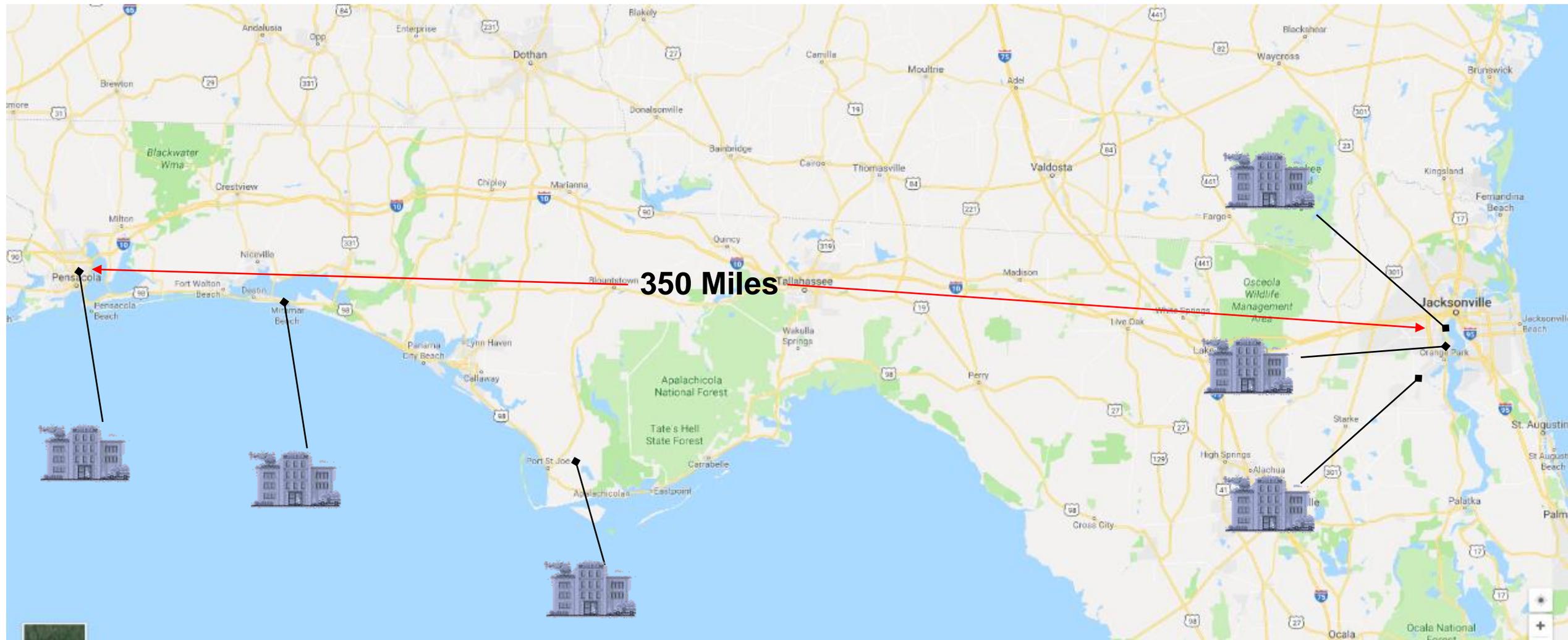




**Hurricane Michael:
Unique Challenges and
Unique Solutions for a
Healthcare System**

Florida Hospitals – Area of Responsibility



Large Health System Perspective

Clinical Stats

Number of Births - - - - - >84k
ED Visits - - - - - >3.1M
Outpatient Visits - - - - - >23M
Surgical Visits – Outpatient >400k
Equivalent Discharges - - >1.6M

161 Hospitals



2,600
Sites of Care



21 States and the
District of Columbia



More than 22k
Available Beds



34k Affiliated Physicians



156k Associates





Largest sole provider of healthcare facilities services in the U.S., using an integrated model to best serve our customers.



