# Statewide Patient Coordination During Emergencies & Disasters:

## The Duke Health Experience

### Miami-Dade County Healthcare Preparedness Symposium

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DukeHealth

# Which day do you celebrate?

- Vision Statement
  - To Build a Prepared, Resilient, and Sustainable Healthcare Community
- Mission Statement
  - “We are a partner to the healthcare community,  working to prepare for, respond to, and recover from emergencies and disasters across North Carolina”

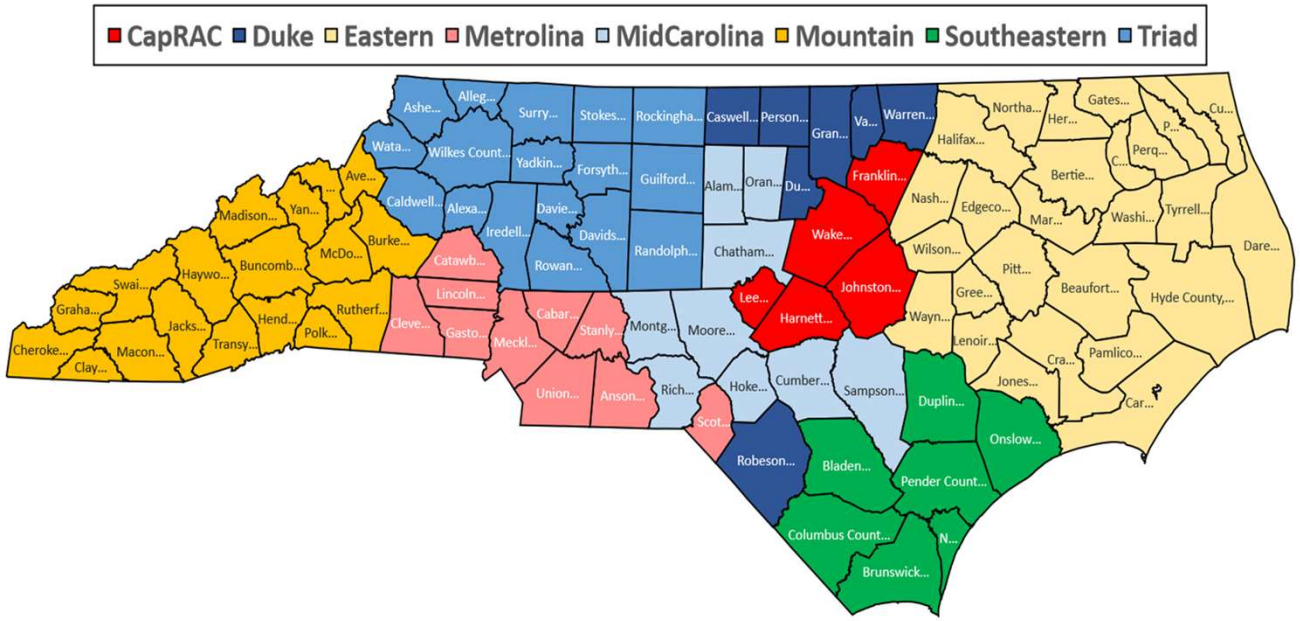
## State Emergency Response Team (SERT)

- NC Emergency Management Act
  - Chapter 166A General Statute
- NC Emergency Operations Plan
  - NCOEMS is the lead agency for ESF-8
- Disaster Medical Services Responsibilities
  - State Operated Healthcare Services in Shelters
  - Mass Patient Movement
  - Healthcare Surge Capacity (Stuff, Staff, Space)
  - Provision of emergency responder health and safety
  - Provision of medical command and control
  - State Medical Response System (SMRS)

# North Carolina Healthcare Preparedness Program

There are eight (8) North Carolina Healthcare Preparedness Coalitions (HPCs) that work with the common mission of facilitating communication, coordination, and collaboration between healthcare facilities, public agencies, and the State of North Carolina. Their primary goals are to:

