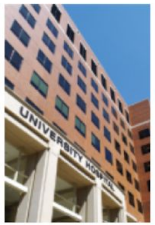
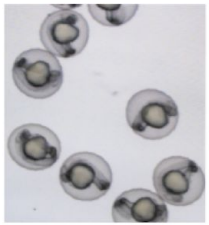
Hospital Preparedness and Disaster Management

Sarah Nafziger, MD, FACEP, FAEMS
Professor, Dept of Emergency Medicine
UAB School of Medicine

UAB HEALTH SYSTEM





Learning Objectives

- Describe general principles of disaster management including mass casualty trauma, infectious diseases, and other hazards
- Understand the basic functions of the Hospital Incident Command System
- Describe the benefit of participation in disaster planning with local hospitals, EMS, and other stakeholders

Disasters: What are they?

Webster's: a sudden event, such as an accident or a natural catastrophe, that causes great damage or loss of life.

Wikipedia: A disaster is something very bad that happens to people and almost always changes their lives completely.

Clinical Definition: When patient care needs exceed available resources.

Types of Disasters

Natural	Human-made
• weather • disease • environmental	• accidental • intentional

Birmingham: 29 Jan 1998

Missing (presumed dead):

- **NYC 2,963**
  - **360 Police/Fire**
- **Pentagon 188**
- **Pennsylvania 44**

Injured:

>4,000 treated

170 NYC hospitals

Katrina: 75 Billion $$

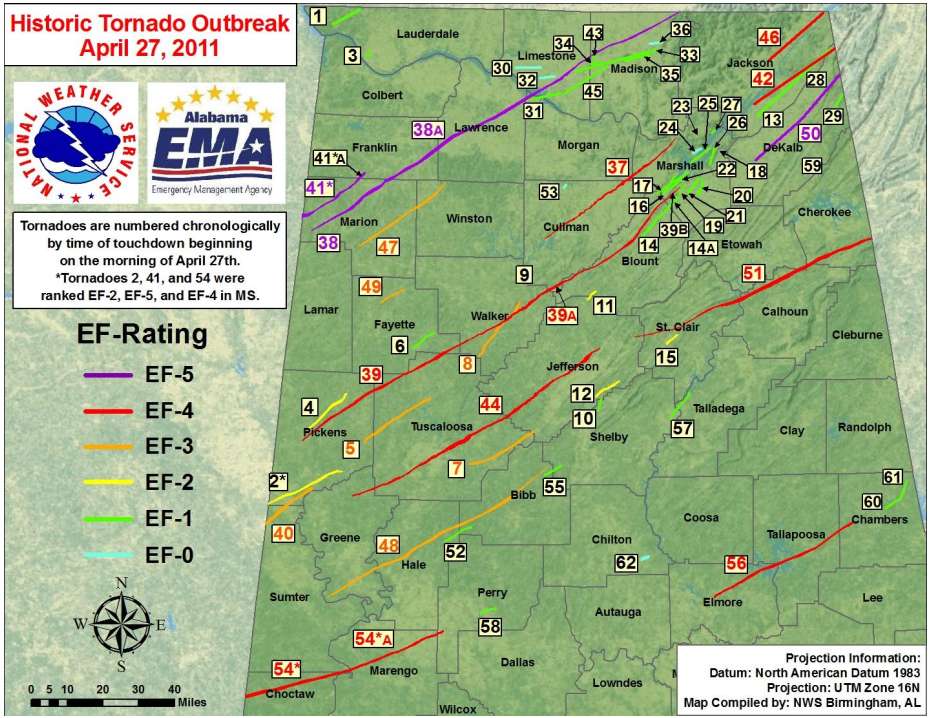
April 27, 2011

62 Total Tornadoes in Alabama on that single day

- **Average is 37 tornadoes/year**

247 Fatalities

Financial Impact….?



DIGITALGLOBE

View from UAB Hospital's Helipad

Ebola 2014

Peace Corps Pulls Volunteers Out of West Africa Amid Ebola Scare

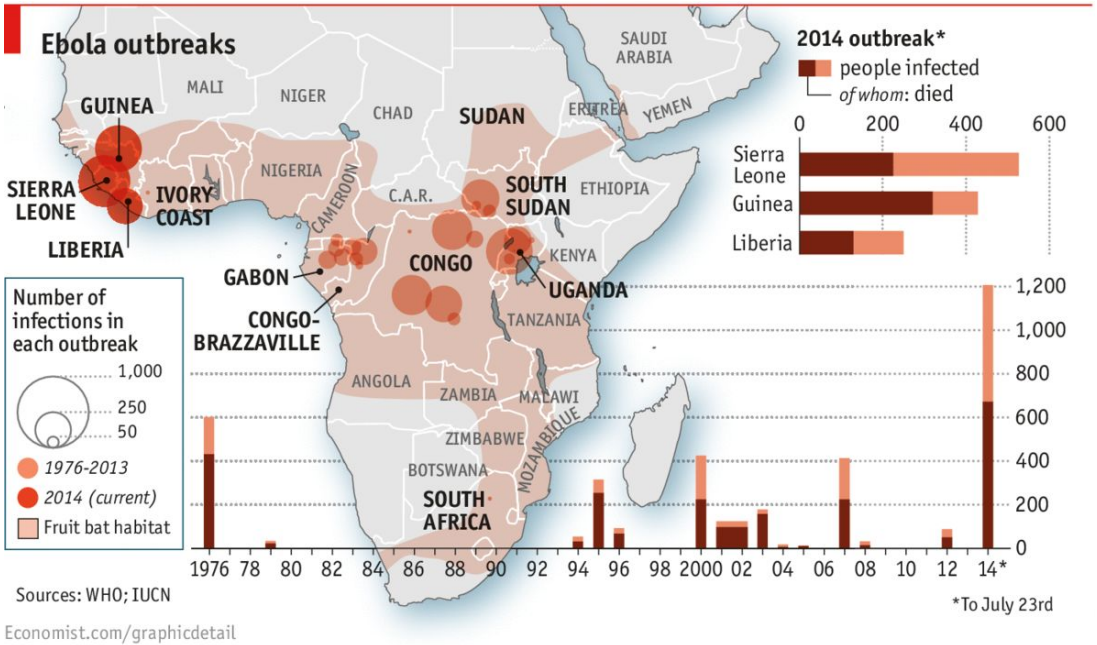
Maya Rhodan @m_rhodan | 5:28 PM ET

Due to spread of the Ebola virus, the organization announced Wednesday

The Peace Corps announced Wednesday that it's pulling volunteers out of parts of West Africa amid a outbreak of the deadly Ebola

Gloves and boots used by medical staff, drying in the sun, at a center for victims of the Ebola virus in Guekedou, on April 1, 2014.