Emergency Management, EC & Safety

Direct Chain of Command Ensures:



Standardization



Optimization

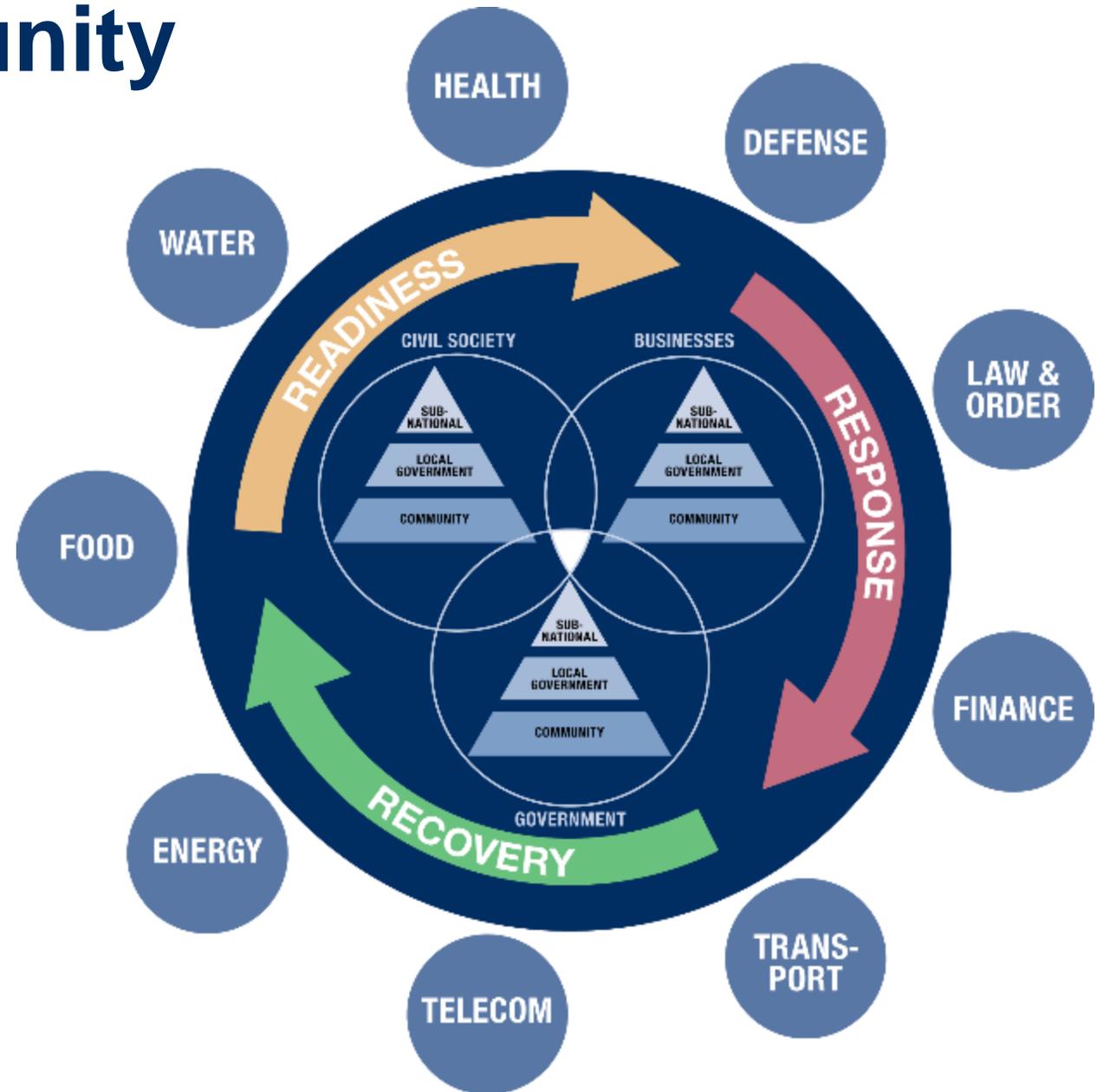


Communication

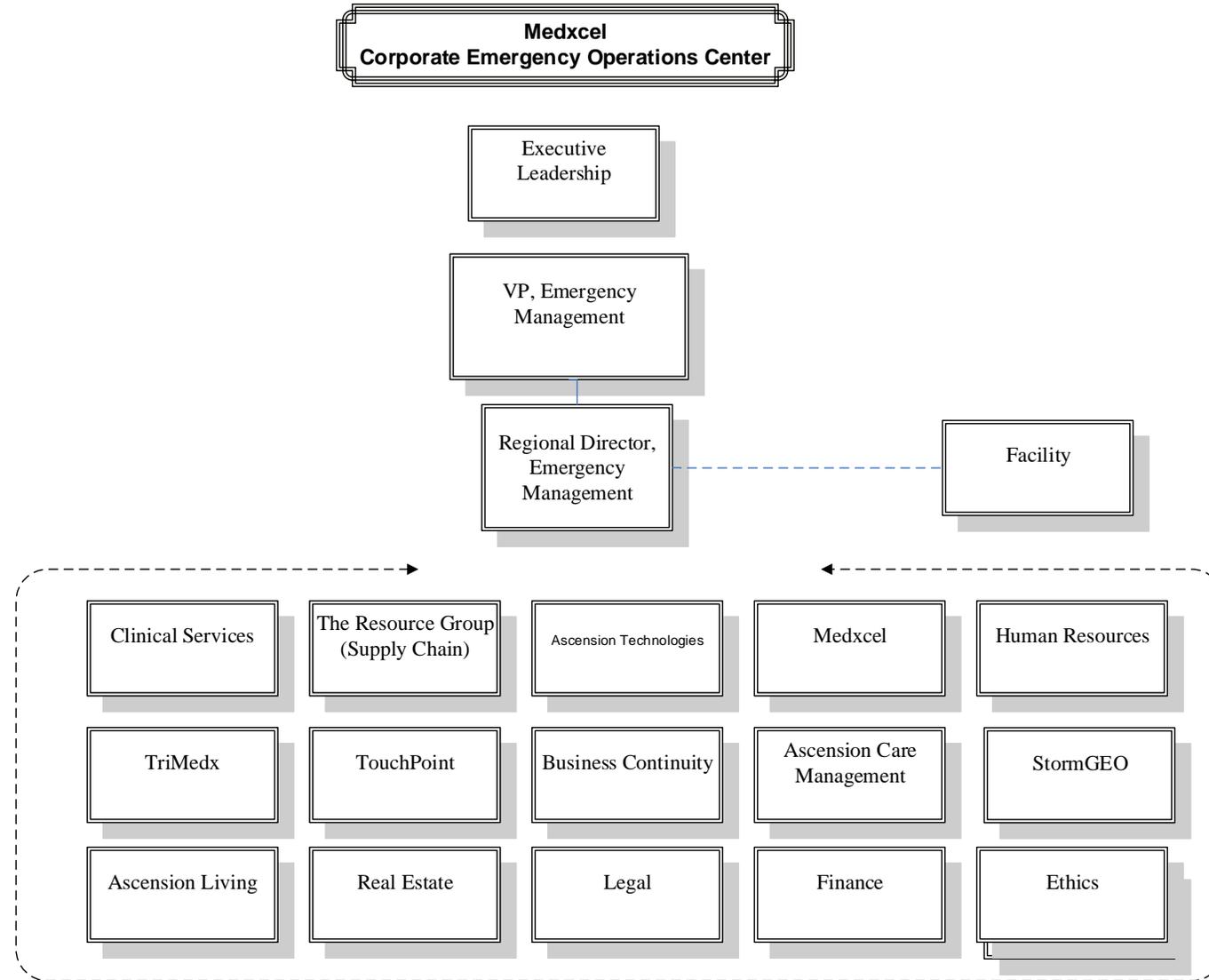


Corporate Community Approach

All businesses and facilities are aligned and organized for a robust response to disasters



Corporate EOC



Magnitude Unleashed



The Prediction

- » Category 2 storm
- » **85mph** winds



The Reality

- » Category 4 storm
- » **155mph** winds



Michael's Journey

Disturbance 47

- » **In NW Caribbean on 10/5 Friday:** Forecast for landfall near Mobile Bay as 50mph TS on 10/10-10/11
- » **10/6 Saturday:** Forecast for landfall near Pensacola as 60mph TS on 10/10-10/11
- » **10/7 Sunday:** Forecast for landfall near Pensacola as 70mph TS on 10/10

Tropical Depression 14

- » **10/7 Sunday:** Forecast for landfall on FL panhandle as 90mph+ hurricane on 10/10