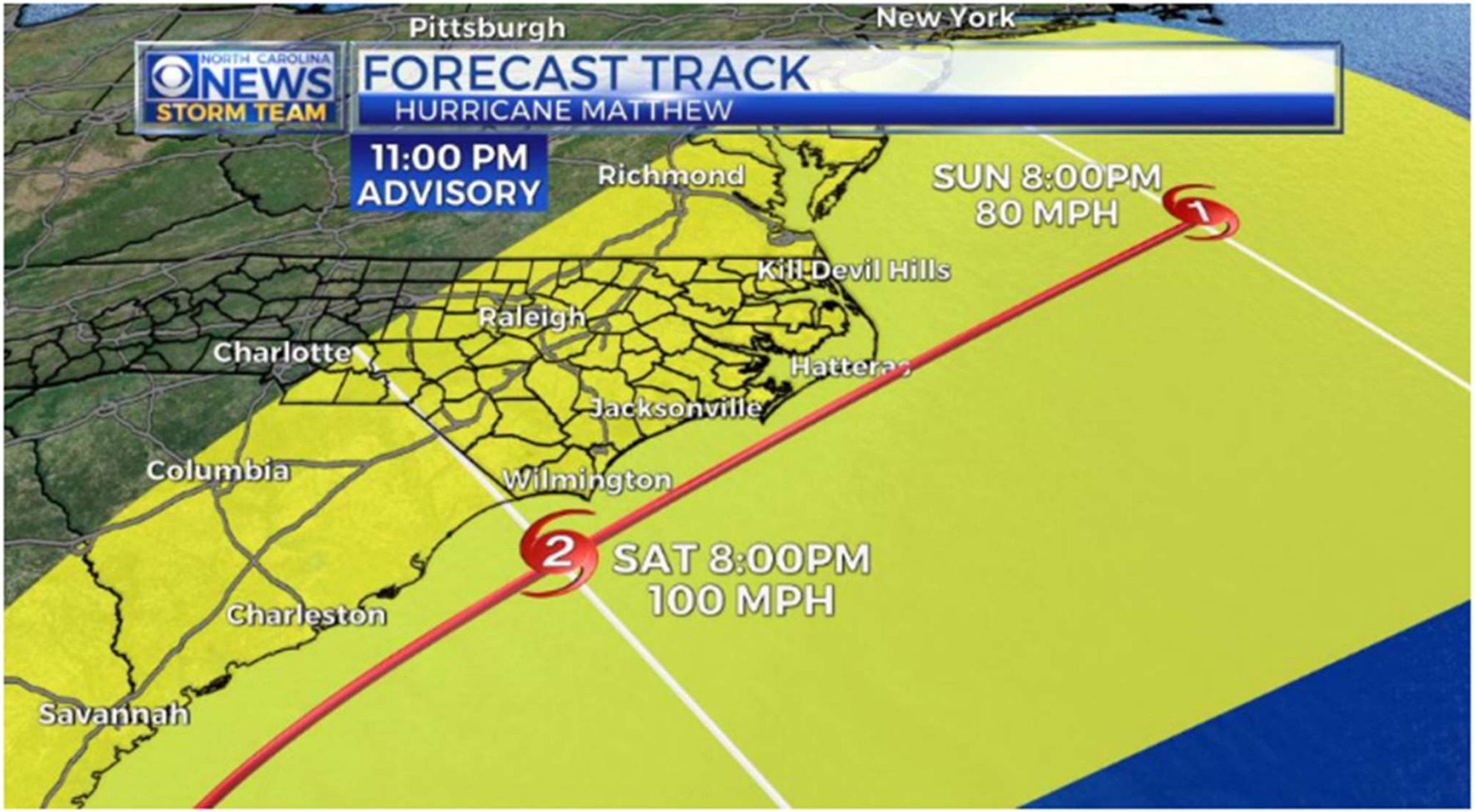
- Strengthen Partnership Engagement
- Support Information Sharing
- Expand Medical Surge Readiness
- Improve Incident Coordination
- Promote Fiscal Responsibility



# North Carolina Hospitals

- 124 Acute Care Hospitals
- ~28,000 Operational Acute Care Beds
  ~2700 Operational ICU Beds
  ~650 Pediatric Beds
  ~150 PICU Beds
- 17 Trauma Centers
  - 6 Level 1
  - 4 Level 2
  - 7 Level 3
  - 2 Burn Specialty Facilities

# Hurricane Matthew- October 2016



- 2017 The Big Move Exercise
- Multi-Day Exercise
- Category 4 Hurricane
- Projected to Hit NC Coast
- 133 page AAR