Seyllou—AFP/Getty Images



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●●○○○ Verizon 4:52 PM

EBOLA

Dallas Ebola patient's c admits missing sympto initial ER visit

FoxNews.com
Published December 8, 2014

The Dallas emergency room docto initially treated the first patient to Ebola virus on U.S. soil has admitte missing key symptoms of infection

Candy Crush Play

●●○○○ Verizon 6:15 PM

omega.7944@paging.u... Contact

Fri, Aug 8, 1:29 PM

(Alpha Backup) barlotta call at 558-4790 working at va

Mon, Aug 11, 3:46 PM

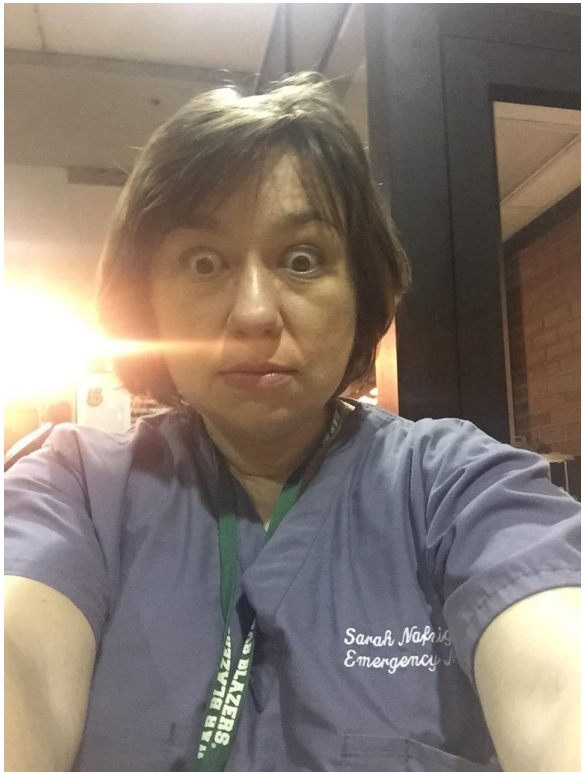
(Alpha Backup) Can you give Danny my number to call me, 996-7969 porterfield

Today 5:32 PM

(Alpha Backup) 996-4480 VANDERNOOT...LIBERIA PT

(Alpha Backup) HOSPITAL ALERT 1ST SUSPECT PATIENT HAS PRESENTED MAIN ER. JVANN MARTIN 281-4728

Text Message Send



Grady
Grady
103

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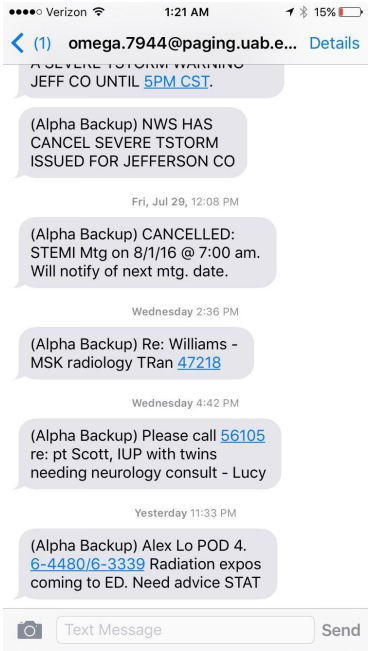
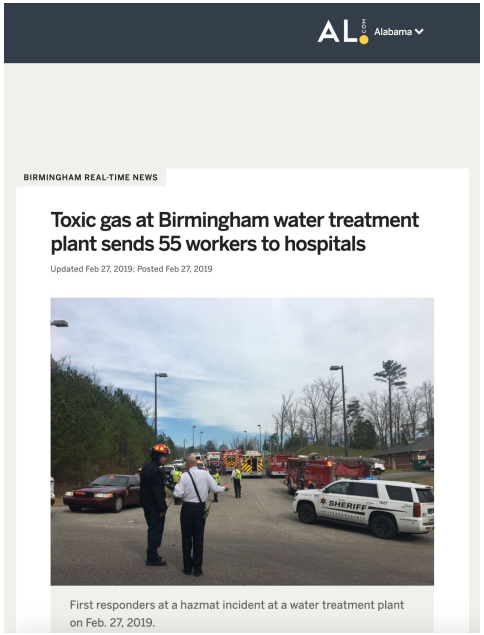
0

Radiation Exposure, June 2016



Feb 2019 Chlorine Gas Release



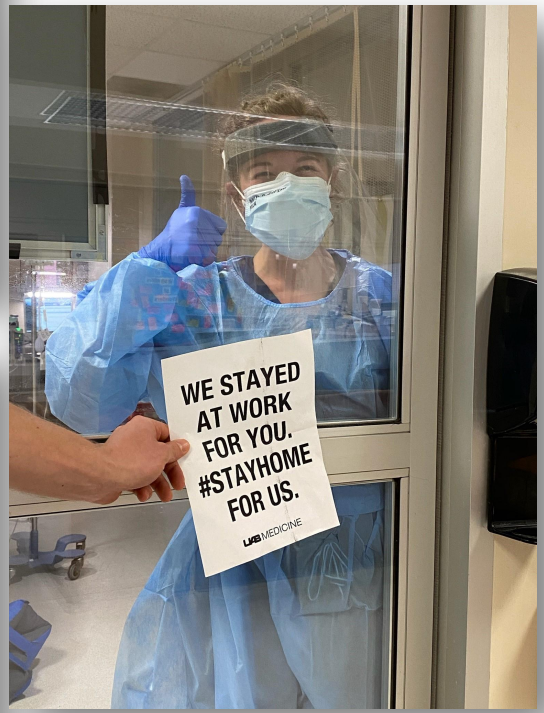
AL.com Alabama

BIRMINGHAM REAL-TIME NEWS

Toxic gas at Birmingham water treatment plant sends 55 workers to hospitals

Updated Feb 27, 2019; Posted Feb 27, 2019

First responders at a hazmat incident at a water treatment plant on Feb. 27, 2019.


