

# Enhancing Trauma & Pediatric Care

Simulation-Based Training Outreach in Rural Areas



**#NHCPC24**

**NATIONAL HEALTHCARE COALITION  
PREPAREDNESS CONFERENCE**

*Visions of Progress: Sustainable Strategies for  
Emergency Preparedness & Resilience*

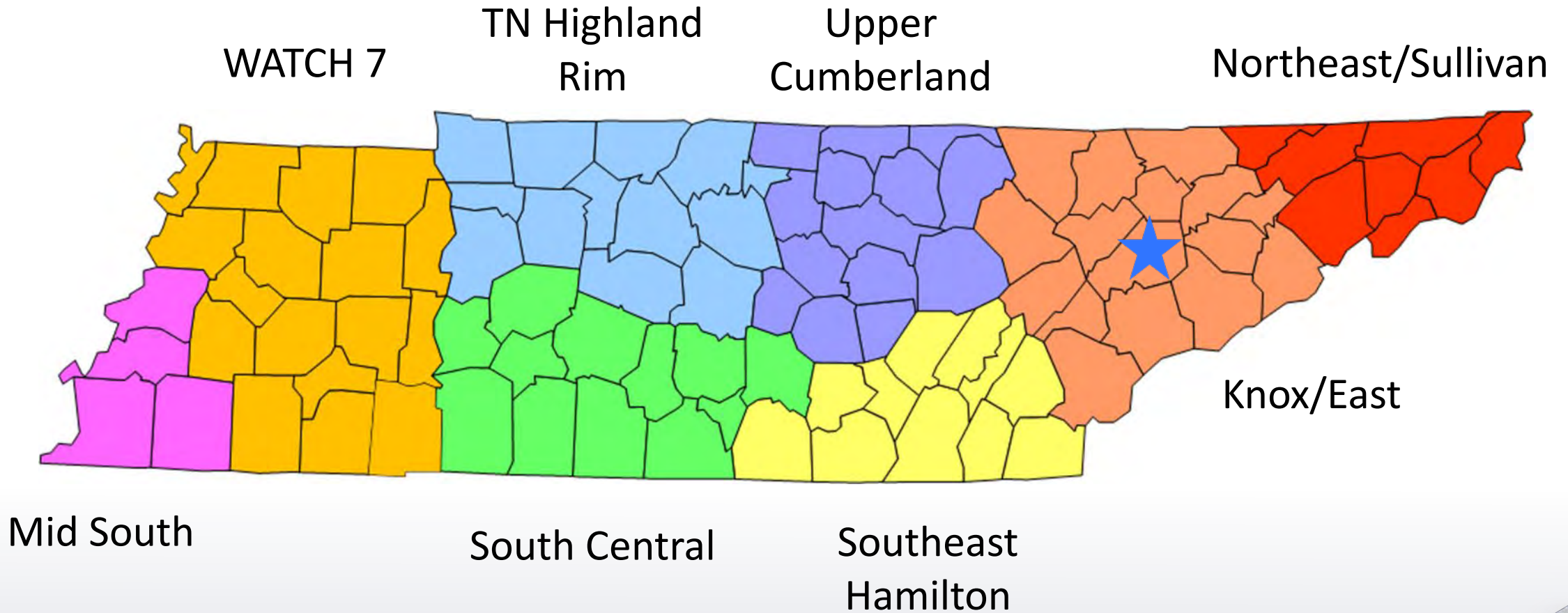
Oseana Bratton BSN, RN, CPEN, AEMT  
Katie Hall BA, CC-Paramedic, IC, NRP

Presented By:



**MESH**

# Tennessee Healthcare Coalitions



#NHCPC24



# Non-Disclosure

We have no financial gain or investment in regards to the following information or medical recommendations.

Specific items featured in this presentation were chosen based on regional needs and after discussion with key stake holders.