Tropical Storm Michael

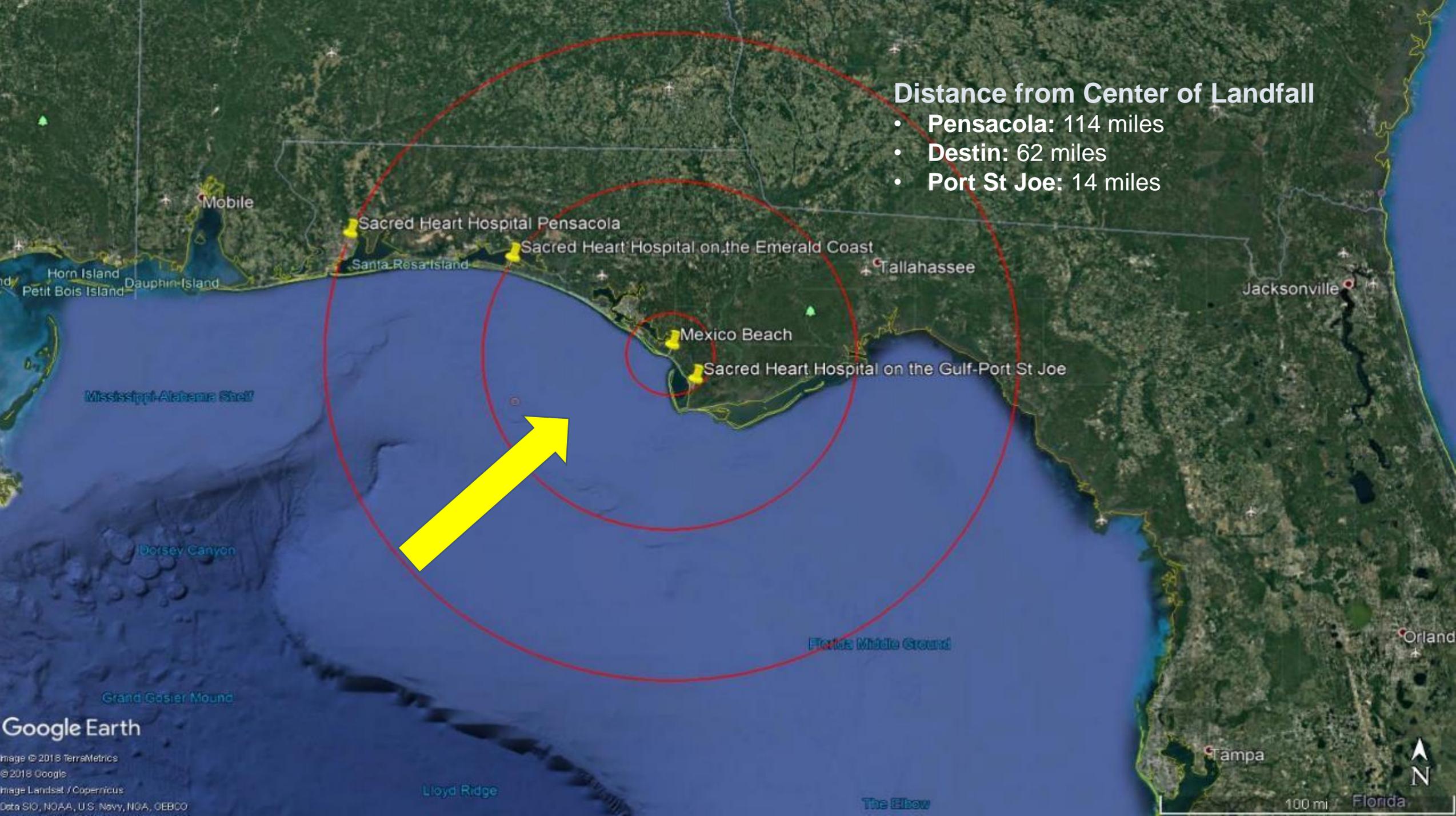
- » **10/7 Sunday:** Forecast for landfall near Panama City as 100mph (Cat 2) hurricane on 10/10
- » **10/8 Monday:** Forecast for landfall on FL panhandle as 115mph (Cat 3) hurricane on 10/10

