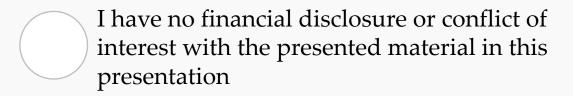






### DISCLOSURE

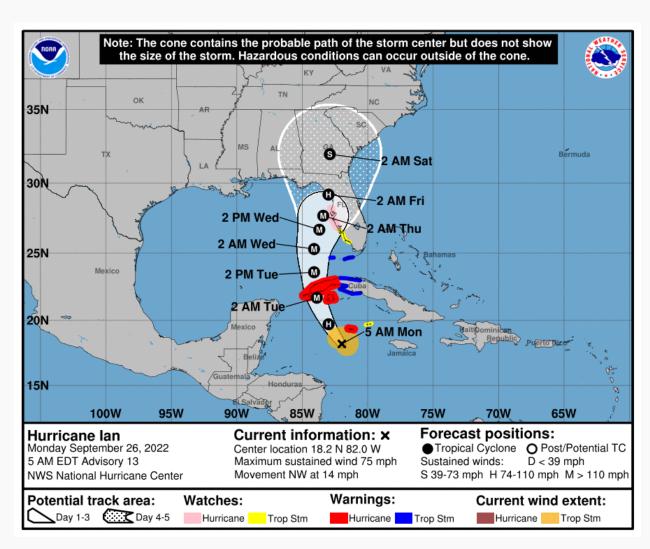


#### **OBJECTIVES**

- Examine lessons learned on hurricane preparation for the NICU
- 02 Illustrate the key factors that contributed to evacuation
- O3 Identify three differences and triage tactics for evacuating a neonatal patient
- Understand the relationship impact of teamwork in evacuations
- Describe repatriation and challenges faced with neonatal patients