WE STAYED
AT WORK
FOR YOU.
#STAYHOME
FOR US.
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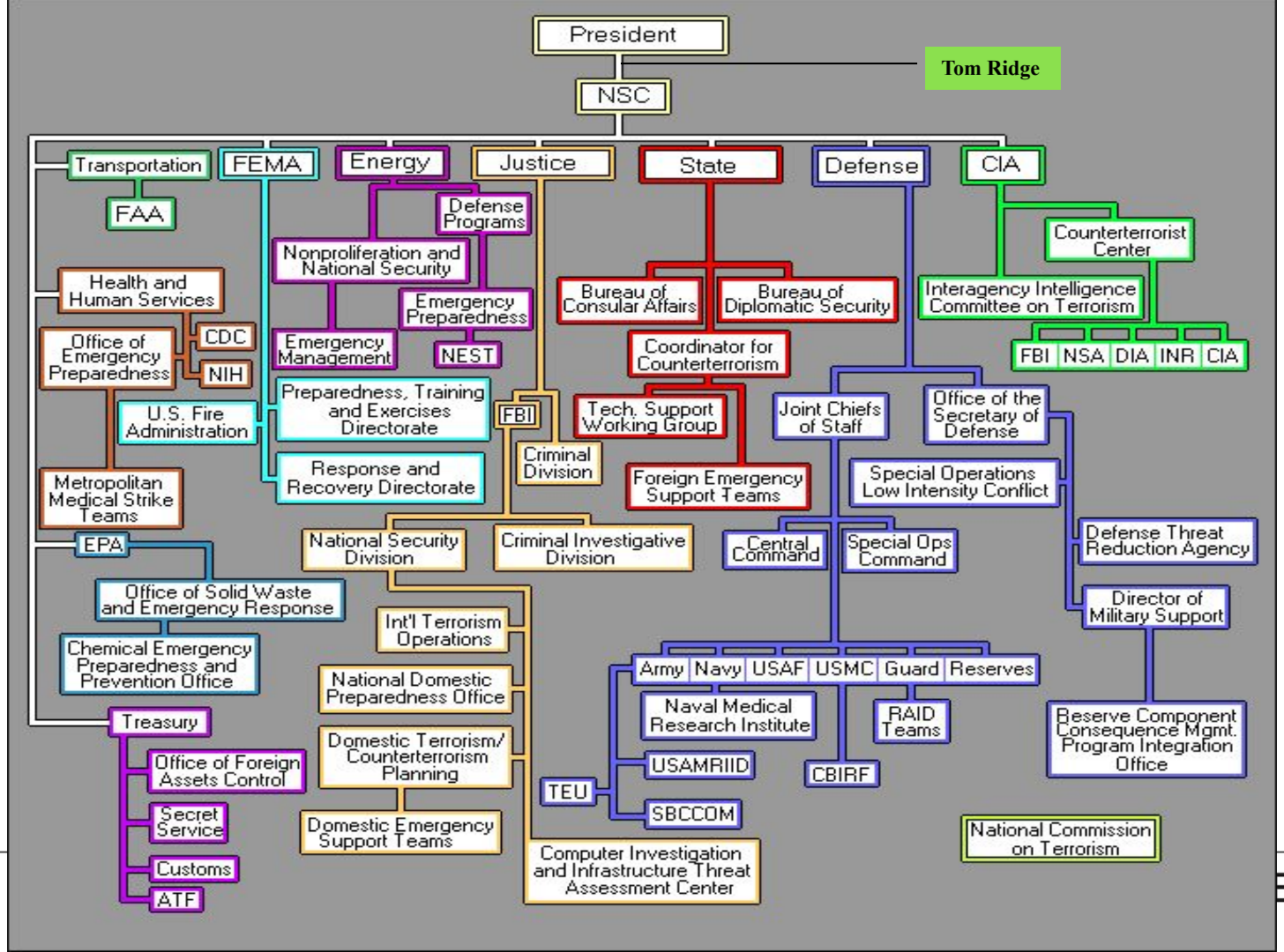
How does the US Government approach disaster planning?


President
Tom Ridge
NSC
Transportation
FAA
FEMA
Energy
Justice
State
Defense
CIA
Defense Programs
Nonproliferation and National Security
Emergency Preparedness
Emergency Management
NEST
Health and Human Services
CDC
NIH
Office of Emergency Preparedness
U.S. Fire Administration
Preparedness, Training and Exercises Directorate
Response and Recovery Directorate
Metropolitan Medical Strike Teams
EPA
Office of Solid Waste and Emergency Response
Chemical Emergency Preparedness and Prevention Office
Treasury
Office of Foreign Assets Control
Secret Service
Customs
ATF
FBI
Criminal Division
National Security Division
Criminal Investigative Division
Int'l Terrorism Operations
National Domestic Preparedness Office
Domestic Terrorism/ Counterterrorism Planning
Domestic Emergency Support Teams
Computer Investigation and Infrastructure Threat Assessment Center
Bureau of Consular Affairs
Bureau of Diplomatic Security
Coordinator for Counterterrorism
Tech. Support Working Group
Foreign Emergency Support Teams
Counterterrorist Center
Interagency Intelligence Committee on Terrorism
FBI NSA DIA INR CIA
Joint Chiefs of Staff
Office of the Secretary of Defense
Special Operations Low Intensity Conflict
Central Command
Special Ops Command
Army Navy USAF USMC Guard Reserves
Naval Medical Research Institute
USAMRIID
TEU
SBCCOM
RAID Teams
CBIRF
Defense Threat Reduction Agency
Director of Military Support
Reserve Component Consequence Mgmt. Program Integration Office
National Commission on Terrorism

EDICINE

Homeland Security

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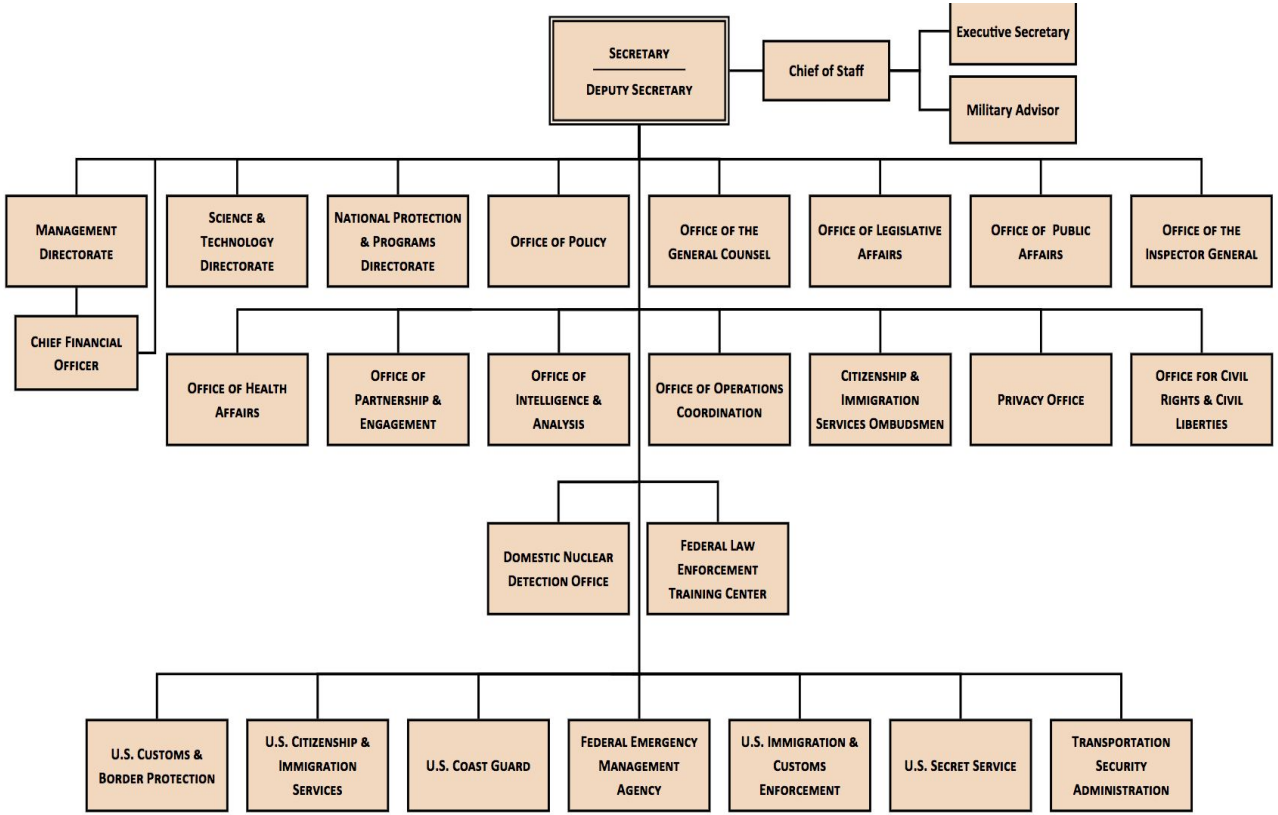
DHS Org Chart