Hurricane Michael

- » **10/9 Tuesday:** Forecast for landfall near Panama City as 120mph (Cat 4) hurricane on 10/10
- » **10/10 Wednesday:** Forecast for landfall near Panama City as 145mph (Cat 4) hurricane on 10/10
- » **Hurricane Michael makes landfall** near Mexico Beach, FL at Cat 4/5 hurricane just after 1200 CDT on 10/10 Wednesday

Distance from Center of Landfall

- **Pensacola:** 114 miles
- **Destin:** 62 miles
- **Port St Joe:** 14 miles



Google Earth

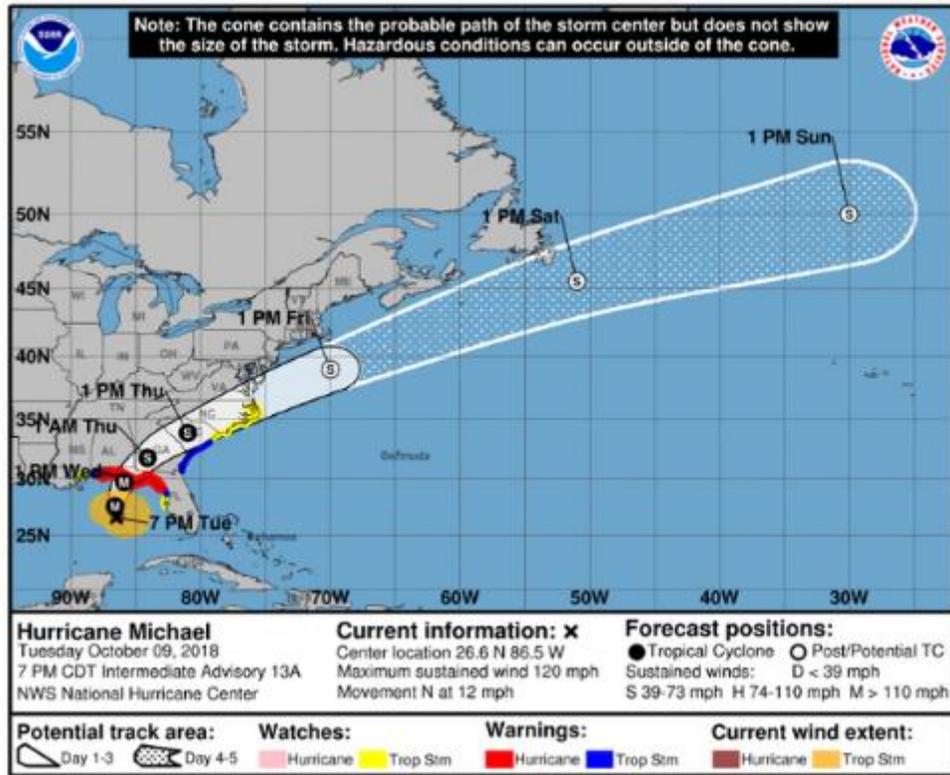
Image © 2018 TerraMetrics
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Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

