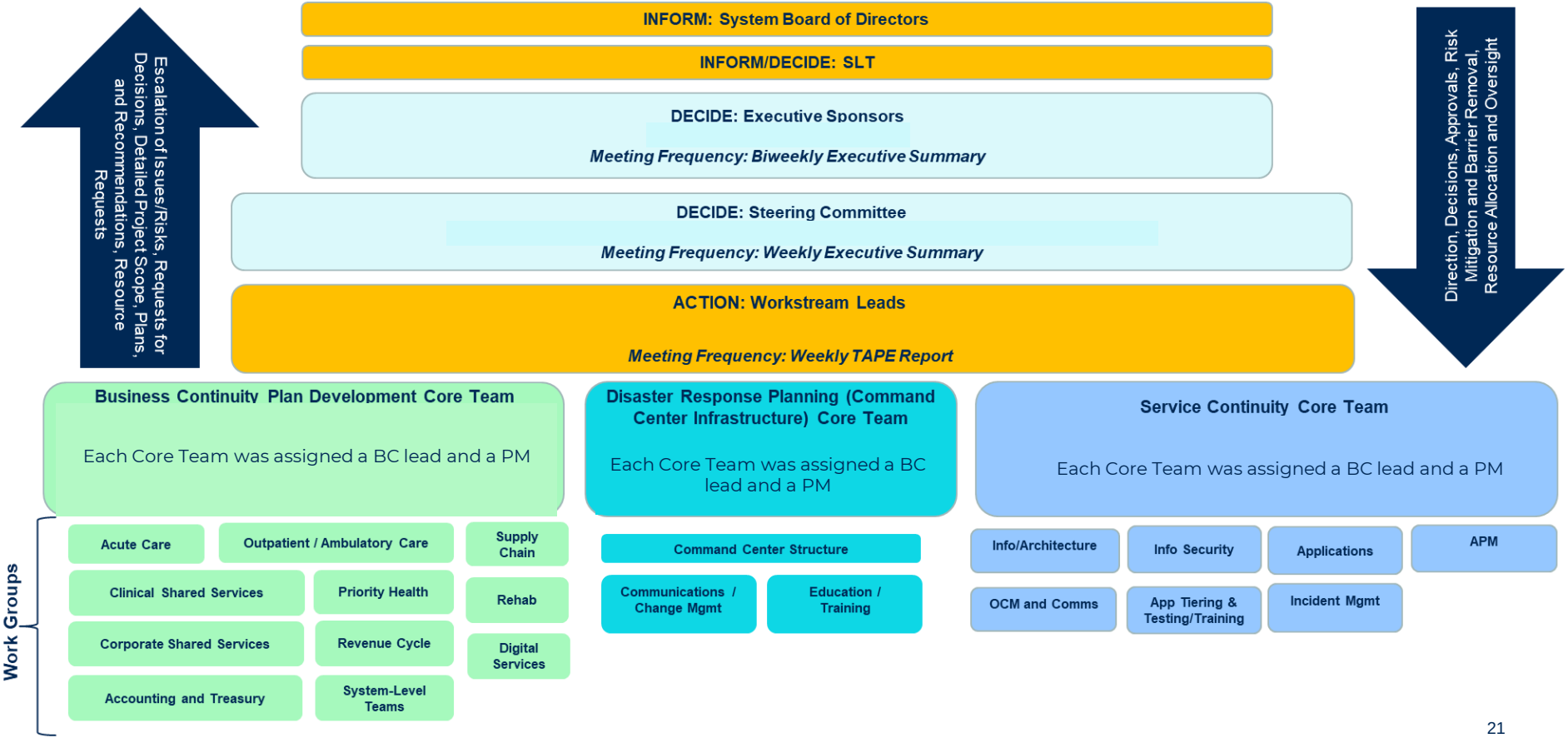
Service Continuity

Create a service continuity plan to restore all applications in priority order.

Governance Structure for Communications and Escalation

Project Components: 30-Day Business Continuity, Disaster Response Planning and Technical Disaster Recovery

Corewell Health™



Revised January 5, 2025

Phase 1

Corewell Health™

We **completed** the following 30-day downtime plans this past Fall (September to mid-December):

Acute Care: Emergency Services, Surgical Services, Inpatient Care

Outpatient/Ambulatory: Urgent Care Centers

Clinical Shared Services: Imaging/Radiology, Lab Services, Pharmacy, Care Coordination, Continuing Care, Mission Control/Transfer Center

Corporate Shared Services: Patient Transport, Food and Nutrition

Accounting and Treasury: Payroll, Accounts Payable, Treasury Liquidity

Revenue Cycle: Registration/Admitting, Billing/Collections, Contact Center, Charging/Coding, Shared Services

Supply Chain: Supply Chain Operations

Priority Health: Claims, Medical Management, Pharmacy, Customer Care Center

Phase 2

Corewell Health™

These teams have been identified for Phase 2 (January to April 2025):

Acute Care: Transplant, Dialysis, Aero Med

Outpatient/Ambulatory: Ambulatory Provider Practices, Ambulatory Surgical Centers

Rehabilitation: Rehab (Inpatient & Outpatient)

Clinical Shared Services: Behavioral Health, Research, Language Services, Virtual Health

Corporate Shared Services: Physical Security, Facilities, Linen, EVS

Priority Health: Government Markets, Compliance/Privacy – SIU, Credentialing, Provider Enrollment, Actuary, Data, Analytics, and Risk Adjustment, Clearing Houses/EDI, Member Enrollment and Premium Billing, Finance – Commissions, Communications

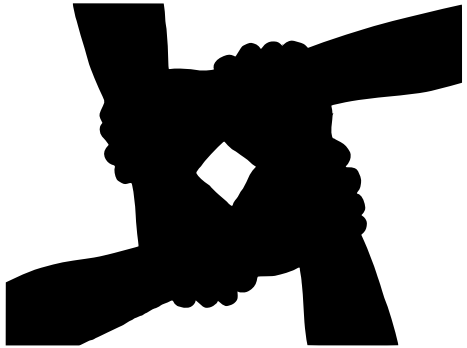
System-Level: ERM/Compliance/Privacy, Human Resources, Communications and Marketing, Quality/Safety/Experience, Medical Affairs/Credentialing, Medical Education, Legal/General Counsel, Foundation

Digital Services: Biomedical Engineering, Major Incident Management (MIM), Service Desk, Procurement, Site Support

Support Design

System-Level Meetings

- Weekly Steering Committee Meetings
- Biweekly Executive Sponsor Status Report Meetings
- Weekly Workstream Leads Meetings
- Exec Leadership presentations at WLT, ELT, LTS, CSS
- 2 - System Board of Directors Meetings



Support Design

Workstream 1 Support Meetings per Phase

- 2 – Full-day Planning Sessions
- 2 – Kick-Off Meetings
- 1 - BCP Education Sessions
- 10 - Optional Support Hours
- 35ish - BIA Review Meetings
- 25 - BCP Review Meetings
- 146 – Milestone Meetings
- 37 Core Team Meetings
- *Countless* Sub-team working meetings attended by designated support leads
- *Countless* one-off meetings (Engagement Meetings, Prep Meetings, Agenda discussions, Charter Development, clarifying calls with Workgroup Leads/Sub-team leads, Planview set up, Tabletop discussions, Tool reviews, Internal Audit, ERM Metrics, Board Prep, Finalizing Sub-teams, etc.)

A Need to Simplify the Process

- Business Impact Analysis templates while very complete can be cumbersome unless you understand Business Continuity principles
- Modified the BIA template so non-experts could complete with minimal support
- Since our planning was specifically around having no technology to do our work, the modified BIA template is focused on application dependencies
- Frequent meetings with BC leads and PMs to support the teams doing this work

Samples from BIA Template

Using the drop-down, select the most appropriate level of impact that the loss of your department/team would have on the organization.
Vital to organization/high level of strategic importance
Patients/community/members could be harmed by disruption
Immediate impact if unavailable/degraded
Financial impact immediate if unavailable
National reputational harm
Safety to patients/members/employees likely to be compromised by disruption

Sections included in the BIA:

- Introduction
- Overarching Scope Info
- Dependencies
- BIA additional information

Samples from BIA Template

Key Dependencies

The dependency section is intended to collect information on ALL critical items for each category. Some categories may not apply. Please add more rows as needed.

5. Business processes

This is the most important section of the spreadsheet. Please include all business processes your team is responsible for and what applications are used in completing them. Are there critical peak times of any day, week, month, or year for these? For instance, these times include when batch jobs are normally processed, when periodic workloads such as the end of month financial applications are needed, or when an open enrollment period occurs.

Name	Applications Used for this Process: For each process in Column A, list all applications to complete this process in a separate row.	Identify any Critical deadlines/time periods in the system Cycle (if any)	How long can you function without this process before there's detrimental impact? (RTO: Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	Downtime procedures (y/n)

6. Business Applications

Please list ALL of the applications that your team relies upon to produce your product. Consider any applications that you receive information from or deliver information to others. Please rank these applications in order (1, 2 , 3, ...) in how they would need to be ideally restored. Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption. For more information on RTO and RPO, see the figure on the bottom of the BIA Additional Information tab. Please indicate what region (s) this application is used in.

Name	What do you use this application for?	RTO: How long can you function without this tool before there's detrimental impact? (Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	RPO: Data Sync Timing - How much data can you afford to lose? (Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	Rank Applications for Recovery	Downtime procedures (y/n)	Region specific? (All/E/S/W)

7. Specific Teams (within this department)

Within your department, do you have specific teams that are responsible for certain processes or key functions of the department? What are their hours? Is anyone on call? What is the key processes they are responsible for?

Specific Teams within this Department	Hours of operation, and is anyone on call?	Team's work process vital to function	Downtime procedures (y/n)

Samples from BIA Template

8. Critical team members	Please list the team members that are critical in the performance of your tasks. Do not only include leadership roles, but also team members who may be the only one who is able to perform a specific task. Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption.		
Name	How long can you function without these people before there's detrimental impact? (RTO: Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	Do you have delegations of authority and lines of succession? (y/n)	Downtime procedures (y/n)

9. Other external departments you rely on (or rely on you)	Please list all of the other departments/teams that you depend upon to be able to complete your task and those that rely on your department to be able to complete their tasks. Indicate how long of an interruption is tolerable. Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption.	
Name	What does this team do for you?	RTO: How long can you function without this team before there's detrimental impact? (Immediately, 4 hours, 8 hours, 24 hours, 48, hours, week, etc)

10. Communication devices/Mass Notification Distribution Groups	Do you use any unique methods of communicating with your team? Do you have a mass notification system established (Radios, Everbridge, Voalte, Vocera, Mobile Heartbeat, Perfectserve)? Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption.

Samples from BIA Template

11. Hardware	Do you use any unique to your area devices (printers, plotters, specialized equipment) needed for your team to perform your tasks? Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption in the ability to access these devices or infrastructure needed to support the device.	
Name	How long can you function without this hardware before there's detrimental impact? (RTO: Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	Downtime procedures (y/n)
12. Physical locations	Only include locations that are either unique for your team or a location where a specific test is performed or task is accomplished (and is not routinely done elsewhere)	
Name	How long can you function without this location before there's detrimental impact? (RTO: Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)	Downtime procedures (y/n)
13. External vendors	Please list any vendors that you and your team rely upon to complete your work. Please indicate what this vendor does for you. Do you rely on the network to receive their product. Please indicate how long you would be able to sustain your work if they were unavailable. Please indicate if you have documented downtime procedures that would be used in case of short term and long term (30+ days) of interruption.	
Name	What does this vendor do for you?	How long can you function without this vendor before there's detrimental impact? (RTO: Immediately, 4 hours, 8 hours, 24 hours, 48 hours, week, etc)

Samples from BIA Template

14. Ongoing Business Changes	Are there any changes that are known to you that will impact or change the way you do or the things that you do? Are there plans being developed to address these changes?	
Description of Change	Estimated Impact	When is the change anticipated?

15. Additional Information	Please list anything else that you can think of that needs to be considered in the development of a Business Continuity Plan for your area.
Description	
Power and Network downtimes	All of our programs rely on power and internet functionaltiy, without these we have no way to support any of our programs.

16. Owner/Contributers	Please list the names of those who contributed to the content of this document.

If you are interested in requesting this modified template, please email me at julie.bulson@corewellhealth.org

A Need to Simplify the Process

- Once a BIA was completed the teams developed their department Business Continuity PLAYBOOKS

Corewell Health

Emergency Services

Technology Business Continuity Playbook:

Table of Contents

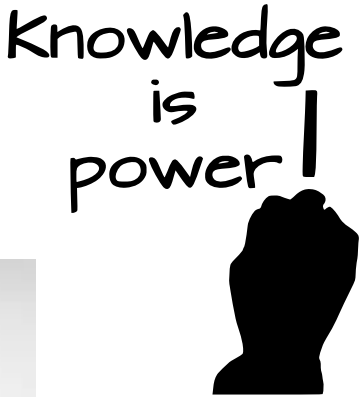
If you are interested in requesting this BC playbook template, please email me at julie.bulson@corewellhealth.org

After the BIA / BCP

So, the modified BIA has been completed and the teams have completed the draft form of their business continuity playbooks.

NEXT STEPS for team leaders:

- Educate and exercise
- Complete an AAR



Exercises

DEPARTMENT EXERCISES TO BE COMPLETE BY JUNE 30

- Template development for departments to complete a TTX
- Walked through the scenario over 2 days
- Provides discussion questions to drive conversation
- Provides debriefing questions
- Provides link to after action form

FULL SYSTEM TABLE TOP EXERCISE TO TEST THE WHOLE PROCESS

Scheduled mid-September

If you are interested in requesting this exercise template, please email me at julie.bulson@corewellhealth.org

05

Lessons Learned

Lessons Learned

- The importance of having a ***clear vision and leadership support*** for the business continuity program, as well as a dedicated team and budget
- The benefits of using a ***standardized and scalable methodology*** and framework for conducting risk assessments, business impact analyses, and strategy development across the healthcare system
- The importance of ***simplifying the process*** – not all teams had a working knowledge of business continuity planning
- The ***challenges of aligning*** the business continuity plans with the emergency response plans and the regulatory requirements, and how to address them through coordination and integration
- The need for ***continuous improvement and adaptation*** of the business continuity program, especially in the face of emerging threats, changing circumstances, and lack of resourcing

06

Conclusion

Conclusion

- **This is a journey**
- Senior leadership support and resourcing for this large project
- Support from senior leaders heightened after a downtime incident in August
- Over 65 teams came together to complete BIAs and BC playbooks if needed (based on BIAs)
- Resource intense - Teams consisted of 3-75 team members
- Needed to keep it simple for all involved
- Still working on a sustainment plan

Thank you.

Julie Bulson DNP, MPA, RN, NE-BC, HcEM-M
Director, Business Assurance
Corewell Health

Julie.bulson@corewellhealth.org


Corewell Health™

Building on the Fly by Design

How the Nation Prepares for Catastrophe

Jeffrey D. Freeman, PhD, MPH
Director and Special Assistant to the President
United States National Center for Disaster Medicine and Public Health

NCDMPH

Uniformed Services University

The views and opinions shared in this presentation are those of the speaker and not those of the United States Government.

NCDMPH

- Established as a federal interagency organization in 2008
- Academic center based at the Uniformed Services University
- Led by DoD, in partnership with HHS, DHS, DoT, VA, and State
- Mission to advance medicine and public health in disasters

Image Credit: Smiley N. Pool/The Dallas Morning News

NCDMPH
Uniformed Services University

The National Center's

Joint Disaster Medicine and Public Health Ecosystem

has been established to serve as a national resource for advancing the Nation's readiness for disasters and other health emergencies. The ecosystem is comprised of leading organizations across government, academia, and industry that have demonstrated excellence in disaster medicine and public health.

Center Focus

NCDMPH
Uniformed
Services
University

National Disaster Medical System Pilot

Motivated by concerns that the NDMS lacked the capacity to meet the requirements of a LSCO

Authorized under the FY20 NDAA to assess and strengthen the National Disaster Medical System (NDMS)

The NDMS Pilot is required to:

- Address the requirements of a LSCO or catastrophic event in the homeland
- Establish partnerships with public and private healthcare organizations
- Ensure coordination with the Federal Interagency
- Be conducted over five years at no less than five sites

The National Center for Disaster Medicine and Public Health was chosen as the Office of Primary Responsibility

Image Credit: Health.mil

[1]Kirsch, Thomas D., et al. "Validation of Opportunities to Strengthen the National Disaster Medical System: The Military–Civilian NDMS Interoperability Study Quantitative Step." *Health security* (2023).

NCDMPH
Uniformed Services University

Fundamental Constraints

There is no sustainable healthcare model for war or other catastrophic-level events

NCDMPH
Uniformed Services University

Simultaneity Challenge

There will always be more to deal with in war than the conflict alone

LSCO

NEO

Disaster

Growing Concerns

Disasters are growing more frequent, severe, and unpredictable

Frequency

Severity

Predictability

Evolving Threats

The U.S. must contend with a range of natural, technological, and geopolitical threats

Climate

Technology

Near-Peer

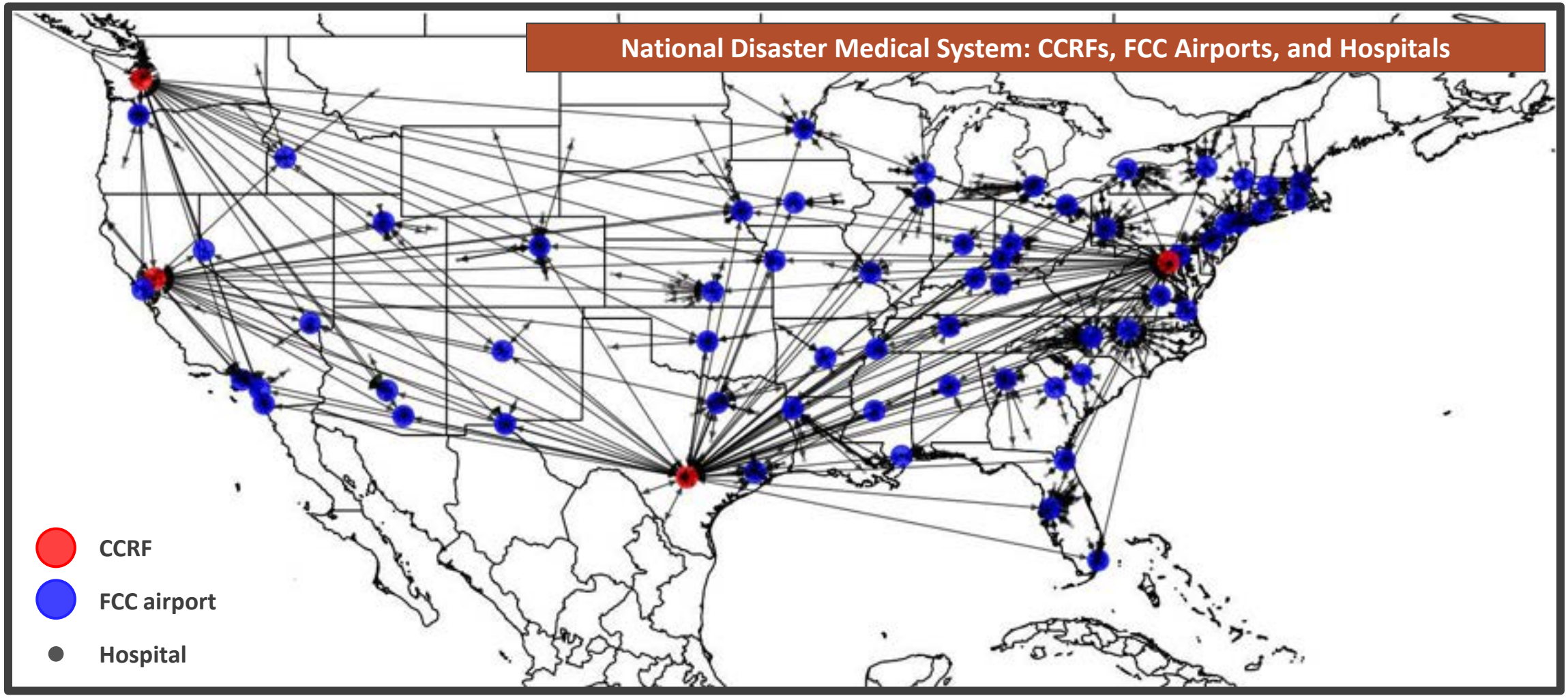
NCDMPH
Uniformed Services University

A More Vulnerable System

A highly optimized healthcare system is a highly vulnerable one

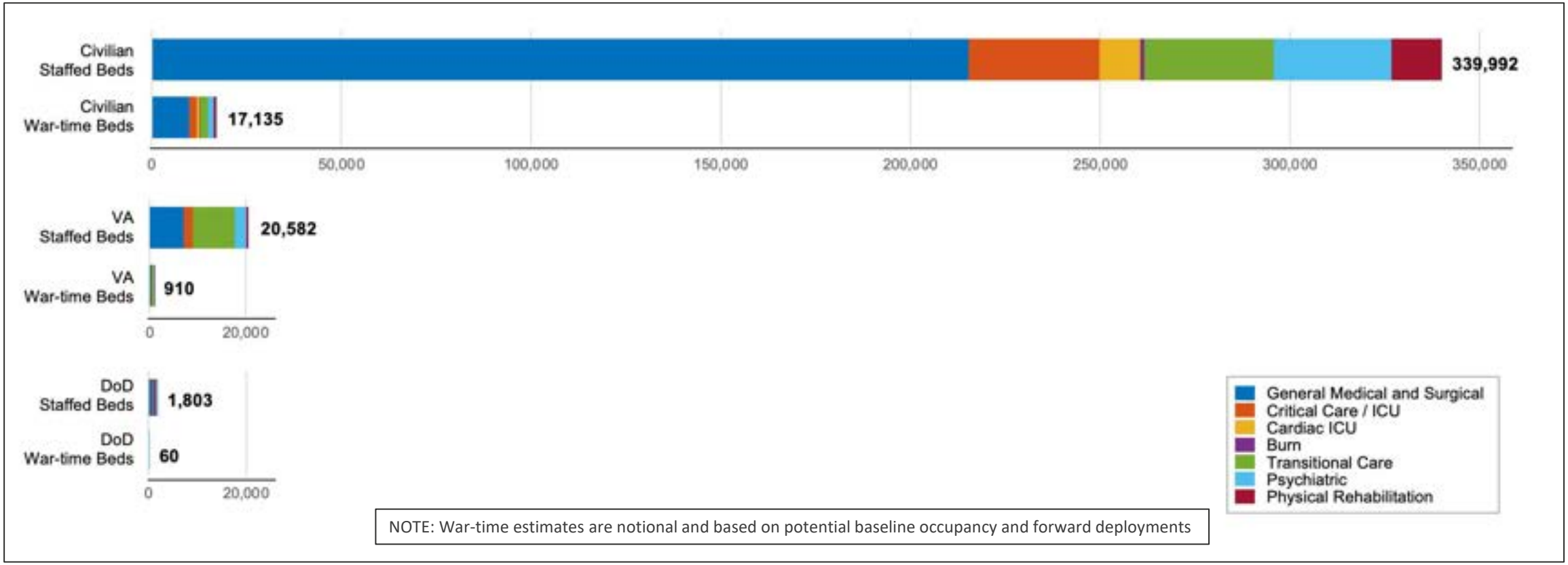
National Disaster Medical System

The National Disaster Medical System is a highly complex CIV-MIL network of partners

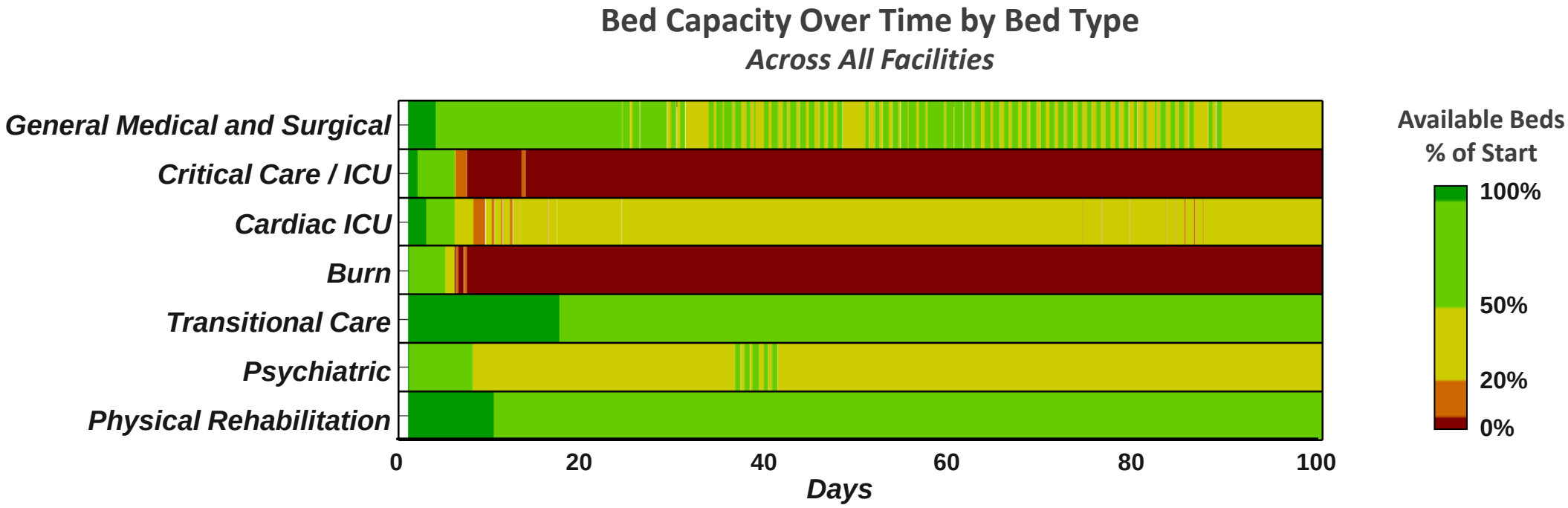


Potential Bed Capacities

Most of the medical capacity in the United States resides within the civilian health system



Notional Scenario Results



- *Gaussian distribution of daily casualty arrivals by site*
  - *370 at San Antonio*
  - *250 at Bethesda*
  - *190 at Sacramento*
  - *190 at Puget Sound*
- *100 Day Simulation*
- *Ukraine Casualty Adjusted Data*

NCDMPH
Uniformed Services University

NDMS Pilot Design

Aimed at achieving a sustainable model for military and civilian medical readiness

Goal 1

ASSESS AND STRENGTHEN THE NDMS OF TODAY

Goal 2

DEFINE POLICY RECOMMENDATIONS FOR IMPROVING THE NDMS OF TOMORROW

Goal 3

DEVELOP PLANS FOR RAPIDLY GROWING THE NDMS UNDER FUTURE SCENARIOS

The NDMS Pilot is designed to address the limitations our military and civilian health systems must overcome in preparing for large-scale events. We aim to address these constraints by: (1) assessing and strengthening our current health systems, (2) defining policy recommendations for improving future health systems, and (3) develop plans for enabling rapid capacity building during large scale events requiring resources above what can be sustained under routine operations.

Midpoint Review

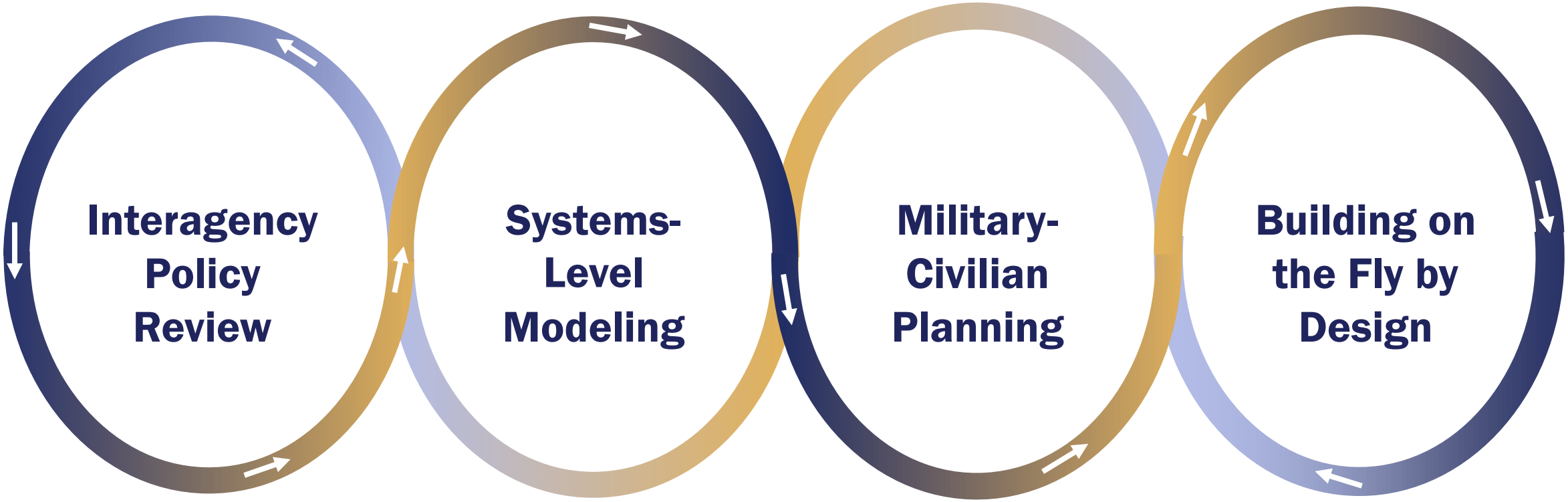
System oriented toward acute onset disasters and unable to meet LSCO requirements

- Lack of understanding of the policy environment
- No common operating picture or system-wide view
- Civilian planning not compatible with military plans
- No sustainable model for medical response in catastrophe

NCDMPH
Uniformed Services University

An Integrated Approach

Define policy environment, understand mission at a systems-level, integrate MIL-CIV plans, and adapt



NCDMPH
Uniformed Services University

Building on the Fly by Design

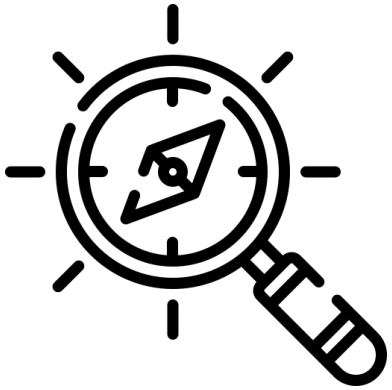
A sustainable model for preparedness

Imagine

Requirements derived from the worst-case scenarios imaginable

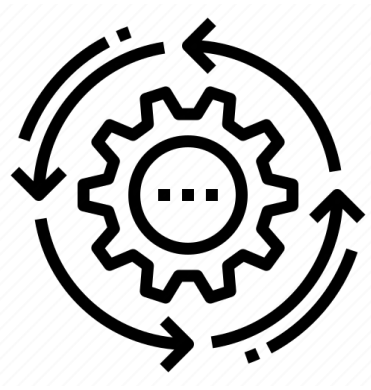
Discover

Capabilities to develop or redirect when the rules may no longer apply



Deliver

Operational planning to ensure rapid and efficient delivery in times of crisis



NCDMPH
Uniformed Services University

Why? Because Assumptions Won't Hold.

Extreme events routinely lay waste to the strongly held beliefs of our world's leading experts

- Day Jobs
- Data Sharing
- Medical Licensure

NCDMPH
Uniformed Services University

Final Takeaways

NDMS Pilot has revealed substantial knowledge and capability gaps across the nation

- Overwhelming majority of system capacity will come from civilian hospitals
- Even minor sustained flows of certain patient types could create bottlenecks
- Critical to incorporate military and civilian policy and plans when ready
- Imperative to develop the ability to build non-disruptive capacity on the fly

NCDMPH
Uniformed Services University

Thank you

ncdmph@usuhs.edu

NCDMPH
Uniformed Services University

Enhancing Objectivity of the HVA

Lessons Learned in HVA Strategy, Data Management and Execution

26 February 2025

NYU Langone Health

Agenda

01

Introduction

02

Program Evaluation

03

Strategic Planning

04

Strategic Improvements

05

Results and Conclusions

06

Lessons Learned

Learning Objectives

By the end of this presentation, you should be able to…

01 Demonstrate why an unbiased risk assessment through **transparent and relevant data** is important in assessing vulnerability, especially in a healthcare setting

02 Outline a simple and translatable **three-step process** to performing an HVA

03 Understand several ways to use **quantitative and qualitative tools** to better inform probability, impact and vulnerability scoring, and threshold building using the Kaiser Permanente Tool

04 Use lessons learned from past stakeholder engagement to **promote more meaningful buy-in** to the HVA process in manageable yet effective ways

01

Introduction

NYU Langone Health Footprint

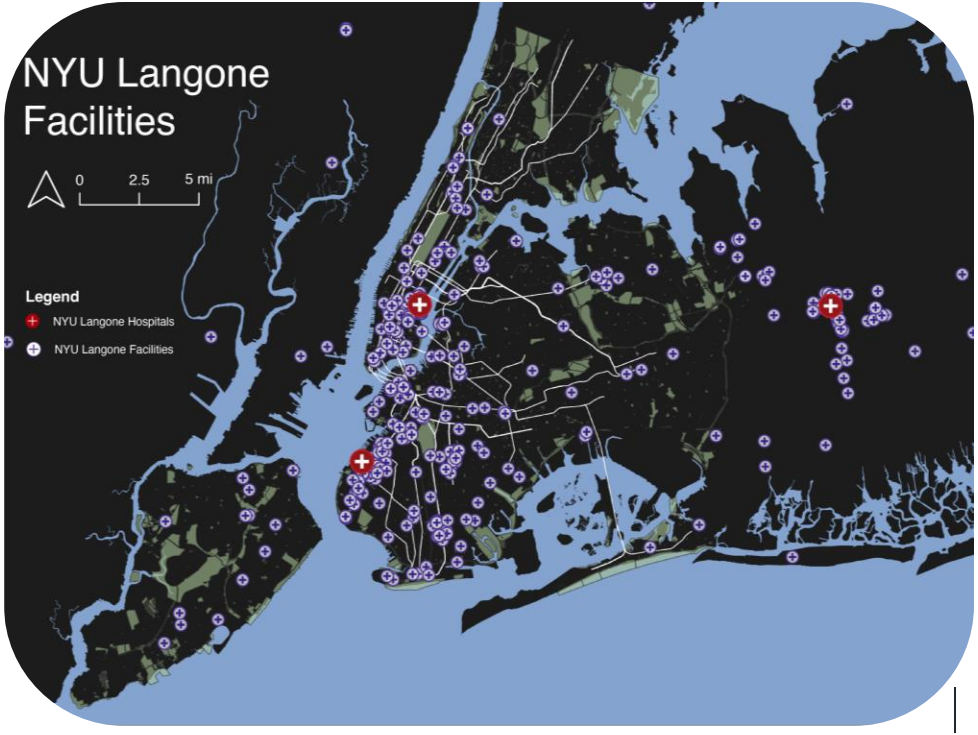
- **4** Hospitals
- **350** Ambulatory Offsites
- **2** Schools of Medicine
- **300+** Research Labs
- **45,000+** Staff and Faculty
- **21** EM+ER Staff

NYU Langone Health Footprint

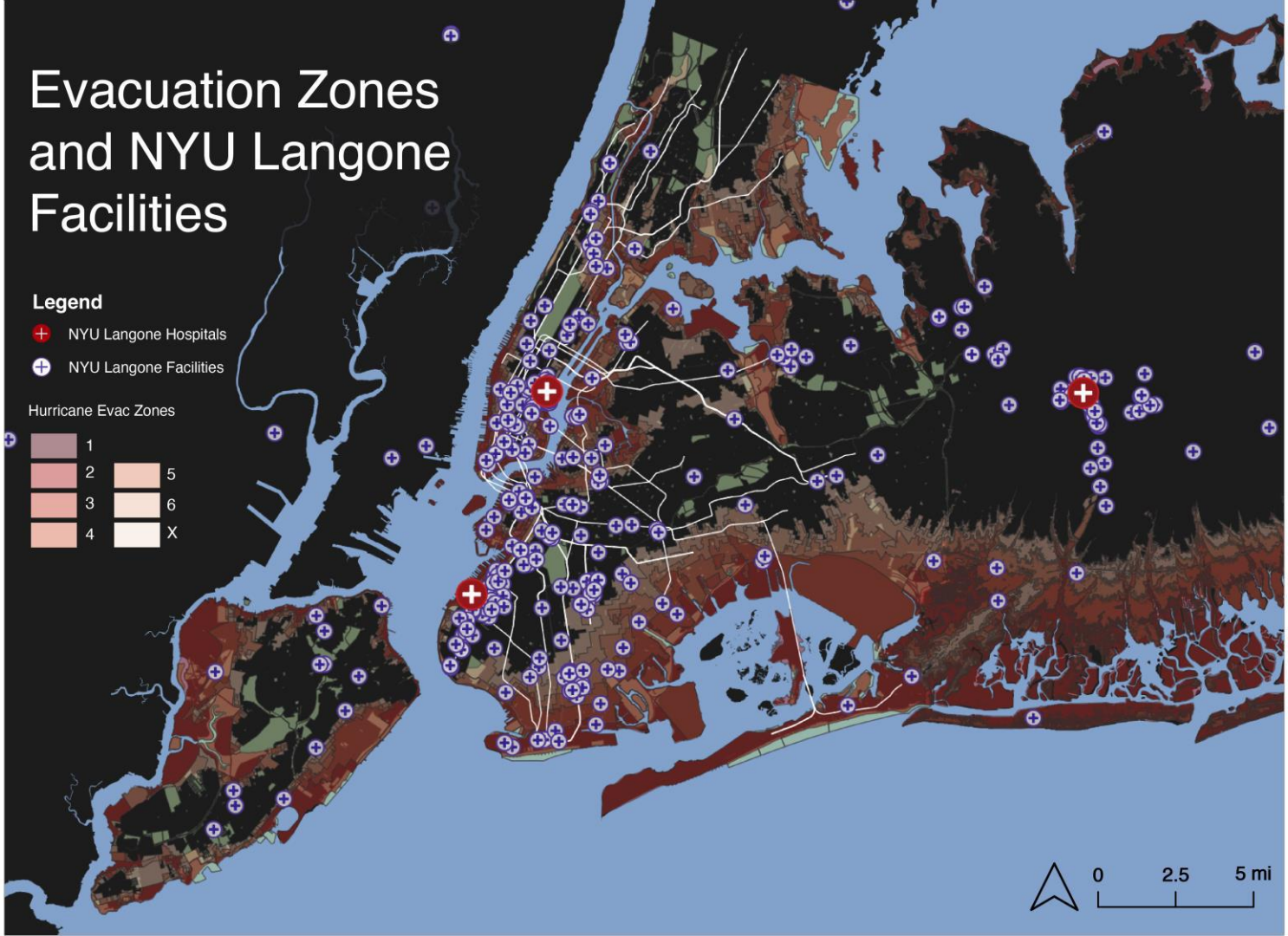
- 4 Hospitals
- 350 Ambulatory Offsites
- 2 Schools of Medicine
- 300+ Research Labs
- 45,000+ Staff and Faculty
- 21 EM+ER Staff

NYU Langone Health Footprint

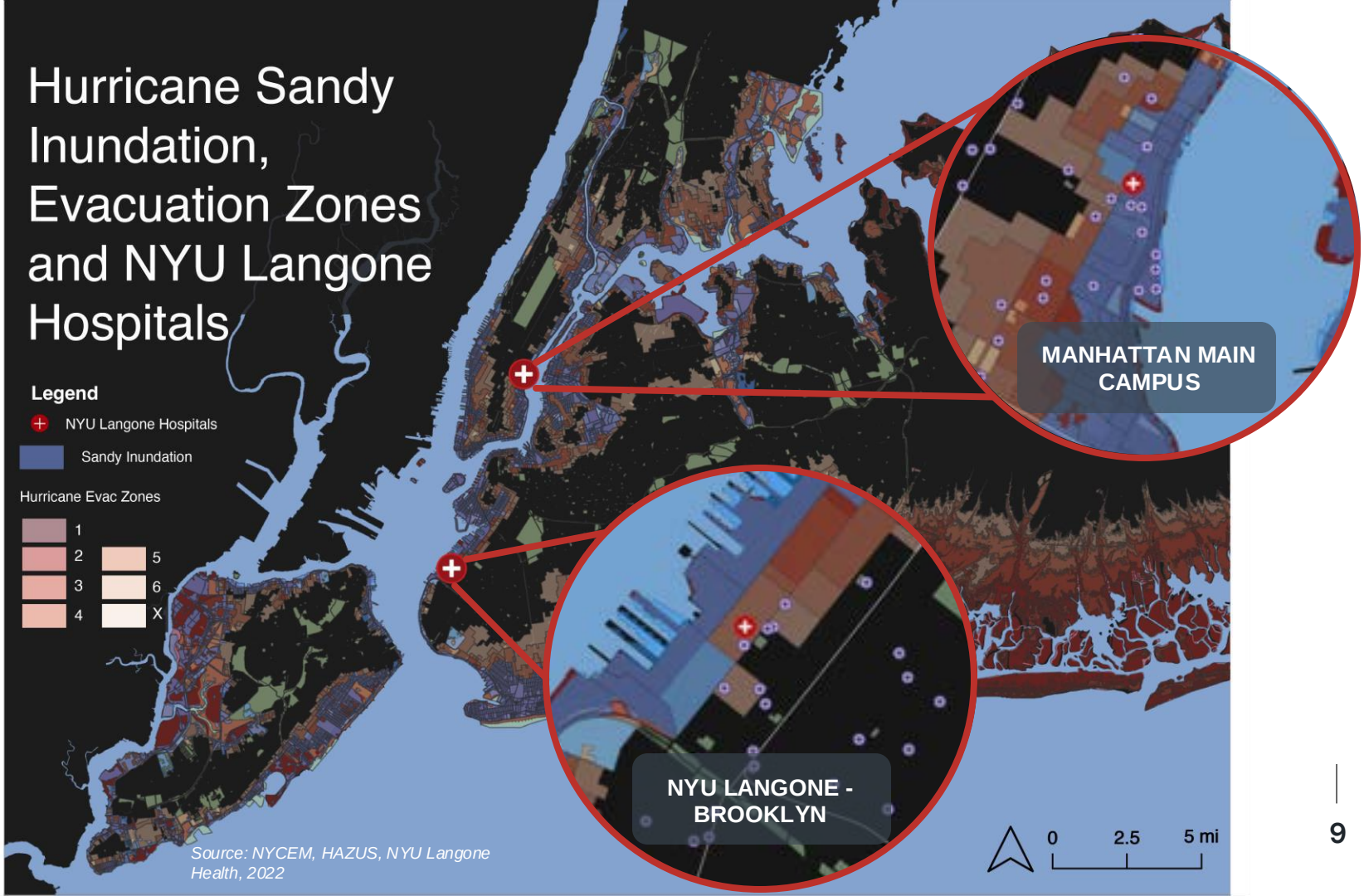
- 4 Hospitals
- 350 Ambulatory Offsites
- 2 Schools of Medicine
- 300+ Research Labs
- 45,000+ Staff and Faculty
- 21 EM+ER Staff



Evacuation Zones and NYU Langone Facilities



NYU Langone Health

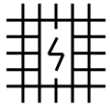


NYU Langone Health

NYC's Threat-Rich Environment

Risk for **violence and terrorism**

Densely packed **population + infrastructure**

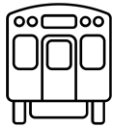


Aging **grid infrastructure** + high power demand

Old building stock + adaptive reuse

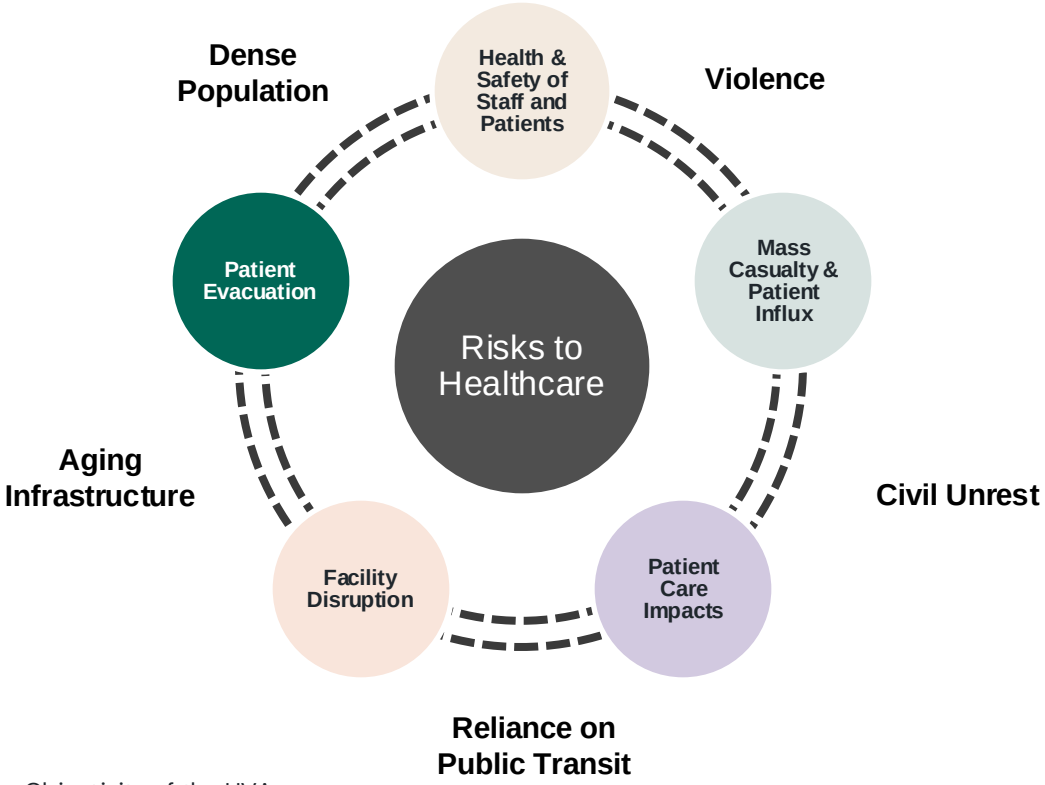
Civil unrest + strike

High reliance on **public transit**



Diverse community profiles

Considerations for NYC Healthcare Systems



02

Program Evaluation

Objectivity through Data Integration

Previous Strategy

- Probability and risk assessment **based on** responses to **qualitative surveying**
  - Led to bias towards certain hazard types

Stakeholder Engagement and Surveying

Table 1. Key Hazard Heat Map

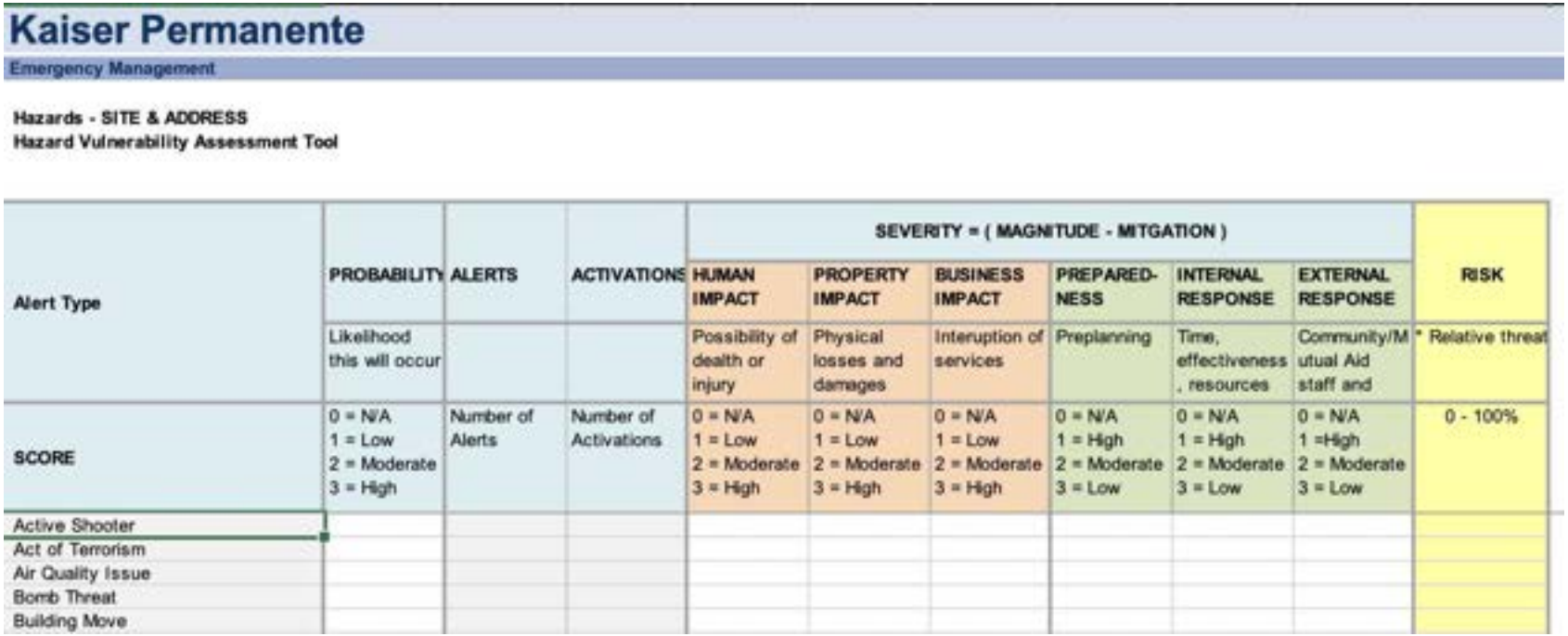
Key Hazard	How likely is this hazard to happen?	What is the potential for personal harm or death?	What is the potential that physical property is destroyed?	How likely is it that you would be unable to provide services?	Relative Threat Rating
Active Shooter/Armed Intruder					74.7
Fire- Internal					69.5
Hurricane or Coastal Storm					66.9
Bomb Threat - Internal					62.3
Winter Weather					59
Workplace Violence/ Threat					57.8
Explosion - Internal					57.4
Flood- Internal					56.7
Infectious Disease Outbreak					53.8
Civil Disturbance					53.7

Relative Risk Scale

Assessing Redundancies in Hazard List

- Active Shooter/ Armed Intruder
- Bomb Threat- External
- Bomb Threat- Internal
- Chemical Spill- External
- Chemical Spill- Internal
- Civil Disturbance
- Communication: Email Failure
- Communication: Telephone Failure
- Cyberattack
- Dam Failure
- Drought
- Earthquake
- EPIC System Outage
- Evacuation of Patients and/or Staff
- Explosion- External
- Explosion- Internal
- Fire- External
- Fire- Internal
- Flood- External
- Flood- Internal
- Generator Failure
- Hazmat Incident/ Mass Decon
- HVAC Failure
- Hurricane or Coastal Storm
- Infant/ Ped Abduction
- Infectious Disease Outbreak
- Landslide
- Mass Casualty Incident/ Patient Surge
- Medical Gas Disruption/ Failure
- Natural Gas Disruption/ Failure
- Pandemic
- Power Outage- External
- Power Outage- Internal
- Radiation Exposure
- Sewage Failure- Internal
- Sewage Failure- External
- Strike/ Labor Action/ Work Stoppage
- Supply Chain Shortage/ Failure
- Temperature Extremes
- Terrorist Attack
- Tornado
- Transportation Failure
- Tsunami
- Water Contamination/ Disruption
- Winter Weather
- Workplace Violence/ Threat

Tools and Best Practices



Kaiser Permanente

Emergency Management

Hazards - SITE & ADDRESS
Hazard Vulnerability Assessment Tool

Alert Type	PROBABILITY	ALERTS	ACTIVATIONS	SEVERITY = (MAGNITUDE - MITGATION)						RISK
				HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPARED-NESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	Likelihood this will occur			Possibility of death or injury	Physical losses and damages	Interuption of services	Preplanning	Time, effectiveness , resources	Community/Mutual Aid staff and	* Relative threat
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	Number of Alerts	Number of Activations	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = High 2 = Moderate 3 = Low	0 = N/A 1 = High 2 = Moderate 3 = Low	0 = N/A 1 =High 2 = Moderate 3 = Low	0 - 100%
Active Shooter										
Act of Terrorism										
Air Quality Issue										
Bomb Threat										
Building Move										

Opportunities for Improvement

1. Critically **Assess Hazard List**
2. Better Integrate **Objective and Unbiased Data**
3. Improve Our **Data Collection** Strategy
4. More **Effectively Engage Stakeholders** in the Process

03

Strategic Planning

Strategy and Data Flow within EM+ER

KEY

STRATEGY

Use HVA to inform preparedness strategy and evaluate effectiveness of programming over time

- Goal Setting
- Programs
- Mitigation Strategy
- Program Evaluations

OPERATIONS

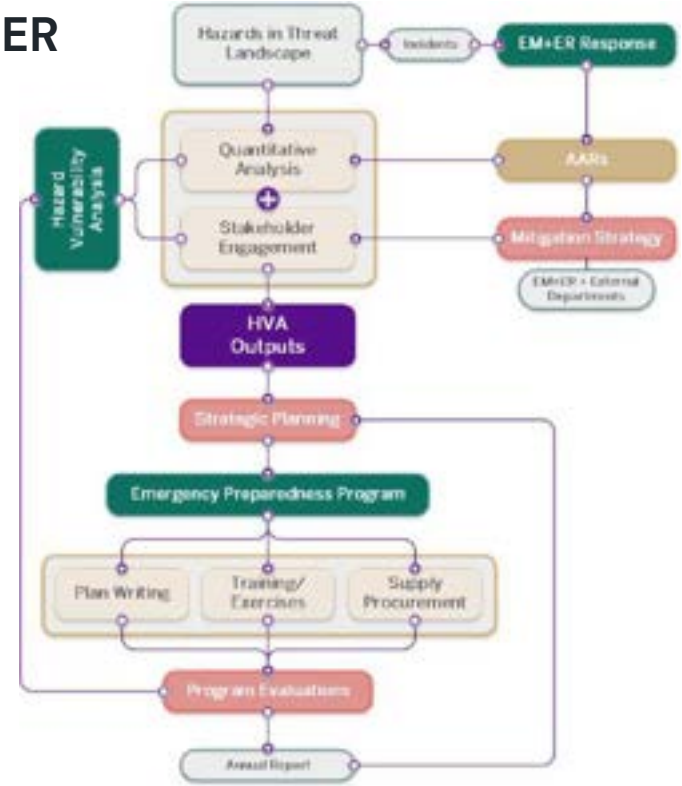
Align programs to threat environment to ensure programs reflect vulnerabilities

- Emergency Preparedness Programs
- Response

TACTICS

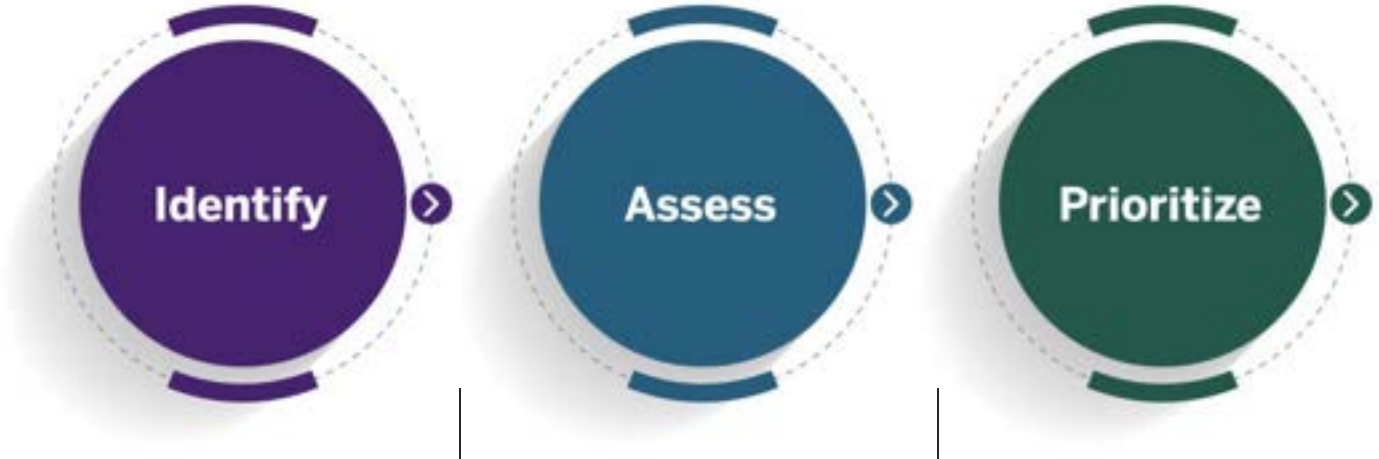
Ensure existing/new plans, trainings and exercises reflect current best practice and hazard landscape

- AARs
- Plan Writing
- Training and Exercises
- Supply Procurement



Basic Process

Basic Process



Identification of Key Hazards

Analysis of Potential Impacts to Enterprise

Prioritization of Hazards for Strategic Planning, Programs, Trainings and Exercises

04

Strategic Improvements

Building Objectivity over Two Years

Rethinking the HVA for 2023

This year's approach incorporates more and better data into the analysis. Past HVAs have relied on survey data to inform risk, primarily qualitative responses from stakeholders, to estimate probabilities and potential impacts. This year's approach builds on that methodology while fostering a more data-centric analysis, utilizing more of our internal datasets and external analyses that are already measuring risk. This is especially important so that biases associated with news and media are limited, since "top of mind" news pieces or recently covered disasters may have an impact on the collective thought surrounding the probability of a disaster or priority hazard type.

2022– 2023

- Used more and better data to inform KP Tool
- Formed a baseline reasoning for scoring
- Focus on hazard types, impact definitions, and overall strategy

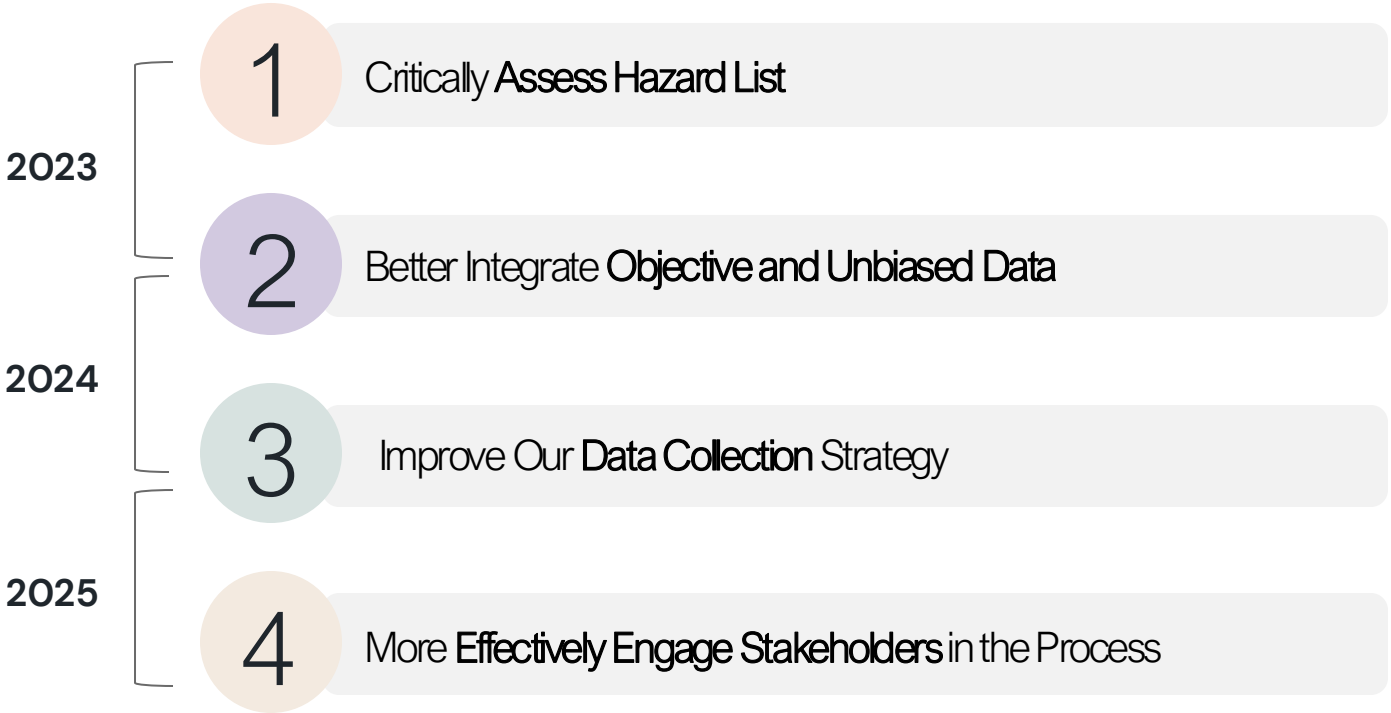
2023 – 2024

- Build upon baseline research
- Enhanced data collection strategies
- Focused on assessing vulnerability and preparedness

Continuing Progress on Objectivity in the 2024 HVA

This year's approach continues to incorporate better and more nuanced data into the analysis. Last year's focus was dedicated to solidifying a baseline for potential hazard impact scoring, where objective data and reporting was utilized to determine potential impacts to NYU Langone. This year's process focused more on solidifying a baseline for the preparedness score and the building out of that section through real-time data collection and stakeholder feedback on mitigation strategies and departmental preparedness. Continued effort will be made in the coming years to build out sections of this report and the objectivity of scoring to diminish biases that existed in past iterations of the analysis.

Timeline for Improvement

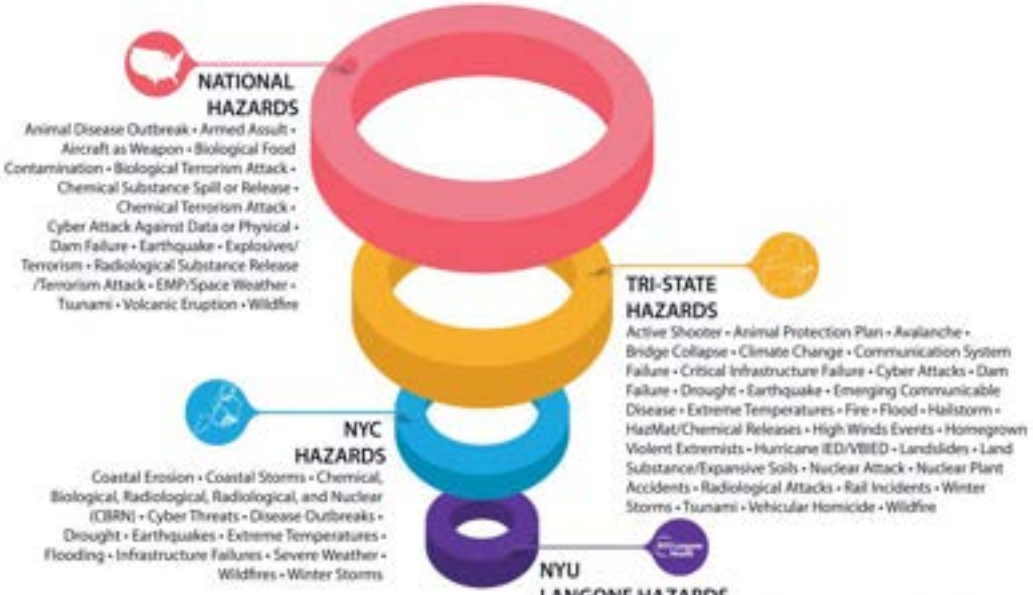


Improvement Checklist

1. Critically **Assess Hazard List**
2. Better Integrate **Objective and Unbiased Data**
3. Improve Our **Data Collection** Strategy
4. More **Effectively Engage Stakeholders** in the Process

Critically Assess Hazard List

Critically Assess Hazard List



Categorization of Key Hazards

Natural

Acts of Nature

Technological

Accidents and Technical Failures

Human-Caused

Intentional acts by an adversary

Key Hazards

Hazard Category	Definition	Key Hazards
Natural	Acts of nature	• Coastal/Tropical Storm/Hurricane • Earthquake • Tornado • Winter Weather • Infectious Disease/Pandemic • Air Quality • Space Weather
Human-Caused	**Intentional** acts of a human or group, most often an adversary	**Internal violence** • Internal/Workplace Violence • Active Shooter/Armed Intruder • Civil Disturbance **Acts of Terror** • Bomb Threat/Explosion • Chemical Release and Radiation **Abduction** • Infant/Pediatric Abduction • Human Trafficking **Cyber Attack** **Strike/Labor Action/Work Stoppage**
Technological	Accidents or failures of systems and structures	**Chemical and Biological Exposure** • Chemical Exposure Biological Exposure/Biohazard **Communications** • Email Failure • Telephone/Paging System Failure **Facilities Disruptions** • Construction-Related Incidents • Explosion • Fire/Smoke Condition • Flood/Water Leak • HVAC Disruption/Failure • Medical Equipment Disruption/Failure • Medical Gas Disruption/Failure • Natural Gas Disruption/Failure • Sewage Disruption/Failure • Water Contamination/Disruption **IT/System Disruption/Outage** **Power Outage** • Generalized Power Outage • Generator Failure **Logistics** • Supply Chain Disruption/Failure • Transportation Disruption/Failure

Improvement Checklist

Critically **Assess Hazard List**

2 Better Integrate **Objective and Unbiased Data**

3 Improve Our **Data Collection** Strategy

4 More **Effectively Engage Stakeholders** in the Process

Indicators in Kaiser Permanente

Probability Score
How likely is this hazard to impact one of our NYU Langone facilities in the next 5 years?

Alerts/Activations
How many times has this hazard impacted us in the past five years?

Human Impact
How severely would this hazard impact the life and safety of staff and patients if it were to occur at NYU Langone?

Property Impact
How severely would this hazard impact any form of property if it were to occur at NYU Langone?

Business Impact
How severely would this hazard impact business and operations if it were to occur at NYU Langone?

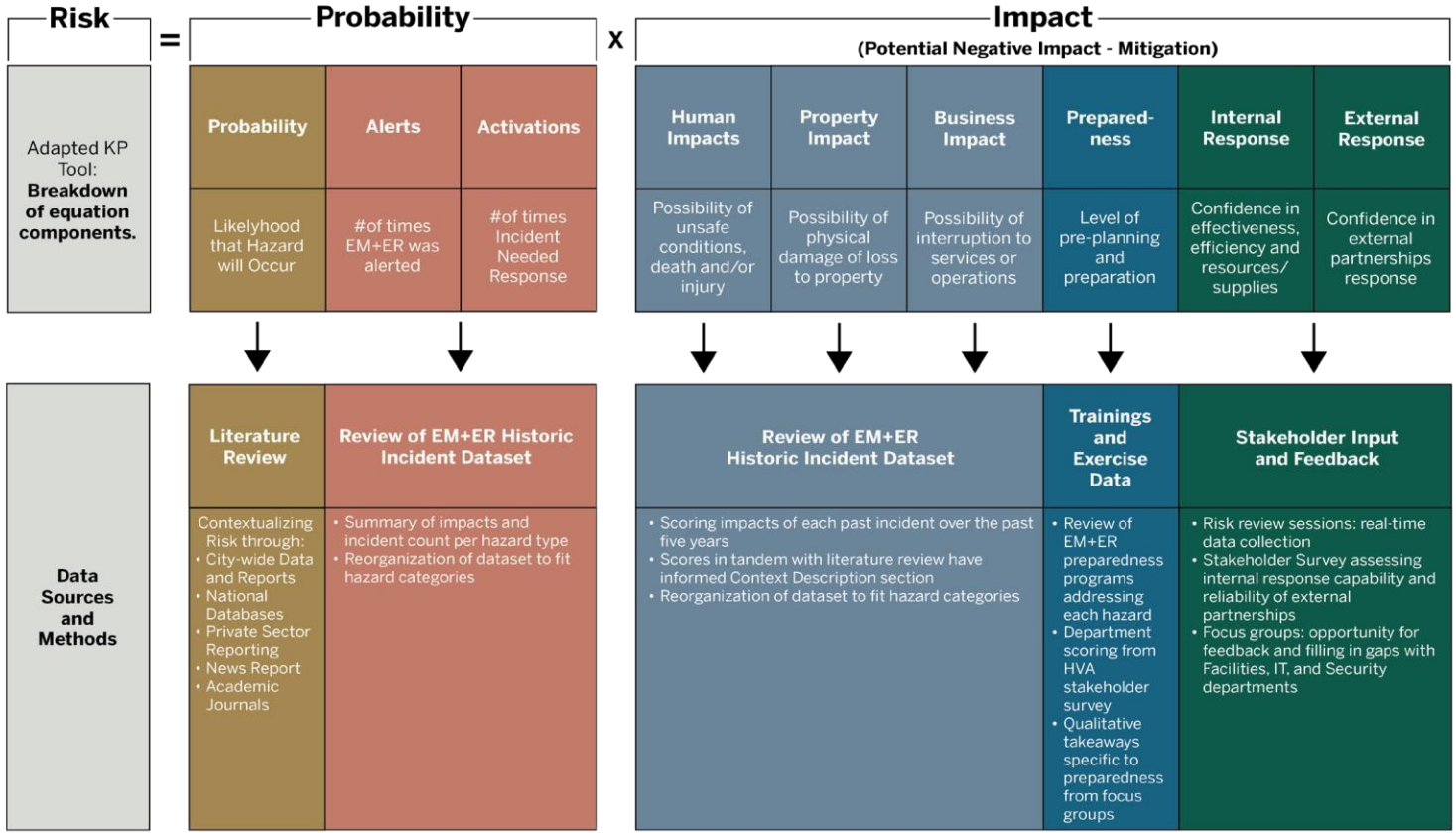
Preparedness Level
What level of preparedness do we have pertaining to this hazard at NYU Langone?

Level of Internal Response
What are our internal response capabilities to this hazard in terms of staff quantity and effectiveness and supply quantity?

Level of External Response
How reliant are we on external partnerships to respond to this hazard, and how confident are we in their ability to respond to an incident pertaining to this hazard?

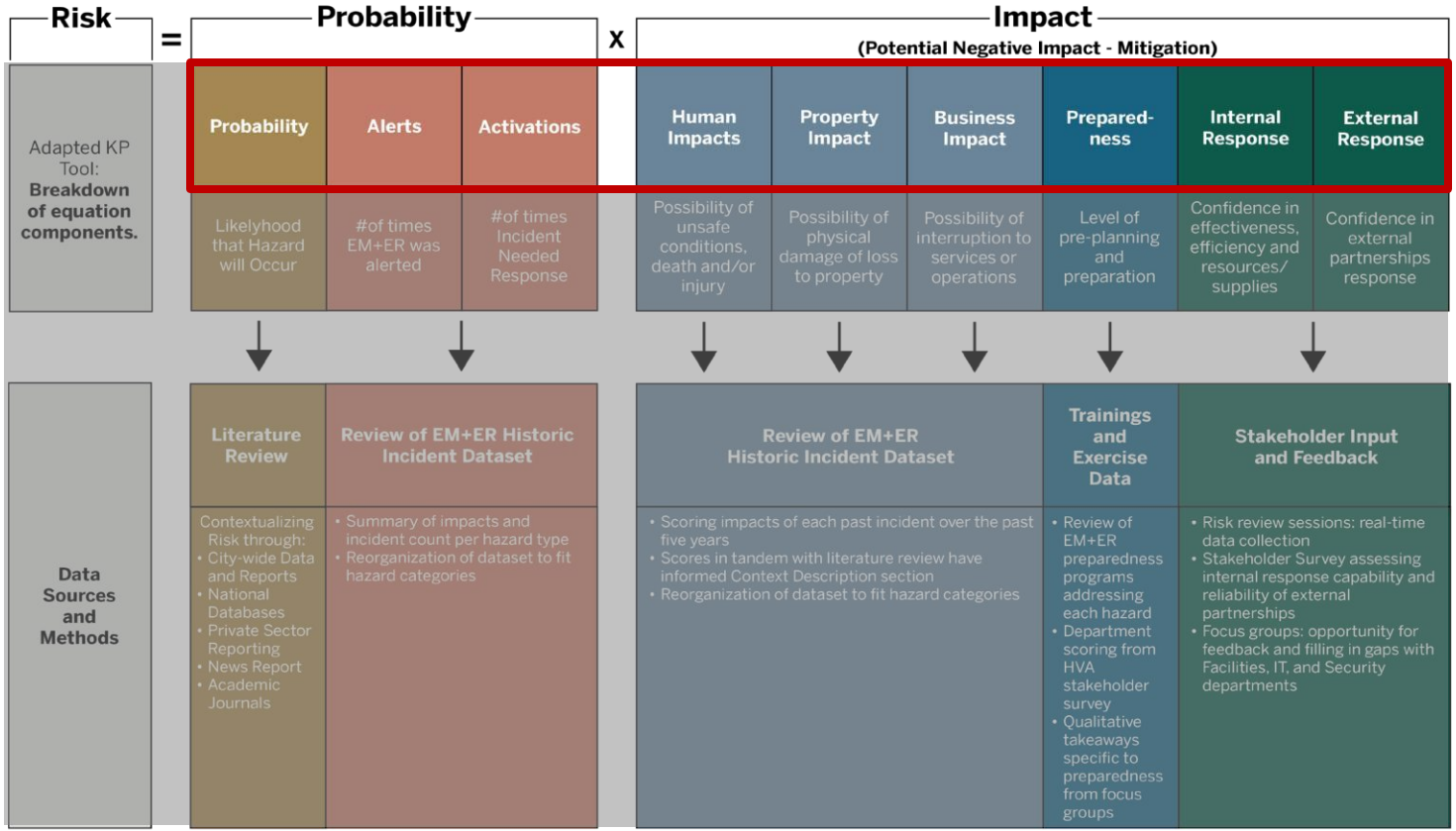
DATA INTEGRATION INTO KAISER PERMANENTE TOOL

Data Utilized to Inform Risk

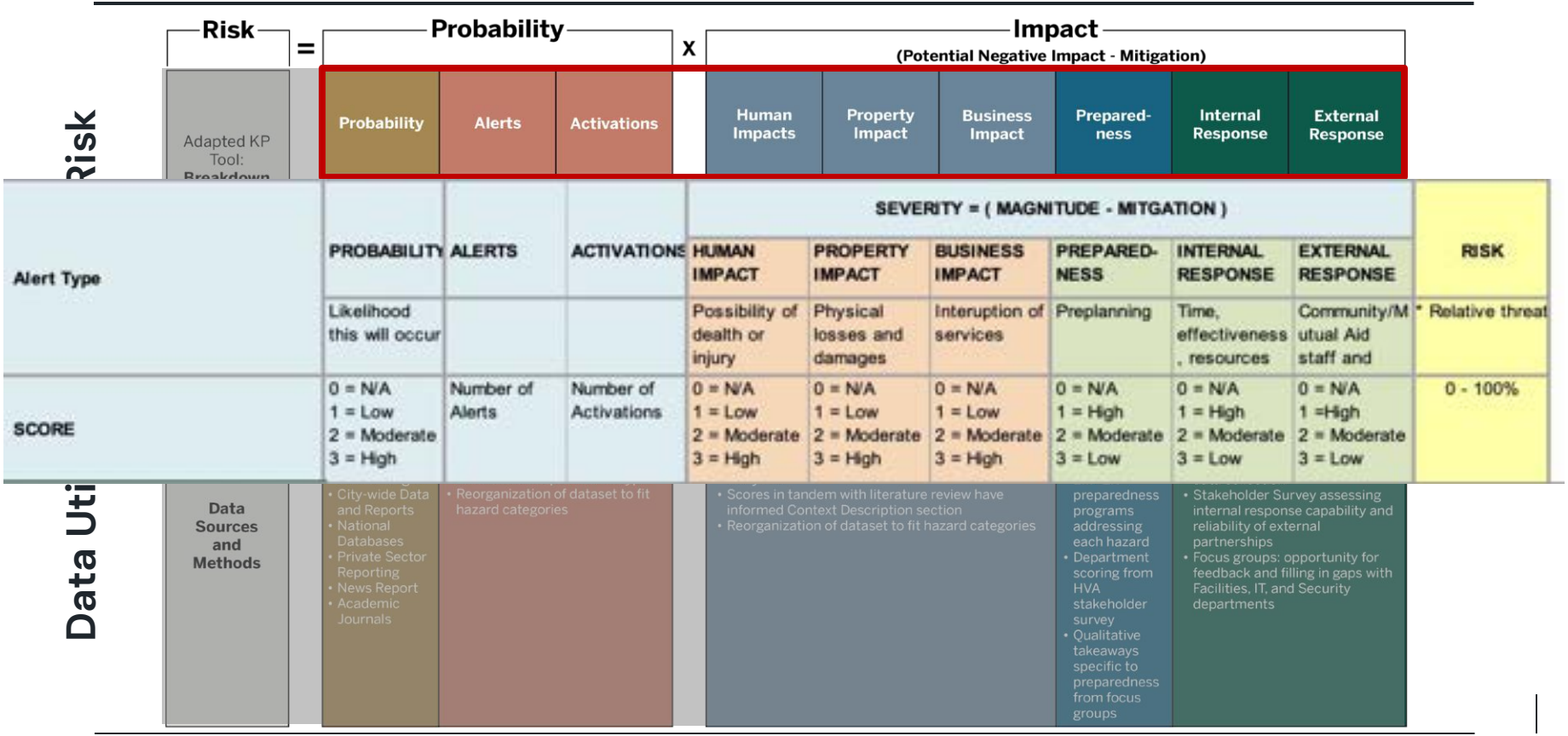


CATEGORIES

Data Utilized to Inform Risk

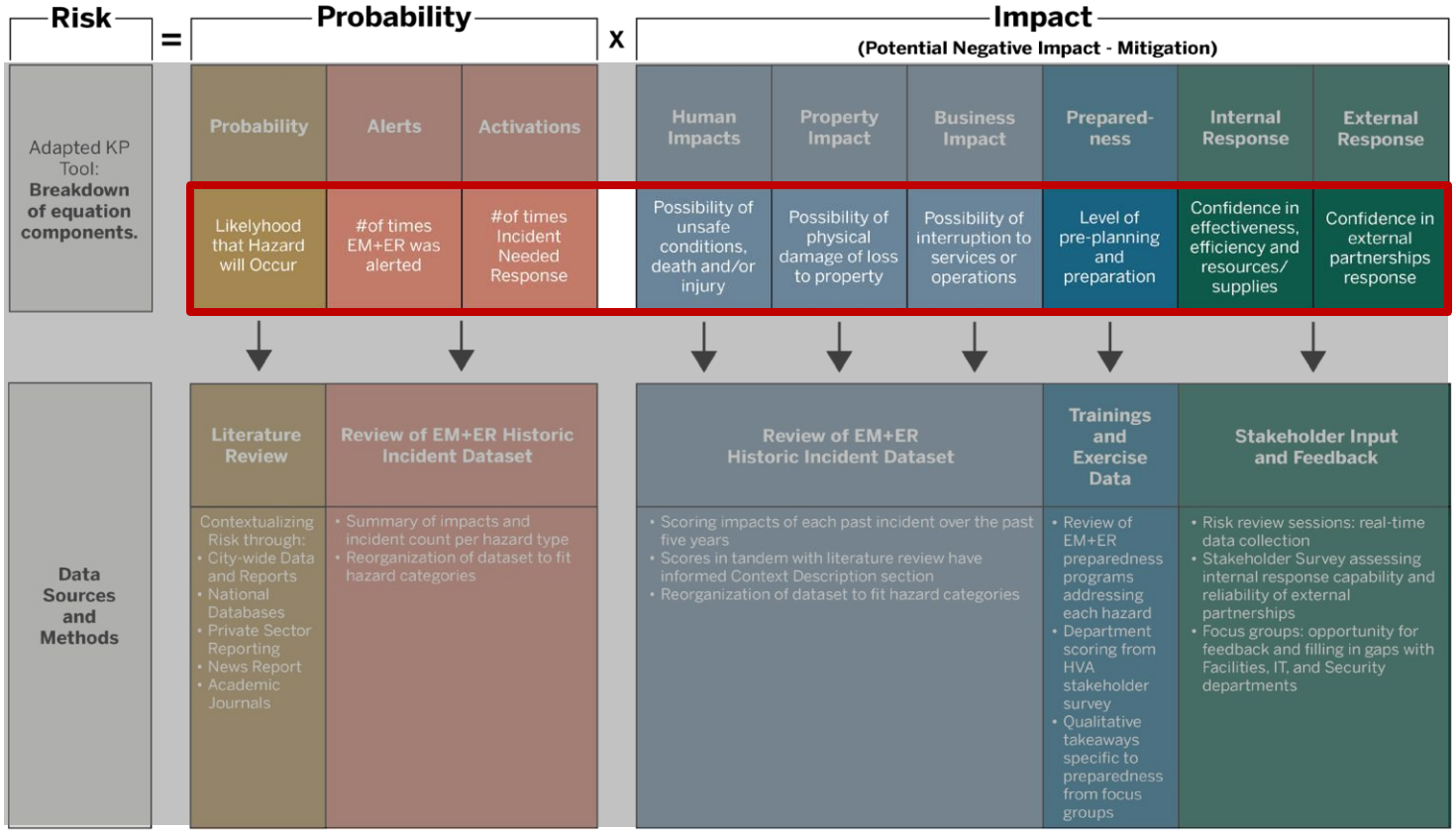


CATEGORIES


Risk
=
Probability
X
Impact
(Potential Negative Impact - Mitigation)
Adapted KP Tool:
Probability
Alerts
Activations
Human Impacts
Property Impact
Business Impact
Prepared-ness
Internal Response
External Response
Alert Type
PROBABILITY
ALERTS
ACTIVATIONS
SEVERITY = (MAGNITUDE - MITGATION)
HUMAN IMPACT
PROPERTY IMPACT
BUSINESS IMPACT
PREPARED-NESS
INTERNAL RESPONSE
EXTERNAL RESPONSE
RISK
Likelihood this will occur
Possibility of death or injury
Physical losses and damages
Interuption of services
Preplanning
Time, effectiveness , resources
Community/Mutual Aid staff and
* Relative threat
SCORE
0 = N/A
1 = Low
2 = Moderate
3 = High
Number of Alerts
Number of Activations
0 = N/A
1 = High
2 = Moderate
3 = Low
0 - 100%
Data Uti
Data Sources and Methods
• City-wide Data and Reports
• National Databases
• Private Sector Reporting
• News Report
• Academic Journals
• Reorganization of dataset to fit hazard categories
• Scores in tandem with literature review have informed Context Description section
• Reorganization of dataset to fit hazard categories
preparedness programs addressing each hazard
• Department scoring from HVA stakeholder survey
• Qualitative takeaways specific to preparedness from focus groups
• Stakeholder Survey assessing internal response capability and reliability of external partnerships
• Focus groups: opportunity for feedback and filling in gaps with Facilities, IT, and Security departments

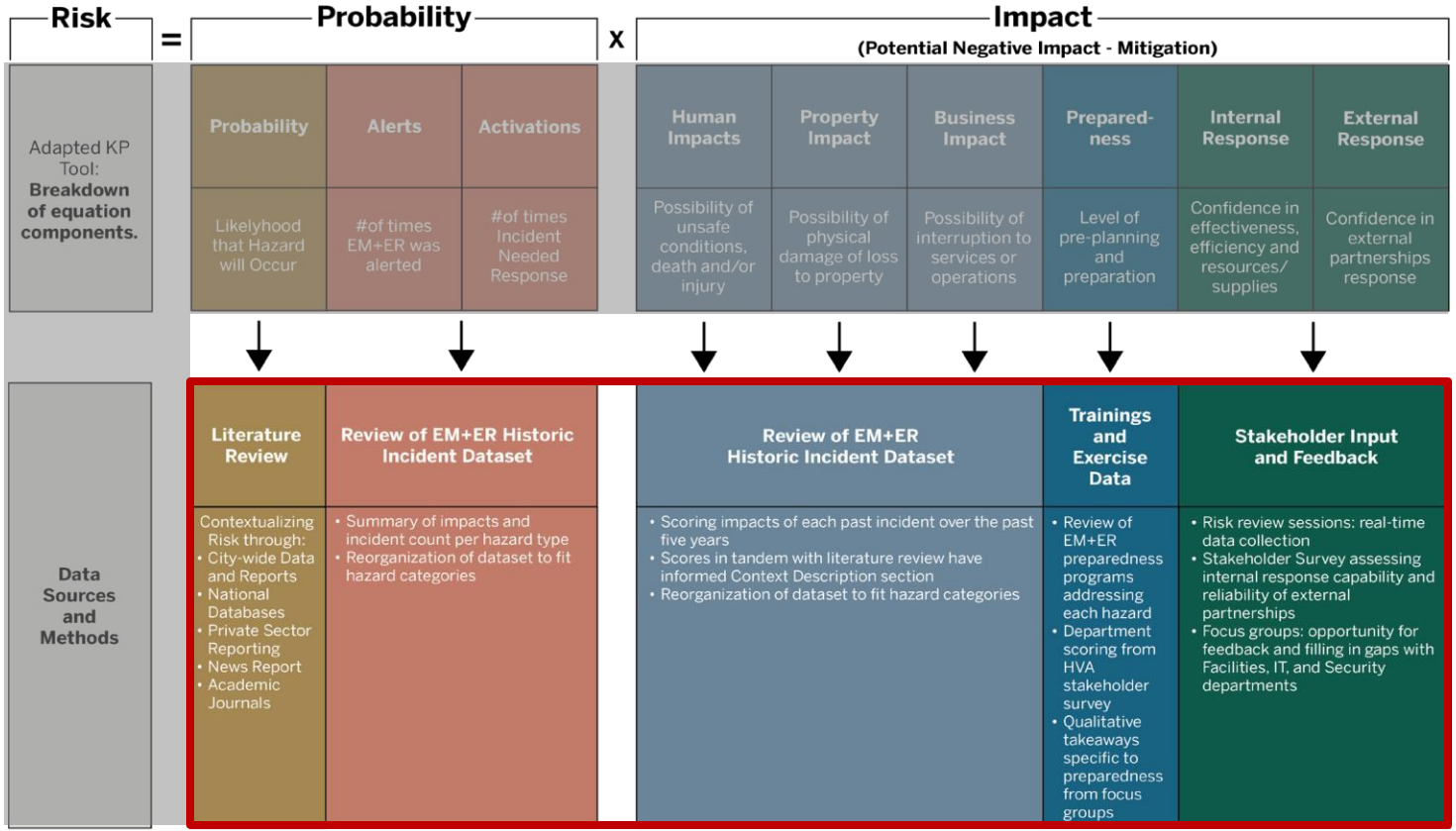
DEFINITIONS

Data Utilized to Inform Risk



DATASETS TO INTEGRATE

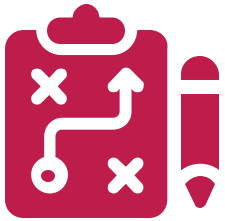
Data Utilized to Inform Risk



Integration of Quantitative data

Incidents and Events

- Measure alerts and activations of each hazard type
- Data plus literature review used to inform **hazard impact scoring**



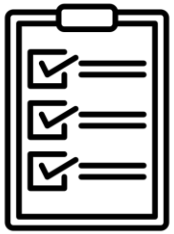
Exercises and Trainings

- Understand baseline preparedness activities per hazard type
- Identify gaps in **preparedness activities**

Integration of Qualitative Data

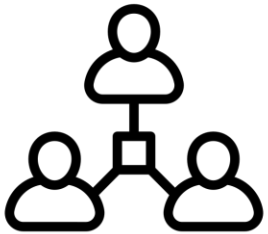
Risk Review Sessions

- Overview with wider Stakeholder and Leadership Group
- Interactive Data Collection



Stakeholder Survey

Assessment of:
- Department Preparedness
- Internal Response Capability
- Reliance on External Partnerships



Focus Group Sessions

- Facilities, Security and MCIT
- Discussion of Preparedness Priorities and Initiatives
- Identification of Gaps

Context Descriptions

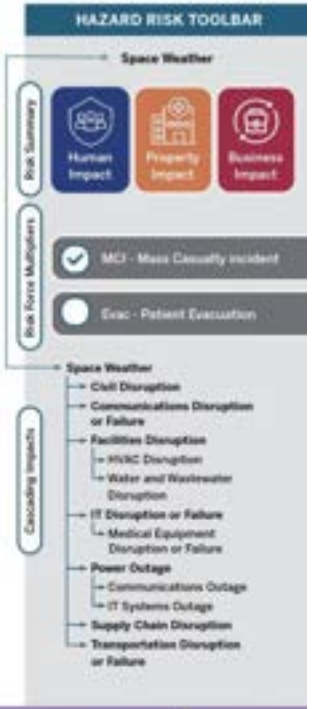
Space Weather

Conditions on the sun, in the solar wind, and within earth's atmosphere that can influence the performance and reliability of space-borne and ground-based technological systems with the potential to endanger

Space weather refers to the environmental conditions in space caused by the sun and the solar wind. While it may seem distant, space weather can have potential impacts on various technologies and systems on Earth, including those critical to hospitals.