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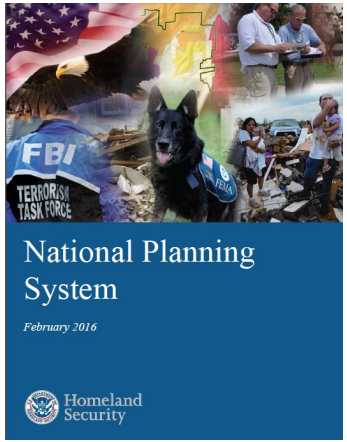
National Planning System



Core Document

Purpose:

Guides how the nation conducts all-hazards incident response

National Planning Frameworks

www.fema.gov/nrf

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Emergency Support Functions

- ESF #1 - Transportation
- ESF #2 - Communications
- ESF #3 - Public Works and Engineering
- ESF #4 - Firefighting
- ESF #5 - Information and Planning
- ESF #6 - Mass Care, Emerg Assistance, Housing & Human Services
- ESF #7 - Logistics
- ESF #8 - Public Health and Medical Services
- ESF #9 - Search and Rescue
- ESF #10 - Oil and Hazardous Materials Response
- ESF #11 - Agriculture and Natural Resources
- ESF #12 - Energy
- ESF #13 - Public Safety and Security
- ESF #14 - National Disaster Recovery Framework
- ESF #15 - External Affairs

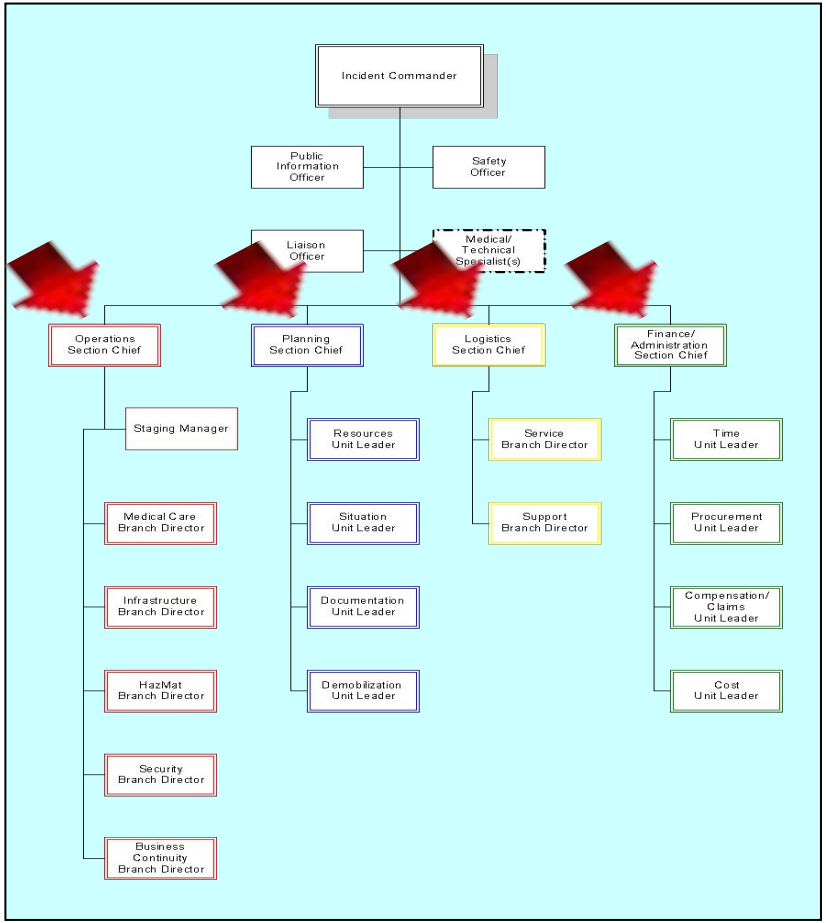
Applying the Framework

- Disasters happen and are managed locally
- Some require additional support
- State Governor must request Federal support
- Stafford Act (1974) provides statutory authority for most Federal disaster response activities

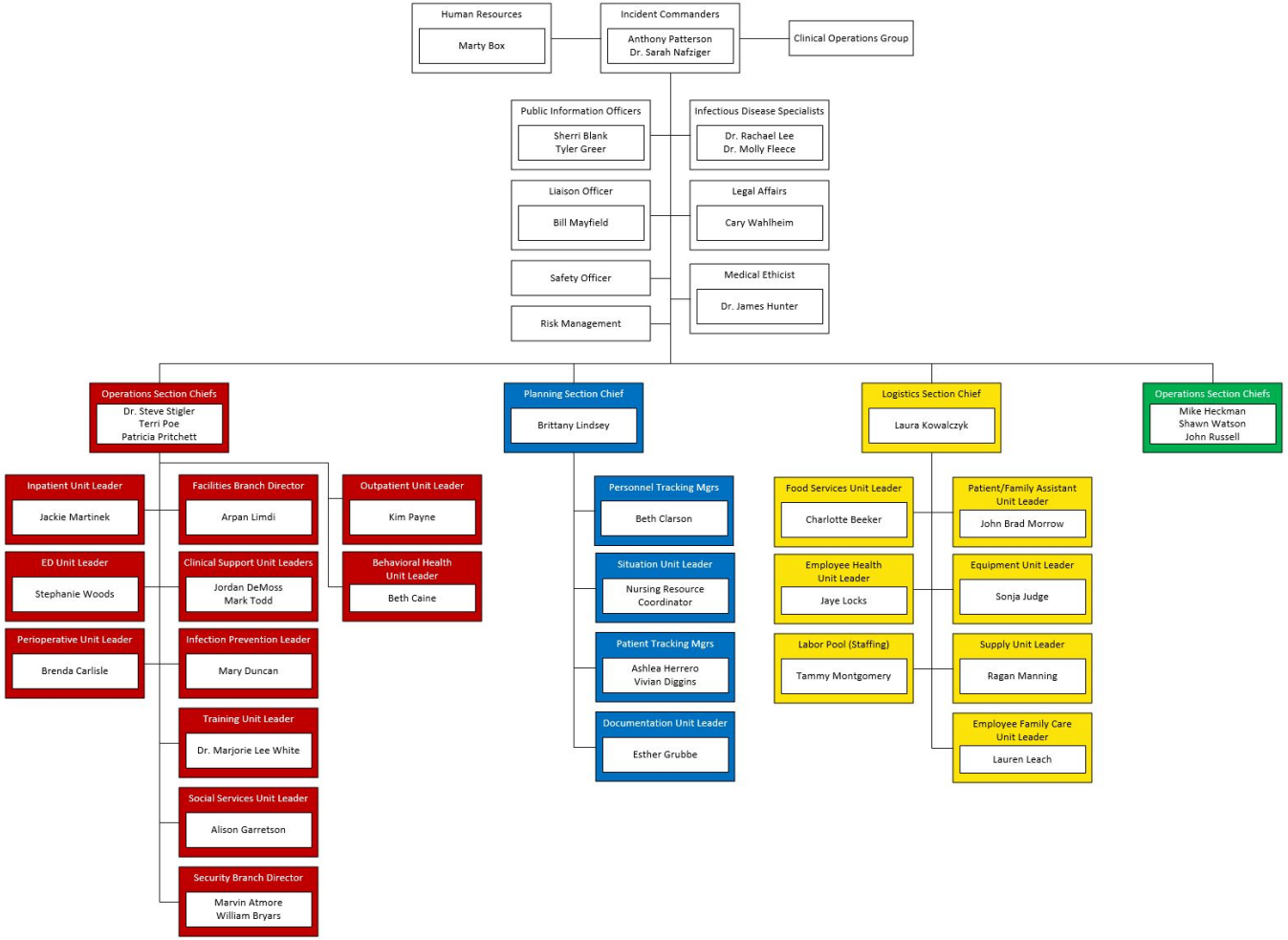
Hospital Incident Command System (HICS)