100 mi Florida

Challenge 1: Weather Reports



Challenge 1: Weather Reports

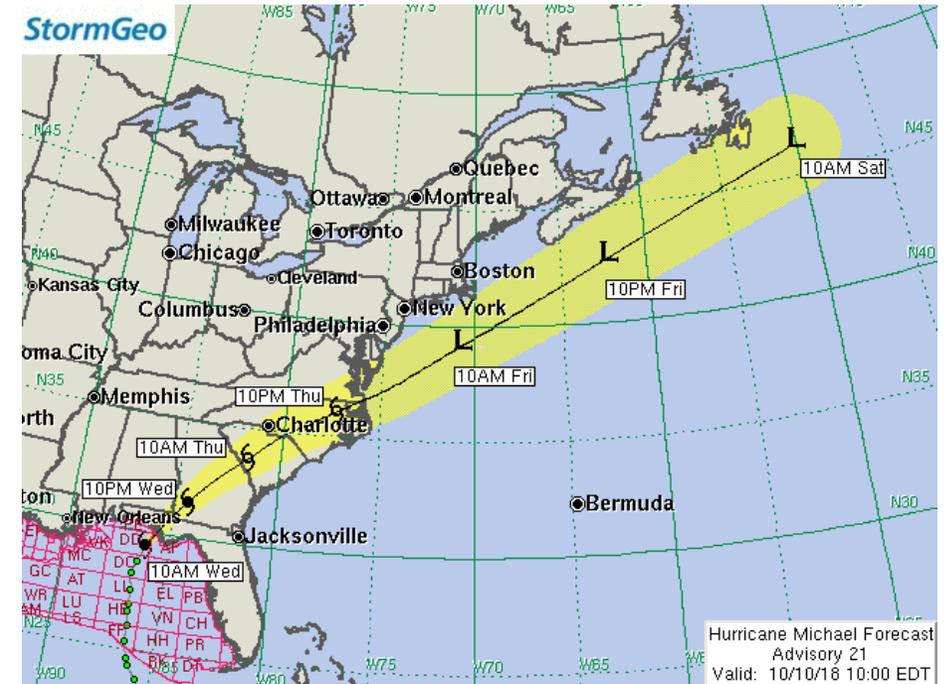


Solution 1: Weather Reports

- Private meteorological service
 - » GPS Coordinates

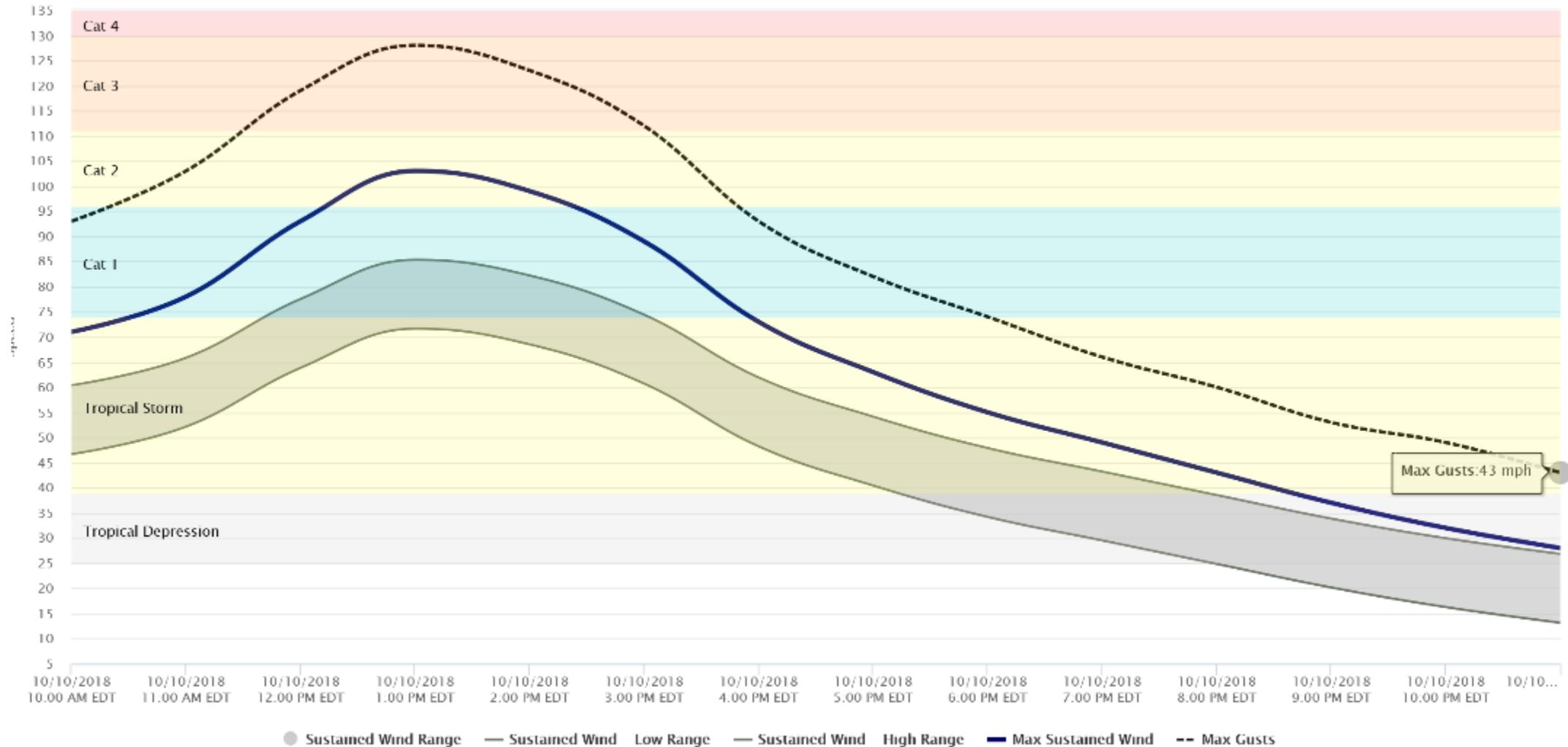
Key Points

1. The center of Michael will make landfall with 145 mph winds near Panama City early this afternoon. 2. Catastrophic wind and storm surge damage is expected near where the center makes landfall. 3. Strong winds and heavy rains will spread inland into Georgia and the Carolinas late this afternoon and on Thursday.



Solution 1: Weather Reports

Hurricane Michael, Advisory 21a Wind Profile for Sacred Heart Hospital on the Gulf



Solution 1: Weather Reports

Storm Summary Information

	Max Sustained Winds	Classification	HSI (size/intensity)
Current	145 mph	Category 4	28 (11/17)
Max Forecast	145 mph	Category 4	28 (11/17)

Timeline Tools - Critical Values

58 mph Probability of Wind Impact	100%	↑ 1%
Worst Case Scenario ETA 39 mph Winds	0 hours remaining	10/10/2018 10:00 AM EDT
Forecast ETA 39 mph Winds	0 hours remaining	10/10/2018 10:00 AM EDT

Additional Data for All Wind Fields

Wind Field	Forecast ETA		Worst-Case ETA		Probability of Wind Impact	
	Hours Remaining	ETA	Hours Remaining	ETA	Value	Trend
25 mph	N/A	10/10/2018 10:00 AM EDT	N/A	10/10/2018 10:00 AM EDT	100%	↔ 0%