Coronal Mass Ejections (CMEs)[i] the most extreme version of solar flares, can eject billions of coronal material at very high speeds. The fastest Earth-directed CMEs can reach our planet in as little as 15-18 hours.[iv] When a CME high-speed stream of solar radiation reaches earth, it interacts with the magnetosphere, especially if the CME aligns oppositely with Earth's oriented magnetic field. The Earth's magnetic field is then "peeled open," allowing energetic solar wind particles hit the atmosphere over the poles. At the earth's surface, a magnetic storm is observed as a rapid decrease in the earth's magnetic field strength lasting about 6 to 12 hours, increasing the vulnerability of technology on Earth's surface during that time. Affected areas can continue to be impacted over several days, as earth's magnetic field gradually recovers.[v]

Solar flares and CMEs can produce electromagnetic pulses (EMPs) that, if aimed at Earth, have the potential to damage satellites used for commercial communications, global positioning, intelligence gathering, and weather forecasting, disrupt the use of high frequency radios used for search and rescue, the Global Positioning System (GPS), and even ground/air communications within the aviation industry.[vi] [vii]



Potential impacts to healthcare and hospitals are summarized below:

Power Grid Disruption: Intense space weather events can induce geomagnetic storms, causing fluctuations in the Earth's magnetic field. This, in turn, can induce electric currents in power lines that can overload the system. Hospitals, like other facilities, are vulnerable to power grid disturbances, which could lead to power outages and impact medical equipment functionality, perishable foods and medications, water and wastewater distribution, HVAC systems, fuel distribution, and IT and telecom systems.

Communication Disruptions: Space weather events, can lead to increased ionization and scintillation in the Earth's atmosphere, affecting radio wave propagation.[iii] This interference can disrupt communication systems that hospitals rely on for coordination, emergency response, and patient care. Communication disruptions could also lead to cascading impacts on public transportation systems.

Satellite Navigation and GPS Systems: Hospitals depend on satellite-based navigation systems for various purposes, including ambulance and medical supply transportation. Space weather disturbances can interfere with GPS signals when the ionosphere becomes highly disturbed. During these events, the GPS receiver cannot lock on the satellite signal and position information becomes inaccurate, potentially affecting the accuracy of navigation systems and leading to delays in emergency services or disruptions to the supply chain.[iv]

Spotlight: The Carrington Event

The 1859 Carrington Event, the largest geomagnetic storm in recorded history, severely impacted the telegraph system at the time, sparking several days worth of downtime after telegraph operators reported sparks and fire from machines across the network. A similarly powerful storm today would cause extreme impacts to our technologically dependent society, with the potential to cost upwards of $2 trillion in damages.[iii]

The vast majority of large-scale geomagnetic storms will not cause catastrophic damage to the electric grid, meaning that the probability of space weather impacting NYULH on a large scale is very low. On average, the Earth is impacted by such storms about four times during every 11-year solar cycle, so many large storms have impacted the planet without significant impact.[vi] If one were to occur, however, impacts have the potential to be very high, especially for business and operations (considering the sheer amount of possible cascading impacts). There is a possibility for medical equipment and/or IT property to be impacted, but human life safety impacts would likely remain low.

Figure 3-17: Summary Data for Impact Scoring Pertaining to Space Weather

	Probability	Alerts	Activations	Human Impact	Property Impact	Business Impact
Space Weather	Moderate	0	0	Low	Moderate	High

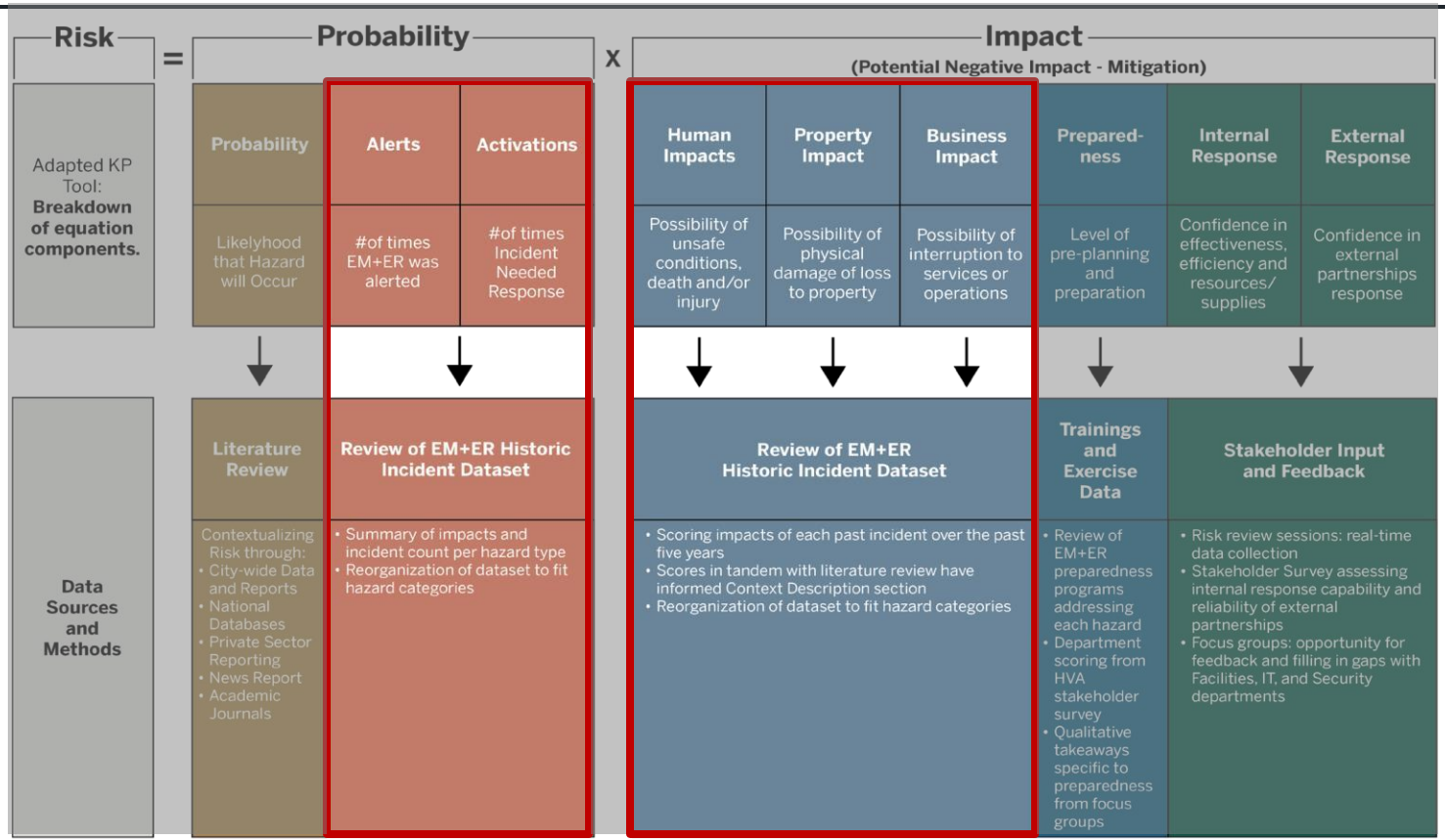
For scoring definitions, please refer to Appendix 2: Probability and Impact Thresholds (i.e., risk scoring)

Improvement Checklist

- ✓ Critically **Assess Hazard List**
- ✓ Better Integrate **Objective and Unbiased Data**
- 3 Improve Our **Data Collection** Strategy
- 4 More **Effectively Engage Stakeholders** in the Process

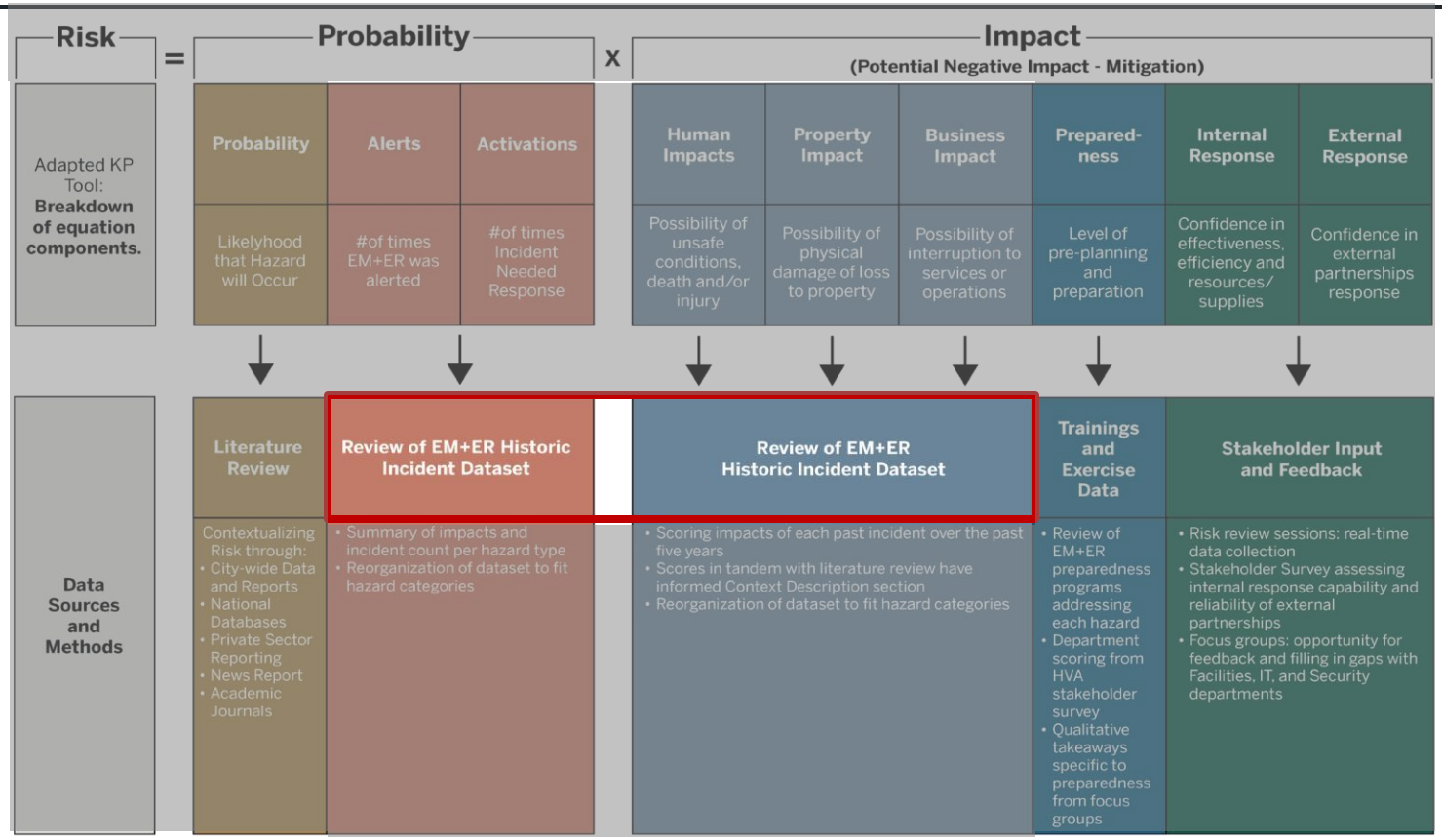
QUANTITATIVE

Data Utilized to Inform Risk



INCIDENT DATA

Data Utilized to Inform Risk



Phases of Incident Data Transition

Phase 1

Now

HVA Integration +
Better Data Collection

- Form reorganization/ cleaning
- Addition of priority levels, HVA categories and scoring thresholds
- Team training on data collection

Phase 2

Future

Merge Watch Center and
Incident Data Collection Forms

- Merging Forms
- Create one data repository, flexible enough for multiple uses

Phases of Incident Data Transition

Phase 1

Now

HVA Integration +
Better Data Collection

IMPROVE QUALITY

- Form reorganization/ cleaning
- Addition of priority levels, HVA categories and scoring thresholds
- Team training on data collection

Phase 2

Future

Merge Watch Center and
Incident Data Collection Forms

IMPROVE PROCESS

- Merging Forms
- Create one data repository, flexible enough for multiple uses

Goals of Incident Data Transition

Overall Goal

Enhance data collection strategy and plan data collection intentionally

DEFINE

Clearly define severity of incident and reasoning for escalation

ALIGN WITH THE HVA

Categorize incident data upon collection to align dataset with the HVA

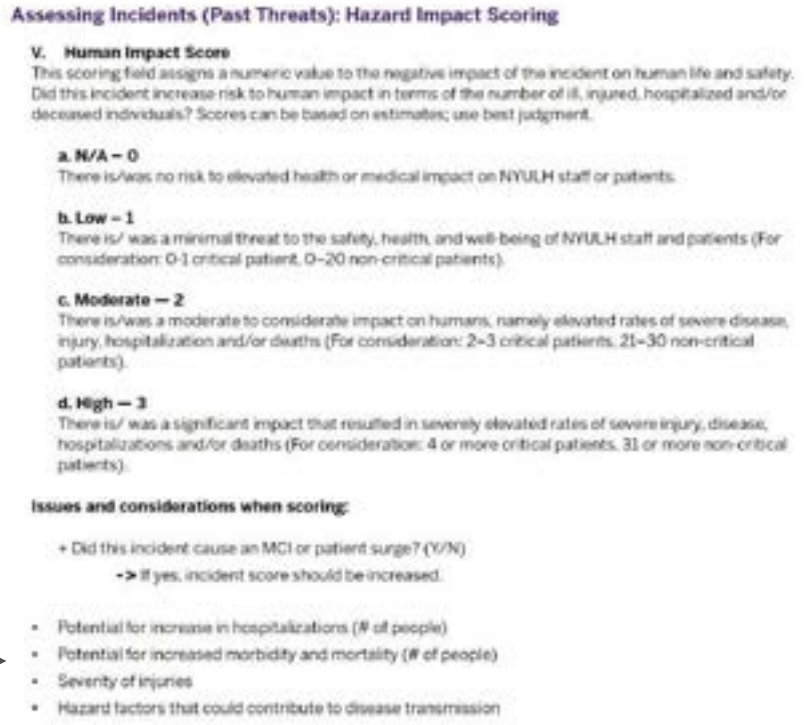
STREAMLINE

Enhance the specificity of data we collect while maintaining efficiency

Data Transition – Completed Goals

Defined Scoring Thresholds

EXAMPLE →



Assessing Incidents (Past Threats): Hazard Impact Scoring

V. Human Impact Score

This scoring field assigns a numeric value to the negative impact of the incident on human life and safety. Did this incident increase risk to human impact in terms of the number of ill, injured, hospitalized and/or deceased individuals? Scores can be based on estimates; use best judgment.

a. N/A – 0
There is/was no risk to elevated health or medical impact on NYULH staff or patients.

b. Low – 1
There is/ was a minimal threat to the safety, health, and well-being of NYULH staff and patients (For consideration: 0-1 critical patient, 0–20 non-critical patients).

c. Moderate — 2
There is/was a moderate to considerate impact on humans, namely elevated rates of severe disease, injury, hospitalization and/or deaths (For consideration: 2–3 critical patients, 21–30 non-critical patients).

d. High — 3
There is/ was a significant impact that resulted in severely elevated rates of severe injury, disease, hospitalizations and/or deaths (For consideration: 4 or more critical patients, 31 or more non-critical patients).

Issues and considerations when scoring:

+ Did this incident cause an MCI or patient surge? (Y/N)
  -> If yes, incident score should be increased.

- Potential for increase in hospitalizations (# of people)
- Potential for increased morbidity and mortality (# of people)
- Severity of injuries
- Hazard factors that could contribute to disease transmission

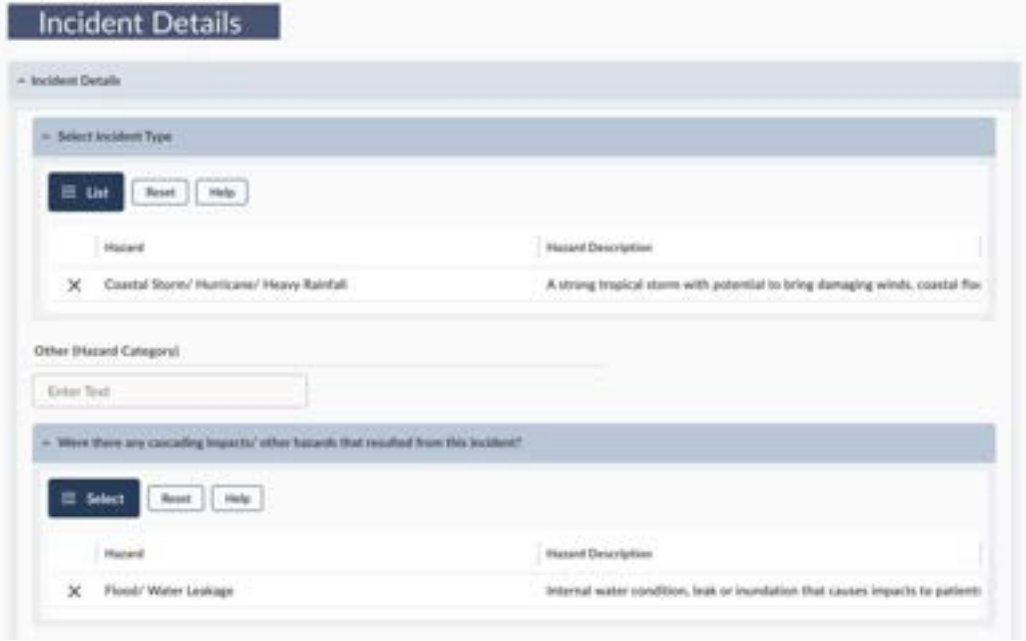
Data Transition – Completed Goals

Aligned Hazard List with HVA

Hazard	Hazard Description
Chemical Spill/ Exposure	The inadvertent release or exposure of a liquid chemical or contact regarded as hazardous to human health, irrespective of the volume or place of release. Excludes Terrorist Attacks.
Civil Disturbance - Internal	Includes protests, riots, demonstrations, threatening individuals or assemblies that have become disruptive and/or a threat to the safety of NYULH patients or staff.
Coastal Storm/ Hurricane/ Heavy Rainfall	A strong tropical storm with potential to bring damaging winds, coastal flooding, heavy rainfall in a short period of time, and storm surge.
Communication: Email Failure	Inability to access Microsoft Outlook internally that causes disruption in hospital operations.
Communication: Telephone/ Paging System Failure	Inability to communicate via Cisco phones, cellular devices or a malfunction of overhead paging systems that results in hinderance of operations.

Data Transition – Completed Goals

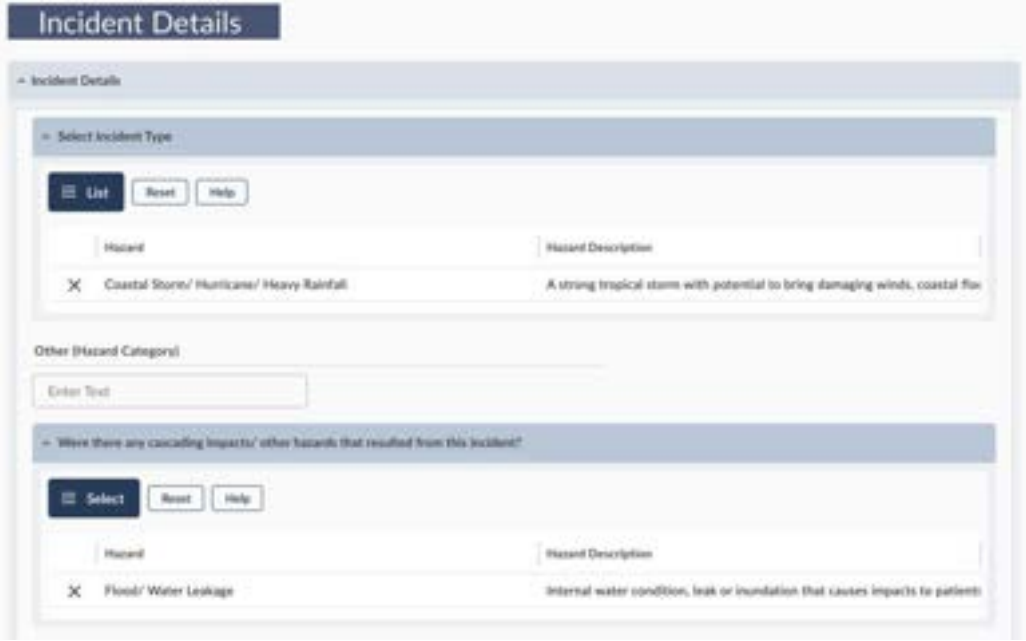
Streamlined Data Collection



Data Transition – Completed Goals

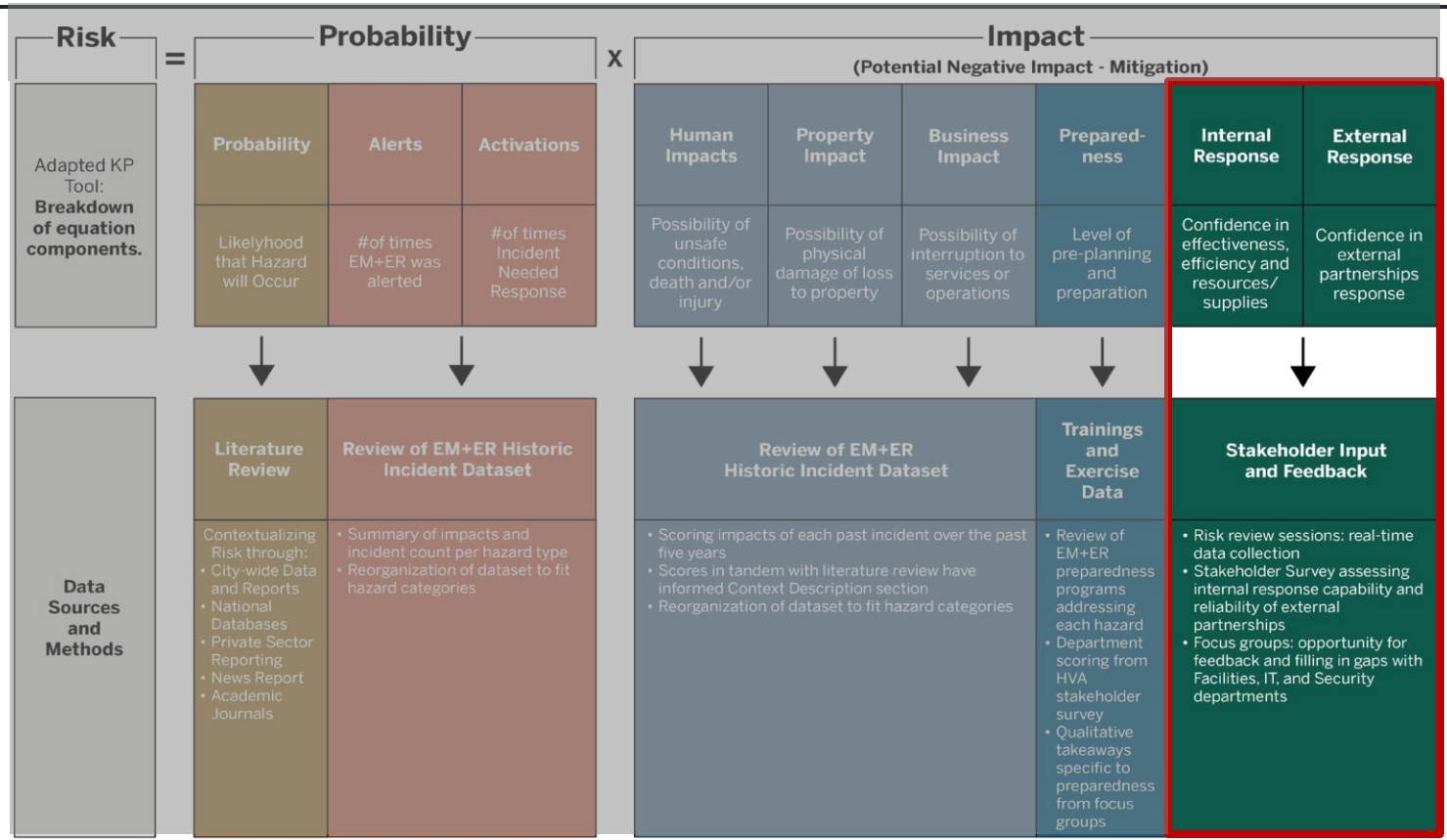
Streamlined Data Collection

(ONGOING)



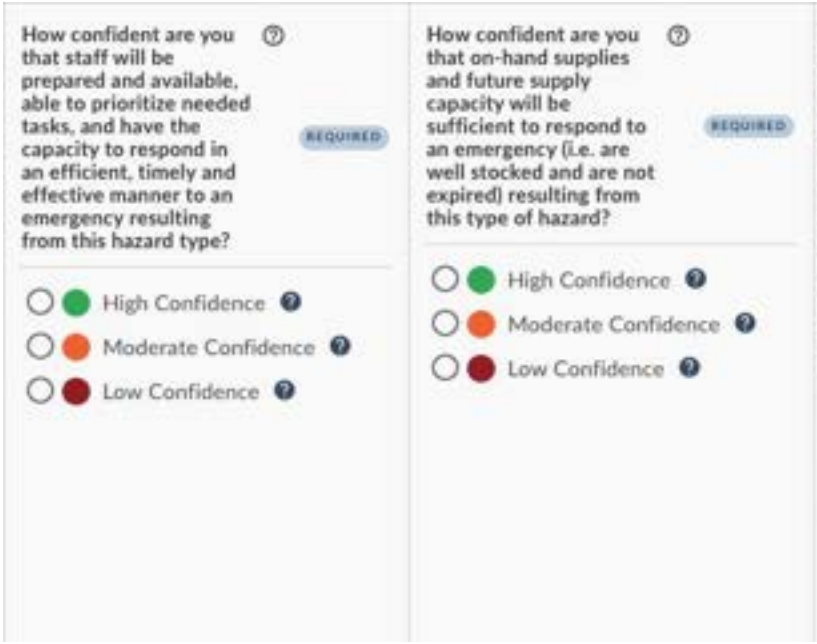
QUALITATIVE

Data Utilized to Inform Risk

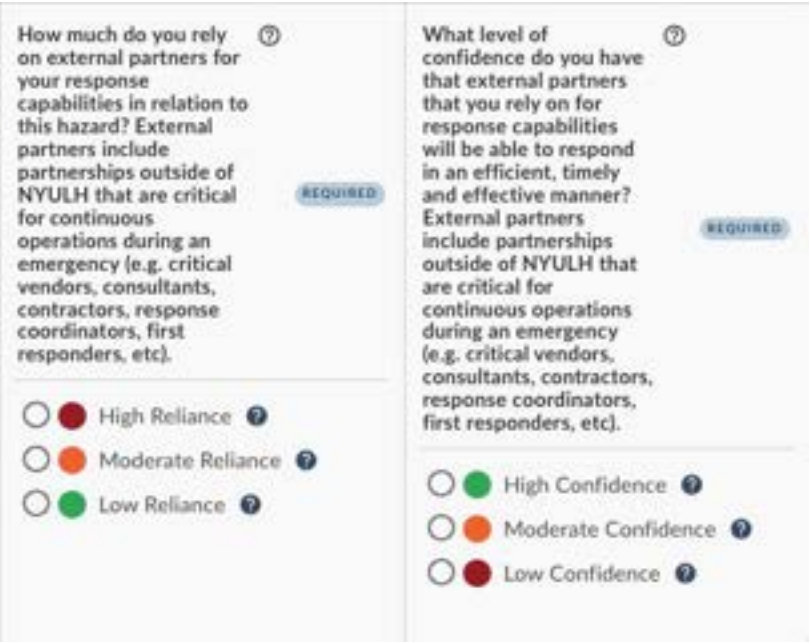


HVA Stakeholder Survey

Internal Response Capabilities



Reliance on External Partnerships

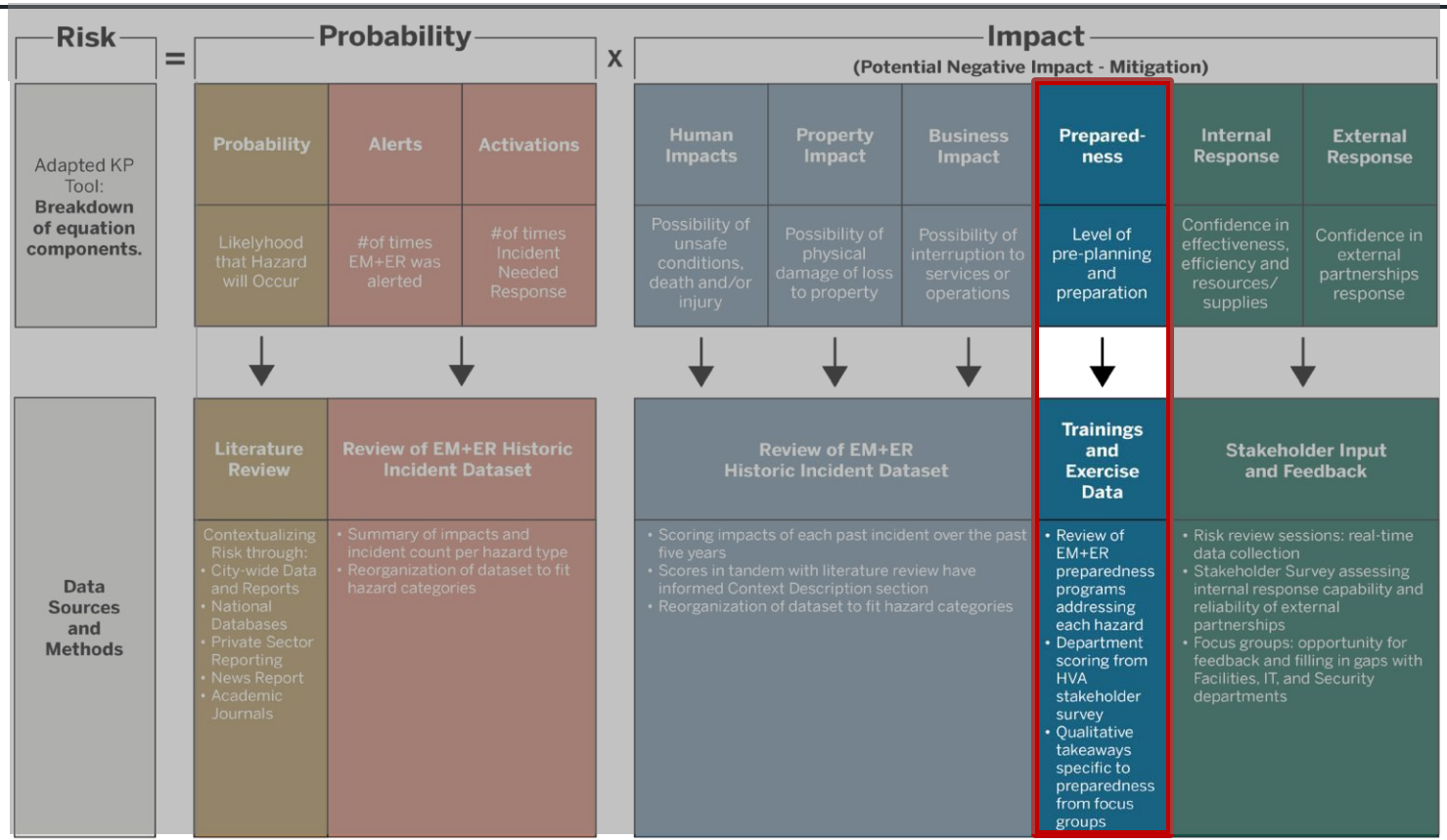


Improvement Checklist

- ✓ Critically **Assess Hazard List**
- ✓ Better Integrate **Objective and Unbiased Data**
- ✓ Improve Our **Data Collection** Strategy
- 4 More **Effectively Engage Stakeholders** in the Process

REAL-TIME DATA COLLECTION

Data Utilized to Inform Risk



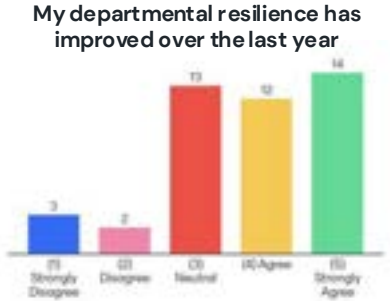
Perceptions in Preparedness

The Current Risk Landscape

"Cybersecurity is a key focus for the future because every risk listed is impacted by cybersecurity… any failures would have drastic implications."

Protection of operations, Services and Systems

"Staffing, listed as the biggest concern, is impacted by burnout and subsequent availability…factors such as transportation and weather can impact their ability to cover all necessary sites."



Departmental Resilience Improvement

"The shutdown due to COVID-19 showed the resilience and adaptability of many staff members. Certain departments were flexible and able to work remotely, creating the possibility for resilient operations to future risks."

Internal Partnership

Enhanced Research and Context Descriptions

Climate Change and NYU Langone Health

- Health impacts of climate change
- Potential impacts to NYU Langone over time
- Current sustainability goals and initiatives that focus on mitigating climate-related issues
- How Emergency Management and Facilities departments collaborate to create resilience

Hazards and Risks of Climate Change

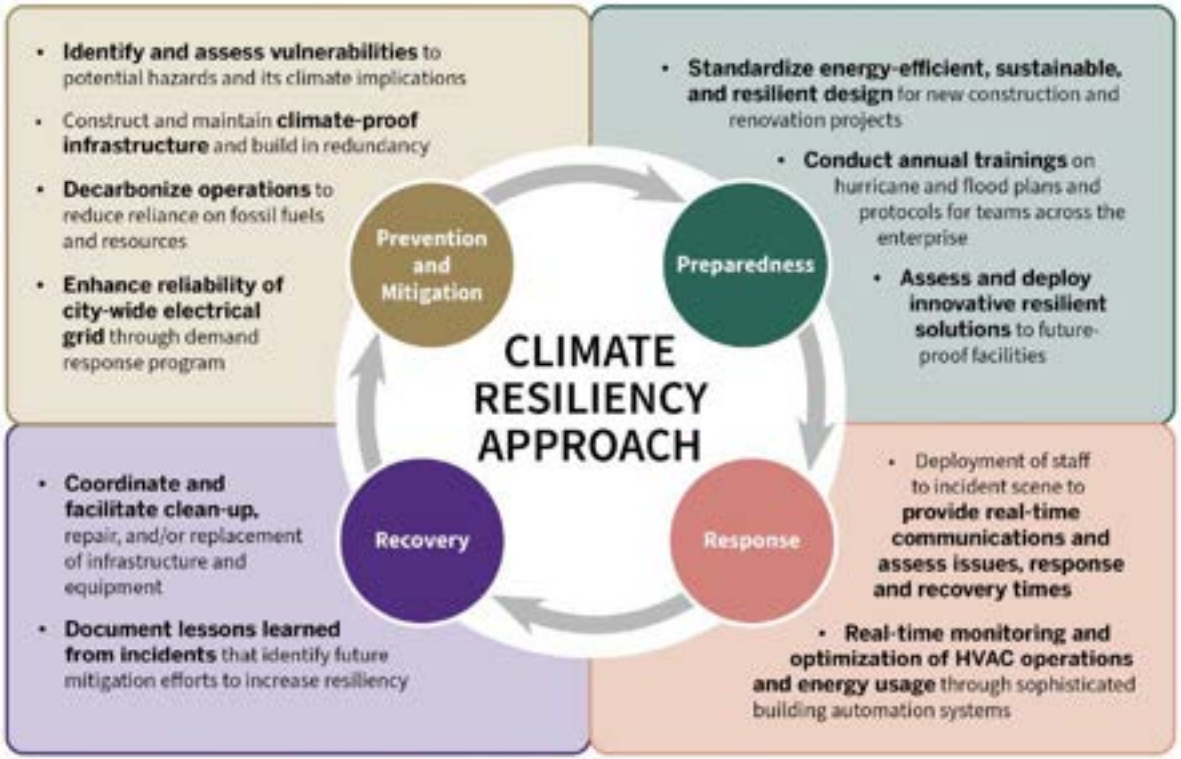
Over the last century, the burning of fossil fuels like coal and oil and other human activities have raised the concentration of atmospheric carbon dioxide (CO_2) levels by nearly 50% since 1750.[1] These activities have also increased concentrations of other key greenhouse gas emissions like methane, nitrous oxide, and fluorinated gases. All together emissions have increased the planetary greenhouse effect trapping more heat in the atmosphere and preventing heat loss to space. This global warming has resulted in key observed changes and challenges like rising temperatures, increased greenhouse gas (GHG) emissions, rising sea levels, and extreme weather.

Climate change drives key environmental and social impacts that may exacerbate health outcomes within our populations. The figure below shows those hazards and health impacts most relevant to NYU Langone Health and its patient populations. The following subchapters - Environmental Outcomes & Health Risks of Climate Change, and Social Impacts of Climate Change - provide an overview of drivers, trends, and impacts of these hazards.

Figure 2-5: Human Health Impacts of Climate Change at NYU Langone Health

This figure shows those hazards and health impacts most relevant to NYU Langone Health and its patient populations. Graphic adapted from adapted from the Centers for Disease Control and Prevention (CDC) and J. Patz and the California Department of Public Health's Office of Climate Equity.

Climate Resiliency Approach

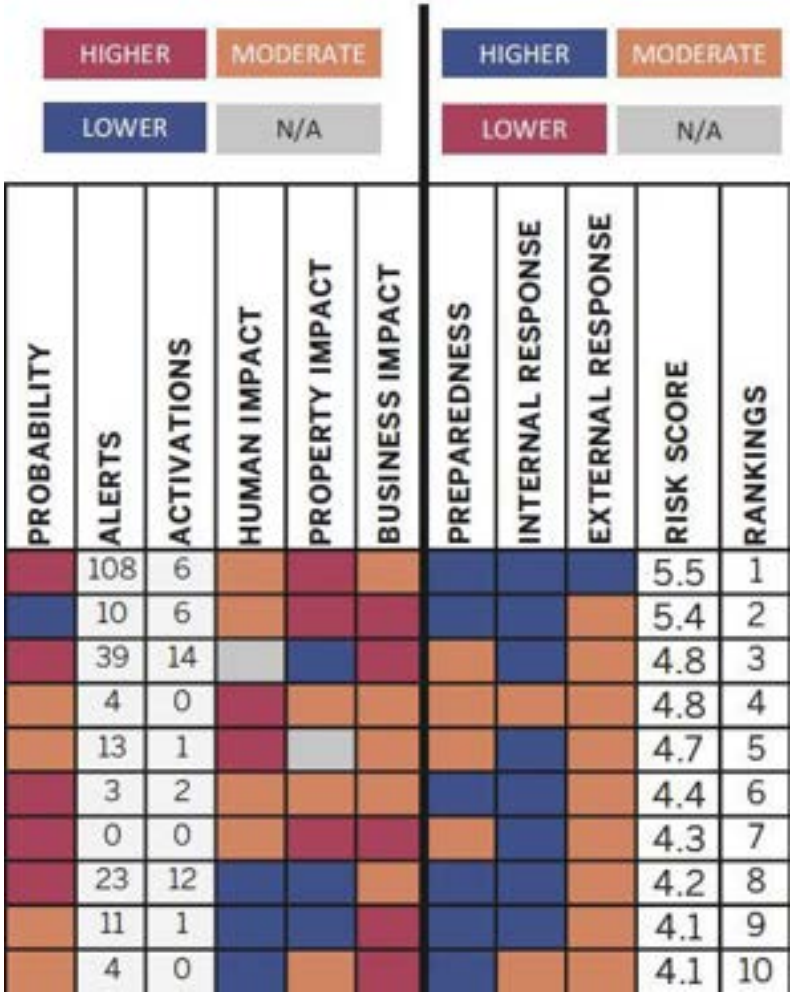


Improvement Checklist

- Critically **Assess Hazard List**
- Better Integrate **Objective and Unbiased Data**
- Improve Our **Data Collection** Strategy
- More **Effectively Engage Stakeholders** in the Process

05

Results + Conclusions



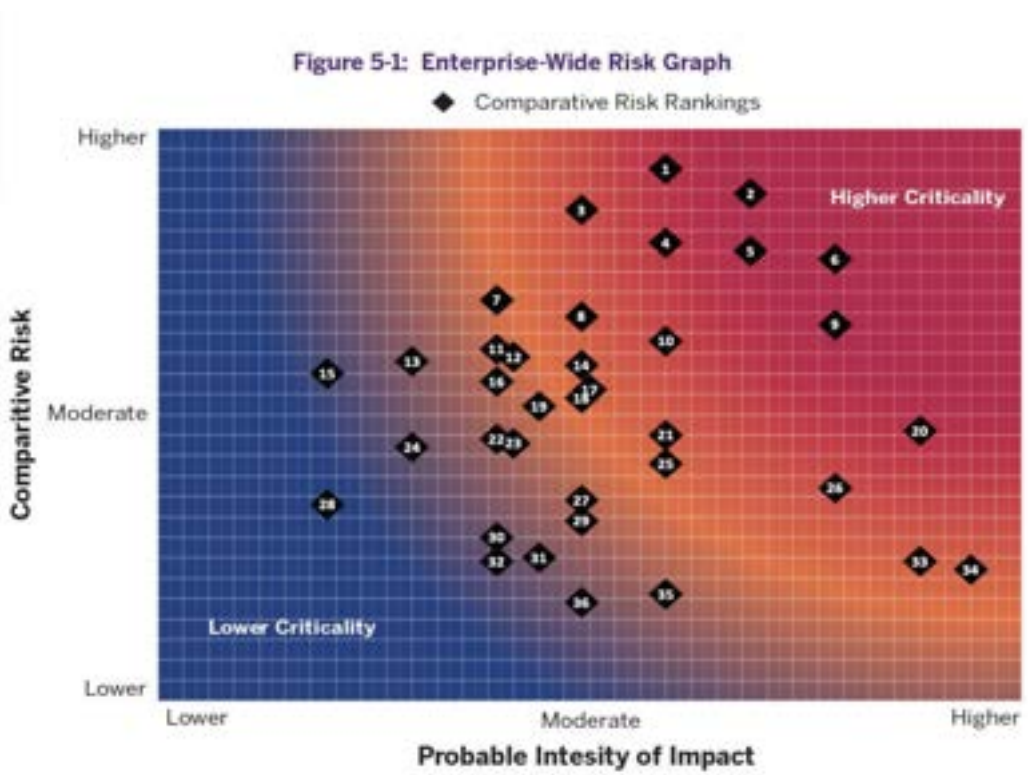
PROBABILITY	ALERTS	ACTIVATIONS	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	RISK SCORE	RANKINGS
	108	6							5.5	1
	10	6							5.4	2
	39	14							4.8	3
	4	0							4.8	4
	13	1							4.7	5
	3	2							4.4	6
	0	0							4.3	7
	23	12							4.2	8
	11	1							4.1	9
	4	0							4.1	10

Conclusions are based on a culmination of:

Top 10 Enterprise Hazards – 2024

1	Flood/ Water Leakage
2	Violence/ Threat of Violence
3	Infectious Disease/ Pandemic
4	Medical Equipment Disruption/ Failure
5	Fire/ Smoke Condition
6	Coastal Storm/ Hurricane/ heavy Rainfall
7	IT Disruption/ Outage
8	Power Disruption/ Outage
9	Cyber Attack
10	Water Contamination/ Disruption

1	Flood/ Water Leakage
2	Violence/ Threat of Violence
3	Infectious Disease/ Pandemic
4	Medical Equipment Disruption/ Failure
5	Fire/Smoke Condition
6	Coastal Storm/ Hurricane/ Heavy Rainfall
7	IT System Disruption/ Outage
8	Power Disruption/ Outage
9	Cyber Attack
10	Water Contamination/ Disruption
11	Tornado
12	Winter Weather
13	Communication: Telephone/Paging System Failure
14	HVAC Disruption/ Failure
15	Transportation Disruption/ Failure
16	Chemical Spill/ Exposure
17	Supply Chain Disruption/ Failure
18	Medical Gas Disruption/ Failure
19	Sewage Disruption/ Failure
20	Radiation Alarm/ Exposure
21	Generator Disruption/ Failure
22	Bomb Threat
23	Air Quality
24	Strike/ Labor Action/ Work Stoppage
25	Space Weather
26	Active Shooter/ Armed Intruder
27	Biological Exposure/ Biohazard



MN - LOH

What is the Kaiser Permanente Hazard Vulnerability Assessment Tool?

- A standardized process that is widely used across healthcare to assess the range of risks that enterprises face and to rank them against each other
- The outcome of this process is a Relative Risk Score (see far right column below). The Risk Score is:
  - ☑ One of many indicators that EM+ER uses to allocate preparedness time and resources in the coming year
  - ☑ Not a probability score (i.e., does not predict the probability that the hazard will occur) .
- The scores below were collected utilizing qualitative and quantitative methods, including literature reviews, EM+ER operations data, and stakeholder survey results*

HIGHER | MODERATE | LOWER | N/A

	PROBABILITY	ALERTS	ACTIVATIONS	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	RISK SCORE	RANKINGS
Flood/ Water Leakage		62	12							6.0	1
Violence/ Threat of Violence		14	2							5.7	2
Fire/Smoke Condition		360	10							5.5	3
Coastal Storm/ Hurricane/ Heavy Rainfall		11	6							5.5	4
Medical Equipment Disruption/ Failure		15	5							5.4	5
IT System Disruption/ Outage		59	19							4.9	6
Cyber Attack		0	0							4.3	7
Winter Weather		23	12							4.2	8
HVAC Disruption/ Failure		5	2							4.2	9
Power Disruption/ Outage		8	3							4.1	10

Strengths

Physical Resilience + Mitigations
- Infrastructure Hardening
- Movement of critical equipment to emergency power
- Security Management Plan – critical access control systems disruption planning
- **Significant insulation improvements** have been conducted

Internal + External Agency Coordination
- **Coordination with Metro Detention Center** + High-Profile Inmate Contingency Plan
- Continued monitoring by the **Watch Center** enhances situational awareness of incidents

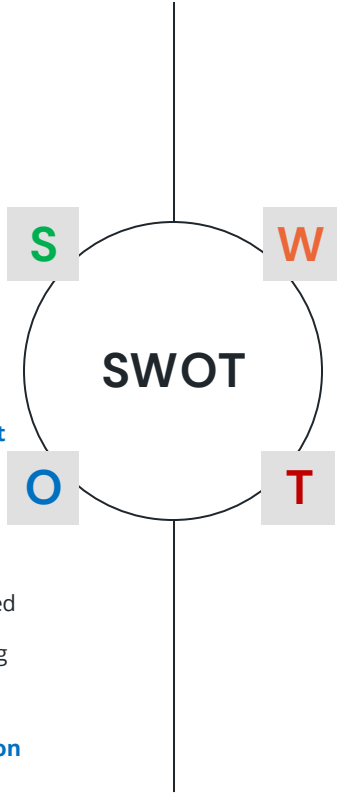
Climate and Sustainability
- Green Infrastructure development on campuses, **managing stormwater runoff**

Weaknesses

Physical Resilience + Mitigations
- **Browning water and water leak issues** persist across campuses
- Many non-hospital locations are **not staffed with security personnel**
- Understanding and preparedness efforts for space weather remain low

Programs and Protocol
- **Vendor outages and lack of operational readiness** exist within some applications

Training and Education
- Staff capacity and geographic distance **limits** information sharing and **training for active shooter** prep talks across campuses



Opportunities

Physical Resilience + Mitigations
- **Enhancing preparedness towards a large-scale blackout**
- Increased preparedness towards sustained winds

IT, Telecom and Cyber Resilience
- Targeted exercises regarding **data recovery strategies** across IT platforms
- **Increased transparency and information sharing about cyber security threats** to ensure emergencies are managed most efficiently
- Examining staffing redundancies: relocating and reassigning staff to provide redundancies to critical departments

Training and Education
- Training initiative for staff on **proper pull station utilization**
- Continued improvement of project manager training with RED+F

Threats

Climate Change
- **Climate change will exacerbate many hazard types**, including the cascading impacts of worsening extreme temperatures and increasingly severe storms
- Power/utility failure across hospital locations due to **volatility of grid infrastructure** in the City and evolving infrastructure improvements

Violence on Campuses
- Active shooter and workplace violence remain concerns, especially considering high-risk locations in proximity to hospital locations
- Sudden **upticks in unexpected violent activity**
- **Social media can serve as a multiplier** for civil unrest and acts of violence that could permeate onto hospital campuses

06

Lessons Learned

...and how we can use them

Improvement Checklist

- Critically **Assess Hazard List**
- Better Integrate **Objective and Unbiased Data**
- Improve Our **Data Collection** Strategy
- More **Effectively Engage Stakeholders** in the Process

Lessons Learned in Data + HVA

1 — Mitigate Bias in Stakeholder Input

Integrating objective data reduced media + availability biases in HVA

2 — Clearly Define Hazards and Scoring

Clearly defined hazards and scores standardized the dataset and improved data quality

3 — Align your Data to the HVA

Aligning hazard categories in data and identifying datasets to feed into the KP tool ensured a more streamlined analysis

4 — Allow Hazard Lists to Evolve

Continuously updated categories makes for a more precise HVA over time while allowing flexibility

5 — Build a Foundation First

Focusing on building a solid foundational analysis forces you to think intentionally

6 — Phase Improvements over Several Years

Implementing multi-year enhancements allowed for incremental but impactful changes over time

Lessons Learned in Stakeholder Engagement

1 — Engage Early and Often

Sustained involvement encourages continuous alignment and fosters buy-in

2 — Balance Expertise & Objectivity

Trust stakeholders as SMEs for what is most relevant to them + use objective data where needed to reduce bias

3 — Diversify Input

Broader perspectives from many operational areas add nuance to risk assessments

4 — Prevent Engagement Fatigue

Streamline processes, plan intentionally, and ensure relevance to maintain participation

5 — Define Roles & Accountability

Clear expectations with specific partners encourages accountability and easier follow up

6 — Leverage Partnerships

Align efforts with system or department-level goals for workload sharing and greater impact

Informing Future Stakeholder Engagement

Better Outreach + Engagement

- Create structured EM+ER **outreach workgroup** for HVA
- Identify **key personnel responsible** for engagement

Data + Survey Strategy

- **Streamline participation** – make it easier and more effective to engage
- **Engage year-round** to collect small amounts of data over a long period

Partnerships

- Collect and integrate **data from other departments**
- Invest in **mutually beneficial** collaborative efforts

Questions?

Leanna Molnar
Emergency Management Analyst
E: Leanna.Molnar@nyulangone.org

Caitlin Flynn, CHSP, CHPCP
Health System Senior Director
E: Caitlin.Flynn@nyulangone.org

Emergency Management and Enterprise Resilience
NYU Langone Health

EMERGENCY DEPARTMENT MASS CASUALTY INCIDENT RESPONSE PLANNING WORKSHOP

Rethinking 'purpose' and supporting the process to prepare for system success…

Paul Mikita

Assistant Director Corporate Office of Emergency Management

RWJBarnabas Health System

About the Session Coordinator

- The typical blah, blah, blah…
  - Currently the Assistant Director of the Corporate Office of Emergency Management for the RWJBarnabas Health Network in New Jersey
  - Education
    - Masters in Emergency and Disaster Management
    - Associates of Science in Nursing
  - Experience
    - 30-plus years Pre-Hospital, both Advanced and Basic Life support
    - 25-plus years Emergency Management, both Public and Healthcare
    - 20-plus years Nursing, Emergency Department
  - Multiple certifications that suggest I get bored easily and like to learn
    - CEN, CEM, CHEP, CBRM, CBRITP, HcEM, NHDP-BC, MICN

About the Session Coordinator

- As it relates to this session…
  - Have been involved in healthcare emergency planning for 25-plus years
  - While a staff nurse in the Emergency Department
    - Led staff-level Emergency Department Committee self-charged with reviewing and updating department-level Mass Casualty Incident response
    - Coordinated development and implementation of a department-level MCI plan through five concepts ranging from “single room” to “whole department” at a regional Level 1 Trauma Center’s Emergency Department
    - Led multi-disciplinary committee to research triage algorithms and develop a Hospital-Based Triage Algorithm
  - As a Hospital Emergency Management Specialist
    - Continued work towards integration of a “whole house” response process among identified departments
  - As Corporate Assistant Director
    - Working towards incorporate of a system standard in MCI response among multiple hospitals

Enough About Me…

- Let's hear about you
  - The typical – Your Name, Facility, Facility Type
  - What experience do you have with Emergency Department MCI planning
  - Anything else that you think might be interesting

- While we go around the room, please answer the following question using the link below:

What is the primary purpose of your hospital's Mass Casualty Incident Response Plan?

MCI Plan Purpose

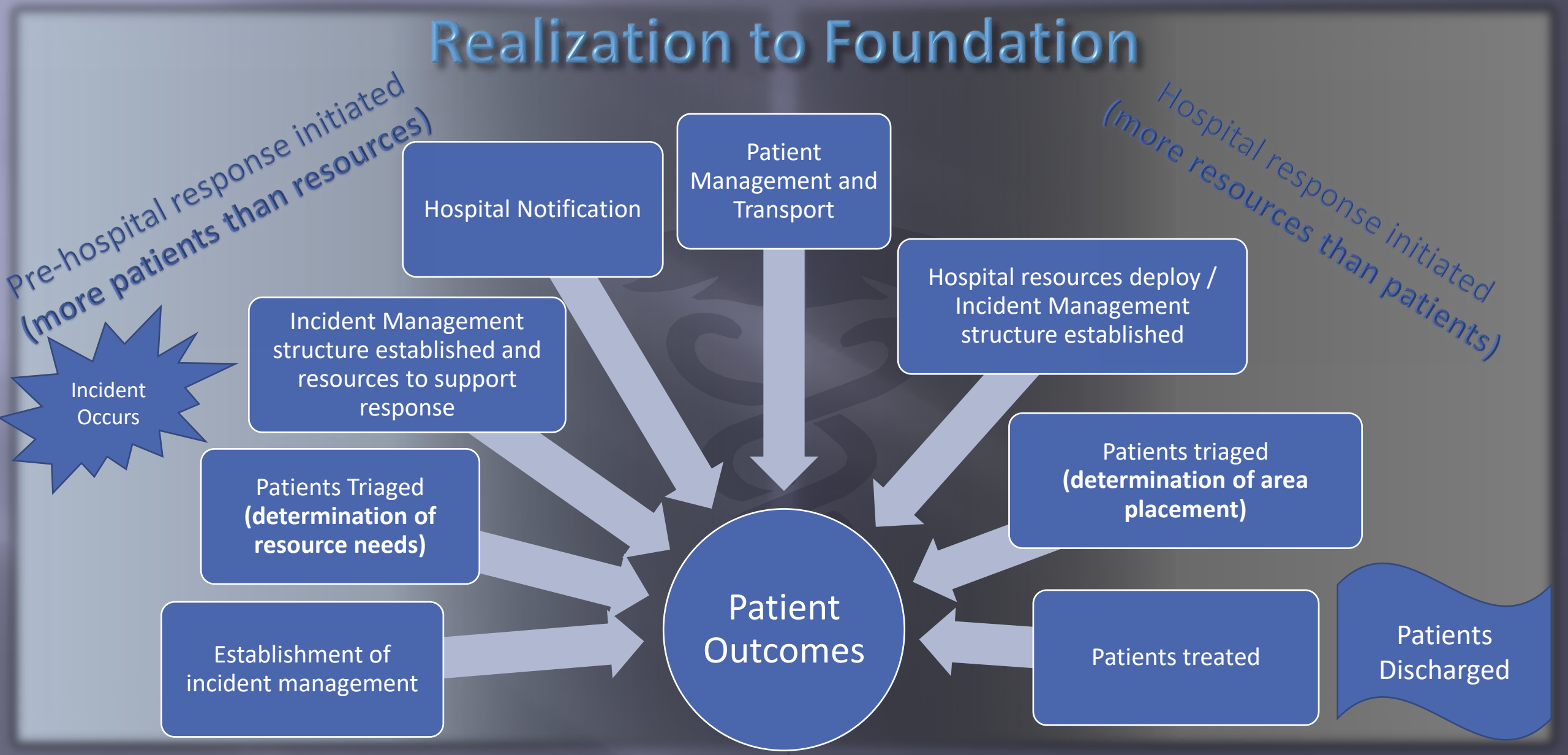
About the Session

- As it relates to this session…
  - With all of my experience and opportunities…
    - I am not here to have you develop the same department plan I've helped to develop, but rather review concepts and principles learned along the way and initially guide their application…although we will use what I've worked on as an example
    - I want to walk you through lessons-learned and let you draw your own conclusions towards a plan that works for your facility
    - I want to learn your experiences this session as you from mine
  - We will be looking to utilize a mix of online surveys as well as pencil and paper throughout our Workshop, the game plan is:
    - To not have me do all the talking
    - Get you thinking
    - Give you something to go home with

About the Session

- Couple of ground rules and expectations:
  - **Please feel free to get up and move about the cabin**
  - **The taking of phone calls and going to the bathroom are both acceptable, just please not while your still in the room**
  - **If you are planning to throw things at me, please make sure you have a clear line…I would not want to see someone else hurt because of me, or bad aim**
  - **Unfortunately, we will probably not get to developing your plan. However, we will discuss concepts, principles, and applications that should start you on your way**
  - **Please ask questions**
- Now for my ramblings….er uhm Lessons Learned

Realization to Foundation



- Components of the "ideal" theoretical mass casualty incident response…if it goes absolutely right…

Realization to Foundation

- What if I were to challenge you to say that the purpose of a hospital-based MCI plan should not solely be to support the Emergency Department, but rather support overall patient care through facilitating the throughput of the Emergency Department?

Best Place Survey

https://www.menti.com/al4x68stuo89

Realization to Foundation

< 90 Minutes (AHA)

ST Elevation Myocardial Infarction

- Rapid Identification via established criteria
- Alert via clearly defined hierarchy
- Dedicated response team
- Standardized response
- **Cardiac Catheterization is not completed in Emergency Department**

< 90 Minutes (AHA)

Brain Attack (with Neurointervention)

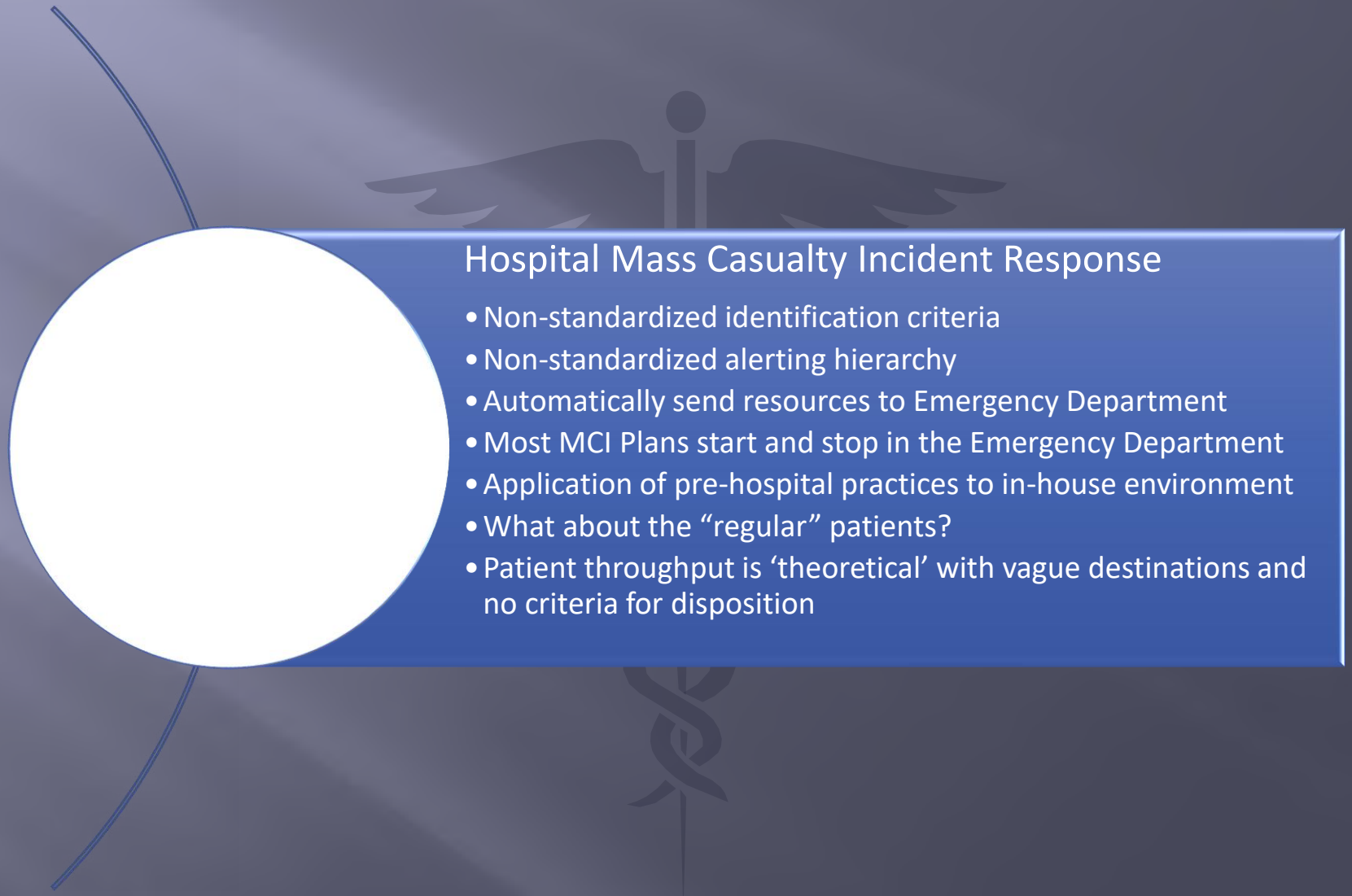
- Rapid Identification via established criteria
- Alert via clearly defined hierarchy
- Dedicated response team
- Standardized response
- **Neurointernventional procedure is not completed in Emergency Department**

< 30 Minutes (ACS)

Surgical Trauma (Timing in Acute Care Surgery – Red)

- Rapid Identification via established criteria
- Alert via clearly defined hierarchy
- Dedicated response team
- Standardized response
- **Corrective procedure is not completed in Emergency Department**

Realization to Foundation



Hospital Mass Casualty Incident Response

- Non-standardized identification criteria
- Non-standardized alerting hierarchy
- Automatically send resources to Emergency Department
- Most MCI Plans start and stop in the Emergency Department
- Application of pre-hospital practices to in-house environment
- What about the “regular” patients?
- Patient throughput is ‘theoretical’ with vague destinations and no criteria for disposition

Realization to Foundation

Comprehensive Mass Casualty Incident Management

Pre-Hospital Management

- High Need / Limited Resources
- Only patients are from the incident
- Need to bring capacity
- Bring Resources to Patients
- “Short-term” Thinking

In-Hospital Management

- Low Initial Need* / Available Resources
- Management of ‘routine’ patients
- Need to ‘open’ capacity
- Bring Patients to Resources
- “Long-term” Thinking

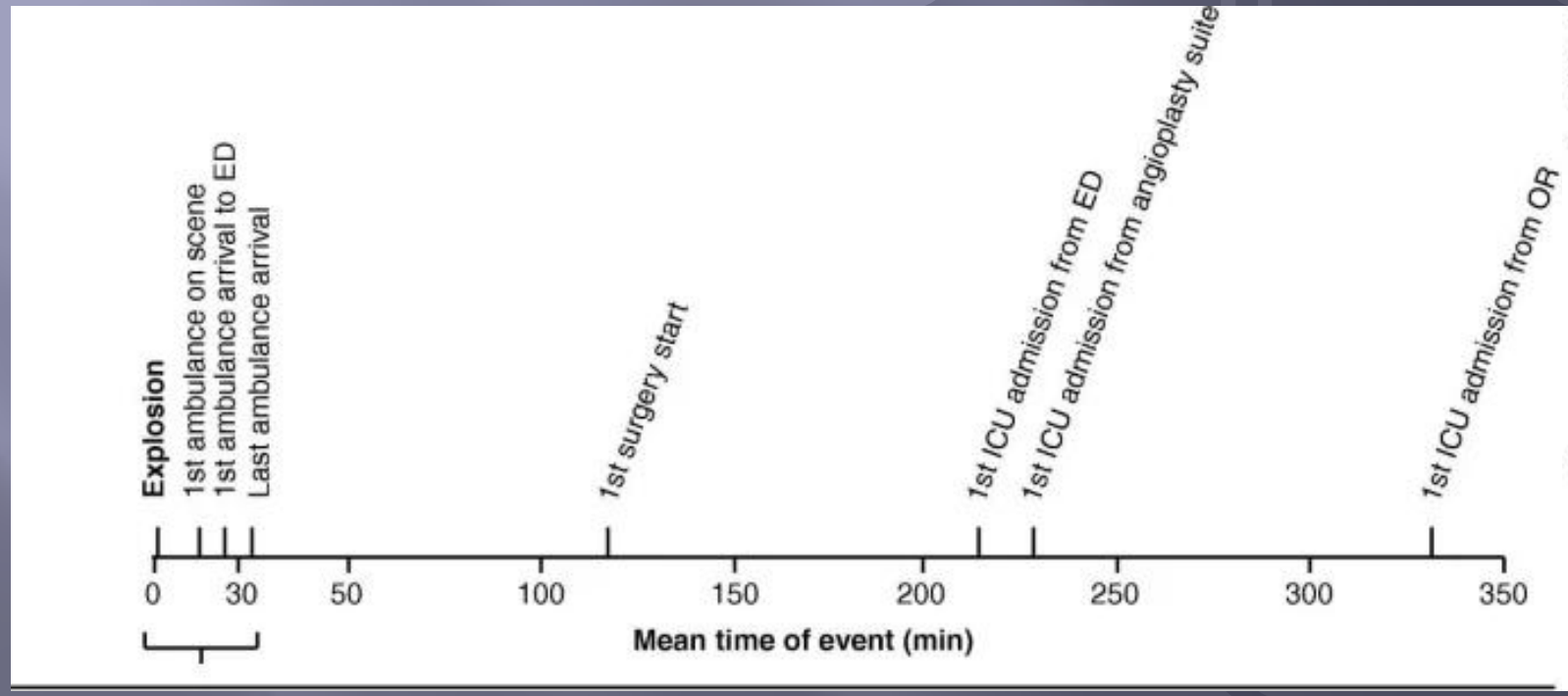
* As it relates to patients from MCI

Realization to Foundation

- Rethinking the response
  - What does your hospital's MCI response timeline look like?
  - What does your Emergency Department's MCI response timeline look like?

Realization to Foundation

- Rethinking the response
  - Most common MCI response vs Documented MCI response

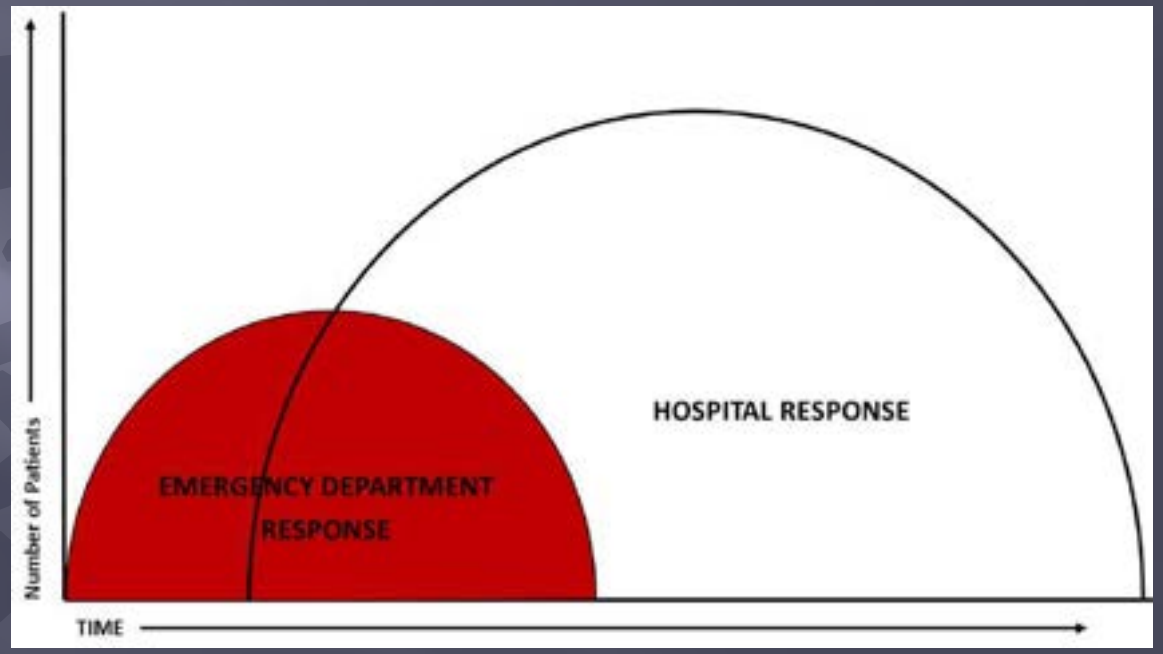


Time (min) after explosion	Event	Actions to be taken
0	**Explosion**	
0–10	**Assess incident size and severity**	Obtain information from emergency services and media sources Continue life-saving operations Hold elective operations Clear emergency department Send patients from OR waiting area back to departments Consider taking out patients from OR if operation not yet started Notify all anesthesiologists present in the hospital about the event Prepare to call in additional personnel
0–20	**Backup and preparation of sites**	Recruit additonal staff: Head of ICU department, on-call senior physicians, ICU head nurses. Other physicians and nurses as needed Triage patients to be discharged from the ICU and recovery room Send on-call most experienced physicians to the trauma bay and emergency department Prepare trauma bay, two operating rooms and ICU beds (including PACU) for admission

Retrospective Assessment of MCI responses in Israel

Realization to Foundation

- Rethinking the response timeline
  - Most common MCI response timeline
    - Based on Hospital Response
  - Documented MCI timeline
    - Emergency Department
    - Hospital Response



- Planning should view MCI responses as two individual activations that complement each other to support appropriate patient throughput

Realization to Foundation

MCI "Normal"

- Automatically send resources to Emergency Department
- MCI Plan starts and stops in the Emergency Department

Realizations Over Time

- Saving patients is not completed in the Emergency Department
- Best place for critical patients is NOT the Emergency Department

Overall Hospital Management with ED Support

- The Emergency Department is essential to comprehensive hospital management serving as a 'Sentry' or 'Scout'
- Reporting of incident particulars helps to identify 'critical' functional areas
- Adapting "Whole Community" to the acute care setting

Realization to Foundation

- Some identified advantages of this "rethinking"
  - Identification of "critical" functional areas
    - Each incident is unique…
  - Minimizes overall hospital disruption
  - Mobilization of necessary resources only
    - "Pull" vs. "Push"
  - Smoother transition to and from MCI Response
  - Development of hospital-based practices
  - More efficient resource management
  - More efficient patient throughput
  - Standardization of training based on response role

"Real-world" Experiences
• FSE – 75 mixed patients, dispositioned and cleared ED within 60 minutes • MCI – 14 critical trauma patients, dispositioned and cleared ED within 35 minutes • FSE – 50 mixed patients (inc. AFN, HOH, and language barrier), dispositioned and cleared ED with 45 minutes

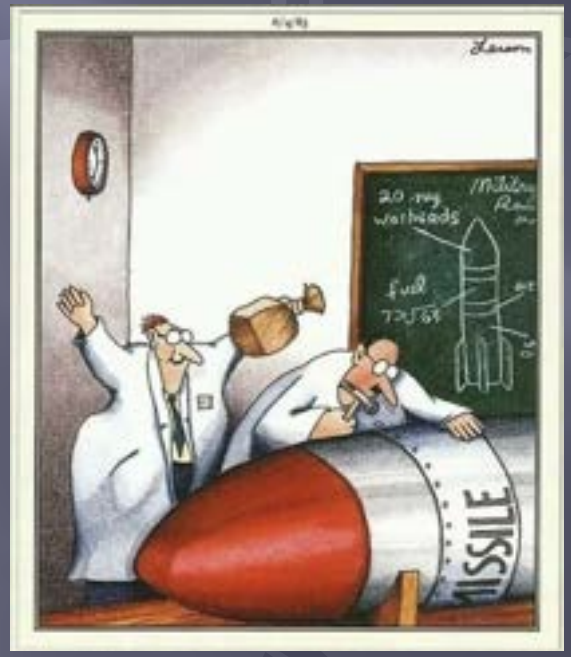
Realization to Foundation

A Fresh Look

Department Response with 'Whole House' flair	Identification and Integration of Planning Partners	Patient Management	Command and Coordination	Plan Development	Response Tools and Tool Development

Realization to Foundation

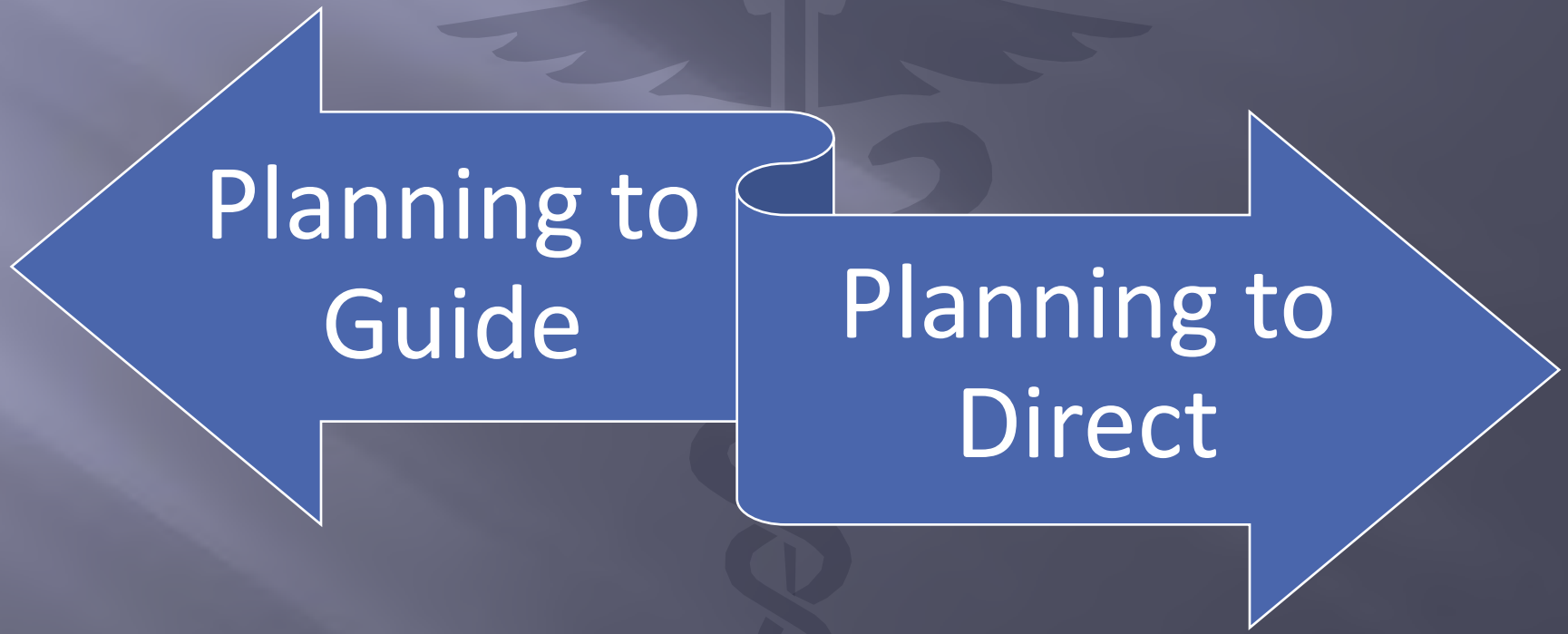
- Any questions so far….



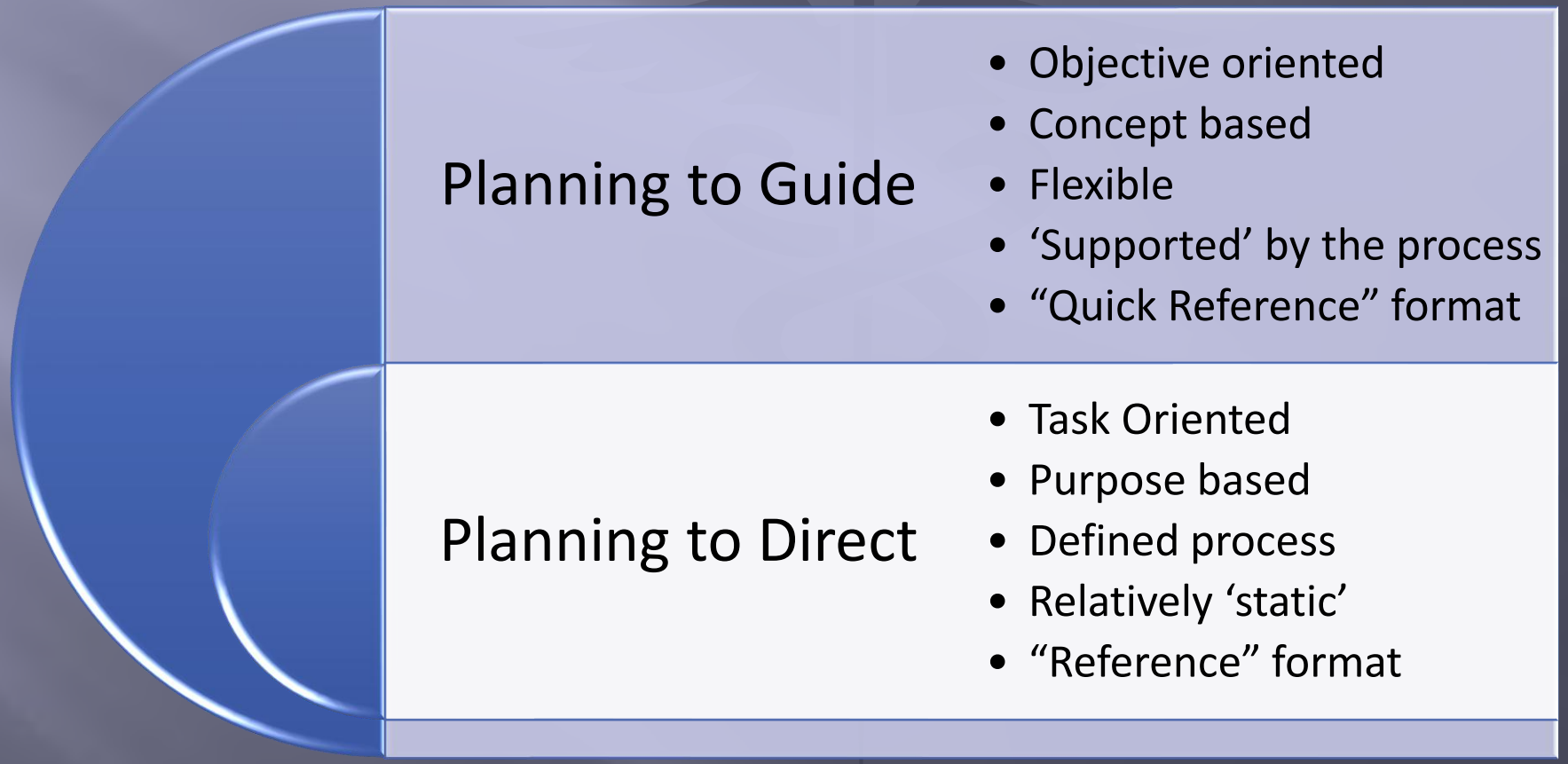
Next: Preparing to Plan

Preparing to Plan

- Envisioning a New Purpose



- Envisioning a New Purpose



- Envisioning a New Purpose
  - Let’s say we are looking to develop an Emergency Department Mass Casualty Incident Response Plan that guides and supports proactive department setup and promotes patient throughput, what key point(s) do you think we should address in our plan?

Workbook – Planning Points

Preparing to Plan

Planning Points That Have Been Identified Over The Years

Purpose	Scope	Objectives	Activation	Patient Throughput	Patient Management Processes	Resource Management Processes	Ancillary and Support Expectations and Processes	Department Command and Coordination	Communication (Department and Hospital)	Quick Reference (Consolidate Plan to a 'Two-Pager')

Preparing to Plan

- Identifying the Key Stakeholders
  - What does your ‘Throughput’ look like?

‘Stay and Play’

Traditional Emergency Department Management

Operational setup is based on separation of acuity
- Identified patient management areas

Patient is static in process

Unidirectional

Establishing One-Way Flow

Operational setup is based on separation of acuity AND purpose
- Identified Intake Areas
- Identified Patient Treatment Areas

Patient moves through process

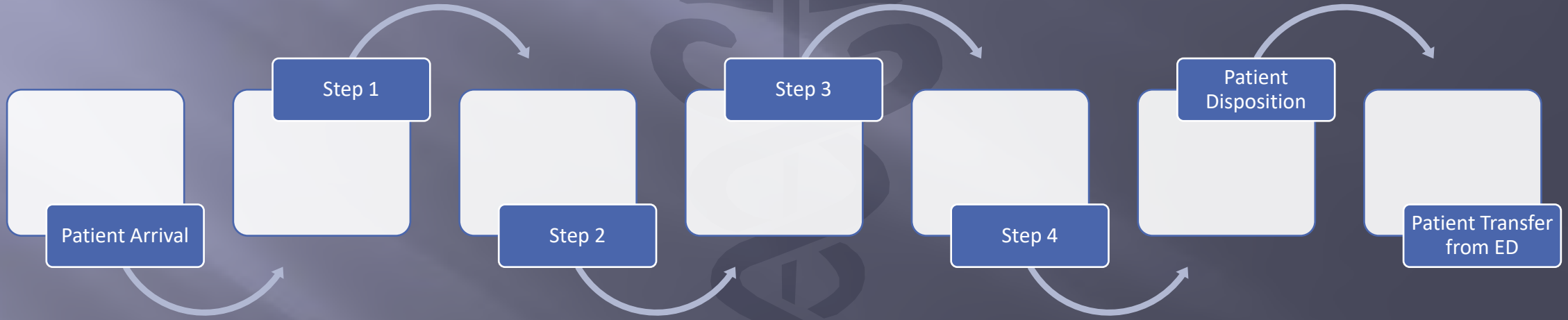
Preparing to Plan

- Identifying the Key Stakeholders
  - What do the steps of your MCI ‘Throughput’ look like?