Oseana Bratton  
BSN, RN, CPEN, FF/AEMT

Regional Outreach &  
Trauma Program Manager

(865) 541-8523

ombratton@etch.com



#NHCPC24



# What is Simulation-Based Learning (SBLE)?

- **Simulation:** Imitation of a situation or process.
- **Modality:** The type of simulation used
- **Fidelity:** "The degree to which the simulation replicates the real event and/or workplace; this includes physical, psychological, and environmental elements."
  - Physical
  - Conceptual
  - Psychological



# What is Simulation-Based Learning (SBLE)?



## Low Fidelity

- Often without the psychological and environmental components
- Task training



## High Fidelity

- Includes all simulation components, resulting in more realistic training



# Why Simulation-Based Learning (SBLE)?



## BLOOM'S TAXONOMY



# Why Simulation-Based Learning (SBLE)?

- High-fidelity Simulations
  - Teach, Assess, Evaluate
  - Valuable for learners of all levels
  - Superior to standardize testing in assessing competency
  - Promotes student engagement
  - Development of clinical reasoning
  - Safe learning environment
  - Teamwork/communication/leadership





# Why Simulation-Based Learning (SBLE)?



- Simulation is not easy
  - Training the trainer
  - Stakeholders & Buy-in
  - Simulation ratios
  - Financial support
  - Psychological safety



# Pediatric Simulation Project

Overview & Background



#NHCPC24



# East Tennessee Children's Hospital



#NHCP24



# TN Pediatric Emergency Care Facilities

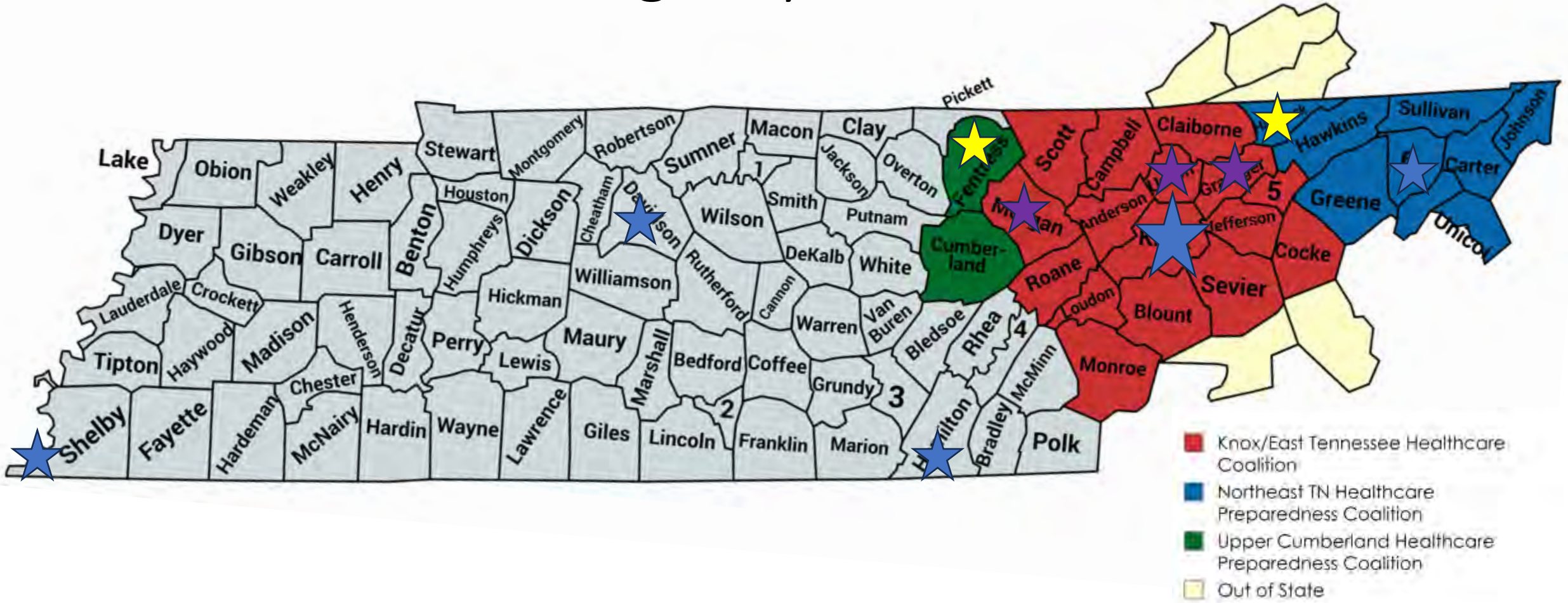
- TN Pediatric Emergency Care Facility Designation
  - Basic Facility
  - Primary Facility
  - General Facility
  - Comprehensive Regional Pediatric Center