39 mph	N/A	10/10/2018 10:00 AM EDT	N/A	10/10/2018 10:00 AM EDT	100%	↔ 0%
58 mph	N/A	10/10/2018 10:00 AM EDT	N/A	10/10/2018 10:00 AM EDT	100%	↑ 1%
74 mph	1	10/10/2018 10:40 AM EDT	N/A	10/10/2018 10:15 AM EDT	91%	↑ 23%
100 mph	3	10/10/2018 12:43 PM EDT	1	10/10/2018 11:30 AM EDT	56%	↑ 15%

Solution 1: Weather Reports

The Worst Case Scenario (WCS) estimates the earliest possible time of arrival of various wind speeds assuming the storm were to hit this location directly.

It assumes the storm travels at maximum forecasted speed of advance directly to this location. It assumes the storm hits this location at its maximum size and intensity that is predicted over the time period before it reaches the location. It does not weaken wind speeds from land or any other effects, overestimating inland locations.

Sustained Winds	Gusts	Earliest ETA
25 mph	38 mph	10/10/2018 10:00 AM EDT
39 mph	54 mph	10/10/2018 10:00 AM EDT
58 mph	79 mph	10/10/2018 10:00 AM EDT
74 mph	97 mph	10/10/2018 10:15 AM EDT
100 mph	125 mph	10/10/2018 11:30 AM EDT
Storm Center		10/10/2018 2:00 PM EDT



We are currently forecasting maximum sustained winds of 100 mph before Hurricane Michael reaches this location. There is a possibility that Hurricane Michael could intensify more than forecasted. The table below represents possible arrival times of these higher wind speeds.