- Identifying the Key Stakeholders
  - What do the steps of your MCI ‘Throughput’ look like?

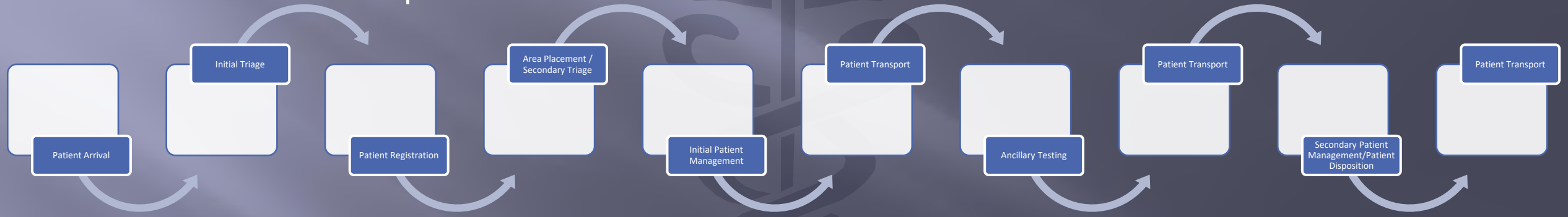
Preparing to Plan

- Identifying the Key Stakeholders
  - What does ‘Throughput’ look like?

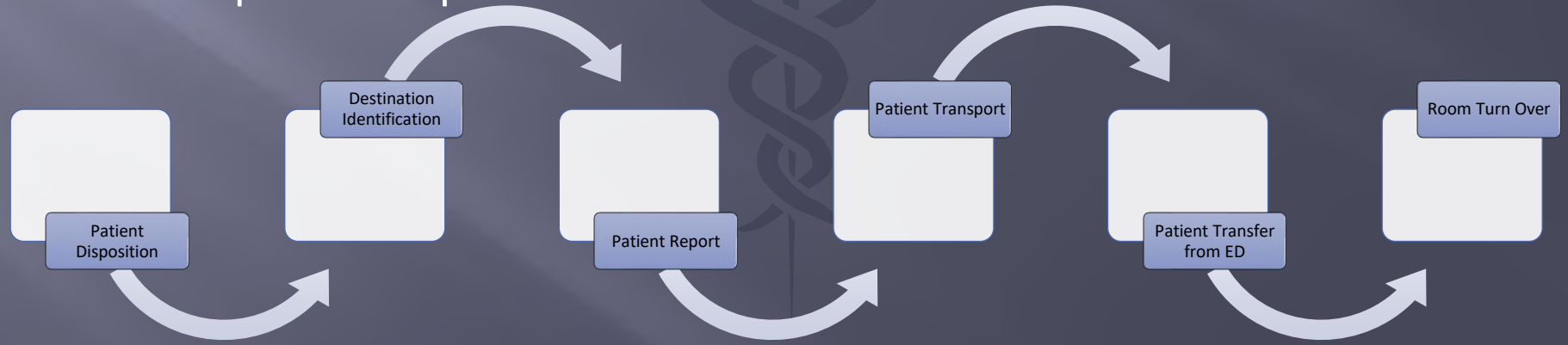


Identifying the Key Stakeholders

- What does ‘Throughput’ look like?
  - New arrival patient flow



  - Current department patient flow



Preparing to Plan

- Identifying the Key Stakeholders

- Identifying the Key Stakeholders
  - Based off our identified ‘Throughput’ steps/stages and ‘Lifelines’, what hospital department(s) or position(s) do you think should have a seat at the table in the development of our Emergency Department Mass Casualty Incident Response Plan?

Workbook – Stakeholders

Preparing to Plan

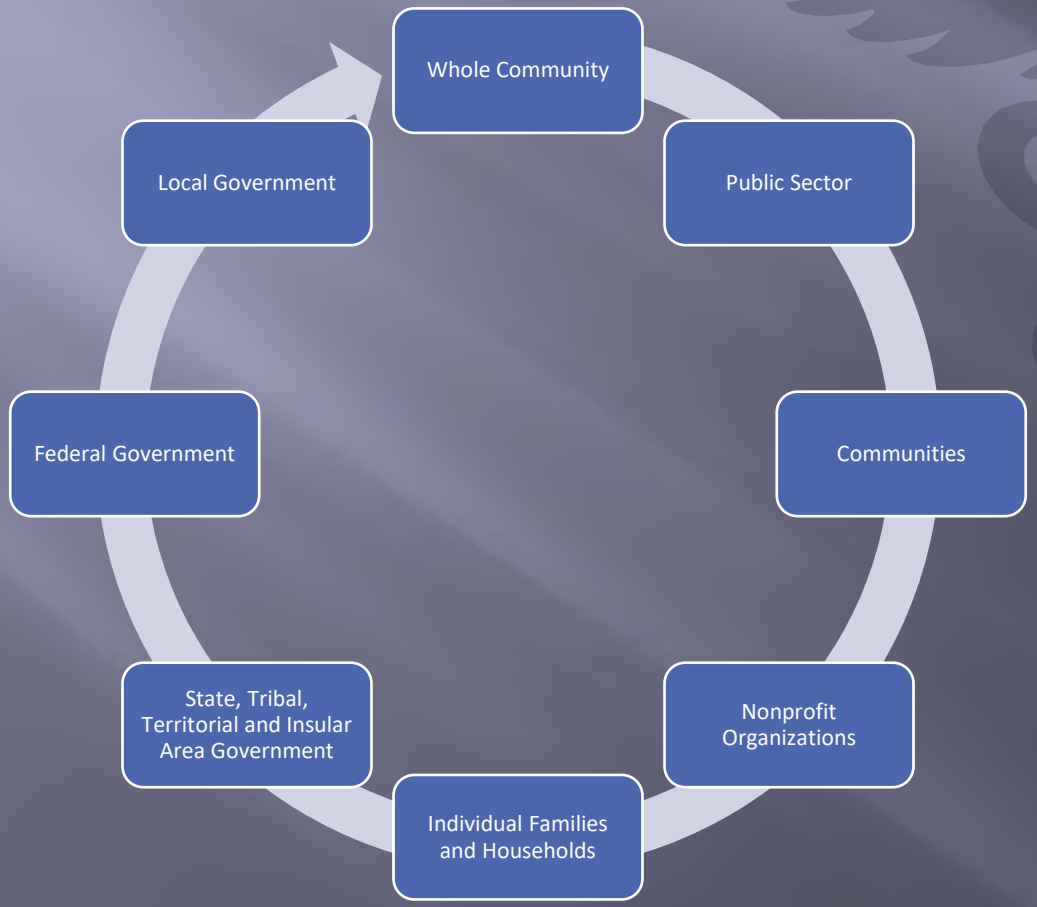
Identified Stakeholders Over The Years

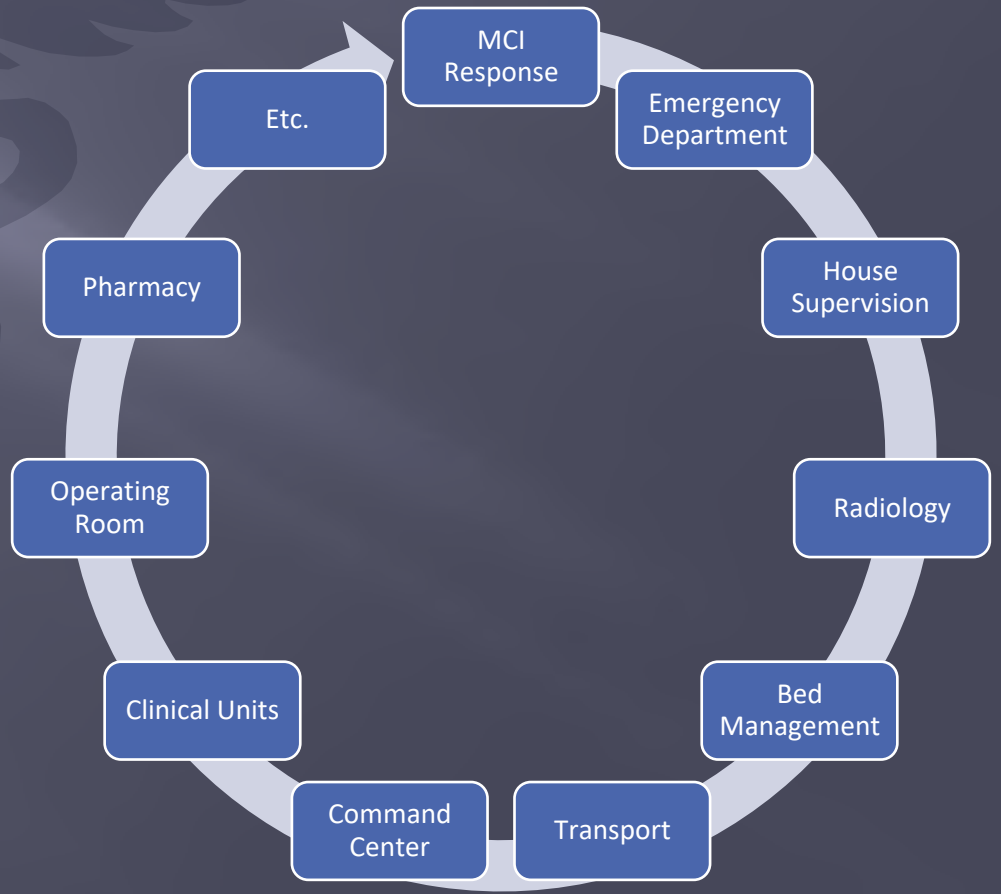
ED Nursing (Adult/Pediatric)	ED Providers (Adult/Pediatric)	Radiology	Cardiac Catheterization Lab	Trauma/Surgery Providers	Critical Care Providers	Supervision	Bed Management	Patient Transport	Security	Clinical Engineering	Patient Equipment	Patient Registration	Pharmacy	Environmental Services

Preparing to Plan

Identifying the Key Stakeholders

- Moving ‘Whole Community’ Concept to ‘Whole House’ Management

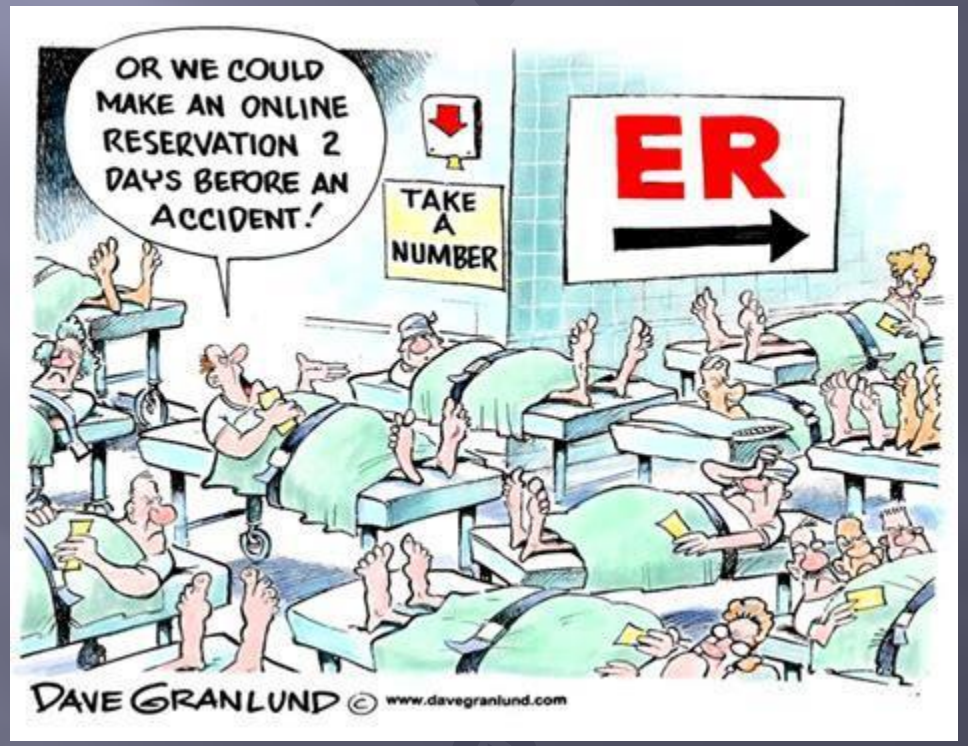




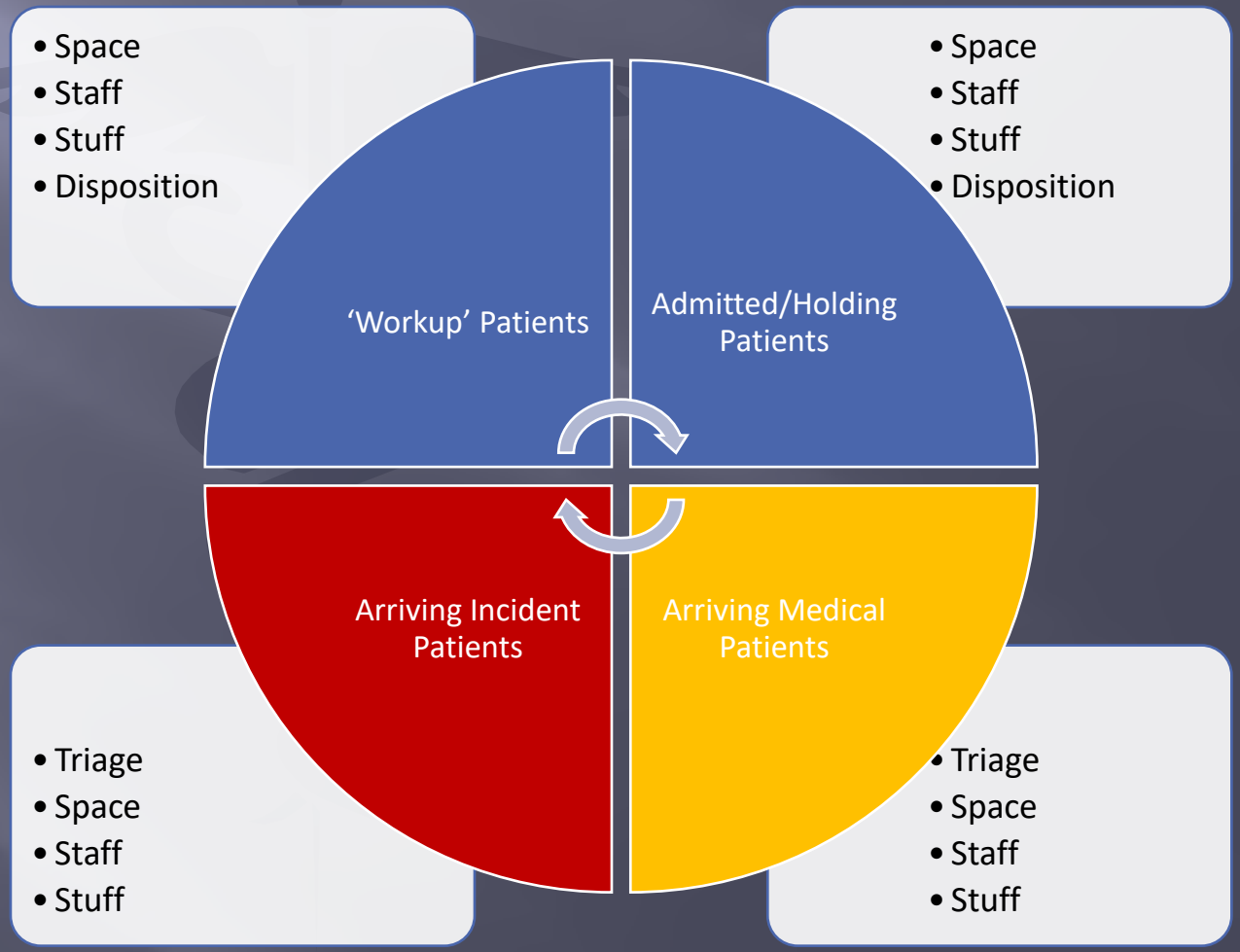
Preparing to Plan

- Any questions so far….

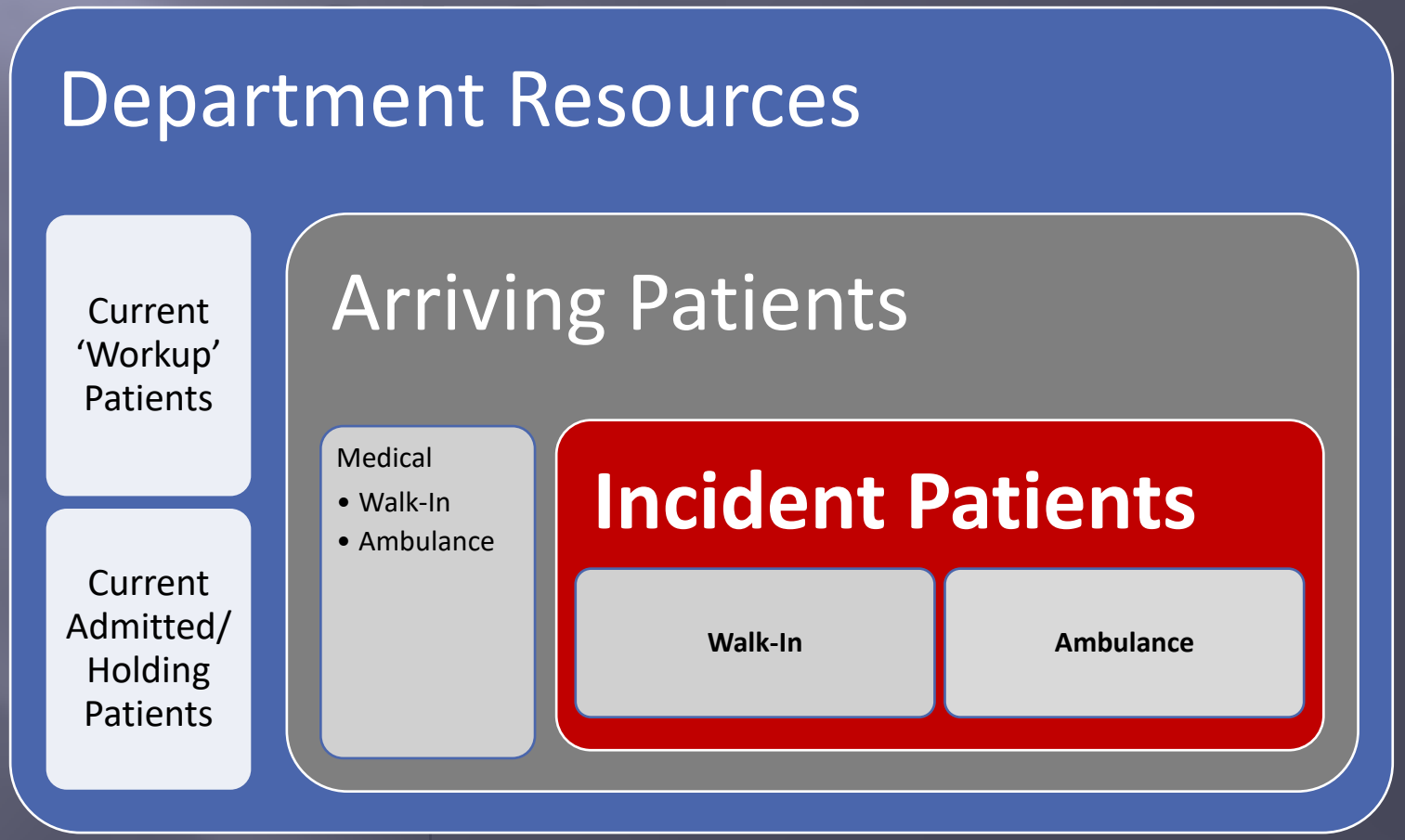
Next: Patient Management Resources


OR WE COULD MAKE AN ONLINE RESERVATION 2 DAYS BEFORE AN ACCIDENT!
TAKE A NUMBER
ER
DAVE GRANLUND © www.davegranlund.com

- Overview of Emergency Department Resource Utilization During a MCI
  - Space
  - Staff
  - Stuff



- Realistic overview of Emergency Department Resource Utilization During a MCI
  - Space
  - Staff
  - Stuff



- Defining resource needs
  - What management processes and procedures can we pre-plan for and implement to help our staff better define what patient management (not patient treatment) resources may be required during a MCI response?

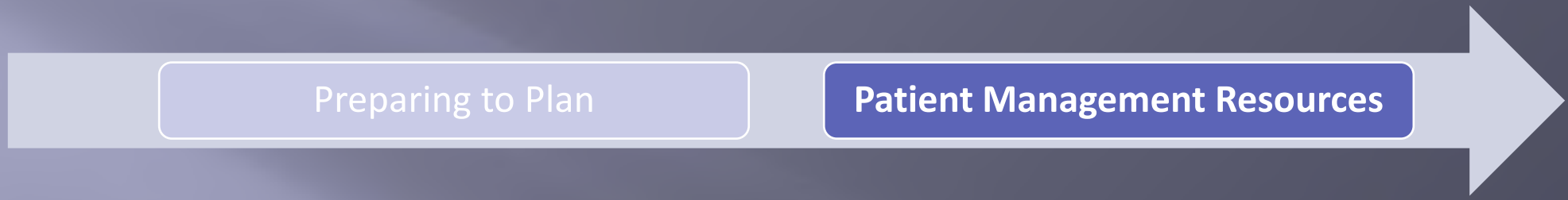
Workbook – Resource Needs

Preparing to Plan

Patient Management Resources

Resource Estimating Processes and Procedures

Patient Triage	Area Designation	Area Staffing Guidance	Patient Throughput Algorithm	Patient Treatment Guidance	Department Decanting	“Single Department Response”

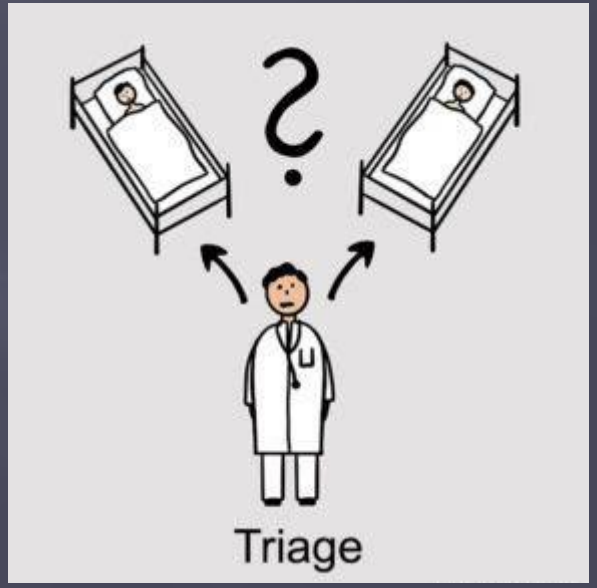


Resource Estimating Processes and Procedures

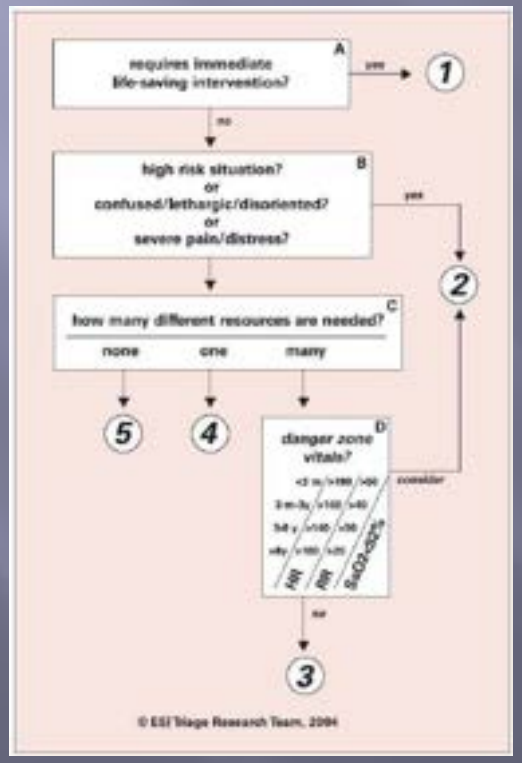
Patient Triage	Area Designation	Area Staffing Guidance	Patient Throughput Algorithm	Patient Treatment Guidance	Consolidation	“Single Department Response”

- In the beginning…..
  - Patient triage is the foundation for
    - Determining patient acuity
    - Area placement

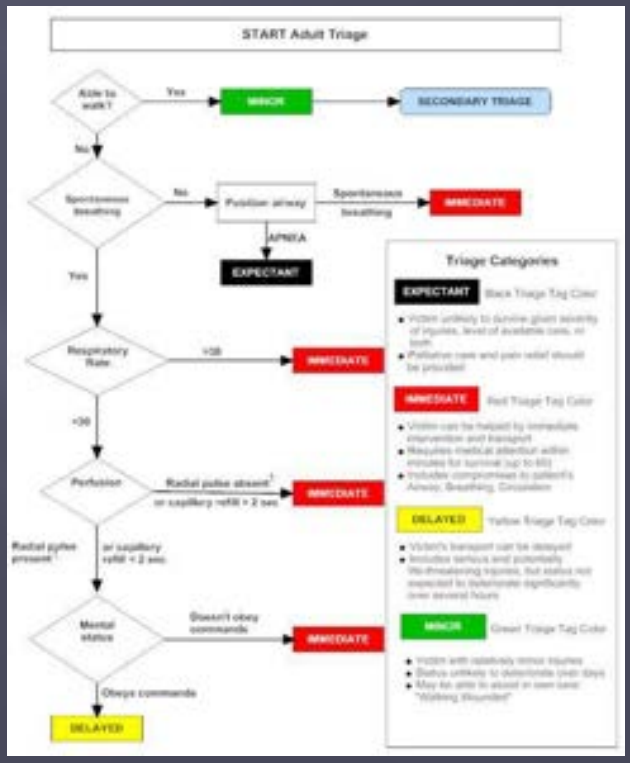
- In the beginning…
  - Patient triage considerations
    - What Emergency Department triage algorithm does your hospital use? Why?
    - What MCI triage algorithm does your hospital use? Why?



- In the beginning…
  - Patient triage considerations



- Spot the differences
- Why do we think they exist?
- Why do we use a ‘pre-hospital’ triage algorithm for hospital patients?
- Two algorithms – One incident?

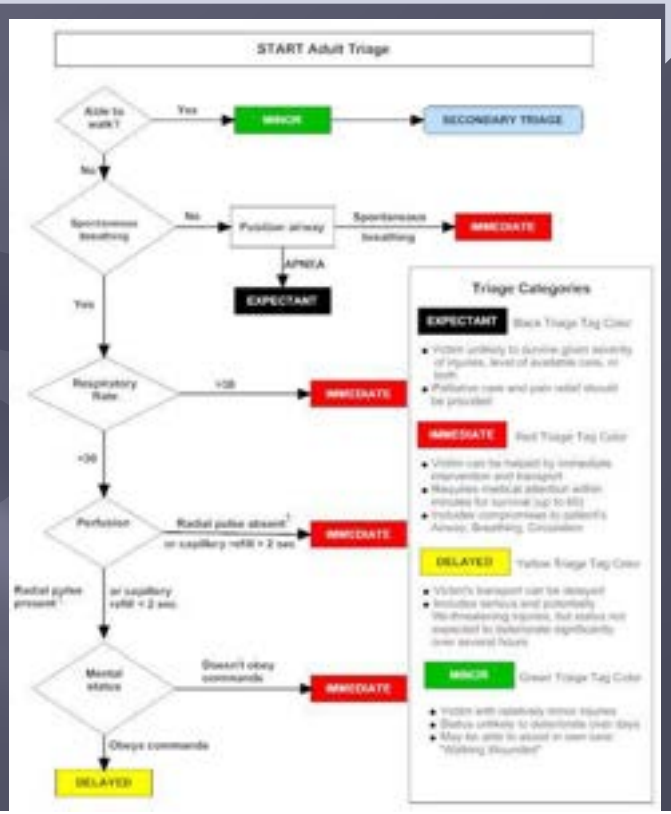


- In the beginning…
  - Patient triage considerations
    - Is there a standard MCI triage algorithm?
    - Is there an ‘approved’ MCI triage algorithm?
    - Is there a ‘mandated’ MCI triage algorithm?
    - Is there a ‘hospital-based’ MCI triage algorithm?
  - What else could triage be capable of?
    - *Pre-hospital to hospital transition and translation?*
    - *Hospital readiness?*
    - *Improving ‘whole house’ response?*
    - *Force multiplication?*

Preparing to Plan

Patient Management Resources

- Please determine the triage acuities for the following patients arriving to your Emergency Department during a MCI where you are receiving 25 patients from the incident



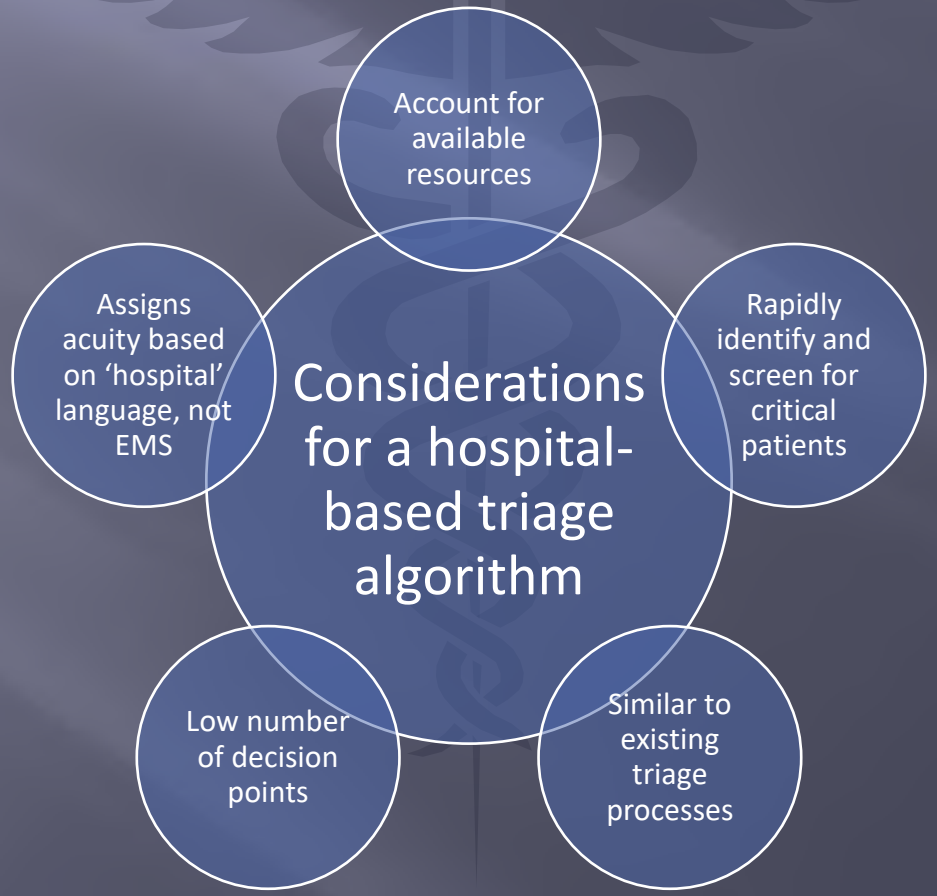
Patient Triage Survey 1 - START

https://www.menti.com/alczozkcyv14

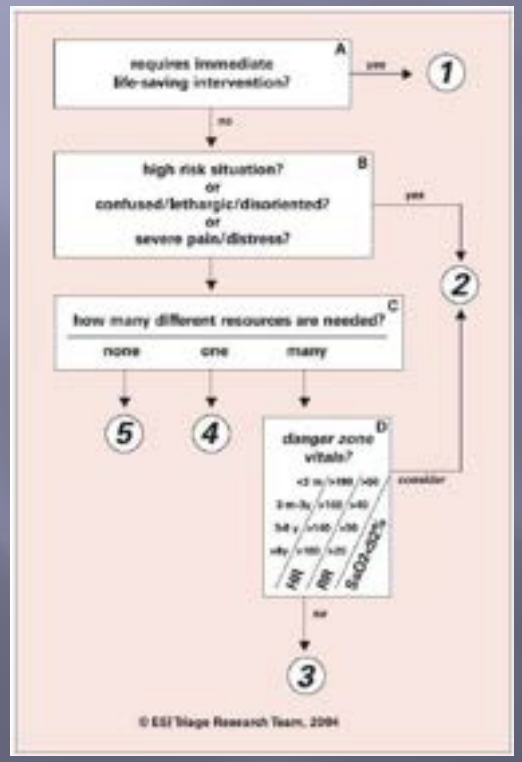
- What if…
  - What considerations would you make to develop a ‘hospital-based’ MCI triage algorithm? What would your ideal triage algorithm look like?

Workbook – Triage Algorithm

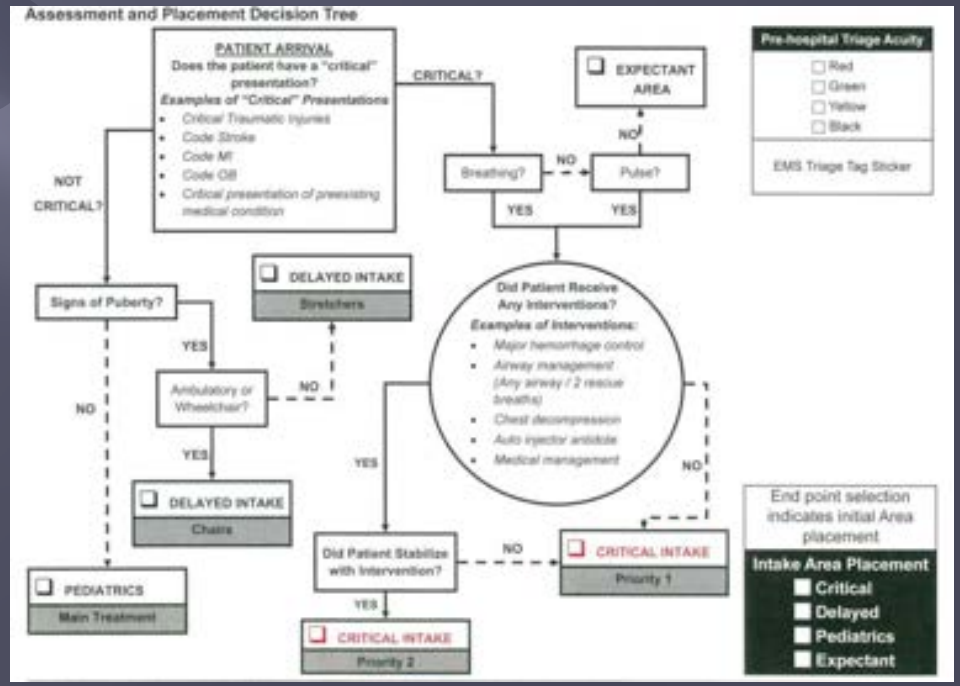
- What if…
  - Can we develop a ‘hospital-based’ triage algorithm?



- What if…
  - Can we develop a ‘hospital-based’ triage algorithm?



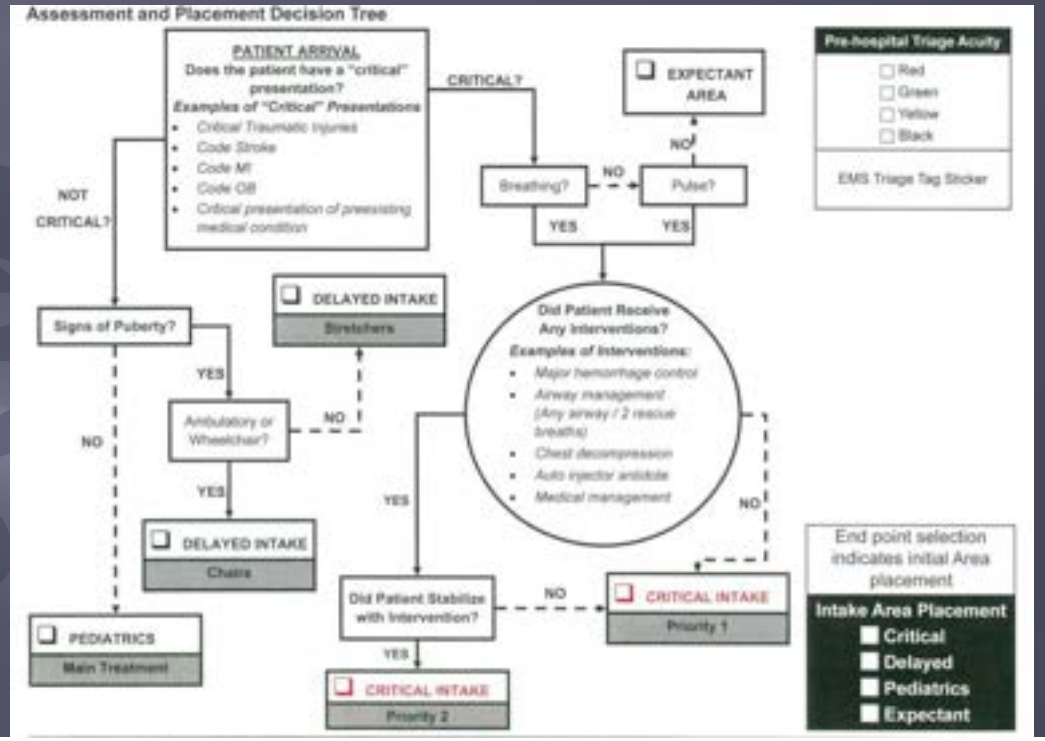
- Spot the differences
- Spot the similarities
- Why do we think they exist?
- How’d we do?



Preparing to Plan

Patient Management Resources

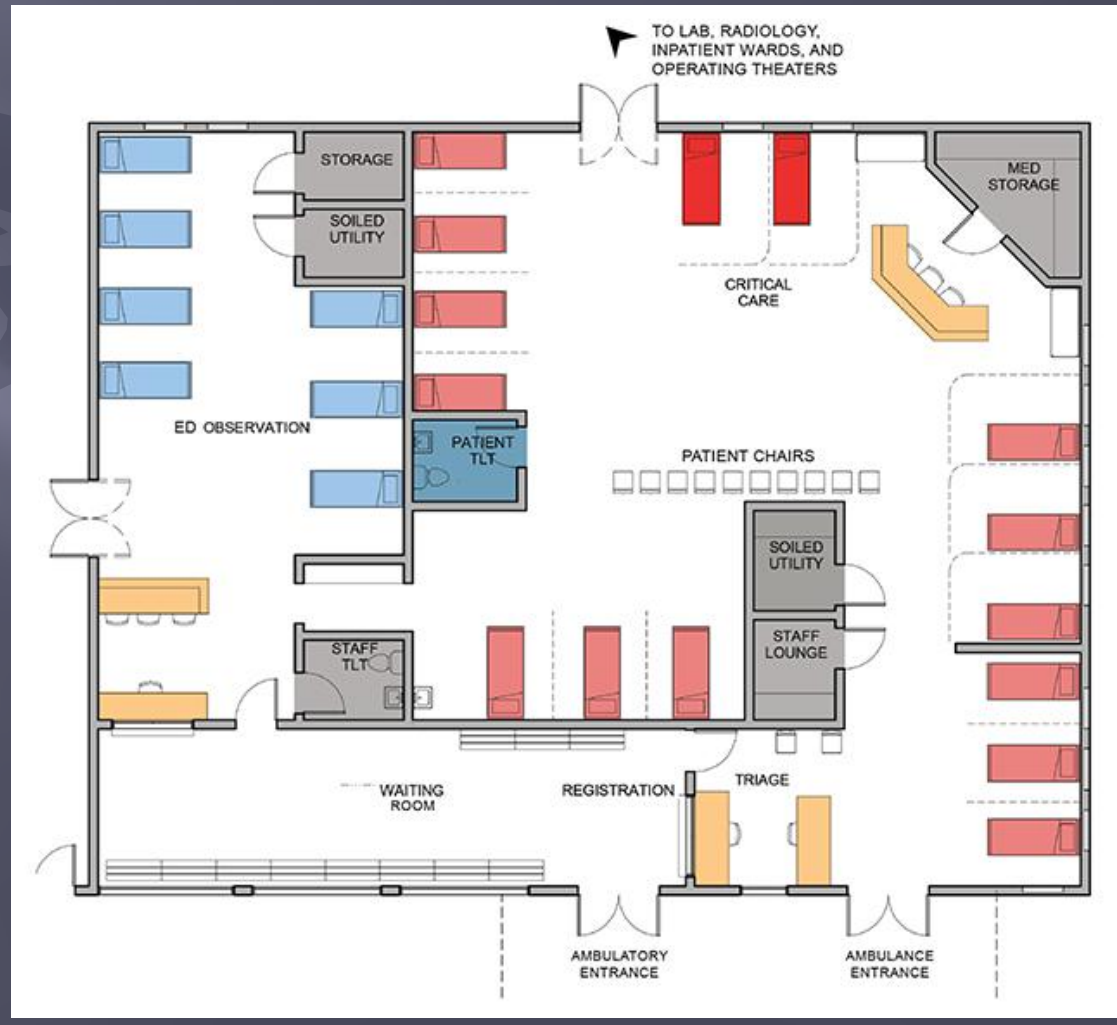
- Please determine the triage acuities for the following patients arriving to your Emergency Department during a MCI where you are receiving 25 patients from the incident



Patient Triage Survey 2 – Hospital

https://www.menti.com/al28eqp63783

- Department Footprint
  - Based off this Emergency Department layout, how would you layout your Emergency Department to manage a MCI?

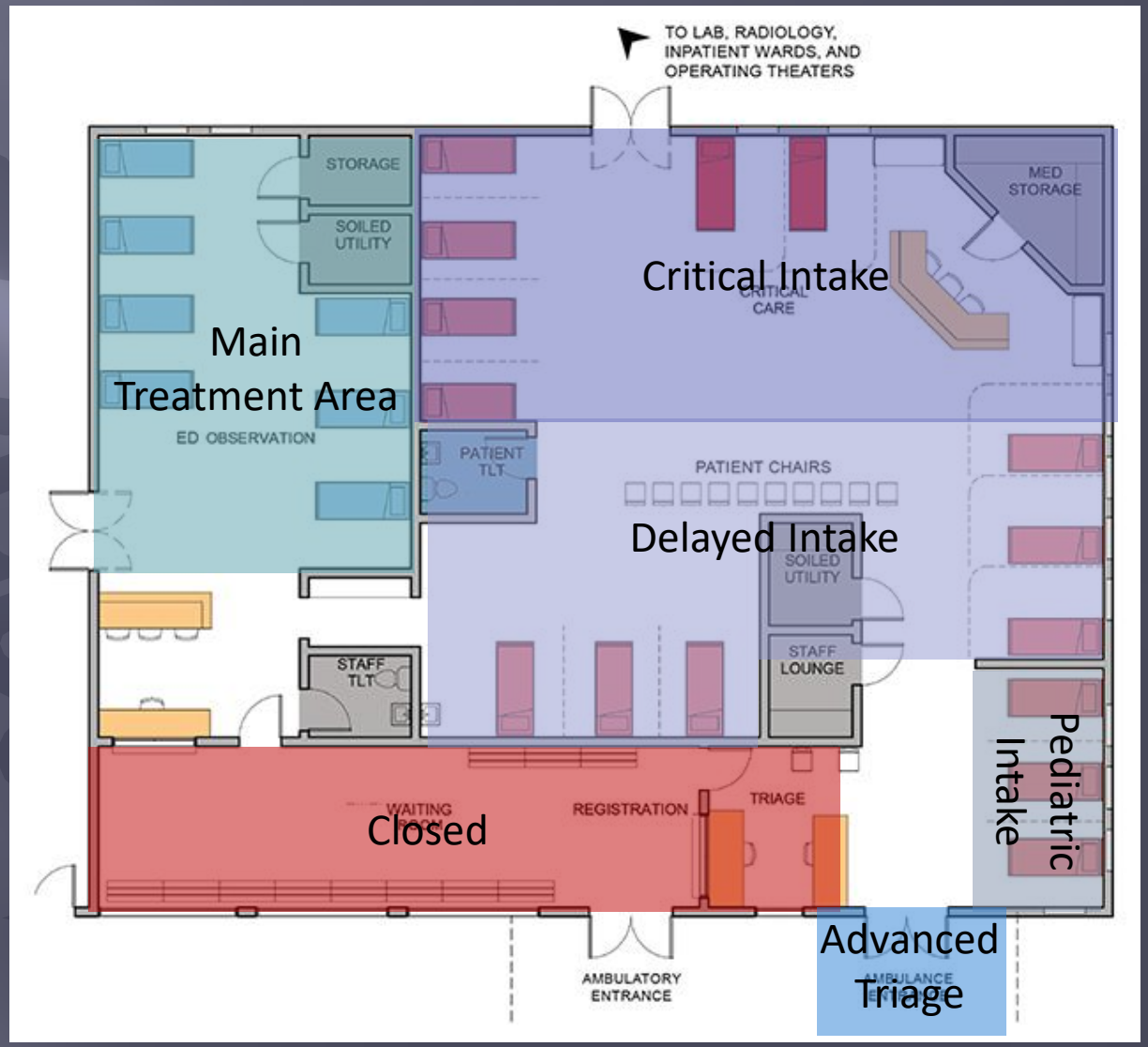


Workbook – Area Setup

- Department Footprint
  - Things to consider
    - Staffing
    - Supply
    - Access
    - Patient Flow
    - Routine Patients
  - START based - Theory

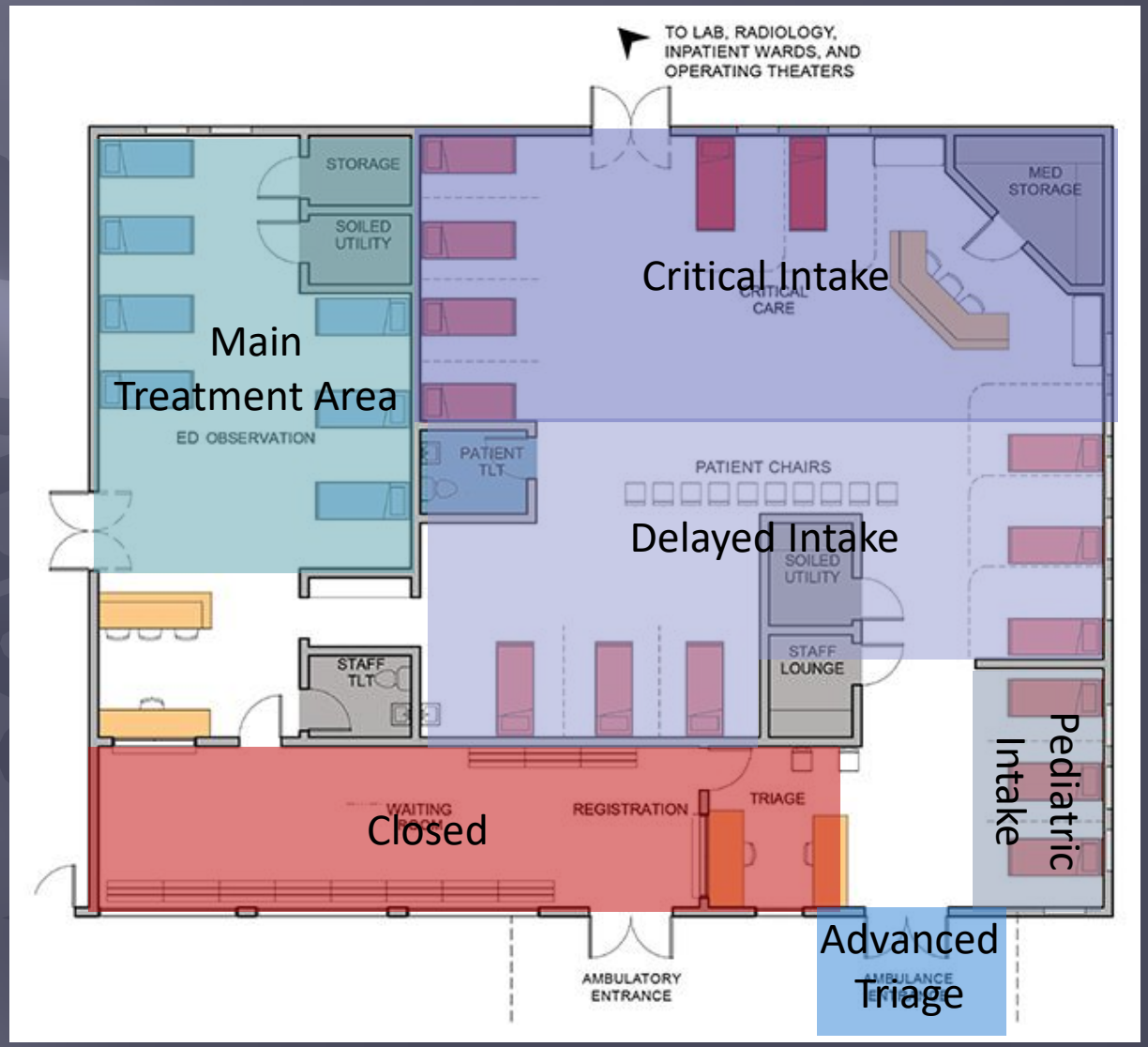
- Department Footprint
  - Things to consider
    - Staffing
    - Supply
    - Access
    - Patient Flow
    - Routine Patients
  - START based – More Likely

- Department Footprint
  - Things to consider
    - Staffing
    - Supply
    - Access
    - Patient Flow
    - Routine Patients
  - ‘Single Department’ Concept



- Throughput Considerations
  - What might patient flow look like in this scenario?

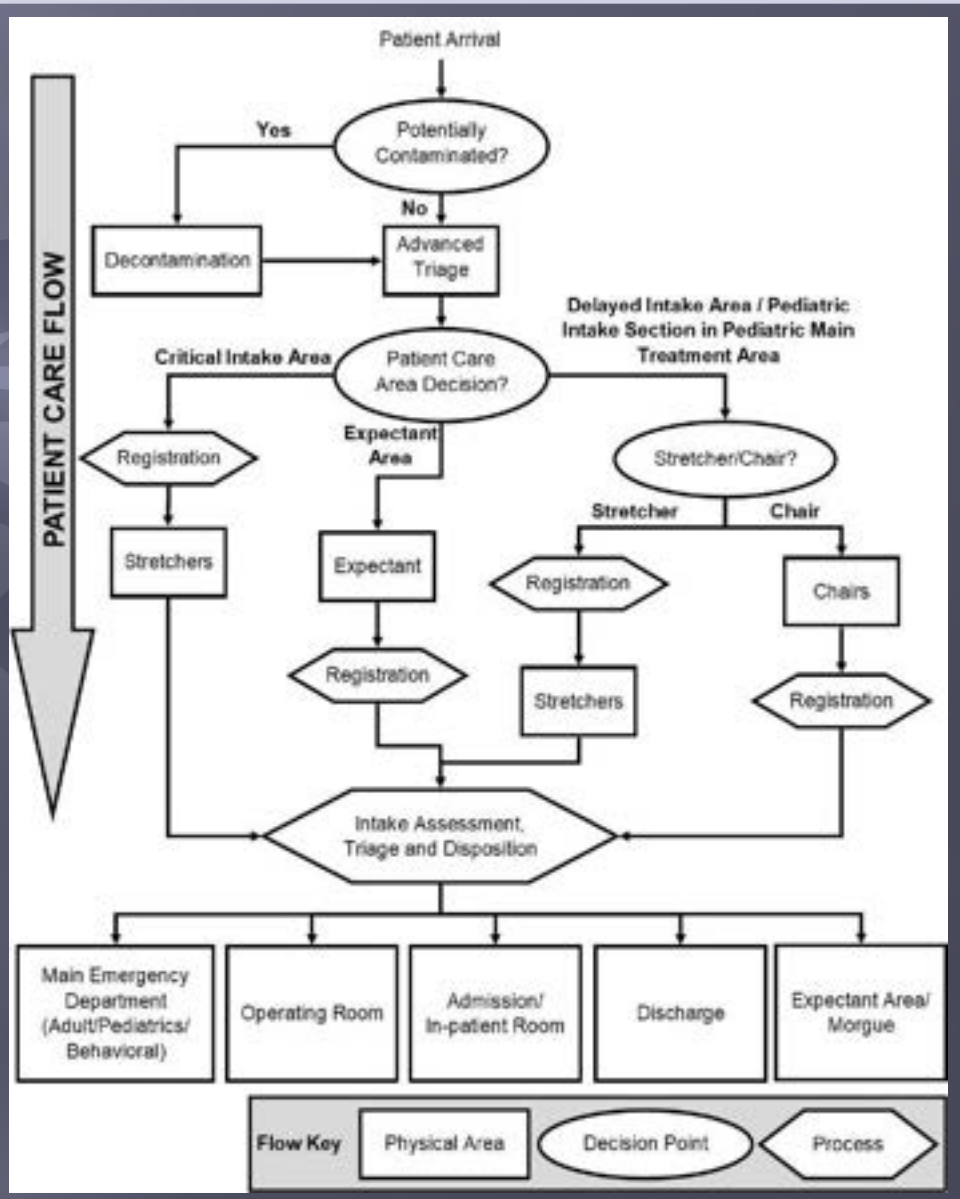
- Throughput Considerations
  - What could patient flow look like in this scenario?



- Throughput Considerations
  - Based off what we've identified so far, what would your ideal patient throughput algorithm look like?

Workbook – Throughput

- Throughput Considerations



Preparing to Plan

Patient Management Resources

- Treatment Considerations
  - Working in groups, determine what kind of treatment would be suitable for the identified area

Intake Areas

Treatment Areas

Workbook – Treatment

- Treatment Considerations
  - Working in groups, determine what kind of treatment would be suitable for the identified area

Intake Areas

- Initial assessment and Life-saving intervention
- Diagnostic testing should be done under the direction of a licensed provider and any departments responsible for testing should be notified of Mass Casualty Incident Response activation and modify operations appropriately. **Priority should be given to requests for diagnostics originating from Intake Areas with preference towards the Critical Intake Area.**

Treatment Areas

- Reassessment as well as continued care and monitoring
- Diagnostic testing should be done under the direction of a licensed provider and any departments responsible for testing should be notified of Mass Casualty Incident Response activation and modify operations appropriately. **May include evaluation of non-life-threatening conditions as allowed by resource needs of Intake Areas**

- Staffing Considerations
  - Is a nurse a nurse?
  - Who can staff the Emergency Department during a MCI?
  - Who should staff the Emergency Department during a MCI?

MCI Staffing Considerations

- Scope of Practice
- Capability
- Comfort
- Knowledge of Procedures
- Physical Access
- Technological Access

- Staffing Guidance
  - Working in groups, determine what kind of staff would be suitable for each of the identified areas

START Setup

- Red
- Yellow
- Green
- Black

Unidirectional Setup

- Critical Intake
- Delayed Intake
- Pediatric Intake
- Main Treatment
- Expectant

Workbook – Staffing Guidance

Staffing Considerations

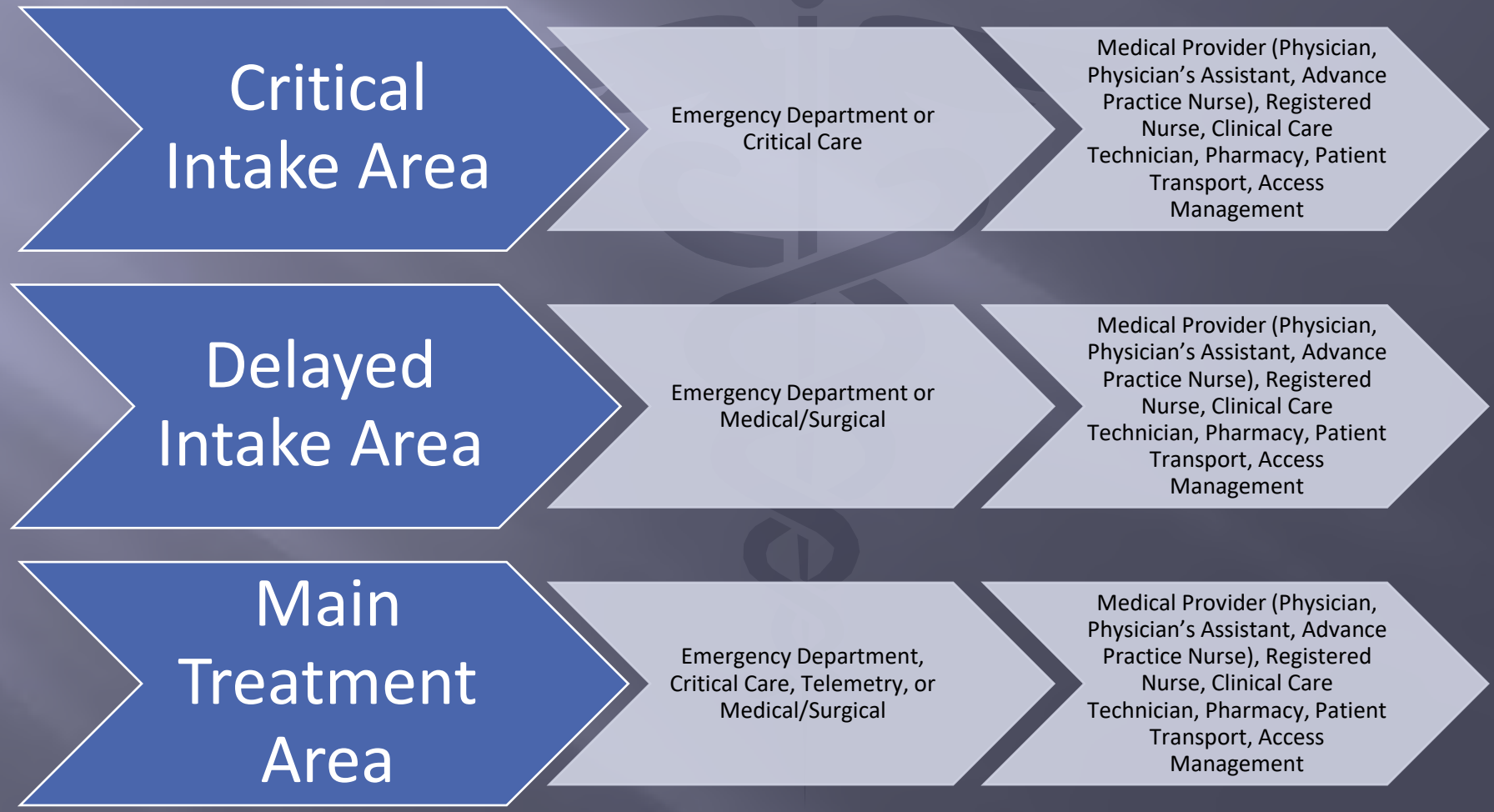
Staffing Positions

- Red
- Yellow
- Green
- Critical Intake
- Delayed Intake
- Pediatric Intake
- Main Treatment

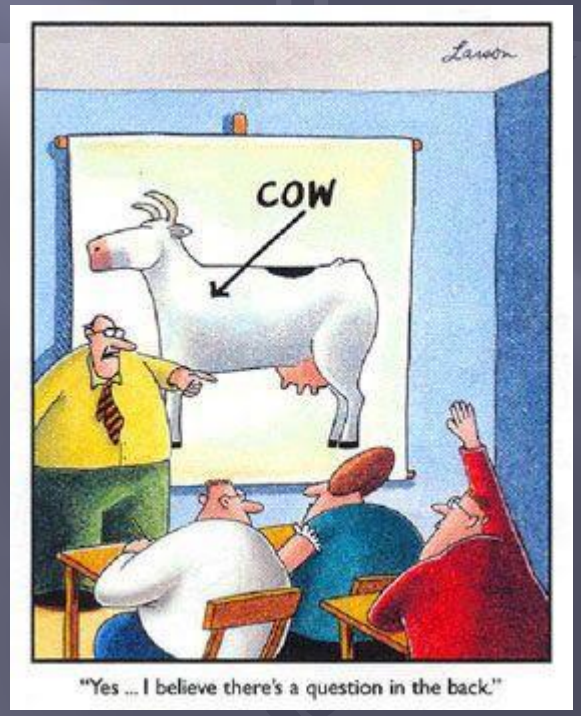
Staffing Types

- Red
- Yellow
- Green
- Critical Intake
- Delayed Intake
- Pediatric Intake
- Main Treatment

Staffing Considerations



- Any questions so far….



Next: Command and Coordination


I SENT YOUR QUESTION UP THE CHAIN OF COMMAND.
I TALKED TO THE DISTRICT MANAGER WHO TALKED TO HIS AVP WHO TALKED TO HIS VP WHO TALKED TO HIS SVP WHO TALKED TO THE CEO.
THE ANSWER IS THAT WE NEED TO SHINE THE BRAILLE TOAD.
DO YOU SEE ANY PROBLEM WITH OUR SYSTEM?
DilbertCartoonist@gmail.com
Dilbert.com
11-23-12 ©2012 Scott Adams, Inc./Dist. by Universal Uclick


Command
Coordination

Coordination Considerations

Incident Command vs Incident Coordination (FEMA)

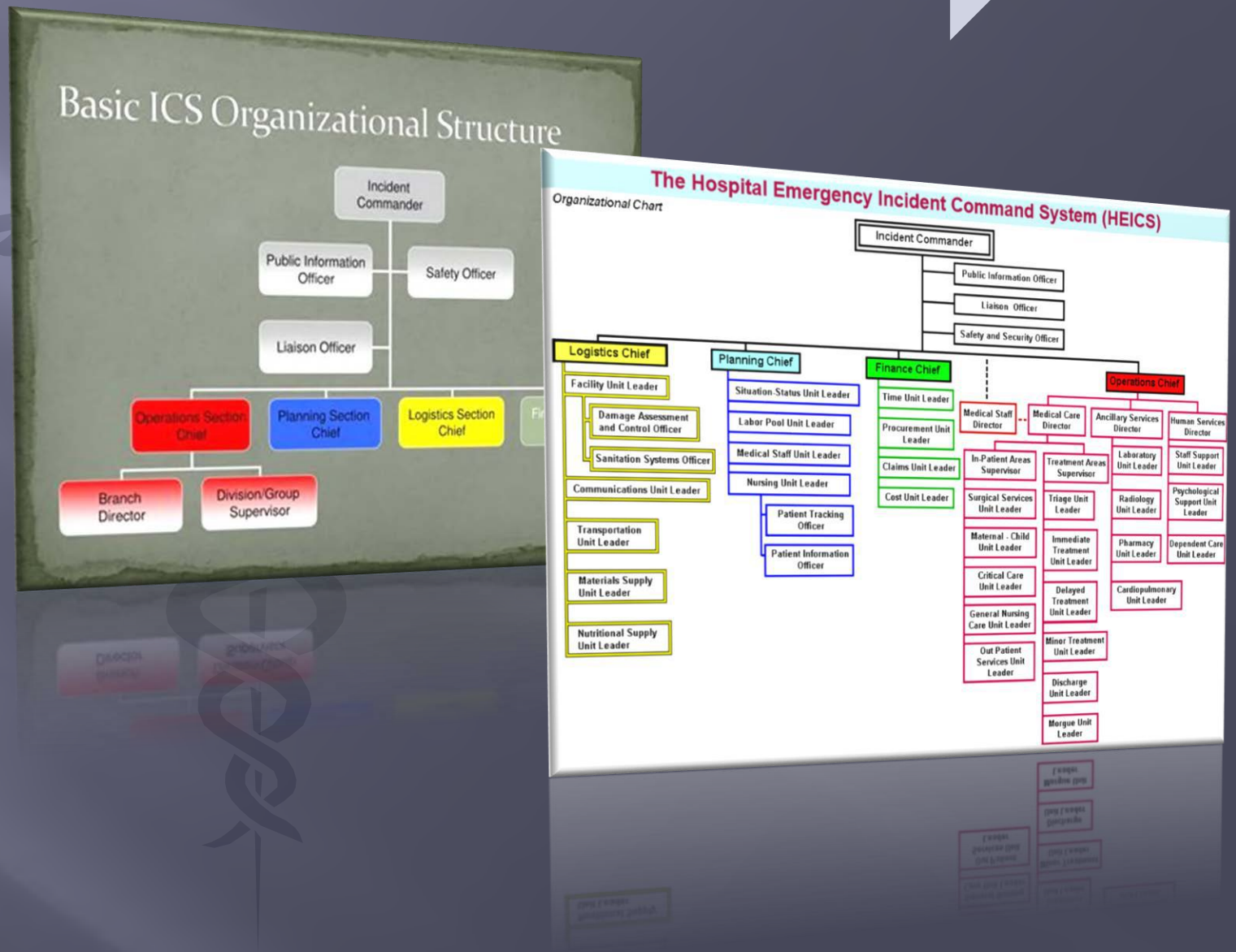
Incident Command

- Is used for all kinds of incidents by all types of organizations and at all levels of government; ICS is applicable to small incidents as well as large and complex ones.
- Can be used not only for emergencies, but also for planned events.
- Enables a coordinated response among various jurisdictions and agencies.
- Establishes common processes for incident-level planning and resource management.
- Allows for the integration of resources (such as facilities, equipment, personnel) within a common organizational structure.

Incident Coordination

- Establishing policy based on interactions with agency executives, other agencies, and stakeholders.
- Collecting, analyzing, and disseminating information to support the establishment of shared situational awareness.
- Establishing priorities among incidents.
- Resolving critical resource issues.
- Facilitating logistics support and resource tracking.
- Synchronizing public information messages to ensure that everyone is speaking with one voice.

- Command to Coordination…
  - Where should/could the Emergency Department live?
    - Branch?
    - Group?
    - Division?
    - Unit? (Casualty Care Unit?)



- Command to Coordination…
  - Unified Coordination picture
  - Pre-planning
    - Determine functions
    - Determine positions
  - Communication

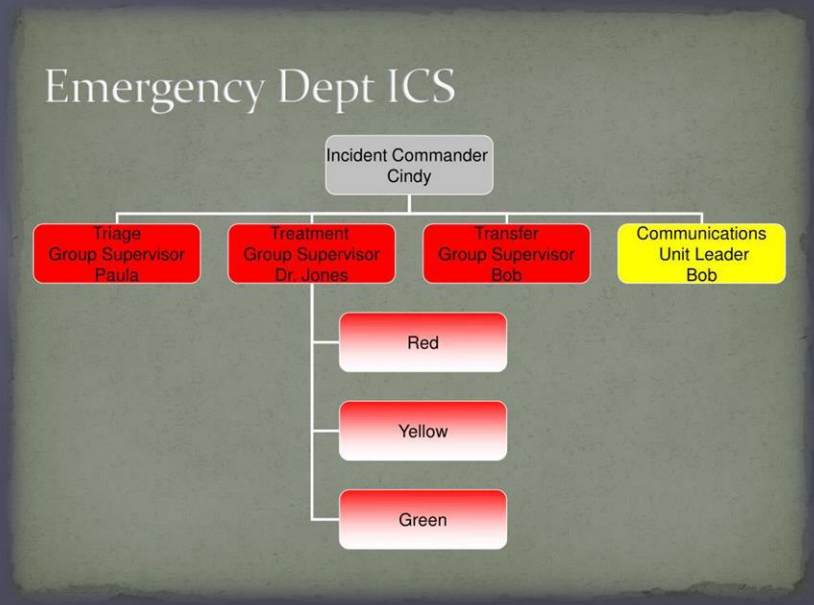
- Command to Coordination…
  - Working in groups, determine what response functions are required to successfully manage a mass casualty incident response

Workbook – Functions

Some Identified Department Functions

Command, Coordination, Communication	Patient Triage	Patient Management	Patient Disposition	Patient Tracking and Transport	Resource Accountability	Personnel Accountability	Registration	Decontamination

- Command to Coordination…
  - Functional Coverage
  - Pre-planned locations



- Command to Coordination…
  - Working in groups and based off identified functions, determine what command roles are required to successfully manage a mass casualty incident response. Identify which available position would automatically assume the role during a response.

Workbook – Positions

Some Identified Department Functions

- Command, Coordination, Communication
- Patient Triage
- Patient Management
- Patient Disposition
- Patient Tracking and Transport
- Resource Accountability
- Personnel Accountability
- Registration
- Decontamination

Some Identified Department Positions

- Charge Nurse
- Triage Nurse
- Nurse
- Attending
- Residents
- Patient Care Technician
- Registration

- Command to Coordination…
  - Available staffing
  - Pre-planned positions
  - Pre-planned posts

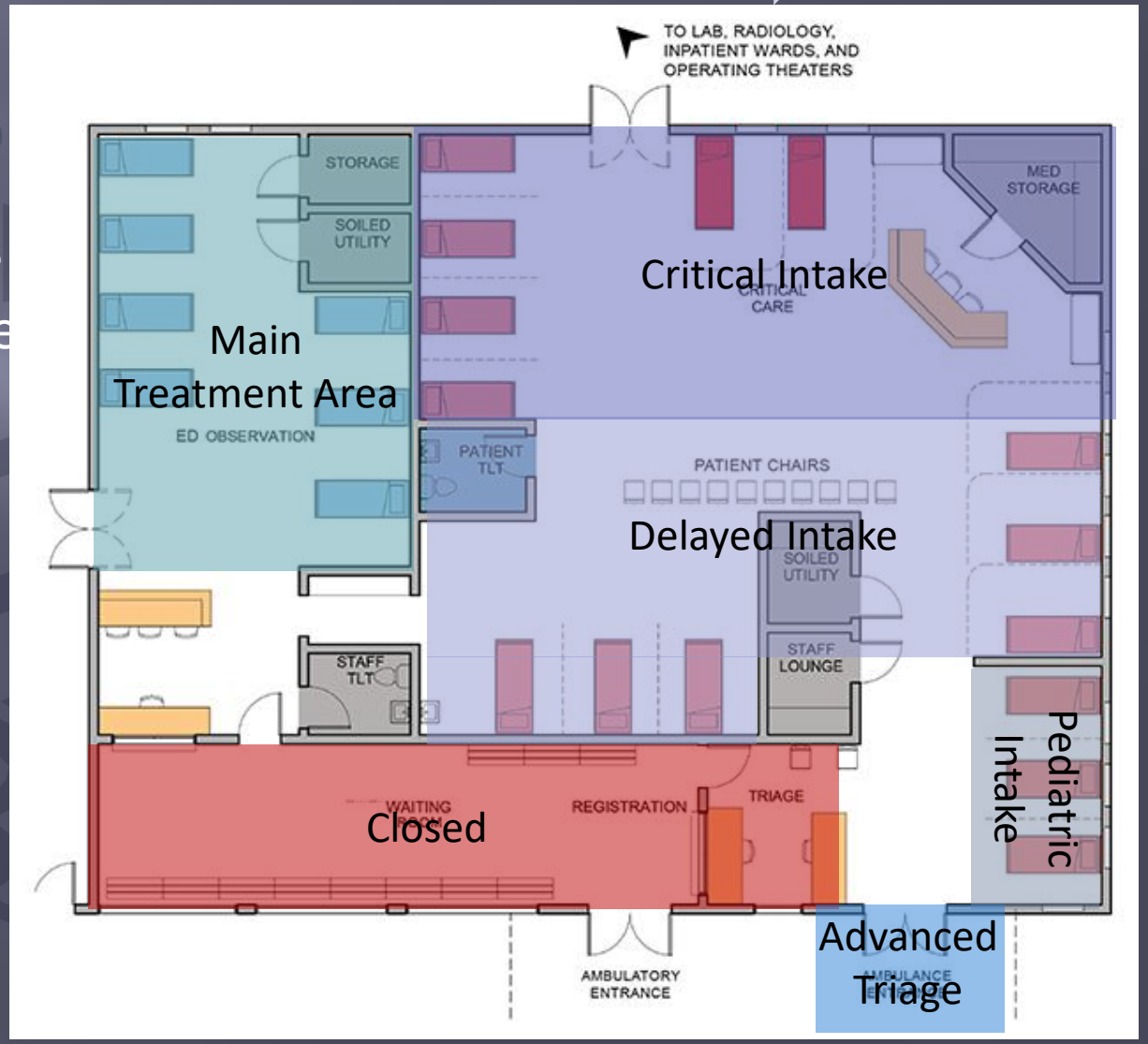
Position	Suggested Assignment
Emergency Department Branch Director	Charge Registered Nurse, or most qualified Registered Nurse
Critical Intake Officer	Critical Area Registered Nurse, or most qualified Registered Nurse
Delayed Intake Officer	Fast Track Area Charge Registered Nurse, or most qualified Registered Nurse
Pediatric Area Manager	Charge Registered Nurse, or most qualified Registered Nurse
Main Treatment Area Officer	Charge Registered Nurse, or most qualified Registered Nurse
Advanced Triage Officer	Triage Registered Nurse, or most qualified Registered Nurse
Helipad Manager	Triage Registered Nurse, or most qualified Registered Nurse
Decontamination Officer	Most qualified Emergency Department staff
Resource Accountability Officer	Most qualified Emergency Department staff (i.e. Unit Clerk, CCT, etc.)
Patient Tracking Manager	Most qualified Emergency Department staff (i.e. Unit Clerk, CCT, etc.)
Registration Officer	Senior Access Manager, or most qualified

- Command to Coordination…
  - Available staffing
  - Pre-planned positions
  - Pre-planned posts
  - *Unified Coordination*

Position	Suggested Assignment
Emergency Department Branch Director	Charge Registered Nurse, or most qualified Registered Nurse
Medical Officer	Senior Emergency Department Attending, or most qualified Attending
Critical Intake Officer	Critical Area Registered Nurse, or most qualified Registered Nurse
Critical Intake Medical Supervisor	Senior Trauma Attending, or most qualified Attending
Delayed Intake Officer	Fast Track Area Charge Registered Nurse, or most qualified Registered Nurse
Delayed Intake Medical Supervisor	Emergency Department Attending, or most qualified Emergency Department provider available
Pediatric Area Manager	Charge Registered Nurse, or most qualified Registered Nurse
Main Treatment Officer	Charge Registered Nurse, or most qualified Registered Nurse
Main Treatment Medical Supervisor	Most qualified provider
Advanced Triage Officer	Adult Triage Registered Nurse, or most qualified Registered Nurse
Helipad Manager	Adult Triage Registered Nurse, or most qualified Registered Nurse
Decontamination Officer	Most qualified Emergency Department staff
Resource Accountability Officer	Most qualified Emergency Department staff (i.e. Unit Clerk, CCT, etc.)
Patient Tracking Manager	Most qualified Emergency Department staff (i.e. Unit Clerk, CCT, etc.)
Registration Officer	Senior Access Manager, or most qualified

- Command to Coordination…
  - Working in groups and based off identified functions, determine where posts would be to successfully manage mass casualty incident response

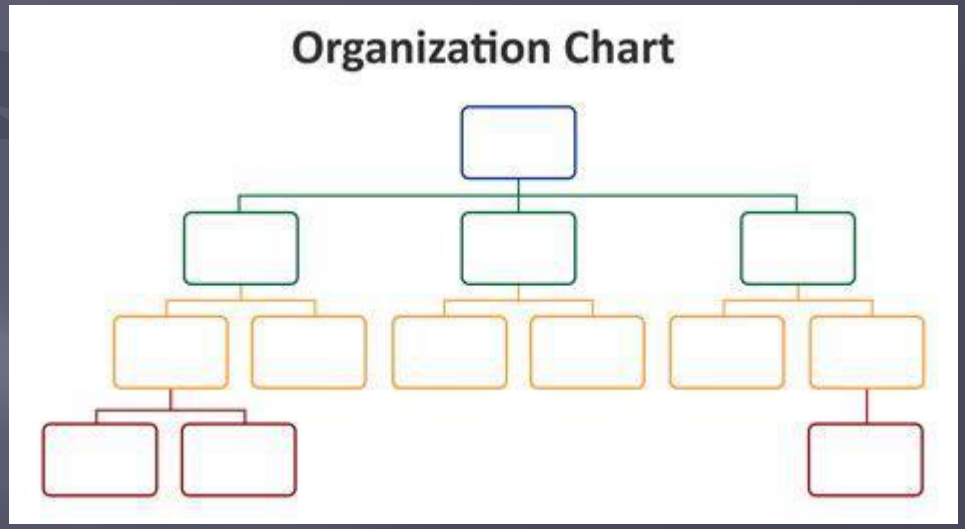
Workbook – Posts



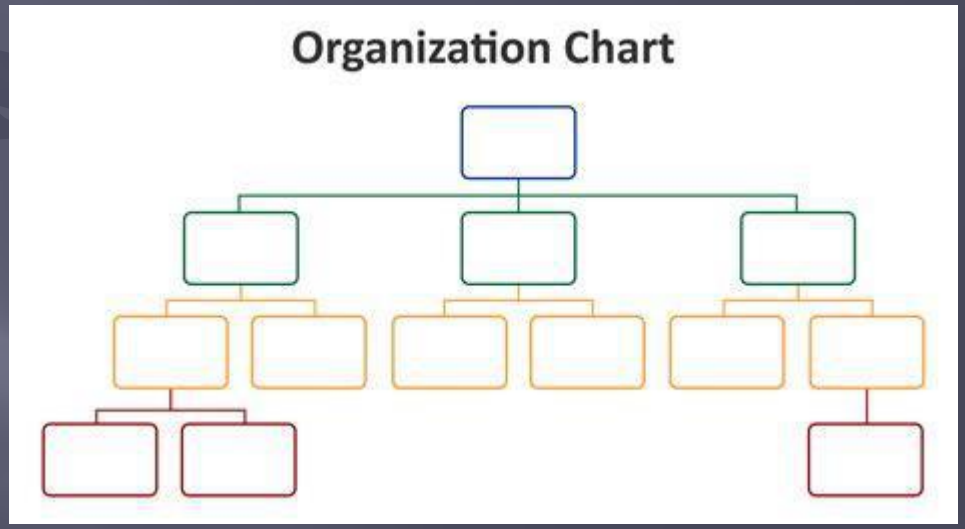
- Command to Coordination…
  - Pre-planned posts

Area Designation	Suggested Assigned From	Operation
Emergency Department Command Post	ED Conference Room	Determination of overall department operations including: • Safety • Objective Development • Communication
Advanced Triage Area	Ambulance Entrance / Helipad	Initial sorting of patients based on established criteria and assignment to appropriate Intake Area as well as initiation of life-saving interventions, as appropriate
Critical Intake Area	Critical Care	Initial assessment, treatment, and disposition of immediate acuity patients
Critical Intake Area Pharmacy Post	Med Closet	Location for delivery and distribution of medications primarily to Critical Intake Area
Delayed Intake Area	Rooms 1-8	Initial assessment, treatment, and disposition of mid and low acuity post-pubescent patients
Pediatric Delayed Intake Section	Rooms 9 & 10	Initial assessment, treatment, and disposition of mid and low acuity pre-pubescent patients
Main Treatment Area	Main Emergency Department – Adult / Pediatrics	Continued assessment and treatment of all patients
Resource Accountability Area	Acute Care Building Elevator Hallway / Hallway outside Pediatric ED entrance	Receiving, deployment, and tracking of all resources assigned to the Emergency Department
Decontamination Area	Ambulance Parking	Receiving and decontamination of patients as well as initiation of life-saving interventions, as appropriate, prior to assignment to Advanced Triage Area
Registration Post	Appropriate Registration stations	Access manager

- Command to Coordination…
  - Establishing Unified Command
  - Development of Unified Coordination
  - Integration into facility response
  - Chain of Command
  - Span of Control

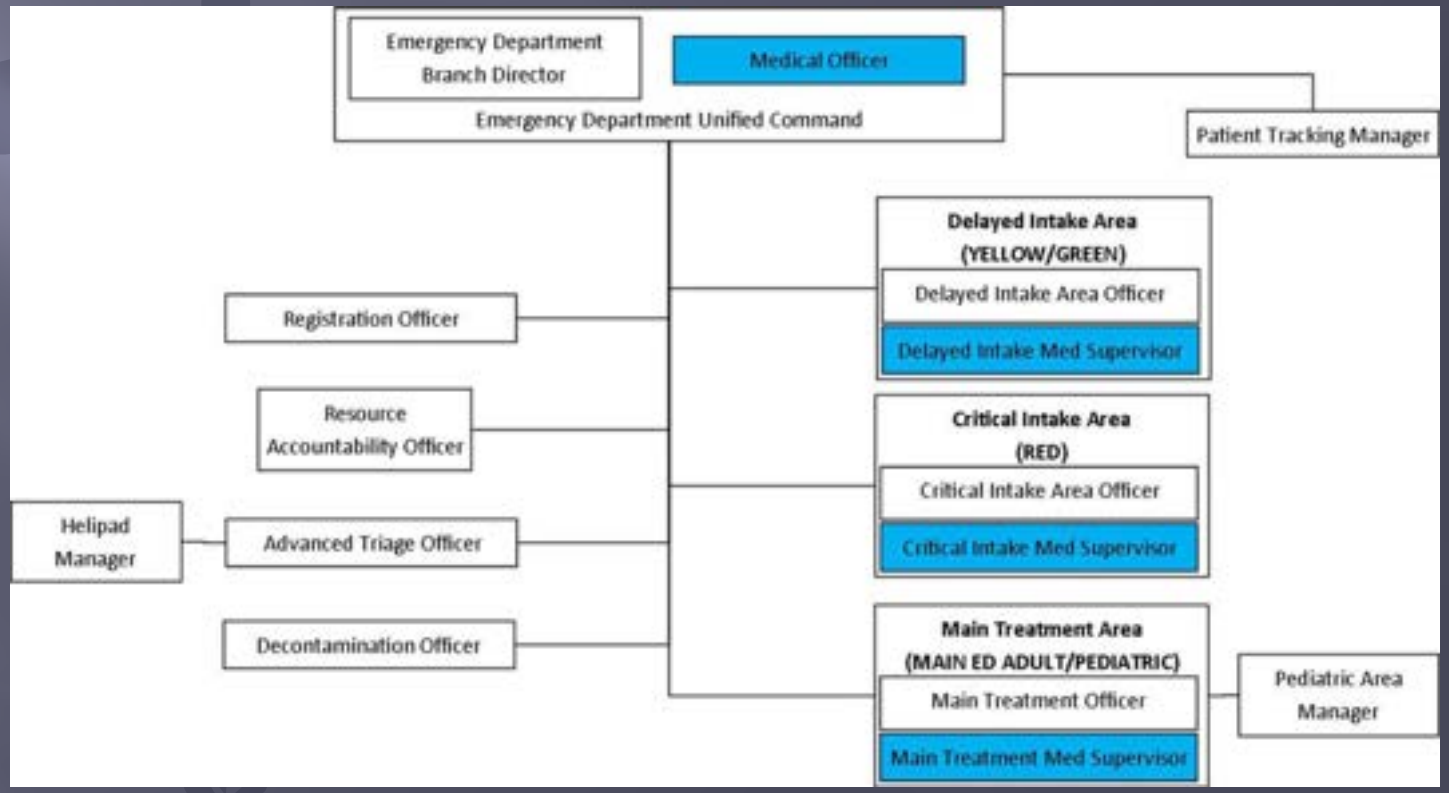


- Command to Coordination…
  - Working in groups and based off identified roles, determine what your ideal organization structure looks like.