120 to Landfall

Coastal Evacuation Exercise

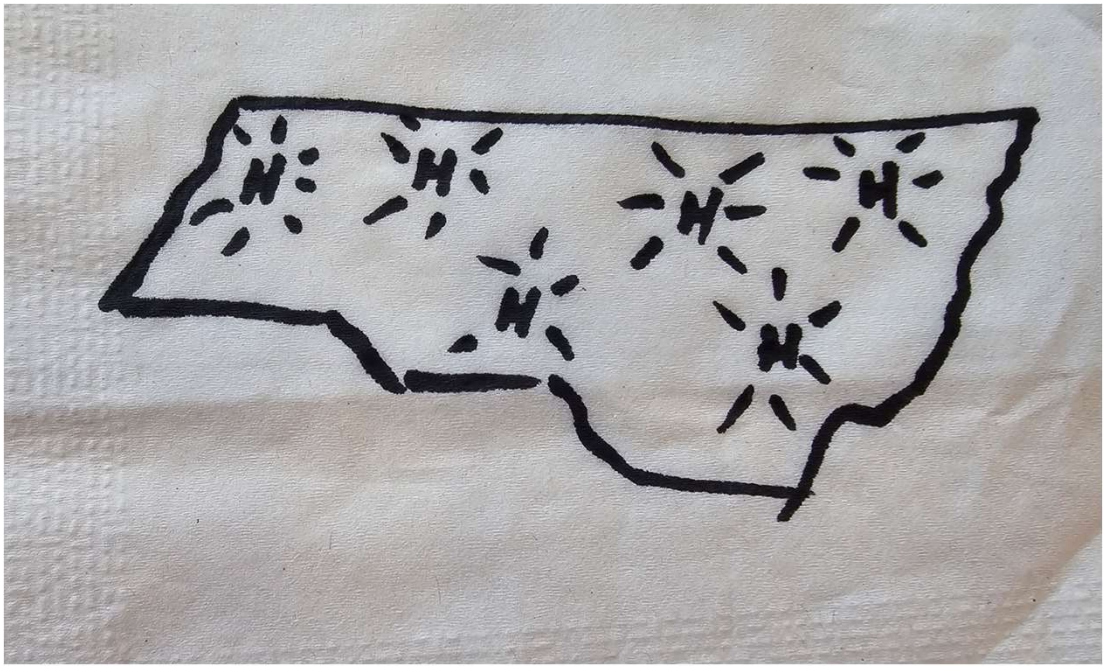
ehpc

Eastern Healthcare Preparedness Coalition

SHPR

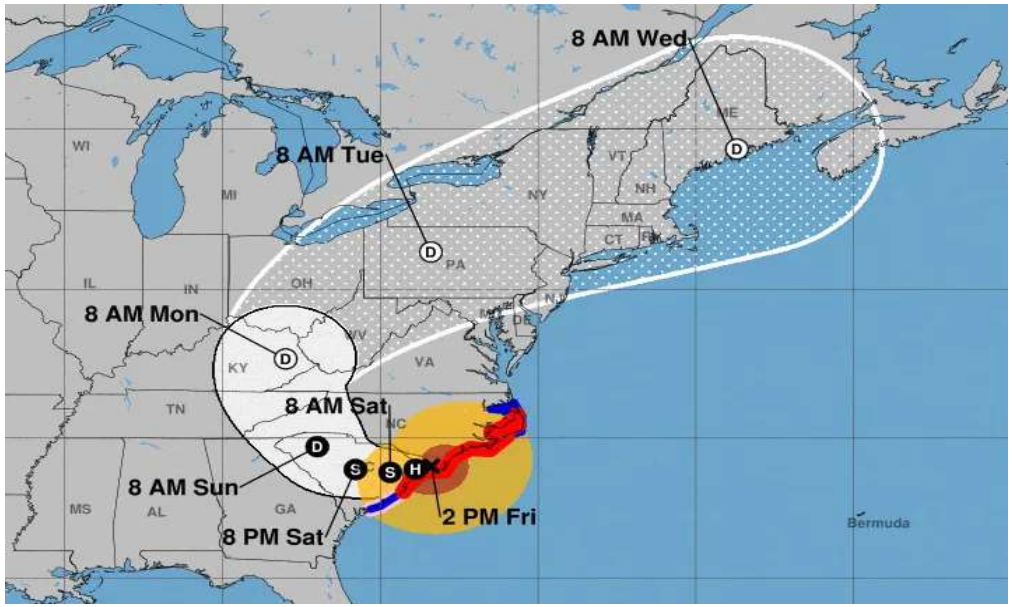
SOUTHEASTERN HEALTHCARE PREPAREDNESS REGION

- August 2018
- Quarterly Meeting with Healthcare Coalition Staff & Leadership
- Back of the Napkin planning session after-hours