#NHCPC24



# TN Pediatric Emergency Care Facilities

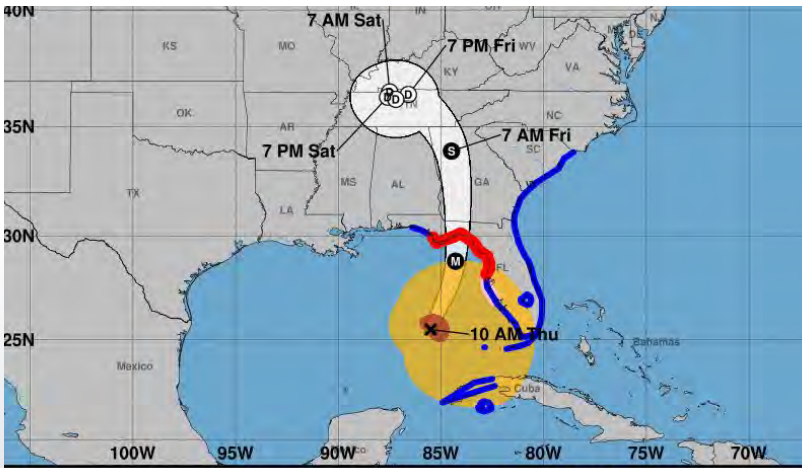


# What is Simulation-Based Learning (SBLE)?

## 2023 Transfers

- 1166 Accepted Patients
  - 563 Rural
  - 199 Knox County
- 329 Phone Consults
  - 150 Rural
  - 29 Knox County





#NHCPC24





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





Only **10%** of 911 calls involve children.

Of those, only **1%** will be critical.



#NHCPC24





About **25%** of any given population is children under the age of 18 years.

#NHCPC24



# It all started when....

## Training

Purchase Pediatric Simulator

ETCH EMS Coordinator to provide pediatric focused training to hospitals and EMS

## Supplies

Focused on infants through 8 years

Pediatric specific mass casualty supplies for region wide 911 EMS providers

Provide each hospital with ED equipment and supplies for 20 pediatric patients over and above their required amounts

## Exercise

Spring 2017: Tabletop

Fall 2017: Full Scale

#NHCPC24





## EMS Supplies

- Purchased for each ambulance in the region (~ 300)
- Partnership with Region 2 EMS Director's Association
- Budget: \$37,000

#NHCPC24



## Hospital Supplies

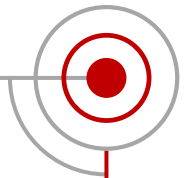
- All hospitals were eligible
- Must attend 75% of HCC meetings
- Must commit to maintaining supplies.