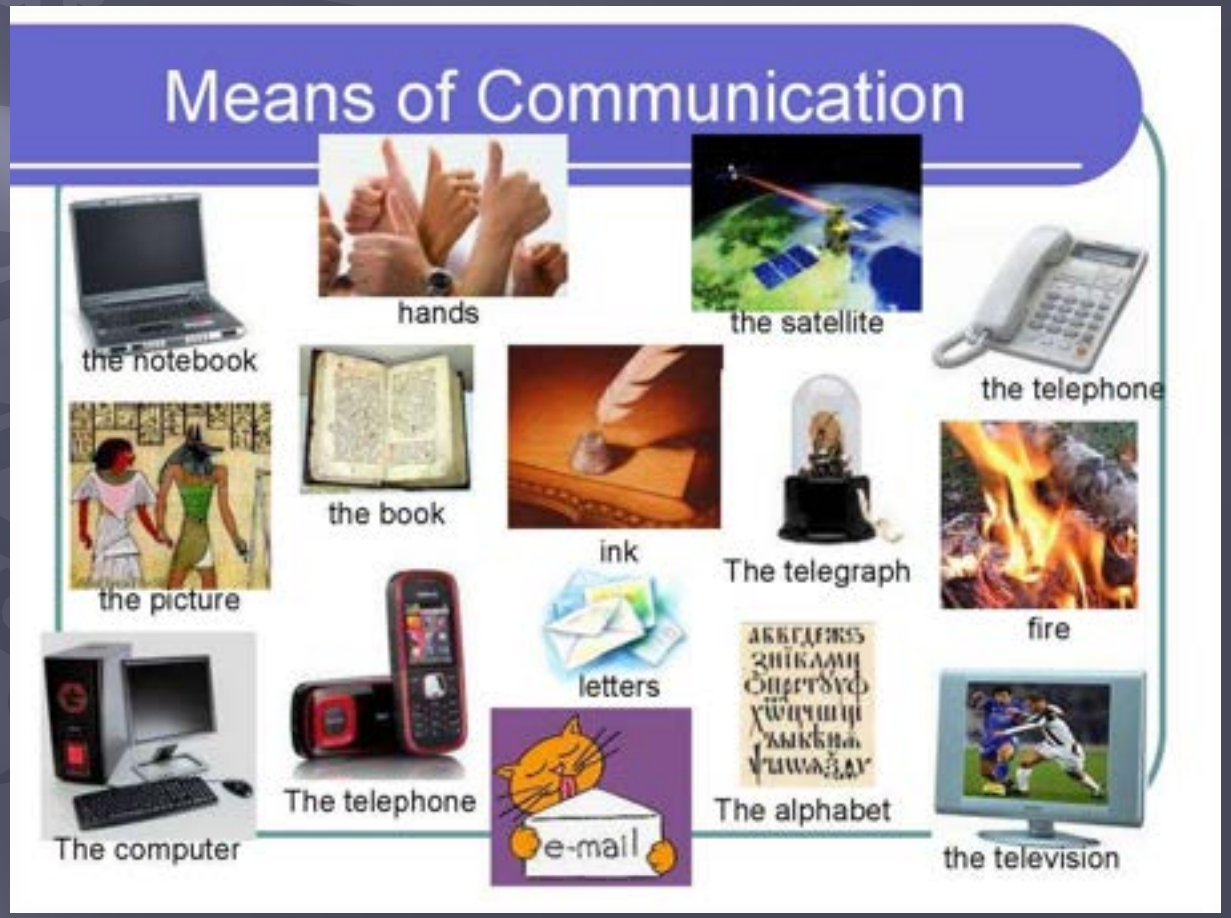


Workbook – Organization

- Command to Coordination…
  - Establishing Unified Command
  - Development of Unified Coordination
  - Integration into facility response
  - Chain of Command
  - Span of Control



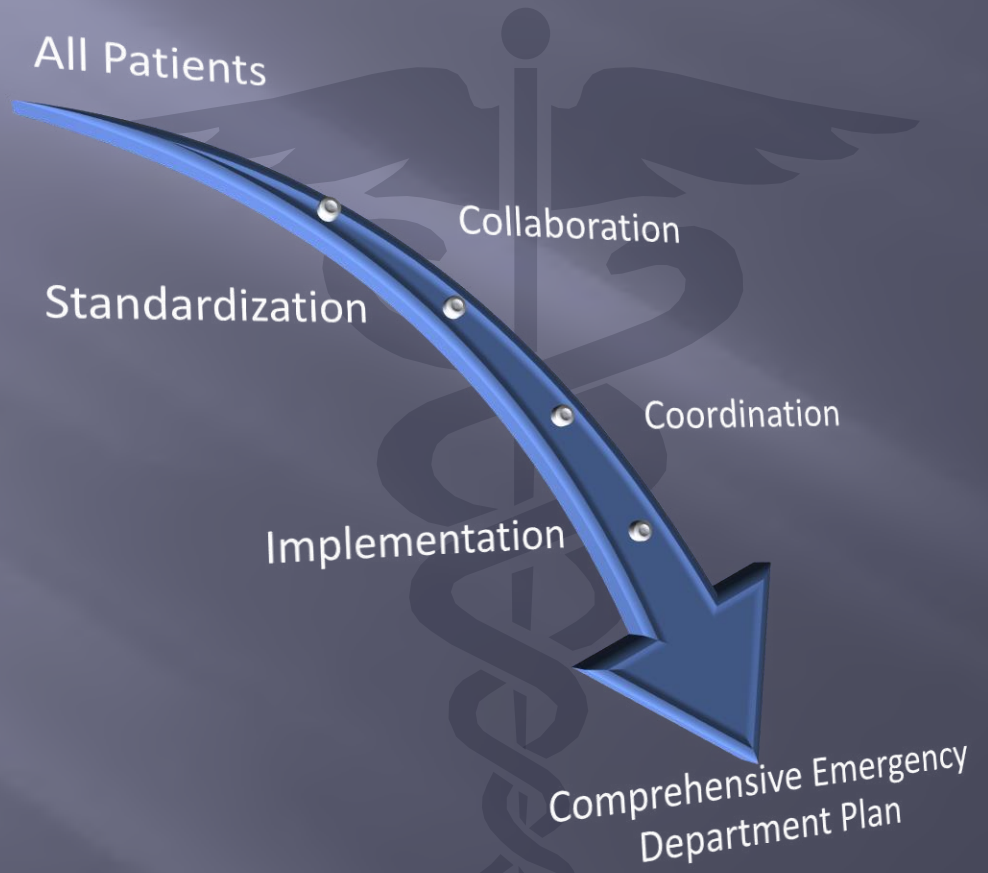
- Communication Considerations
  - Who
  - What
  - Where
  - When
  - How



- Any questions so far….

Next: Plan Development


Oh, wait! I don't want to do that!


All Patients
Collaboration
Standardization
Coordination
Implementation
Comprehensive Emergency Department Plan

- Planning Considerations
  - Working in groups, determine what section headers you would want to include in your Emergency Department Plan

Workbook – Planning

Purpose	Background/Assumptions	Scope	Activation	Objectives	Incident Command Structure
Incident Area Designations	Pre-Incident Patient Disposition	Staffing	Equipment	Patient Triage / Advanced Triage	Patient Flow
Patient Identification / Registration	Specialty Patients / Minors	Patient Treatment / Assignment	Documentation / Order Entry	Treatment and Diagnostics	Medication
Patient Tracking and Transport	Incident Patient Disposition	Decontamination	Reunification	Critical Incident Stress Debriefing	**Quick Reference**

- Planning Considerations
  - *Walking through a Plan…*

Workbook – The Plan

- Any questions so far….

Next: Tools

Job Aids, Tools and Their Development

Job Aids, Tools and Their Development

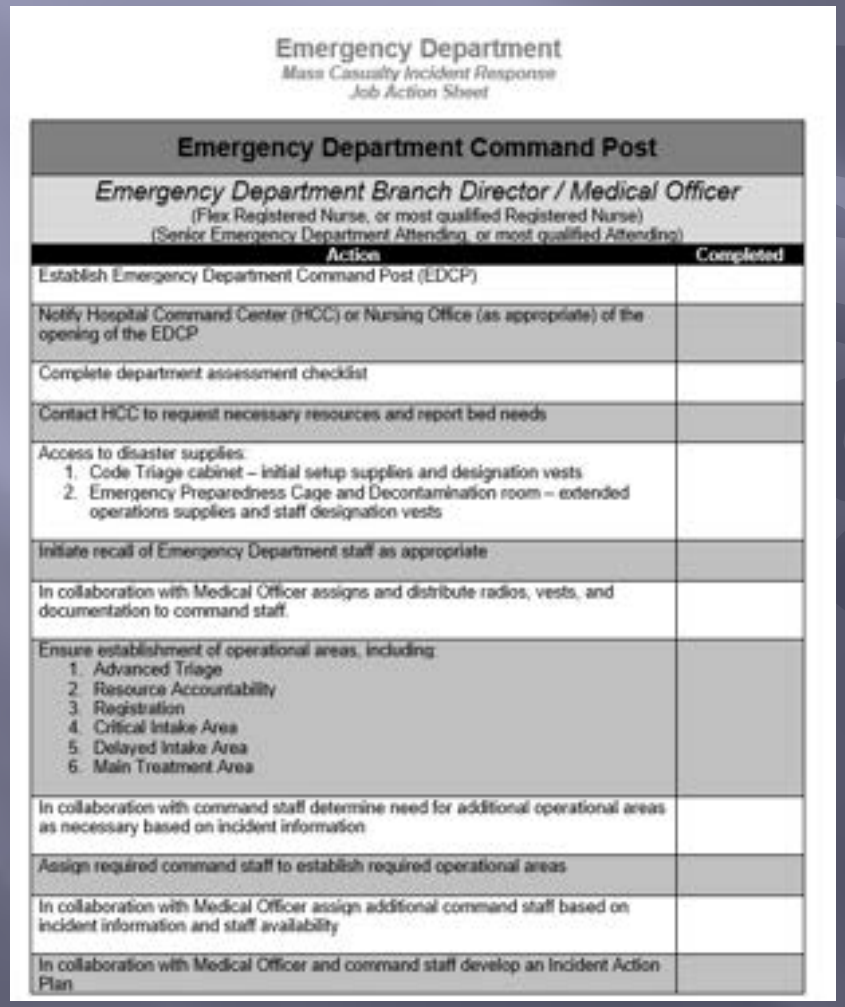
- Tool Considerations
  - *What types of job aids and tools would you look to develop to help standardize a MCI response for your Emergency Department team?*

Workbook – Job Aids and Tools

Job Aids, Tools and Their Development

Job Aids, Tools and Their Development

- Job Action Sheet

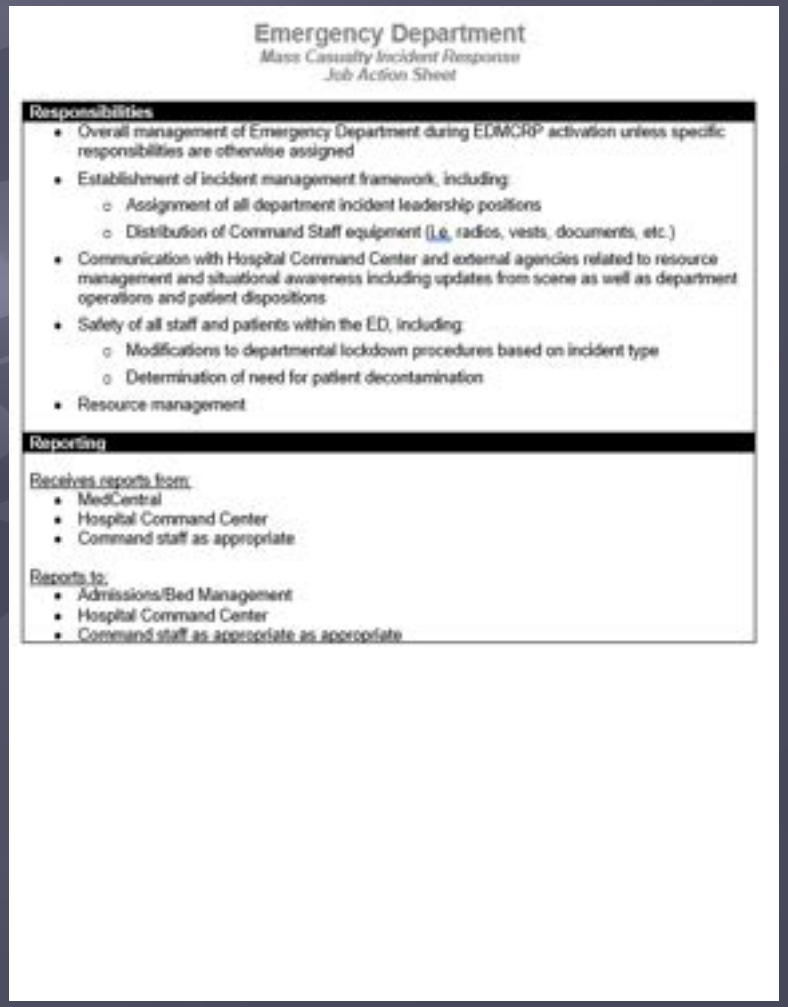


Emergency Department
Mass Casualty Incident Response
Job Action Sheet

Emergency Department Command Post

Emergency Department Branch Director / Medical Officer
(Flex Registered Nurse, or most qualified Registered Nurse)
(Senior Emergency Department Attending, or most qualified Attending)

Action	Completed
Establish Emergency Department Command Post (EDCP)	
Notify Hospital Command Center (HCC) or Nursing Office (as appropriate) of the opening of the EDCP	
Complete department assessment checklist	
Contact HCC to request necessary resources and report bed needs	
Access to disaster supplies 1. Code Triage cabinet – initial setup supplies and designation vests 2. Emergency Preparedness Cage and Decontamination room – extended operations supplies and staff designation vests	
Initiate recall of Emergency Department staff as appropriate	
In collaboration with Medical Officer assigns and distribute radios, vests, and documentation to command staff.	
Ensure establishment of operational areas, including: 1. Advanced Triage 2. Resource Accountability 3. Registration 4. Critical Intake Area 5. Delayed Intake Area 6. Main Treatment Area	
In collaboration with command staff determine need for additional operational areas as necessary based on incident information	
Assign required command staff to establish required operational areas	
In collaboration with Medical Officer assign additional command staff based on incident information and staff availability	
In collaboration with Medical Officer and command staff develop an Incident Action Plan	



Emergency Department
Mass Casualty Incident Response
Job Action Sheet

Responsibilities

- Overall management of Emergency Department during EDMCRP activation unless specific responsibilities are otherwise assigned
- Establishment of incident management framework, including:
  - Assignment of all department incident leadership positions
  - Distribution of Command Staff equipment (i.e. radios, vests, documents, etc.)
- Communication with Hospital Command Center and external agencies related to resource management and situational awareness including updates from scene as well as department operations and patient dispositions
- Safety of all staff and patients within the ED, including:
  - Modifications to departmental lockdown procedures based on incident type
  - Determination of need for patient decontamination
- Resource management

Reporting

Receives reports from:
- MedCentral
- Hospital Command Center
- Command staff as appropriate

Reports to:
- Admissions/Bed Management
- Hospital Command Center
- Command staff as appropriate as appropriate

Job Aids, Tools and Their Development

- Incident Action Plan / Department Assessment Tool

Emergency Department
Department Management Plan
(To be completed by Branch Director)

Date | Operational Period: From ____ To ____ | ☐ Initial Documentation (Complete all areas) ☐ DMP Modification (Exclude shaded areas)

Incident Nature / Cause (Select All Appropriate)
☐ Transportation Accident ☐ Structural Collapse ☐ HAZMAT/CBRNE (Consider decontamination setup) ☐ Fire/Smoke Condition ☐ Infrastructure Failure ☐ Security/Law ☐ Mass Casualty Incident ☐ Clinical / Public Health

Department Notification Time
Hospital Activation Time

Incident Name designated as location and type (i.e. Turnpike Bus Accident)

Incident Summary (Known incident information—i.e., type of chemical, number of victims, types of injuries, etc.)

Notifications Made / Discussions Had
☐ Nursing Supervision ☐ ED Area Charge RN / Supervisors ☐ ED Leadership
☐ ED Attending ☐ Pediatric Emergency Department (as appropriate) ☐ Command Center (as appropriate)

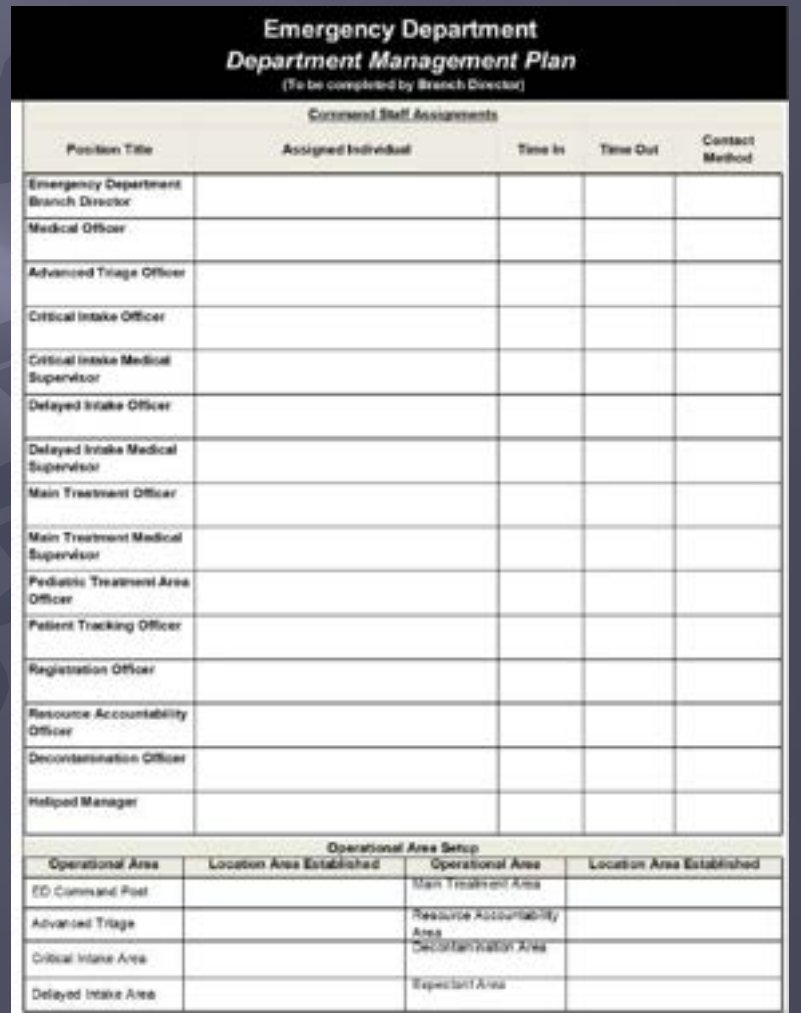
Goals of Operational Period
☐ Establish, or maintain, incident command
☐ Establish, or maintain, appropriate operational areas (Advanced Triage, Intake, Treatment, etc.)
☐ Establish, or maintain, appropriate patient care capabilities, patient tracking, and patient treatment
☐ Establish, or maintain, staff and resource tracking and accountability

Summary of Operational Period (Outline of proposed operations such as established areas, plans for resources, etc.)

Initial/Start of Operational Period Department Assessment

Total Census			Current Staffing		Current Resources		
Total Available Spaces			RN		Stretcher		
Admitted Census (Total)			CCT		Wheelchair		
Intensive Care Unit			Unit Clerk		IV Pump		
Intermediate Care Unit			Provider		Cardiac Monitor		
Telemetry			Pharmacist		Other		
Medical Surgical			Ancillary				

Completed By:



Emergency Department
Department Management Plan
(To be completed by Branch Director)

Command Staff Assignments

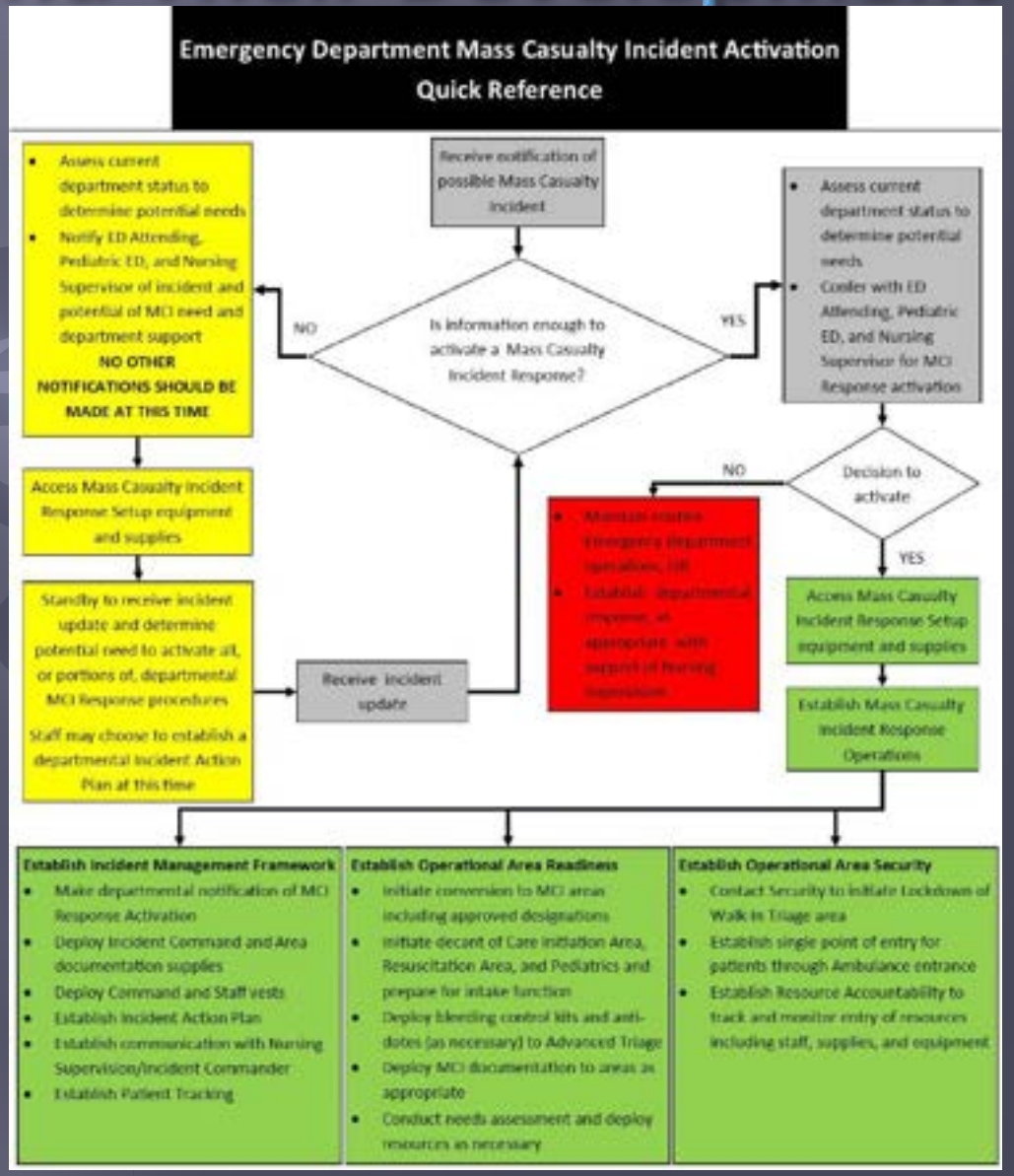
Position Title	Assigned Individual	Time In	Time Out	Contact Method
Emergency Department Branch Director				
Medical Officer				
Advanced Triage Officer				
Critical Intake Officer				
Critical Intake Medical Supervisor				
Delayed Intake Officer				
Delayed Intake Medical Supervisor				
Main Treatment Officer				
Main Treatment Medical Supervisor				
Pediatric Treatment Area Officer				
Patient Tracking Officer				
Registration Officer				
Resource Accountability Officer				
Decontamination Officer				
Helipad Manager				

Operational Area Setup

Operational Area	Location Area Established	Operational Area	Location Area Established
ED Command Post		Main Treatment Area	
Advanced Triage		Resource Accountability Area	
Critical Intake Area		Decontamination Area	
Delayed Intake Area		Expectant Area	

Job Aids, Tools and Their Development

- Activation Flow Chart



Job Aids, Tools and Their Development

- Additional Tools…
  - Follow-up with your team to see what will help them initiate and respond to a MCI
  - Determine how to summarize and guide
  - Remember, simple standardizes

Next Steps

- Thank you for your time and attention
- Here is the simple part for me…the next steps are up to you
  - Develop a planning team
  - Review considerations
  - Multi-disciplinary planning sessions
  - Tabletop, Functional, Full-Scale
  - Review and update

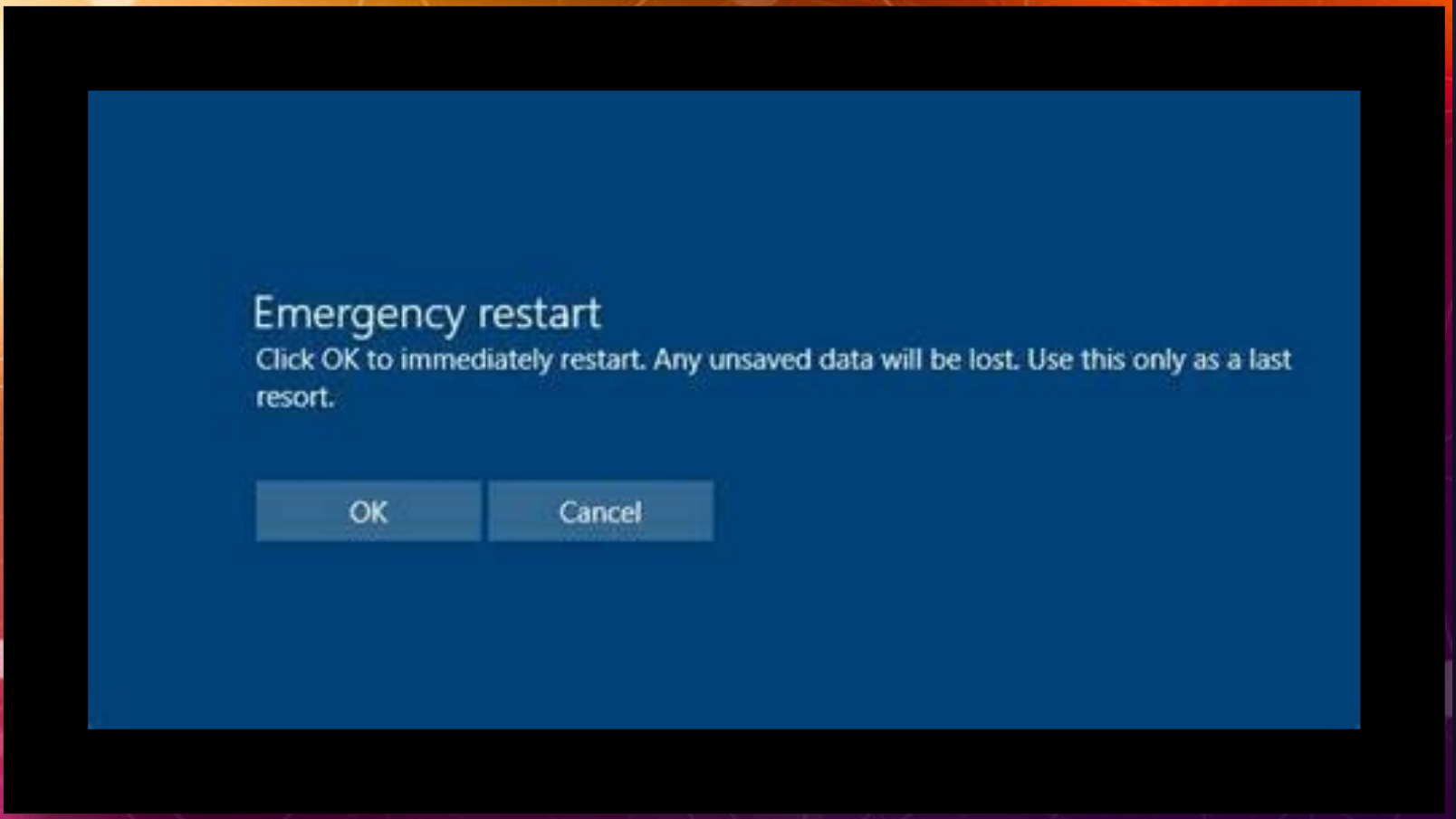
- Final Questions….
- Future Questions
  - Connect at AHEPP
  - E-mail: paul.mikita@rwjbh.org

Next Steps

Paul Mikita

Assistant Director, Corporate Office of Emergency Management

RWJBarnabas Health System



Restarting an Emergency Management Program

Presented by: Deb Teske, HcEM-M, CEM
Mayo Clinic

Agenda

with interactive activities interspersed

Introduction

Overview of the original state

Challenges

Movement forward

Tools and templates

Conclusion

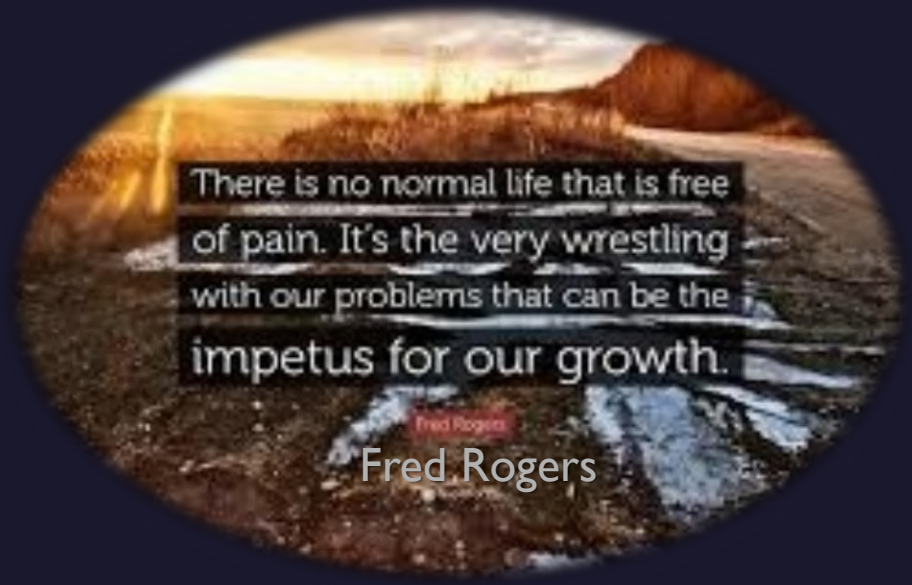
Introductions

Initiating Situation – Minnesota Mayo Clinic Health System

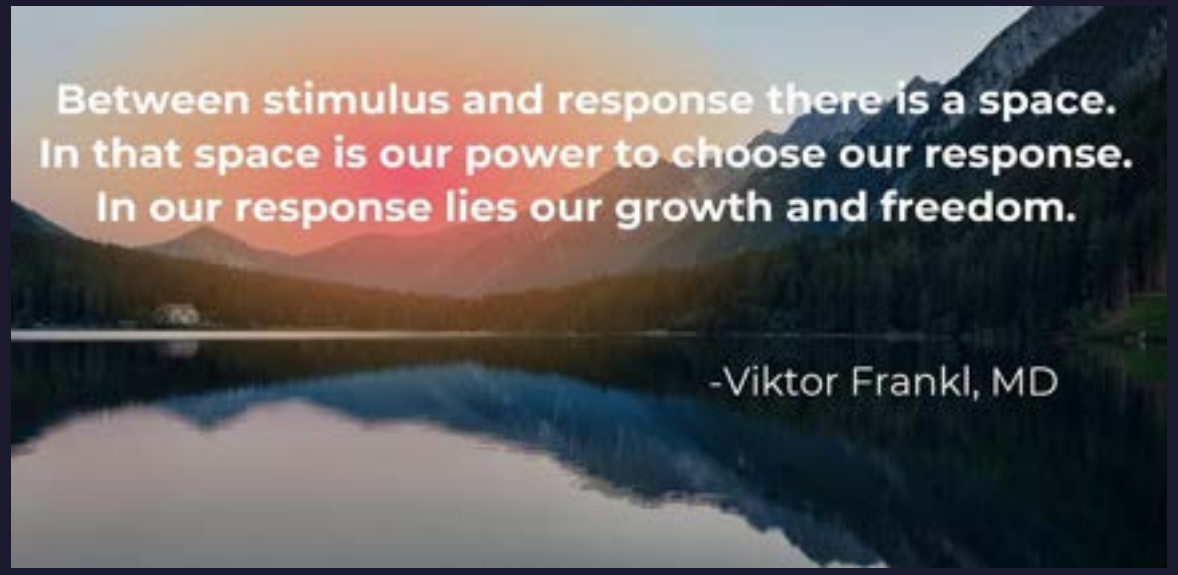
10 Hospitals

- Critical access to Trauma level 3
- Multiple clinics and other buildings

What to do?



"The keynote of progress ... is system and organization — in other words, 'team work.'"
Charles H. Mayo, M.D.
(The Examination, Preparation and Care of Surgical Patients. *Journal-Lancet,* 36:1-4 (Jan. 1) 1916)



What do you think is the biggest challenge when it comes to successfully establishing or restarting an emergency management program?

1. Staff understanding what Emergency Management is and why it is important

2. Functioning and engaged Emergency Management Committee with the right membership

3. Leadership buy-in of the importance of disaster preparedness

4. Having dedicated Emergency Management staff

5. Emergency Management budget

Group Activity

Find at least 3 others with the same number of fingers up and meet up to talk about the area you feel is the biggest challenge. Brainstorm some options to address those concerns.

Ask the 5 Whys

Group Sharing

What is the biggest challenge?
Brainstorm some options to address those concerns.

Staff understanding of EM & its importance

Functioning/engaged EM Committee

Leadership buy-in

Dedicated EM staff

EM budget

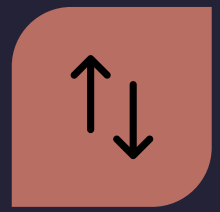
Possible Solutions

(Group Sharing)

The Process We Used

ASSESS SITUATION

IDENTIFY MAJOR ISSUES



PRIORITIZE

DEVELOP STRATEGIC PLAN

COMMUNICATE (ADKAR)

CREATE TOOLS

REESTABLISH LOCAL EM COMMITTEES

GET LOCAL BUY-IN

ESTABLISH EM METRICS

DEVELOP WORK PLANS

IMPLEMENT WORK PLANS

COMMUNICATE

Assess the Situation

External Audit

Interviews with leadership

Review Plans

Assess regulatory compliance

Collate results

Should have:

- Conducted informal discussion with frontline staff regarding their awareness of EM and needs
- Use this time to find EM champions at local sites

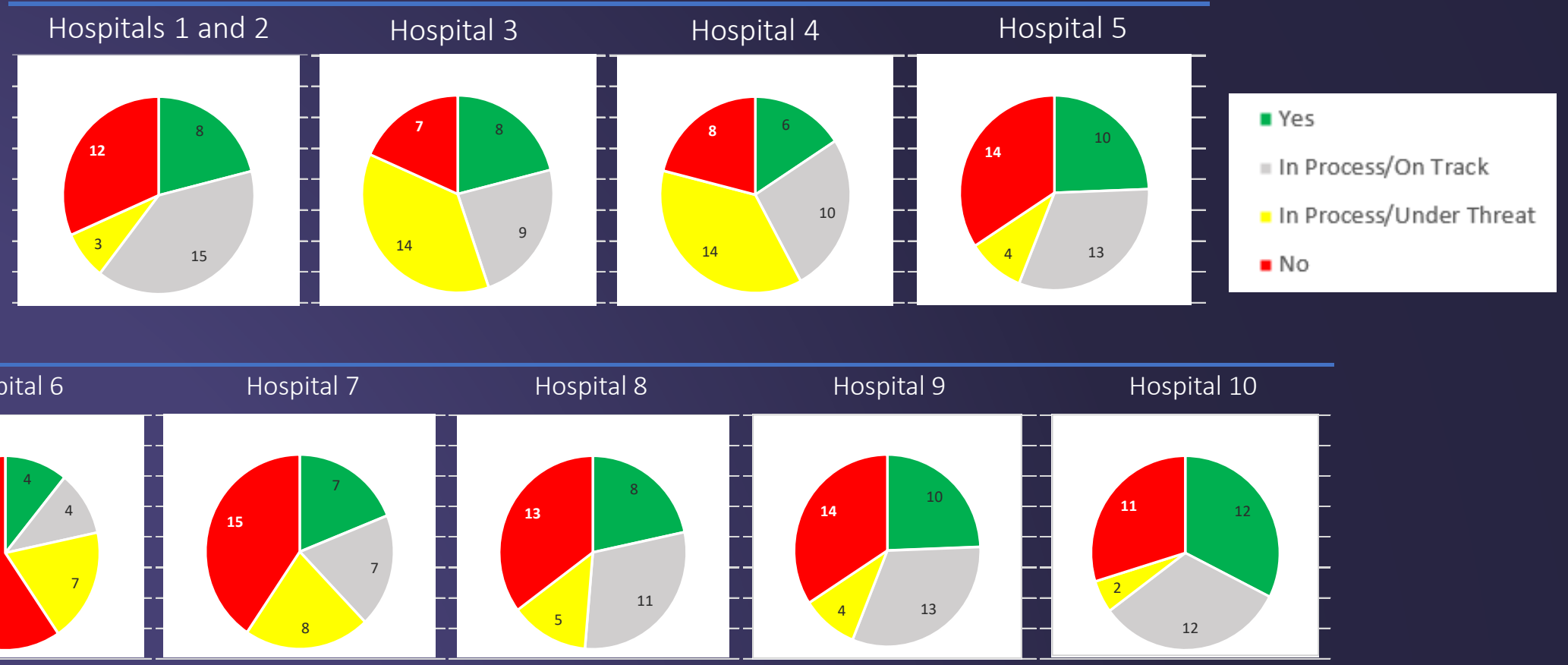
Identified Major Issues

IDENTIFY MAJOR ISSUES

- No support for EM
- No EM committee
- Limited leadership support
- Majority of plans over three years old
- Only annual preparedness training for staff
- No exercise or training plan
- No dedicated HICS personnel or training

Program	Alignment	Sustainability	Compliance
Hazard Vulnerability Assessments			
Emergency Management Plan			

EM Metrics March 2024



"I would admonish you, above all other considerations, to be honest. I mean honesty in every conception of the word: Let it enter into all the details of your work." **William J. Mayo, M.D.**

(Commencement Address, Rush Medical College, University of Chicago, June 15, 1910. *Collected Papers of St. Mary's Hospital, Mayo Clinic.* 1910; 2:557-566)

Prioritize

- No support for EM
- No EM committee
- Limited leadership support
- Majority of plans over three years old
- Only annual preparedness training for staff
- No exercise or training plan
- No dedicated HICS personnel or training

How would you prioritize this list?

Group Sharing

What should be the focus and why? Work out pros and cons.

DEVELOP STRATEGIC PLAN

Create Strategic Plan

Table of Contents

Keys for Leadership

Measure progress

Measure compliance

Clear roles and goals

Standardization

Roles and Responsibilities

Item	Site/Regional Operational Owner	Est. Time Initial/ Continuous	EM Support	Outcome
Annual Preparedness Training	Monitor staff participation and provide input to training content	1 hr per qtr/ 1 hr per yr	Review and update required preparedness training in MyLearning with operational input	Staff prepared to respond to emergencies Meet TJC EM 09.01.01, EM 10.01.01, EM 15.01.01
Emergency Operations Planning	Provide site leadership (including medical staff) oversight and input into the plan through a site EM committee who updates plans including: • MCI (Multiple/ Mass Casualty Incident) • Evacuation • Sheltering-in-Place	1 hr per month/ 1 hr per qtr	Provide advice to site EM committee that oversees the update of the EOP (Emergency Operations Plan)	Meet TJC EM 09.01.01, EM 10.01.01, EM 12.01.01, EM 12.01.01, EM 12.02.07, EM 12.02.09, EM 12.02.11
HICS Planning	Identify leaders to fill HICS (Healthcare Incident Command) roles, establish authority of HICS and HICS processes		Advise HICS on best practices	Meet TJC EM 09.01.01, EM 10.01.01, EM 12.01.01
Emergency Communications Planning	Determine communication methods and processes	1 hr per qtr/ 1 hr per yr	Advise on best practices Help establish connections with other local/regional response groups	Meet TJC EM 09.01.01, EM 10.01.01, EM 12.01.01, EM 12.02.01

Sample Portions of Strategic Plan

Add'l Sections

Goals

This process will involve some initial meetings with leadership and other impacted staff. Out of these meetings, the initial goals for this integration will be to:

- Understand current state of Emergency Preparedness at each site.
- Create efficiencies within Rochester and the SWMN regional sites for drills, exercises, and tabletops.
- Address site-specific needs and gaps in Emergency Preparedness.
- Create learning opportunities for all staff at all sites based on needs.
- Create standardized (aligned) processes, procedures, and sustainable systems where feasible across the SWMN Region and Rochester.
- Identify local staff and create organizational structure to lead, engage and manage Emergency Preparedness requirements.
- Ensure TJC requirements are met.
- Establish metrics for the emergency management program.
- Communicate the established metrics and scores to leaders.

Action Items

Action	Person Assigned	Target Date	Completed Date
1. Identify Administrative, Nursing, and Physician Leadership participation as EM Champions and lead of the EM Committee which should meet at least quarterly	Leadership	4th Qtr 2023	
a. Develop draft charter to include review of EOP and site preparedness/response training	Deb Teske	Jan 2023	
b. Identify members to fill roles in EM Committees including Chair	Leadership	Mar 2023	
c. Committees established with representation from the primary response departments (instead of just mainly Facilities and EM)	Leadership	Jun 2023	
d. Assess HICS structures at each site and the region to determine the best way forward. Prepare an SBAR to EM Committee on the best way forward.	Deb Teske	Aug 2024	
2. Establish metrics for EM		1st Qtr 2024	
a. Develop draft metrics	Deb Teske	Jan 2024	
b. Obtain leadership input on draft metrics	EM Committee	Feb 2024	
c. Review and approve metrics at EM Committees	EM Committee	Mar 2024	
3. Establish and Approve Exercise/Drill planning processes	EM Committee	2nd Qtr 2024	
a. Establish site exercise planning teams	EM Committee	Apr 2024	
b. Develop multi-year exercise plan	EM Committee	May 2024	
c. Review and approve exercise plan at EM Committees	EM Committee	Jun 2024	
4. Assess the Emergency Response Plans for update and consistency. Provide SBAR to EM committees for consideration on updates needed.	EM Committee	3rd Qtr 2024	
5. Assess the HICS preparedness training provided at sites	EM Committee	Sep 2024	
a. HICS training assessed with plan developed for training going forward and provide SBAR to EM Committee	EM Committee	Sep 2024	
6. Assess training needs for Site-specific response plans (i.e., MCI) and provide SBAR to EM Committee	EM Committee	Nov 2024	
a. Review Hazmat/Decon processes/equipment/training and identify opportunities for consistency and alignment where practical.	EM Committee	May 2024	
7. Implement HICS structure for coordinated action in SWMN	EM Committee	2nd Qtr 2024	

Communicate (ADKAR)

COMMUNICATE (ADKAR)

Stakeholder Analysis

Stakeholder	Role	Approach	Key Interests & Issues	Impact	Current Status	Strategies	Long-Term Engagement
Work Area Supervisors	Responsible	Supervisor article	Time & understanding	High	Unaware	Templates, QRGs	Rounding and fire drill checks
Front-line Staff	Informed	All staff article	Safety & Knowledge	Medium	Unaware	Articles	Rounding and fire drill checks
Site EM Committees	Accountable	Meeting	Staff knowledge & TJC	Medium	Supportive	Input and monitoring	Remind work areas when base plan reviewed

Communication Plan

COMMUNICATE (ADKAR)

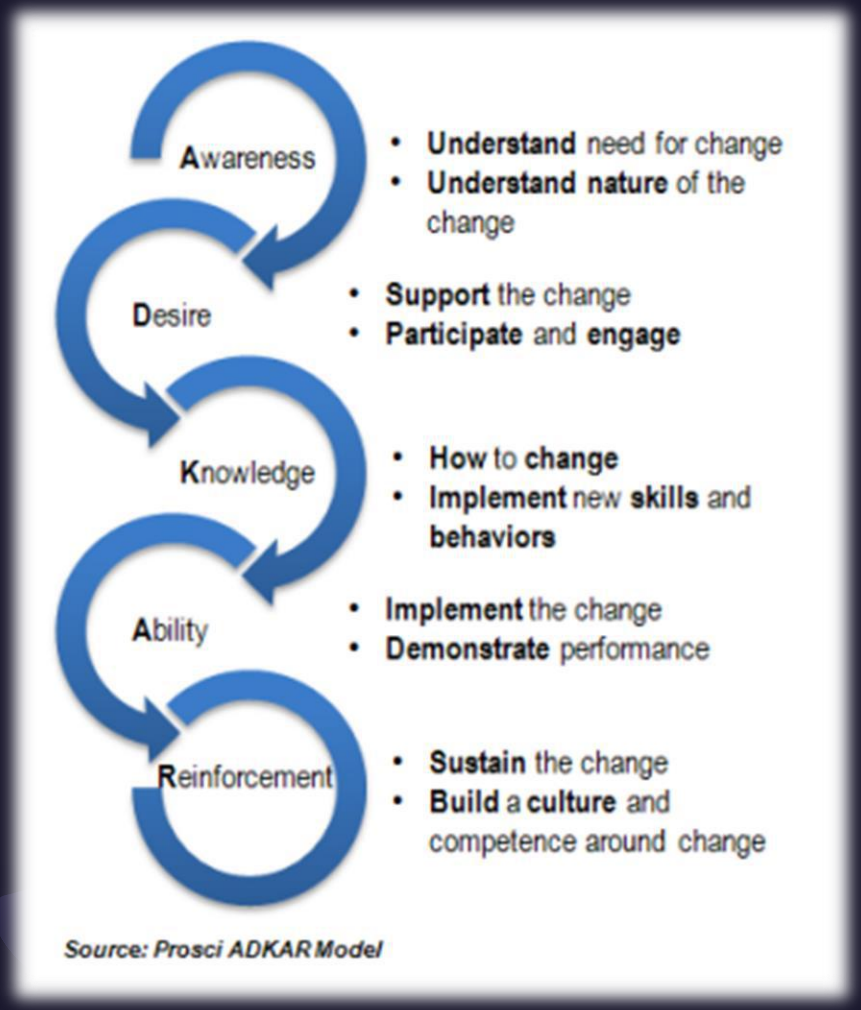


Table of Contents

Create tools

CREATE TOOLS

Developed templates for:

- **EM Committee Charge**
- **Site Training and Exercise Plan template**
- **EM Committee Work Plan**
- **Response and Operations Plan templates**
  - Emergency Operations base with Annex for site
  - Hospital Surge
  - MCI
  - Decon
  - Relocation/Evacuation
  - Shelter-in-Place
  - Weather

Committee Charge

- Scope
- Charge
- Structure including suggested membership

[Name] Emergency Management Committee Charge

Rev. 10/13/2023

Scope:

The [name] EM Committee covers the [hospital] in [location(s)].

Charge:

The charge of the [name] EM Committee is to oversee the Hazard Vulnerability Assessment, and emergency/disaster plans as well as the training and exercise plan related to these plans including but not limited to Emergency Operations Plan. The committee will:

- Conduct effective management reviews of the Emergency Management Program providing up-to-date plans, training, and exercises to ensure that staff are prepared to respond to emergencies and disasters.
    - Establish and track program objectives and metrics.
    - Conduct a hazard vulnerability assessment and identify updates needed to plans, training and exercises based on this assessment.
- Create, review, update, and implement emergency/disaster *plans* as needed to provide guidance to staff about responding to emergencies/disasters.
- Create, review, update, and implement emergency/disaster *training* to provide staff with competency on the emergency/disaster response.
- Create and implement emergency/disaster *exercises* to test the emergency/disaster plans and training to assure staff competency, and appropriate response capabilities.
- Ensure compliance with applicable standards and regulations.
    - Monitor and evaluate program activities for effectiveness of preparedness and response plans including compliance to applicable regulatory requirements (i.e., The Joint Commission Emergency Management chapter).
- Communicate Emergency Management program progress and status to leadership and other applicable committees.
- Direct and support improvement of the Emergency Management Program, including implementation of standard-based and best practice initiatives.
- Proactively assess new emergency management studies, articles and best practices for application to EM program.

Note: Although the committee may provide support to a specific work area through templates, training and exercises, work area level planning is not within the scope of this charge; work area supervisors/managers are responsible for developing/updating work area level plans.

REESTABLISH LOCAL EM COMMITTEES

REESTABLISH LOCAL EM COMMITTEES

- Identify operational owner (Chair) at each site
- Work with operational owner to find a representative for major departments. Balance between:
  - Manager/supervisor level and front-line staff
  - Decision-makers and passion for EM

The Joint Commission EM 10.01.01 EP3

The hospital has a multidisciplinary committee that oversees the emergency management program. The committee includes the emergency program lead and other participants identified by the hospital; meeting frequency, goals, and responsibilities are defined by the committee.

Share your experience with establishing or managing Emergency Management Committees. If you don't have a committee, share how you get input and approval on EM program and plans.

Group Sharing

Share about Emergency Management Committees.

Our Membership Recommendation

- Communications
- Desk Operations
- Emergency Department
- Emergency Management (in advisory role)
- Facilities
- Global Security
- Hospital Operations
- Human Resources
- Information Technology/Informatics
- Laboratory Medicine and Pathology
- Nursing
- Outpatient Operations
- Patient Experience
- Pharmacy
- Radiology
- Safety
- Supply Chain
- Telephone Operators/Switchboard
- Transporters

Committee Members Role

- Represent their area of expertise; provide subject matter expertise to group discussions.
- Have the authority to make decisions for their represented functional area.
- Actively participate in setting preparedness priorities.
- Support achievement of preparedness goals and objectives.
- Implement emergency/disaster plans in the areas they represent.
- Communicate EM activities and information to their represented functional area as appropriate.

Get local buy-in

GET LOCAL BUY-IN

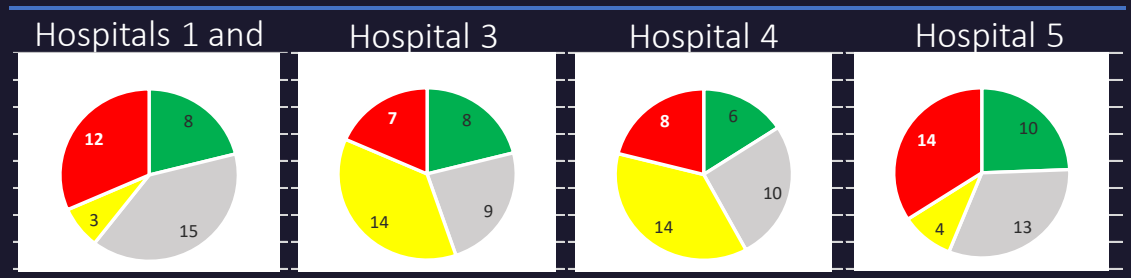
- Find pain points
- Create value
  - ➢New simple website
  - ➢New SharePoint site for documents
- Reconnect to:
  - ➢County EM/ Public Health
  - ➢Regional Healthcare Coalition
- Provide updates/touchpoints for EM Committee Chairs and Leadership

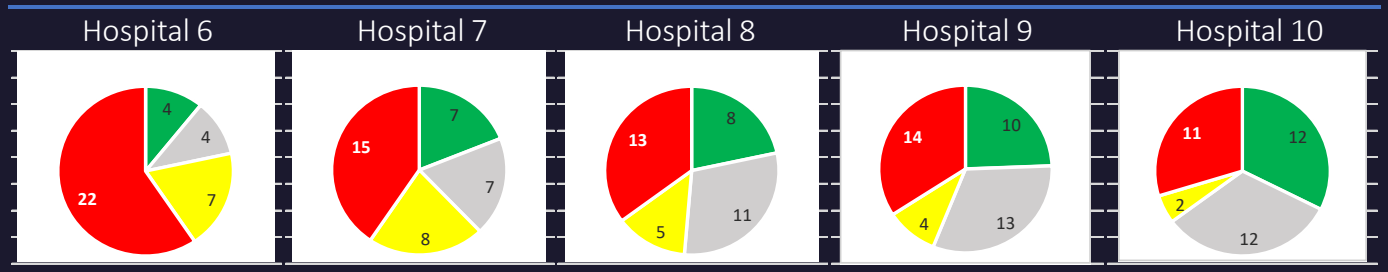
ESTABLISH EM METRICS

Approve EM Metrics

37 goals with a performance measure attached to each.

Ref	Goal	Performance Indicator	Metric	Goal
EM 09.01.01 EM 10.01.01 EP 4	EM Committee(s) reviews EM program elements.	Reviewed/updated bi-annually	Yes	Yes
EM10.01.01 EP 1	Leadership engages and provides oversight of EM program.	% Attendance at EM committee meetings	Yes	75%
EM 10.01.01 EP 2	Qualified Emergency Management positions assigned and resourced.	FTE assigned and resourced	Yes	100%
EM 10.01.01 EP 3	EM Committee(s) reviews/updates its charter and members.	Update date < three years	Yes	Yes
EM 11.01.01 EP 1, 2, 3	Hazard Vulnerability Analysis (HVA)/Risk Assessment reviewed/updated (Input to site's risk assessment in Sustainable Planner).	Reviewed/updated annually	Yes	Yes
EM 11.01.01 EP 4	EM Committee(s) reviews the HVA/Risk Assessment and identifies actions to reduce impact.	Reviewed annually	Yes	Yes
EM 12.01.01	Emergency Operation Plan meets the requirements and is reviewed/updated.	Reviewed/updated bi-annually	Yes	Yes
EM 12.01.01	Emergency Preparedness/Response Plans meets the requirements and is reviewed/updated.	Reviewed/updated bi-annually	In Process/On Track	Yes





DEVELOP WORK PLANS

Develop Work Plans

Each Committee determines timeframe and priorities

Work Plan for Emergency Management Committee

Last Update: [insert date]

	On Target/No Barriers
	Minor Challenges
	Significant Barriers
	Complete
	No Action to Date

Overall Purpose: Oversee the Emergency Management Program.

Scope: [enter scope of committee]

Recommendation/Action	Responsibility	Status	Due Date	Notes
1. EM Committee Governance				
1.1. Review charter and meeting cadence	EM Chair			
1.2. Assess membership	EM Chair			
2. Hazard Vulnerability Assessment				
2.1. Review and update HVA	EM Committee			
3. Standardize and Update Incident Response and Emergency Operations Plans, Policies, Procedures and Guidelines.				
3.1. Review/Update emergency response/ management policies/ procedures/ plans	EM Committee			
[list documents]				
3.1.1. Approve changes	EM Committee			
3.1.2. Communicate policy changes	EM Committee			
4. EM Metrics				
4.1. Review EM metrics and provide to leadership	EM Committee			
5. Develop Preparedness Training				
5.1. Assess training needs for Site-specific response plans	EM Advisor			
5.2. Assess the HICS preparedness training	EM Advisor			
6. Assess HICS structure and document procedures				
6.1. Identify any gaps in HICS response and document activation and response protocols	EM Committee			
6.1.1. Address gaps identified				
7. Complete Disaster Exercises				
7.1. Conduct and document exercises				
7.1.1. Establish site exercise planning teams	EM Committee			
7.1.2. Develop multi-year exercise plan	Exercise Planning Team			

Recommendation/Action	Responsibility	Status	Due Date	Notes
7.1.3. Review and approve exercise plan	EM Committee			
7.2. Conduct exercise for 2024	Exercise Planning Team			
7.2.1. Review and approve After Action Report	EM Committee			
8. Strengthen connection with Coalition and community partners				
8.1. Verify communication from and to coalition	EM Advisor			
8.2. Establish or strengthen connection with local utilities, County EM, County Public Health, EMS agencies and Fire Departments	EM Advisor			

IMPLEMENT
WORK PLANS

IMPLEMENT WORK PLANS

What would you put into your work plan?

How would you encourage buy-in?

What are the issues you would see arising?

Bumps in the Road

- Misunderstandings by leadership
- Changes in Leaders
- Actual response (help and hinderance)

Resources

AHEPP Healthcare Emergency Management Committee Toolkit

EM Committee Agenda Template

EM Committee Charter

EM Metrics Spreadsheet

EM Strategic Plan

Questions?

Deb Teske

Teske.Deborah@mayo.edu

Limited Resource Healthcare Facility Considerations for Disaster Preparedness

Dr. Joel Evans DO

Dr. Caren Herring MSN, RN, NHDP-BC

Objectives

- Identify barriers to emergency preparedness for limited resource facilities.
- Discuss solutions to identified barriers for emergency preparedness in limited resource facilities.
- Apply evidence-based practices to crisis action planning for limited resource facilities.

Background

Mass Shooting in Dadeville, Al.

- 4 Deaths
- 32 Injured

46 bed Community Hospital

- 9 victims taken to surrounding hospitals.
- The rest came to the community hospital.

Literature Review

CINAHL, Cochrane, EBSCOhost, MEDLINE, Google Scholar, and Nursing & Allied Health

Key Terms

- Limited Resource Healthcare MCI
- FSED MCI
- Critical Access Hospital MCI
- Rural Hospital MCI

Results:

- Nothing- Zero Articles

Secondary Literature Review

- CINAHL, Cochrane, EBSCOhost, MEDLINE, Google Scholar, and Nursing & Allied Health
- Key Terms:
  - MCI
- Results:
  - 12, 051 Articles
  - Filtered- Peer Reviewed, Last 5 Years
    - 2, 337 Articles
      - Trauma Centers and Universities

Application of the Literature to Limited Resource Facilities

Multidisciplinary Team Approach

- All Personnel Located at the Facility Represented

Critical Organizational Functions

- Staff Protection
- Direct Production and Processes
- Support- Logistics and Personnel

Threat Forecast

- Natural Disasters
- Man-made Disasters
- Product and Process Disasters
- Fictitious Disasters (False Accusations)

Application of the Literature to Limited Resource Facilities Continued

Pre-Crisis Mitigation Actions

- HVA

Response Planning

- HVA and Resources Available

Teams & Authorities

- HIC Structure
- Ensure Represented at the System Level

Recovery and Restoration

- Collaboration and MOUs

Outcomes

- Identification of Capabilities and Gaps
  - Be Creative with Gap Resolution
- Multidisciplinary Collaboration and Cross Training
  - All staff trained in Stop the Bleed, BLS, SALT Triage
- Collaboration with Outside Agencies for Support
  - Police, Fire, EMS
- All-Hazards Approach
  - One Risk at a Time, Walk Through the Process as a Team
- Create a Guideline to Follow but be Flexible

Example:

- Man-Made Disasters
  - Verify Incident
    - What was the event?
    - Where did the even occur?
    - Was the facility impacted?
  - Activate HICS
  - Notify Patient Care Supervisor
    - Notify Administrator on Call
    - Determine need to active crisis action plan
  - Personal Safety/Personnel Safety
    - Are staff, patients, visitors safe?
    - Is the facility in a safe location/area?
- Environment
  - What is the current environment?
  - Are there any Hazards?
    - Debris, electrical, water, sewage, fires, chemicals?
  - Are systems operational?
    - Utilities, electronic charting, communications?
  - Number of Victims
    - Is anyone injured? How many? Staff/ Patients/ Visitors?
    - Are/Will victims being transported to facility?
      - How many?
    - MOI?
  - Are additional resources needed?
    - Safety?
    - Staff?
    - Stuff?
    - Space?
    - Systems?

Conclusion

More research is needed to identify the unique challenges for limited resource facilities and solutions to these challenges.

Dedication is needed by systems levels to support limited resource facilities to be prepared for disaster situations.

Collaboration and creativity is the answer.

QUESTIONS?

Thank you!

Dr. Joel Evans
jgevans@uabmc.edu

Dr. Caren Herring
ceherri4@sentara.com

ARMED INTRUDER SPOT DRILLS

A beneficial way to engage front line workers

Kim Eischeid, MPA, CHEP
Emergency Preparedness Manager
Nebraska Medicine

Nebraska Medicine

Disclosure Statement

I have no financial interests or relationships to disclose.

- 9,600 employees
- More than 1,400 affiliated physicians
- Two hospitals, anchored by tertiary/quaternary academic medical center, Nebraska Medical Center
- Primary clinical partner of University of Nebraska Medical Center
- 70 specialty and primary care clinics, with 50 specialties and subspecialties
- 809 licensed beds in Omaha and Bellevue
- Region's only 24/7 trauma center providing comprehensive care for adults & children

Objectives:

- Consider what type of armed intruder exercise is right for your organization
- Identify various exercise barriers and look for ways to make it feasible
- Strategically lower the anxiety threshold of frontline staff on this threat.

“Everybody has a plan until they get punched in the mouth”

- Mike Tyson


BREAKING NEWS
POLICE HANDLING SITUATION AT NMC EMERGENCY DEPT.
6NEWS

What type of exercise is right for you?

Discussion Based
- Tabletop
- Games
- Seminar
- Workshop

Operations Based
- Drills
- Functional
- Full Scale

First Pitch: Full Scale Exercise

Pros

- Enhance staff Preparedness
- Interagency Collaboration
- Realistic Training
- Identify areas of opportunity

Cons

- Potential Stress and Trauma
- Space Requirements
- Cost
- Controversial exercise

Photo Credit: Fox 2 Detroit news: Active shooter mock drill held at Beaumont Hospital in Farmington Hills

I struck out

What exercises were right for us

Tabletop Exercise

Spot Drills- Task specific for front line staff to respond appropriately and identify areas of opportunity.

- Performed similar to silent fire drills or infant abduction drills, but without hospital notification via overhead PA system, email, and computer crawlers.
- Small group participation
- Allow time for discussion following drill to answer questions

Goals to spot drills

Test	Test response plan on continuous basis in various areas as well as colleague awareness of plans.
Reinforce	Reinforce current armed intruder response plans to all staff
Identify	Identify any gaps or areas of concern noted from exercise or by staff.

Unexpected perks of spot drills

- Offered real-time education of a top threat in addition to annual compliance.
- Reiterate and reinforce the inherit risks to staff and various ways threat exists.
- Alleviate anxiety & stress in the workforce.
- Garner discussion in every segment of an organization.

Should we continue? Why not…..

- Effective:: These drills help prepare individuals to respond quickly and appropriately in the event of an armed intruder through repetition, swift decision making, and confidence building.
- Cost Efficient
- Low Effort Planning
- Feedback shows that staff values the drills and opportunity to discuss concerns

Announced vs unannounced drills

	PRO	CON
Announced Drills	Minimizes stress	Employees may not take seriously knowing it's a drill. Staff suddenly are "too busy"
Unannounced Drills	Realistic response	Unnecessary Stress and emotional trauma

Note: If you utilize all the alarms and alerts as real life, people may grow to think it's just a drill like fire alarm drills.

Our Implementation

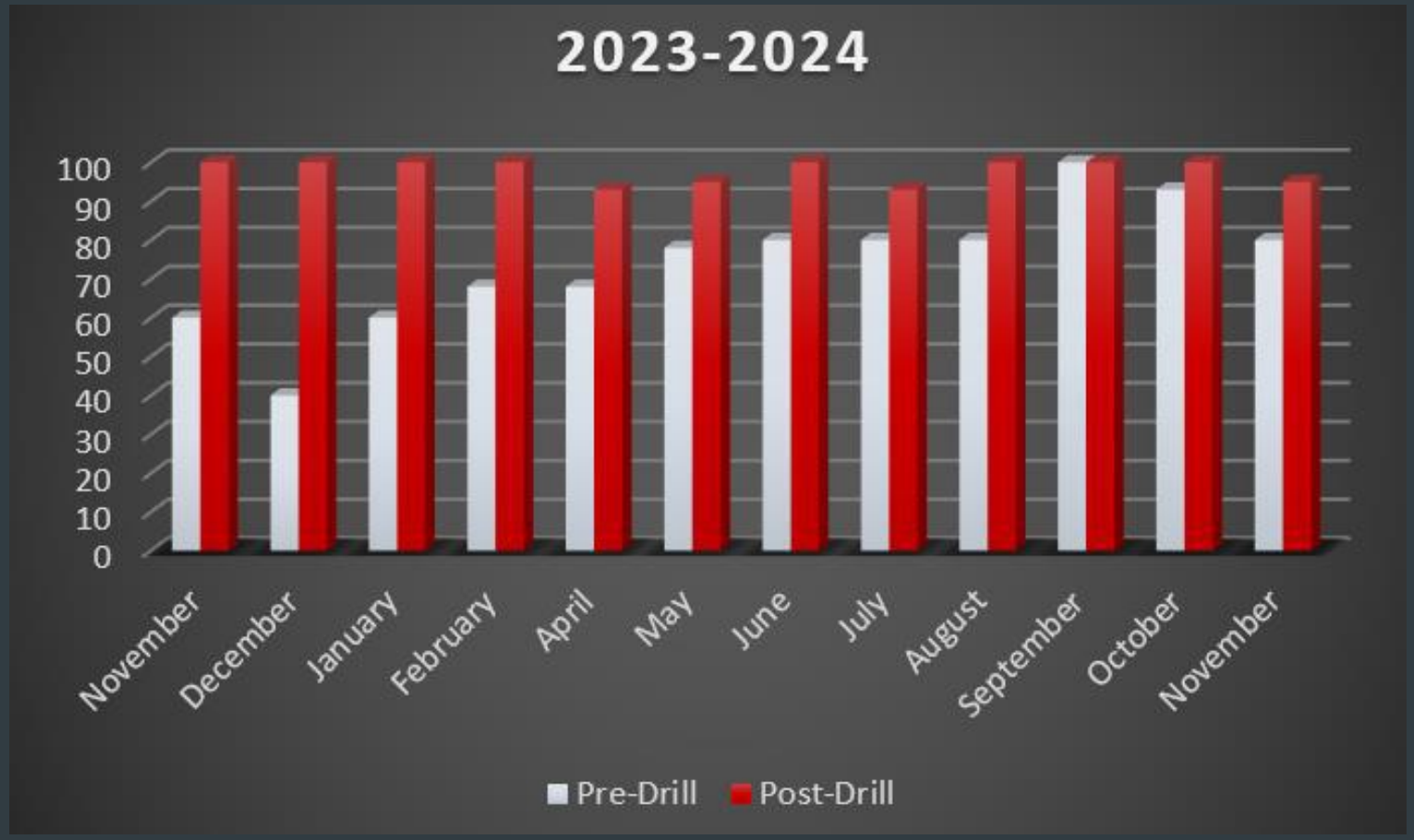
Drill evaluator form

- Includes area for documenting areas for improvement
- Document's location of drill, number of participants and departments
- Backside includes additional educational information
- Completed forms are emailed to Managers & Directors of each area for awareness and follow-up

Colleague self assessment survey

- Basic Questions including date of drill & department
- Colleagues asked to rate knowledge of Armed Intruder Response plan **Before** and **After** drill.
- Colleagues are asked to rate any increase in stress noted secondary to drill itself.
- Staff empowered by scanning the QR code. By doing so they are literally holding the power in their hands to dictate the future course of Armed Intruder Planning & education. This gives them a feeling of being a true Stakeholder in the development of our workplace.

Pre/Post Survey Data



Colleagues were asked to rate their knowledge of Armed Intruder Response Plan (EC-61) prior to drill, then again following the drill.

Lessons Learned

Assessing Initial Awareness Levels with Armed Intruder Response Plan

- Objective: Gauge initial staff awareness without exercises
- Approach: Surveys and feedback sessions.

- **Findings: Colleagues knowledge perception increased significantly post drills.**
- **Findings: Since recent drill induced stress question, there has been no increase in perceived stress from the drill itself.**

Lessons Learned

Survey Participation

- Challenge: Staff showed reluctance to complete short surveys, even with QR codes.
- Consequence: Limited quantitative data collection.

➢ **Recommendation: Consider alternative feedback methods.**

Lessons Learned

Exercise Engagement

- Observation: Staff were highly receptive to discussions and reviews.
- Benefit: Provided valuable qualitative insights.
- Action: Continue to grow drills into standard practice

- Flexible
- Valuable qualitative insights.
- Notable improvement in plan knowledge

- Time Consuming for small team
- Lack of survey participation

“To be prepared, is one of the most effectual means of preserving peace"

- George Washington


FOCUS
ON THE GOAL
NOT THE
OBSTACLES

Resources

Federal Bureau of Investigation. (2017). *Active shooter planning and response in a healthcare setting*. FBI.

Federal Emergency Management Agency. (2020). Homeland Security Exercise and Evaluation Program (HSEEP). FEMA.

National Fire Protection Association. (2024). *NFPA 3000: Standard for an active shooter/hostile event response (ASHER) program*. NFPA

The Joint Commission. (2021). Quick Safety 4: Preparing for active shooter situations (Updated June 2021). The Joint Commission.

U.S. Department of Health and Human Services, U.S. Department of Homeland Security, U.S. Department of Justice, Federal Bureau of Investigation, and Federal Emergency Management Agency. (2014). Incorporating Active Shooter Incident Planning into Health Care Facility Emergency Operations Plans.

For additional information, please contact Kim Eischeid at keischeid@nebraskamed.com

Nebraska Medicine

An EF-4 Tornado and the Resolve of a Critical Access Hospital

Finding dry ground when you no longer have a roof: 24 hours, 19 tornadoes, the first EF-4 in Oklahoma in 8 years

Megan Stephens, RN BSN

Erica McAllister, MPH, CHSP, CHEP, CLSS-HC, CHFM

Mercy

Your life is our life's work.

Objectives

- Identify critical means of internal and external communication required to manage a disaster situation.
- Develop a hierarchy of recovery priorities post disaster when resources are limited.
- Understand the impact of these events on the hospital's workforce, how to support them moving forward and devise a workflow for maintaining and redeploying the facility workforce.
- Review the processes and roadblocks for recovery support from leadership, insurance, and the state and federal governments.
- Determine how to move forward with temporary buildings, repairs, or new.

Resolve: Cambridge dictionary defines the noun use of “resolve” as “strong determination”.

Resolve defines Mercy Health Love County in Marietta, OK both past, present, and future. Resolve is a quality every critical access hospital and team member must have. It is not easy being a pocket-sized hospital that is 35 miles from another hospital … as defined by CMS. It’s especially not easy when you are struck by an EF-4 tornado on approximately 11:00 pm on April 27, 2024, with only a skeleton crew working and no longer have a roof or safe building to provide patient care. What is even harder is determining how you are going to survive post tornado with limited funds, assets, and options. Through it all you know your community needs the resources you furnish, the care you provide, and the mission you represent. Join us for exploring what closed our doors and how we are moving forward. Resolve.

Who is Mercy

- Health System founded by the Sisters of Mercy in 1986
- Heritage back to Catherine McAuley
- 6th largest Catholic Healthcare System in the U.S.
- $9.27 billon operating revenue
- 45 acute care and specialty hospitals

Who is Mercy

Oklahoma FY23

Hospitals & Ambulatory Sites

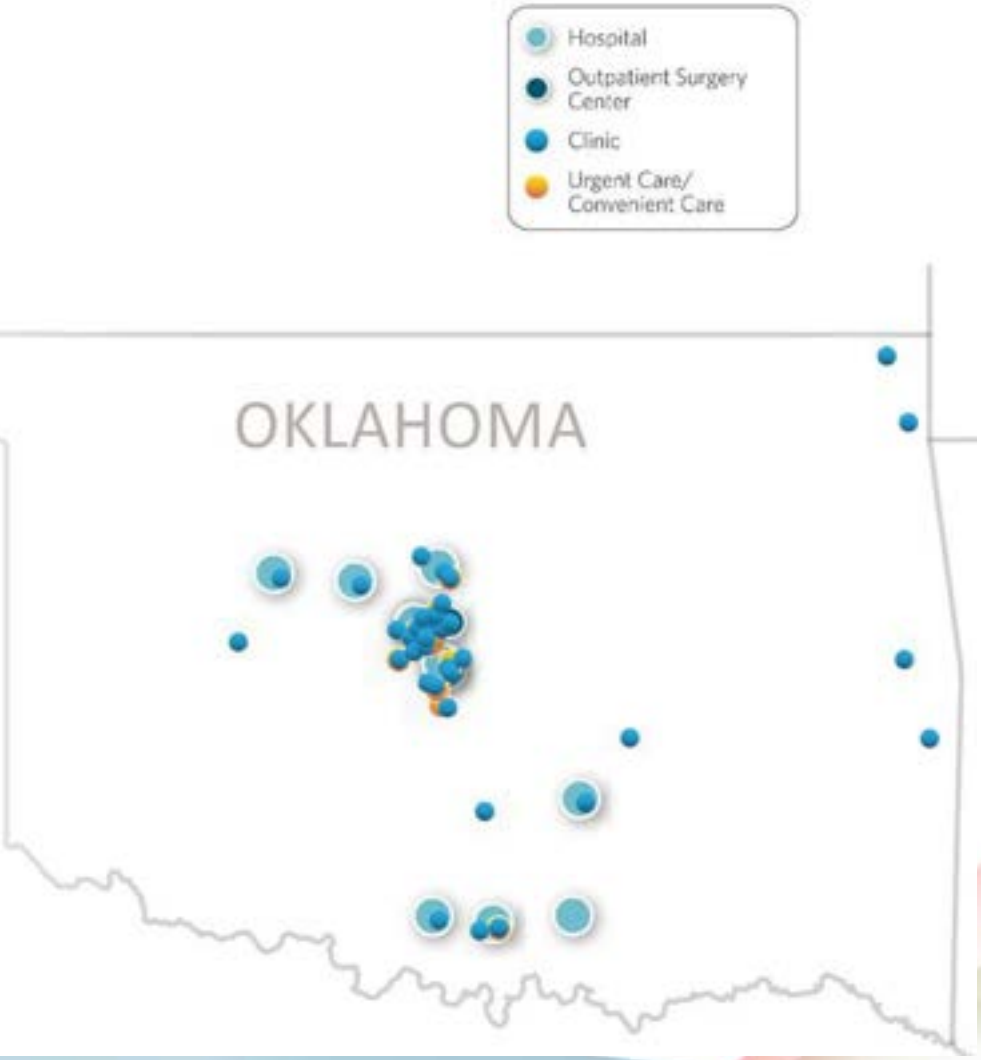
9 acute care hospitals
2 heart hospitals
2 rehab hospitals
108 physician practices
53 clinic locations
1 outpatient surgery center
10 urgent care centers
3 convenient care centers

Medical Staff & Co-workers

6,700+ co-workers including
325 integrated physicians
290+ integrated advanced practitioners

Utilization FY23

555 staffed beds
5,009 births
42,614 surgeries
29,969 inpatient discharges
1,711,740 outpatient/office visits
146,361 ED visits



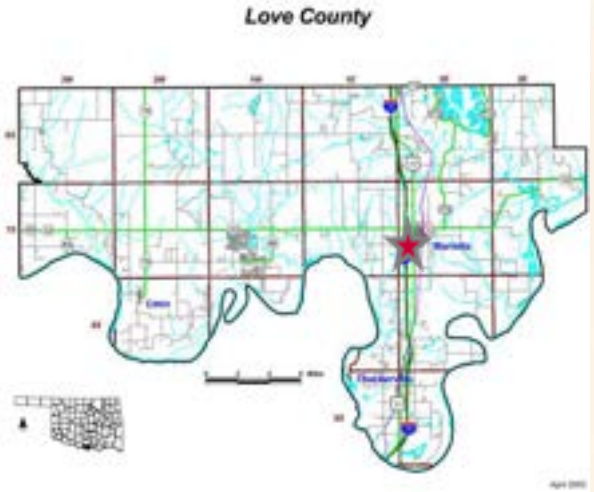
It feels like we've been here before…

Mercy Hospital Joplin (St. John's) May 22, 2011 EF-5

No two disasters are the same.

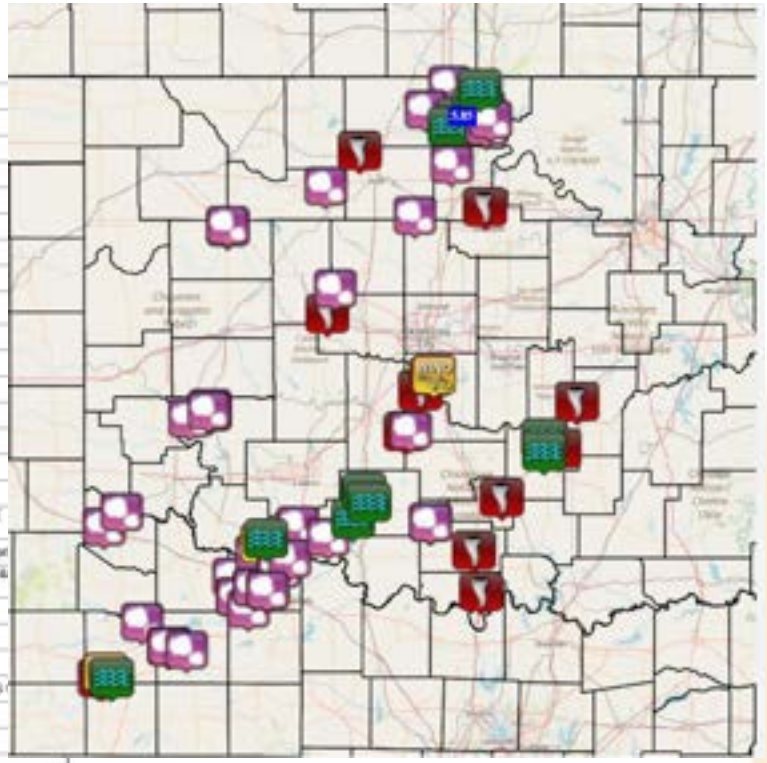
Who is Love County: a little Love history

- Established in 1972 by the people of Love County
- South-central Oklahoma
- Joined with Mercy as managed in 1998
- Critical Access Hospital with first accredited RHC
- Services prior to event:
  - ED and Outpatient Services
  - Total ED visits 2023 = 4891
  - EMS
  - Acute and Swing Bed Inpatient Care
  - Swing Bed admits 2023 = 165
  - RHC
  - Social Services Building
  - Outpatient PT
  - Food Pantry
  - Senior Citizens Projects
- Rural but BUSY!!



A Very Busy Day and Night

16	04/27/2024	0911-0912	0.7	50	EF1	0	0	Roger Mills	5 ENE Strong City
17	04/27/2024	0918-0918	0.1	10	EF0	0	0	Roger Mills	6 NW Hammon
18	04/27/2024	1221-1222	0.8	100	EF1	0	0	Garfield	Hillsdale - 1 ENE Hillsdale
19	04/27/2024	1339-1344	2.6	30	EF1	0	0	Kay	3 SE Peckham - 3 W Newkirk
20	04/27/2024	1354-1356	1	75	EF1	0	0	Kay	4 NNE Newkirk
21	04/27/2024	1420-1427	5	30	EF0	0	0	Payne	5 NW Stillwater - 5 SW Morrison
22	04/27/2024	1510-1512	0.8	20	EF0	0	0	Caddo	3 SW - 2.5 SW Hinton
23	04/27/2024	1529-1539	7	150	EF1	0	0	Canadian	5 ESE Geary - 5 N Calumet
24	04/27/2024	1743-1756	7	100	EF1	0	0	Wichita TX/ Tillman/ Cotton	5 WNW Burkburnett TX - 1 E Devol
25	04/27/2024	1855-1855	0.3	20	EFU	0	0	Comanche	4 SSE Pumpkin Center
26	04/27/2024	1916-1916	0.1	75	EFU	0	0	Osage	3 NW Grainola
27	04/27/2024	1953-2001	4.4	225	EF1	0	0	McClain/ Grady	3 ENE Bradley - 6 SSW Dibble
28	04/27/2024	2012-2014	0.5	40	EF1	0	0	McClain	3 NNE Dibble
29	04/27/2024	2016-2022	5	150	EF1	0	0	Johnston	3 NNE Ravia - 1 W Reagan
30	04/27/2024	2017-2026	1.7	40	EF0	0	0	McClain	1 WNW - 1 S NNE Cole
31	04/27/2024	2026-2027	5	125	EF2	0	0	McClain	3 N Cole - 2 NNW Goldsby
32	04/27/2024	2029-2036	3.5	200	EF1	0	0	Cleveland	Norman (near NW 24th/Robinson - SW of NE 12th/Tecumseh
33	04/27/2024	2042-2056	11	400	EF2	0	19	Carter	5 SW Ardmore - Ardmore (west side) - 3 S Spr
34	04/27/2024	2046-2056	9	150	EF1	0	0	Oklahoma	Oklahoma City (2 E Tinker AFB, south of SE 4 - 1 E Choctaw
35	04/27/2024	2115-2117	1.5	30	EF1	0	0	Pontotoc	2 ENE - 3 NE Happyland
36	04/27/2024	2116-2129	10	250	EF1	0	0	Lincoln	4 SSE Chandler - 1 E Kendrick
37	04/27/2024	2123-2137	10	440	EF3	1	30	Murray/ Pontotoc	3 SSW Sulphur - Sulphur - 3 NW Hickory
38	04/27/2024	2136-2215	28	1760	EF3	2	4	Hughes/ Okfuskee	1 SSW Spaulding - just W of Holdenville - 3 S
39	04/27/2024	2137-2154	8	500	EF1	0	0	Pontotoc	4 W Roff - 4 SSE Vanoss
40	04/27/2024	2145-2146	0.5	30	EF0	0	0	Carter	4 NNE Ardmore
41	04/27/2024	2207-2218	6	250	EF1	0	0	Murray	4.5 E Dougherty - 6 SE Sulphur
42	04/27/2024	2208-2243	27	900	EF4	1	6	Love/ Carter	2 WSW Marietta - Marietta (west side) - Lake Murray - Dickson - 4 ESE Gene Autry
43	04/27/2024	2221-2227	3.5	100					2 SE Dougherty - Lake of the Arbuckles (3 NE
44	04/27/2024	2301-2314	11.3	1400					
45	04/27/2024	2314-2323	8.9	1100					
46	04/27/2024	2322-2325	1	200					
47	04/27/2024	2326-2336	6.2	800					



What We Experienced: The Winds and the Rain

- Several nearby towns impacted
- Weather service tracking multiple cells
- Minimal hospital crew working
- Little notice: Tornado Sirens not working
- Rain, rain and more rain
- Direct hit to interstate, warehouse, and grocery store
- Trucks thrown about
- Electric lines down

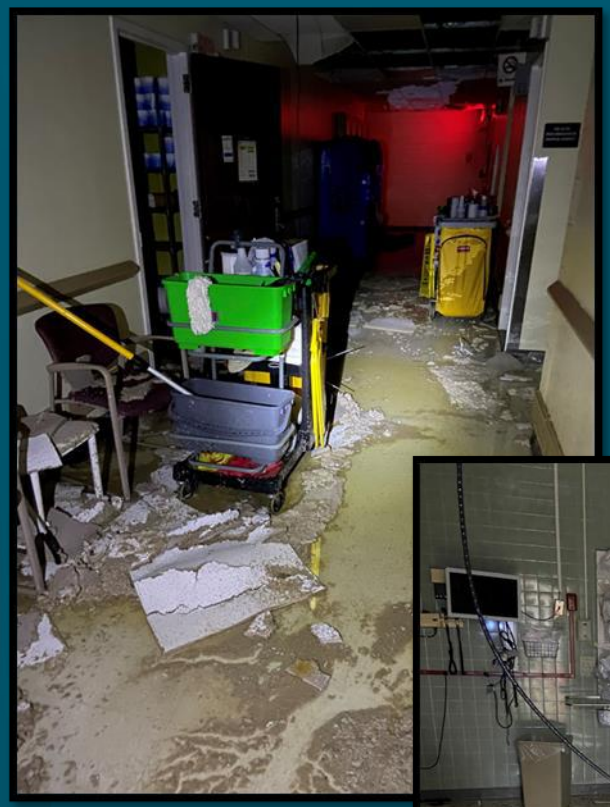
An EF-4 Tornado and the Resolve of a Critical Access Hospital

An EF-4 Tornado and the Resolve of a Critical Access Hospital

Waking Up to the Reality

Mercy

An EF-4 Tornado and the Resolve of a Critical Access Hospital



Mercy

An EF-4 Tornado and the Resolve of a Critical Access Hospital

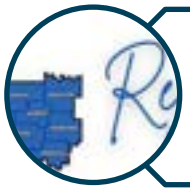
Mercy

Strengths

- Tight community
- Active relationship with MERC (Medical Emergency Response Center) and RMRS (Regional Medical Response System) Region 3 leadership
- Frequent exercises/drills
- Established system for weather communication
- Two providers on scene
- EM leader monitoring weather at home
- Patients moved to safety
- Additional coworkers and volunteers arrived quickly
- 2 EF5 rated storm shelters on campus

Strengths

Retired & current leadership onsite during the event



MERC coordinated the patient transfers

Team secured equipment

County EM onsite = MHLC became incident command for hospital and county

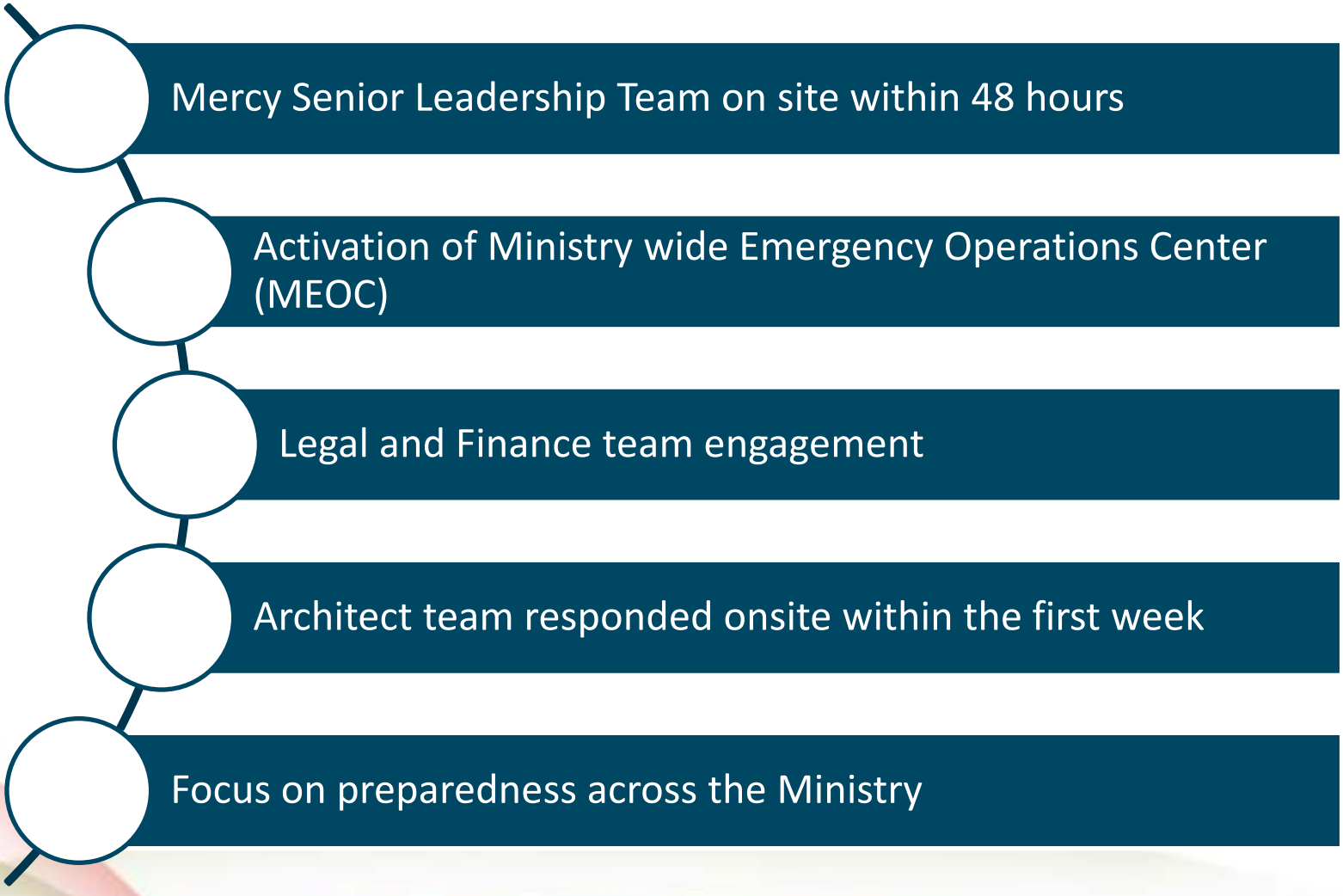
MHLC member of a larger healthcare system and able to utilize the ministry

Finding Dry Ground

- 45 caregivers displaced
- Mercy Town Hall and HR Communications were initiated within days of the disaster
- Coworkers paid by Mercy up until June 8th if not already redeployed

Status of Displaced Caregivers	# of Co-workers
Redeployed to Mercy Ardmore	23
Retired	6
Found other employment outside of Mercy	4
Redeployed to Healdton	3
Accepted work from home position at Mercy	3
Moved to new or temporary role in Love County	3
Redeployed to Oklahoma City	1
Redeployed to Tishomingo	1
Redeployed to Ada	1

Finding Dry Ground: Mercy's Response



Downdrafts and Lessons Learned

- Mercy access center
- Comparing to previous events
- Continued weather concerns

- Promises made versus promises kept
- Mass communication system not functional
- Ambulances trapped and damaged
- No Public Health Emergency Declared= No 1135 Waivers

Moving Forward

- Getting functional in a timely manner
  - EMS, RHC, and PT
- Lean on your leadership upstream
- Plan for an extensive recovery
  - What will carry you through?
  - Repurpose the functional
- Rethink your financial future
  - Is your insurance sufficient?
- Be fluid
- Continue to be a part of the community
- Communication inside and out

Getting Back to Serving Our Community

FLOOR PLAN

Conclusion

An EF-4 Tornado and the Resolve of a Critical Access Hospital

Mercy

Your life is our life's work.