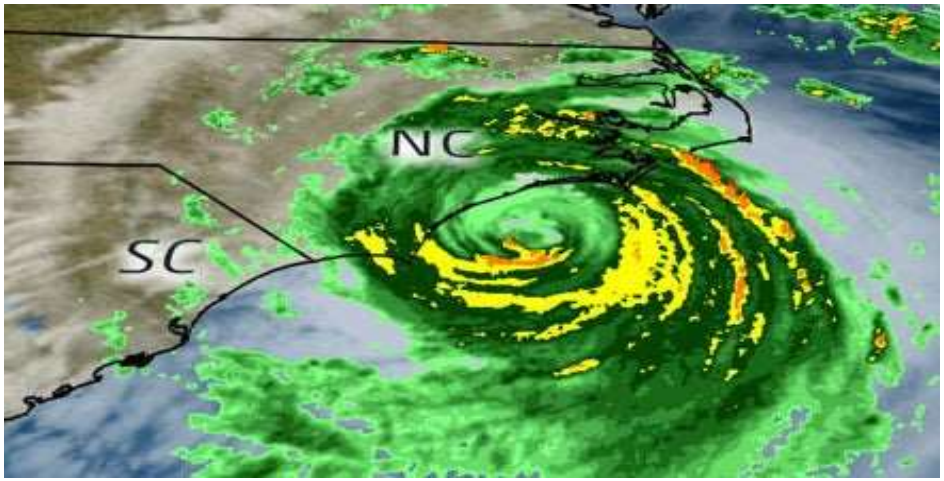


# Hurricane Florence

- Landfall: September 14, 2018
  - Wrightsville Beach, NC
- Cat 4 on Sept 10th
- Cat 1 at landfall
- 9-13ft storm surge







- **Activated the “Back of the Napkin” plan for patient movement**
- **Duke Health agreed to be lead for coordination across state with support from NCOEMS & Healthcare Coalitions**
- **Tools from The Big Move Exercise were able to be adapted easily and utilized for submission of patients needing evacuation/derisking**

# Brief Timeline of Events

| Date | Action |
|---|---|
| 9/10 | DUHS transfer center requested to provide patient placement coordination |
| 9/11 | • 11:00am- First conference call with many statewide health systems and hospitals<br>• 4:00pm- First few patient being placed through process |
| 9/12 | • 7:00am- 92 out of 106 patient placed |
| 9/13 | Statewide process suspended due to timeframe for placement and safe transport of patient prior to landfall |
| 9/15 | Statewide process resumed after coastal landfall and winds reduced |
| 9/18 | Final conference calls and placements occurred |

# Process and Activities

**Hospital Needing Evacuation**
- Review patients in the hospital needing evacuation.
- Create list using the state issued template.
- List is sent to the HPC.

**Healthcare Preparedness Coalition (HPC)**
- HPC reviews the list.
- Forwards requests to the ESF-8 Desk.

**ESF-8 Desk**
- Reviews the request for assistance.
- Shares needed information.
- Forwards the list to the PPSC.

**Patient Placement Support Center (PPSC) (Duke Health)**
- Reviews list and compares to previous lists.
- Distributes list securely to receiving hospitals.
- Creates a secure conference call for review.

**Receiving Hospitals**
- Reviews list for appropriate placement.
- Creates a separate list of patients that each hospital can accept.
- Coordinates with the PPSC.