#### SET THE STAGE

- Pre Hurricane
- Teams A & B
- State activation



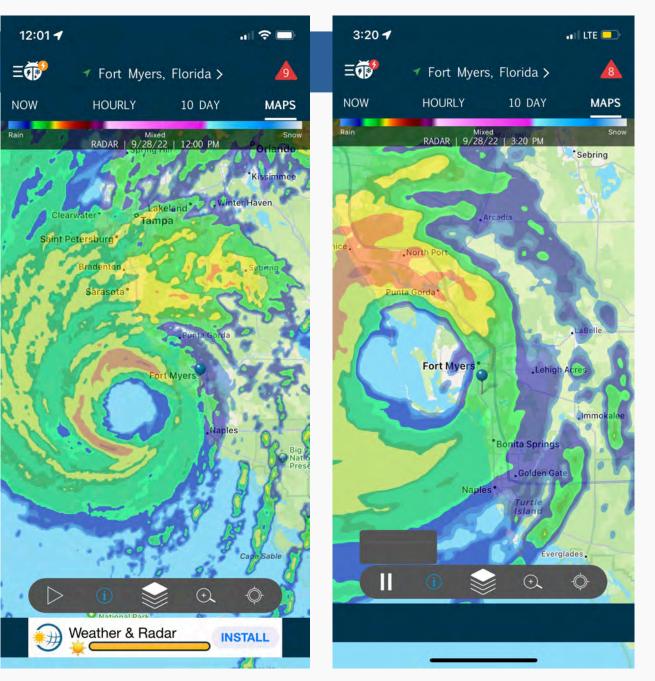


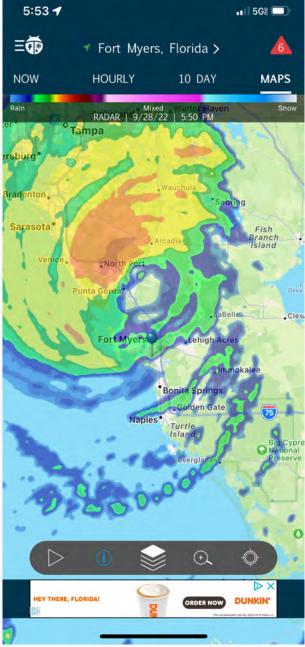


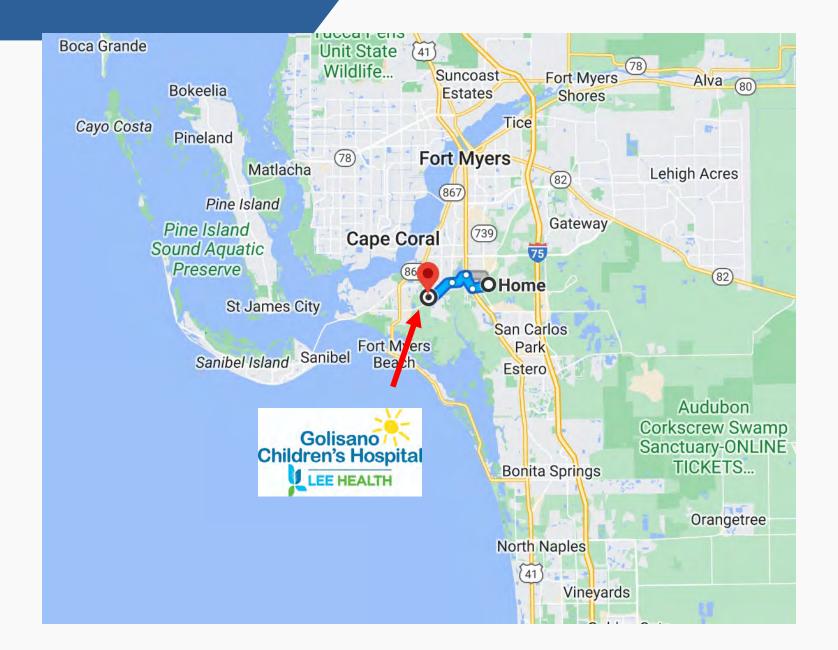
### Hurricane Ian Evolution & Facts

September 19	Tropical wave
September 23	Tropical depression
September 23	Tropical storm
September 26	Category I hurricane
September 26	Landfall in Cuba as Category III
September 28	Category IV – Landfall Cayo Costa 3:05 pm

5 <sup>th</sup>	Strongest hurricane on record to strike the US
161mph	Category 4 Winds (Category 5 prior to landfall)
156 / 41	Storm related lives Lost / Due to Storm Surge
2.6 Million	People lost power
1,100	Cell Phone Towers lost due to power outages
\$112.9/ \$109 Billion	Estimated damages overall / Florida









#### SURGE







#### **BUILDING TO CODE**



#### 2017

- No patient care on first floor
- Impact windows

- Electric generator moved to higher floors
- Structurally reinforced skylights in the atrium of HealthPark
- Removal of all rock-ballasted architectural roofs and replaced with multi-ply heavy-duty roof system
- Closed and sealed original windows in Healthpark





#### STATE PREPARATION



#### BUREAU OF EMERGENCY MEDICAL OVERSIGHT PATIENT MOVEMENT SUPPORT STANDARD OPERATING GUIDANCE



Florida Department of Health, Division of Emergency Preparedness and Community Support Bureau of Emergency Medical Oversight

Page 1 of 102

# FLORIDA AMBULANCE DEPLOYMENT STANDARD OPERATING PROCEDURE

- 1. PURPOSE: The purpose of this Ambulance Deployment Standard Operating Procedure (ADSOP) is 1. PURPOSE: The purpose of this Ambulance Deployment Standard Operating Procedure (AUSOF) to establish a mechanism for State ESF-8 to marshal and deploy ground and air emergency medical services (EMS) assets during disaster response.
- 2. SITUATION: EMS assets are a critical component of the public health and medical response 2. SITUATION: EMS assets are a critical component of the public health and medical response system. County Emergency Operations Centers (EOC) may request additional EMS resources during a system. County Emergency Operations Centers (EOC) may request additional Environmental disaster to supplement ground and air ambulances and EMS personnel in counties when their usasiter to supprement ground and air ambulances and EMS personner in counties when their resources are overwhelmed by a major emergency or catastrophic disaster. The State EOC may resources are overwhelmed by a major emergency or catastrophic disaster. The State EUC may request EMS resources to fulfill missions from other states under EMAC. Specific missions for EMS assets may include:
  - Patient and medical facility evacuation support. Augmentation of day to day EMS services.
  - Patient triage, treatment, and transport.

Appendix VIII, Public Health, and Medical Services, of the State Comprehensive Emergency Appendix VIII, Public Health, and Medical Services, of the State Comprehensive Emergency Management Plan, establishes that deployment of EMS resources will be coordinated by State ESF-8, warragement man, establishes that deployment of EMS resources will be coordinated by State ESF with ESF 4 and 9, the Florida Fire Chief's Association, (FFCA), the Florida Ambulance Association 3. ASSUMPTIONS:

- The Department of Health ESF-8 Public Health and Medical, does not possess the capabilities The Department of Pleatin ESP-o Public Realin and Medical, does not possess the capability of providing EMS transport. Resources are provided by non-impacted local EMS providers.
- As of February 2017, Florida has 5107 permitted EMS vehicles and 140 permitted EMS aircraft. As or February 2017, Florida has 5107 permitted EMS venicles and 140 permitted EMS a The EMS vehicles consist of 2640 ALS transport, 1777 ALS non-transport, and 550 BLS The EMS venicles consist of 2640 ALS transport, 1777 ALS non-transport, and 550 BLS transport. The air medical aircraft consists of 56 helicopters and 84 airplanes. In addition, pansport. The air medical aircraft consists of on helicopters and 64 airpianes. In additional food and airpianes are specially located throughout the state.
- State-level deployments of EMS assets will be authorized by State ESF-8 and coordinated with
- Deployments of EMS assets will strictly adhere to the principles of Florida's Incident Command
- Resources can most efficiently be identified and marshaled working through established
- EMS resources will deploy under an authorized mission request and will not self-dispatch to the
- Availability of EMS assets may be limited during disasters due to competing operational
- All ambulance deployments are subject to weather conditions and safety considerations.

#### **Appendix 1: Disaster Plan Design**

Request made from the State of Florida, ESF-8, SEOC, or Ambulance Deployment Plan for Incident Coordinator response

Call placed to FNPTNA President requesting Neonatal or Pediatric needs and respond to area needed.

Incident Coordinator activated and prepares two (2) week minimum deployment to area affected.

FNPTNA President implements Disaster Plan and notifies FACTS and FNPTNA Board

FNPTNA President or Incident Coordinator notifies participating services to respond from preplan call list.

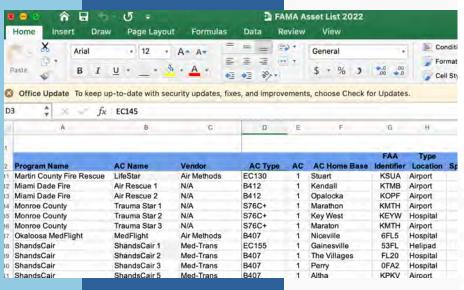
Response to affected area begins, if needed.

FNPTNA President or Designee informs SEOC of Incident Coordinator ETA.

Response to affected area is demobilized upon notification by the EOC to the FNPTNA Incident Coordinator.

Once local area operations can return to normal, Incident Coordinator departs affected area.

### COMMUNICATION





#### FACTS Board call at 10:00





#### WATER MAIN BREAK

#### Loss of water pressure

The critical challenge, due to multiple undefined breaks in the community water system, was a loss of water pressure, and concerns of crosscontamination with the sewage system. Our facility sustained loss of the domestic water plumbing function, loss of air conditioning, and loss of fire suppression sprinkler systems

# Address loss of water pressure

01

03

04

Unable to address loss of water pressure for wet fire suppression system

Emergent action during the storm

02

Used contiguous lake water to support condenser water that flows through chillers to remove the transfer of heat- able to maintain air-conditioning function in both facilities.

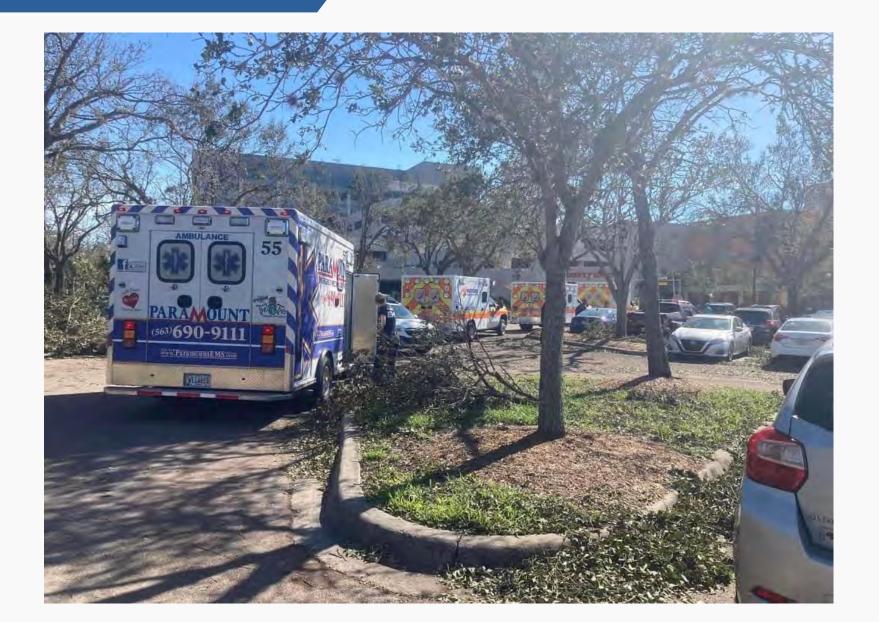
#### **COMMUNICATION WITH STAFF**

HOW DO YOU TELL STAFF YOU ARE EVACUATING?