Critical Infrastructure Failure:

When Standing Water Brings Surgeries to a Standstill

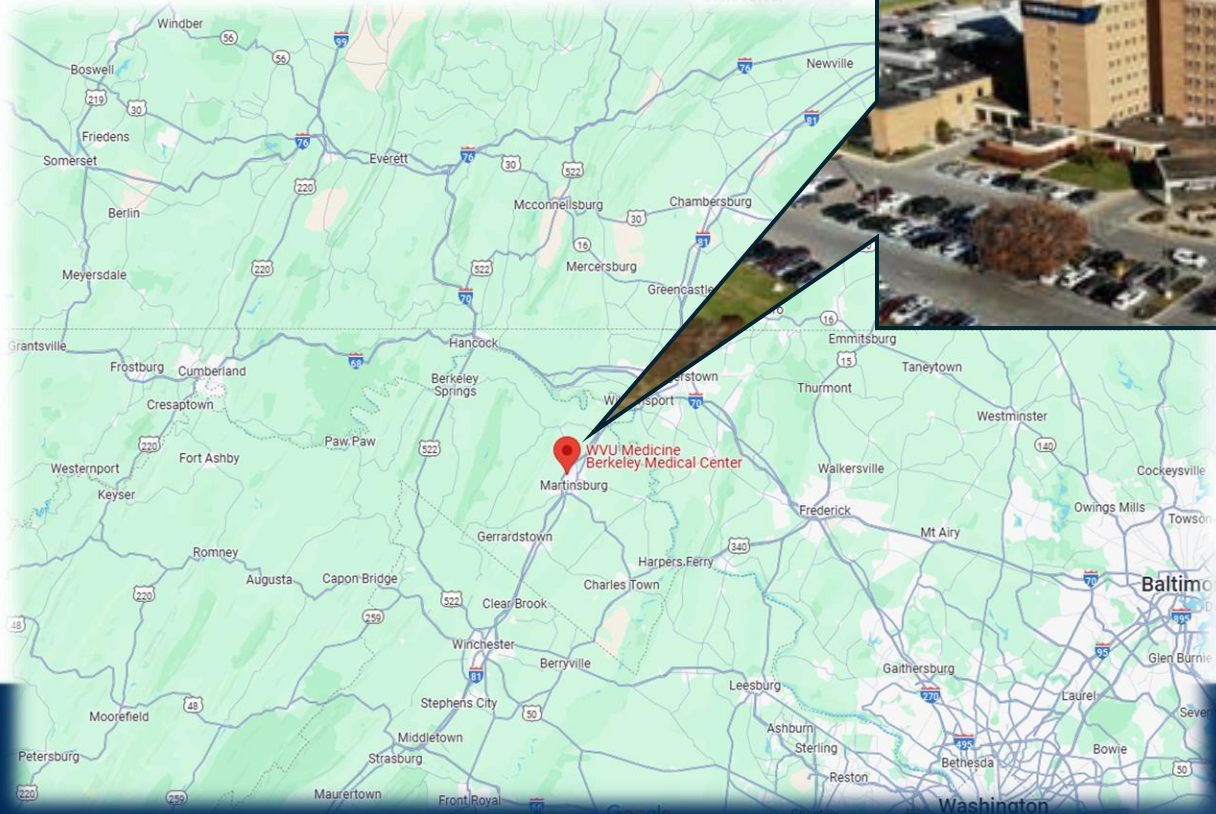
Presented by Donnie Grubb & Elizabeth Garrasi

WVUMedicine

EMERGENCY MANAGEMENT
Mitigation. Preparedness. Response. Recovery.

WVU Medicine

BERKELEY MEDICAL CENTER



- 200 bed acute care hospital
- Level III Trauma center 40 bed Emergency Department – 65,000 patients per year
- 50-60 surgeries per day


1. BARNESVILLE, OHIO
Barnesville Hospital
2. BLUEFIELD
Bluefield Pavilion Campus
A CAMPUS OF PRINCETON COMMUNITY HOSPITAL
3. BRIDGEPORT
United Hospital Center
4. BUCKHANNON
St. Joseph's Hospital
5. CADIZ, OHIO
Harrison Community Hospital
6. CHARLESTON
Saint Francis Hospital
7. PRINCETON
Princeton Community Hospital
8. FAIRMONT
Fairmont Medical Center
A CAMPUS OF J.W. RUBY MEMORIAL HOSPITAL
9. GASSAWAY
Braxton County Memorial Hospital
10. GLEN DALE
Reynolds Memorial Hospital
11. KEYSER
Potomac Valley Hospital
12. MARTINSBURG
Berkeley Medical Center
13. MORGANTOWN
J.W. Ruby Memorial Hospital
14. MORGANTOWN
Children's Hospital
A CAMPUS OF J.W. RUBY MEMORIAL HOSPITAL
15. NEW MARTINSVILLE
Wetzel County Hospital
16. OAKLAND, MARYLAND
Garrett Regional Medical Center
17. PARKERSBURG
Camden Clark Medical Center
18. PETERSBURG
Grant Memorial Hospital
19. RANSON
Jefferson Medical Center
20. RIPLEY
Jackson General Hospital
21. SOUTH CHARLESTON
Thomas Memorial Hospital
22. SUMMERSVILLE
Summersville Regional Medical Center
23. UNIONTOWN, PENNSYLVANIA
Uniontown Hospital
24. WHEELING
Wheeling Hospital
PENNSYLVANIA
OHIO
MARYLAND
VIRGINIA
KENTUCKY
WVUMedicine
West Virginia University Health System

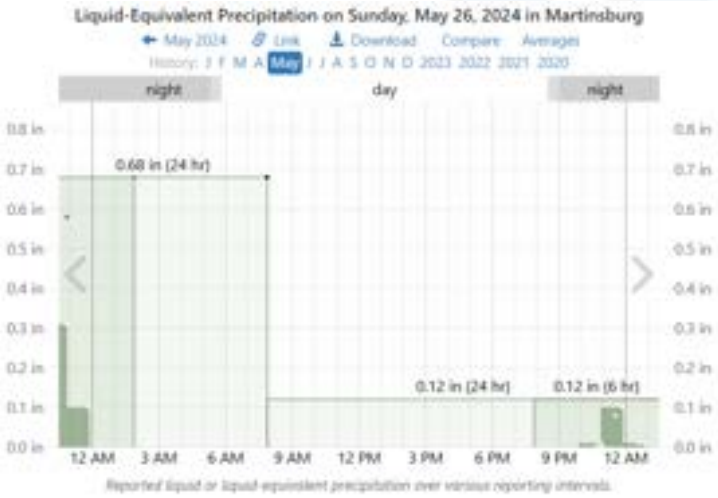
Severe Weather Incident

The afternoon of Memorial Day, damaging storms passed through the eastern panhandle.

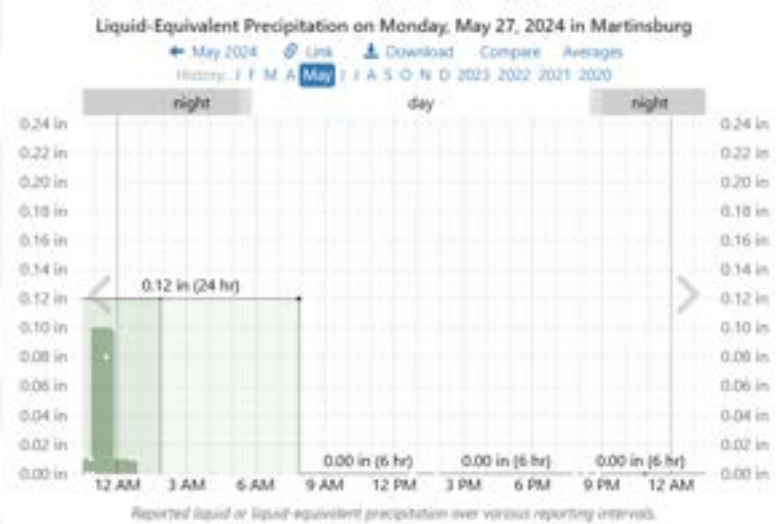
→Initial damage was isolated to 1 Operating Room

→A second storm passed through that evening causing major infrastructure damage to all 10 Operating Rooms.

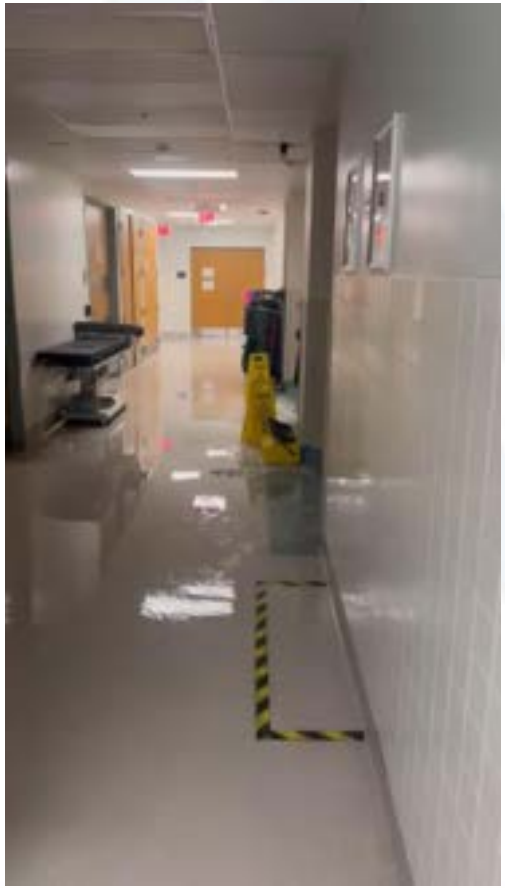
Weather Insights



Time	Observations	Precipitation	Codes
12:26 AM	Thunderstorm in the Vicinity		VCTS
10:42 PM	Thunderstorm with Rain	0.00 in	TSRA
10:52 PM	Thunderstorm with Rain	0.01 in	TSRA
10:57 PM	Thunderstorm with Light Rain	0.00 in	-TSRA
11:31 PM	Light Rain	0.00 in	-RA
11:52 PM	Light Rain	0.10 in	-RA



Time	Observations	Precipitation	Codes
12:45 PM	Light Rain	0.00 in	-RA
12:52 PM	Light Rain	0.00 in	-RA
6:32 PM	Thunderstorm in the Vicinity		VCTS
6:52 PM	Thunderstorm		TS
7:47 PM	Thunderstorm		TS
7:52 PM	Thunderstorm with Light Rain	0.00 in	-TSRA



Incident Response

- The AOC on-call issued an “all hands-on deck” after the second storm passed through.
- Leadership and staff responded to move OR equipment and supplies out.

Incident Response

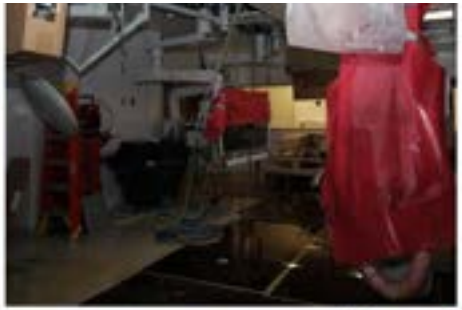
- Chief of Surgery immediately placed BMC on surgical/trauma diversion.
- Chief Medical Officer activated Incident Command.
- System ICC requested to assist.

Barriers to Response

- Lack of understanding of incident management
- Lack of cohesiveness among executive leadership
- Local resources were inadequate

Incident Command Activation

- ICC Roles
- System Support
- ICC Schedule
- ICC JITT & Education
- Assessing Impacts




Incident Command Operations

- Preserving evidence for legal
- Equipment inventory
- Coordination with outside entities
- Restoration/Construction oversight

WVUMedicine

EMERGENCY MANAGEMENT
Mission Preparedness. Response. Recovery.

Patient Impacts

- Trauma diversion for 6 weeks
- All surgeries cancelled until they could be rescheduled
- OB patients had to be rerouted
- Inpatients awaiting surgery had to await an alternate site

Staff Impacts

- Restructuring of leadership org chart
- Irregular scheduling and workspaces
- Lack of appropriate equipment/supplies
- New workflows

Financial Impacts

Business Interruption Insurance Claim :

$3.2 Million

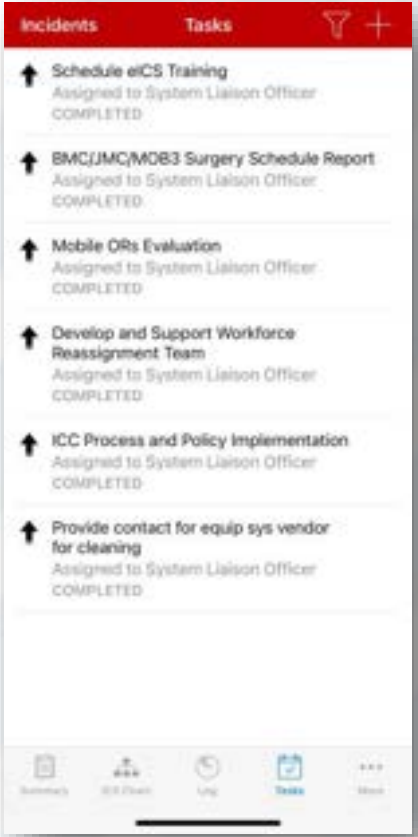
Supplies = $1million

Mobile OR = $1 million

Loss/Disaster response = $3 million

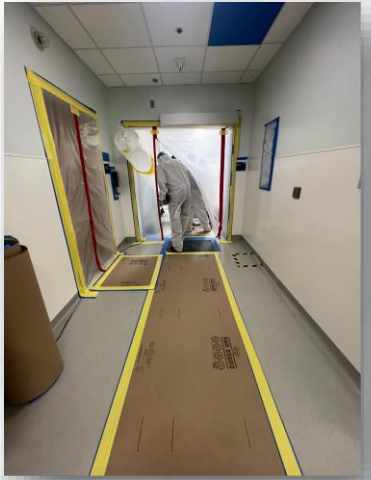
Problem Solving

- Creative use of space
  - Converted Cath Lab to damage control OR
  - Adjusted outpatient surgery eligibility requirements (BMI/age thresholds)
  - Reallocated 4 ICU rooms to endo suites
- Delegation of Tasks and Streamlined Communications through Juvare eICS



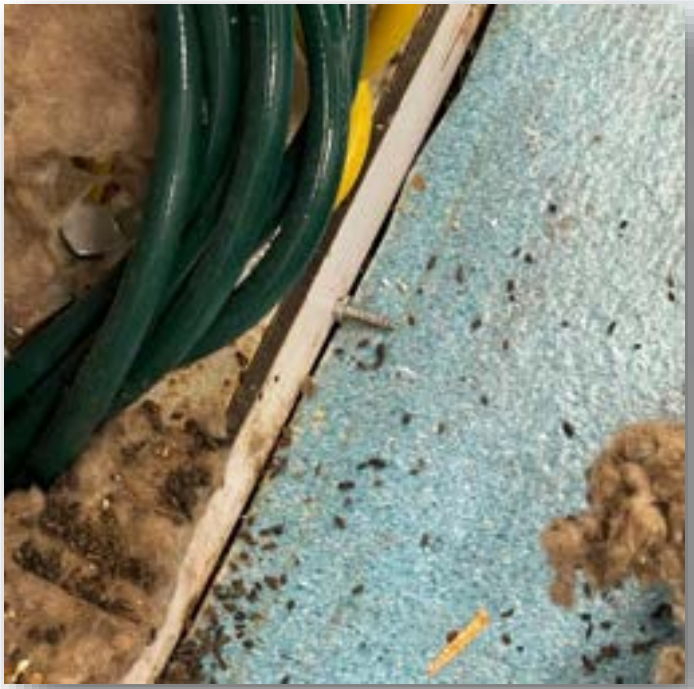
Problem Solving

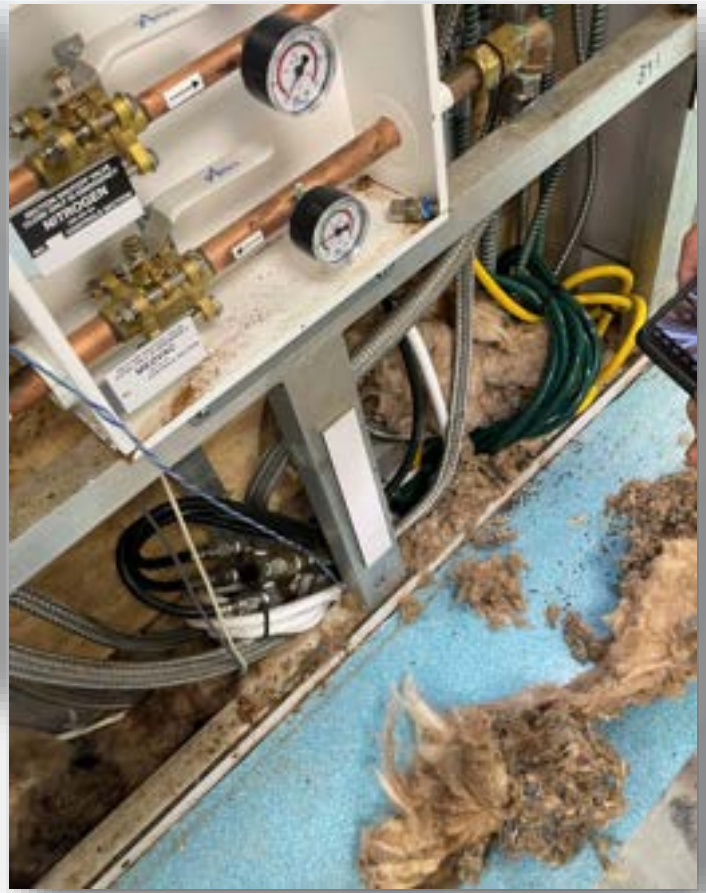
- Infection Control
- Mobile ORs

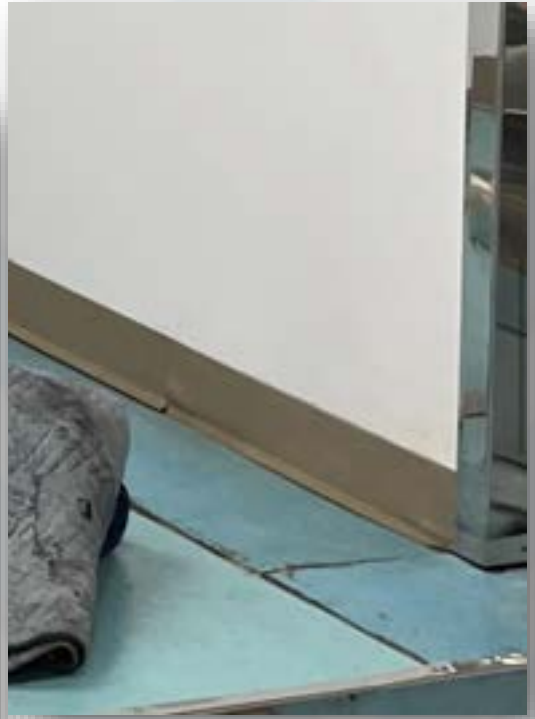


WVUMedicine

EMERGENCY MANAGEMENT
Mission: Preparedness, Response, Recovery



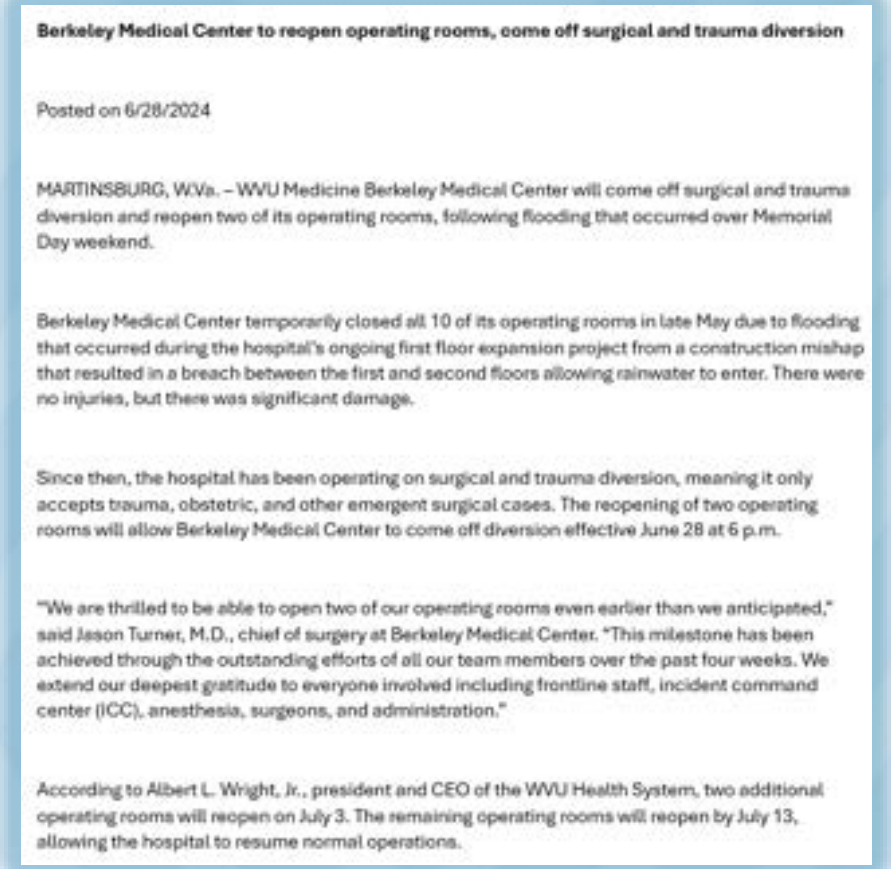

NITROGEN




CKT #5 UPS

Lessons Learned

- The construction process: be involved early & often
- Executive ICS Training
- Vet your vendors
- Communications (internal, external, patients)
- Process Maps
- Creative Continuity Strategies



Berkeley Medical Center to reopen operating rooms, come off surgical and trauma diversion

Posted on 6/28/2024

MARTINSBURG, W.Va. – WVU Medicine Berkeley Medical Center will come off surgical and trauma diversion and reopen two of its operating rooms, following flooding that occurred over Memorial Day weekend.

Berkeley Medical Center temporarily closed all 10 of its operating rooms in late May due to flooding that occurred during the hospital's ongoing first floor expansion project from a construction mishap that resulted in a breach between the first and second floors allowing rainwater to enter. There were no injuries, but there was significant damage.

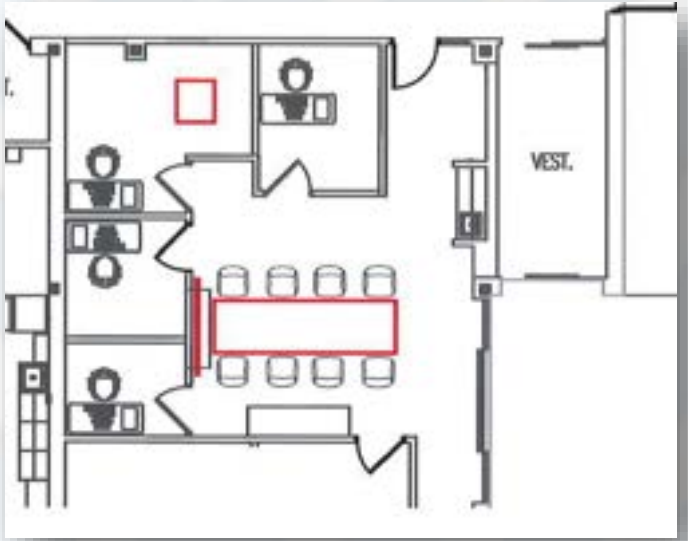
Since then, the hospital has been operating on surgical and trauma diversion, meaning it only accepts trauma, obstetric, and other emergent surgical cases. The reopening of two operating rooms will allow Berkeley Medical Center to come off diversion effective June 28 at 6 p.m.

"We are thrilled to be able to open two of our operating rooms even earlier than we anticipated," said Jason Turner, M.D., chief of surgery at Berkeley Medical Center. "This milestone has been achieved through the outstanding efforts of all our team members over the past four weeks. We extend our deepest gratitude to everyone involved including frontline staff, incident command center (ICC), anesthesia, surgeons, and administration."

According to Albert L. Wright, Jr., president and CEO of the WVU Health System, two additional operating rooms will reopen on July 3. The remaining operating rooms will reopen by July 13, allowing the hospital to resume normal operations.

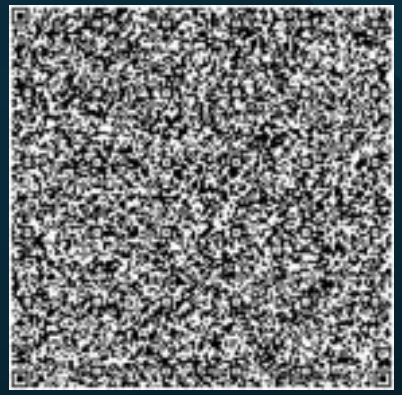
Crisis = Opportunities

- New leadership
- More buy-in for Emergency Management
- Accelerated Timelines
- Bed Transfer Center
- New incident command center



"WHEN WRITTEN IN CHINESE, THE WORD CRISIS IS COMPOSED OF TWO CHARACTERS — ONE REPRESENTS DANGER, AND THE OTHER REPRESENTS OPPORTUNITY."

John F. Kennedy



Donald L. Grubb III, BSPH, PN, CHEP
Manager, Trauma & Emergency Management
WVU Medicine Berkeley & Jefferson Medical Centers

Elizabeth M. Garrasi, MS, CHEP, CEDP, HcEM-P
Director, Institutional Continuity
St. Jude Children's Research Hospital

Corewell Health™

System Level Unified Command: A Case Study of a Healthcare System's Response to the CrowdStrike Incident

Julie Bulson DNP, MPA, RN, NE-BC, HcEM-M

FEBRUARY 25, 2025

01

Objectives

Corewell Health™

Objectives

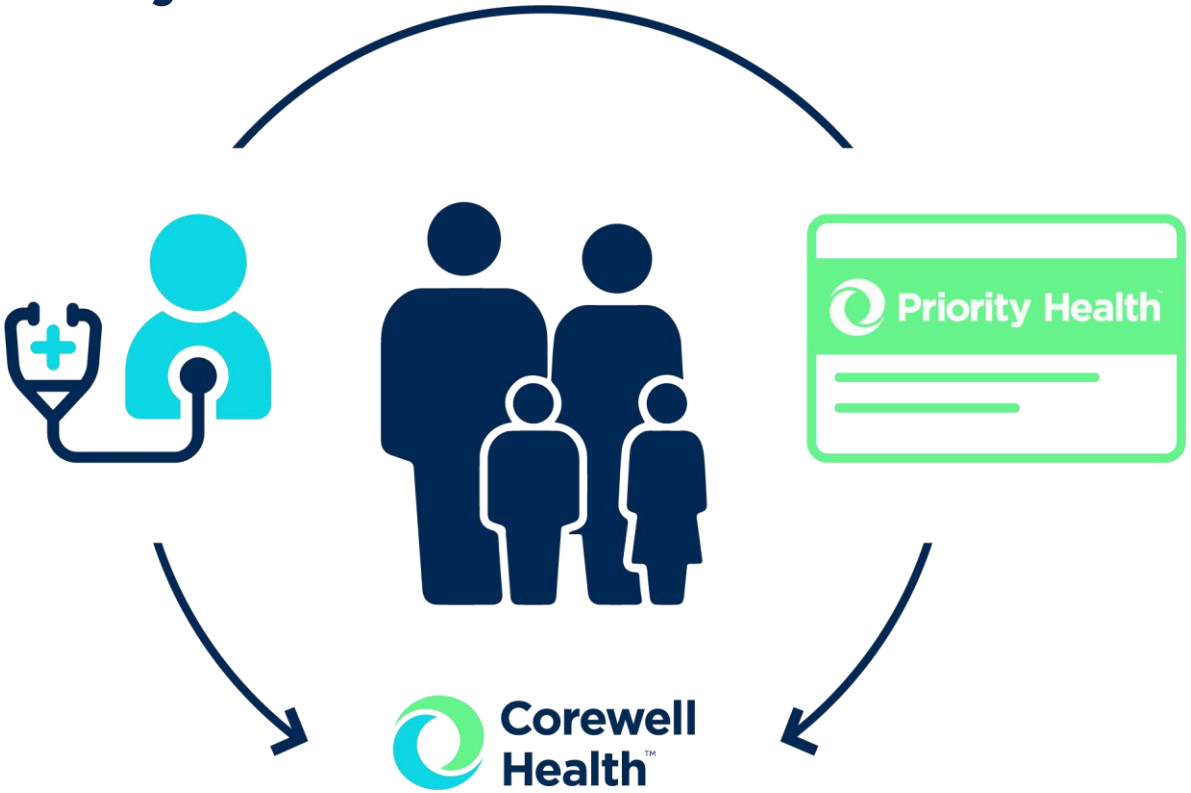
- Explain the impact of the CrowdStrike incident on the healthcare system and its services
- Describe the system unified command structure and its key features and design for managing the crisis
- Identify the challenges and lessons learned from the incident and the strategies for improving preparedness and resilience for future technological impacts

02

Who Are We?

Corewell Health™

An Integrated System



Who We Are

65,000+
Team Members

300+
Ambulatory/Outpatient Locations

1.3+ Million
Health Plan Members

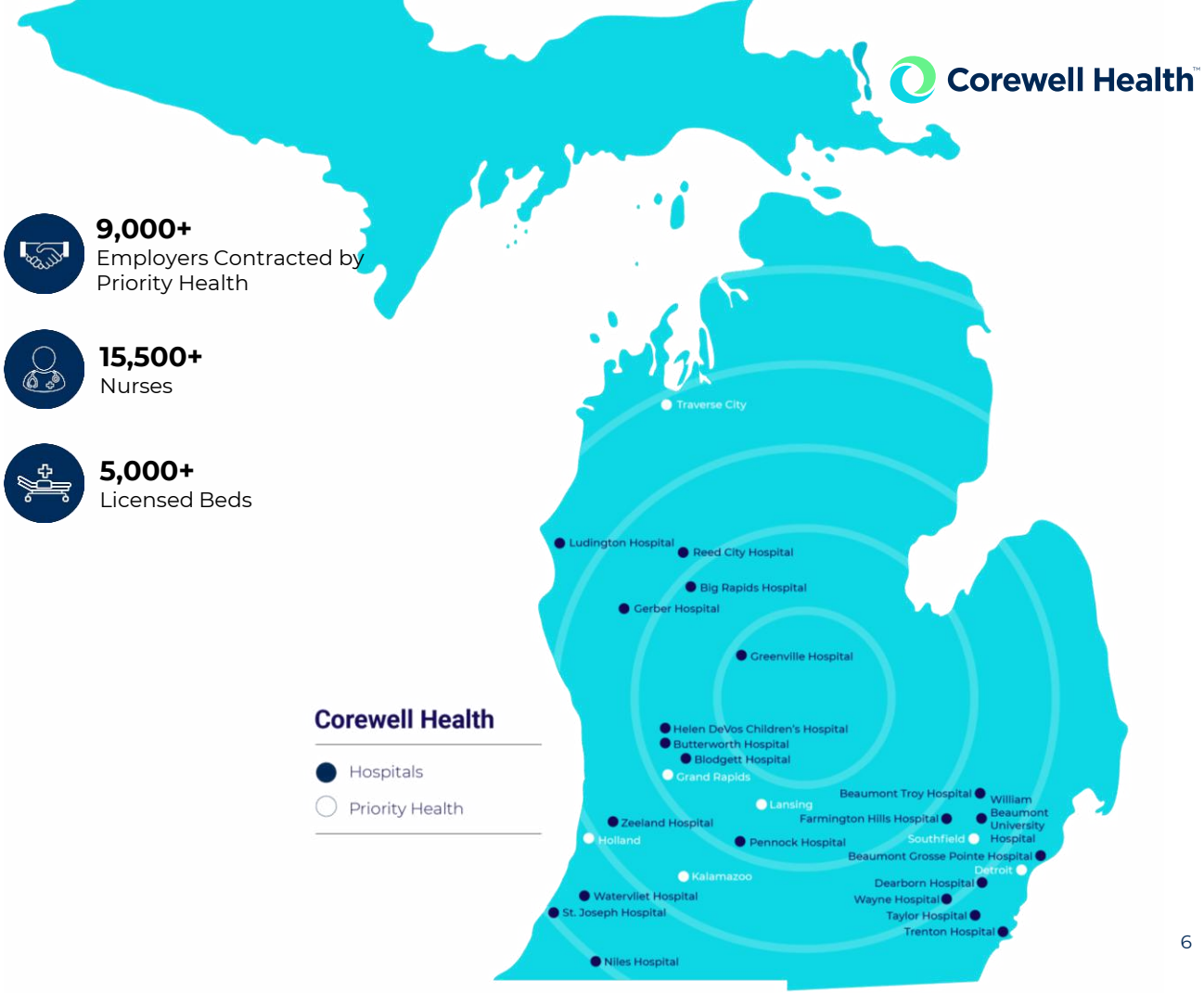
12,000+
Affiliated, Independent and Employed Physicians and Advanced Practice Providers

21
Hospital Facilities

9,000+
Employers Contracted by Priority Health

15,500+
Nurses

5,000+
Licensed Beds



Organizational Design

Care Delivery*

Corewell Health West

- Ludington Hospital
- Reed City Hospital
- Gerber Hospital
- Greenville Hospital
- Helen DeVos Children's Hospital
- Butterworth Hospital
- Blodgett Hospital
- Zeeland Hospital
- Pennock Hospital

Corewell Health East

- Beaumont Troy Hospital
- Farmington Hills Hospital
- Wm Beaumont University Hospital
- Beaumont Grosse Pointe Hospital
- Dearborn Hospital
- Wayne Hospital
- Taylor Hospital
- Trenton Hospital

Corewell Health South

- Watervliet Hospital
- St. Joseph Hospital
- Niles Hospital

Coverage

Priority Health

- Grand Rapids
- Kalamazoo
- Holland
- Traverse City
- Lansing
- Southfield
- Detroit
- Physicians Health Plan of Northern Indiana

*Also includes 300+ ambulatory/outpatient locations throughout all care delivery regions

Corewell Health™

03

CrowdStrike Impact

Scenario - CrowdStrike

Scenario

On July 19, 2024, CrowdStrike declared a widespread outage affecting Microsoft Windows hosts due to an issue with an update to CrowdStrike Falcon.

They confirmed this was not due to any malicious cyber activity.

This had a rolling impact internationally based on when the upgrade was deployed to CrowdStrike Customers. They were able to roll back the update file within 1.5 hours of deployment.

The result to the computers that automatically downloaded the update was a Windows operating system crash. This required manual intervention to any devices presenting the “blue screen of death”.

***Important to note, this occurred two days prior to a regional transition from one instance of Epic to a primary instance to 21 hospitals and 200+ providers.

Scenario – CrowdStrike Impact at Corewell Health

Shortly after 1:30 am, a spike of calls reported multiple areas with computers rebooting and getting stuck at a Blue Screen of Death (BSOD) error throughout the organization – all regions.

DS aligned resources and found this was due to an issue with the CrowdStrike security application (Falcon) on our computers.

CrowdStrike pushed an automatic update globally that pushed a bad file causing the blue screen for Windows systems.

Performing a restart causes the workstation to go into recovery mode locking it out from immediate use.

Our internal Security team stopped the CrowdStrike push but it reached several of our devices. Both Windows servers and end user workstations were impacted.

CrowdStrike Impact at Corewell Health

DS team members were deployed onsite to start manual intervention to repair the BSOD on workstations throughout the organization.

Communication delivered via a Plan Data page and email, and the System Command team is working to identify areas of impact, priorities, and focal points. The DS Status Button was updated along with an email.

Based on the 6 am System Command call, the estimate is about 80% of devices (32,685 workstations and 1,571 servers) could be impacted, with only 20% unaffected.

We did not divert in our Eds

We did reschedule many surgeries

Staffing impact due to Canadian nurses not able to cross the border – it was closed for a period of time

DS change moratorium in place until 1700

***Important to note, this occurred two days prior to a regional transition from one instance of Epic to a primary instance across 21 hospitals and 200+ providers.

CrowdStrike Impact at Corewell Health

- 32,685 devices and 1,571 servers were impacted
- Developed and distributed blue screen fix instructions
- All devices required manual intervention
- Developed a corporate cost center to capture all related expenses
- By Wednesday, 7/24/24, 95% of devices had been completed remediated

Corewell Health Response Timeline

2/19/24 - Impact

32,000+ devices

1500+ servers

2/21/24 0600

Major Epic go live across 8 hospitals and 200+ provider locations

2/24/24 - Impact

95% of devices remediated

0134 – Major Incident Declared with report of multiple systems down across the region. Computers are rebooting and staying on the blue screen of death

0223 – System - Plan Data - Multiple Systems declared and mass notification message issued

- "We are aware of multiple system impacts throughout the organization. This includes computers rebooting and arriving at a windows blue screen error. DS is aware and actively working to understand root cause and resolutions. Please use downtime procedures where appropriate"

0356 – Teams chat message sent to all COOs and key executives to attend a command center meeting at 0430

0410 – MIM update call

0430 – System Command Center update meeting

0505 – MIM update call

0600 – System Command Center update call

Continued cadence of MIM / Command Center updates every three hours.

2000 – System incident commander completed hand off to incident commander on call for evening and overnight hours

These update calls continued throughout the day for the next several days and transitioned into the update calls for the Epic go live

Remediation Process

- Routinely schedule command center meetings at all levels of command
- Utilized the EOC / Incident Commander daily chat to provide routine updates
- Each local command post had routine times for updates to regional command post
- Regional command posts had routine update times to connect with the System Command Center
- Group TEAMS chat and open meeting for DS team support as they worked through the volumes of devices
- Recruited leaders to round at each facility with a flash drive to upload a fix for each impacted device
- Developed a tracking process for each flash drive to ensure return (had to buy 300 as we don't allow them in our system)
- Coordinated distribution of flash drives at all primary locations
- DS on site support teams and site-specific leaders were engaged to assist with the remediation process
- Transitioned to an automated process for remediation

04

System Unified Command Structure

System Command Center Structure - Benefits

- Enhanced communication
- Collaboration with external agencies
- Ensuring continuity of care
- Ability to effectively prioritize patients needs
- Flexibility and adaptability
- Continuous improvement and learning
- Support for non-emergency operations

- Improved organizational efficiency
- Clear decision-making structure
- Enhanced patient safety
- Efficient resource management
- Reduced chaos and improved order
- Standardized approach
- Improved preparedness and planning
- Enhanced accountability and transparency

What is Project Oscar?

Corewell Health™

We aim to develop a **robust readiness strategy** to respond to any unforeseen business disruptions such as a **major cybersecurity incident and/or ransomware attack**.

We need to prepare for a **significant, system-wide outage that lasts up to 30 days or longer**

This initiative will develop **disaster response and business continuity playbooks** to:

- Minimize our operational and financial impact
- Enhance patient safety and care delivery
- Allow us to restore our business systems and functions to normal

Named after the Oscar-winning movie *Everything, Everywhere All at Once*.

This project plans for a **worst-case scenario** where <u>all</u> systems and applications are impacted across the *entire* organization.

Corewell Health™

What does Project Oscar include?

Project Oscar consists of **three workstreams:**

Business Continuity

Develop 30-day downtime plans for operating during a system-wide network and application outage.

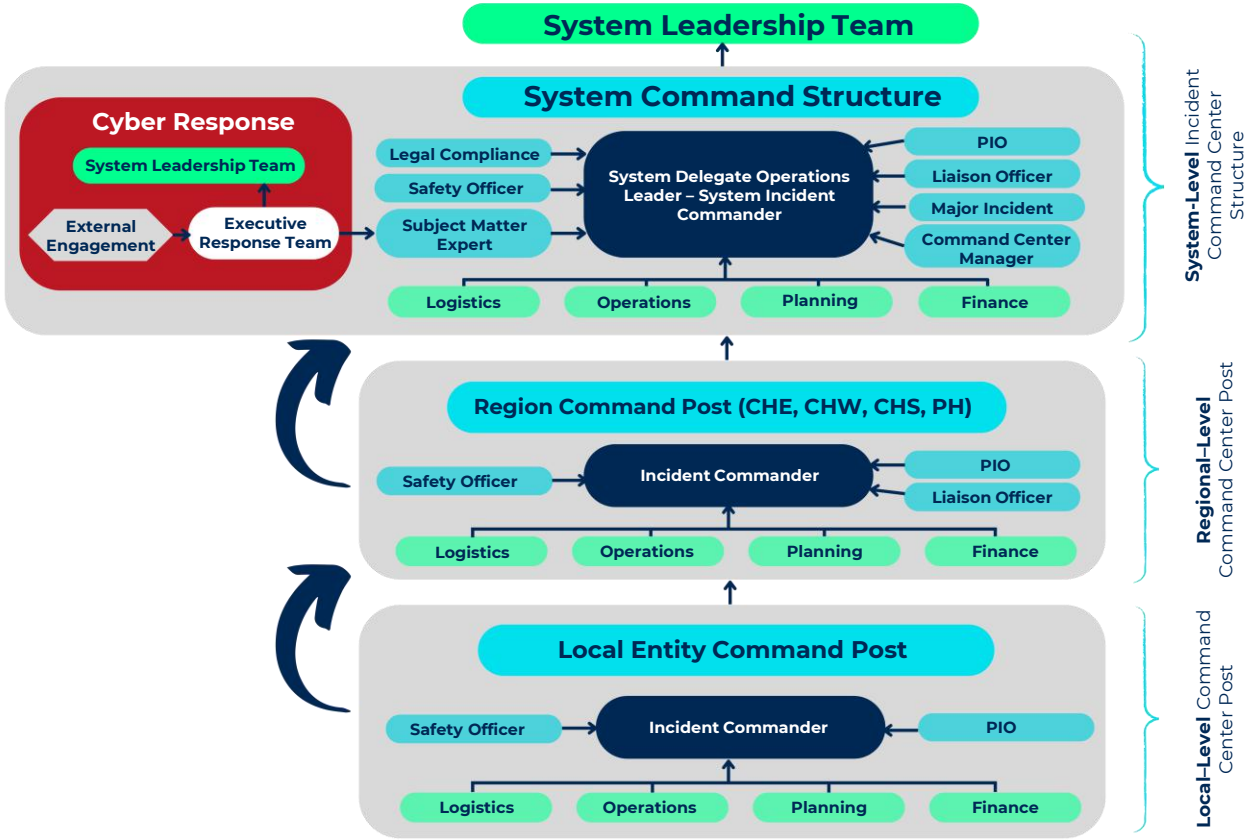
Disaster Response

Refine an incident command center structure, roles and responsibilities, communication plan, and staff education.

Service Continuity

Create a service continuity plan to restore all applications in priority order.

System Unified Command Center Structure



System Command Center Structure

- Leaders defined three deep for all positions within the System / Regional / Local command center structures.
- Job action sheets developed specific to cyber threats for each position within the command center structure.
- Education modules being developed for each role within the command center structure at all levels.
- Several large-scale tabletop exercises were completed in 2024 with key leaders at all levels within the organization.
- Systemwide tabletop exercise planned for late fall with all levels of command center structure to test the newly revised System command center structure and ensure all leaders staffing the command centers are comfortable with their roles.

05

Lessons Learned

What went well?

INCIDENT COMMAND

- Rapidly established the system level command center with connections to all local command posts including Priority Health
- Regular update meetings with all levels of the command center structure
- Rapidly developed “Blue Screen Fix Instructions” per region (different devices between regions)

COMMUNICATION

- Coordinated communications utilizing already established venues to share information (e.g., DCI)
- Utilization of TEAMS chats to coordinate tracking of resolved devices

RESOURCES / ASSETS

- Multidisciplinary coordination to resolve computer / device issues including access to DS support meetings to address questions and to guide team members through the instructions
- Redeployment of staffing based on needs
- Onsite leadership to direct prioritization
- Good coordination of sharing devices that remained working
- Creative thinking and rapid procurement of flash drives

Lessons learned

- Mass notification groups inaccurate
- Lack of off network connections to response tools
- Unauthorized use of mass notification tool based on historical applications resulting in confusing messaging
- Integration challenges remain (three different clinical communication platforms) – working to implement an interface to improve mass notification efforts
- Develop a communications strategy for urgent / emergent communications (e.g., platform, timing, notification group, etc) – education to the masses
- Need a pre-planned emergency main menu on our DS service desk

Lessons learned

- Need to be able to communicate specifically to remote workers
- Educate on the delegation of authority for decision-making (e.g., cancellation of surgeries / ED diversions, etc.)
- New command center technology needs some build and education to all leaders
- Need an updated list of all departments / facilities / OP locations, etc
- Need to emphasize the need for departments to develop their technology downtime plans (e.g., nutrition and utilization of cash registers, etc).

Thank you.

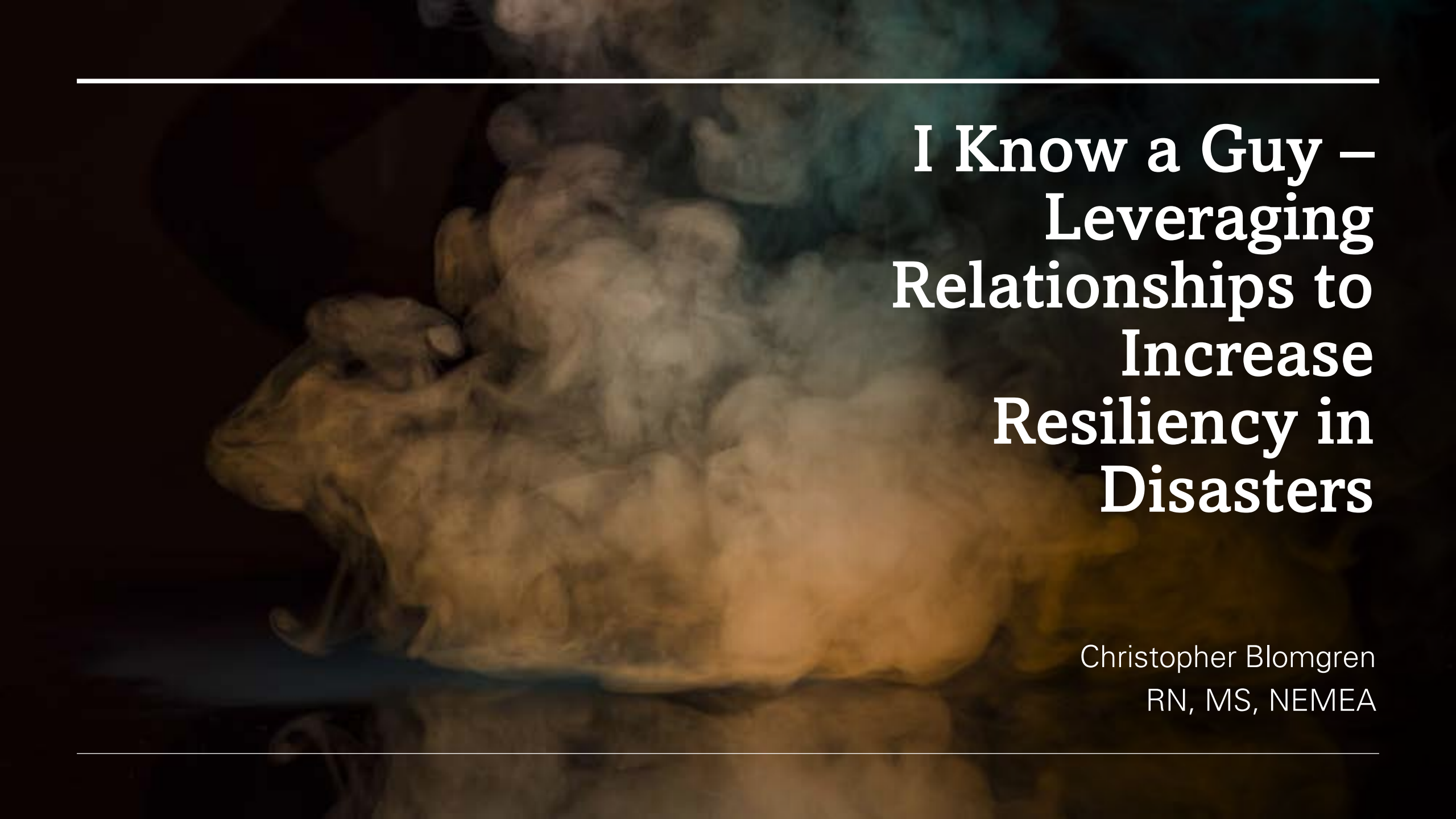
Julie Bulson DNP, MPA, RN, NE-BC, HcEM-M

Director, Business Assurance, Corewell Health

Julie.bulson@corewellhealth.org

616.481.2448


Corewell Health™



I Know a Guy – Leveraging Relationships to Increase Resiliency in Disasters

Christopher Blomgren
RN, MS, NEMEA

- Associates in Nursing (RN)
- Bachelors in Psychology
- Masters in Emergency Preparedness
- Graduate of Master Exercise Practitioner Program, National Emergency Management Advanced & Executive Academies

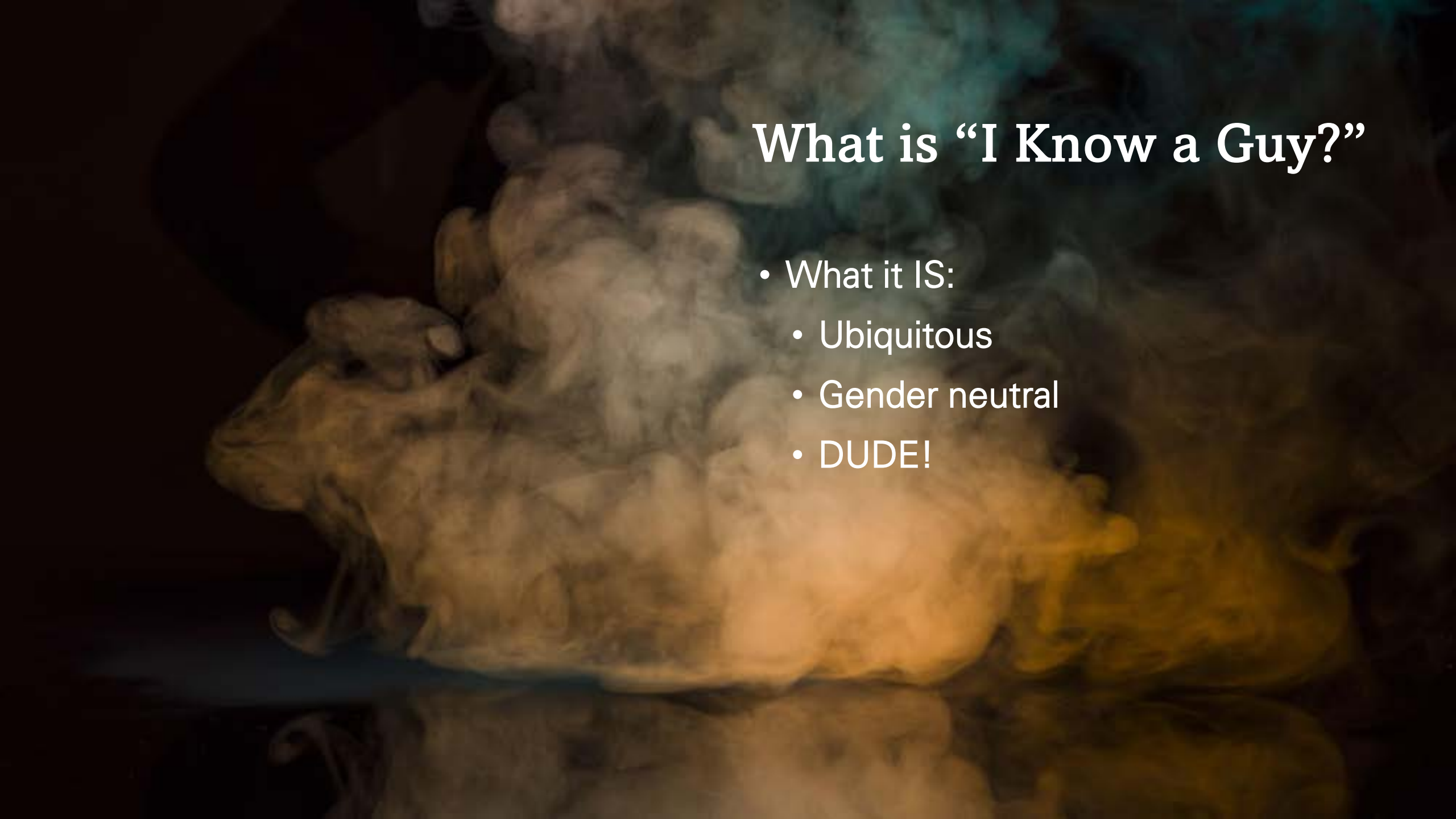
- Retired Army (Medic/LPN)
- Volunteer Firefighter (31 years)
- Team Rubicon IMT
- Former City/County Fire Chief
- Former City/County Emergency Manager
- Former Small Business Consultant for LTC
- Current Healthcare Emergency Preparedness Consultant

Objectives

1. At the end of our discussion, we will understand what “I Know a Guy” means and how it applies to facility and community resiliency after a disaster.
2. At the end of our discussion, we will have clear guidance on how to build “I Know a Guy” relationships through outreach, training, and exercises, while simultaneously meeting CMS guidelines on emergency preparedness.
3. At the end of our discussion, by way of story-time, we will have an understanding on how the “I Know a Guy” principle was used in real-world events at the regional, local, and facility level.
4. At the end of our discussion, as time allows, you will join in on a moderated discussion on how to build relationships and increase resiliency at the facility level.

What is “I Know a Guy”?

- What it is not:
  - Sexist
  - Misogynistic
  - Exclusionary



What is “I Know a Guy?”

- What it IS:
  - Ubiquitous
  - Gender neutral
  - DUDE!

Blue-Sky vs Gray-Sky

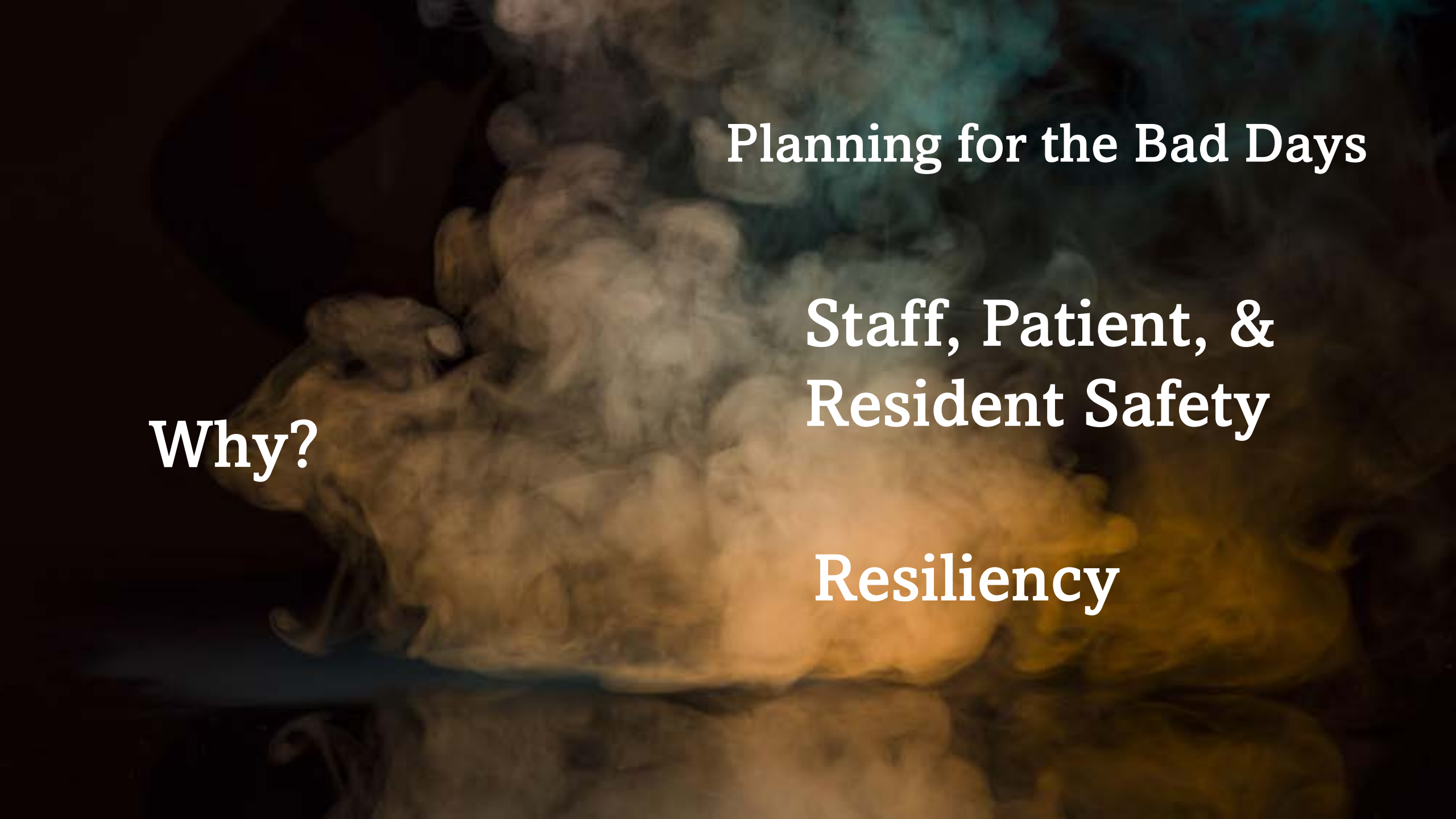
- Blue-Sky Events
  - Things we do when there isn’t an emergency
    - Training
    - Exercise
    - Plan Reviews/Updates
    - Relationship Building
    - Public Outreach

Blue-Sky vs Gray-Sky

- Gray-Sky Events
- Things we do when a disaster or emergency happens:
  - Response -
    - Protection of life/Life-saving
    - Incident stabilization
    - Protection of facility/infrastructure

Building Relationships

- How do we build relationships?
  - GET TO KNOW YOUR NEIGHBORS
    - Who has skid steers/heavy equipment
    - Where can you do commercial amounts of laundry
    - Who can provide refrigerator/freezer access
    - Who has manpower to move people, beds, food, etc.
    - Who can provide meals if you lose food production capability
  - Even in the largest of communities, LTC and hospitals are a cornerstone of the community


Planning for the Bad Days
Staff, Patient, &
Resident Safety
Why?
Resiliency

Staff, Patient, & Resident Safety

- Financial
- Legal
- Culture
- Satisfaction

Why is Resiliency Important?

- Continuity of Care – Continuing to provide the best care to the most people for the longest amount of time.
- Continuity of Operations – Continuing to maintain the business aspect of the facility.
- Quality of Life – Ensuring minimal disruption of day-to-day life to our residents
- Economic Stability - Ensuring our staff remains gainfully employed and we provide services/employment to our communities


W. Jungle Blvd.
W. 20th St.
S. Malden Ln.
S. Main St.
Franklin
Technology
Center
St. Mary's
Elementary School
Joplin
High Scho
Greenbriar
Nursing Home
SJRMC
Mercy
Village
W.


VEED.IO

What do we plan for?

NATURAL & MANMADE HAZARDS

- Wind Events
- Extreme Temps
- Utility Failures
- Active Threats
- Cyber

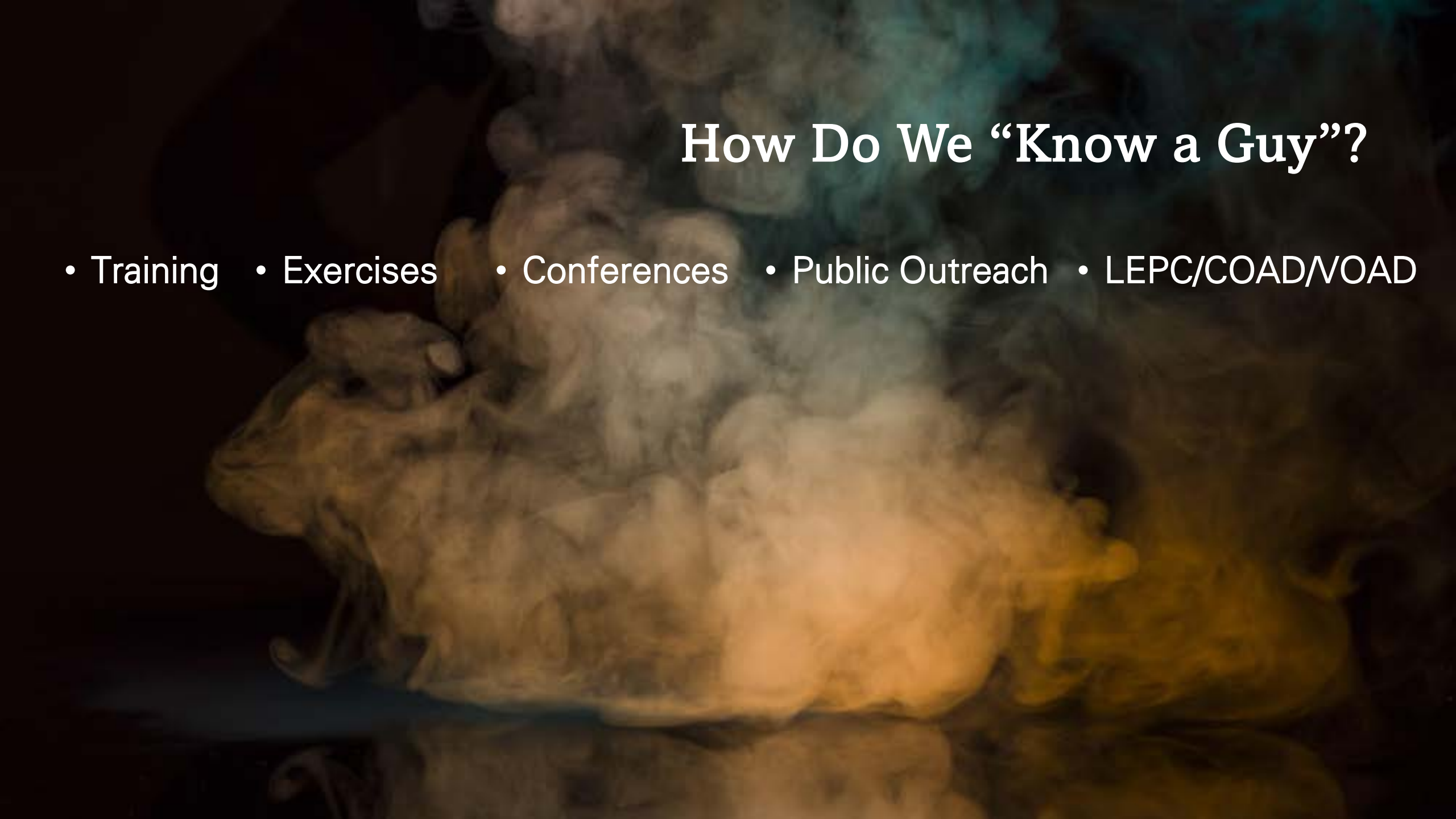
THIRA/HVA

- THIRA – Threat & Hazard Identification & Risk Assessment
  - Is also done at the city/county/regional level
  - Easily adaptable to healthcare facilities
- HVA – Hazard Vulnerability Analysis
  - Similar to the THIRA
  - Focused more on healthcare/healthcare facilities

Using the THIRA/HVA

- Mitigation Efforts
- Training & Exercises
- Plan Development & Refinement

How Do We “Know a Guy”?



How Do We “Know a Guy”?

- Training
- Exercises
- Conferences
- Public Outreach
- LEPC/COAD/VOAD


Story-Time.....

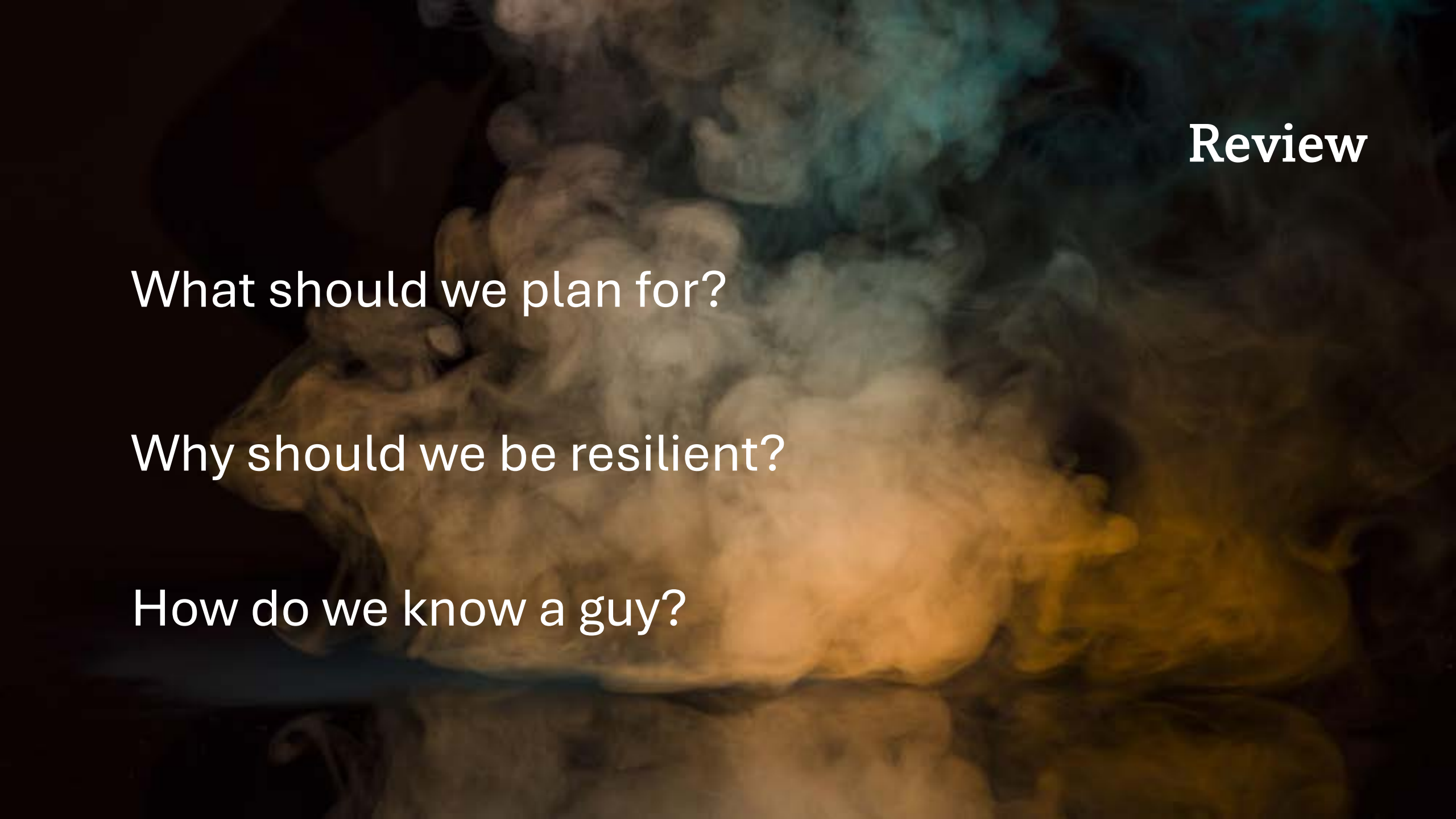
Clark County MYTEP

MOBEX Trigger

Moberly Water Failure

COVID Response

NEMO Derecho



Review

What should we plan for?

Why should we be resilient?

How do we know a guy?

When ”I Know a Guy” Hits Home

Contact Information

- Christopher Blomgren
  - Sappernurse@gmail.com (personal)
  - Chris.Blomgren@katmaisolutions.com (work)
  - 660-342-3962 (cell)
  - 907-308-3698 (work)
  - https://www.linkedin.com/in/christopher-blomgren/

ELDERLY VULNERABILITY AND DISASTER-ASSOCIATED PSYCHOLOGICAL TRAUMA: CONSIDERATIONS FOR FACILITY DECISION MAKING

JACQUELYN MARCHAND, PHD, HCEM-B

VICE-PRESIDENT OF ADMINISTRATIVE SERVICES & COMMUNITY RESILIENCE

DISCUSSION POINTS

- Brain Function & Decline
- Physical Decline
- Disaster-Induced Psychological Trauma
- Considerations for Facilities

BRAIN FUNCTION & DECLINE

- **Cognitive impairment** is present in 10-30% of elderly population
- **Brain size decreases with age**
- **Crystallized abilities** improve until age 60, but **fluid abilities** have steady decline from age 20-80
- **Sensory and processing speed and executive functioning decline with age**
- Functional brain decline impedes information processing

BRAIN FUNCTION & DECLINE

- **Dementia** is the progressive loss of cognitive functioning to the extent it interferes with daily life
  - Brains cells stop functioning and die
  - Common symptoms: short-term memory loss; difficulty with communicating, visual and spatial abilities, reasoning, complex tasks, planning and organizing, coordinating and motor functions; confusion and disorientation
  - In 2015 50 million people had some form of dementia
  - Expected to be 82 million by 2030 and 152 million by 2050

BRAIN FUNCTION & DECLINE

- **Traumatic brain injuries** are very common in the elderly population due to increased fall risk
- **Illness or chronic health conditions**
- **Medications for health conditions**
- **Malnutrition**

BRAIN FUNCTION & DECLINE

- **How does brain function and decline contribute to psychological trauma?**
  - Difficulty processing new information and changes to routine
    - What is going on?
  - Difficulty reasoning
    - Why is this happening?
  - Sense of time is lost
    - How long will this last?
  - Difficulty communicating feelings and needs
    - I need….
  - The brain’s inability to do these normal functions leads to higher levels of anxiety without factoring in disasters

PHYSICAL DECLINE

- **Changes to vision**
  - Presbyopia, senile miosis, cataracts, glaucoma, macular degeneration, diabetic retinopathy
- **Hearing loss**
  - Presbycusis
  - Difficultly hearing sounds over 4 KHz
  - Difficulty filtering out distracting noises

PHYSICAL DECLINE

- **Chronic health conditions/comorbidity**
  - Heart disease, diabetes
  - 80% of elderly have at least 1 chronic health condition
- **Sedentary lifestyle**
- **Extended hospital stays**
- **Muscle mass and strength decreases**
  - 30-50% reduction between ages 30-50
  - Strength decreases 12-14% each decade after 50

PHYSICAL DECLINE

- **How does physical decline affect psychological trauma?**
  - Physical decline leads to feeling of helplessness, vulnerability, and isolation
  - Increases likelihood of anxiety, confusion and fear without factoring in disasters
  - Those under such mental duress are more prone to disaster-induced psychological trauma

DISASTER-INDUCED PSYCHOLOGICAL TRAUMA

- 3 tiers of factors influencing risk perception: macro, meso, and micro
- Territorial functioning
- Ontological security
- Memory bias
- Social attachment theory
- Time pressure
- Elderly are more prone to long-term psychological stress

DISASTER-INDUCED PSYCHOLOGICAL TRAUMA

- Recency effect
- Spatial optimism bias
- Elderly more prone to PTSD
- Elderly have greater sense of loss
- Psychosomatic illness

DISASTER-INDUCED PSYCHOLOGICAL TRAUMA

- What triggers psychological trauma?
  - Exposure hypothesis
    - Past experiences
    - Chronic conditions
    - Fragile social support
    - Mental health
    - Disruption of daily routine

DISASTER-INDUCED PSYCHOLOGICAL TRAUMA

- What trauma can a disaster inflict on psyche?
  - I’ve lost control
  - I can’t help myself/family
  - I’ve lost my possessions/memories
  - Things will never be the same
- Elderly psyche
  - Already is losing control
  - Already is losing ability to help self/others
  - Possessions and memories are prized
  - Wants to keep things the same forever

DISASTER-INDUCED PSYCHOLOGICAL TRAUMA

- Signs of psychological distress
  - Withdrawal
  - Apathy
  - Agitation/Irritability/Anger
  - Suspiciousness
  - Disorientation/Confusion
  - Memory loss
  - Sleep disorders
  - Physical distress
  - Loss of personal care abilities

CONSIDERATIONS FOR FACILITIES

- Do the regulations require an evacuation?
- Vulnerability of population
  - Does vulnerability increase with evacuation or SIP?
- Main needs of elderly: nutrition, physical/ADLs, mental
  - Can these needs be met sufficiently at evacuation site?
- Maslow's Hierarchy of Needs
  - physiological, security, support system, recognition

CONSIDERATIONS FOR FACILITIES

- Minimize disruptions to routine a priority after ensuring safety
  - Try to stay on schedule with daily routines as much as possible
  - Try to keep as many daily activities as possible
    - e.g., happy hour!
  - Familiar faces
- Every day is new
  - Act like every encounter is the start of the change
    - e.g., The building is being painted . We'll be back tomorrow.
  - Be creative with the explanations
    - e.g., We are on a cruise

CONSIDERATIONS FOR FACILITIES

- Staff should be prepared for behavioral changes & outbursts/non-compliance
  - Aggressive behavior
  - Crying/Depression/Isolation
  - Increased confusion
  - Incontinence/Loss of abilities
  - Wandering/Elopement
- Behavioral changes are most likely psychologically-based rather than physically-based
- Read emotions over words
  - What feeling are they trying to convey?

POYDRAS HOME

QUESTIONS?

JMARCHAND@POYDRASHOME.COM

HTTP://WWW.POYDRASHOME.COM

When Things Go Boom in the Basement

May 26, 2024

Joshua Cook Director Emergency Management
Rich Howlett Enterprise Disaster Response Coordinator

WVUMedicine

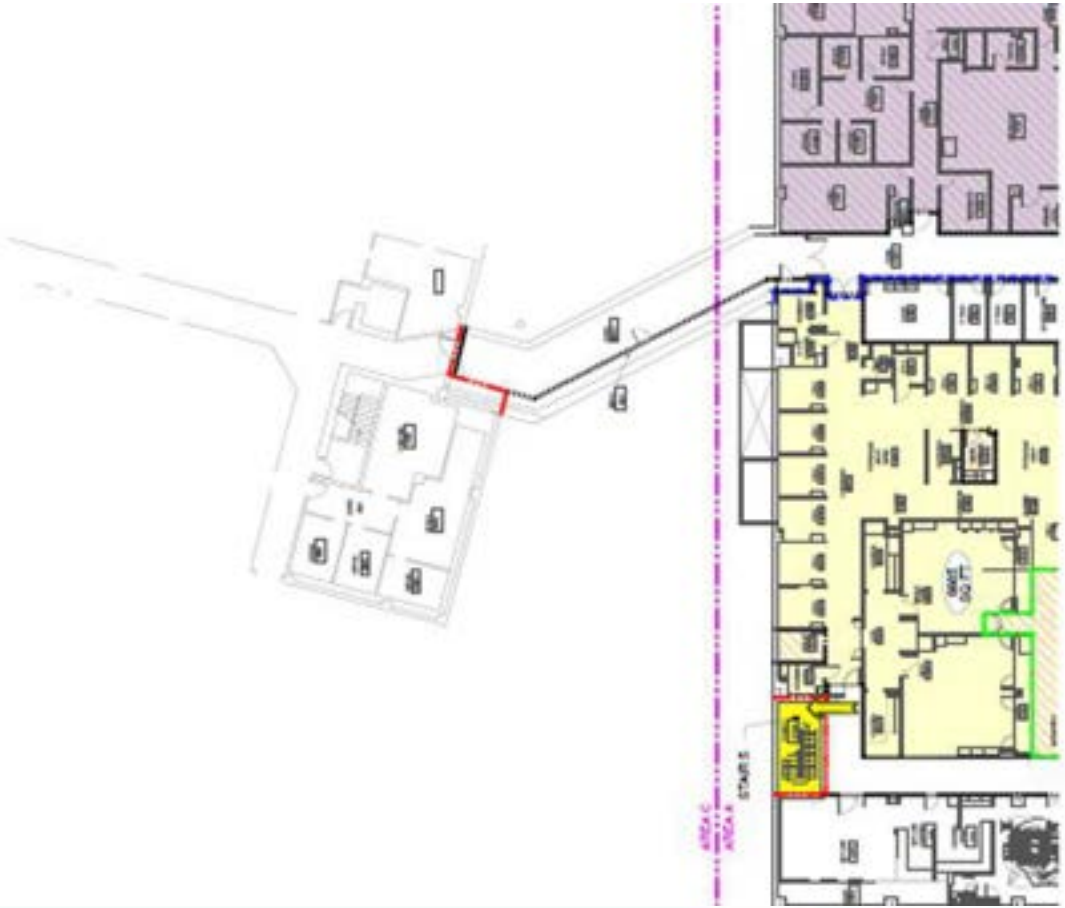
WVU Health Science Center

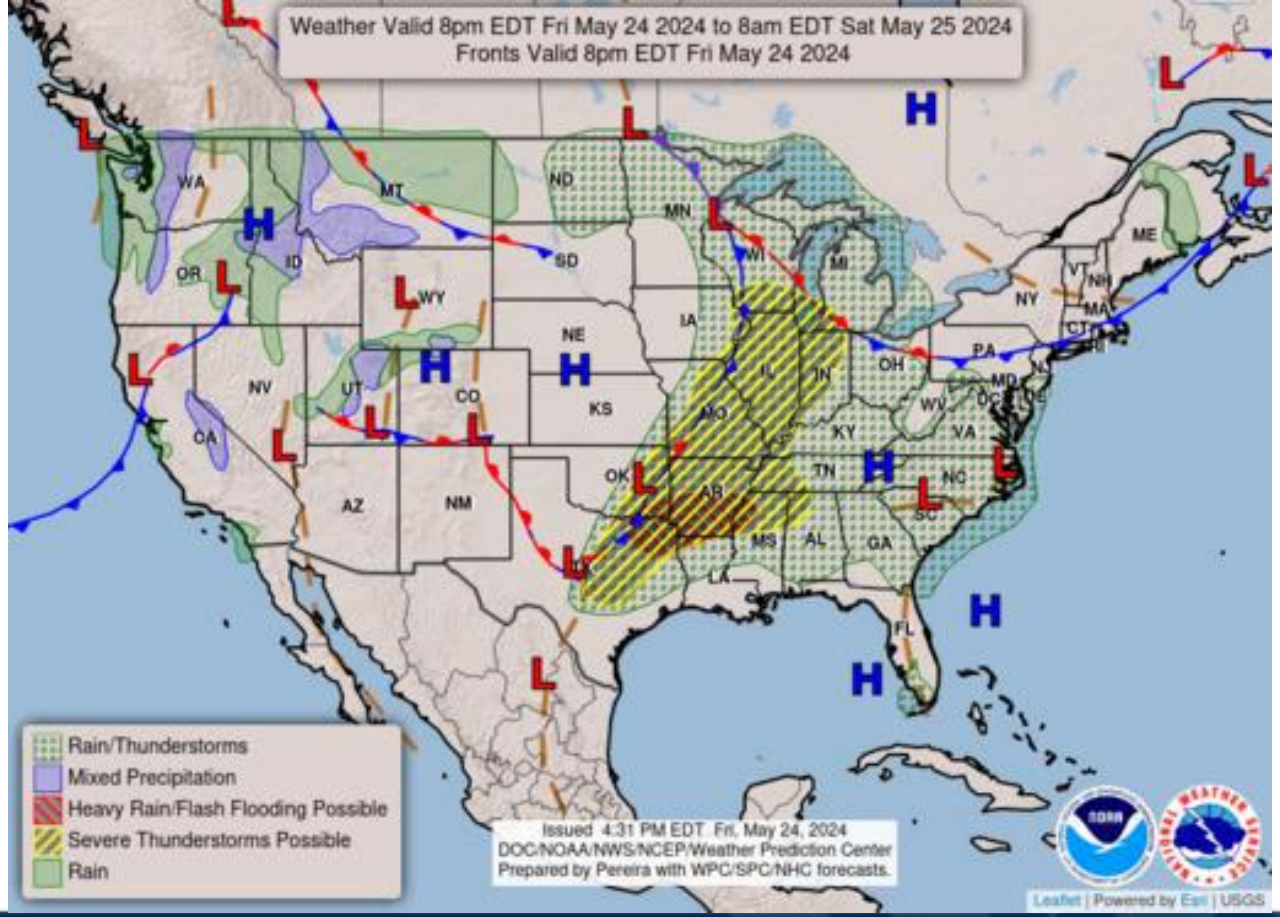
(Original Hospital)

- **Constructed in 1960**
- **522 Bed Hospital**
- **Designed to endure for a lifetime.**
- **Fire in 1967 requiring a shutdown for 3 weeks**
- **Ventilation system failures in 1981**
- **Today, the building houses research facilities, laboratories, and serves as a hub for over 4,000 students.**

J.W. Ruby Memorial

- 800+ Beds
- Built in 1988 because of safety concerns of the old Hospital
- Connected via tunnel with shared utilities





Incident Recap

- In May 2024, a steam pipe explosion at JW Ruby Memorial Hospital sent shockwaves throughout the building, initially raising concerns of a possible bomb.
- The delayed response to the incident resulted in additional damage to patient care areas.
- This multi-million-dollar loss could have been prevented with proper maintenance and staff training and coordination.


AVEVA™ PI Vision™
New Display
Popup Trend
Name
Description
Value
Units
Average
Minimum
Maximum
Bottom
Top
ME A005/Pressure
Measured Pressure
ME A005/Pressure - Design
Pressure - Design
ME A005/Winter Pressure Setpoint
Winter Pressure Setpoint
ME A005/Summer Pressure Setpoint
Summer Pressure Setpoint
No Data
5/26/2024 12:06:51 AM
4h 11m
Now
5/26/2024 5:06:18 AM
WVUMedicine
EMERGENCY MANAGEMENT
Mission Preparedness. Response. Recovery.


MOTOROLA SOLUTIONS
05/26/2024 03:58:25 BWC2-008805


ACTIVATED SPRINKLERS

WVUMedicine

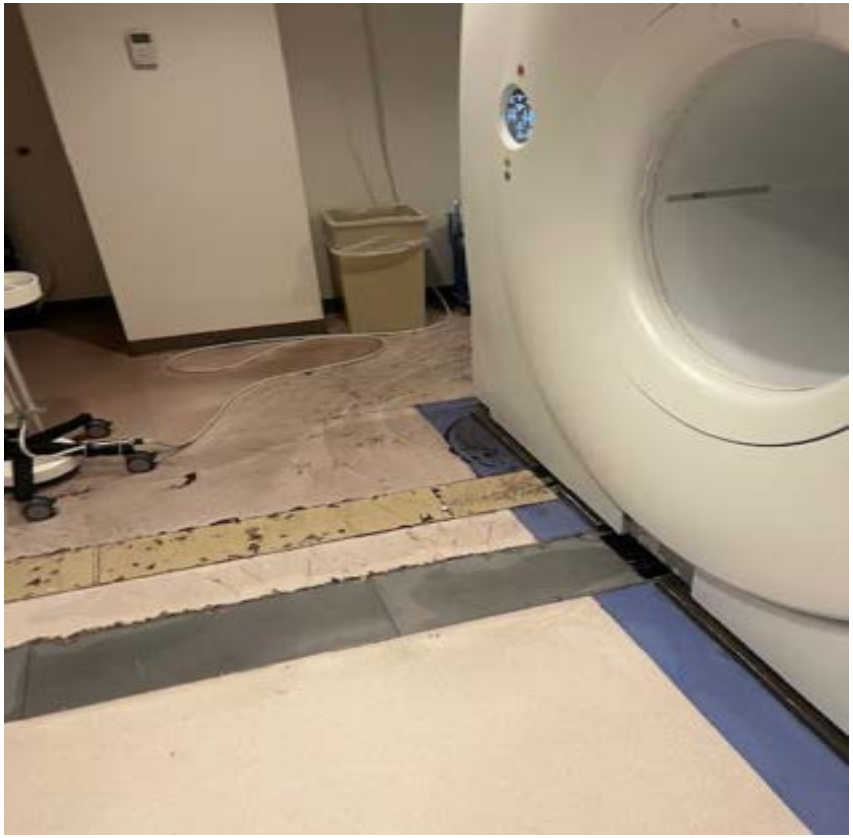
EMERGENCY MANAGEMENT
Mitigation. Preparedness. Response. Recovery.