# Inpatient Transfer Form

**Disaster Evacuation Patient Transfer Report**

| | **Please Complet | Facility Name | | | | | Total Census Currently | | | | Total # Evacuating | | Total # Sheltering in place | | Total # of Discharges |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date of Birth DD/MM/YYYY | Veteran / Active Duty | Unit / Floor Name | Location Type | Unit Phone Number ###-###- | Room Number | Primary Diagnosis | Weight (lbs) | Oxygen | IV (Yes / No) | Type of Tx Needed | Specialized Equipment (May pick | Select Max Transport | Notes |
| 1 | NHRMC1 | | | ST/PACU | ICU (2:1) | 910-343-7776 | ST/PAC 4 | R Illeac aneurysm | 75.9 kg | Yes | Yes | Critical Care | IV Drip(s) | | Palliative care requests to stay her |
| 2 | NHRMC2 | | | ST/PACU | ICU (2:1) | 910-343-7776 | ST/PAC 6 | pelvic fracture | 93.7kg | No | Yes | Critical Care | IV Drip(s) | | Cardene low dose/foley |
| 3 | NHRMC3 | | | ST/PACU | ICU (2:1) | 910-343-7776 | ST/PAC 7 | Pulmonary contusion | 120 kg | Yes | Yes | Critical Care | IV Drip(s) | | Vent, drips, Foley |
| 4 | NHRMC4 | | | ST/PACU | ICU (2:1) | 910-343-7776 | ST/PAC 8 | Stroke like sx | 95 kg | No | Yes | Critical Care | IV Drip(s) | | |
| 5 | NHRMC5 | | | ICU 16 | ICU (2:1) | 910-343-7686 | ICU 16 | Drug OD | 116 kg | Yes | Yes | Critical Care | Vent | | Drips, foley may tx to floor tomor |
| 6 | NHRMC6 | | | ICU 17 | ICU (2:1) | 910-343-7687 | Icu 17 | Sepsis | 78.8 kg | Yes | Yes | Critical Care | Vent | | Aline, vent, drips, Fentanyl PCA |
| 11 | NHRMC7 | | | Icu 25 | ICU (2:1) | 910-343-7211 | ICU 25 | pneumonia | 56.7 kg | Yes | Yes | Critical Care | | 4-6 hrs | |
| 12 | NHRMC8 | | | Icu 30 | ICU (2:1) | 910-343-7211 | Icu 30 | Ex Lap | 80.4 kg | No | Yes | Critical Care | | 4-6 hrs | Sitting up in chair |
| 14 | NHRMC9 | | | ICU 32 | ICU (2:1) | 910-343-7522 | Icu 32 | Sah | 60.4 kg | Yes | Yes | Critical Care | IV Drip(s) | | Hi flow NC, Ventric (ground only) |
| 15 | NHRMC10 | | | ICU 34 | ICU (2:1) | 910-343-7522 | Icu 34 | MVC | 107 kg | Yes | Yes | Critical Care | Vent | | Vent, chest tubes, lines, IV drips |
| 16 | NHRMC11 | | | Icu 35 | ICU (2:1) | 910-343-7522 | Icu 35 | Pontine Bleed | 46 kg | Yes | Yes | Critical Care | Vent | | Isolation MRSA, foley, vent - ethics |
| 17 | NHRMC12 | | | Icu 36 | ICU (2:1) | 910-343-7522 | Icu 36 | SAH | 89.7 kg | Yes | Yes | Critical Care | Neuro Monitor | | trach, t-piece, peg, ventric (ground |
| 18 | NHRMC13 | | | U | | 667-7300 | 706 | encephalopathy | 209 | yes | yes | ALS | | | BIPAP |
| 19 | NHRMC14 | | | PCU | | 667-7300 | 705 | A/C Resp Failure | 171 | Yes | Yes | ALS | | | HFNC |
| 20 | NHRMC15 | | | PCU | | 667-7300 | 707 | Parotitis | 143 | yes | Yes | ALS | | | HFNC |
| 21 | NHRMC16 | | | PCU | | 667-7300 | 708 | Epidural hematoma211 | 211 | yes | Yes | Critical Care | Vent | | vent |
| 22 | NHRMC17 | | | PCU | | 667-7300 | 729 | act Resp Insuff | 67 | Yes | Yes | Critical Care | Vent | | vent |
| 23 | NHRMC18 | | | PCU | | 667-7300 | 735 | SIRS | 188 | Yes | Yes | Critical Care | Vent | | vent |
| 24 | NHRMC19 | | | PCU | | 667-7300 | 736 | Act Resp Failure | 136 | Yes | Yes | Critical Care | Vent | | sodium phos gtt |
| 25 | NHRMC20 | | N/A | CCU | ICU (2:1) | 667-7498 | ICU-10 | renal Insufficiency | 189 | Yes | Yes | Critical Care | Central Line | | Heart Transplant - Feb 2018, return |
| 26 | NHRMC21 | | N/A | | | | | | | | | | | | |
| 27 | NHRMC22 | | N/A | CCU | ICU (2:1) | 667-7498 | ICU-14 | CHF | 201.8 | Yes | Yes | ALS | Swan cath | | Ac CHF - going to UNC Chapel Hill |
| 28 | NHRMC23 | | N/A | AP | Intermediate (4:1) | 667-3041 | 3111 | PTL-3-cm 25 3/7 gest | | | Yes | BLS | IV Drip(s) | | PTL fetal monitoring |
| 29 | NHRMC24 | | N/A | AP | Intermediate (4:1) | 667-3041 | 3109 | PROM-22 2/7 gest | | | Yes | BLS | IV Drip(s) | | PROM-fetal monitoring- full code |
| 30 | NHRMC25 | | N/A | Labor | Speciality Care (1:1) | 667-6964 | 3124 | Baby anomal-IUGR | | | Yes | BLS | IV Drip(s) | | Bab anomal transfer to UNC today |
| 31 | NHRMC26 | | | NICU | ICU | 910-667-7391 | 3039 | premature infant | 1lb 13oz | Yes | Yes | Critical Care | Vent | 4-6 hrs | CMC NICU preferred for inland location |
| 32 | NHRMC27 | | | NICU | ICU | 910-667-7391 | 3026 | premature infant | 1lb 6oz | Yes | Yes | Critical Care | Vent | 4-6 hrs | CMC NICU preferred for inland location |

Projected 75 patients needing evacuation

# Outcomes

- 150 Patients placed through state process
  - 136 Pre-Storm
  - 14 Post-Storm
  - 98 were placed (refusals & discharges)
- 21 Different Hospitals in NC accepted patients from 7 impacted hospitals
  - Utilized hospital based landing pads with critical care transport and local EMS sending transporting patients to nearby facilities
- 61% of patients were handled within a corporate health system