DO YOU HAVE RESOURCES TO SUPPORT?

ASSESS PATIENTS –
DISCHARGE/TRANSFER OUT







#### INTERNAL COMMUNICATION

TWO WAY RADIOS HAVE YOU EVERY MOVED A HOSPITAL?

POINT PERSON AT AMBULANCE

SHOULD HAVE PLACED ONE AT HELIPAD POINT PERSON ON EACH UNIT

POINT PERSON AT ENTRANCE OF UNIT



#### TRIAGE

#### Not so typical triage:

- Most PICU/Peds kids our before NICU started
- Who were Level II or Level III
- Who were on vents
- Open crib = stretcher
- Warmer = isolette
- Keep families/multiples together
- Who could tolerate over 2hour trip in an ambulance Or with a nonneonatal team?



#### TRIAGE TOOL

#### Lucile Packard Children's Hospital

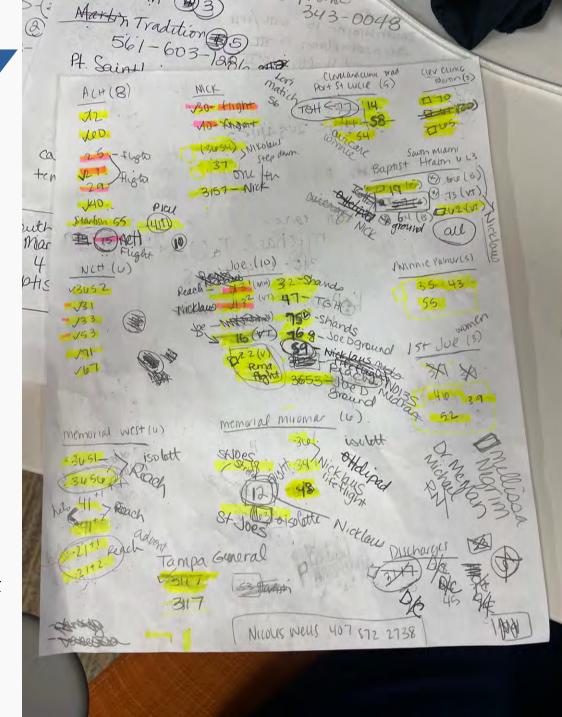
#### **LPCH TRAIN MATRIX**

Transport	Car	BLS	Critical Care	Specialized
Life Support	Stable	Minimal	Moderate-Stable	Max-Unstable
Mobility	Car/Carseat	Wheelchair/stretcher	Transport rig	Immobile
Nutrition	PO Feeds	PO/NG	NG/PO + TPN/IL	NPO & TPN/II
Pharmacy	PO Meds	PO Meds/IV Meds/IV Pluids	IV Drip x1	IV drip ≥ 2
Life Support	Moderate-Stable = 0	Low Flow Cannula O2, Peritoneal Dialy. Conventional Ventilator, CPAP/BiPAP/I		est tube, wt < 1500
Life Support	Moderate-Stable = 0 grams, etc.		Hi-Flow, Externally paced, ch	
Life Support	Moderate-Stable = Ograms, etc.  Max-Unstable = Hig	Conventional Ventilator, CPAP/BiPAP/I	Hi-Flow, Externally paced, ch	
Life Support	Moderate-Stable = Ograms, etc.  Max-Unstable = Hig	Conventional Ventilator, CPAP/BiPAP/I	Hi-Flow, Externally paced, ch	

https://asprtracie.hhs.gov/technical-resources/resource/1875/preplanning-disaster-triage-for-pediatric-hospitals-train-toolkit

#### **CHALLENGES**

- Paper tracking- HICS forms
- Neonatologists are only used to transfers – not evacuation
- Communication with families
- How could we have prepared better prior
  - Print a master patient list
  - Preprint face sheets



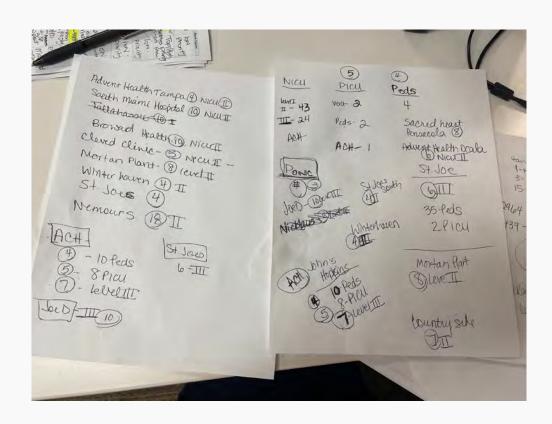
#### BED PLACEMENT

# Multiple people calling for beds

- Who owns bed capacity?
- State FHA System Command?
- General site to say what beds where and where we place?
- With phone numbers?