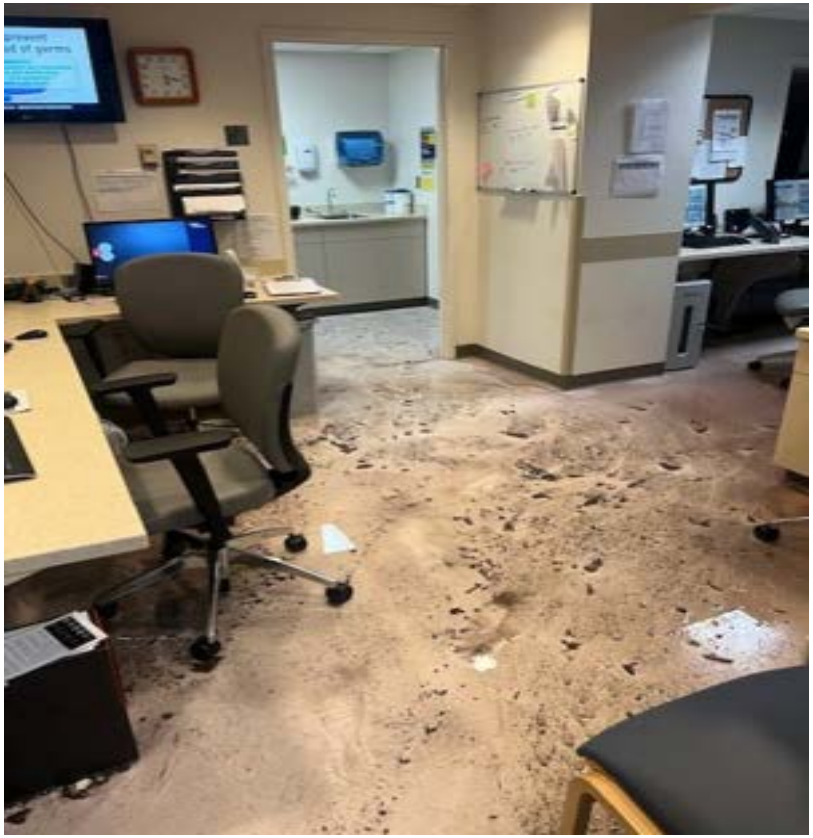
WVUMedicine

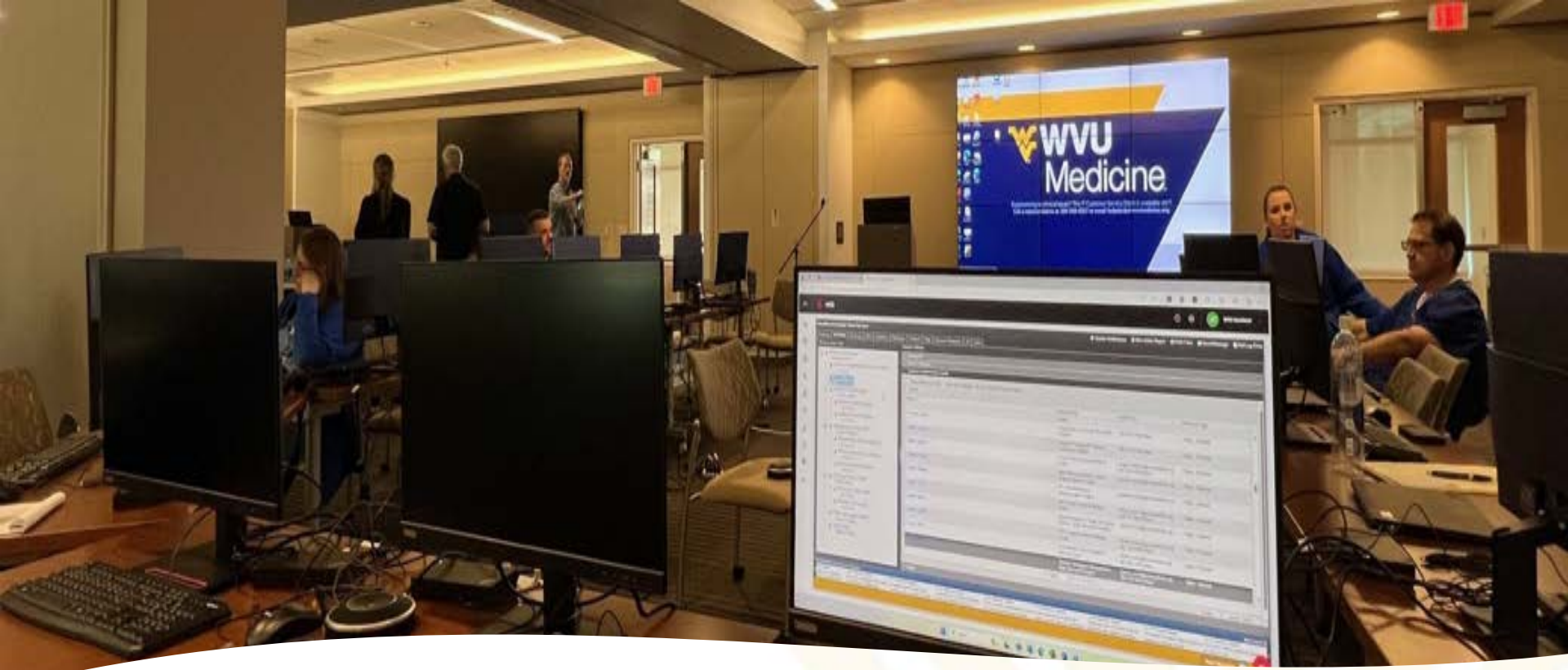
EMERGENCY MANAGEMENT
Mitigation. Preparedness. Response. Recovery.

WVUMedicine

EMERGENCY MANAGEMENT
Mitigation. Preparedness. Response. Recovery.







Incident Command set up to manage the incident

Thank You!

Josh Cook

Rich Howlett

Collaborate with Colleagues 2025

Celebrating 10 Years of Sharing Ideas, Best Practices, and Experiences

Andrew Moull, HcEM-M, Hamilton Health Sciences, Hamilton, Ontario

Anna Hansen, MPH, Association of Healthcare Emergency Preparedness Professionals

Objectives for this Session

- **Building Meaningful Connections**: Develop relationships with industry peers, potential collaborators, and key stakeholders.

- **Knowledge Transfer**: Share and gather insights about industry trends, innovative practices, and emerging technologies.

- **Celebrate being a Healthcare Emergency Manager:** Share stories, experiences, triumphs and failures with your peers to continue to grow our community and *move preparedness forward*!

Let's Begin!

- 10 Questions for 10 Years of AHEPP
- Discuss the question as a table
- Record highlights of your discussion on your Flipchart
- At the end, hang your Flipchart paper on the wall
- Flipcharts will remain on the wall until the end of the conference & will be posted on our app

Practice Question

Share your name and organization, then answer the question…

How did you find yourself in healthcare emergency management?

The Past 10 Years

1) What is your "why"? What drives you to be a Healthcare Emergency Manager (HcEM)

2) What is the best piece of advice you've received and/or given for healthcare emergency management?

3) What is an unexpected hazard/challenge your program encountered in the past 10 years, and how did you navigate it?

Best Practices & Lessons Learned

4) What is the most surprising lesson learned you've encountered in the past 10 years?

5) What is the most creative solution you have implemented to address a challenge? How did it work, and why did it work?

6) What is the exercise that had the largest impact on participants or the most player engagement? What made this exercise so impactful and engaging?

Enhancing Your Program

7) How are you currently using AI in your disaster planning efforts? How do you hope to use AI for disaster planning in the future?

8) How have you moved preparedness forward in your HcEM program?

9) What skills do you see becoming essential for HcEMs over the next 10 years?

Moving Preparedness Forward

10) What is the craziest disaster or emergency you have experienced, and what is the one takeaway from this experience that you think all HcEMs should know or be aware of?

"You won't believe what happened!"

Mass General Brigham

Healthcare Preparedness and Resilience in the Face of a Changing Climate

February 2025

Overview

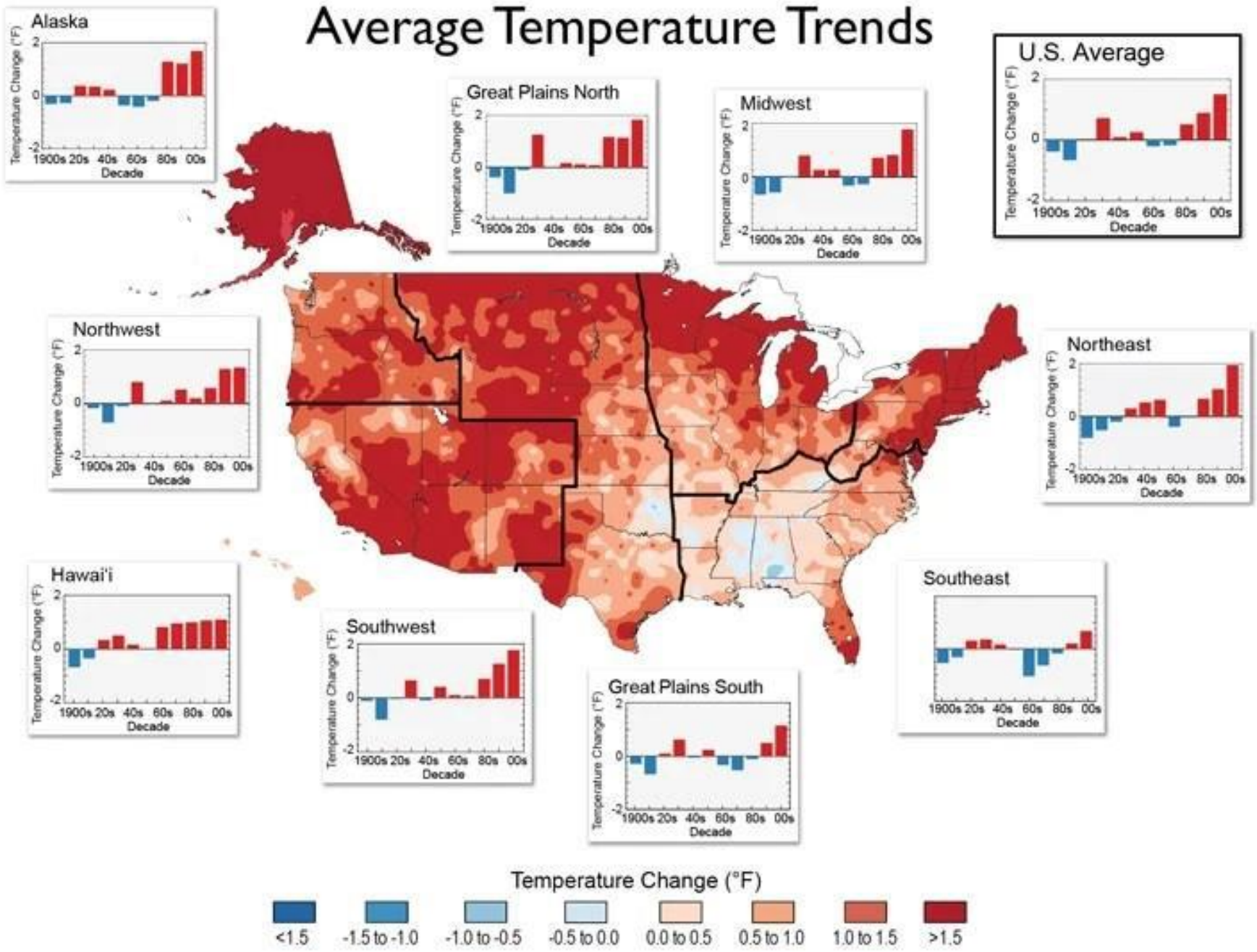
1. Identify both structural and non-structural vulnerabilities among health care systems

2. Discuss how the hazard vulnerability and other risk assessments must evolve to better anticipate the consequences of a changing climate

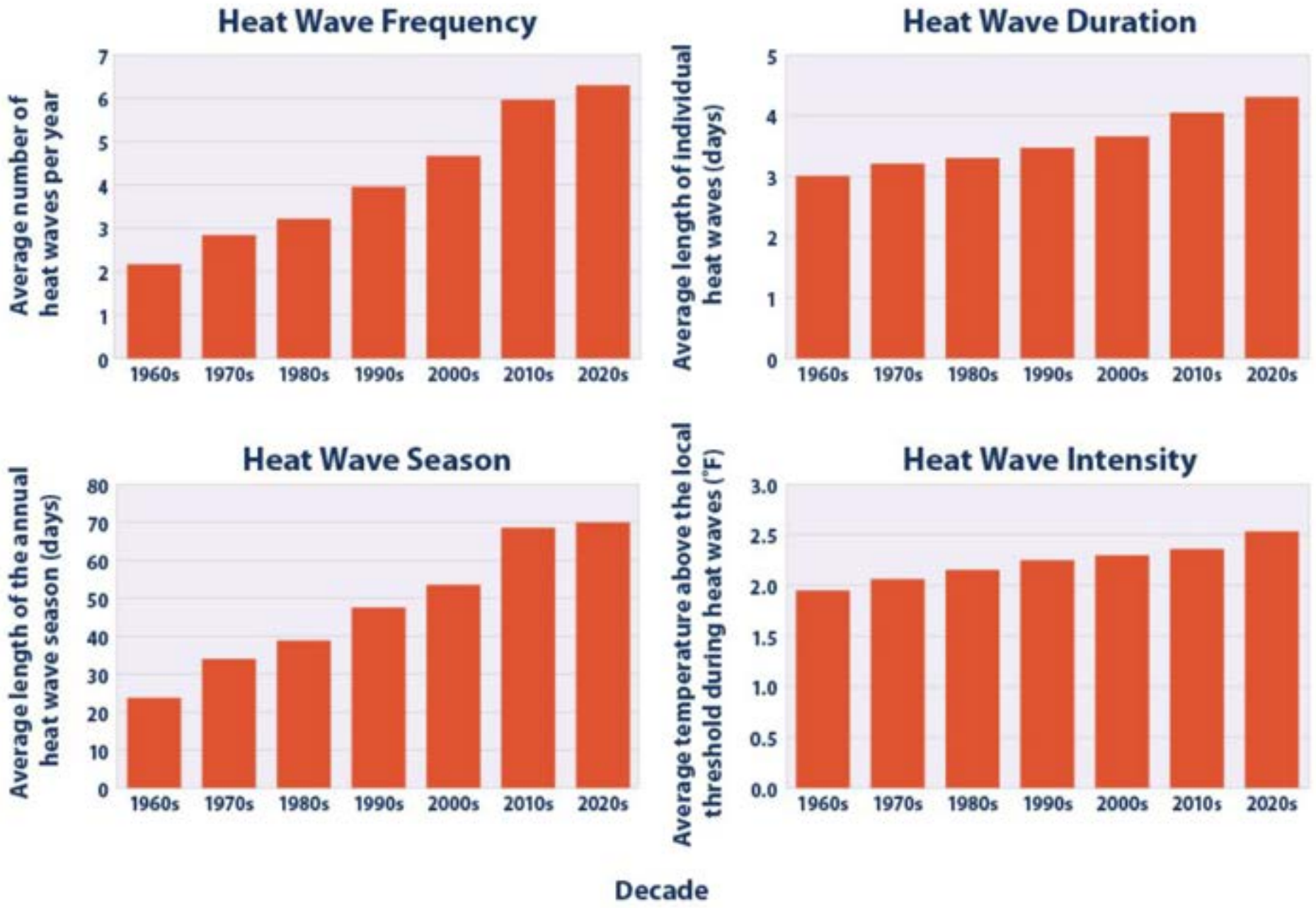
3. Explore how hospitals and healthcare systems can develop better mitigation and response plans to address their risks

4. Recognize potential community and other partners who can help support this work

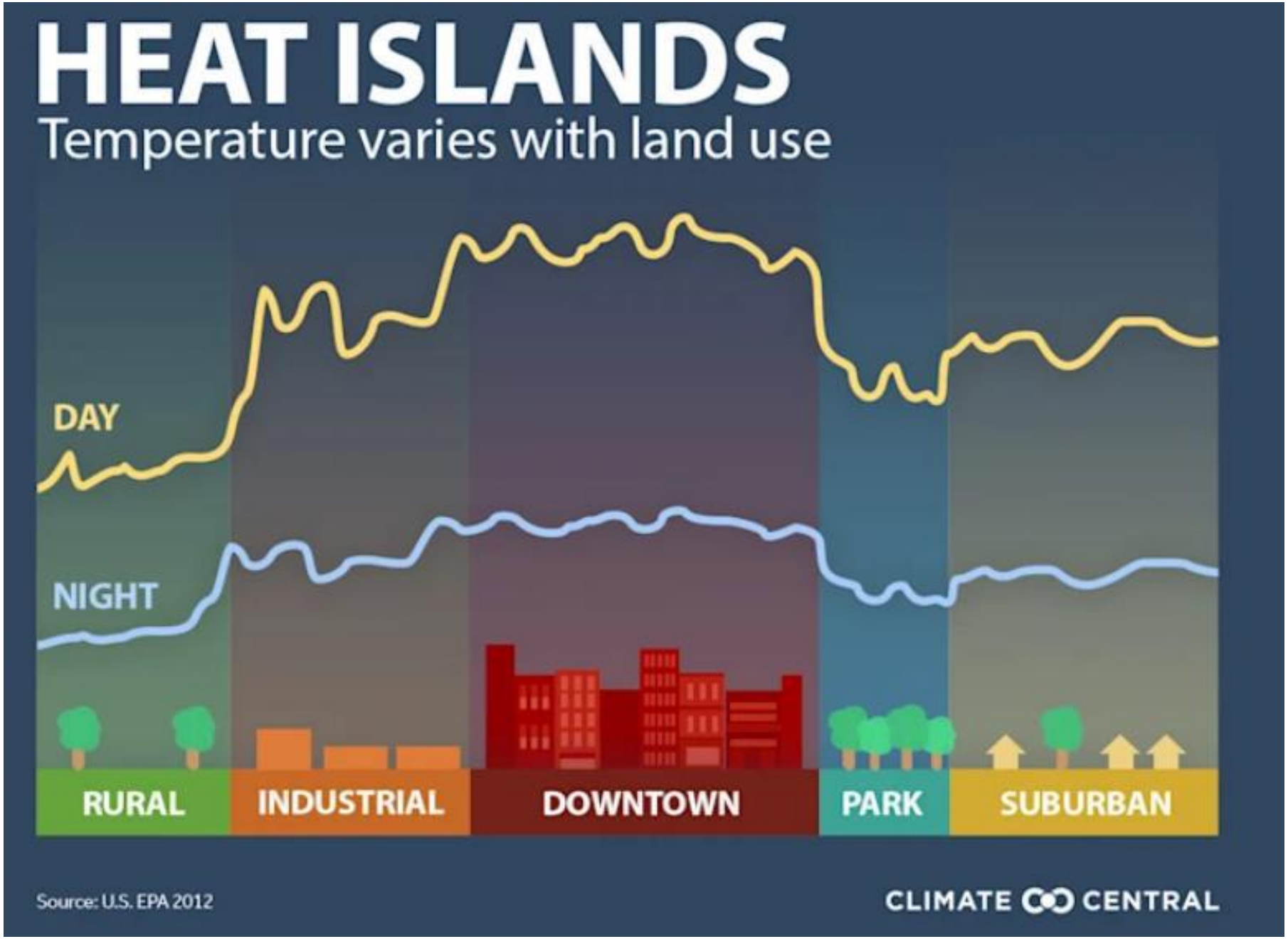
National Trends



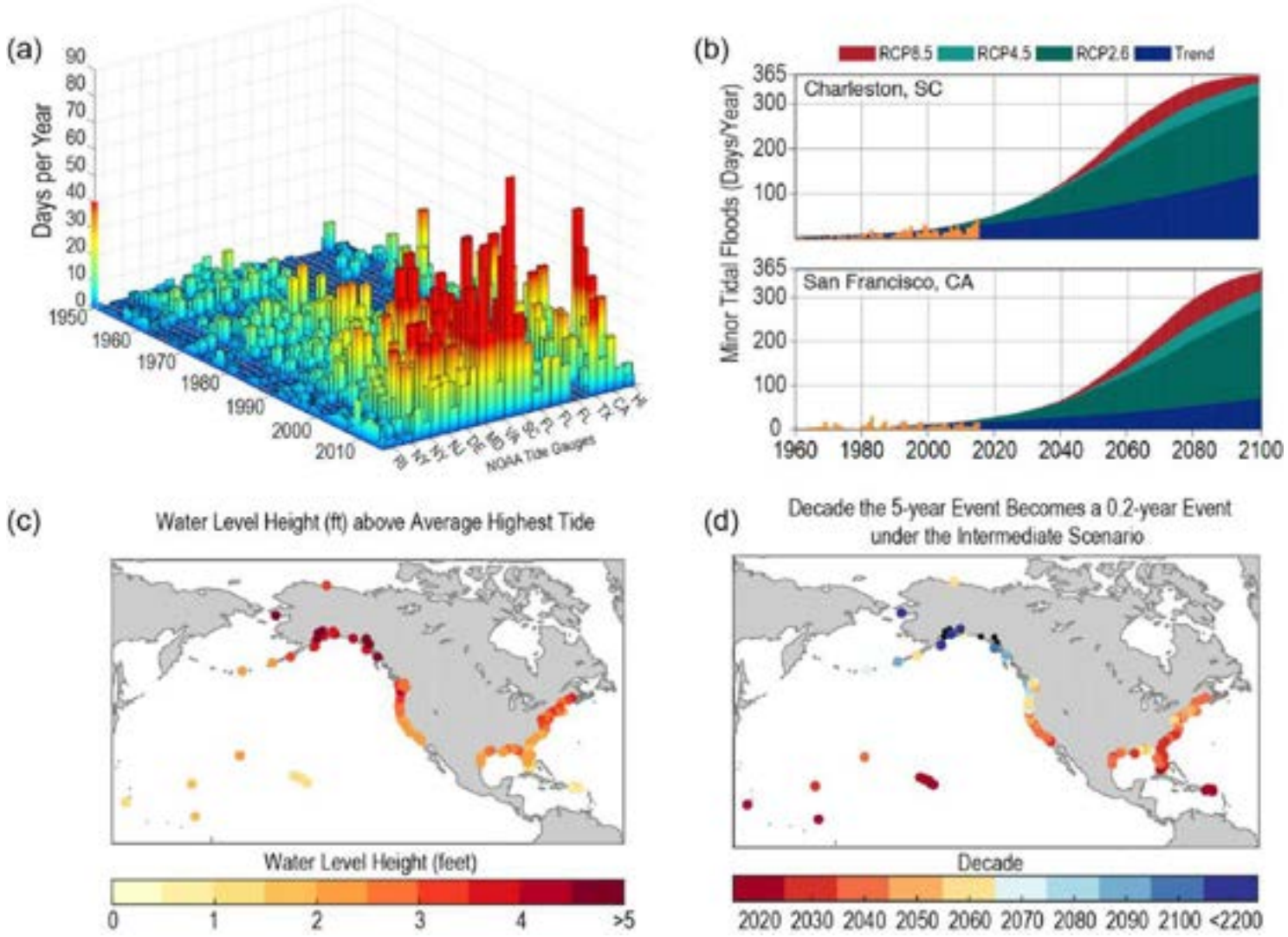
https://www.climatecentral.org/news/climate-change-in-8-compelling-charts-17406



NOAA (National Oceanic and Atmospheric Administration). (2024). *Heat stress datasets and documentation* (provided to EPA by NOAA in April 2024) [Data set].


HEAT ISLANDS
Temperature varies with land use
DAY
NIGHT
RURAL
INDUSTRIAL
DOWNTOWN
PARK
SUBURBAN
Source: U.S. EPA 2012
CLIMATE CENTRAL

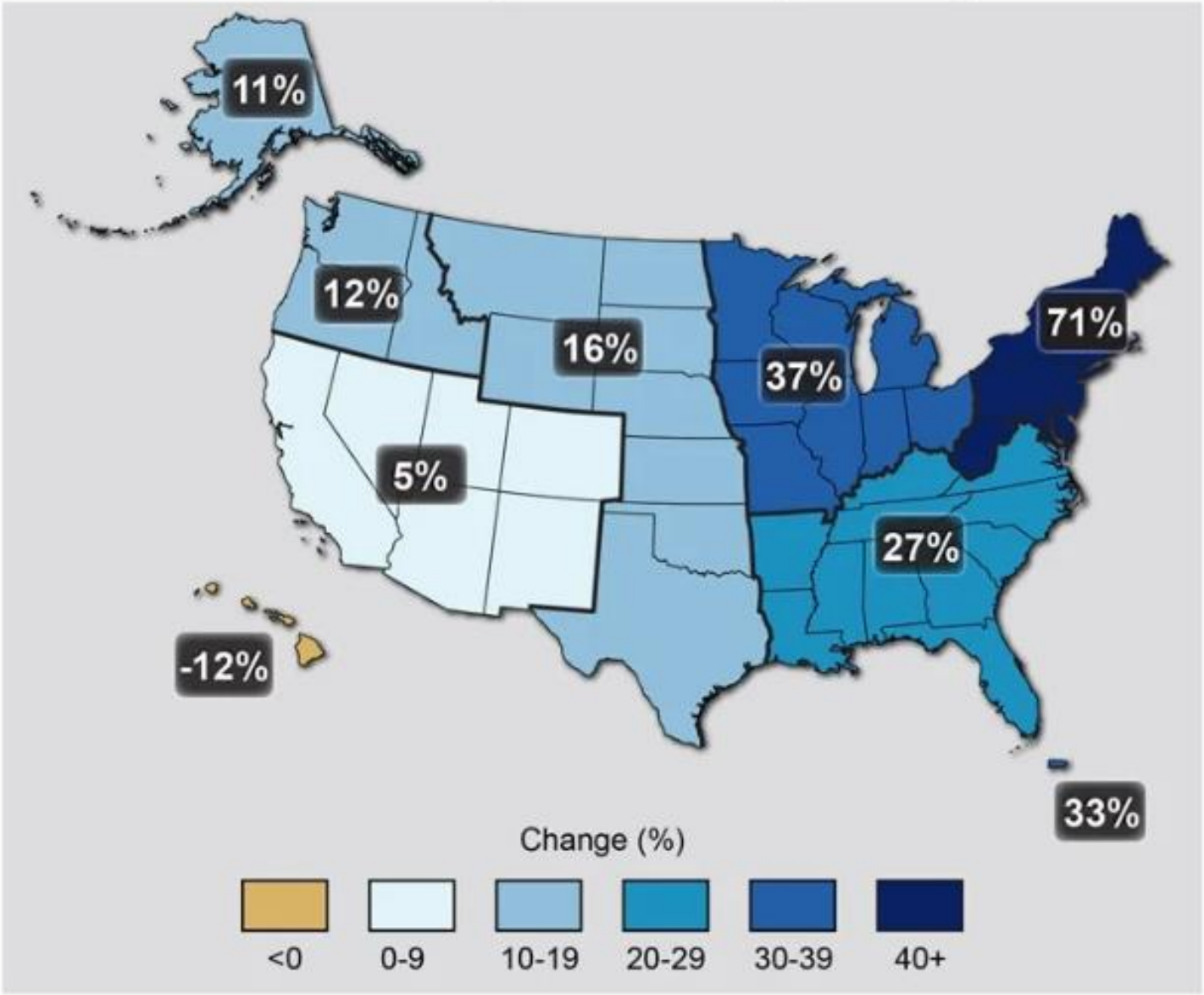
Coastal Flooding



- Tidal flooding increases in depth, frequency, extent
- Frequency and extent of storm related coastal flooding will also increase

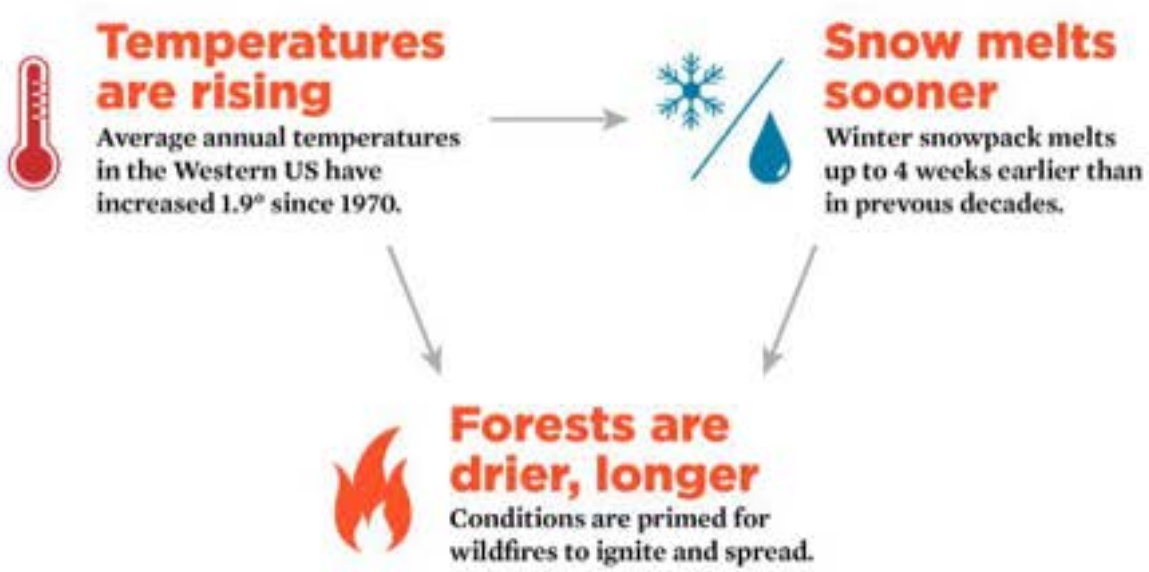
USGCRP, 2017

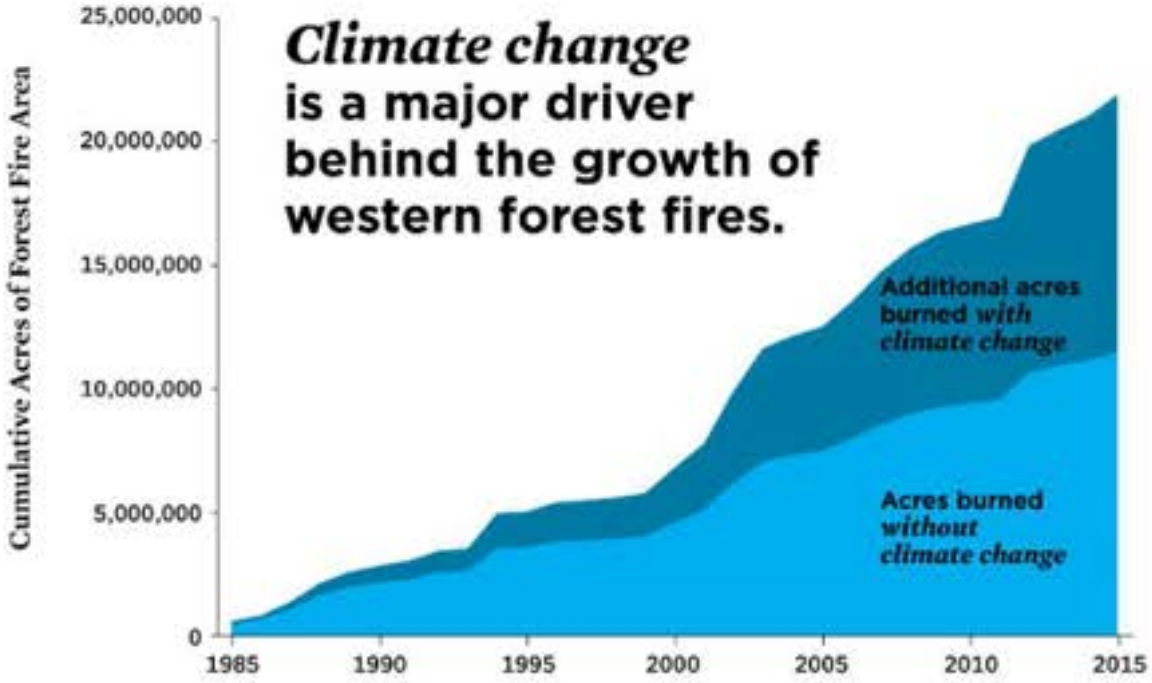
Observed Changes in Heavy Precipitation



https://www.climatecentral.org/news/climate-change-in-8-compelling-charts-17406

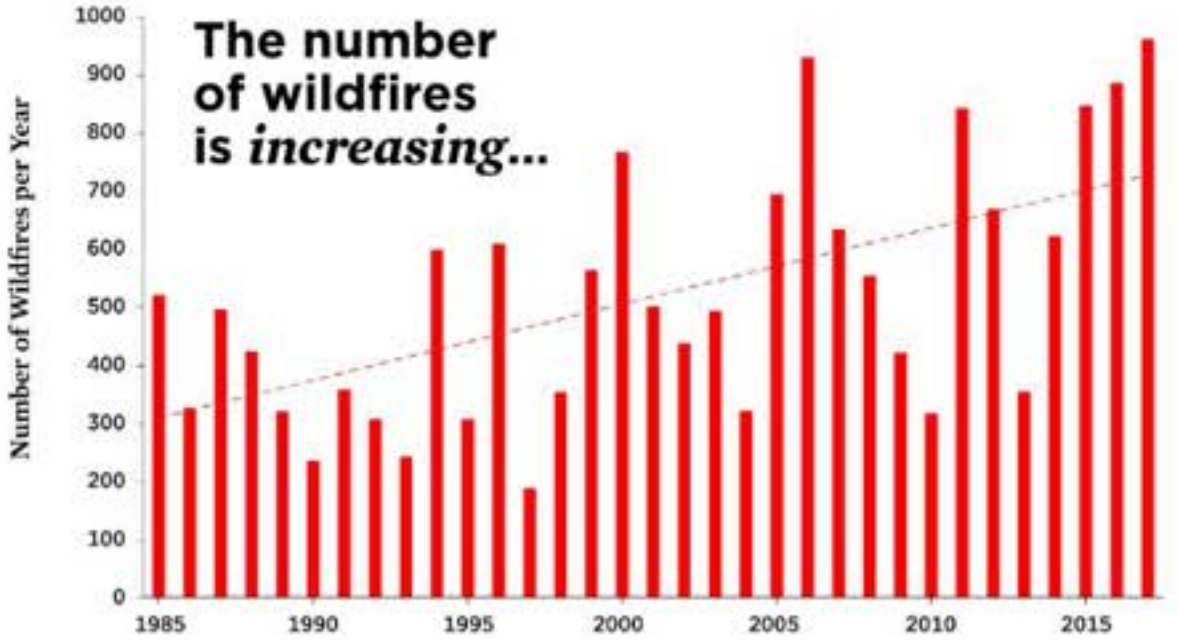
Increased Wildfires

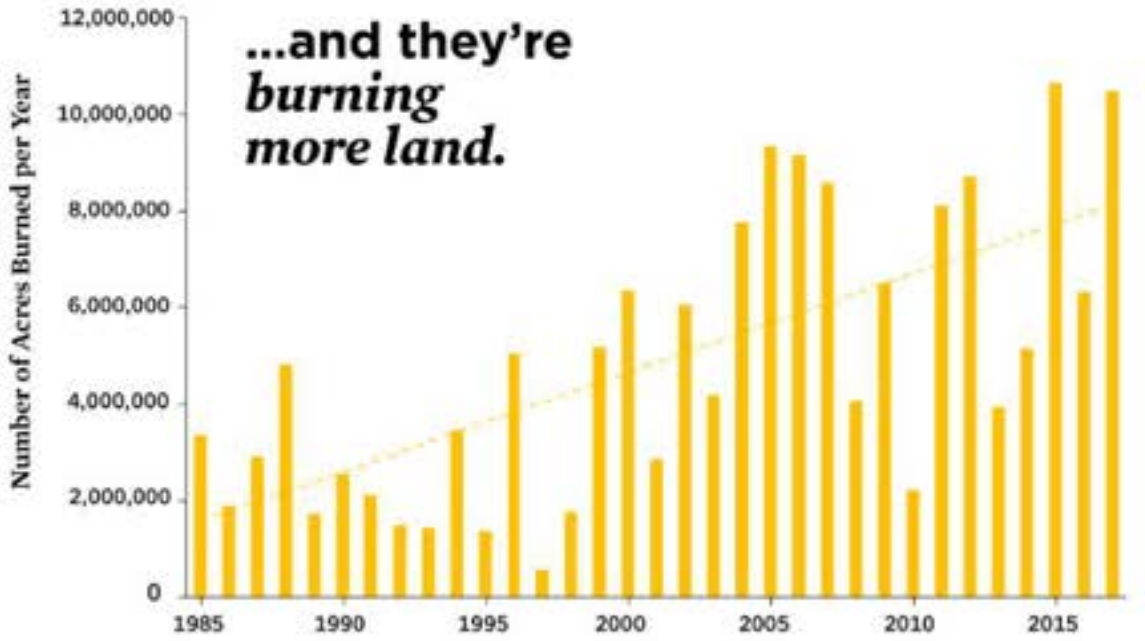




Data shown are from John T. Abatzoglou and A. Park Williams, Impact of anthropogenic climate change on wildfire across western US forests, which models forest fire area as a function of fuel dryness both with and without climate change.

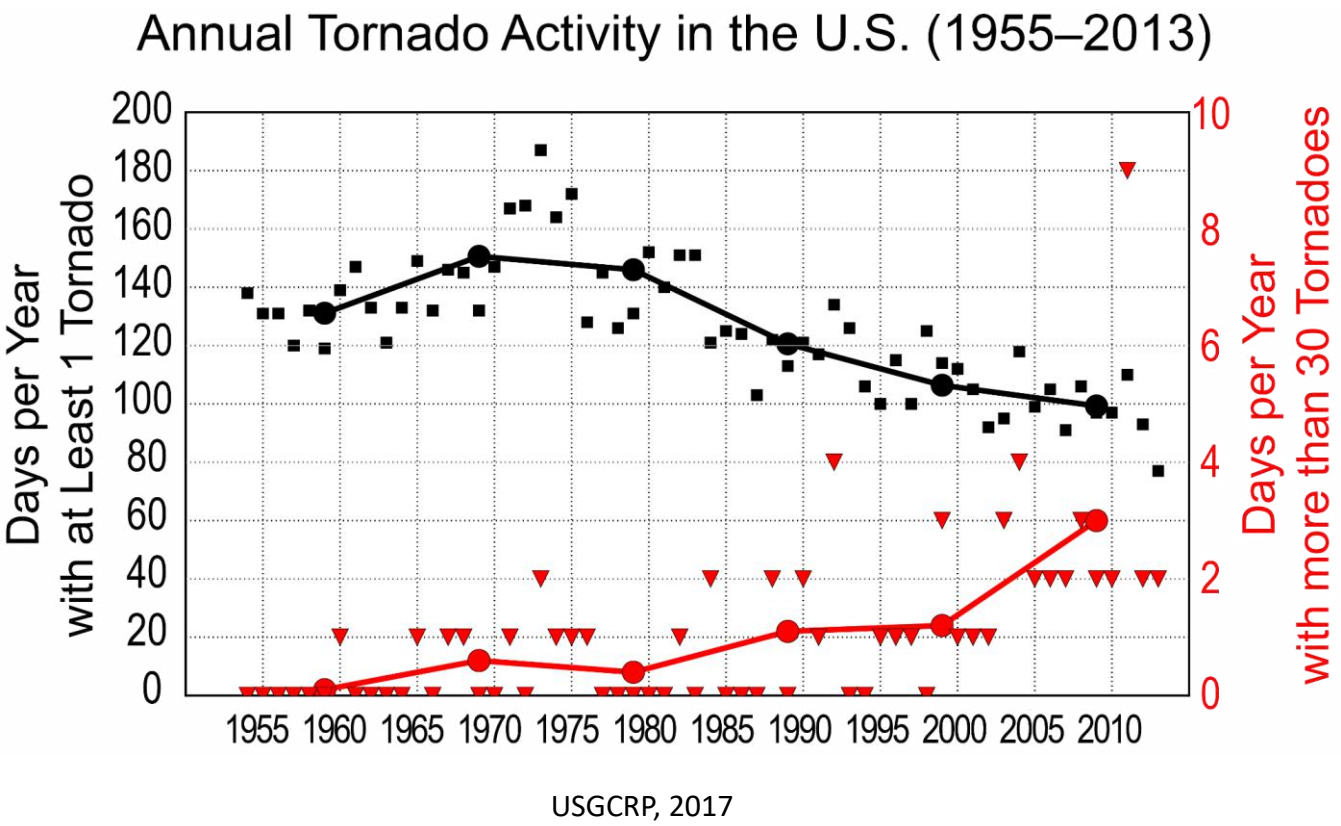
Increased Wildfires



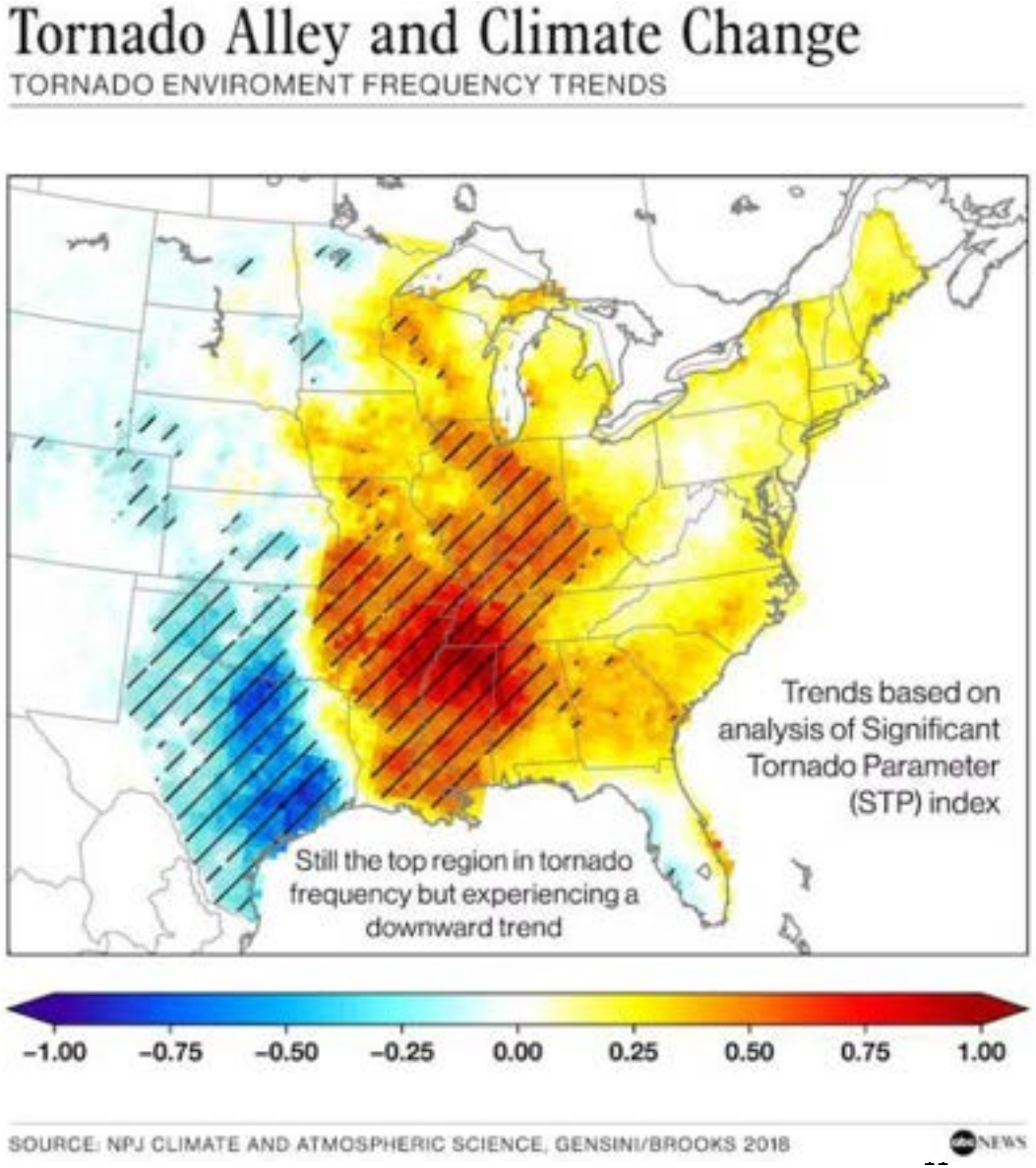


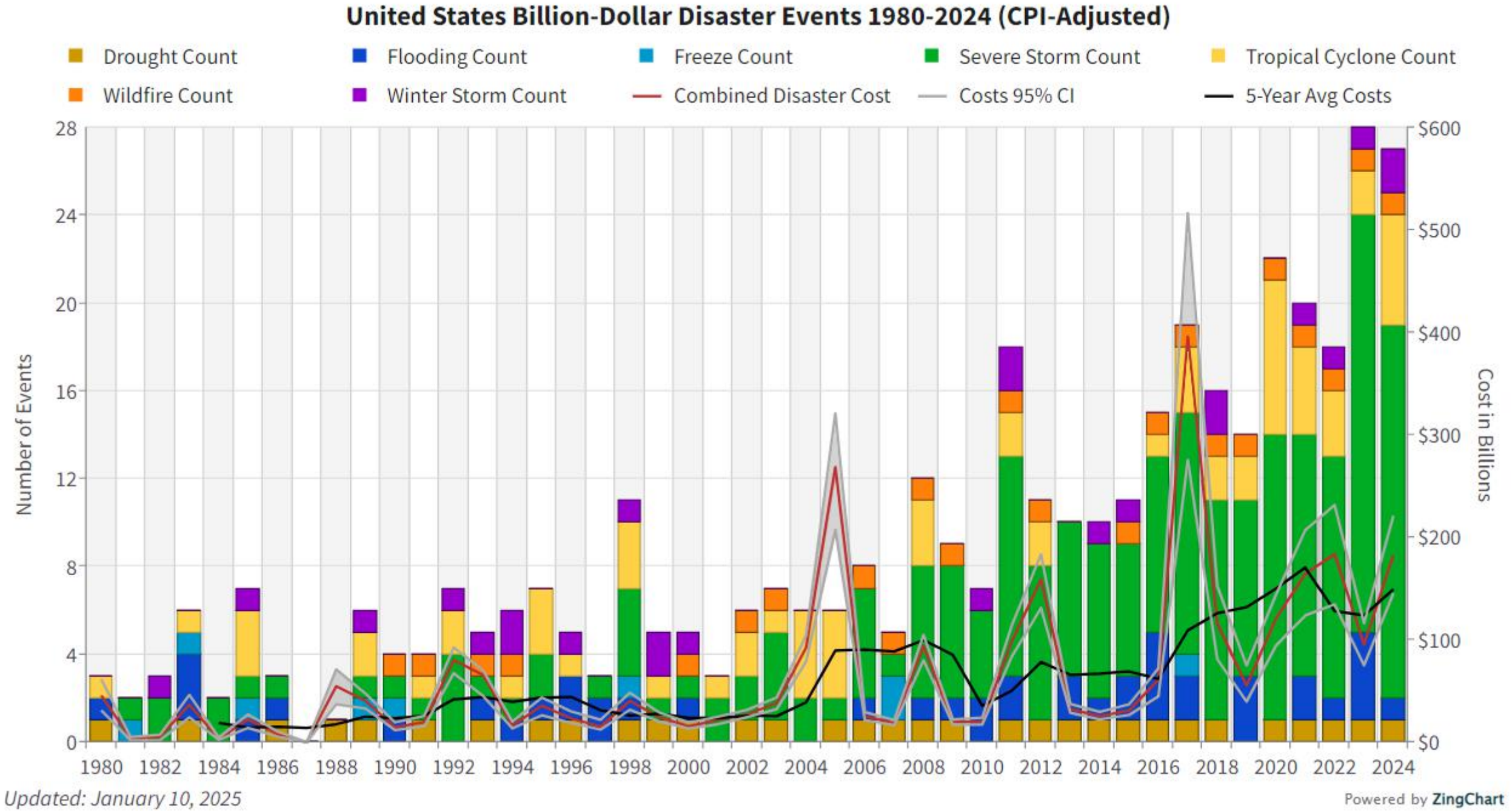
Data from the Monitoring Trends in Burn Severity program. MTBS only includes large fires in the United States (>500 acres for the eastern US, >1000 acres for the west). Prescribed fires removed.

Tornadoes

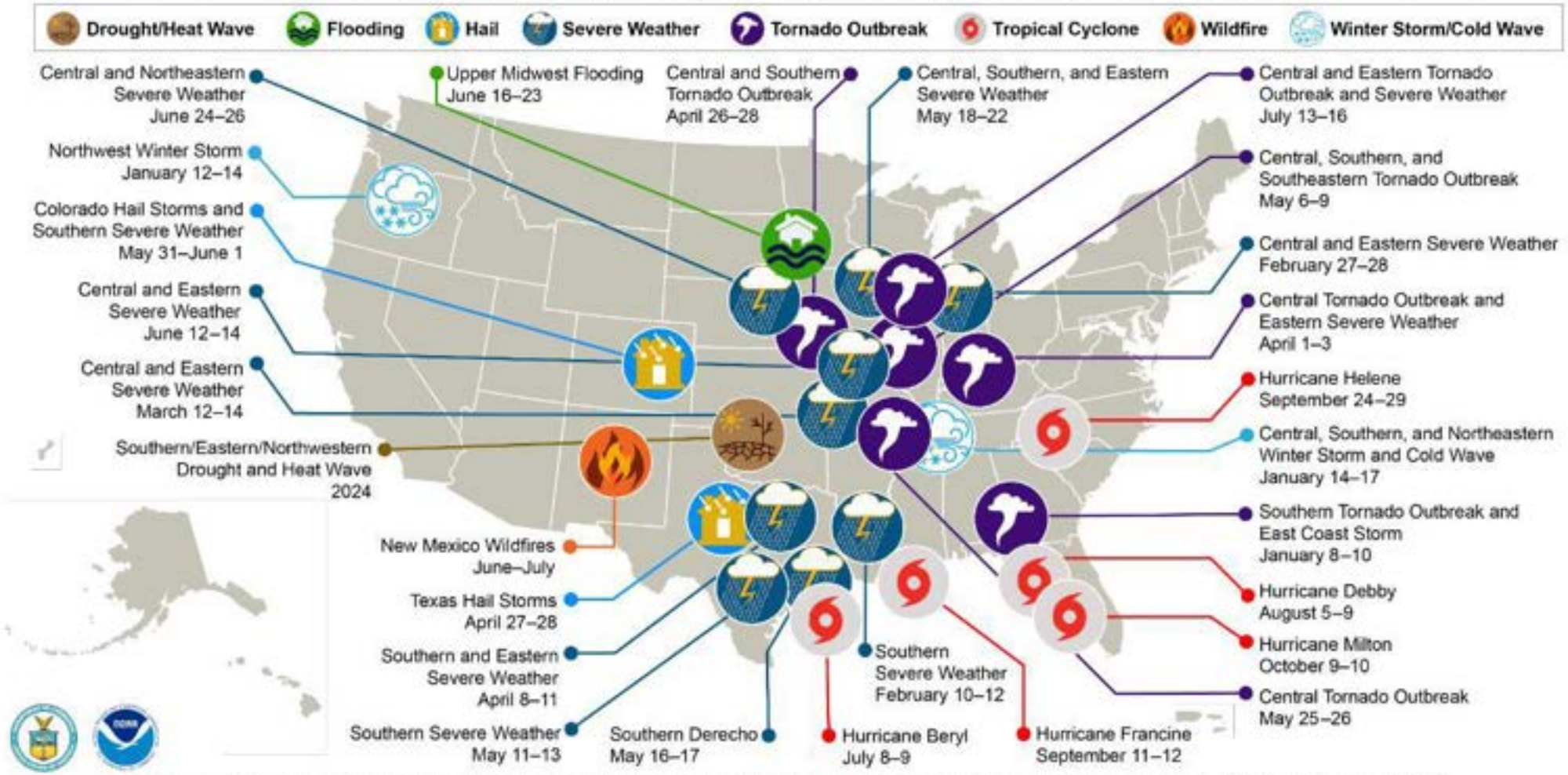


USGCRP, 2017




United States Billion-Dollar Disaster Events 1980-2024 (CPI-Adjusted)
Drought Count
Flooding Count
Freeze Count
Severe Storm Count
Tropical Cyclone Count
Wildfire Count
Winter Storm Count
Combined Disaster Cost
Costs 95% CI
5-Year Avg Costs
Number of Events
Cost in Billions
0
4
8
12
16
20
24
28
$0
$100
$200
$300
$400
$500
$600
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024
Updated: January 10, 2025
Powered by ZingChart

U.S. 2024 Billion-Dollar Weather and Climate Disasters



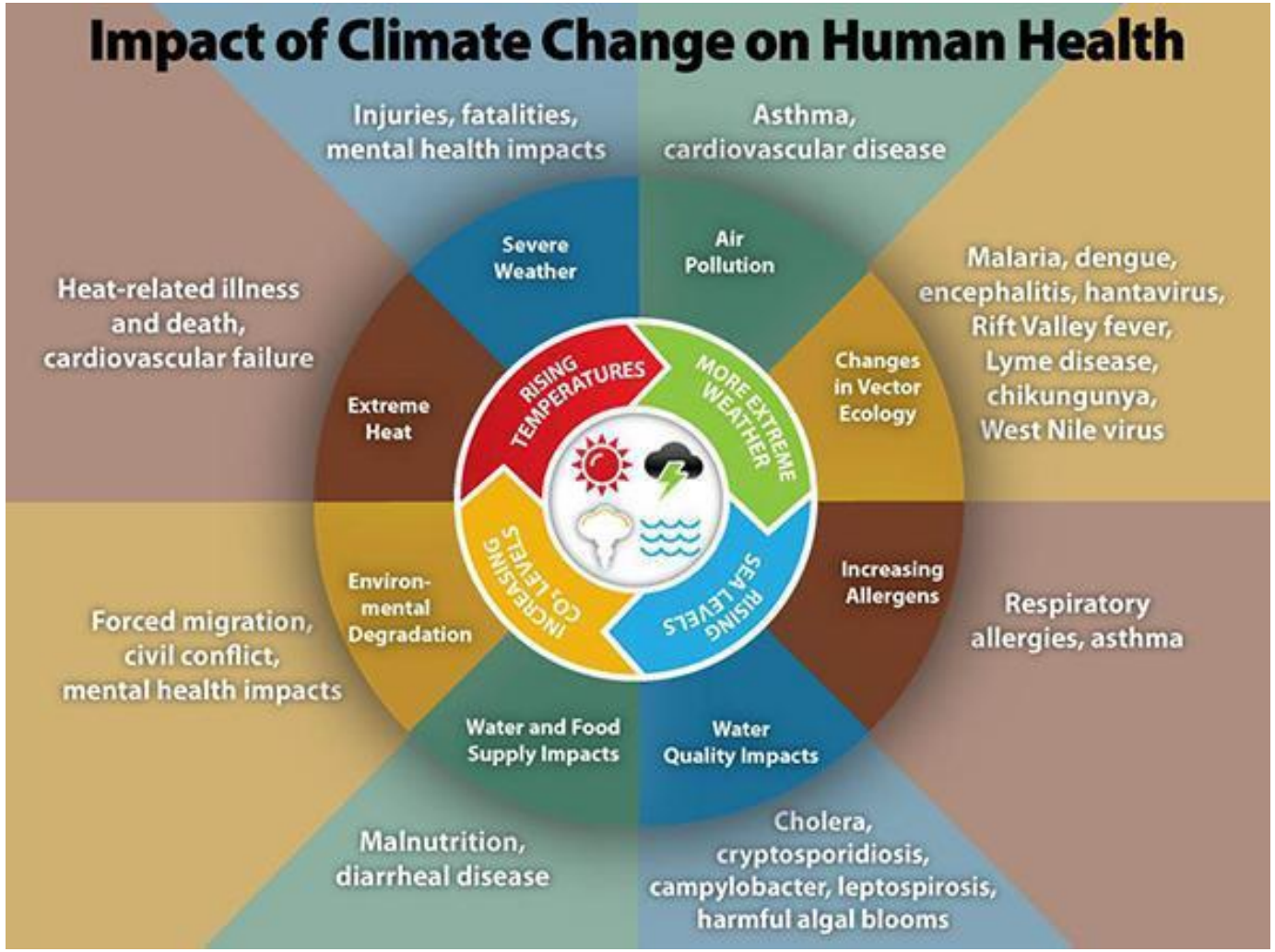
*This map denotes the approximate location for each of the **27 separate billion-dollar weather and climate disasters that impacted the United States in 2024.***

All Disasters | Drought | Flooding | Freeze | Severe Storm | Tropical Cyclone | Wildfire | Winter Storm

NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2025). https://www.ncei.noaa.gov/access/billions/, DOI: 10.25921/stkw-7w73

Healthcare System Consequences

Climate Change and Human Health



Source: http://www.cdc.gov/climateandhealth/effects/default.htm

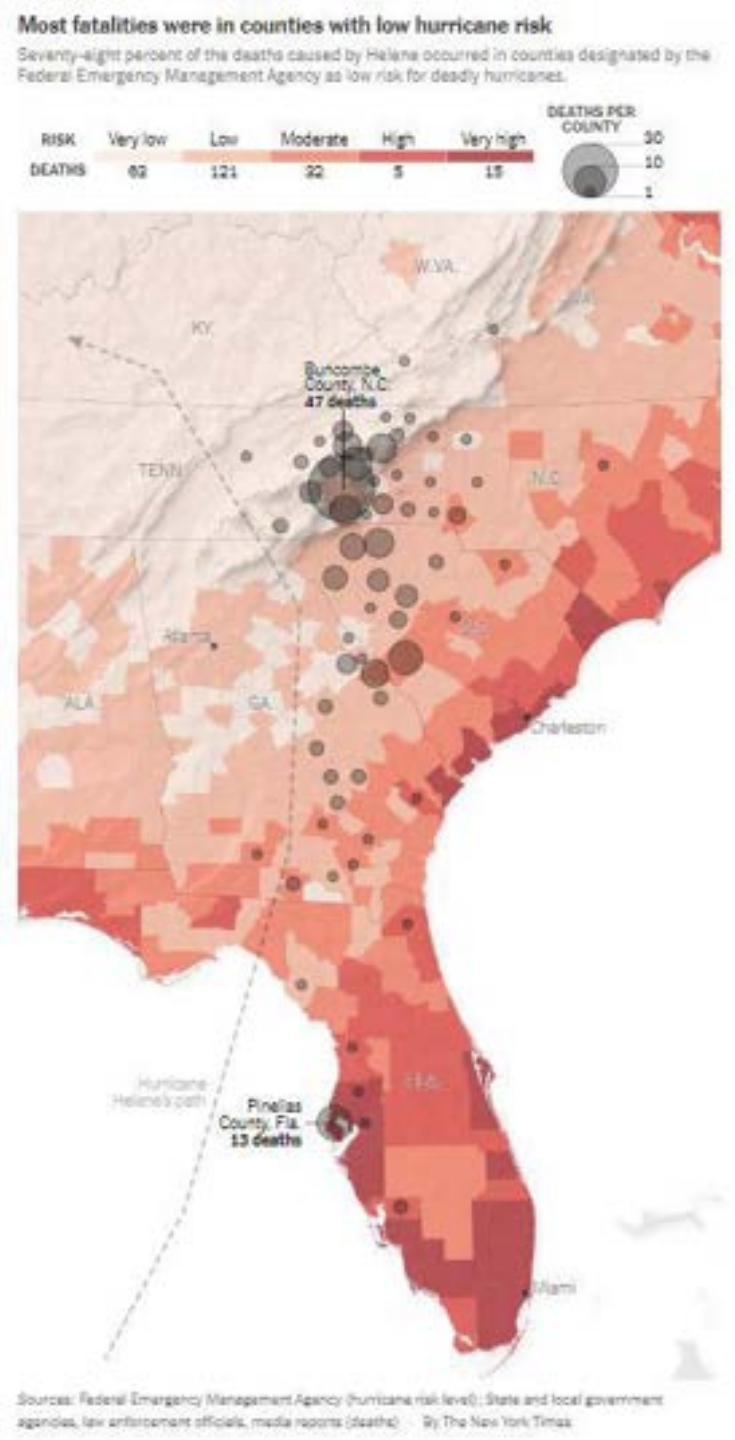
Vulnerability is Evolving

Hurricane Helene (2024) was a good example of the changing toll of hurricanes in previously unexpected places

The inland consequences of Hurricane Irene (2011) in Vermont are another example of severe inland consequences from a hurricane

- 2,000 roads / 500 miles of roads washed out
- 20,000 acres of farmland damaged

Indirect deaths (from power outages, traffic accidents) are common



Freshwater flooding has overtaken storm surge as the greatest threat

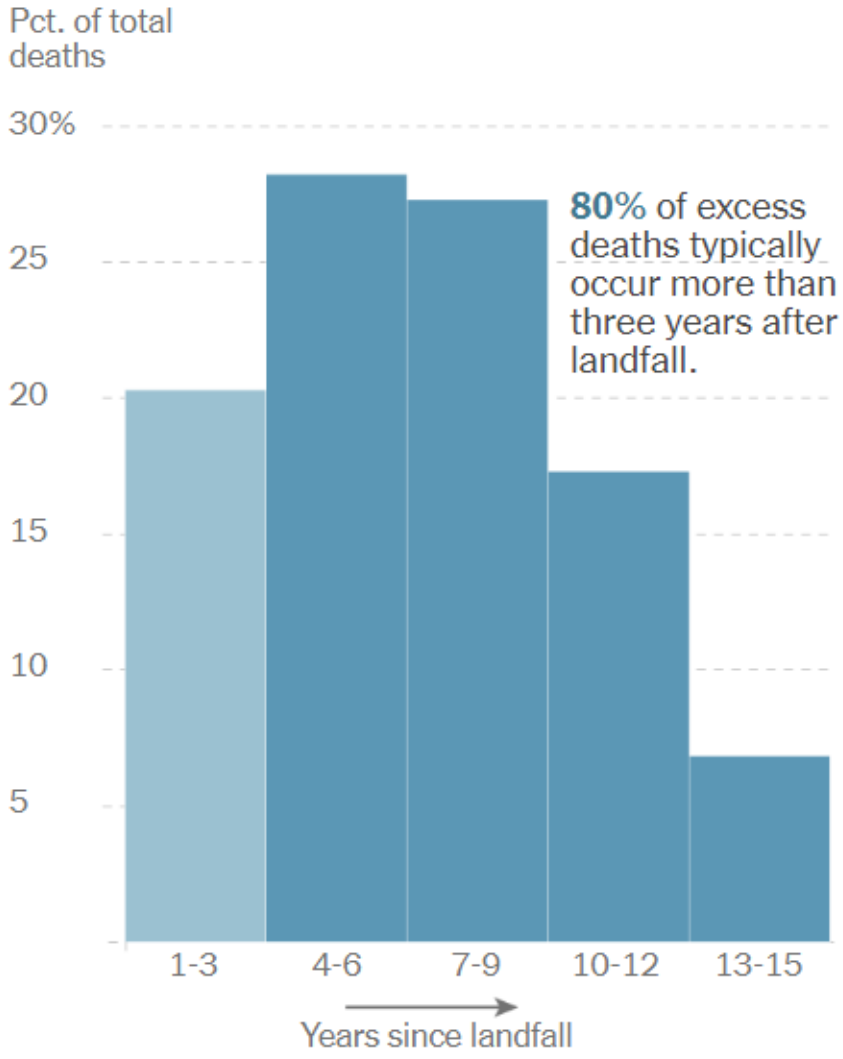
In recent years, researchers have observed a shift in fatality trends during tropical cyclones, with freshwater flooding driven by rainfall becoming the deadliest hazard.

CAUSE OF DEATH	1963-2012	2013-2022
Storm surge	**49%**	11%
Freshwater flooding	27%	**57%**
Wind	8%	12%
Surf/rip currents	6%	15%
Offshore marine incidents	6%	3%
Tornadoes	3%	2%
Other	1%	1%

Source: National Hurricane Center • By The New York Times

The long tail of the average tropical cyclone's death toll

In a study published in 2024, researchers analyzed more than 500 tropical cyclones over an 85-year period to estimate the number of excess deaths caused by a typical tropical cyclone. They found that mortality rates may remain above average for up to 15 years after a storm.



Source: Young and Hsiang, Nature (2024) · By The New York Times

Changing Impacts of Heat Waves

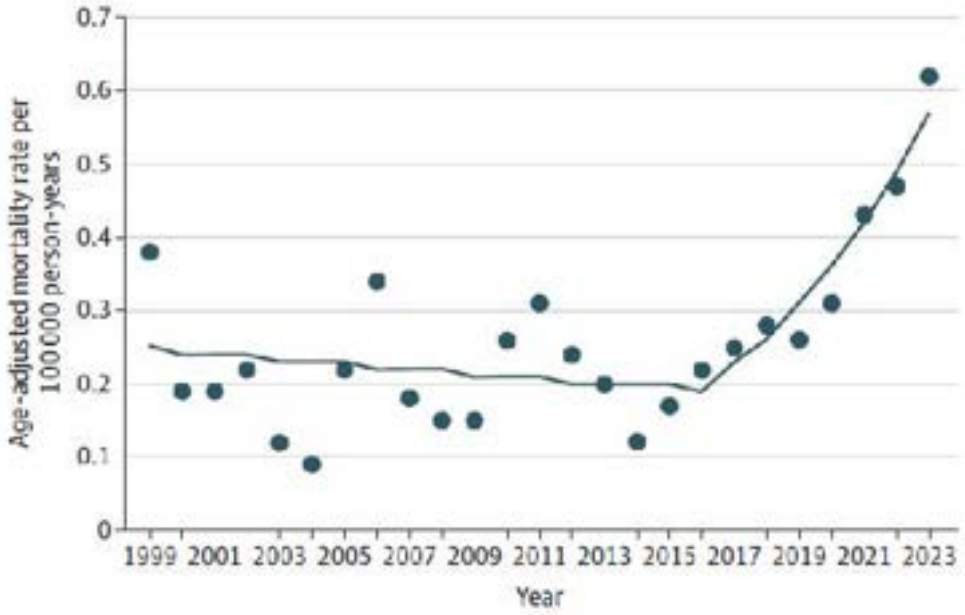
- Heat kills more people in the United States than any other type of extreme weather
- There has been a 117 percent increase in heat-related deaths over the past 24 years, with a significant upswing since 2016
- 2023 was the hottest year on record in the US and led to at least 2,325 heat-related deaths
- More than 21,518 people have died from heat since 1999

The New York Times

Heat Deaths Have Doubled in the U.S. in Recent Decades, Study Finds

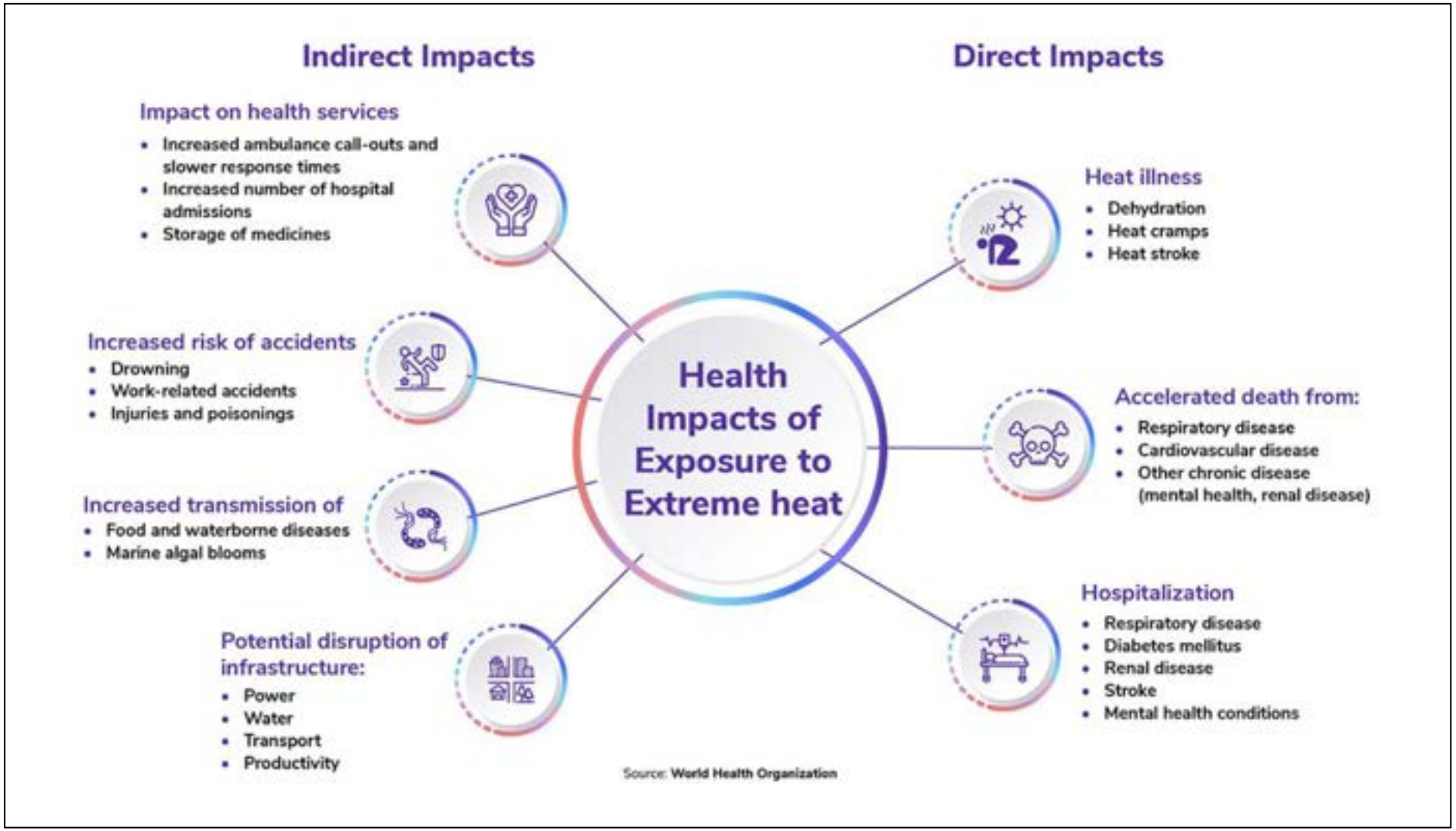
The finding comes as a late-August heat wave bears down on a significant part of the country.

Figure. Age-Adjusted Mortality Rates With Joinpoint Model Estimates for Heat-Related Deaths as Either Underlying or Contributing Cause From 1999-2023



Howard JT, Androne N, Alcover KC, Santos-Lozada AR. Trends of Heat-Related Deaths in the US, 1999-2023. JAMA. 2024;332(14):1203–1204. doi:10.1001/jama.2024.16386

Implications for Health



"When it's this hot, laborers start work in the middle of the night.

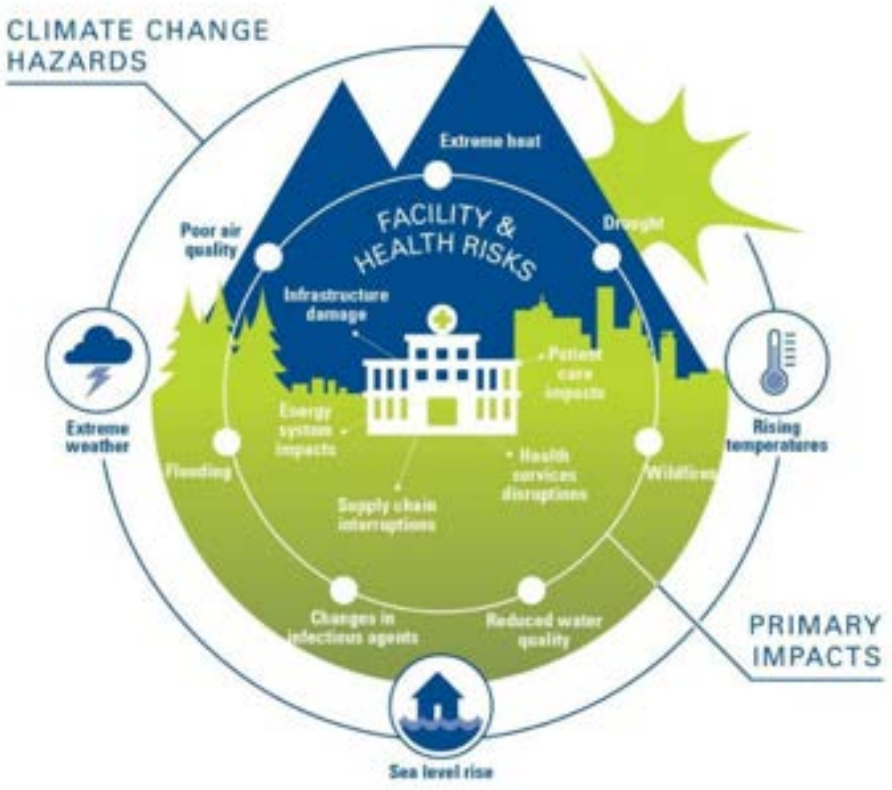
The heat of the day can give you a fever.

Even play is impossible when a merry-go-round can sear the skin."

Source: "Extreme Heat Will Change Us" NYT 11.18.22

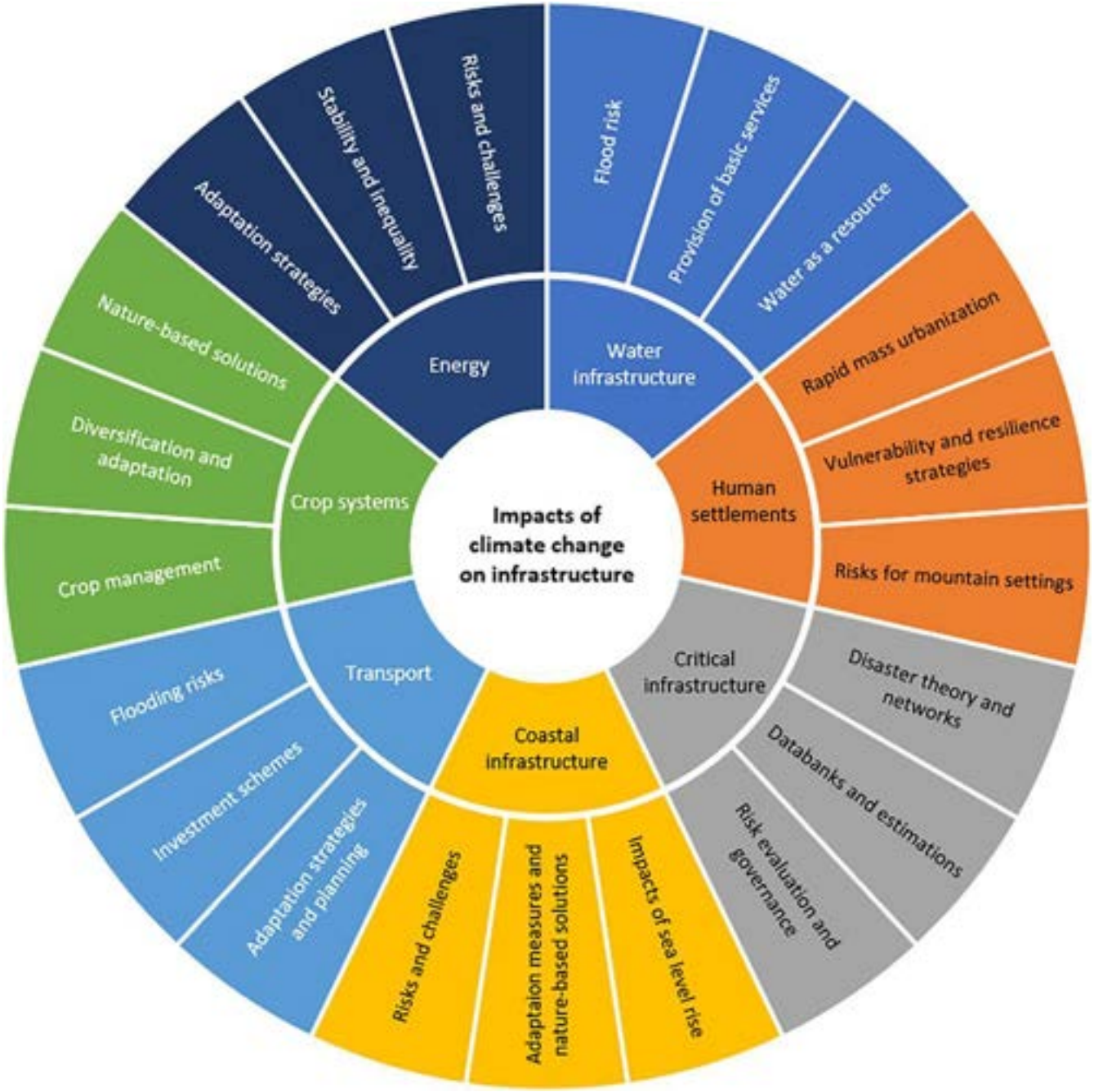
Healthcare Infrastructure Impacts

- In addition to direct impacts from severe weather, hurricanes and other severe storms have increasingly affected supply chain, transportation, utility, and other key services to hospitals
  - Between 2000 and 2017, there were 114 climate-related hospital evacuations, more than half of which required the evacuation of over 100 patients.
  - In California, 248 hospitals lost power in October 2019 due to wildfire prevention measures.
  - Extreme cold in Texas in 2021 resulted in power failures that left some facilities unable to heat buildings or operate dialysis machines. Water supply failures further worsened conditions.



Source: Aubie Vines G., Murdock T., Sobie S., Hohenschau D. Lower Mainland Facilities Management: Moving towards Climate Resilient Health Facilities for Vancouver Coastal Health. Report Prepared for Vancouver Coastal Health; Vancouver, BC, Canada: 2018

Sharon E. Mace & Aishwarya Sharma, Hospital evacuations due to disasters in the United States in the twenty-first century, 15:1 AM. J. OF DISASTER MED. (2020), https://doi.org/10.5055/ajdm.2020.0351.


Impacts of climate change on infrastructure
Energy
Risks and challenges
Stability and inequality
Adaptation strategies
Water infrastructure
Flood risk
Provision of basic services
Water as a resource
Human settlements
Rapid mass urbanization
Vulnerability and resilience strategies
Risks for mountain settings
Critical infrastructure
Disaster theory and networks
Databanks and estimations
Risk evaluation and governance
Coastal infrastructure
Impacts of sea level rise
Adaptaion measures and nature-based solutions
Risks and challenges
Transport
Adaptation strategies and planning
Investment schemes
Flooding risks
Crop systems
Crop management
Diversification and adaptation
Nature-based solutions

Implications for Disaster Planning

Increased threats to health from a changing climate clearly mean greater demand for healthcare services overall

During disasters, healthcare facilities must:

- Continue routine health care services
- Care for the newly sick and injured
- Potentially serve as a place of refuge for those who normally receive medical services in the home or community

Bottom line: the changing climate is:

- *Affecting the baseline health of the population*
- *Changing the patterns of who gets ill/injured after disasters*
- *Increasingly threatening the infrastructure of the healthcare system*

Paterson, J., et al. (2014) Health care facilities resilient to climate change impacts. *International Journal of Environmental Research and Public Health.* 11:13097-13116; doi:10.3390/ijerph111213097

Implications for Disaster Planning

In the face of increasing and evolving threats, healthcare emergency planners must improve:

Risk assessments

Infrastructure resilience

Mitigation, response, and recovery

Improving Risk Assessments

Assessing Climate Vulnerabilities Within the Healthcare Sector

Responding to the changing threats, accurate analysis of risk is essential

Only 21% of U.S. healthcare organizations are reported to have assessed their climate-risks

In Harris County, Texas (which includes Houston,) 770 hospitals, utilities, and water treatment plants are at risk of flooding at levels that threaten their ability to maintain operations

Source: First Street Found. 2021. The 3rd National Risk Assessment: Infrastructure on the Brink. First Street Found., New York. https://assets.firststreet.org/uploads/2021/09/The-3rd-National-Risk-Assessment-Infrastructure-on-the-Brink.pdf

Hospital Hazard Assessments

The hazard vulnerability analysis (HVA) is the classic systematic approach to identifying hazards or risks that are most likely to have an impact on a healthcare facility and its surrounding community. Valid data and expert opinion regarding each hazard's probability and consequence is essential for an accurate HVA.

- In the current environment, historical data are no longer useful for planning purposes

Data models and outputs are highly vulnerable to variable assumptions and purposes

- 500 yr vs 1000 year storm
- Time horizons of mitigation versus new construction

Highly granular data is needed to predict the facility-based consequences, however forward-looking, expertly developed projections can be hard for hospitals to find.

Louisiana Floods, 2016

Patrick Dennis/The Advocate via AP

Potential Sources of Useful Data

National Oceanic and Atmospheric Administration (NOAA):

- Provides access to historical weather data (temperature, precipitation, and extreme weather event) through the National Centers for Environmental Information (NCEI)

Federal Emergency Management Agency (FEMA):

- Provides access to historical data on past flood events, as well as flood maps, and community vulnerability assessments

Other state and local government agencies:

- Planning departments: Land use maps, zoning regulations, and other resources
- Public works departments: Information on drainage systems, sewer lines, and potential flood risks
- Utility service providers: Modeling and resilience data and programs
- Transit systems: Risk analyses and projections

Environmental agencies:

- State environmental agencies: Air quality data, water quality monitoring, and coastal erosion data
- Local conservation commissions: Data on sensitive habitats and other resources

Universities:

- Research programs and data

JAMA®
The Journal of the American Medical Association

Viewpoint | ONLINE FIRST

December 26, 2012

Emergency Preparedness and Public Health
The Lessons of Hurricane Sandy

Tia Powell, MD; Dan Hanfling, MD; Lawrence O. Gostin, JD

Author Affiliations

JAMA. 2012;308(24):2569-2570. doi:10.1001/jama.2012.108940

Operational Resources

Checklist for Sustainable and Climate Resilient Facilities

U.S. Climate Resilience Toolkit

HHS Sustainable and Climate Resilient Health Care Facility Initiative

ELEMENT 1 CHECKLIST

CLIMATE RISKS AND COMMUNITY VULNERABILITIES ASSESSMENT

○ Yes – Action completed ○ Somewhat – Action in progress or incomplete ○ No – No action planned or taken ○ Unknown – Status or action unknown ○ N/A – Does not apply

GENERAL	Value	Rank
1.0.1 Does your health care facility receive notifications of weather warnings, alerts, and advisories for the following hazard conditions?:		
• Extreme heat		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Extreme cold		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Extreme weather - freezing rain, blizzard, ice storm, hail, snow		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Drought		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Wildfire		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Tornado		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Flash Floods and/or Coastal Floods		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Hurricanes or Severe storms		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Avalanche or landslides		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Poor air quality and smog		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Water-borne contamination and/or diseases		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A
• Vector-borne diseases		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A

STEP 1: Understand Climate Risks	Value	Rank
"Climate vulnerability assessment" is the analysis of the expected impacts, risks and adaptive capacity of a region or sector to the extreme and gradual effects of climate change. A vulnerability assessment is more than simple measurement of the potential harm caused by extreme weather events resulting from climate change includes an assessment of the ability to adapt.		
1.1.1 Is local or regional government conducting climate risk and vulnerability assessments for the healthcare sector?		☐ Yes ☐ Somewhat ☐ No ☐ Unknown ☐ N/A

- Climate Risks and Community Vulnerability
- Land Use, Building Design, and Regulatory Context
- Infrastructure Protection and Resilience Planning
- Essential Clinical Care Service Delivery Planning
- Environmental Protection and Ecosystem Adaptation

https://toolkit.climate.gov/topics/human-health/building-climate-resilience-health-sector

Essential Areas of Focus for Risk Assessment

- Flooding
  - Include sustained precipitation, riverine flooding, sea level rise, storm surge
  - Include assessments of impacts on roadways, other healthcare facilities
- Heat
  - Assess impact on HVAC systems, vulnerable patient populations, potential for surge
- Wind
  - Include increasing wind speeds as well as changes in tornado patterns
- Wildfire
- Community infrastructure
  - Power, water, sewer, communications and other partner vulnerabilities

Identifying Individual Patients at Risk

Medical Vulnerability

- Age
- Medications
- Pregnancy status

Environmental Vulnerability

- Residential location
  - Housing variables
- Occupational sites

Socioeconomic Vulnerability

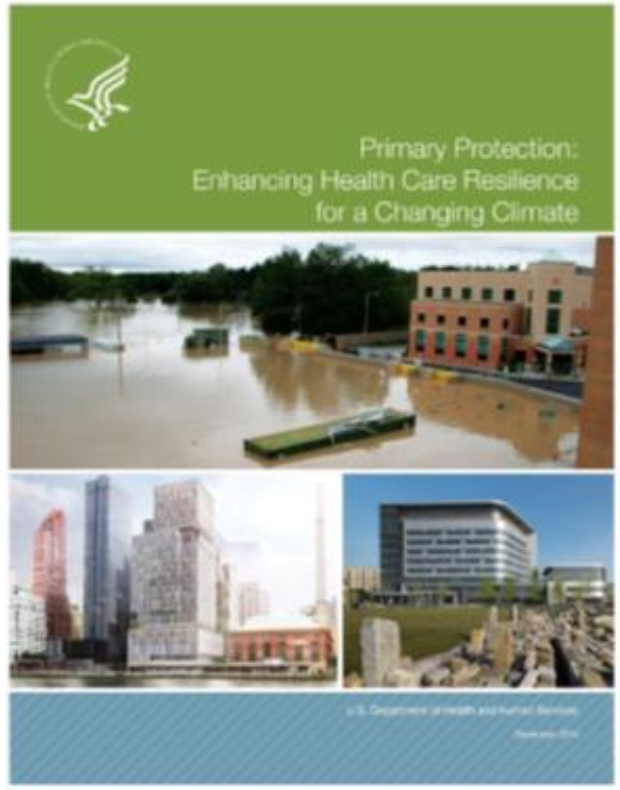
- Age
- Access to heating/cooling resources
- Lack of transportation

Increasing Infrastructure Resilience

Operational Resources

The US Department of Health and Human Services offered a report on improving resilience in 2014. It noted that there are several important planning considerations for healthcare with respect to climate change resilience:

- Health care facilities and services cannot rely on community infrastructure
- Hardening health care facilities, including hospitals and sub-acute facilities is vital
- Resiliency includes planning for staffing and supplies in addition to physical structures
- Green design serves a dual purpose
- Protecting research must be part of the plan



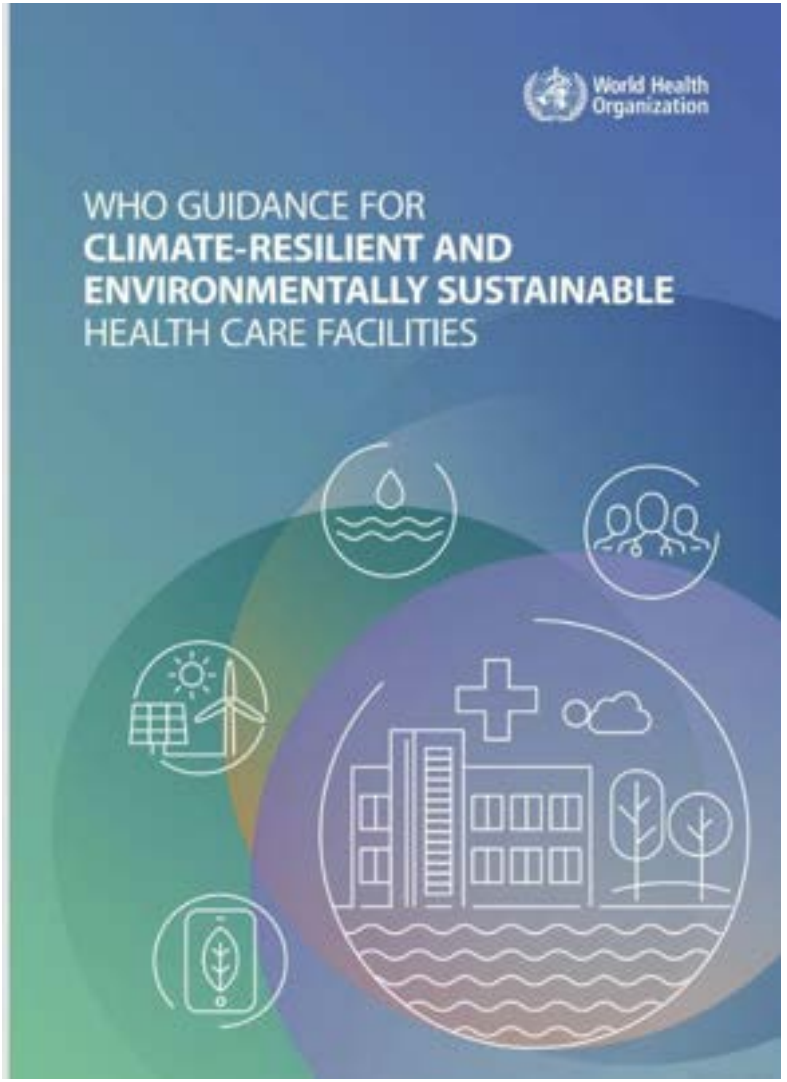
US Department of Health and Human Services. (2014). Primary protection: Enhancing health care resilience for a changing climate. Retrieved from: https://toolkit.climate.gov/

Operational Resources

The World Health Organization (WHO) has published a framework and guidance supporting the development of climate resilient health systems.