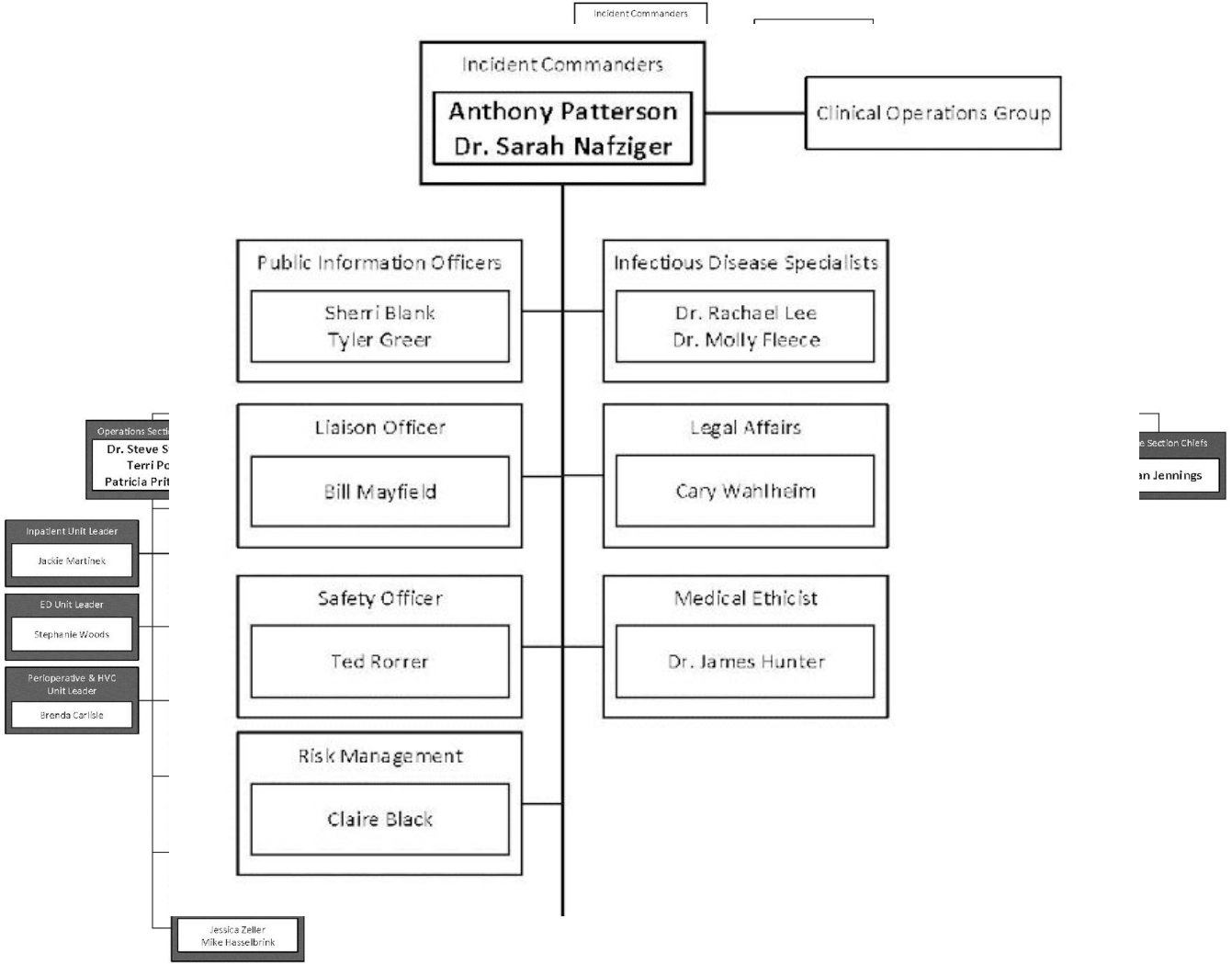
Sections

- Operations
- Planning
- Logistics
- Finance



Unified Incident Management Team as of 18 March 2020



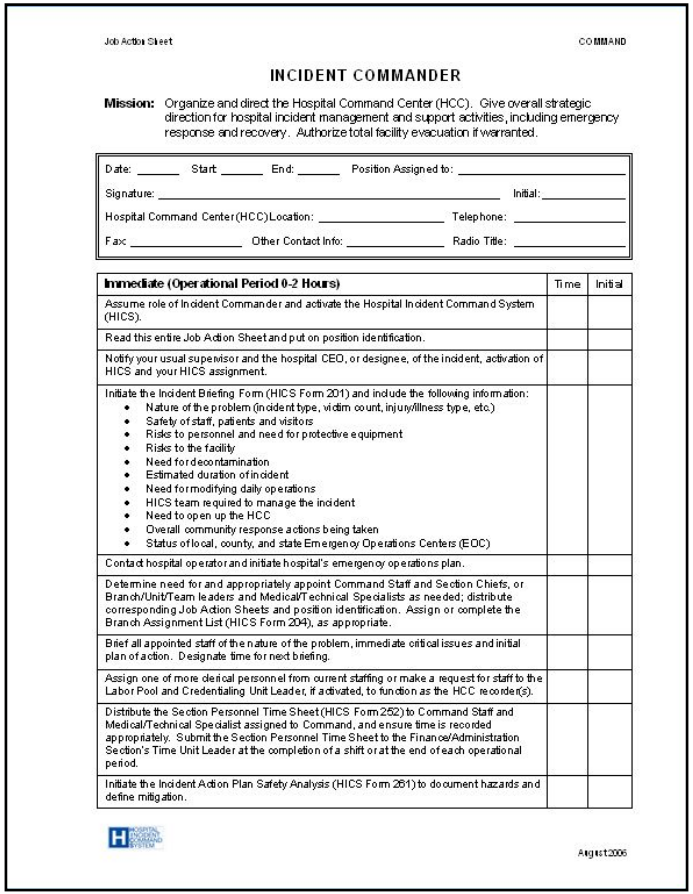

Incident Commanders
Anthony Patterson
Dr. Sarah Nafziger
Clinical Operations Group
Public Information Officers
Sherri Blank
Tyler Greer
Infectious Disease Specialists
Dr. Rachael Lee
Dr. Molly Fleece
Liaison Officer
Bill Mayfield
Legal Affairs
Cary Wahlheim
Safety Officer
Ted Rorrer
Medical Ethicist
Dr. James Hunter
Risk Management
Claire Black
Inpatient Unit Leader
Jackie Martinek
ED Unit Leader
Stephanie Woods
Perioperative & HVC Unit Leader
Brenda Carlisle
Jessica Zeller
Mike Hasselbrink