# Strengths

| Duke University Health System | North Carolina |
|---|---|
| Patients were placed in appropriate facilities/beds in order to maintain a consistent level of care.<br>• No secondary movement needed as has occurred in other large scale evacuations. | The speed and efficacy with which the Duke University Health System (DUHS) established a patient transfer/coordination center provided a profound resource to the state and the affected facilities in the coastal region of the state. |
| Hospital physicians and leadership were aware of type and acuity of incoming patients which allowed for availability of needed resources. | Dare and Onslow counties addressed repatriation of patients proactively and coordinated transportation needs, facility assessments, and supporting logistics. |
| Once accepted and trusted, the process worked efficiently and effectively amongst health systems/hospitals. | Reciprocity agreements allowed for out-of-state ambulances being able to transport patients within the state when under private contract. |
| By using health system/hospital transfer centers, standard processes were used which allowed for the safe and effective acceptance/transfer of all patients.<br>• No safety incidents reported. | Safe movement of patients |
| By using health system/hospital transfer centers, standard processes were (DUHS) Single point physician acceptance made the process more streamlined. | |

# Challenges/Opportunities for Improvement

| Duke Health | North Carolina |
|---|---|
| Automated approach to patient placement vs. manual / spreadsheet | Inconsistency across different hospitals on evacuation processes |
| Post-acceptance, receiving hospital was informed the patient refused or no longer appropriate | Definitions for facility decompression, partial evacuation or full evacuation |
| Took time for other organizations to trust the process | Some facilities delayed decision making as to when to evacuate, waiting until it was extremely difficult to safely evacuate the facility |
| Did not have complete list of transfer centers / hospital contact information | Not all hospitals have signed the North Carolina Hospital Mutual Aide agreement |
| | As assets began to demobilize, repatriation of patients became more difficult with the limited resources |
| | Difficulty with indicial patient tracking process (departure from facility, arrival, etc) |
| | There was a lack of availability of ambulances pre-storm to support hospital or facility evacuations |

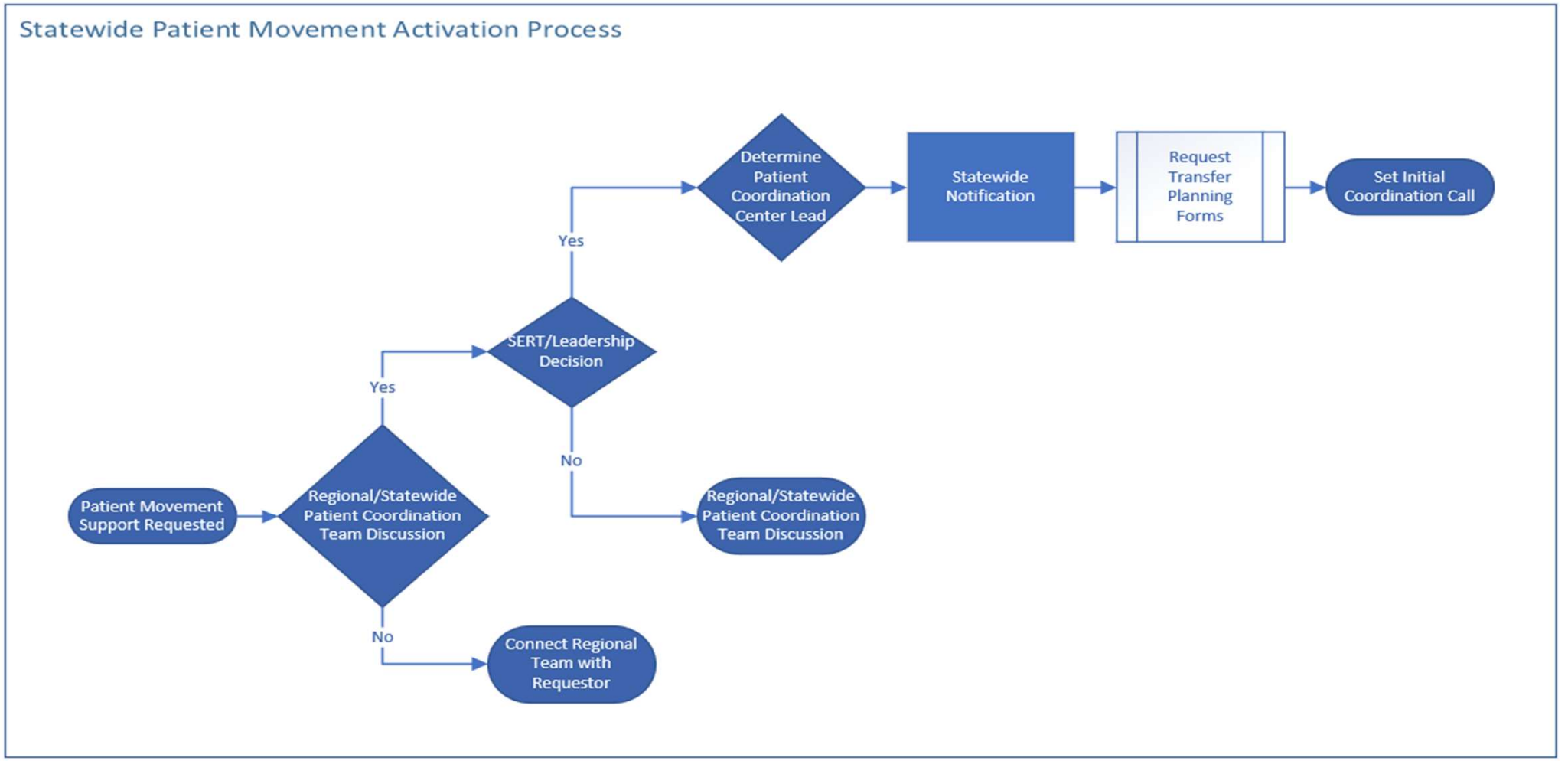
- Purpose:
  - To assist in the coordination for the transfer of critical inpatients that need a higher level of care than can be provided at the facility where a patient is currently located.