The framework states that the building codes governing the construction and maintenance of health facilities must take into account current and future climate risks.

It suggests that resilient health systems have the ability to adapt essential environmental services such as drinking water and sanitation services, which can be compromised by floods and droughts, and electricity supply, which may be cut off during extreme weather events.



One System's Approach: MGB Climate Resilience Program

Initial Influences

- Need for resilient design for Spaulding Rehabilitation Hospital situated on Boston Harbor (http://returnsonresilience.uli.org/case/spaulding-rehabilitation-hospital/)
- Superstorm Sandy's near-miss to Boston
- Data from Boston and Cambridge, MA municipal climate assessments

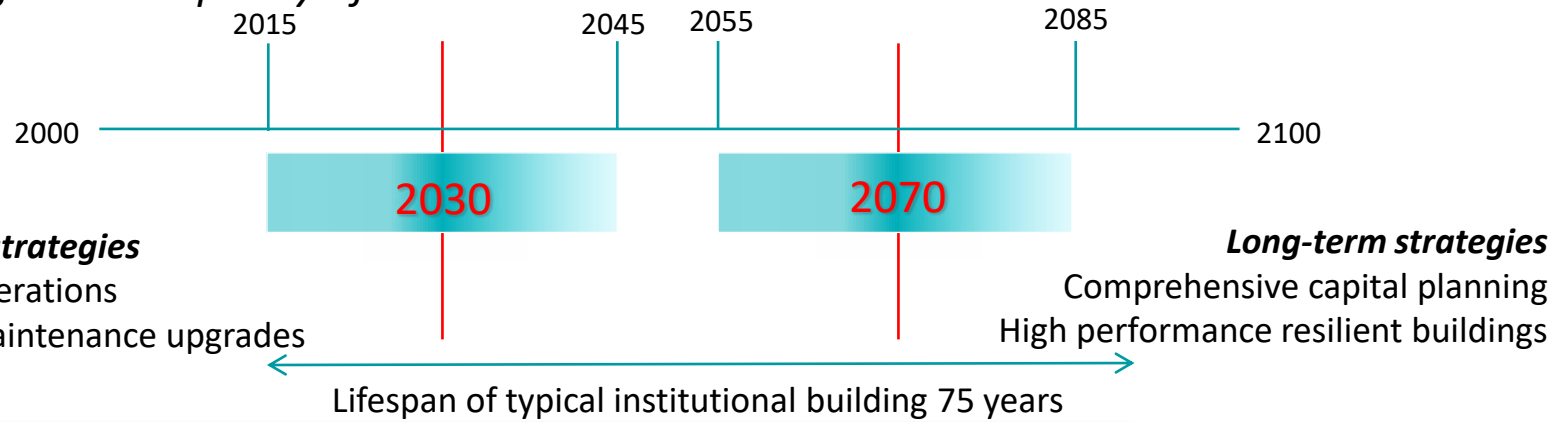
Initial Project Goals

- Identify climate trends
- Identify vulnerabilities
- Review and refine operational protocols
- Prioritize remedial action

Mass General Brigham's Assessment of Climate Threats

Climate analysis projections

Value of long view vs. quality of data



Risk = Probability x Consequence

Where to place the emphasis?

Probability based

Informs capital investment cycle

10 year	10%
100 year	1%*
500 year	.2%
1000 year	0.1%

Consequence based

'Worst case scenario' for emergency operations management. Based on 5 storm models.

* 1% probability of an event occurring in any one year = 26% in 30 years = 39% in 50 years

Phased Study Approach

PHASE 1

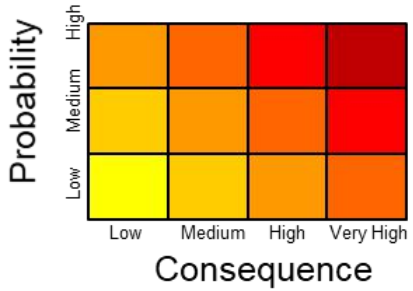
Climate Scenarios Hazard Assessment

Climate analysis Hazard priorities

- SLR / Storm Surge
- Precipitation
- Temperature
- Wind
- *Seismic*

PHASE 2

Vulnerability Assessment



- Critical Facilities and Operations
- Checklist for Risk Assessment
- Prioritize Needs Across System

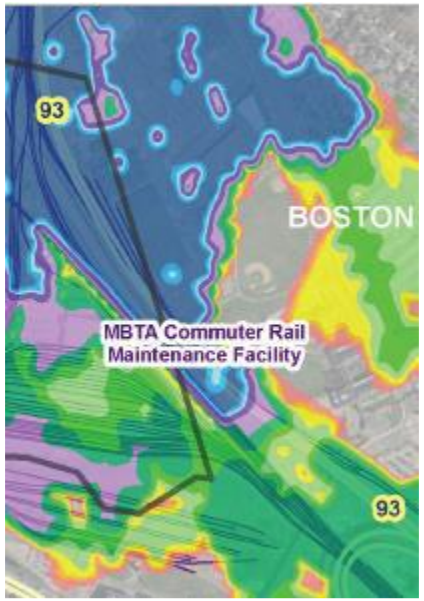
PHASE 3

Implementation

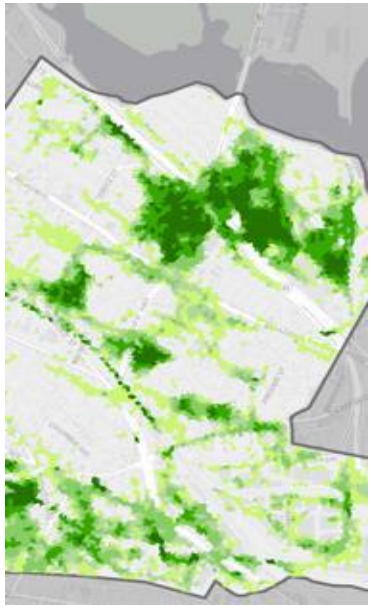
- Facility Resilience
- Operations Enhancement
- Community Engagement
- Capital Prioritization
- Long-term Adaptation
- Arrange and Align Insurance as needed

Phase I: Climate Scenarios and Hazard Assessment

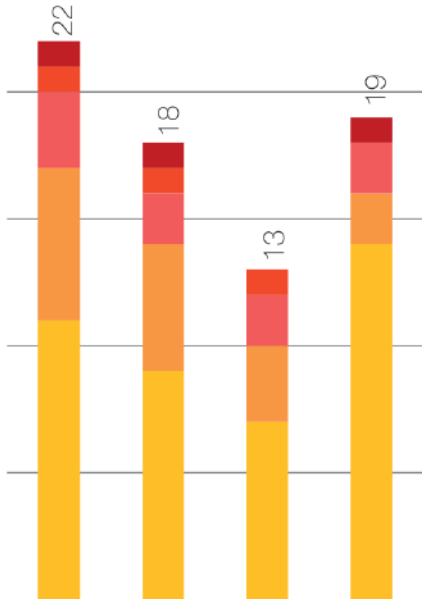
SLR & storm surge



Precipitation



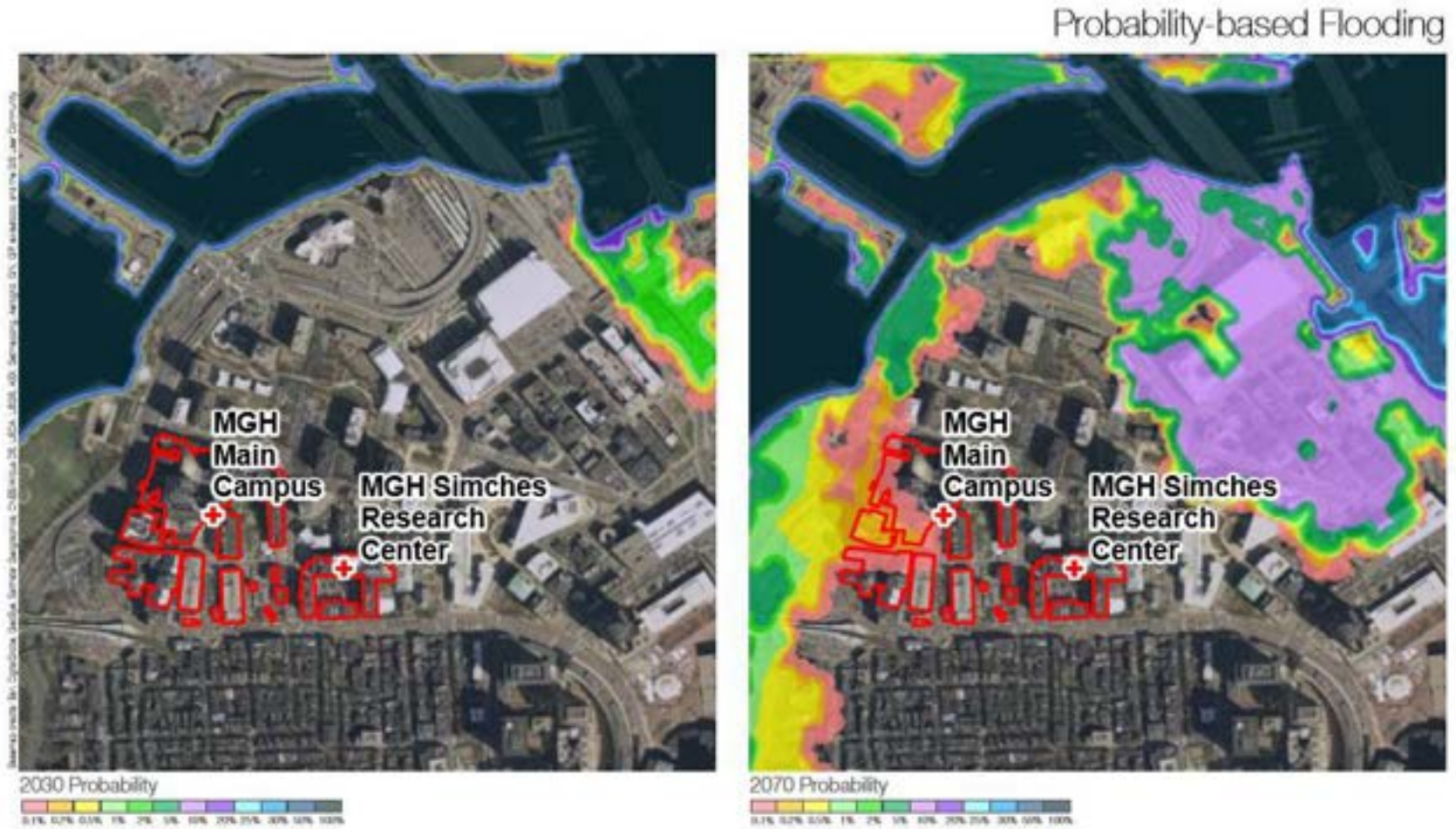
Temperature



Wind

2015 — 2030 — 2070

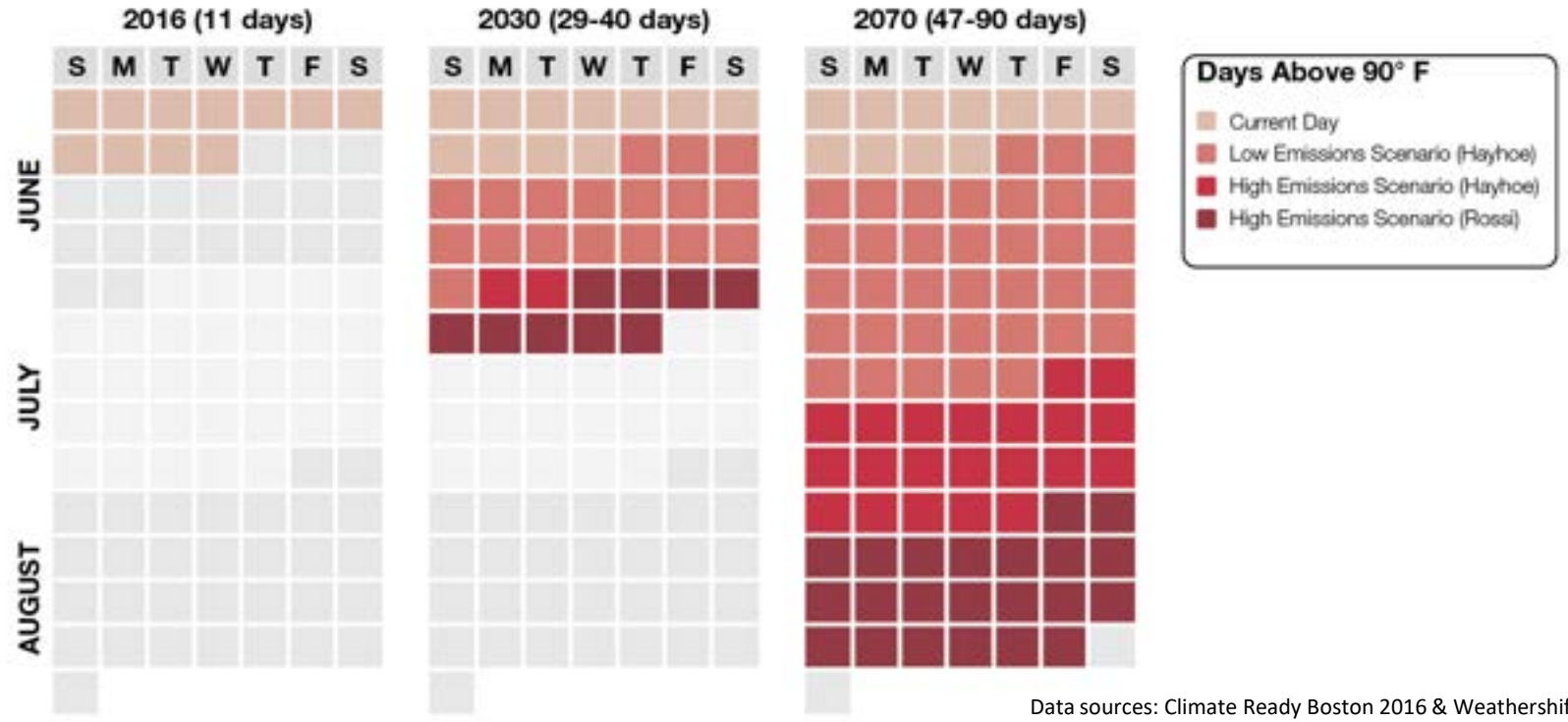
Sea Level Rise and Storm Surge



Temperature - Heat

Boston Monthly Average Temperature Projections (°F)

	January	February	March	April	May	June	July	August	September	October	November	December
Present	29.6	31.1	38.8	47.4	58.8	66.0	74.1	71.0	64.6	54.0	43.3	35.9
2046-2065	32.0	36.5	44.2	53.4	64.2	71.4	79.5	76.4	70.0	59.5	48.7	41.3
2081-2099	36.4	40.9	48.5	57.1	68.6	75.8	83.9	80.8	74.4	63.9	53.0	45.7

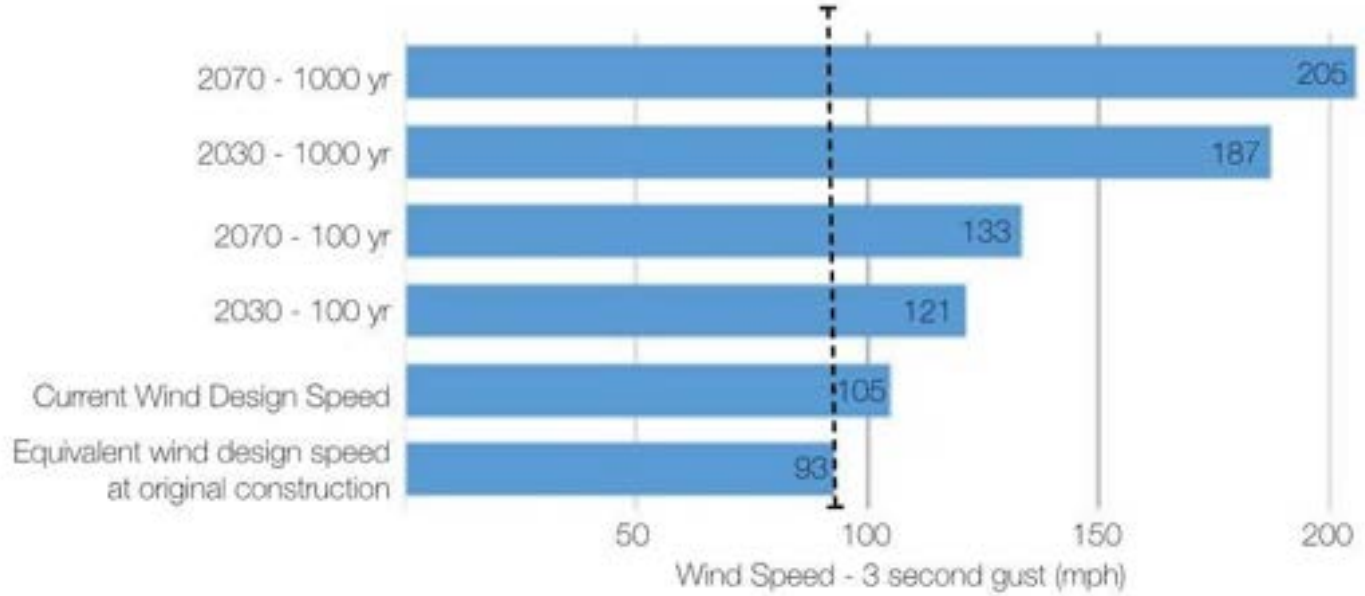


Data sources: Climate Ready Boston 2016 & Weathershift

Wind

Return Period	2013 / 2030 Wind Speeds (mph)		2070 Wind Speeds (mph)	
	Sustained Maximum	Gust (3 sec)	Sustained Maximum	Gust (3 sec)
100 year	94.8	121.3	104.2	133.3
1000 year	135.7	187.3	149.1	205.8

Data: Woods Hole Group



Phase II: Creating a Vulnerability Matrix

Partners Severe Weather Resiliency Study - Phase II - Identified Action Item Matrix

Facility Name	Type	Top Strengths	Top Concerns	Current Consulting Engagement: Facility Condition Assessment	Current Consulting Engagement: Stormwater Management	Current Consulting Engagement: Roofing Assessment	Current Consulting Engagement: Power Assessment	Requested Consulting Engagement: Flood Barriers	Requested Consulting Engagement: Wind Resilience	Requested Consulting Engagement: Water (Treatment, Well Backup)	Requested Consulting Engagement: Electrical	Needed Facility Improvements: External Connection	Needed Facility Improvements: Address permeable concrete/brick	Needed Facility Improvements: Add Chillers to Generator Power	Needed Facility Improvements: Electrical - relay protect, add redundant	Needed Facility Improvements: Vulnerable water pump/chiller lines	Needed Facility Improvements: Landscaping to Prevent Flood	Needed Facility Improvements: Energy Efficiency initiatives	Needed Facility Improvements: Co-Gen	Agency Coordination: Move / End Lease	Agency Coordination: Advocate changes with Municipality	Agency Coordination: Utility Meeting	Needed Emergency/Operational Planning: Tornado Plan	Needed Emergency/Operational Planning: Staff Travel Plan	Needed Emergency/Operational Planning: Supply Chain (Island Operations)	Needed Emergency/Operational Planning: Roof/water tanker connect	Needed Emergency/Operational Planning: 48 Hour Flood Plan	Needed Emergency/Operational Planning: Improve Staff Personal Preparedness	Needed Emergency/Operational Planning: Equipment Testing	Needed Emergency/Operational Planning: Other COOP Plans
[redacted]	HOS																												
[redacted]	HOS	External power/chiller CXN	St. floods, Chiller Power						Leaks, Equipment																		Fuel				
[redacted]	HOS		Wind																												
[redacted]	HOS	Off-grid power plant/chiller capacity; Water supply	Wind resiliency; Tornado risk				Power Plant		Equipment		Power Plant Right Size																				
[redacted]	REA	Strong remote work/instruct capabilities	Flood, Warm ocean water threatens building cooling systems						Slate Roofs																					
[redacted]	HOS		Wind @ Nursing Home; Flood on 3 sides																												
[redacted]	HOS	Distributed generators; Stormwater holding tank	Research emergency plans; Heat; Microbursts	HVAC	W/VHB			Middleborough Site	Slate Roofs																		Generator rental				
[redacted]	HOS	Electrical protected from flood	Flooding, Island Operations									Generator																			
[redacted]	CHC																														
[redacted]	CHC																														
[redacted]	REA		Flooding; freezer power loss								Freezers																				
[redacted]	REA		Flooding; freezer power loss								Freezers																				
[redacted]	REA																														
[redacted]	ACC																														
[redacted]	HOS		Loss of municipal water; Rooftop equipment																								Water				
[redacted]	HOS								Equipment																						
[redacted]	HOS	External power CXN; Chillers on generator cover key areas	Heat in old buildings; Leaks; Building System Operators						Leak, Equipment																		Fuel				Evac Plans/ Earthquake
[redacted]	HOS	EPFAT Assessment Complete; FY17 work on emergency power, sewers	Stormwater Management		W/TRO				Roof, Window Leaks			Chiller																		
[redacted]	ACC								Roof leaks	Water Quality																Water				
[redacted]	ADM																														
[redacted]	DATA																														
[redacted]	DATA																														
[redacted]	HOS		Access issues with area flooding									Generator																			
[redacted]	HOS	Generator, supply, and flood water storage capacity										Generator																			
[redacted]	HOS	Emergency plans	Building envelope & wind									Generator																			

Project Team Recommendation not discussed by site

Self Assessment by Facility:

- Top strengths, top concerns
- Identified facility vulnerabilities
- Required consulting support to evaluate
- Assistance developing appropriate response
- Review & update emergency management plans

Guided Interviews

Participants:

- Facilities
- Emergency Preparedness
- Supply Chain
- Clinicians
- Research
- Senior Hospital Leadership

Facility Operations	Infrastructure Vulnerability	Continuity Considerations
• Ambulatory Care • Ambulatory – Surgical/Procedural • Emergency Care • Inpatient Care • Intensive Care • Research • Administration	• Power – main grid • Power – emergency • Natural gas • Medical gasses • Fuel oil • HVAC • Water – potable/non • Storm water • Waste water • Medical waste • IT/Communications • Transportation	• Patient transfers • Staff availability/ accommodations • Patient surge • Medical supplies • Lab & Pharmacy • Food/Nutrition • Hospital as community anchor

Common Vulnerabilities Identified

- **Water vulnerabilities:**

  Asset protection requiring flood barriers or hardening of critical equipment
- **Wind vulnerabilities**:

  Displaced rooftop equipment opening roof leaks, wind-driven rain penetration around windows
- **Heat vulnerabilities:**

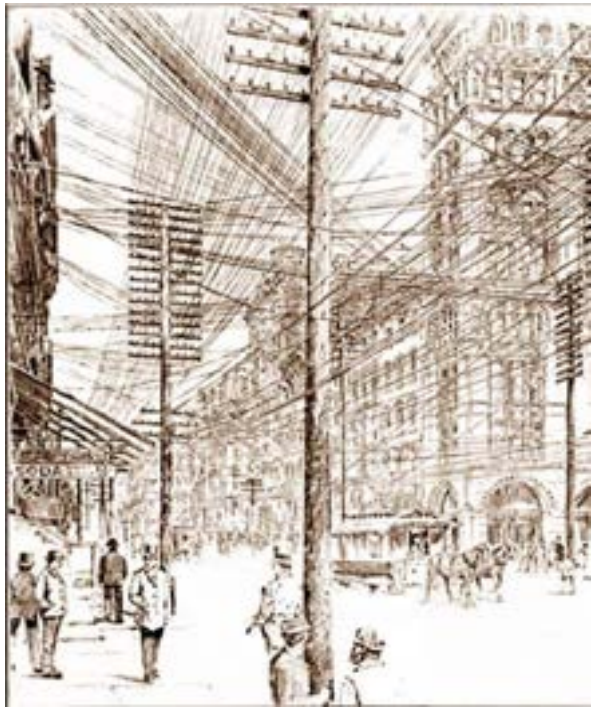
  Limited ability to cool facilities using emergency power
- **External vulnerabilities:**

  Inadequately-sized storm water systems, power-grid outages, mass transit dependency of staff and patients
- **Other vulnerabilities**:

  Continuity of Operations Plans (COOP) for scarce/essential services

Weakest Link Often Outside the Fence

Transportation



Energy

Telecommunications

Phase III: Implementation/Resilience Capital Plan
Goals

1. All capital improvement plans informed by resiliency risk assessments
2. 5-year prioritized capital investment plan for risk mitigation coordinated with deferred maintenance and new development program
3. Complementary operational protocols

Prioritization Criteria

Numerical Score:	1	2	3	4
Severity of Impact				
Type of Service	Core Inpatient Services Emergency Department Dialysis Infusion Primate/Transgenic Animal Facility Irreplaceable Research Samples Data Center Services	Elective Inpatient Services Core Outpatient Services Rodent/Other Animal Facility	All Other Clinical All Other Research/Lab Equipment	Administrative Services Parking & Site Impacts
Facility Type	Hospital/Inpatient Building Data Center	Community Health Center/ACC Research Building	Medical Office Building Administrative Building	
Cost & Implementation				
High-level Project Cost	> $10M	$1M-$10M	$100k-$1M	< $100k
Cost Estimate	Actual $ Estimate			
Cost of Downtime	> $9M	$1M-$9M	$200k-$1M	< $200k
Ease of Implementation	Approved funding, internal support for the project, and limited regulatory barriers	Barriers for only 1 of the 3 implementation buckets	Barriers for 2 of the 3 implementation buckets	Need to raise significant funds, gain significant institutional support, and overcome regulatory barriers

Projects will be prioritized based on these inputs.

Vulnerability scoring

1-4:

1	present exposure / high exposure
2	2030 exposure / medium exposure
3	2070 exposure / low exposure
4	district expsoure

Project Categorization

Flooding
- Flood barriers
- Roof/façade leaks
- Stormwater – roof runoff
- Stormwater – site
- Equipment protection/relocation
- Program protection/relocation
- Backflow preventers

Wind
- Roof tiedowns
- Slate roofs
- General assessment

Temperature
- Envelope issues
- Window issues
- System capacity
- Control/design issues
- Animal protection and comfort

Backup Power
- Chillers
- Critical operations
- Temporary hookups
- Additional capacity
- Grid issues

Operations/Other
- Seismic assessment
- Vendor agreements/leasing
- Old equipment/retrofits
- Maintenance
- Operations and/or planning
- Energy efficiency and renewables
- Site access – parking
- Site access – snow
- Site access – flooding
- Site access – med evac/helicopter
- Redundancy/interconnection of systems
- Miscellaneous

Justifying Resilience Investments

- Resiliency programs are justified on the basis of “avoided losses”.
- Need real values for risk mitigation – net patient revenue lost, workforce retention, overtime reduced, environmental cleanup, reputation, etc.

National Benefit-Cost Ratio Per Peril *BCR numbers in this study have been rounded	Federally Funded	Beyond Code Requirements
Overall Hazard Benefit-Cost Ratio	6:1	4:1
Riverine Flood	7:1	5:1
Hurricane Surge	Too few grants	7:1
Wind	5:1	5:1
Earthquake	3:1	4:1
Wildland-Urban Interface Fire	3:1	4:1

“Natural Hazard Mitigation Saves: 2017 Interim Report”, Nat. Inst. Bldg. Sciences, Washington DC, 2017

Case Study: Spaulding Rehabilitation Hospital

Incorporated anticipated effects of sea-level rise and other consequences of climate risks for the next 70 years into its design, without being required to do so by local building codes.

Added 0.3-0.5% to overall building costs but resulted in a considerably more resilient facility.

- The building uses an estimated 30% less energy than expected and the ongoing operational savings from these measures more than offset the additional capital investment.

Examples of the design considerations include:

- Placing the first-floor elevation 30 feet above the projected 500-year flood elevation.
- Placing all critical patient care functions above the first floor.
- Ensuring a high-performance envelope to improve thermal performance and prevent low interior temperatures if heating is lost in winter or overheating if cooling or ventilation is inoperable in summer months.
- Incorporating key-operable windows in patient rooms, so that if cooling or ventilation systems fail, indoor overheating can be avoided in summer months and patients can shelter-in- place.
- Placing all critical mechanical/electrical/power generation infrastructure on the roof to minimize possible interruption.
- Implementing gas-fired on-site cogeneration to provide efficiency and redundancy in the event of grid loss or diesel generator failure
- Implementing extensive green roofs to mitigate stormwater discharge during heavy rainfalls.

Improving Mitigation and Response

Flooding

- Identify all possible sources of water threats to the facilities

- Identify the lowest points of vulnerability and highest possible water levels
  - Consider backwards threats from storm sewer systems
  - Consider below grade penetrations
  - Consider facility access and egress points
  - Harden all aspects of essential low-lying infrastructure

- Identify opportunities to block intrusions
  - External permanent or deployable barriers
  - Submarine doors and others in internal spaces

- Foster community partnerships for the largest-scale threats

Extreme Heat

- Critically assess building cooling systems' ability to support projected loads
  - Ensure adequacy of backup power systems
- Examine feasibility of operable window options
- Develop support, warning, communication, and response systems for the patient groups at highest risk

Improving Patient Communications

"Hello, a heatwave is anticipated for your area. Go to your local cooling center and stay cool"

× Too broad
× Not actionable
× Lacks opportunity to measure effectiveness

VS.

*"Hello **Franchesca**, this is Mass General Chelsea's Chatbot alerting you that there is extreme heat expected in Chelsea between May 2 – May 5. Your doctor has identified you as a patient who may be at higher risk of heat-related illness because:*

- *You may have a medical condition that gets worse with heat.*
- *You may be taking medications that can make the effects of heat worse.*
- *You live in an area that is usually hotter on average than the rest of the community.*

*We put together a list of local cooling spaces and safety tips tailored just for you, click here to view - **Franchesca's Heat Dashboard**"*

✓ Personable
✓ Links to Actionable Dashboard
✓ Measurable

High Winds

- Proactively assess rooftops and window systems
  - Harden rooftop systems
  - Plan for redundancies for vulnerable rooftop communications, HVAC systems

- Mercy hospital in Joplin, MO placed special windows in the highest-risk units, reinforced building core and interior stairwells with emergency lighting, created multiple elevator banks that minimize the risk of wind damage disabling all elevators

Wildfires

- Plan for fire-resistant zones and barriers around healthcare facilities and access points
- Create plans to monitor and support facility air quality during fires
  - May need to support surge in toxin/hazmat response as well, especially as urban areas become more involved
- Develop support, warning, communication, and response systems for the patient groups at highest risk
- Re-examine evacuation plans for plan triggers, timing, and patient destination options

Anticipating and Mitigating Utility Disruptions

- Consider adding external utility connections (EUC) for temporary utility equipment, including diesel generators, portable chillers, boilers, and/or water trucks if feasible
- Work with local emergency management, National Guard, and private service contacts to assess the potential availability of temporary equipment and to determine configuration needs for the connections

Final Thoughts

- Healthcare has significant dependency on public infrastructure and agency mitigation planning and investment.
- Designing buildings to current code standards will likely not protect facilities and operations from the impacts of extreme weather.
- Planners should take the long view – new hospital buildings have a depreciable life of at least 40 years and a life expectancy of at least 75 years. This requires designing buildings to predicted future conditions.
- Emergency managers must undertake mitigation efforts now for the threats that are often underappreciated.
- Sustainability and resilience are complimentary. Reducing consumption of energy and supplies improves resiliency.
- RROI analysis is difficult but the cost of doing nothing is unacceptable.


Mass General Brigham

Mass General Brigham

Reframing Healthcare Downtime Incidents as Patient Safety Events – Lessons Learned from CrowdStrike

Jennifer Andonian Shearer, MPH
Gabriela Garcia Dolagaray, MD

Agenda

1. Objectives
2. Who we are
3. Impacts of downtime events in healthcare
4. Integrating patient safety – MGH lessons learned from CrowdStrike

Objectives

Learning Objectives

1. Describe the importance of quality and safety collaboration in all phases of the disaster life cycle.

2. Identify opportunities to engage key stakeholders in downtime readiness planning.

3. Recognize the types of patient safety impacts that can arise during downtime events.

Main takeaways

- Building quality & safety into response structures
- Leveraging existing safety reporting/monitoring during emergencies
- Creating sustainable follow-up from major downtime events

Who We Are

Who We Are

Mass General Brigham Department of Emergency Preparedness & Business Continuity

System-wide department with numerous professionals working within our system's 16 member institutions to ensure we are ready for any emergency.

MGH Center for Disaster Medicine

Numerous externally funded projects and programs with the goal of strengthening and assisting other healthcare systems to prepare for, respond to, and recover from disasters and other major incidents.

Institutional home for MGH Emergency Preparedness.

Impacts of Downtime Events in Healthcare

Types of Downtime Events

Planned Downtime

Mass General Brigham Digital — Maintenance Scheduled

Applies To: All MGH Clinicians and Staff

ATTENTION MGH:

UPCOMING SCHEDULED HEMATOLOGY SOFTWARE MAINTENANCE

The planned Hematology Software Maintenance is scheduled for Thursday, October 26th from 12:00PM – 1:30PM.

Impacted locations include:

- MGH Core Lab
- Yawkey Cancer Center Lab
- Revere Health Center Lab
- Chelsea Health Center Lab
- MGH Waltham Lab

During this time:

- Please minimize the sending of CBC specimens on Thursday, October 26th from 12:00PM – 1:30PM to only those required for urgent clinical care
- CBC, Differential and Reticulocyte testing will continue to be performed during the maintenance and results will still post into Epic, but the reporting will be delayed.
- Samples from the ED, ICU, OR and Labor & Delivery will be prioritized
- If a CBC, Differential or Reticulocyte result is urgently needed and was sent to the Core Lab, please call: 617-643-0340. Only CBC/Diff or Retic results will be given out at this number.

For any issues after the downtime window, please contact the IS Service Desk at 617-726-5085.

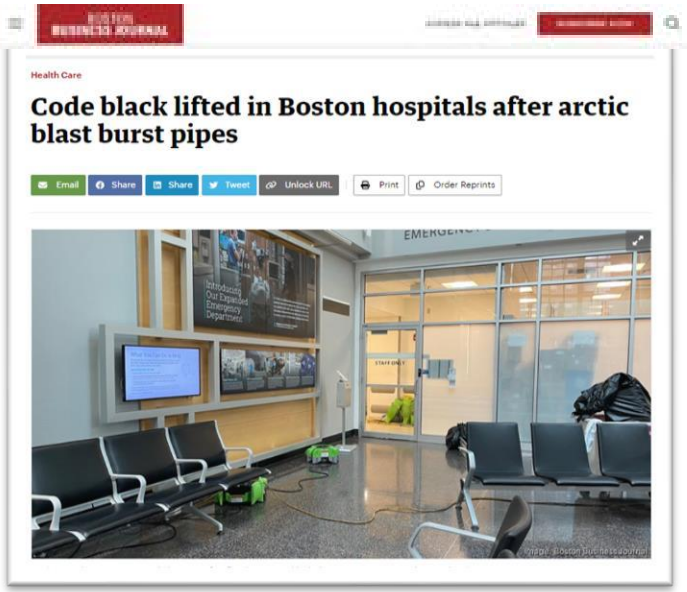
For assistance, visit Digital Service Hub or call 857-282-4357.

Ongoing Scheduled Downtimes

MGB Digital teams conduct upgrades and maintenance of digital systems.

Unplanned Downtime

(Unintentional)



Health Care

Code black lifted in Boston hospitals after arctic blast burst pipes

Email | Share | Share | Tweet | Unlock URL | Print | Order Reprints

February 2023

Flooding at BWH impacts the network switches and leads to unplanned downtime.

Image Source: Boston Business Journal

Unplanned Downtime

(Intentional)

June 2024

Synnovis ransomware attack

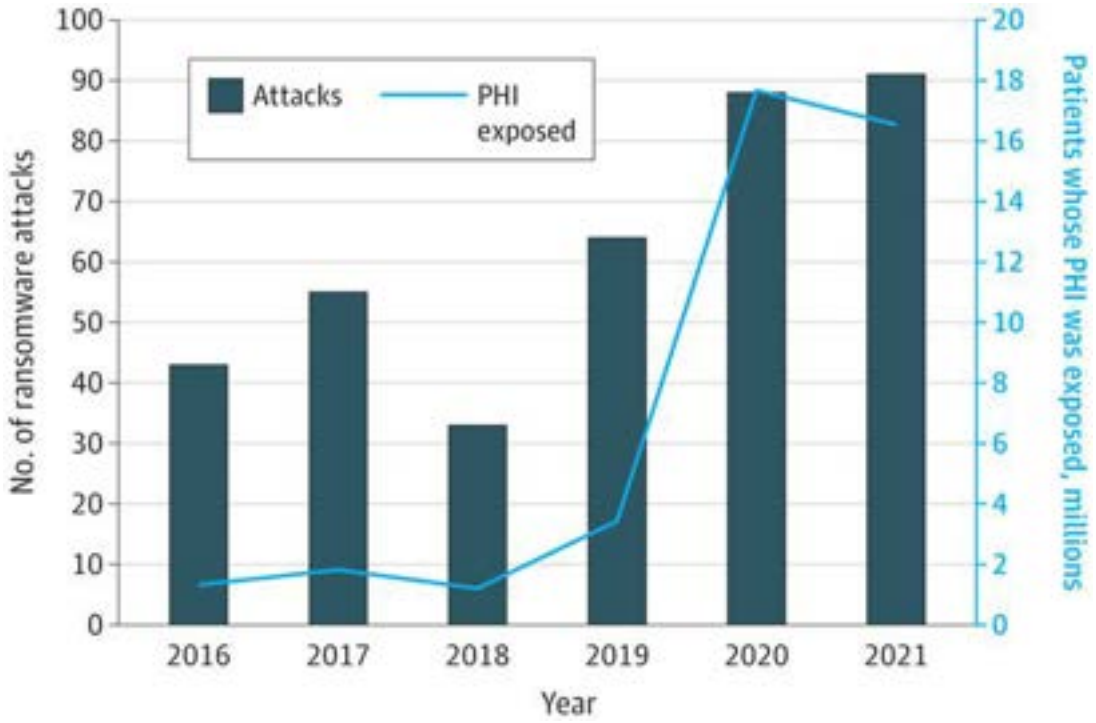
Image Source SYNLAB

Mentimeter Poll

- Are cyber security and/or unplanned digital-related risks included in your annual Hazard Vulnerability Analysis?
  - Yes
  - No

- How does your organization approach emergency preparedness responses to downtime (one sentence response)?

Unplanned Downtime is a Growing Risk to Healthcare



Number of Ransomware Attacks on US Hospitals, Clinics, and Other Health Care Service Delivery Organizations, 2016-2021[2]

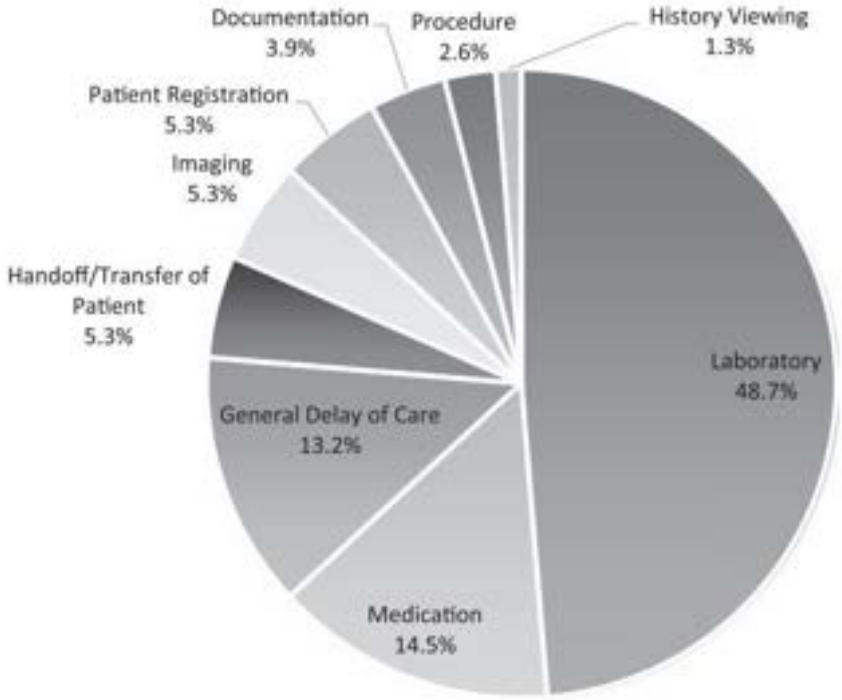
- The frequency of downtime incidents in healthcare, including cyberattacks, is growing.
  - Nearly **1 in 4** cyberattacks target the healthcare industry[1]
  - Over the past 5 years, the number of ransomware attacks experienced by healthcare has **more than doubled**[2]
- Cyberattacks have exposed personal health information **of over 40 million patients.**[2]
- It can take an average of **4 weeks** for hospital digital systems to come online after an attack.[3]

Unplanned Downtime is Disruptive to Patient Care

- Both intentional attacks and unintentional downtime can disrupt patient care.

- EHR downtime is associated **with patient safety issues** including:
  - laboratory delays
  - medication dose & administration errors
  - throughput and capacity challenges [4]

- Patients that are admitted to a hospital during a ransomware attack have a **20-35% increased risk of in-hospital mortality.**[5]

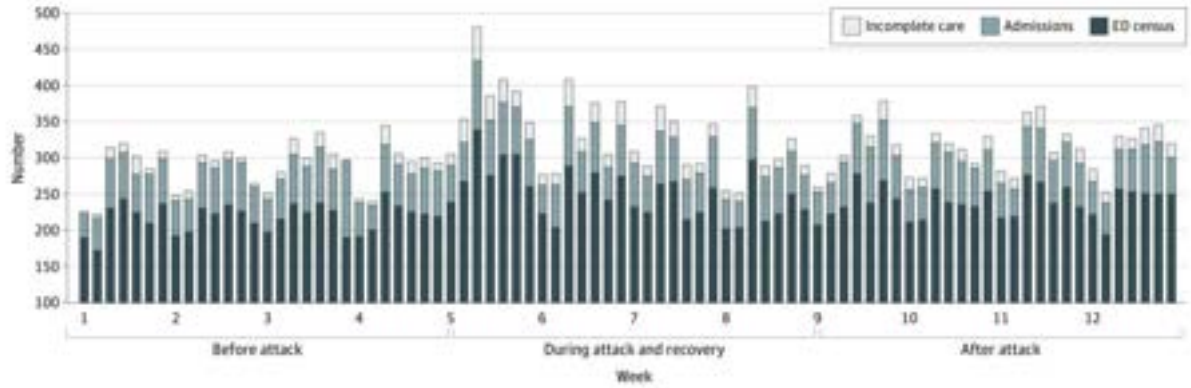


Electronic Health Record Downtime Safety Incident Category Breakdown [4]

Unplanned Downtime has a Broad Impact

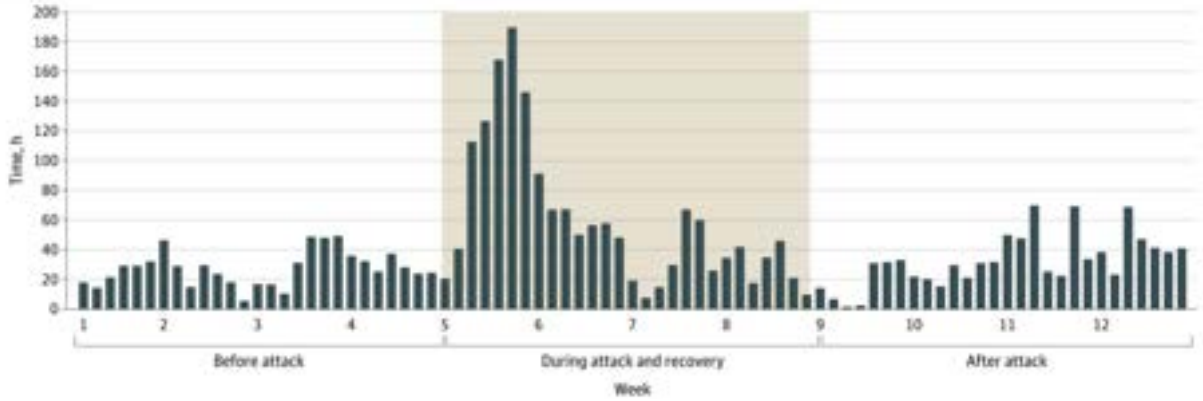
- Downtime can affect surrounding institutions
- Significant increases were seen in:
  - Patients seen
  - Patients leaving before care was completed
  - Wait times
  - EMS arrivals
  - Lenth of stay
  - Stroke codes
- Increased time on diversion

Figure 1. Emergency Department (ED) Census, Admissions, and Incomplete Care Per Day



Incomplete care includes patients who left without being seen, patients who left against medical advice, and patients who "eloped" (could not be located after being placed in a treatment area after nurse triage and clinician evaluation).

Figure 2. Cumulative San Diego County Emergency Medical Services Diversion Hours Per Day



Ransomware Attack Associated With Disruptions at Adjacent Emergency Departments in the US[6]

Treating Downtime Events As Patient Safety Responses

- Healthcare-based **emergency preparedness (EP) programs are uniquely positioned** to support a variety of events that adversely impact their operations, sometimes including those not traditionally considered emergency preparedness hazards.

- When we hear of downtime-related events, often the first thought is Digital/Information Services as the core stakeholders.
  - Because EP programs are often well-positioned to facilitate collaboration among multidisciplinary groups of stakeholders who may not interface routinely, to prioritize a diverse set of response actions, and to support a coordinated response.

- **Matching technical experts with emergency preparedness, quality/safety, clinical, and operations leaders is essential to minimizing patient safety risks and operations impacts.**

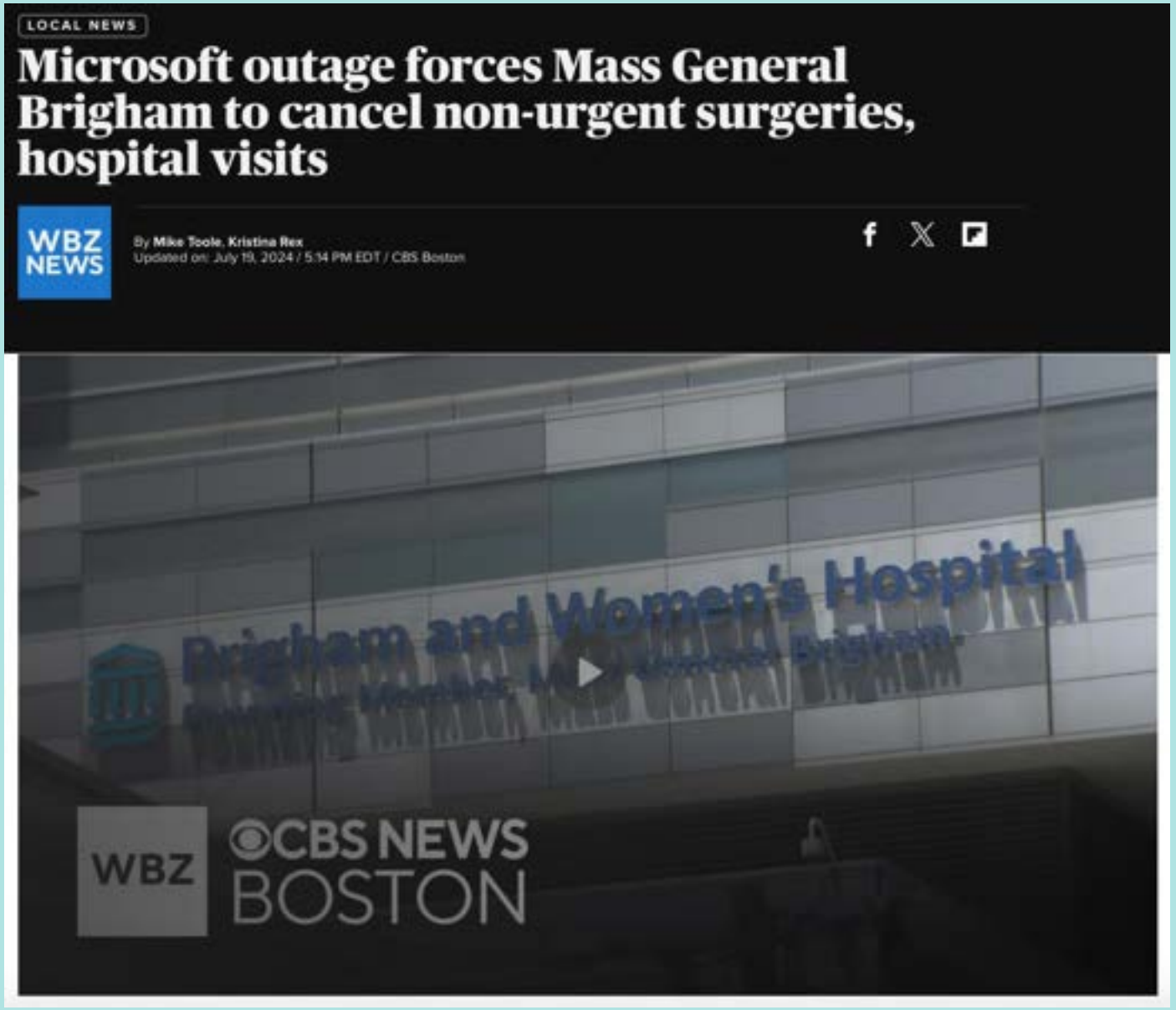
Integrating Patient Safety – MGH Lessons Learned from CrowdStrike

Mentimeter Poll

1. How impactful was the CrowdStrike event to operations at your place of work?
    1. No impacts – business as usual
    2. Minor impacts – general slowness, but we got by
    3. Moderate impacts – modification of some operations, but limited patient/personnel impact
    4. Significant impacts – activation of Healthcare Incident Command System or other structures, significant modification to operations (e.g., cancellations, downtime procedures, etc.)

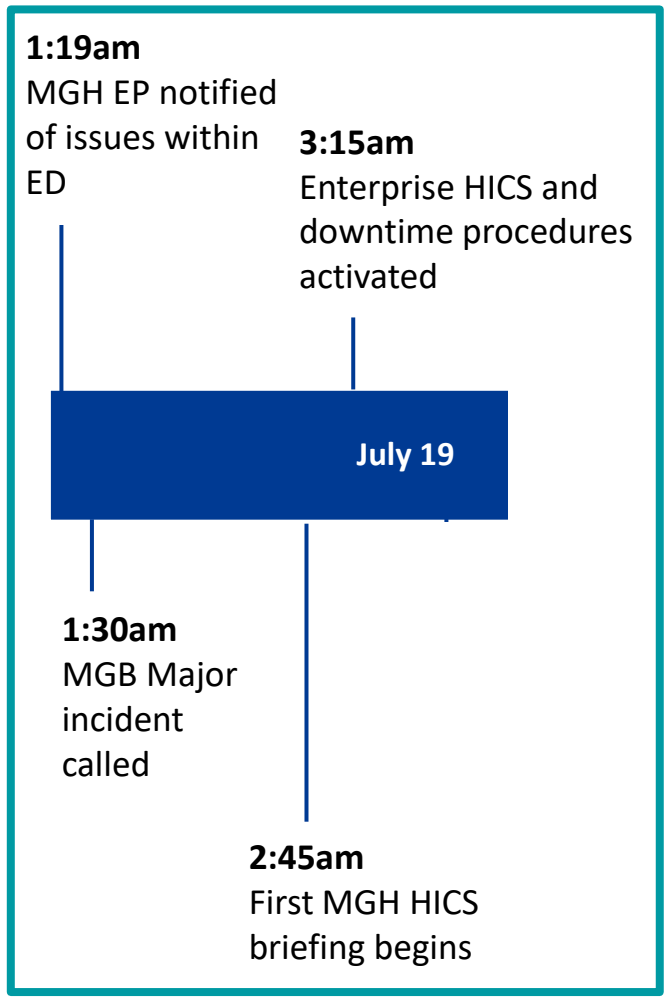
2. For those with moderate or significant impacts what types of actions were taken? (3-5 words Free text)

3. How many of you have quality, patient safety, and/or risk as standing members within your emergency response structures (IMT, HICS) for emergency events?
    - Yes
    - No
    - Pull in as needed



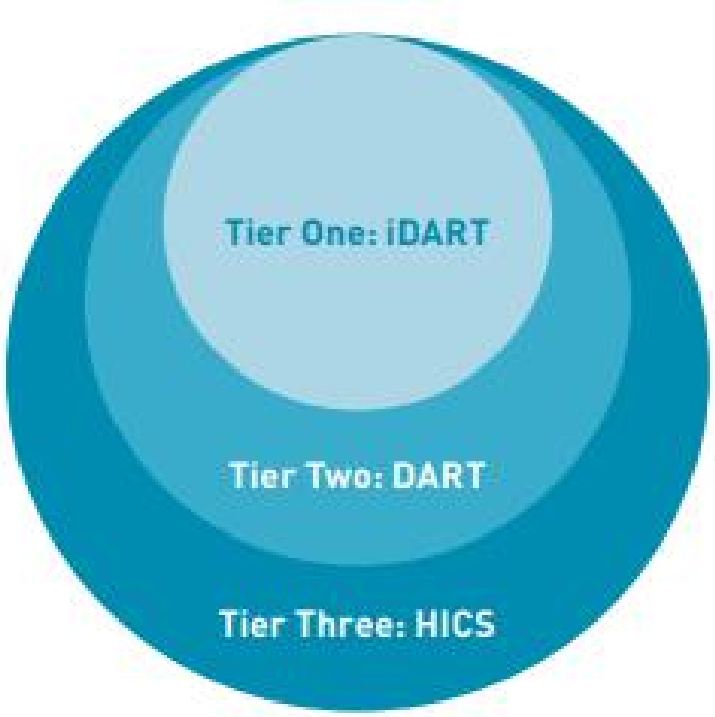
https://www.cbsnews.com/boston/news/microsoft-outage-crowdstrike-mass-general-brigham-hospitals-boston/

Overview of Incident Timeline - Activation



Incident action & notification begins at MGH and across MGB

MGH's Tiered Response to Downtime



- Prior to initiation of a downtime response, representatives from EP, Digital, & the CIO/CMIO convene to determine anticipated impacts and necessary actions.

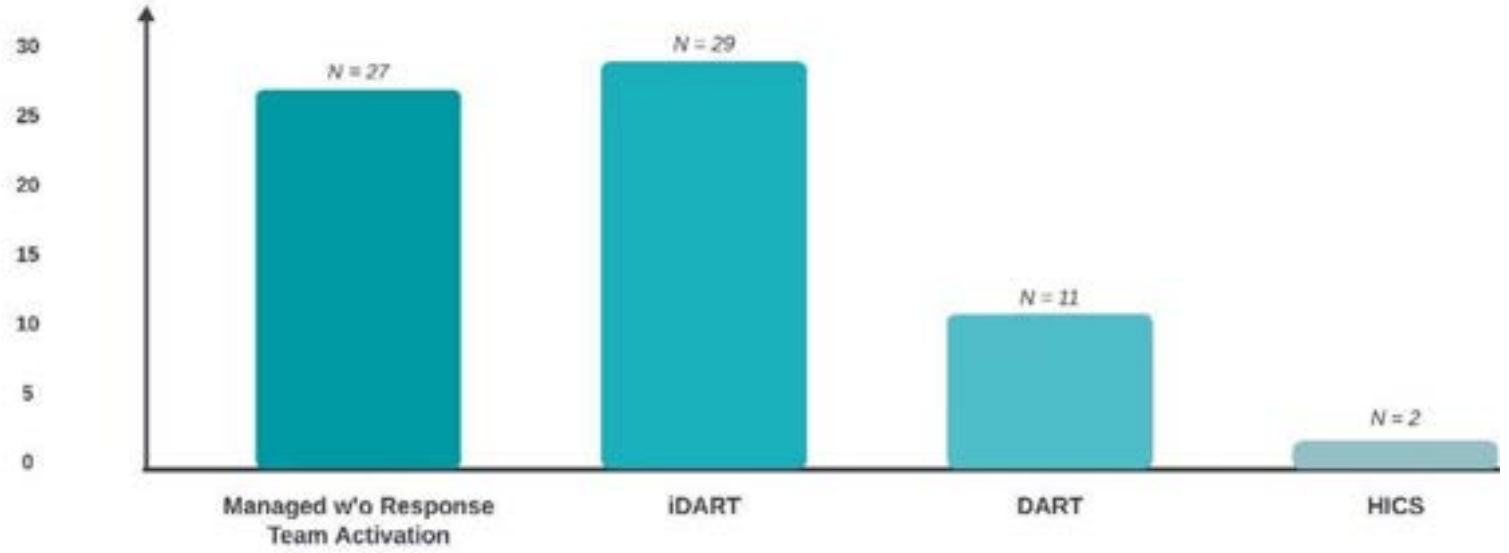
- **Initial Downtime Assessment and Response Team (iDART)**
  - Small, multidisciplinary team is initially notified of unplanned downtime events in real time, to assess operational impacts
  - Determines what type of response (if any), is warranted.

- **Downtime Assessment and Response Team (DART)**
  - If the iDART determines the downtime incident does indeed affect hospital operations, a dedicated multidisciplinary response team is activated to manage the incident.
  - Activating the DART also activates the Incident Management Team.

When Plans Collide with Response Challenges

- Even though we routinely leverage our downtime response plans, redundancies and testing of key modalities are critical.

- Many of our primary communication modalities rely on paging or secure communication applications (e.g., Voalte), which were impacted during this event.



MGH Downtime Incident Responses by Activation Type 2019-2023

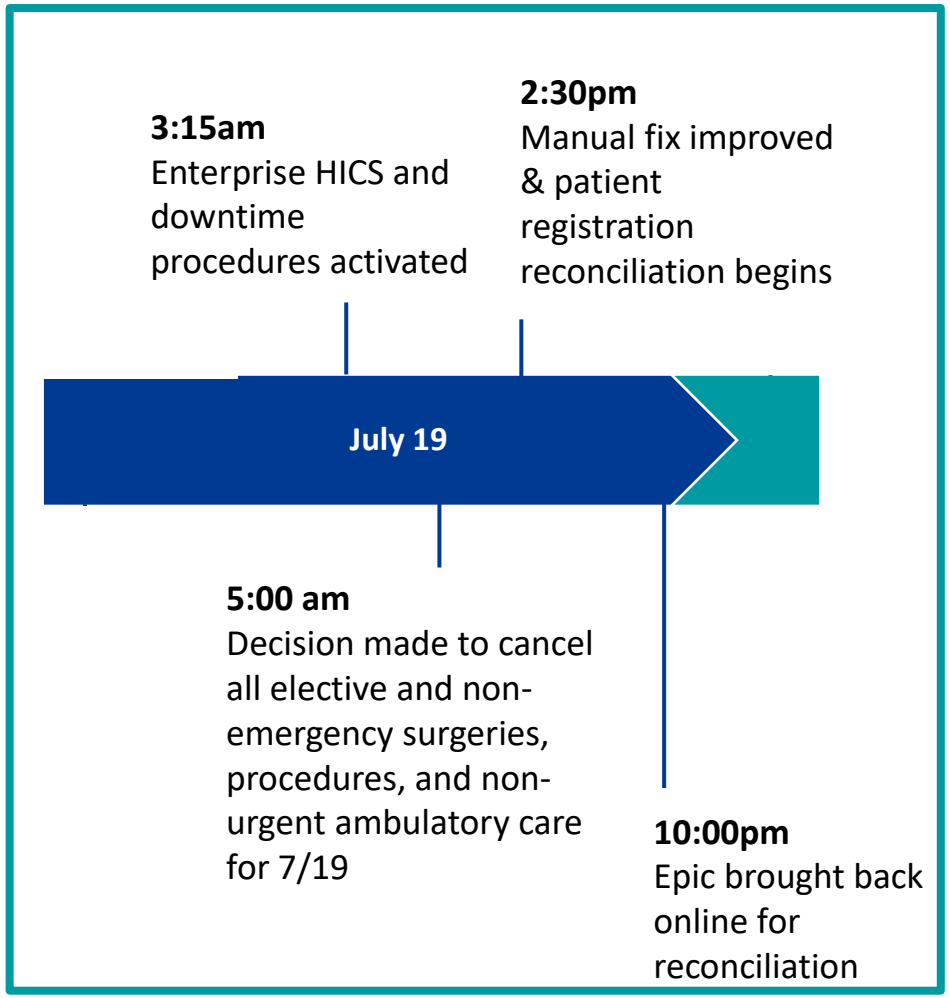
Multimodal Strategy to Determine Patient Risk

Early monitoring of safety reports provided a passive way to capture any trends or increase in events which required immediate action.

With HICS active, the command structure established a strategy to rapidly escalate safety concerns to be discussed at each briefing.

Recent restructuring of the MGB Office of the Chief Medical Officer built in Quality and Safety as an essential arm for daily operations.

Overview of Incident Timeline – Response



Downtime protocol activation and modification of operations

Activating Downtime Plans & Modifying Operations

- Each unit is equipped with a “downtime kit” with paper forms in the event BCA computers down.
  - By happenstance, MGH had completed a full inventory of forms & update to inpatient kits in the weeks prior.

- As healthcare increasingly relies on technology for all elements of patient progression, interconnectedness of downtime plans is essential.

- Defining “urgent” and “emergency” previously, lessened some of the challenges to modifying procedural and ambulatory care.

- Communication – communication – communication

Emergency Medicine Impacts & Response

- Paper documentation
- Information tracking
- Communication
  - Results
  - Consults
- Patient tracking
- Patient monitoring


MASSACHUSETTS GENERAL HOSPITAL

EMERGENCY DEPARTMENT RECORD

HOUSESTAFF PHYSICIAN NOTES

Chief Complaint: ankle pain

35 yo male with no medical issues presenting with left ankle pain after twisting it while playing basketball. No other injuries or pain.

Vital Signs: T: 99 P: 75 BP: 130/80 RR: 12 SaO2: 99% RA

MASSACHUSETTS GENERAL HOSPITAL

HOUSE STAFF PHYSICIAN NOTES CONTINUED

Impression Plan/ED Course

35 yo with ankle pain after twisting it. Sprain likely, but fracture possible by Ottawa ankle rule so will order x-rays.

ED ATTENDING PHYSICIAN NOTE

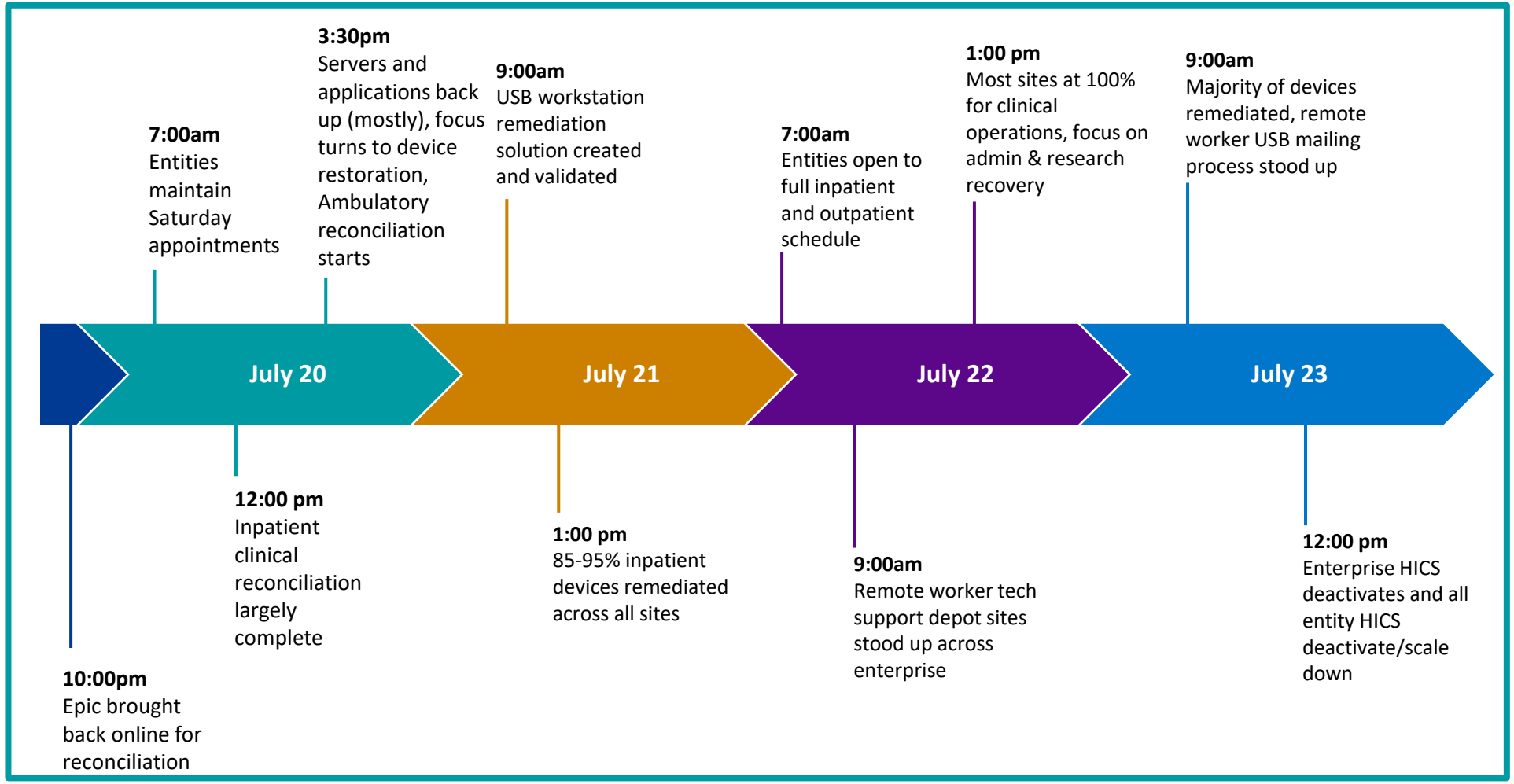
35 yo male with left ankle pain after twisting it while playing basketball. No other injuries. Ambulating without help.

Left lateral malleolus edema, tenderness, and ecchymosis with reduced ROM. Intact sensation and pulses.

Ankle sprain likely given negative x-rays. Pain improved with medication. Crutches provided for comfort.

Overview of Incident Timeline – Reconciliation & Recovery

The process of returning to standard operations

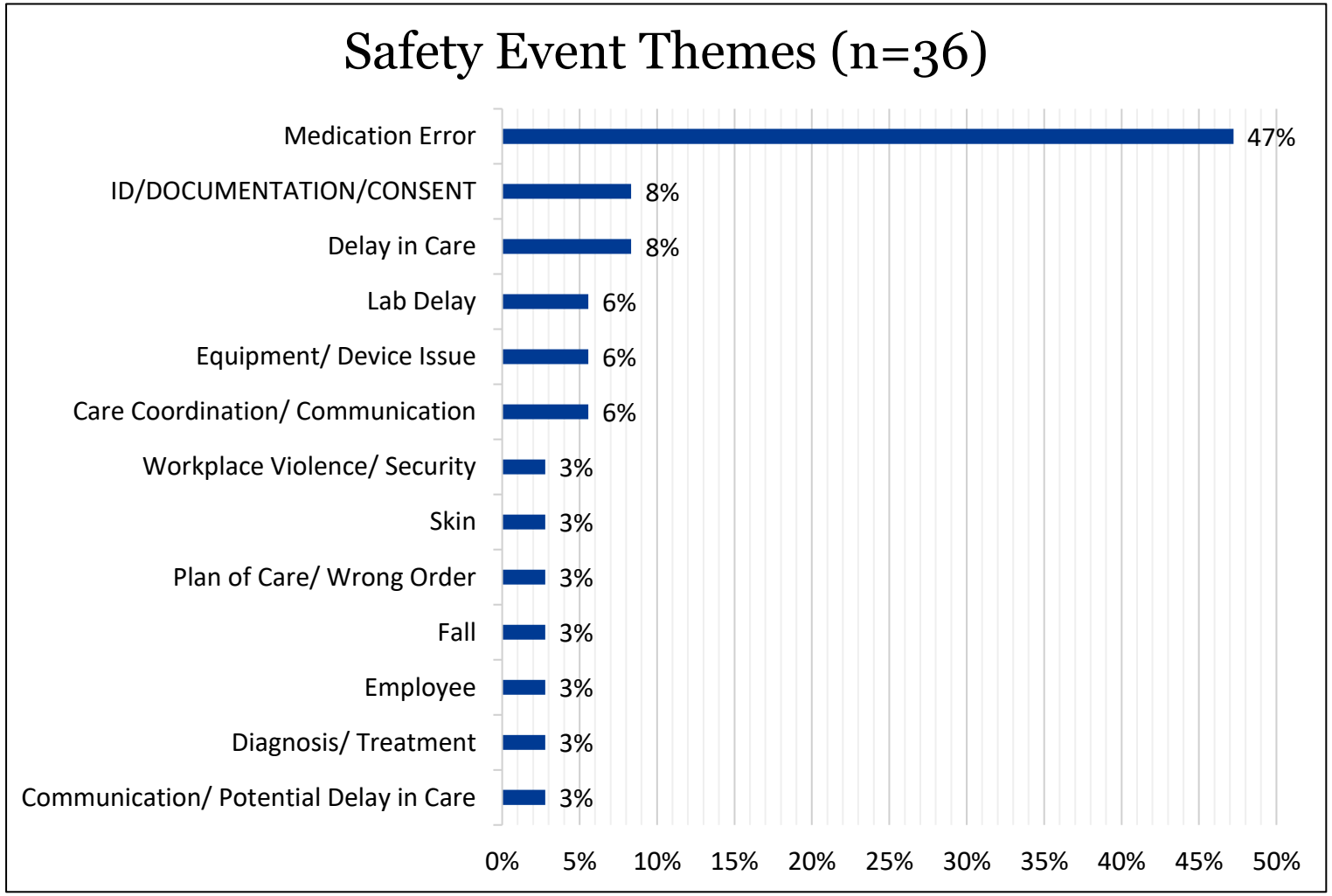


Recovery & Reconciliation

- Prioritization of areas for device remediation
- Impacts to patient movement
- Reconciliation of patient medical record
- Reestablishing downtime kits

MGH CrowdStrike Downtime Safety Event Themes

- **No significant adverse patient outcomes** were identified during the CrowdStrike event.
- Dedicated SR review as part of the debriefing process allowed for incorporation into improvement plans.
- The duration and timing of this event may have helped in reducing risk.



Mitigation After CrowdStrike

- MGB Downtime Governance Framework
  - Leveraging lessons learned to drive downtime initiatives.
- Enhancing the role of recovery across all emergency preparedness planning and responses.
  - Dedicated role and representation within IMT and HICS

Thank You

The plans, response, and ongoing work today represents a snippet for phenomenal initiatives taking place across MGH and the MGB system.

Eva Stanton	Teresa Klink	Josh Baugh	MGH Downtime Co-chairs & Co-chairs
MGB Department of Emergency Preparedness & Continuity	MGH HICS team members	MGH frontline staff	Numerous others across MGH & MGB

Questions

- Jennifer Shearer, MGH – Director of Emergency Preparedness – MGH/MEE/CDH
  - Email: jshearer1@mgb.org
- Dr. Gabriela Garcia Dolagaray –
  - Email: ggarciadolagaray@mgb.org

Appendix

References

1. Wasserman L, Wasserman Y. Hospital cybersecurity risks and gaps: Review (for the non-cyber professional). Front Digit Health. 2022 Aug 11;4:862221. doi: 10.3389/fdgth.2022.862221. PMID: 36033634; PMCID: PMC9403058.

2. Neprash HT, McGlave CC, Cross DA, et al. Trends in Ransomware Attacks on US Hospitals, Clinics, and Other Health Care Delivery Organizations, 2016-2021 [published correction appears in JAMA Health Forum. 2023 Feb 3;4(2):e230001]. *JAMA Health Forum*. 2022;3(12):e224873. Published 2022 Dec 2. doi:10.1001/jamahealthforum.2022.4873

3. Fox A. Is your hospital ready for 3-4 weeks of downtime? Healthcare IT News. 2023 Sept 7. Retrieved from https://www.healthcareitnews.com/news/your-hospital-ready-3-4-weeks-downtime

4. Larsen E, Fong A, Wernz C, Ratwani RM. Implications of electronic health record downtime: an analysis of patient safety event reports. *J Am Med Inform Assoc*. 2018;25(2):187-191. doi:10.1093/jamia/ocx057

5. Levi R. Ransomware attacks against hospitals put patients' lives at risk, researchers say. *NPR.* 2023 October 20. Retrieved from https://www.npr.org/2023/10/20/1207367397/ransomware-attacks-against-hospitals-put-patients-lives-at-risk-researchers-say

6. Dameff C, Tully J, Chan TC, et al. Ransomeware Attack Associated with Disruptions at Adjacent Emergency Departments in the US. JAMA Netw Open. 2023 May 1;6(5):e2312270. doi: 10.1001/jamanetworkopen.2023.12270.

Building a Resilient Future

Developing an Effective Emergency Management Program

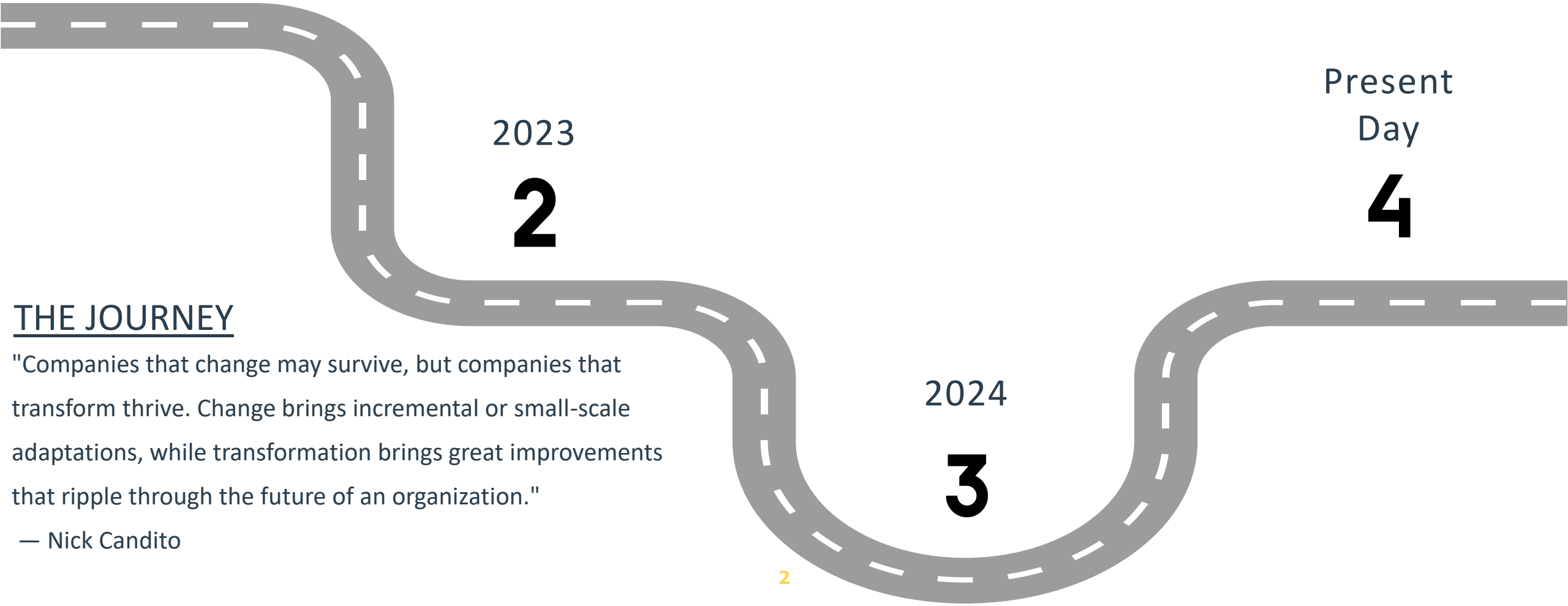
Our Program Journey

1 2022

2023 2

2024 3

Present Day 4



THE JOURNEY

"Companies that change may survive, but companies that transform thrive. Change brings incremental or small-scale adaptations, while transformation brings great improvements that ripple through the future of an organization."

— Nick Candito

Our Program Journey

1 2022

- Went from a department of 1 to 4.5
- Rebranded the department
- Focus was mainly on Cyber Security & Business Continuity
- Was embedded in the Trauma Service Line
- Initial 3-year Strategic Plan

2023 2

- Moved under President of Community Hospitals
- Business Continuity & Cyber Security
- Showcasing program
- StormReady Designation
- Won one Award of Excellence

2024 3

- Re-aligned team from 4.5 to 7.5 FTE
- Hurricane Beryl, EHR Transition, CrowdStrike
- Won 5 awards
- Preparedness Week

Present Day 4

- Developing a new Strategic Plan
- Winter Storm Enzo
- Implementing new EM, BC, PM and Mass Communication Software
- Preparation for the FIFA World Cup

The Team

Brandy Ferguson MD, MS
Medical Director

Adam Lee MBA, MS, CEM
Director

Ashley Simon MSN, RN, CEN, NPD-BC, SCRN
Manager

Katie Linn MS,
Planner

Jenny Pfannes
Planner &
Ambulatory EPO

Michael Olivier EMT-P
Emergency Management
Coordinator – TMC/Childrens

Jonathan House EMT-P
Emergency Management
Coordinator – PL/SE

Michael Carrier
Emergency Management
Coordinator – SW/SL

~50 Other Duties as Assigned
Emergency Preparedness Officers
(EPOs) and Backup EPOs

AGENDA

01
Opening

02
Our Journey

03
Leadership Support

04
Measuring Success

05
Growing & Sustainment

06
Closing Remarks

Objective

Provide leaders with alternative approaches to make their healthcare organizations more resilient by building stronger, more active Emergency Management and Business Continuity program.

Three Key Questions to Answer

QUESTION 1

How will you get leadership support?

QUESTION 2

How will you measure success?

QUESTION 3

How will you grow and/or sustain your program?


Leadership Support
Measuring Success
Growing/Sustaining
Your Program

Question 1

How will get Support From Leadership?

RECOMMENDATION 1

"The Why"

Identify your problem

RECOMMENDATION 2

"Value Proposition"

Figure out how you will measure success

RECOMMENDATION 3

"Tell your story"

Socialize your program and the successes

RECOMMENDATION 1: The Why

Your problem statement needs to be **relevant** and **unique**.

Traditional Approaches	Our Approach
HVA	Identified a single threat
Regulatory Compliance	Figured out what made us different
Recent Events	Collaboration

RECOMMENDATION 2: Value Proposition

Your value proposition needs to align with organizational mission, vision and values

Key Performance Indicators

- **Objective**
- **Subjective**

Show the leaders why we spend money on this

- **Our Value**
- **Our Strategy**
- **Our Approach**

RECOMMENDATION 3: Telling Your Story

When telling your story, the near misses do not matter, and it needs to give leaders justification for being a cost center while supporting your mission.

Traditional Approaches

- Program Charter
- Strategic Plan
- Internal Presentations/Trainings

Our Approach

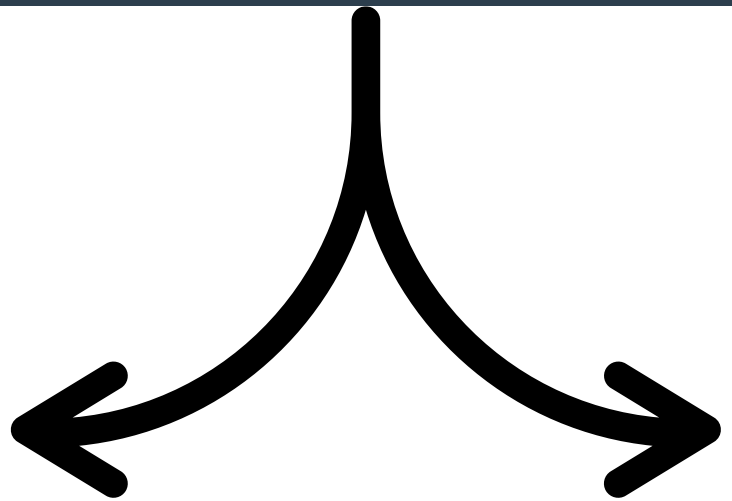
- RESILIENCE Report
- Publications, Presentations, Awards
- Recognition

Question2

How will you measure success?

Subjective

This is the easier data point to talk about in our line of work because we know being prepared = saving money, protecting people, patients and infrastructure but is the hardest justification to make to executives.



Objective

This is the language most leaders speak and is an easier justification to make to executives but is much harder to obtain.

Subjective

- Safety
- Relationships
- Decision Making
- Culture
- Cost Savings
- Trust
- Coordination
- Morale
- Confidence

Objective

- Staff # Trained
- # of Drills
- Compliance Rate
- Recovery Time
- Response Times
- Cost
- Plan Completion
- Safety Incidents
- Satisfaction Score

OUR OBJECTIVE

APPROACH

RESILIENCE METRICS

Defining Key Performance Indicators across Qualitative and Qualitative Metrics

Create and Define a Strategy

R E S I L I E N C E

Readiness Assessment

Conduct a risk assessment to identify potential hazards and vulnerabilities for your care delivery site.

Emergency Planning

Provide a structured and organized approach to preparedness, response, and recovery.

Safety

Create an environment that emphasizes safety of Memorial Hermann Health System employees, patients, and visitors through ongoing training and education.