# Pediatric Simulation Timeline



2016



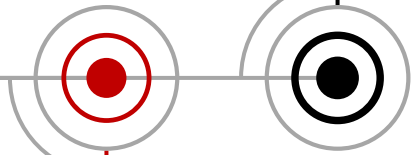
FIRST  
SIMULATOR  
PURCHASED



# Pediatric Simulation Timeline

PEDIATRIC TABLE  
TOP

2016

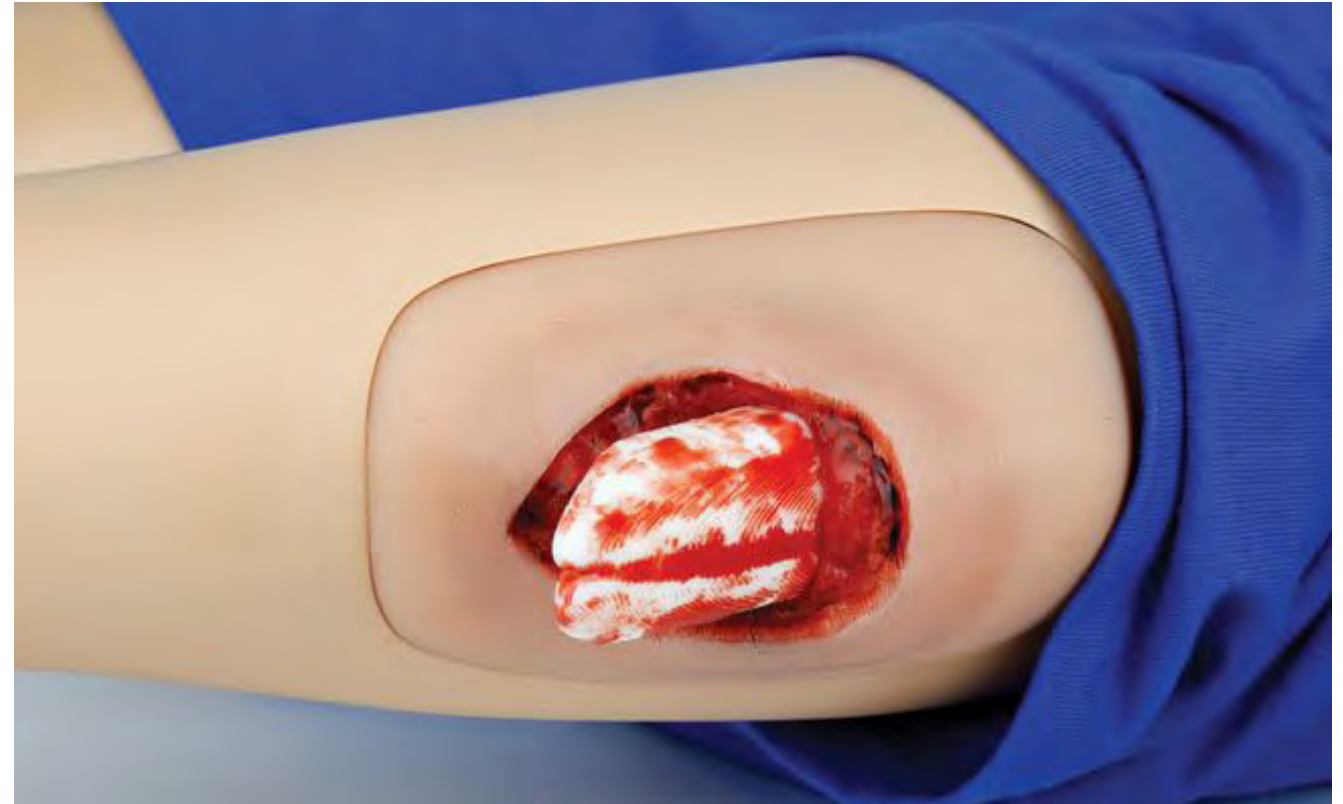
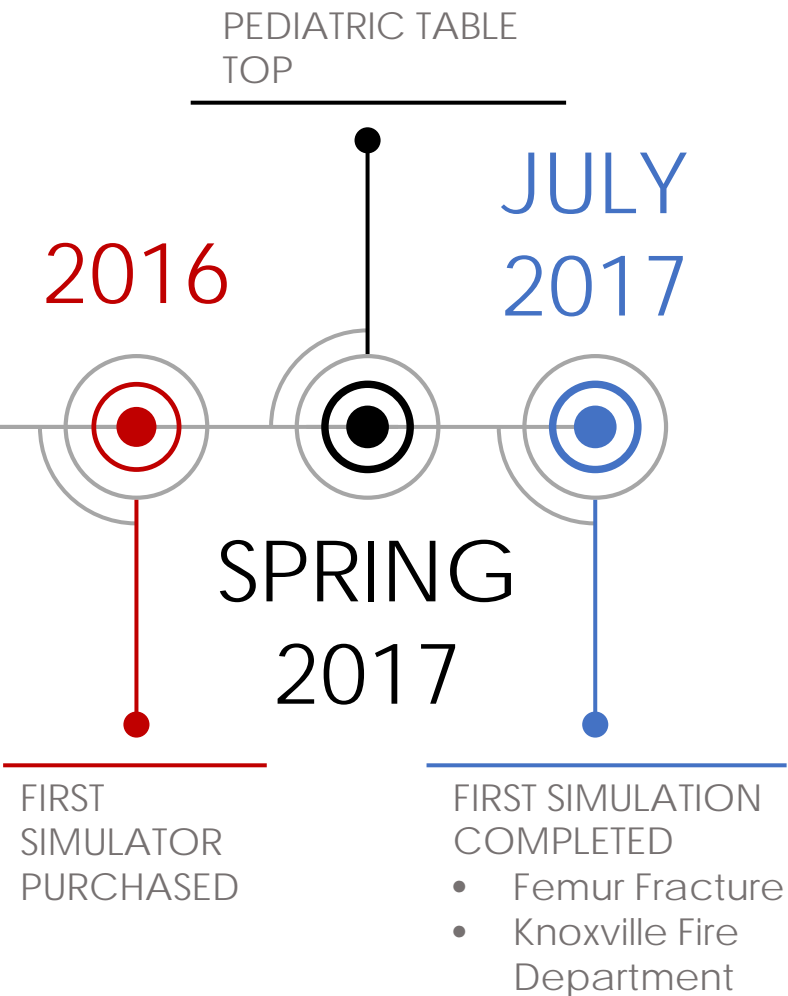