#### **Facilities**

- Level II and Level III
- Helipad or not



#### LANDING ZONE









#### WEATHER



#### **AMBULANCES**

- Not all ambulances are equipped the same
- Power Source
- PEDIMATES















#### PATIENTS MOVED

## All moved in 36 hours

81 total patients

62 Neonates

8 PICU

6 Peds

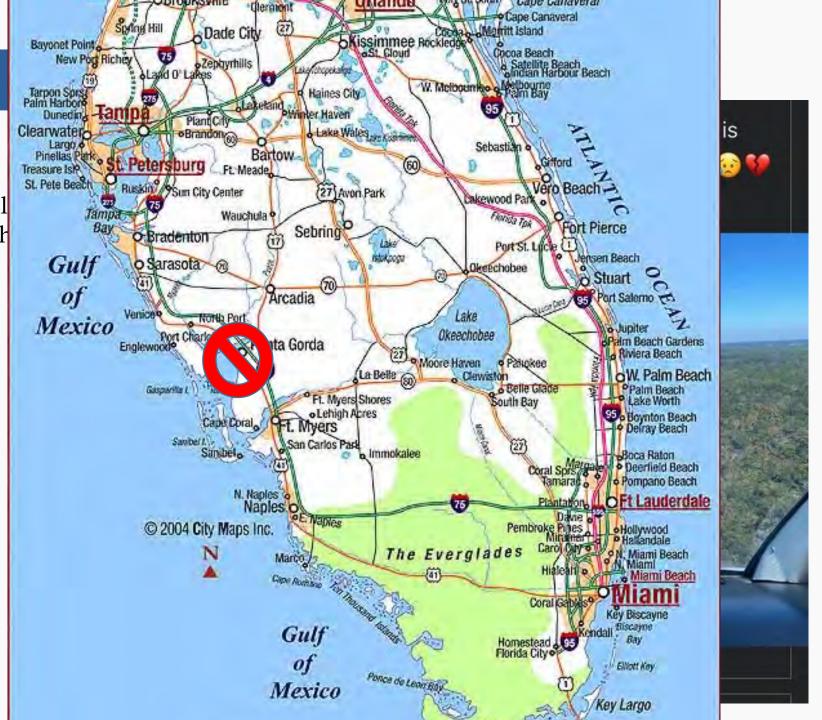
3 PONC

2 Peds ED



F

Well al until th



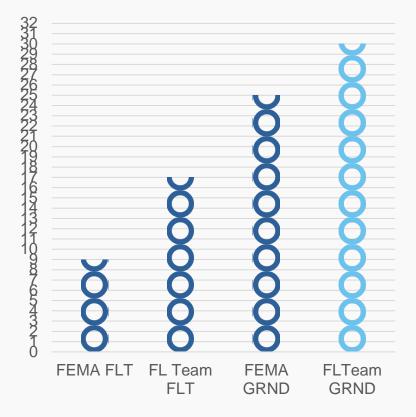
#### SAFETY

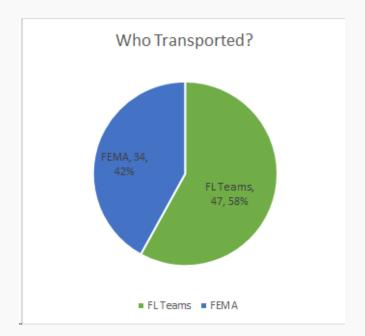
- ✓ No safety or adverse events
- ✓ All patients arrived to expected facility