- Anticipated – greater than 48 hours to expected impact, allowing time to deliberately plan, identify, triage and link patients with appropriate facilities
- Unexpected- the risk to life safety with immediate needs to relocate patients to an alternate healthcare facility

## Anticipated Incidents

- Request to activate Statewide Patient Coordination
- Patient Movement Activation Chart
- Notification sent via Regional Healthcare Coalitions & NCHEMC Disaster Roundtable List-Serv (redundancy)
- Instructions, Planning Form Links, Patient Movement Links

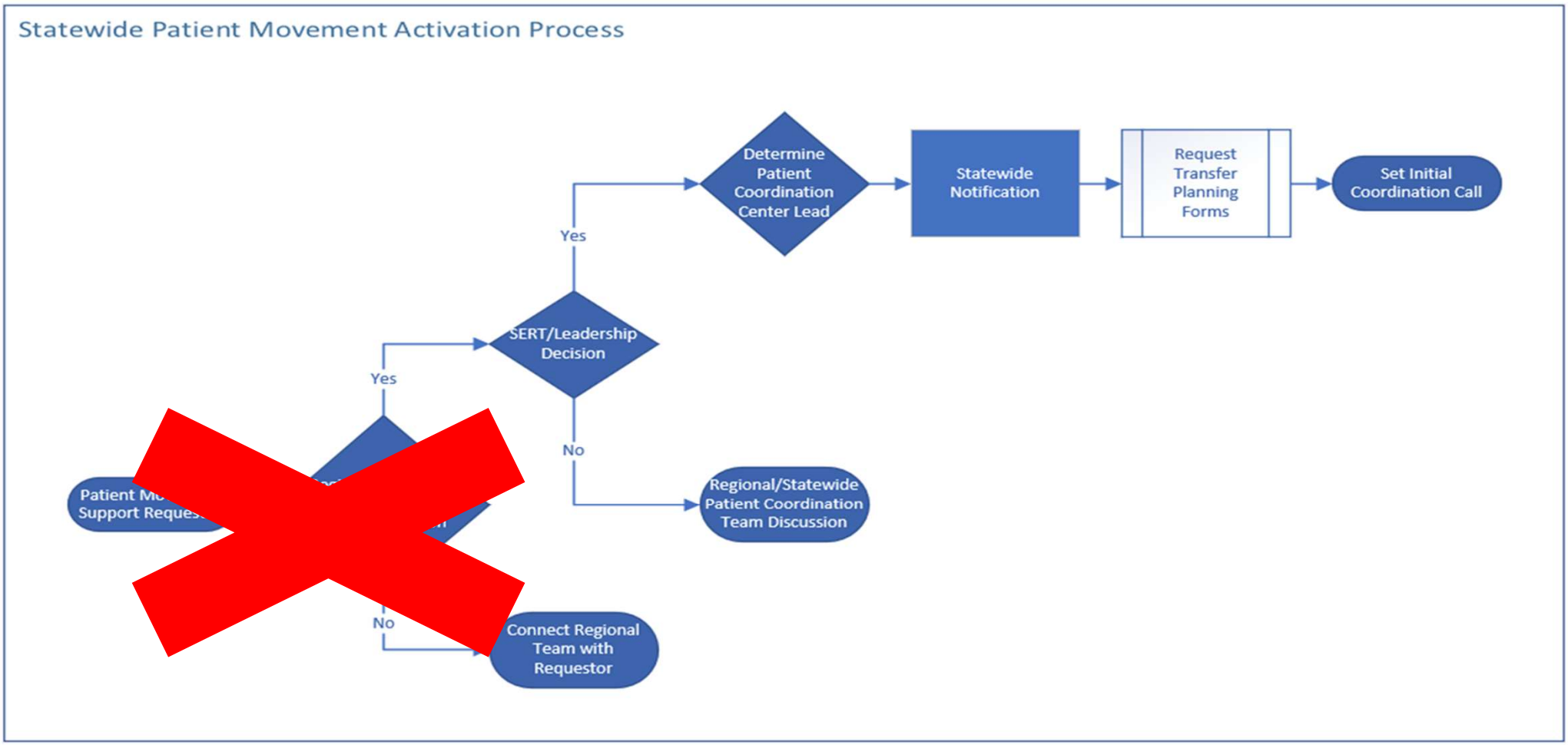
# Patient Movement Activation



## Patient Placement Planning Forms

- Healthcare Entities send their planning forms
  - Name of Facility
  - Region / County
  - Key Point of Contact
  - Tally of potential patients by placement type (ICU/Med Surge etc.)
  - Tally of potential transportation types (Specialty Care Transport, ALS etc.)

# Patient Movement Activation (No Notice)



# Patient Placement Process

## TEMPLATE - Hospital Individual Patient Placement Request Form

Provide detailed information on patients needing transfer to/from healthcare facilities

### Transferring Facility Information

This form is NOT meant for critical time sensitive needs (STEMI, Stroke, Trauma, EMTALA etc.) please follow normal processes for time sensitive patients.

Please provide as much information as possible about the patient. This information will help the Patient Coordination Team ensure proper placement.

After submission of this form please enter your email to receive the link to this form. This link will allow you to view your entry, see the assigned Patient ID number after our team processes the form, and monitor for any updates.

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### FOR INTERNAL USE ONLY! TO BE COMPLETED BY NC DHHS STAFF

DO NOT ENTER ANYTHING IN THIS SECTION!!
PROCEED TO THE NEXT SECTION TO ENTER FACILITY INFORMATION

**DHHS Patient ID Number (DO NOT ENTER ANYTHING HERE!)**

DHHS Patient ID (RO Form Number) INTERNAL USE ONLY

**Patient Placement Status**

- ○ Received by NCOEMS Staff
- ○ Waitlisted
- ○ Consult Pending
- ○ Resolved by Consult
- ○ Removed from List (Reason in Notes Below)