SPRING  
2017



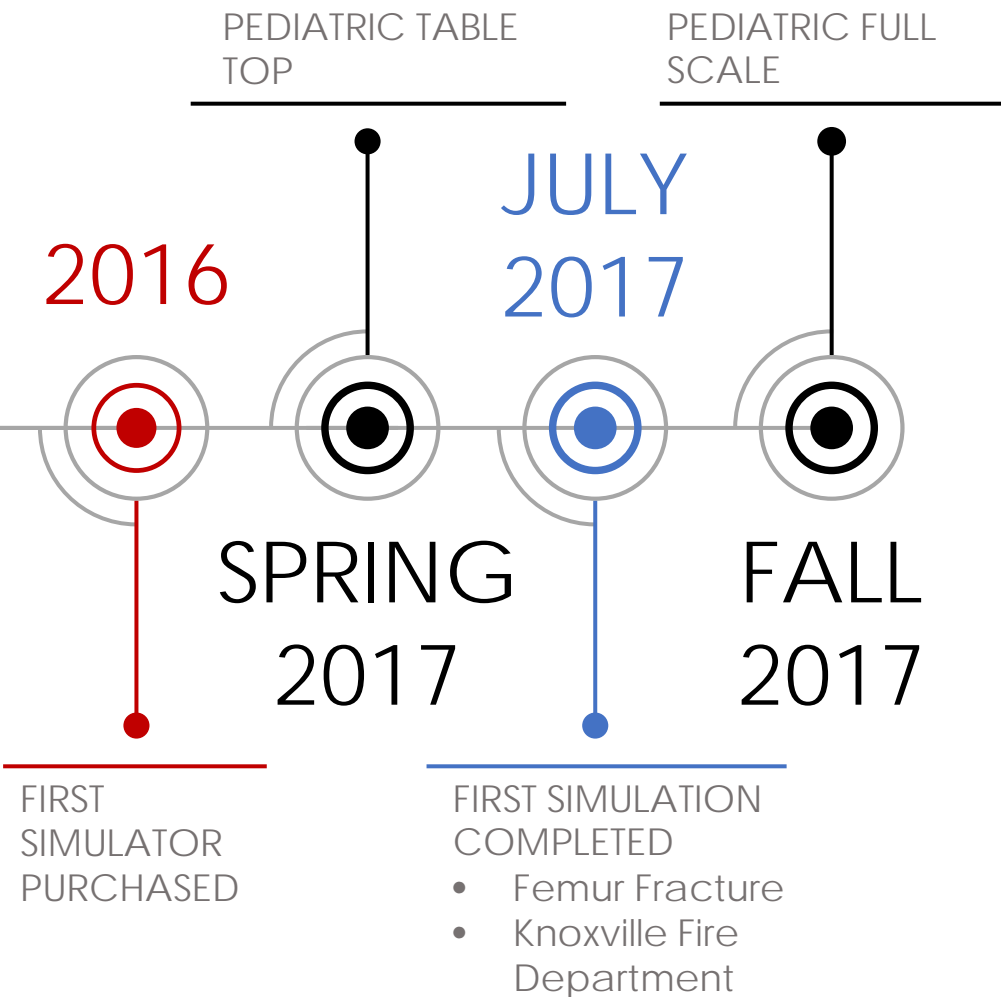
FIRST  
SIMULATOR  
PURCHASED