Command Staff Identification

All personnel assigned to an incident command role should wear identification that correctly communicates their role

Job Action Sheets

Intended to “prompt” the incident management team members to take needed actions related to their roles and responsibilities



Job Action Sheet COMMAND

INCIDENT COMMANDER

Mission: Organize and direct the Hospital Command Center (HCC). Give overall strategic direction for hospital incident management and support activities, including emergency response and recovery. Authorize total facility evacuation if warranted.

Date: _____ Start: _____ End: _____ Position Assigned to: _____

Signature: _____ Initial: _____

Hospital Command Center (HCC) Location: _____ Telephone: _____

Fax: _____ Other Contact Info: _____ Radio Title: _____

Immediate (Operational Period 0-2 Hours)	Time	Initial
Assume role of Incident Commander and activate the Hospital Incident Command System (HICS).		
Read this entire Job Action Sheet and put on position identification.		
Notify your usual supervisor and the hospital CEO, or designee, of the incident, activation of HICS and your HICS assignment.		
Initiate the Incident Briefing Form (HICS Form 201) and include the following information: • Nature of the problem (incident type, victim count, injury/illness type, etc.) • Safety of staff, patients and visitors • Risks to personnel and need for protective equipment • Risks to the facility • Need for decontamination • Estimated duration of incident • Need for modifying daily operations • HICS team required to manage the incident • Need to open up the HCC • Overall community response actions being taken • Status of local, county, and state Emergency Operations Centers (EOC)		
Contact hospital operator and initiate hospital's emergency operations plan.		
Determine need for and appropriately appoint Command Staff and Section Chiefs, or Branch/Unit/Team leaders and Medical/Technical Specialists as needed; distribute corresponding Job Action Sheets and position identification. Assign or complete the Branch Assignment List (HICS Form 204), as appropriate.		
Brief all appointed staff of the nature of the problem, immediate critical issues and initial plan of action. Designate time for next briefing.		
Assign one of more clerical personnel from current staffing or make a request for staff to the Labor Pool and Credentialing Unit Leader, if activated, to function as the HCC recorder(s).		
Distribute the Section Personnel Time Sheet (HICS Form 252) to Command Staff and Medical/Technical Specialist assigned to Command, and ensure time is recorded appropriately. Submit the Section Personnel Time Sheet to the Finance/Administration Section's Time Unit Leader at the completion of a shift or at the end of each operational period.		
Initiate the Incident Action Plan Safety Analysis (HICS Form 261) to document hazards and define mitigation.		

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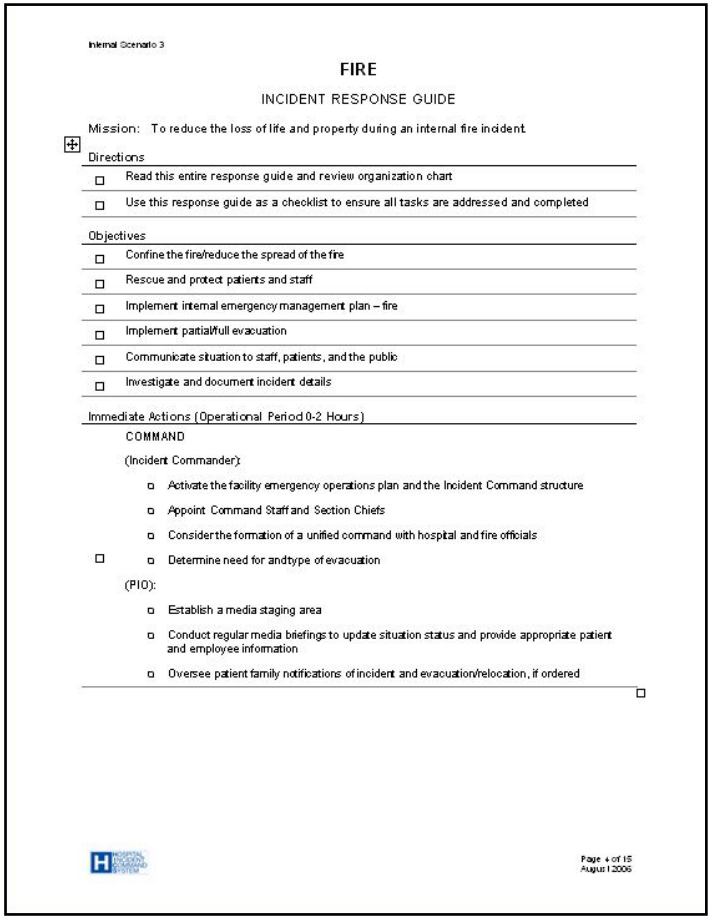
Incident Response Guides

Incident Response Guides have been devised for many different scenarios.



Internal Scenario 3

FIRE

INCIDENT RESPONSE GUIDE

Mission: To reduce the loss of life and property during an internal fire incident

Directions

- ☐ Read this entire response guide and review organization chart
- ☐ Use this response guide as a checklist to ensure all tasks are addressed and completed

Objectives

- ☐ Confine the fire/reduce the spread of the fire
- ☐ Rescue and protect patients and staff
- ☐ Implement internal emergency management plan – fire
- ☐ Implement partial/full evacuation
- ☐ Communicate situation to staff, patients, and the public
- ☐ Investigate and document incident details

Immediate Actions (Operational Period 0-2 Hours)

COMMAND

(Incident Commander):

- ☐ Activate the facility emergency operations plan and the Incident Command structure
- ☐ Appoint Command Staff and Section Chiefs
- ☐ Consider the formation of a unified command with hospital and fire officials
- ☐ Determine need for and type of evacuation

(PIO):

- ☐ Establish a media staging area
- ☐ Conduct regular media briefings to update situation status and provide appropriate patient and employee information
- ☐ Oversee patient family notifications of incident and evacuation/relocation, if ordered