Innovation

Continuously seek, integrate and implement new innovative ideas and concepts to enhance safety and maintain high levels of competencies, and identify new efficiencies that support operational excellence.

Learning & Development

Develop emergency management program leads and backups by increasing knowledge in emergency management, business continuity, and leadership.

Integration

Identify opportunities to collaborate with clinical and operational departments to enhance integration and foster culture of preparedness across the organization.

Emergency Response & Recovery

Enhance organizational emergency response and recovery capabilities by implementing technologies that improve operational efficiencies, promote standardization, and increase operational redundancy's.

Networking & Partnerships

Identify opportunities to collaborate with system and external stakeholders to enhance integration increasing the level of organizational preparedness.

Continuity of Operations

Improve the organizations ability to utilize continuity of operations strategies, increase redundancy, and establish abilities to maintain essential functions.

Emergency Communication

Establish and maintain redundant means of communication methods.

Strategy		Strategic Priority			
R	Readiness Assessment	Risk Assessment	Inventory		
E	Emergency Planning	Program Documents	EM Meetings		
S	Safety	Training	Education		
I	Innovation	Speaking Engagements	Publishing	Awards & Recognition	Financial Sustainability
L	Learning & Development	Professional Development in EM	Professional Leadership Development	Professional Development Other	
I	Integration	Clinical	Operations	Physician	Executive
E	Emergency Response & Recovery	Response Supplies	Response Capabilities		
N	Networking and Partnerships	Regional/Community Engagement	System Engagement	EM and/or BC Association Involvement	
C	Continuity of Operations	Downtime Preparedness	Continuity of Operations		
E	Emergency Communications	Redundant Communication	Mass Communications		

HOW IT WORKS

Objective Score

1. Each strategy has a set of competencies with subset of question (10 points per strategy)
2. All campuses will complete the survey and receive a score each May/June.

Subjective Assessment Score

1. How effectively does the EPO demonstrate alignment with Memorial Hermann's Mission, Vision, and Values in their role?
2. How effectively does the EPO collaborate with counterparts and campus leaders to achieve program goals?
3. Does the EPO instill confidence as the subject matter expert for your campus?
4. What impact has the EPO had on fostering a culture of preparedness and improving morale within your campus?
5. Overall areas for improvement.

Total scores for campuses are based on both subjective and objective scores.

Question 3

How will you grow and/or sustain your program?

INTEGRATION

Identifying opportunities to make an impact and leveraging those opportunities to increase internal collaboration and build trusted external partnerships.

TELLING OUR STORY

Your program may be an asset to your organizations, but if you do not effectively showcase your value and communicate it, that value **will** go unnoticed

INNOVATION

What are we doing to give our leaders something to talk about with executives and other hospitals/health systems?

Integration

Preparedness Week

Hospital Emergency Response Teams

Monthly System Wide Meetings

Preparedness Week

June 3-7

System Activities

625 LUNCH & LEARN ATTENDEES

485 RED PHONES TESTED

4601 PHISHING TEST EMAILS REPORTED

Campus Activities

10 TABLETOP EXERCISES

10 INFORMATIONAL TABLES STAFFED

44838 MH ALERTS SENT

16 DISASTER TRAININGS

1 FULL SCALE EXERCISE WITH LIFE FLIGHT

213 SETRAC ACTIVITIES

LEADERSHIP INVOLVEMENT AT ALL CAMPUSES

5 FULL SCALE EXERCISES

Cyber Monday

TAC Tuesday

Weather Wednesday

Training Thursday

Finale Friday

Hospital Emergency Responses Teams (HERT)

Multidisciplinary group of healthcare professionals trained and organized to manage and respond to emergencies, disasters, or critical incidents within the hospital.

What We Do

- Regular Meetings
- Drill/Train
- Create Muscle Memory
- Promote Safety & High Reliability

Preparing For

- Decontamination
- Mass Casualty
- Evacuations
- Highly Infectious Patient(s)

Telling Your Story

Are you telling the right story?

How are you showcasing it?

Emergency Management & Organizational Resilience

R E S I L I E N C E

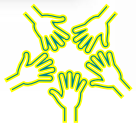

Readiness Assessment


Emergency Planning


Safety


Innovation


Learning & Development


Integration


Emergency Response & Recovery


Networking & Partnerships


Continuity of Operations


Emergency Communication

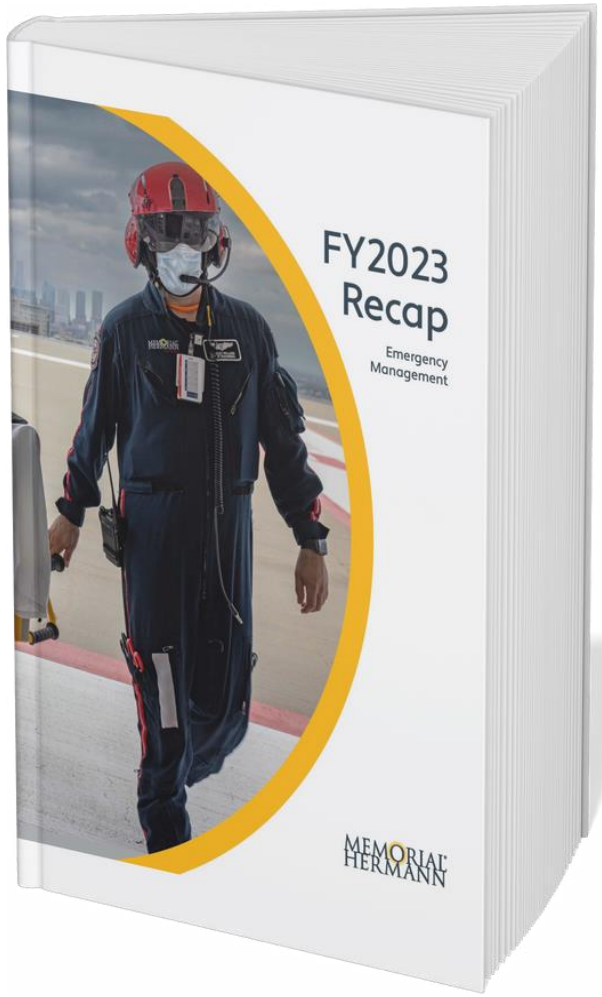
Our Purpose

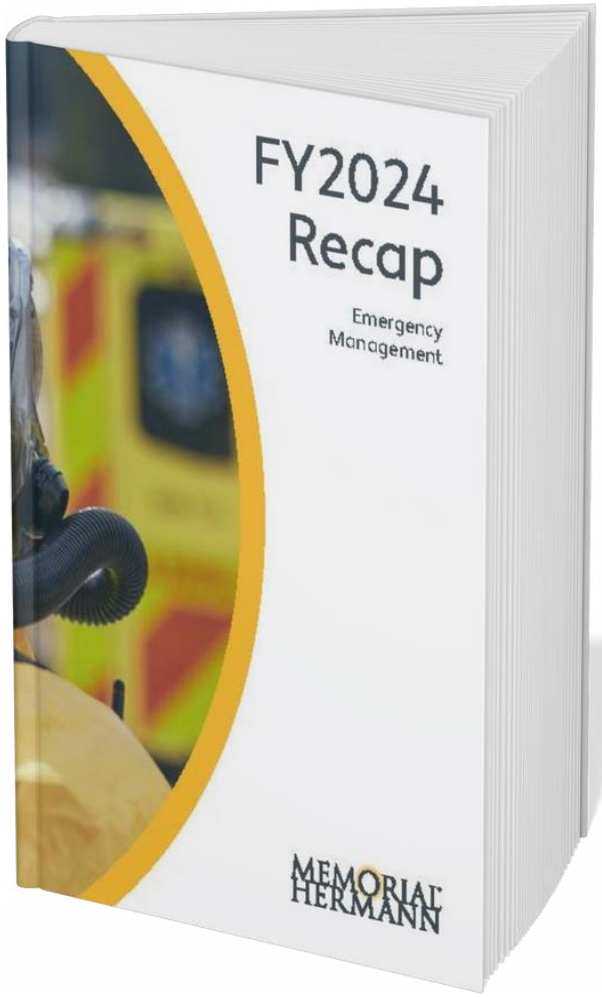
Ensure operational continuity by equipping staff with the knowledge, skills, and competencies necessary to uphold our mission, vision, and values during crises. Recognizing that disasters do not occur in isolation, we adopt a system-based approach to foster organizational collaboration and resilience.

Our Approach

- INTEGRATE BEST PRACTICES
- MULTIDISCIPLINARY COLLABORATION
- EVIDENCE-BASED EDUCATION
- HIGH RELIABILITY
- SUBJECT MATTER EXPERTISE
- ENHANCED EFFICIENCIES
- STRATEGIC COORDINATION
- COMMUNITY RELATIONSHIPS

Program Reviews





?

Closing

Summary

Leadership Support

- Your Value Proposition and "Why" will dictate your journey
- Your ability to tell your "story" matters

Measuring Success

- Objective vs Subjective measures
- What's your Key Performance Indicators?

Growing/Sustaining Your Program

- Invite a wide variety of people to your events, drills, meetings – you never know who will show up
- Think outside the box

The Key Point

A resilient future in healthcare is dependent on an effective emergency management and business continuity program. It is our job to show leadership why this statement is true **and** why having a robust emergency management and business continuity is a competitive advantage.

Questions

Adam Lee
Director, Emergency Management & Organizational Resilience
adam.lee@memorialhermann.org
651-757-6772

Achieving a Culture of Zero Violence

Leadership Strategies to reduce the Risk and Anxiety of patients, staff and visitors

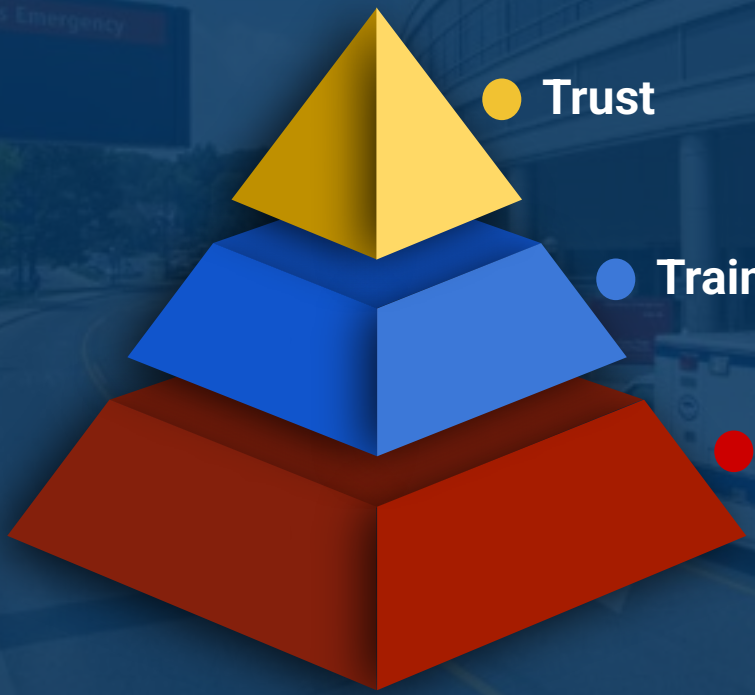
Brian Uridge, MPA, CPP, CHPA, CTM
DPSS Senior Director Michigan Medicine
Safety and Security

DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

Healthcare Safety and Security

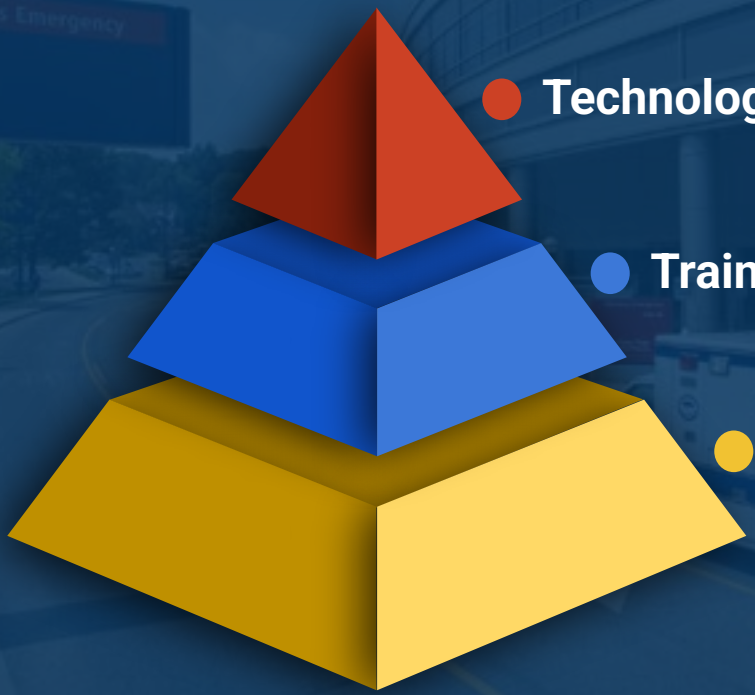
Each hospital is a community and every floor is a neighborhood

President's Task Force on 21st Century Policing. Final Report of the President's Task Force on 21st Century Policing. 2015. cops.usdoj.gov/pdf/taskforce/taskforce_finalreport.pdf



DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

COLUMN II ACTIVITIES		NO	MIN
Routine Patrol			
Felony Arrests	*60*		
Misd. Arrests	*30*		
O.U.I.L Arrests	*60*		
Foot Patrol	*5pts-15 min*		
Bar Checks	*5*		
Premise Inspections	*5*		
Crime/Fire Inspections	*5*		
Discovered Felony	*60*		
Discovered Misd.	*30*		
Open Doors/Windows, etc.	*15*		
Haz Citations	*30*		
Non-Haz Citations	*15*		
O.U.I.L. Citations	*30*		
Traffic Warnings	*5*		
Accident Citations	*5*		
Radar Citations	*0*		
Parking Citations	*5*		
Fir Cards	*5*		
Citizen Contacts	*0*		
Sub Total Column II			
TOTAL TIME SPENT			



DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

Polarizing of America

Right now partisan tribalism is statistically higher than at any point since the Civil War.

Overchoice Homes X 3

Nightline with Ted Koppel

Mash vs. Game of Thrones

Them: Why we hate each other and how to heal, by Ben Sasse, St. Martin Griffin, 2018

Polarizing of America

Emotion trumps data

Only 55 percent will spend more than 15 seconds reading an article

The median American checks “our smartphones every 4.3 minutes

Facebook's own research: content that is hateful, divisive, or polarizing garners the greatest engagement.

Flying the friendly skies

Them: Why we hate each other and how to heal, by Ben Sasse, St. Martin Griffin, 2018

Two types of Security

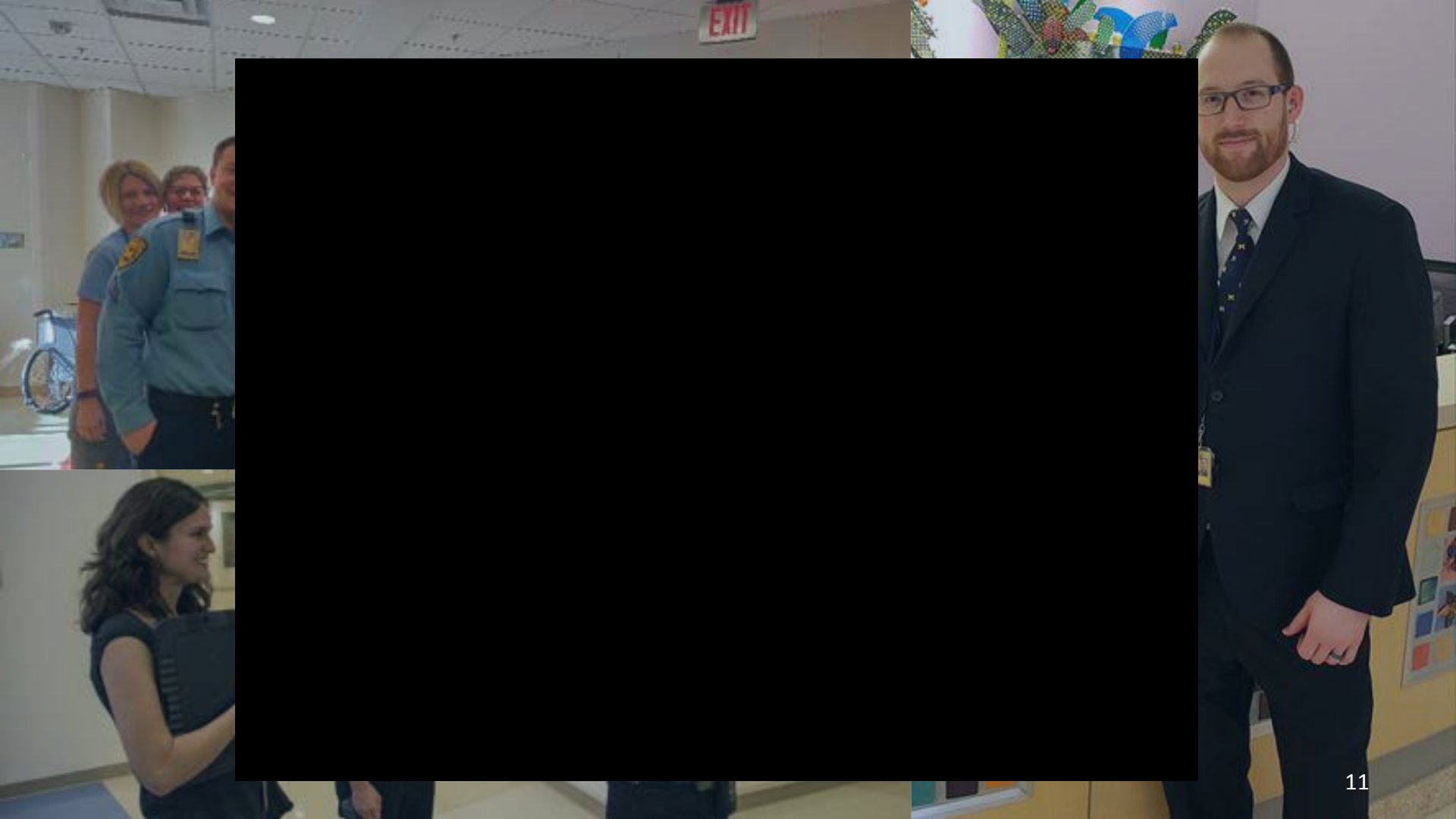
Reduce Risk

Reduce Anxiety

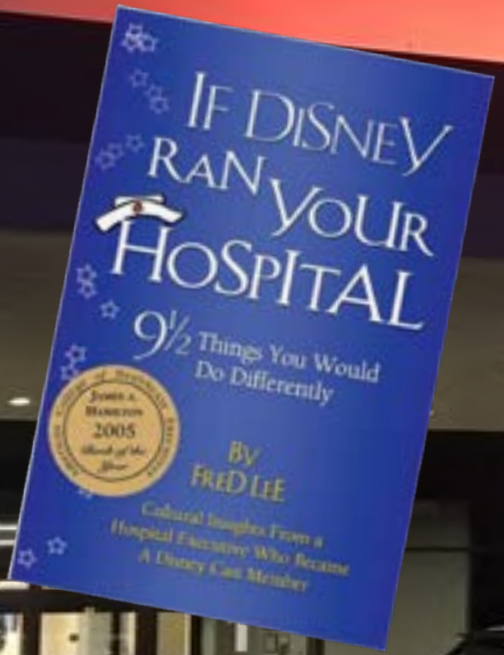
Fear Less: Real Truth about Risk, Safety, and Security in a time of terrorism, by Gavin De Becker, 2002

Non-Traditional Security

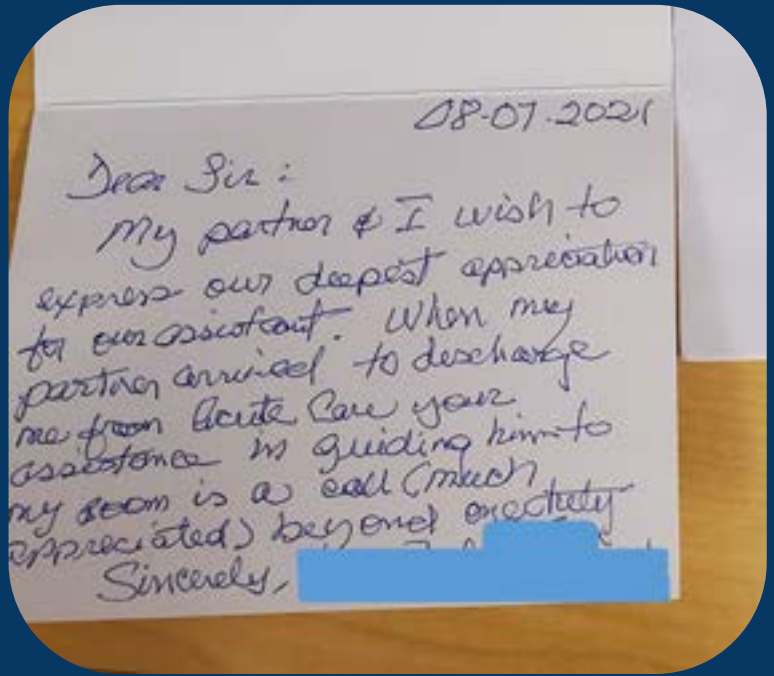
Police in Healthcare


EXIT

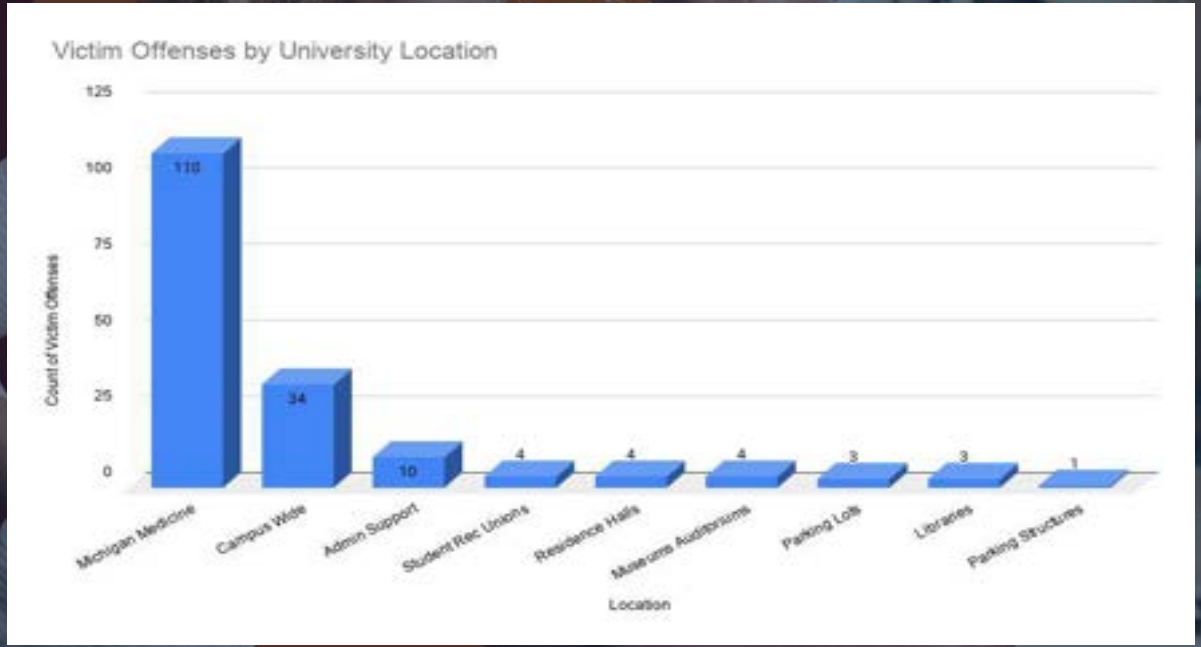
Exceptional Experience



Ambassadors First and Security Second



Violence Against Staff



Security Risk Codes

S0 •Security response not required

S1 •Consult with Security Services

S2 •Security presence may be required

S3 •Security presence most likely required

S4 •Security presence required

S5 •Threat travels with the patient

VIOLENCE **PREVENTION**

- See Something/Say Something
- Employee Safety Training
- School Resource Officers
- Threat assessment teams
- Employee Assistance Programs
- Situational Awareness training

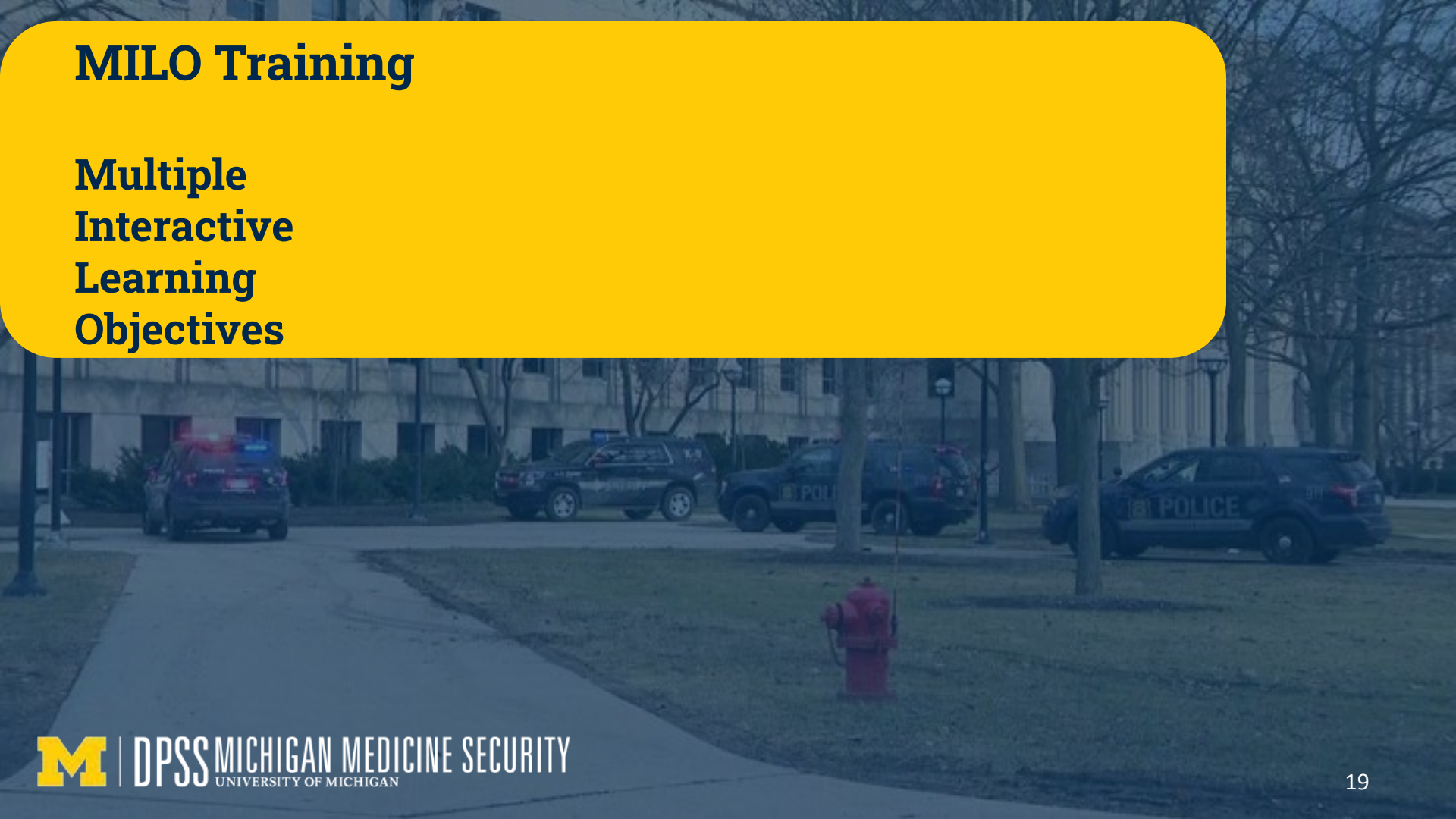
Stop the Killing: How to end the Mass Shooting crisis, by Katherine Schweit, 2021

Staff Training

AES Ride Along

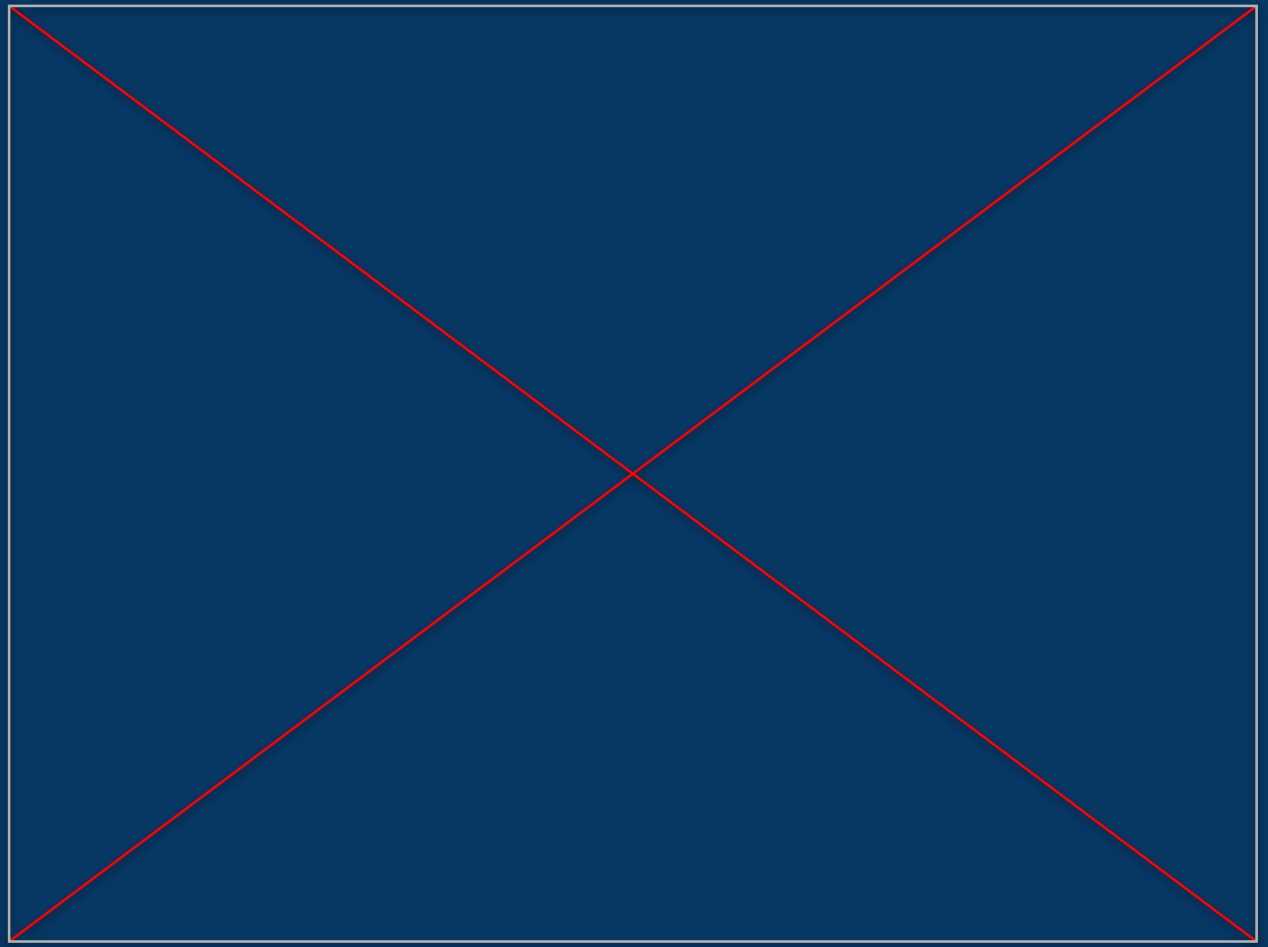
MILO Training

Multiple Interactive Learning Objectives



DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

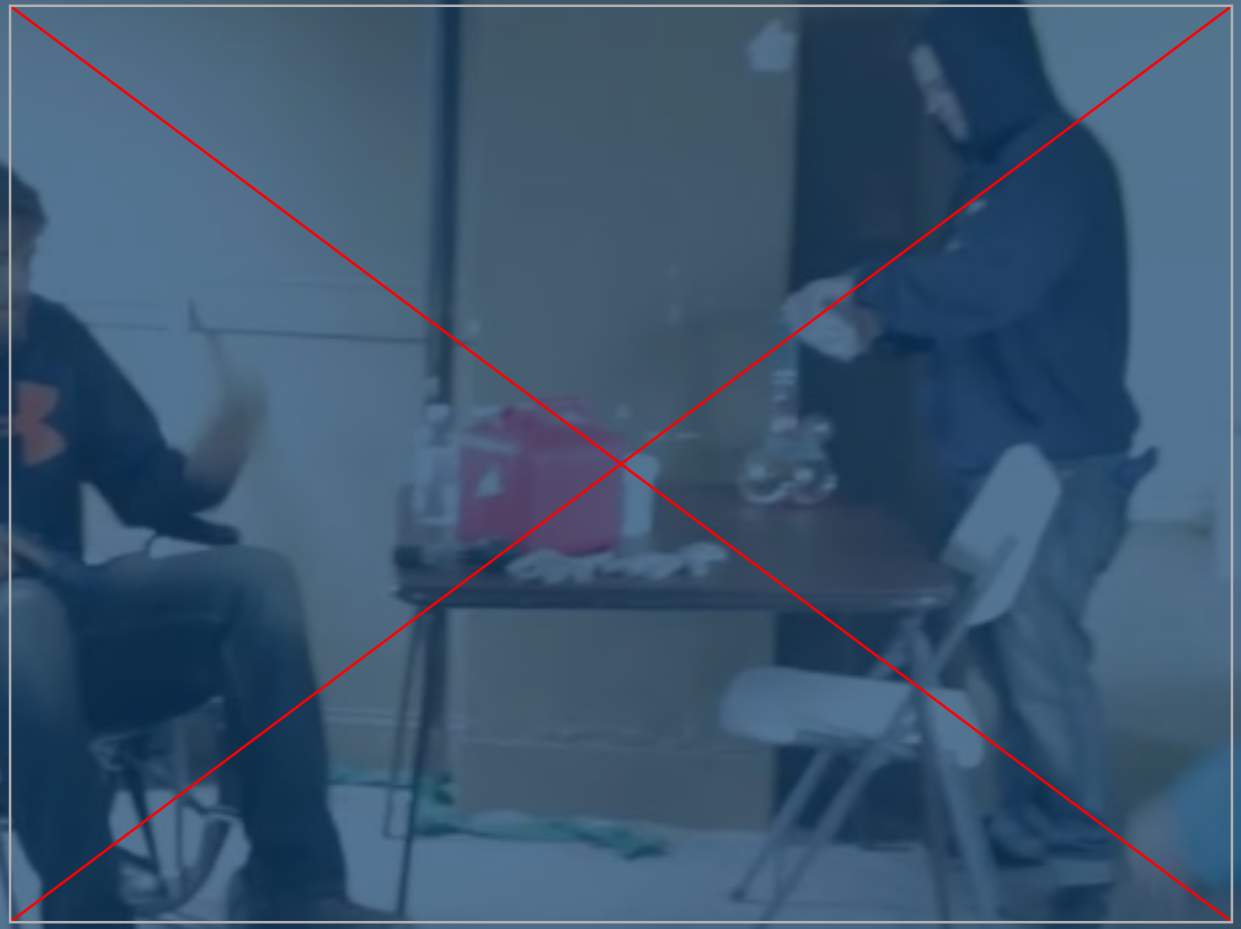
MILO Training



REACT Training: Home Health Care

Rapid
Environmental
Assessment
Control
Training

REACT Home Healthcare Scenarios



Situational Awareness and Personal Safety Training


Reception

Moving Off of the X

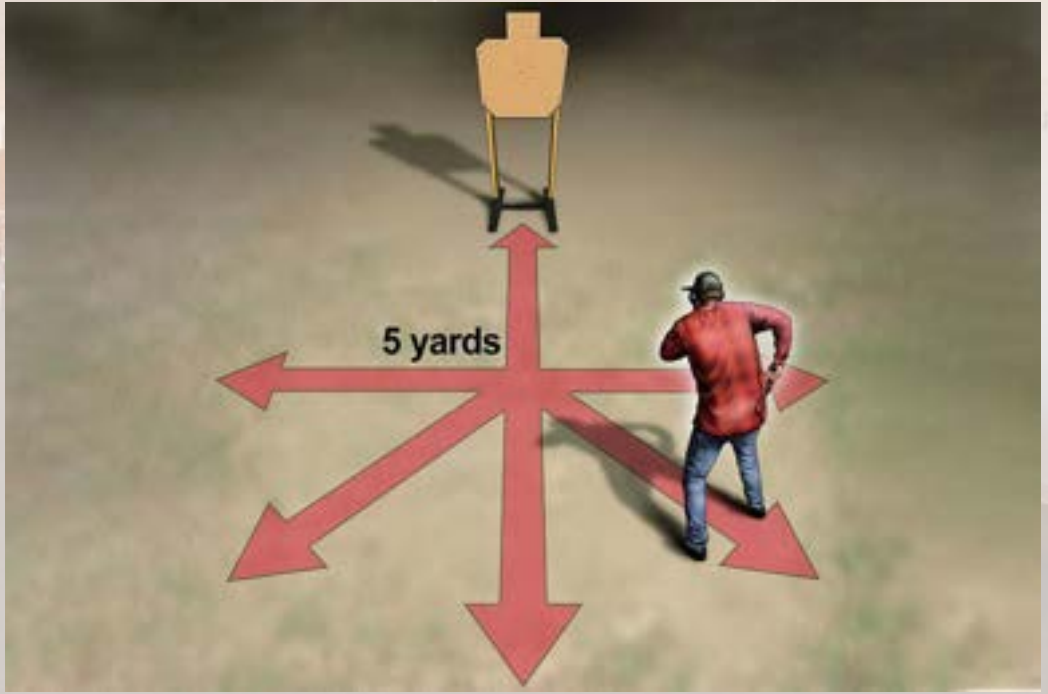
Reactionary Gap

Blade Off

Hands out of pockets

Move off the X

Non-Dominant side



Safety Mindsets

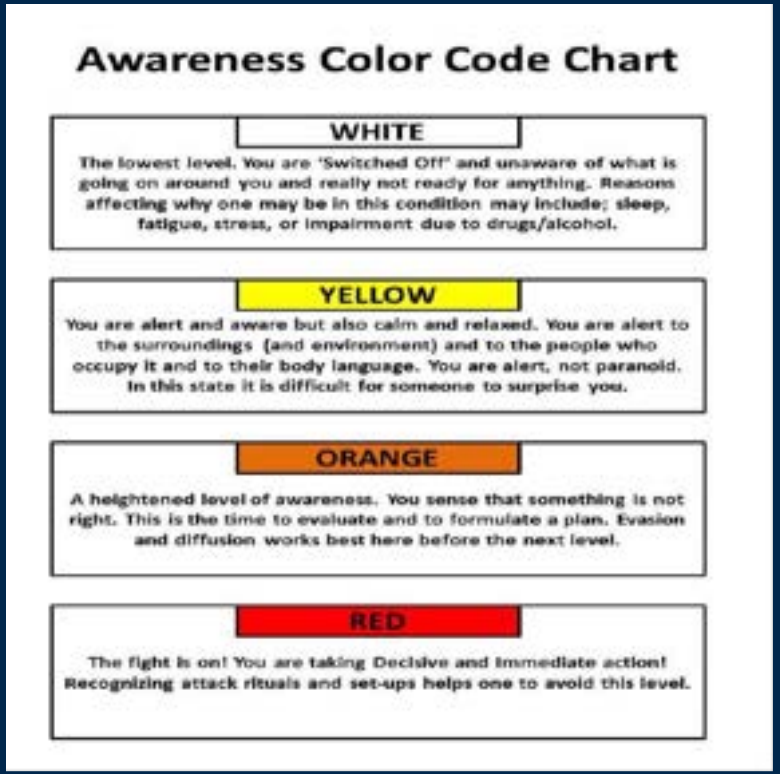
Conditions:

White

Yellow

Orange

Red



Safety Mindset Examples

Research on Walking

Grayson and Stein Research

The choices were not solely based on gender, race, or age

Short, shuffling strides when walking

Not swinging their arms in proportion with their stride

Exaggerated side-to-side movement when walking

Head facing at a downward angle when walking

Safety Training: Suspicious People

Forced teaming

Charm

Too many details

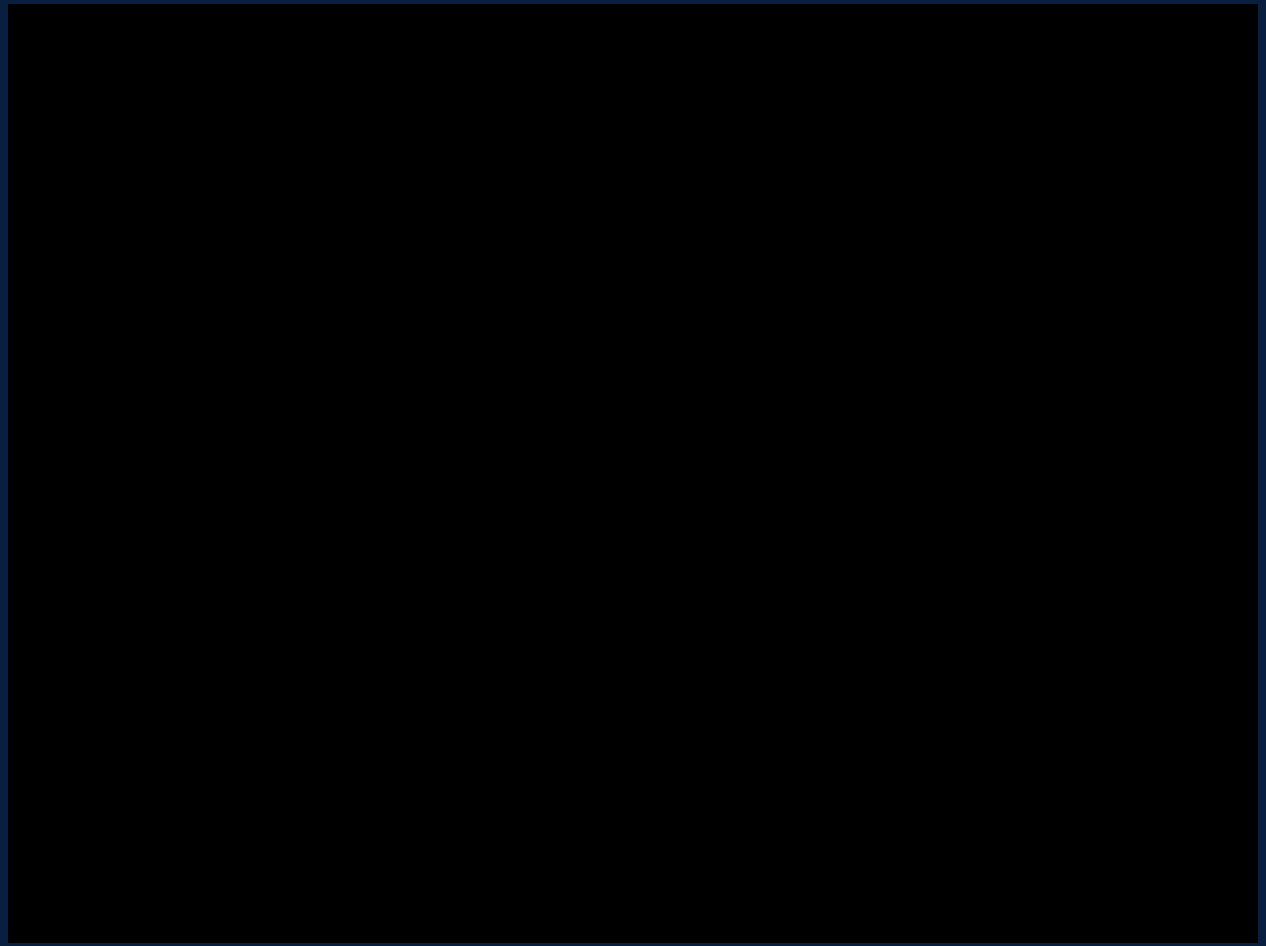
Typecasting

Loan sharking

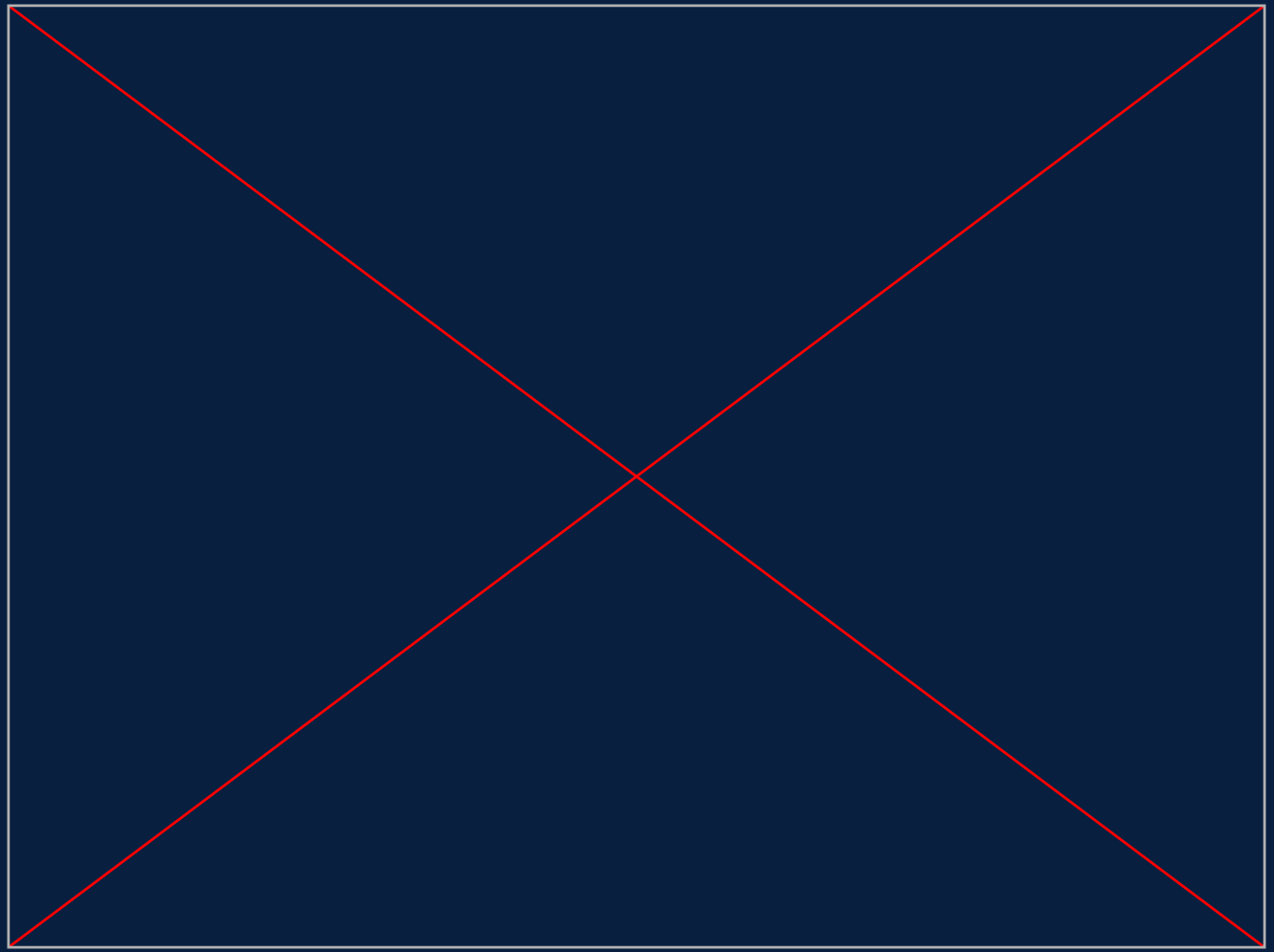
Unsolicited Promise

Discounting the word No

Proxemics

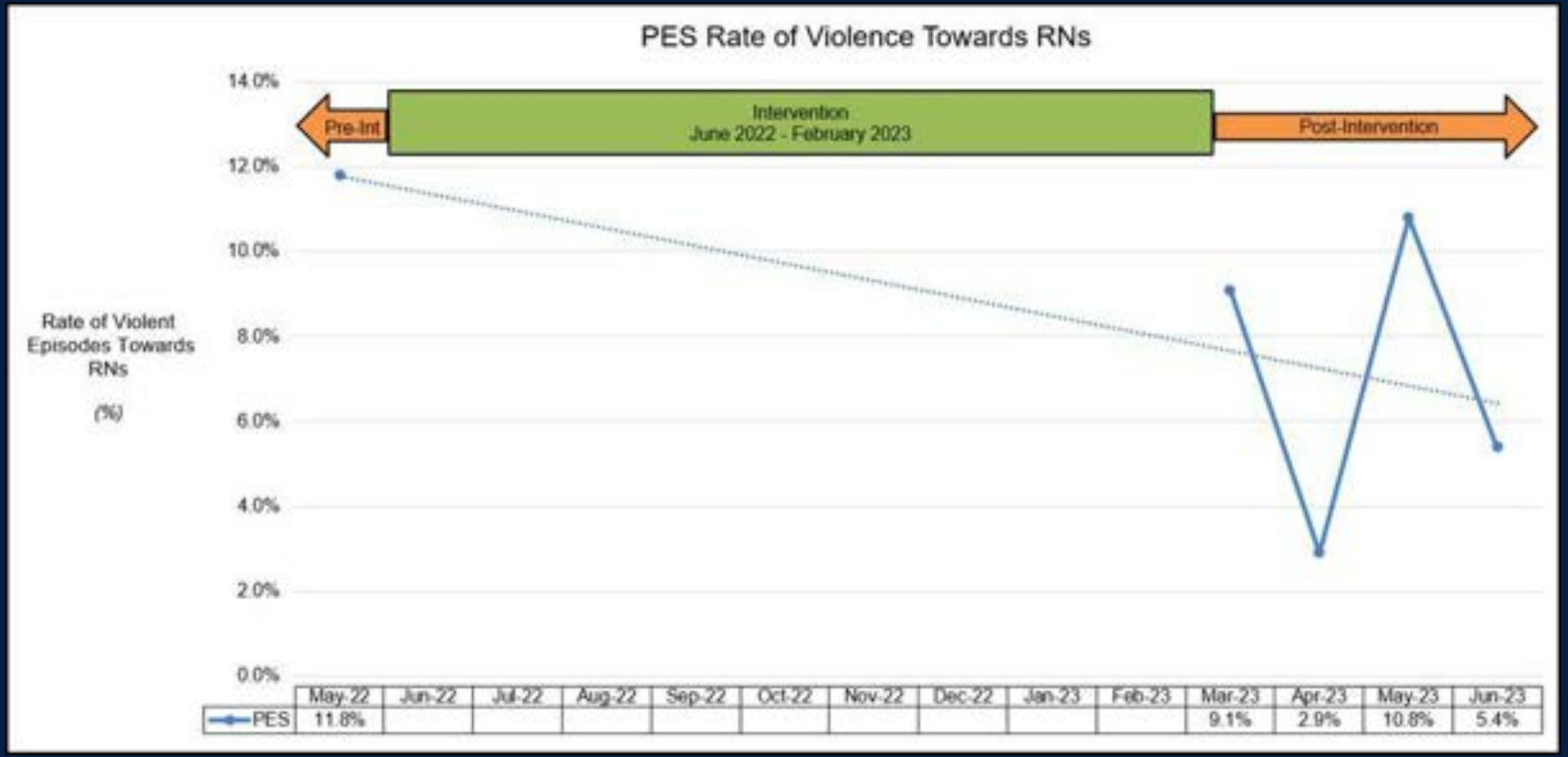


SAFER



POST SAFER INJURY DATA

POST SAFER INJURY DATA



Active Shooter Training

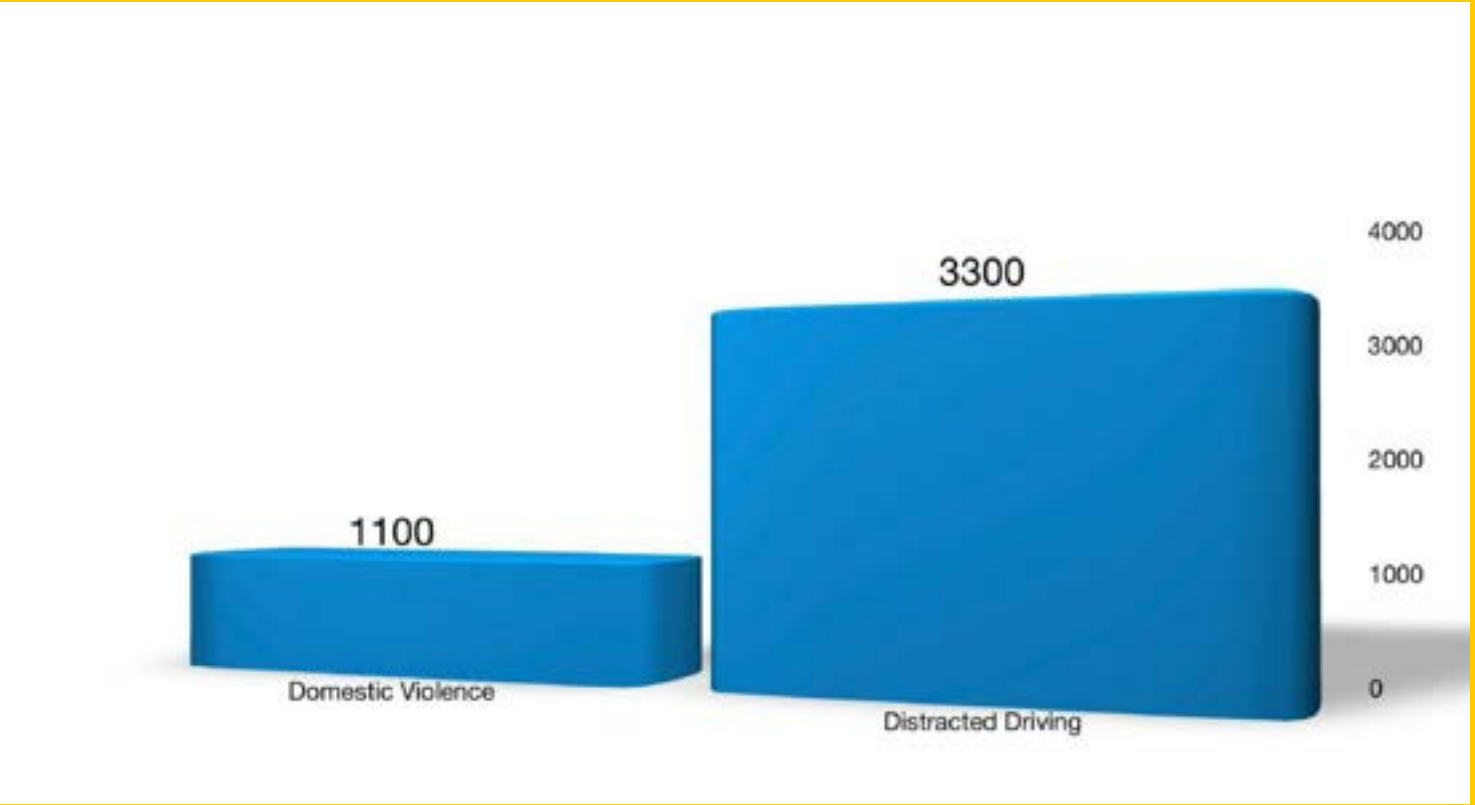
Active Shooters 2000-2019 (FBI Research)

Active Shooter Defined:

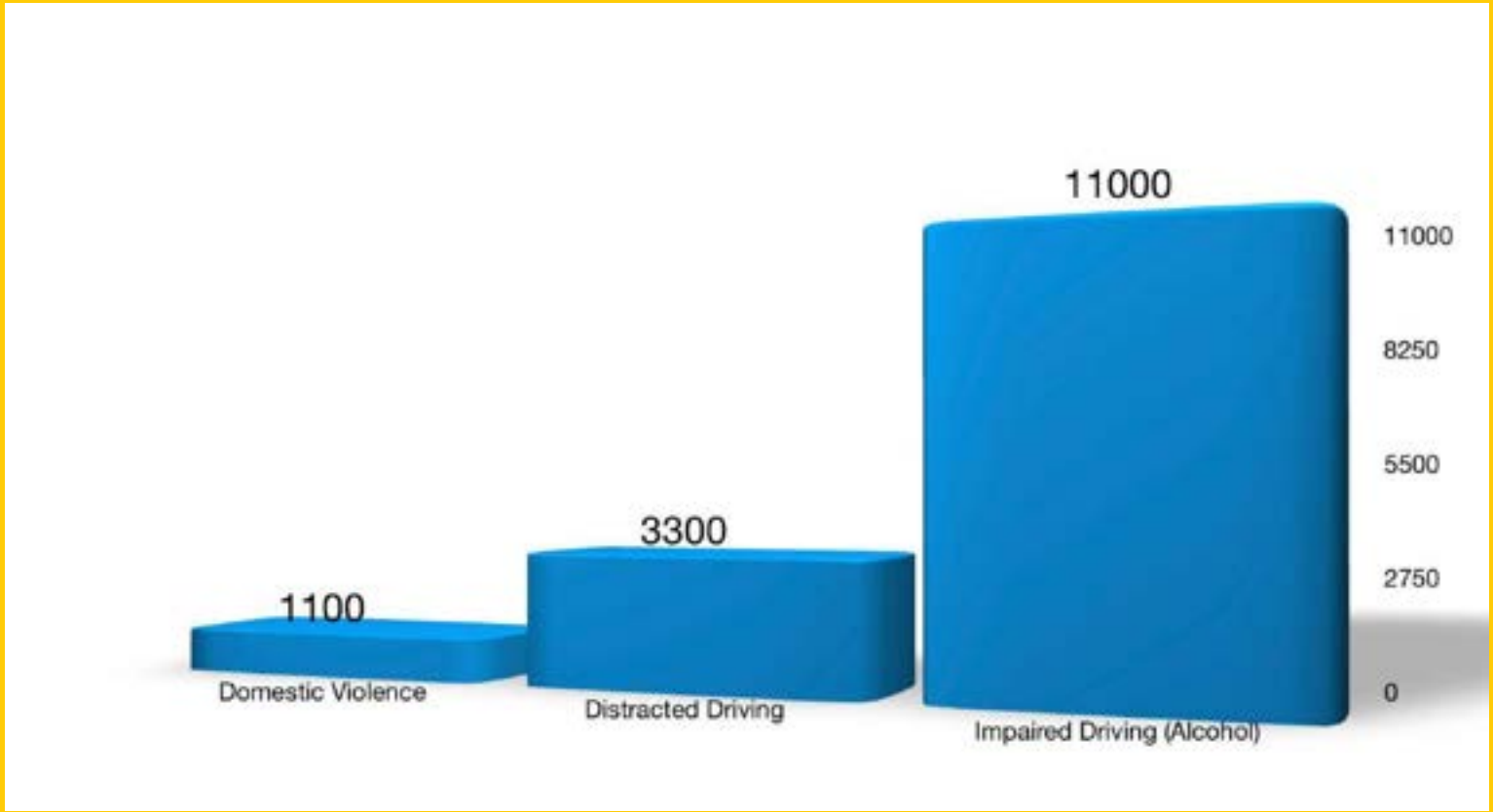
- An individual actively engaged in killing or attempting to kill people in a confined and populated area

Deaths Per Year

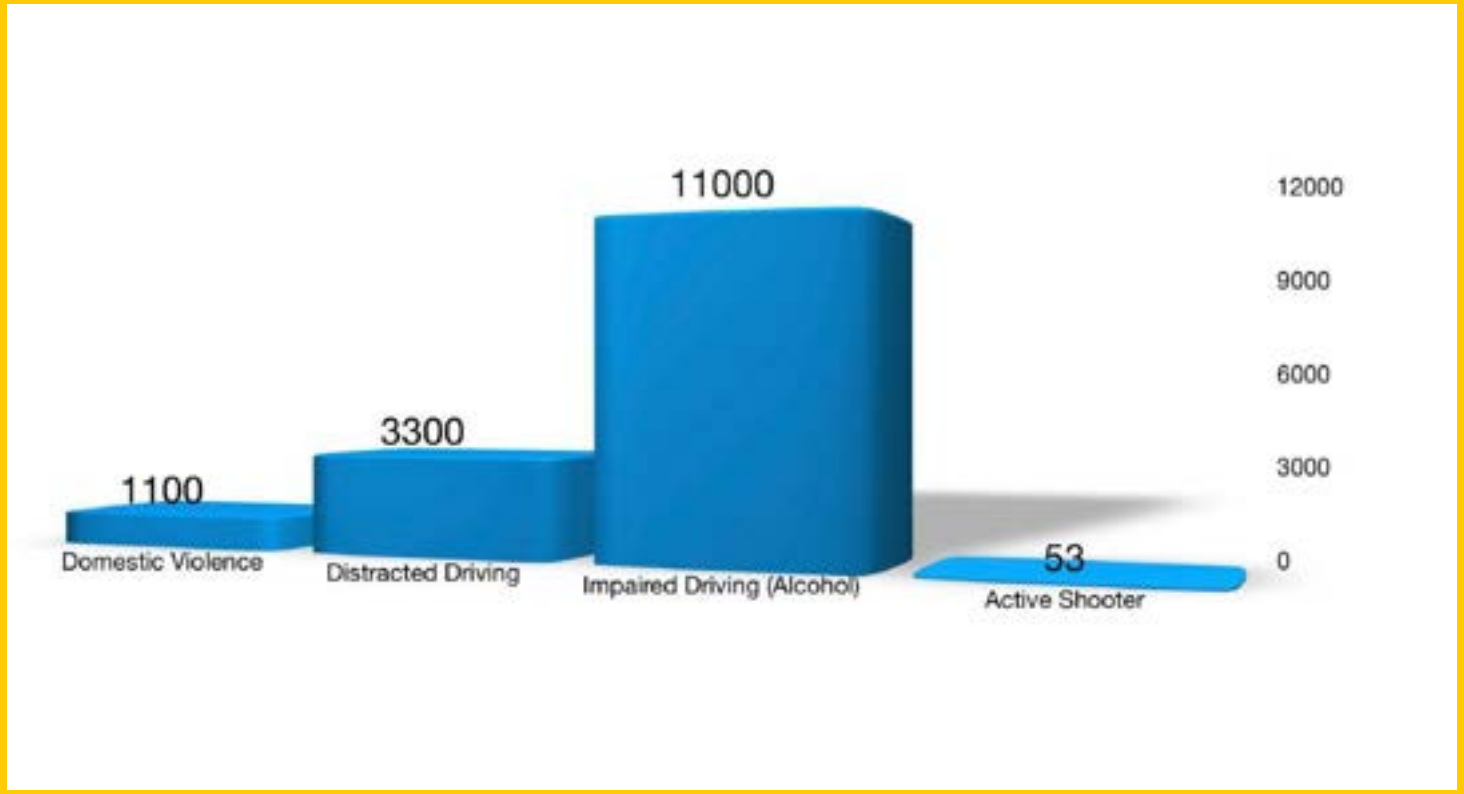
Deaths Per Year



Deaths Per Year



Deaths Per Year



Mass Killing

Mass Killing: Three or more killings in a single incident as defined by the Investigative Assistance for Violent Crimes Act of 2012

Active Shooter: An individual actively engaged in killing or attempting to kill people in a confined and populated area, as defined by the FBI

Mass killings account for less than two-tenths of One Percent of all homicides

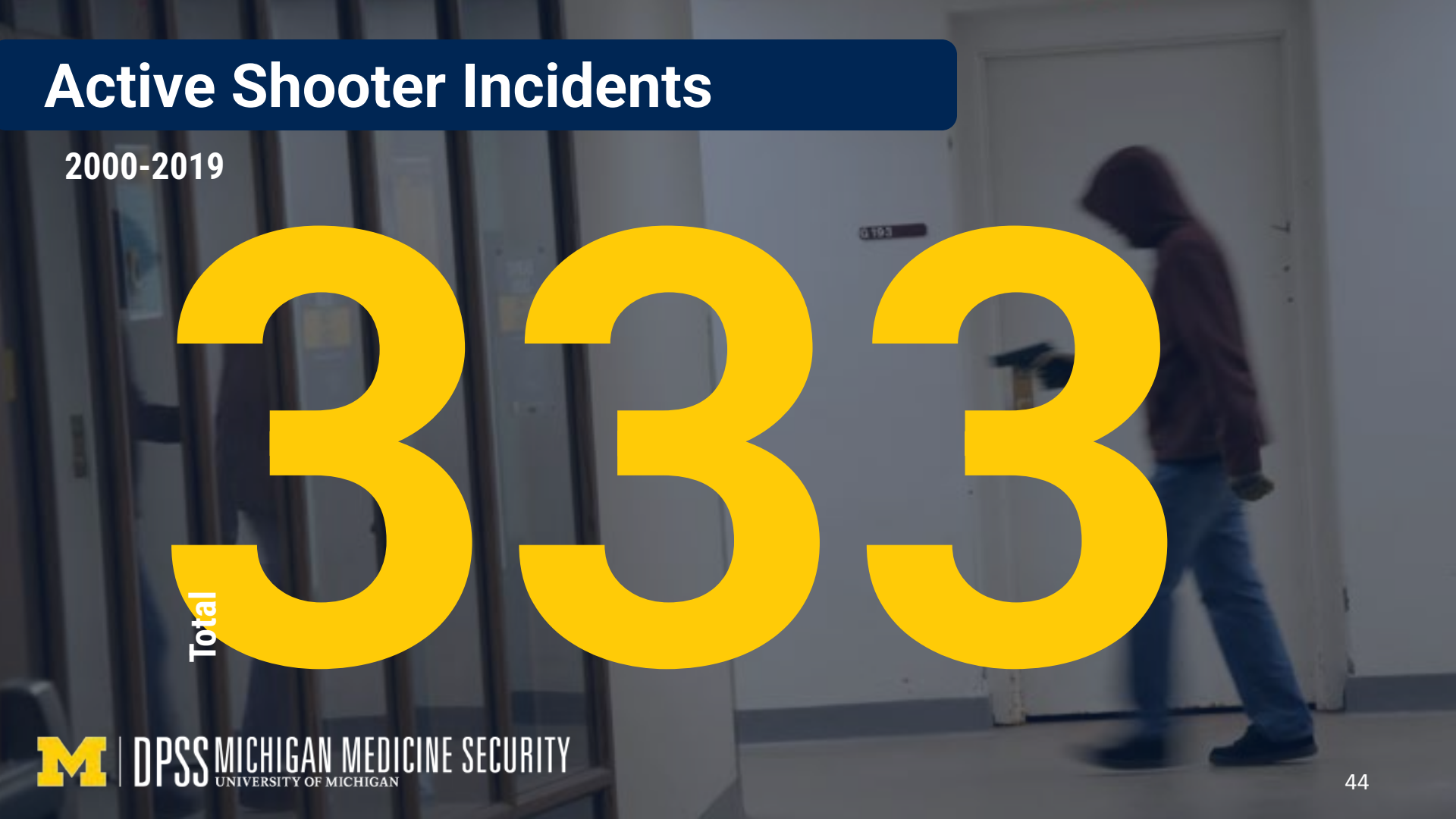
"National Council for Behavioral Health (NCBH), "Mass Violence in America: Causes, Impacts and Solutions," National Council Medical Director Institute (MDI) report, August 2019, accessed September 30, 2020,

Active Shooter Incidents

2000-2019

Total

333



DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

Active Shooter Incidents

2000-2019

Total

333

Hospital Incidents

15

DPSS MICHIGAN MEDICINE SECURITY
UNIVERSITY OF MICHIGAN

Threat Assessment

LAW ENFORCEMENT

EMPLOYEE ASSISTANCE/ SOCIAL WORK

ORGANIZATIONAL SECURITY

HUMAN RESOURCES

LEGAL

MENTAL HEALTH

RISK

Threat Assessment and Management Strategies: Identifying Howlers and Hunters, Second Edition
by Weston and Calhoun, 2016

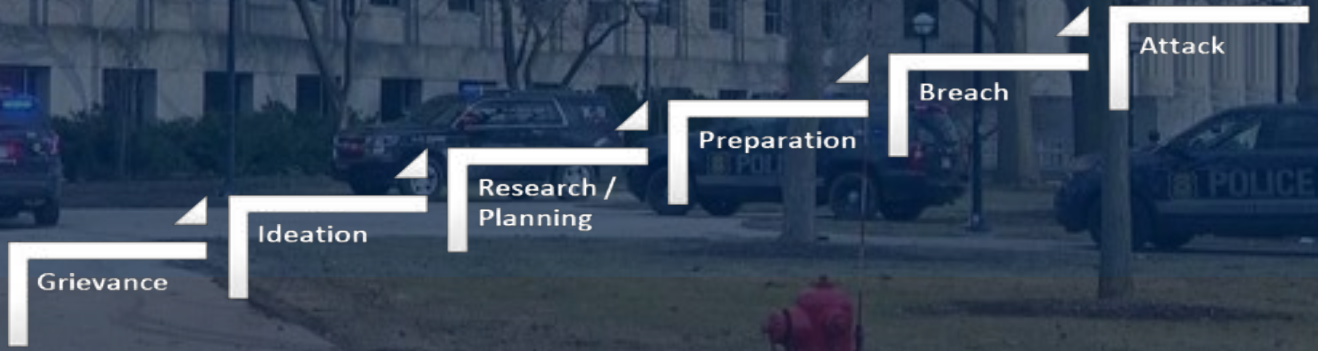
M DPSS
PUBLIC SAFETY

Threat Assessment Team

Best Practices: Pathway to Intended Violence

Hunters: Grievance, Ideation, Research, Preparations, Breach, Attack

Howlers: Grievance, Ideation, inappropriate communication



Threat Assessment and Management Strategies: Identifying Howlers and Hunters, Second Edition by Weston and Calhoun, 2016

United Healthcare Pathway to Intended Violence

Media Contagion Effect

Media:

- Lone Wolf, Active Shooter project power
- Extensive Media Coverage cement legacies

Social Media:

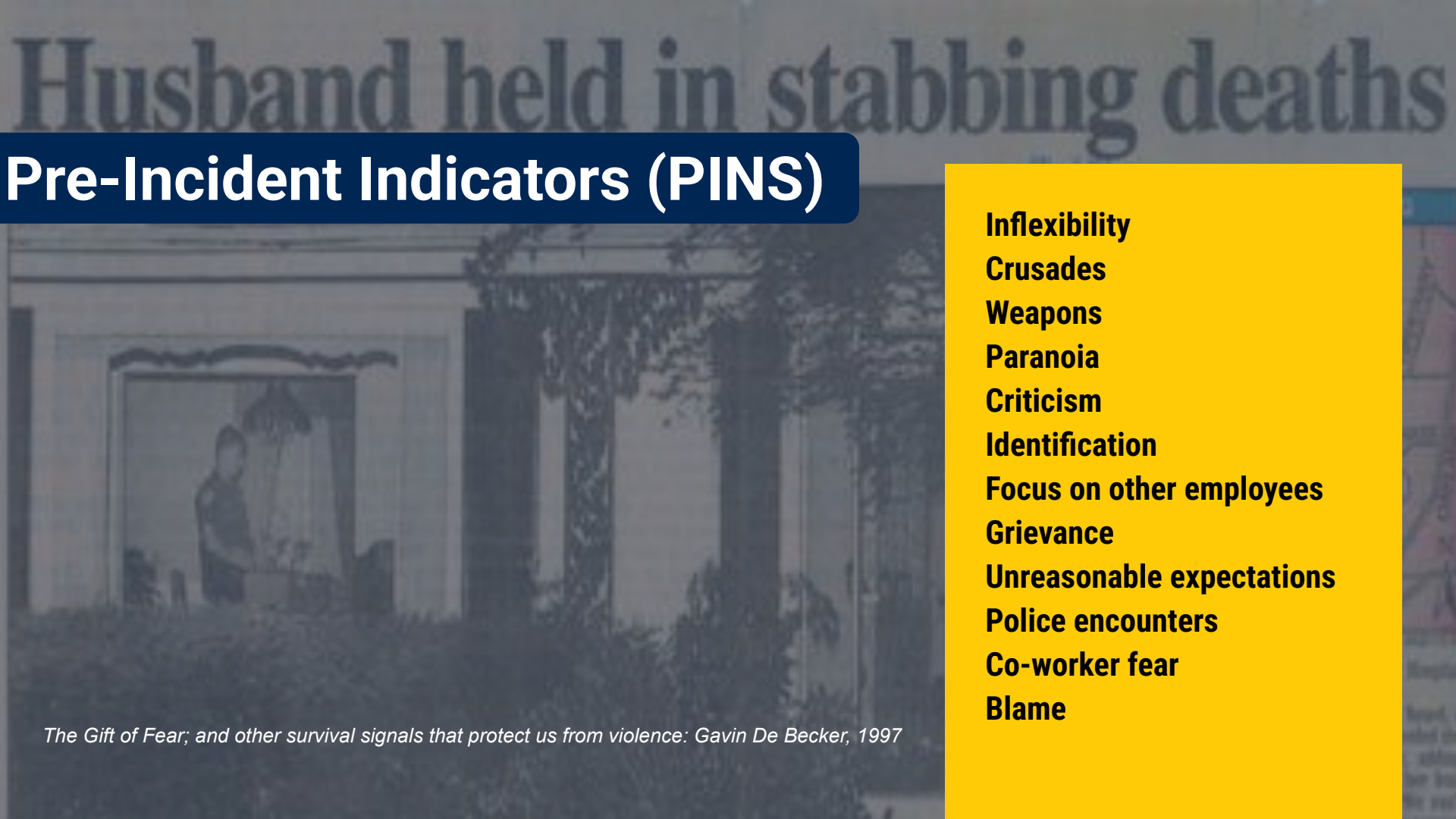
- Quickly spreads false information
- Potential to trigger a crisis

Port Arthur massacre mass shooting April 28, 1996 (35 Dead and 18 Wounded)

He is a terrorist. He is a criminal. He is an extremist. But he will, when I speak, be nameless

Stop the Killing: How to end the Mass Shooting crisis, by Katherine Schweit, 2021


SEATTLE
ONE LESS
CEO
KOMO
NEWS
4
MANY
MORE TO
GO
TRAFFIC ROAD SIGN
SHOWCASES
'DISTURBING' MESSAGE



Pre-Incident Indicators (PINS)

- **Inflexibility**
- **Crusades**
- **Weapons**
- **Paranoia**
- **Criticism**
- **Identification**
- **Focus on other employees**
- **Grievance**
- **Unreasonable expectations**
- **Police encounters**
- **Co-worker fear**
- **Blame**

The Gift of Fear; and other survival signals that protect us from violence: Gavin De Becker, 1997


Patients, Flowers and Books

S.A.V.E.

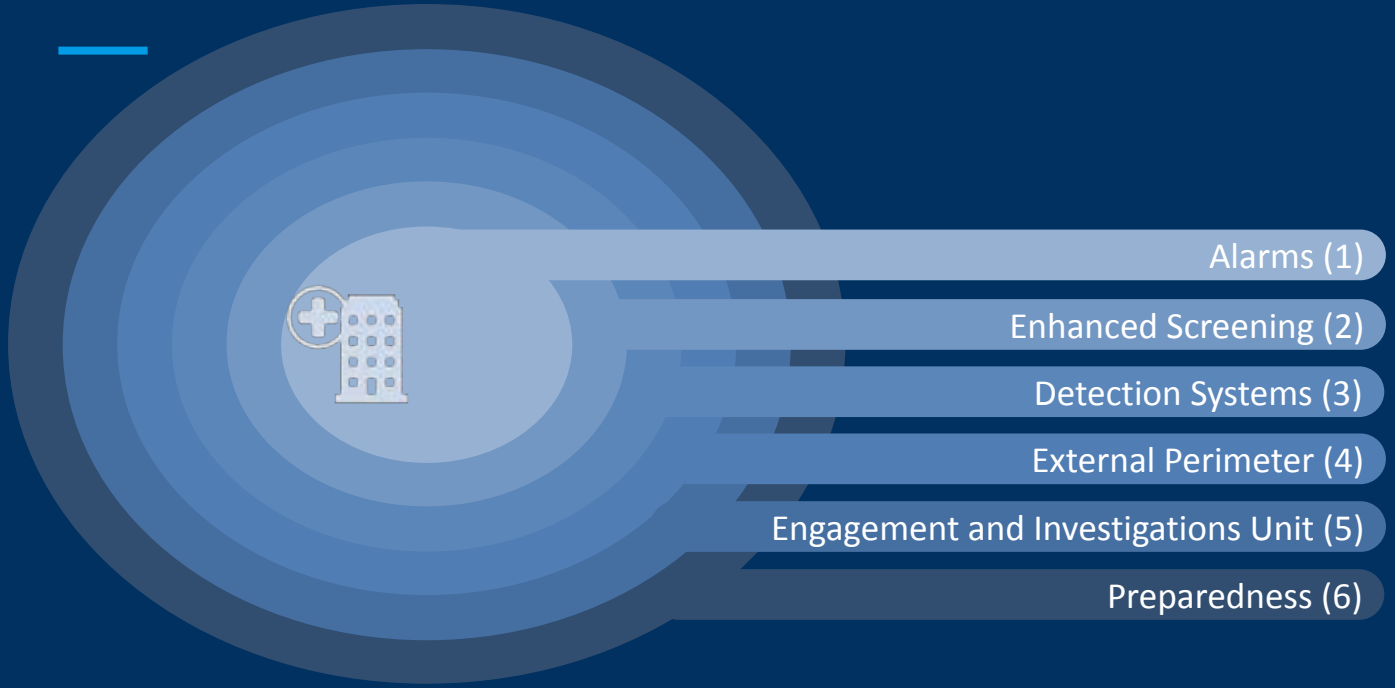
Situational **A**wareness for **V**iolent **E**vents

Creating Capable Guardians

Threat Suppression Incorporated; Dr. Mike Clumpner. www.threatsuppression.com

Technology

Concentric Rings of Security Concept



Crime Prevention through Environmental Design

On Stage vs. Off stage

Allina Health 2-9-21

Allina Health 2-9-21

67 year old Paul Ulrich

Detonated three pipe bombs, shot five people

Dissatisfaction with treatment

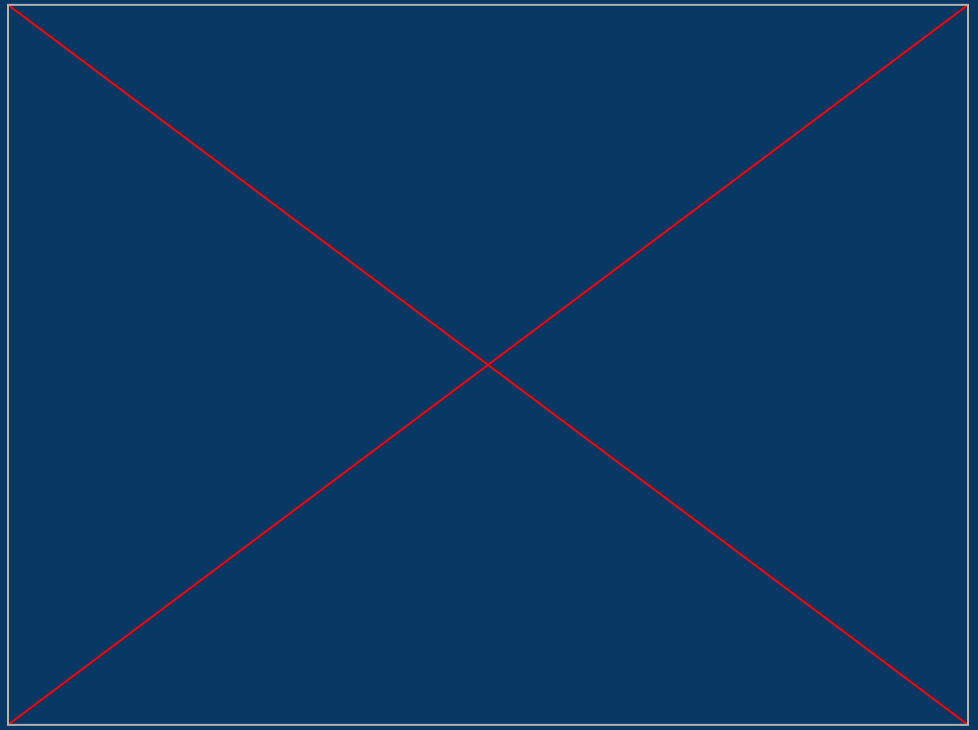
Had made threats of mass shooting and had restraining order

“ wanted it big and sensational, so that it makes an impact”

Allina Health 2-9-21

Cameras with analytics

Cameras with analytics



Weapons Detection

3% of hospitals experience shootings

59% outside

41% inside (ED mainly)

23% security weapon

31% LEO weapon (S1 generally in custody)

Weapons Detection

K9s in Health Care

A 2014 study by the International Healthcare Security Safety Foundation found the risk of violence was lower in hospitals with K-9 units, compared to those without.

A study by the National Center for Biotechnology Information showed canines have effectively reduced crime and violence by 75% to 80% in Midwest and East Coast hospitals.


Two New K9’s

A Day in the Life

Safety Mindset

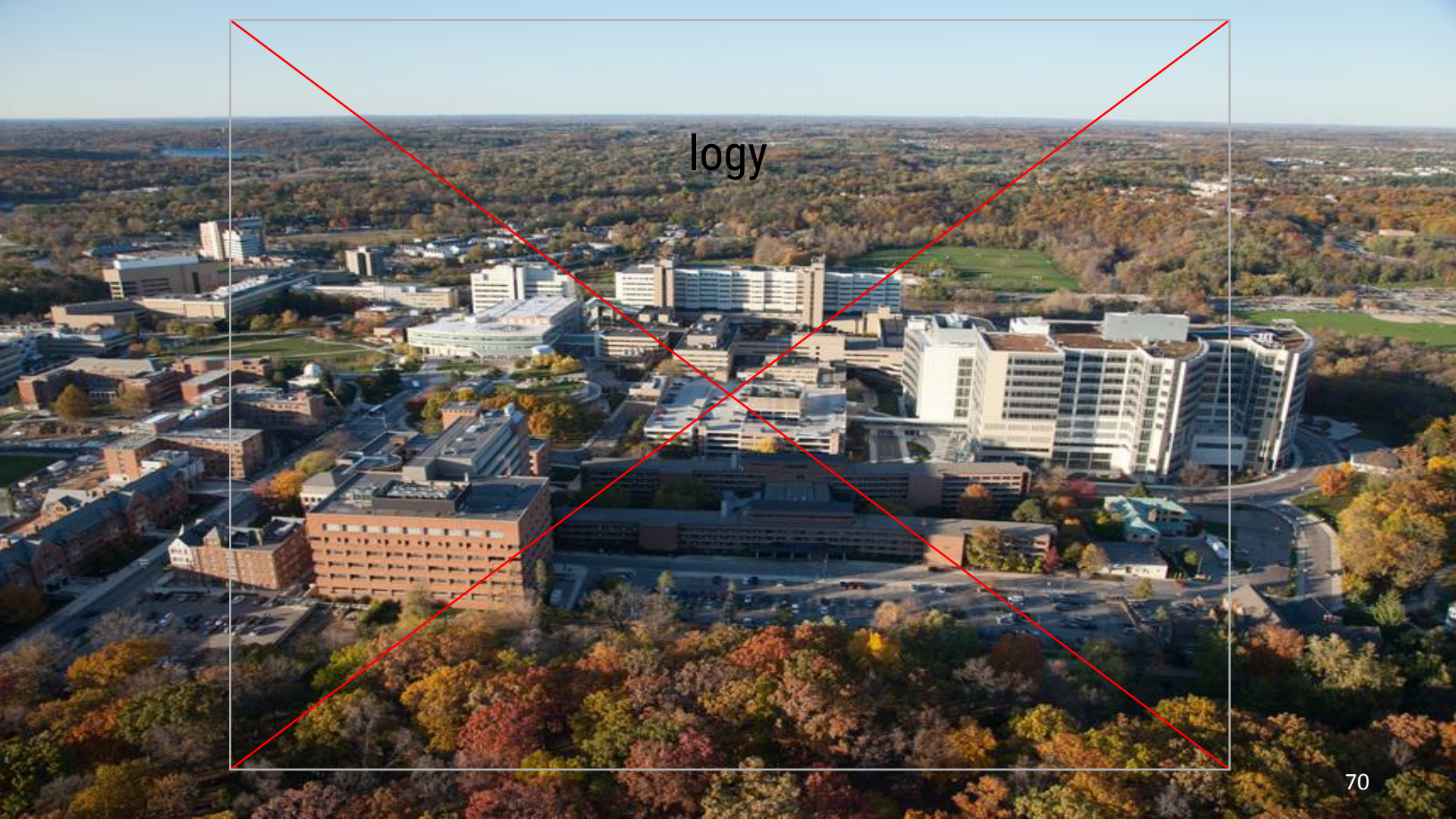
Kalamazoo Gazette

Kalamazoo, Michigan

Officer remembers close call with drug suspect

"The gunshot, it came from right below me ... I could actually feel the vibration. It felt like it was passing right underneath my chest."

Reducing the risk and anxiety of our patients, staff and visitors through Trust, Training and Technology


logy

Contact Information

Brian Uridge

buridge@med.umich.edu

(269) 985-3196 Cell

https://www.linkedin.com/in/brian-uridge-mpa-cpp-chpa-ctm-9aa4bb25/