# Pediatric Simulation Timeline

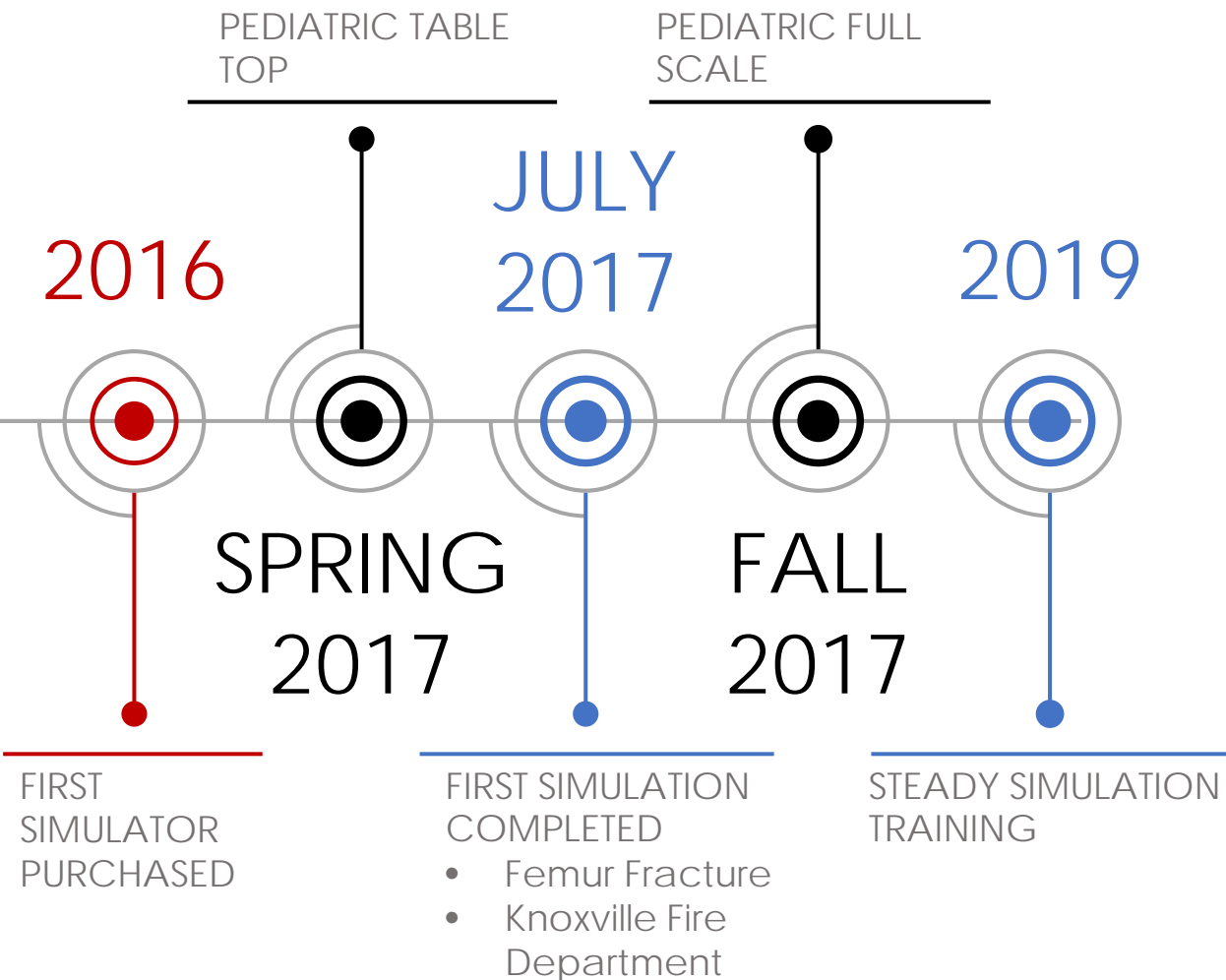




# Pediatric Simulation