Page 4 of 15
August 2006

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Training

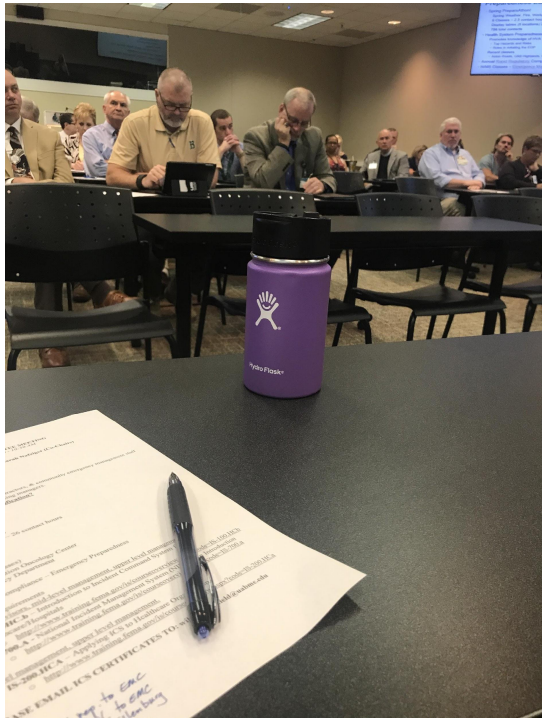
NIMS training: National Incident Management System training includes components of Hospital Incident Command System (HICS)

- National Incident Management System
- ICS-100 Course

How do we organize ourselves to plan for disasters?

Emergency Management Committee

- Co-Chaired by Physician and Administrator
- Broad representation
- Operational Committee that meets quarterly to oversee activities related to Emergency Planning for the hospital



Emergency Management Committee

- Oversee drills
- Responsible for oversight of Emergency Management Standards for hospital
- Assist with Joint Commission and CMS compliance
- Address new potential threats

Preparation Strategies

- Use Hazards Vunerability Analysis (HVA) approach
- Review Intrafacility Disaster Plans
  - Are they in agreement housewide?
  - Are they reasonable?

Joint Commission: Emergency Management Standards

EM Standard's Elements of Performance has increased from 37 to 134 and became it's own chapter in 2009!

Focus on 6 critical areas:

1. Communication
2. Resources and Assets
3. Safety and Security
4. Staff Responsibilities
5. Utilities Management
6. Patient Clinical and Support Activities

96 Hours of Self Sufficiency or Evacuation Plan

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1. Communication

- Test your communication systems
- Have at least 2 backup plans

2. Resources and Assets

- Inventory of Assets (Equipment and Personnel)
  - Who in my hospital can tell me how many ventilators we have?
- Do we have enough food to last for 96 hours?
- Can we take conservation measures such as diverting non-potable water for things like flushing the toilets?

N95 Reprocessing

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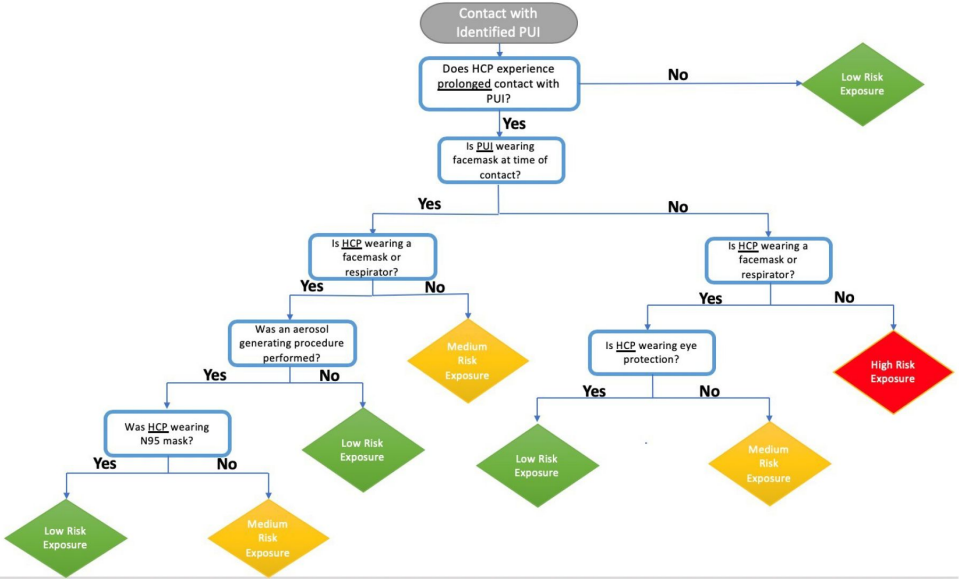
3. Safety and Security

- How can we secure our facility if we need to?
- What areas are highest priority?

Policy Management
Complying with Rapidly Evolving Guidelines to Keep Staff Safe



4. Staff Responsibilities

- Plans for reallocation of personnel
- Plans for taking care of your staff (and their families) during event
- Streamlining of resources to focus on critical functions
- Who's in charge?

5. Utilities Management

- Can we function without electricity?
- How much fuel do we have for our generators?

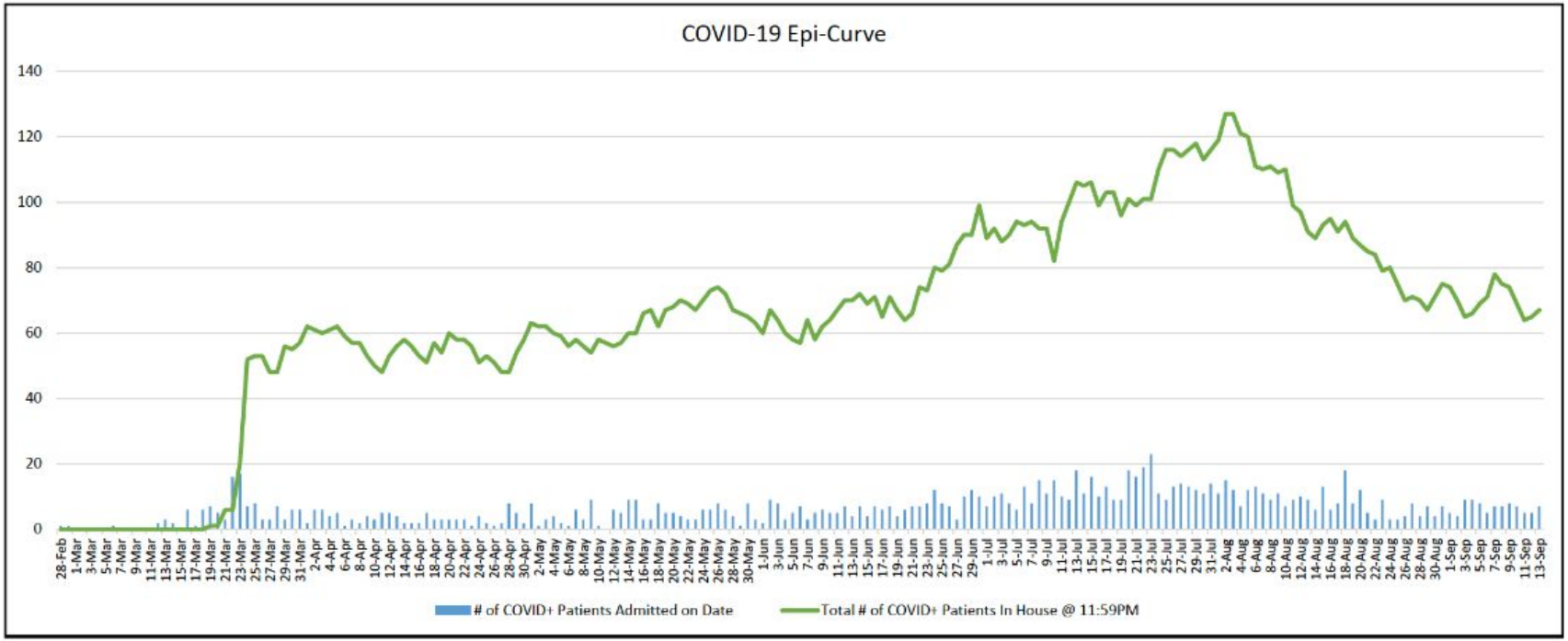
6. Patient Clinical and Support Activities