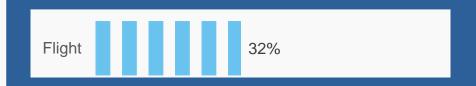


#### DATA









#### **TIMELINE**



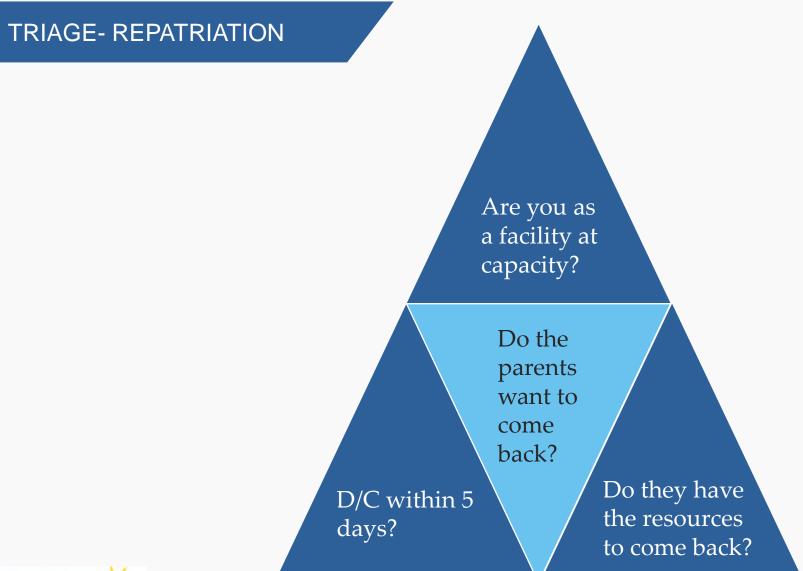
transported to a higher level of care



#### **REPATRIATION**

- Say what?
- Who, when, how...
- This isn't the part that is written....
- Funding



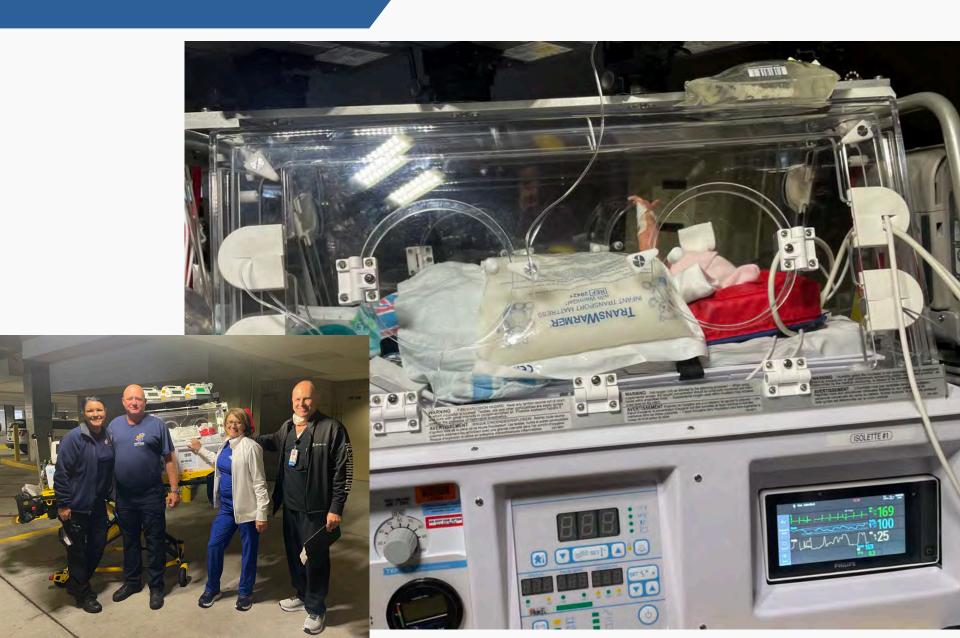










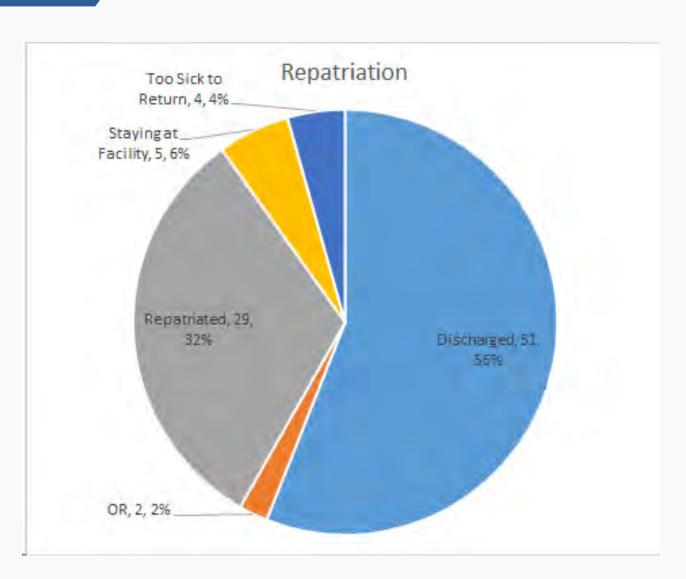


# **REPATRIATION**

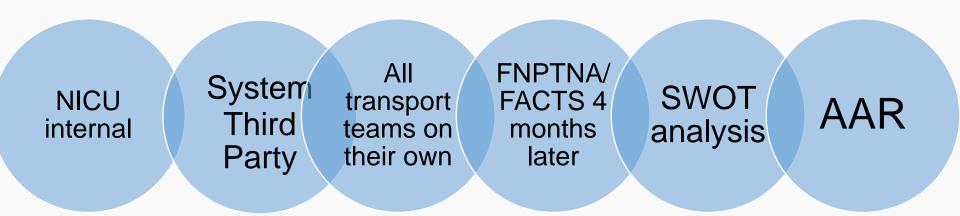
# Fun Fact:

- ALL NICU babies left under
- Baby, boy/girl....
- All came back with birth Certificate names

IN THE END: 33 Total Came Back Over 2 weeks



# **EVALUATION**



#### **SWOT ANALYSIS**

#### **STRENGTHS**

Early Communication
Back-up Plan
No Middle Man
Used to Interfacility Mentality
Golisano teams went on
transport – Mentally?
Repatriation – One
Neonatologist taking calls
Relationships
HICS forms used

#### **THREATS**

Statewide weather Route I-75 flooding



#### **WEAKNESSES**

Paperwork needs (perceived)
Bed placement – Internal vs FHA
Too many cooks in the kitchen
with bed placement
Ambulance tracking – ETAs
Unknown Fuel Depot

# **OPPORTUNITIES**

Streamline paperwork (transfer vs evacuation)
Isolette Team
Redistribute team to help
Repatriation
Special Needs placement from the hospital
Plans for families at receiving
facilities

#### 4 S's in Disaster

# Pediatric Disaster Response and Emergency Preparedness — TEEX

# STAFF

Spreadsheet of the teams, include contact numbers (and alternative communication/ emergency contacts)

# **SPACE**

Billeting is variable: if staff are not allowed to bring their significant others with them, there should be strong statements recommending the other spouse/family either evacuates or is in a secure local site.

# **SUPPLIES**

Identify all ventilatory support/ critical level of care babies and ensure there are extra oxygen tanks in the room

# **SYSTEM**

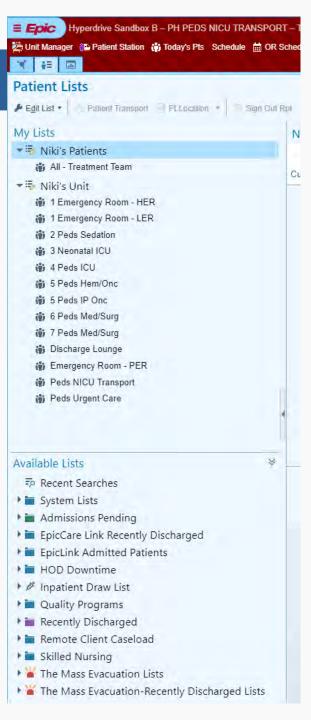
If the parking lot is vulnerable to flooding, encourage Team A comes in with alternative transportation and minimizes exposure of their vehicles to flooding risk

# Year and a half later

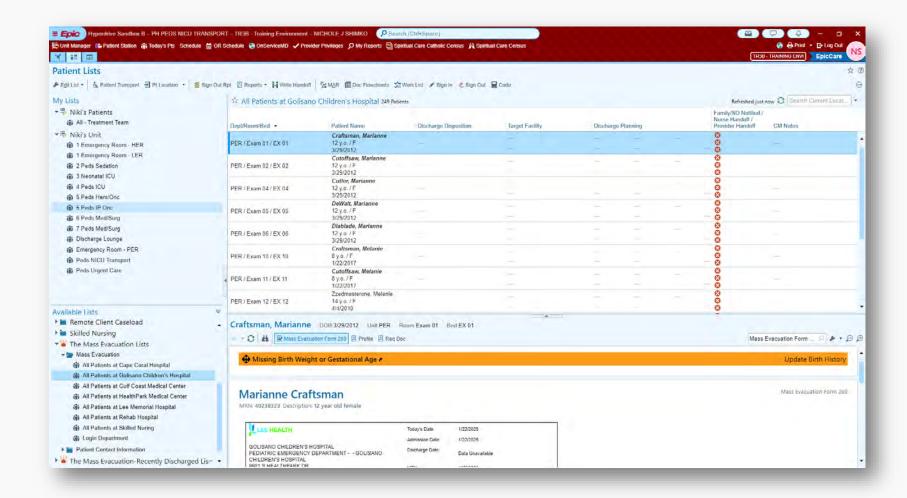
What has been done?