Sustained Winds	Gusts	Earliest ETA
165 mph - Max Possible	195 mph	10/10/2018 12:08 PM EDT

Challenge 2: Leadership

- Healthcare executives are smart!
 - » No formal emergency management training
- Scrambled priorities
- Seat of the pants management



Challenge 2: Leadership

- “no plan of operations extends with any certainty beyond the first contact with the main hostile force”
- Moltke wanted to evolve beyond deterministic battle plans in favor of resilient strategies that could adapt to real battle situations as they occurred

Field Marshal Helmuth Karl Bernhard Graf von Moltke



Solution 2: Leadership

- Help executives make decisions
 - » Pertinent, prudent information
 - They can watch TV and surf the internet too!
 - » What are the plans
 - » Timelines to execute
 - » How resilient are you



Solution 2: Leadership

T- 5 Days	Daily calls with affected ministries, facilities, and Corp team. PM activated. Begin executive updates.
T-4 Days	Begin to move spare generators. Dispatch electricians or gen mechanics as needed
T-3 Days	Secure evacuation assets (as needed) Evacuations should be complete by T-24 hours
T-2 Days	Dispatch extra security teams, fuel, food, and supplies Send extra staff (as needed) Calls increase to twice a day Dispatch remediation teams
T-24 Hours	Review staffing and sheltering plans Secure hotel rooms (as needed)
T-4 hours	Activate conference line for communication

Challenge 3: Associates

- Personal preparedness must be addressed
 - » Onboarding and annual competencies
- Hospitals are not shelters or kennels



Challenge 3: Associates

➤ Housing

- » Long term displacement due to home/apartment damage

➤ Financial

- » May not have enough money for evacuation, temporary housing, or repairs

Solution 3: Associates



SET
SAFETY & EMERGENCY
TOOLKIT

Things to Remember

Practice your plan, check your supplies, and update the information as necessary. Remember your work, schools, and places you frequent have emergency plans that you should be familiar with as well so you can be **SET**. Give a copy of this information to each family member and friend that is a part of your plan.

SET
SAFETY & EMERGENCY
TOOLKIT

An emergency can occur at any time. They can be weather related, a public health emergency, or a terrorist attack.

*No matter what the cause, there are steps that you, your family, and friends can take to better prepare and be **SET** to meet any challenge of an emergency.*

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Solution 3: Associates

- EM preparation should be a part of onboarding and annual competencies
- Hospitals are not shelters or kennels
 - » Assess personal needs before assigning to A/B teams
- Encourage family to evacuate
 - » May need to provide assistance

Solution 3: Associates

➤ Financial assistance

- » Hospital or healthcare charities
- » Temporary housing
 - Mainstay Suites 30 rooms for 90 days
- » Assistance with insurance/FEMA filings
- » Continue pay



Challenge 4: Communications

- All communications down
- Sacred heart Hospital on the Gulf: No onsite servers
 - » Tied to servers in Pensacola via fiber
- No onsite radiologist
 - » Films read in Pensacola

Hurricane Michael

› Our data issues

- › Medical records
- › PACS (radiology)-normally used remote readings
- › Building automation system (chillers, dynamic ip)
- › Phones and communication

Challenge 4: Communications

- Tracking offsite associates
 - » Where are they?
 - » How are they?
 - » What are their needs?
 - » Can they return to work?



Challenge 4: Communications

“Typical” Role Structure

Cyber Threat

IT Takes the Lead

Work completed in silos

Impact and “clean up”

Effective Role Structure

Cyber Threat

IT and EM teams collaborate

EM teams activate disaster plans

IT works on recovery solution

Impact minimized –
Remediation accelerated

Emergency Management Integration is Key



Coordination of Diverse Groups

Identifying impacted teams & mitigating a potential patient safety event



Planning

Create short, medium & long-term plans



Communication

Maintain communication with key stakeholders by activating communication strategies in EM plans

Solution 4: Communications

- Sprint mobile cell tower moved on-site after landfall
- AT&T FirstNet
- Federalized SAR Team on-site
- WIFI Hotspots



Solution 4: Communications

- Cellular routers connected to IT systems
- Prioritized on cellular system
- Radiologist sent to site
- Sungard mobile data center
- 800 number for associates



Leadership

- *It does not do to leave a live dragon out of your calculations, if you live near him.*
 - J.R.R Tolkien
- *If you don't know where you are going, you'll end up someplace else.*
 - Yogi Berra



HOPE
IS NOT A
PLAN

Thank You

Questions?

scott.cormier@medxcelfm.com