- Patient care comes first
- Special needs patients
- Mental Health issues
- Mortuary Services
- Medical Records
- Mutual aid agreements with other hospitals

UAB MEDICINE COVID-19 DASHBOARD

Additional Patient Information

Last updated Sunday September 13 at 11:59pm from COVID-19: Daily Census Report.



RESPIRATORY ENHANCED PRECAUTIONS

FAMILY AND VISITORS: PLEASE SEE THE NURSE BEFORE VISITING.

1. Clean hands with sanitizer or soap and water upon entering and exiting the room.
   - PPE:
     - Gown
     - Gloves
     - N-95 respirator
     - Face shield
2. Ensure that the door to the patient's room remains closed at all times.
3. Use patient-dedicated or disposable equipment.
4. Clean often-touched surfaces at the beginning of each shift.

This sign should be removed only by Environmental Services after the room is cleaned.

RESPIRATORY ENHANCED PRECAUTIONS

Recommendations:

- Private room with door closed
- Gown
- Gloves
- N-95 respirator
- Face shield
- Ask patient to place mask on before entering, give patient box of tissues, ask patient to cover cough, dispose of tissues, and clean hands.
- Perform hand hygiene before and after visiting patient's room
- **Unit staff will clean frequently touched surfaces at the beginning of each shift.**
- Once the patient has been discharged or transferred, inpatient rooms should remain down for one hour. **(ER and procedural areas should follow EVS Cleaning Guidelines)**

Dedicated equipment:

- Disposable stethoscope
- Disposable BP cuff
- Gait belt
- Single-use thermometer
- Disposable pulse oximeter

Transport:

- Only if medically necessary
- Patient must wear a mask
- Bypass waiting areas during transport
- Schedule procedures as the last of the day, if possible

INFECTION PREVENTION UAB MEDICINE

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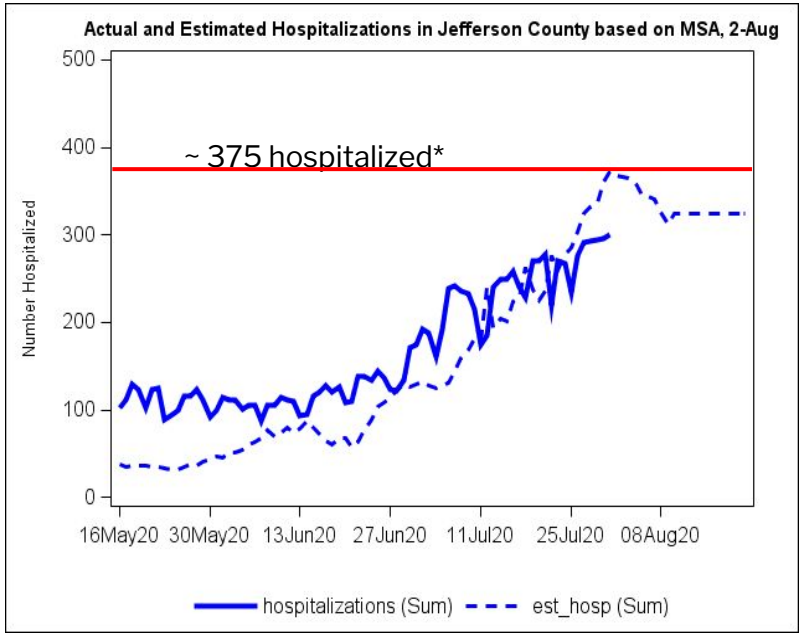
Predictive Models for Hospitalization

UAB School of Public Health – Suzanne Judd, PhD



Organization Name	Adult COVID +	Market Share	Group %
UNIVERSITY OF ALABAMA HOSPITAL	121	40%	73%
ST. VINCENT'S BIRMINGHAM	42	14%	
ST. VINCENT'S EAST	37	12%	
MEDICAL WEST HOSPITAL AUTHORITY	18	6%	
PRINCETON BAPTIST MEDICAL CENTER	25	8%	13%
BROOKWOOD BAPTIST MEDICAL CENTER	13	4%	
GRANDVIEW MEDICAL CENTER	39	13%	N\A
CHILDREN'S OF ALABAMA	5	2%	N\A
Total	**300**		

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Surge Planning Tool

Mkt Share of Hosp Patients	39%
Projected Bed Need*	350
ICU Bed Demand	45%
Acute Care Bed Demand	55%

** Surge Levels based inpart on data from Dr. Judd, UAB SOPH*

Surge Level	Jefferson County Hospitalizations	Covid Bed Need	ICU Bed Need	Acute Bed Need
Level 1	300	117	53	64
Level 2	313	122	55	67
Level 3	325	127	57	70
Level 4	338	132	59	72
Level 5	350	137	61	75

Level 1	**Covid Bed Need**	**117**
	Covid Bed Count	**100**
	Acute Care	**51**
	Excess / (Shortage)	**(13)**
	ICU	**49**
	Excess / (Shortage)	**(4)**

Level 2	**Covid Bed Need**	**122**
	Covid Bed Count	**129**
	Total Acute Care	**80**
	Excess / (Shortage)	**13**
	ICU	**49**
	Excess / (Shortage)	**(6)**

Level 3	**Covid Bed Need**	**127**
	Covid Bed Count	**160**
	Total Acute Care	**101**
	Excess / (Shortage)	**31**
	ICU	**59**
	Excess / (Shortage)	**2**

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Emergency Department Surge Plan Implemented

Alternate Care Sites

Sheraton Hotel **(Tier 1 only)**

- 377 available rooms

BJCC Exhibit Halls **(Tiers 2 and 3)**

- 220,000 sq. ft.
- North Exhibit Hall
- East Exhibit Hall
- Meeting space available

Closing Thoughts:
What can I do to help prepare for a disaster in my hospital?

- Take care of your personal needs (food, water, clothes, personal hygiene products, medications etc)
- Make plans for your family/pets
- Immunizations!
- Familiarize yourself with your unit/hospital disaster plan
- Train on NIMS (ICS-100)
- Resilience is key
- Don’t become another patient

QUESTIONS?