- ○ Accepted (Patient Placed at Facility)
- ○

## Statewide Patient Coordination Team

- 72% of NC Hospitals Have Transfer Center
- Invites to Major Transfer Centers (13)
- Biweekly Meetings
  - Discuss patient flow concerns and mitigation plans
- Committed to Coordinating Patient Transfers for Higher Capability Care Needs
- Utilize Expertise of Patient Transfer Centers
- Important: Team Effort and Not One Entity

- Process Overview
  - Requesting facility submits patient info via ReadyOp link
  - NCOEMS Staff review form for completeness, reach out with any questions, the pass along to transfer centers group who review entries daily
  - Accepted patients' facilities will be contacted by the receiving facility
  - Waitlisted patients will be continually reviewed

# Patient Placement Status

- Received by NCOEMS
  - Entry has been reviewed by NCOEMS staff and sent to the Transfer Centers
- Waitlisted
  - Reviewed by all Transfer Centers and holding until placement is available
- Consult Pending
  - Transfer Center agrees to reach out to find out more about the patient and potentially accept or find alternative
- Resolved by Consult
  - Transfer Center was able to resolve by consult, no physical transfer necessary
- Removed from list
  - Patient expired, improved, transferred outside this process, or no longer needs/wants/qualifies for transfer
- Accepted
  - A bed has been secured via transfer center

## Other Events Requiring Pateint Placement

- COVID-19 State Response and Patient Placement
  - Bi-weekly meetings
- Pediatric Statewide Surge for RSV
- Flu Season
- Regional High Capacity Workflows

- Team continues to meet regularly
  - Cadence Set by Team
  - Any Team Member Can Request Meeting
  - Each Hospital Reports Out
  - Share Best Practices & Lessons Learned
  - Provide Pulse of the Healthcare System Across North Carolina

## Key Takeaways

- Pull Method vs. Push Method
- Built Strong Relationships Based On Partnerships & Trust
- Forum for Best Practices
- Provides Perspective of Capacity Managers
- Provides Centralized Process to Work Through for Maximum Efficiency
- Access to Portal with Key Patient Information Reduced Duplication


ANY
QUESTIONS?