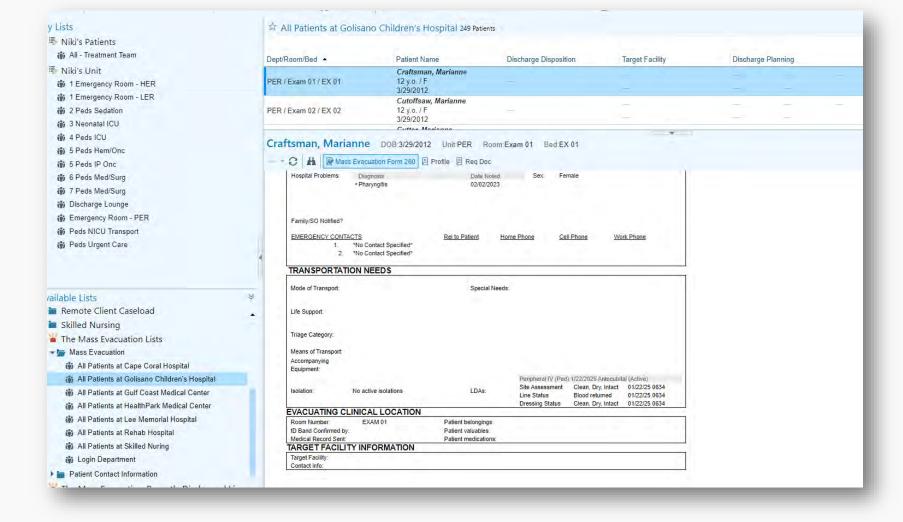
System: Well on order EPIC changes for Further discussion ining Awareness and What does it look ľU Preparedness FNPTNA: Updated the plan Over 15 times giving Further education this talk nationally C-Suite leadership State: Patient tracking Updated deployment plan

#### **EPIC List**

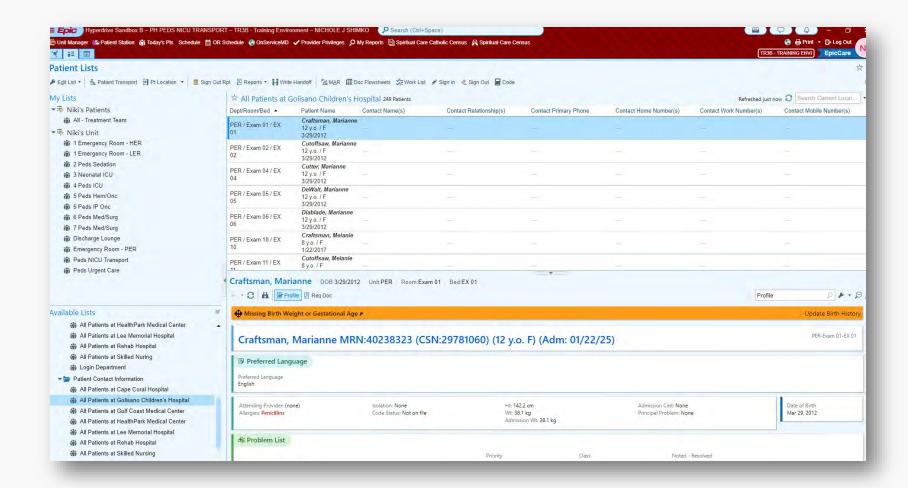






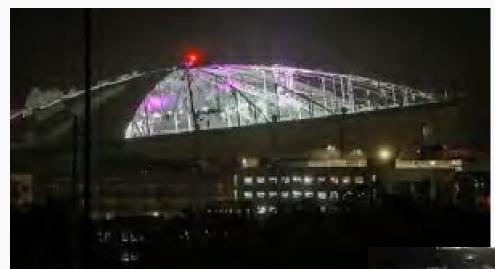


#### Contact List



# If you called today... for tips for tomorrow

**Pre Triage Patients** Acuity-resource based Identify who would be in charge of bed placement in command Identify who would be in charge of patient movement Work with IS team for list of patients and emergency contacts





# THANK YOU

# THANK YOU to all the teams

- LifeLine- John's Hopkins All Children's
- Joe DiMaggio Children's
- Life Flight Nicklaus Children's
- Air Care Orlando Health
- St. Joseph's Children's
- Winnie Palmer
- Med Trans
- Tampa General Aeromed
- Advent Health
- ShandsCair
- Sarasota Memorial



One day you will tell your story, of how you've overcome what you're going through now, and it will become Part of someone else's survival quide. or

# **RESOURCES**

https://asprtracie.hhs.gov/technical-resources/resource/1875/preplanning-disaster-triage-for-pediatric-hospitals-train-toolkit

https://www.stanfordchildrens.org/en/research-innovation/train

TEEX Pediatric Disaster Response and Emergency Preparedness MGT439