Timeline



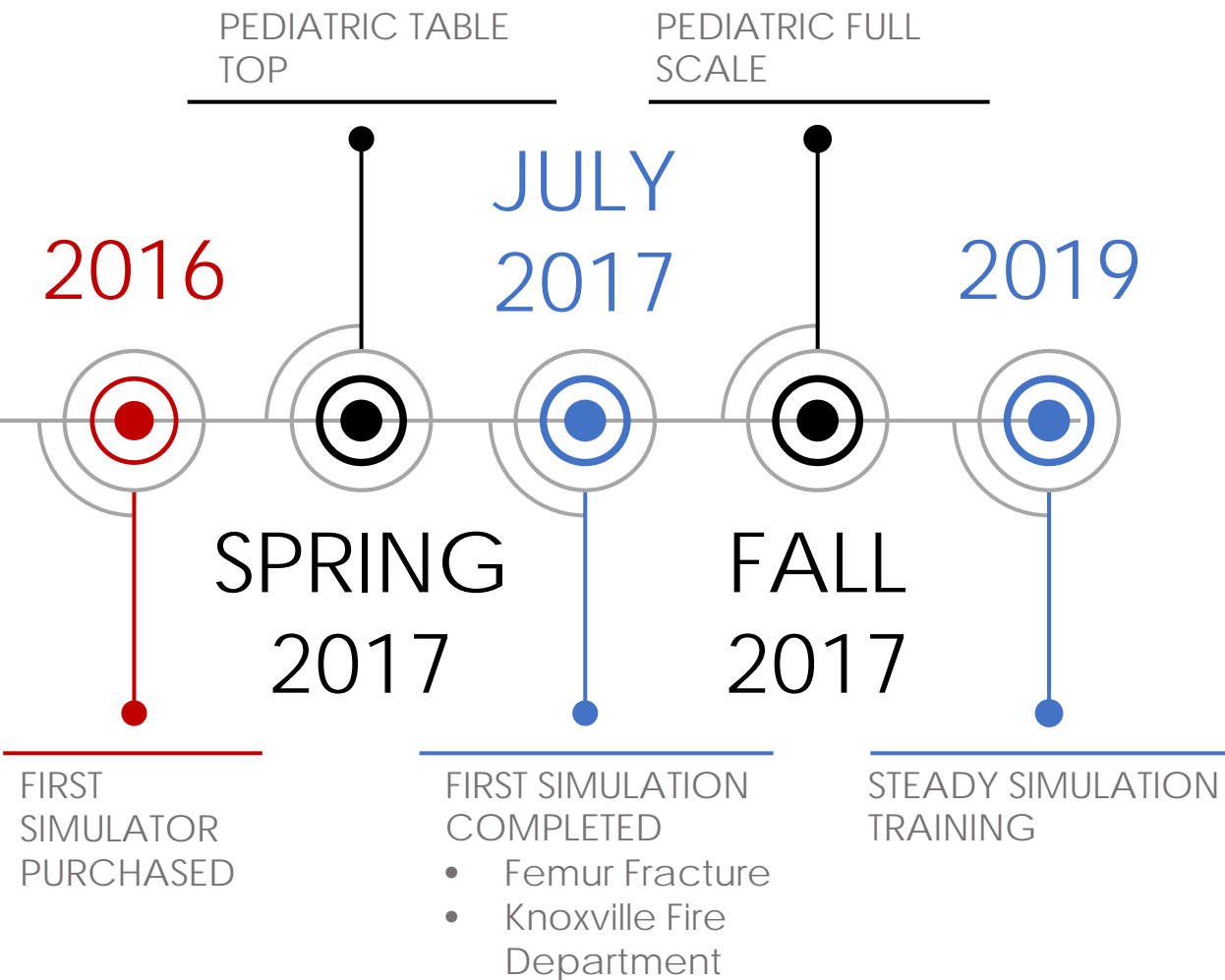
# Pediatric Simulation Timeline



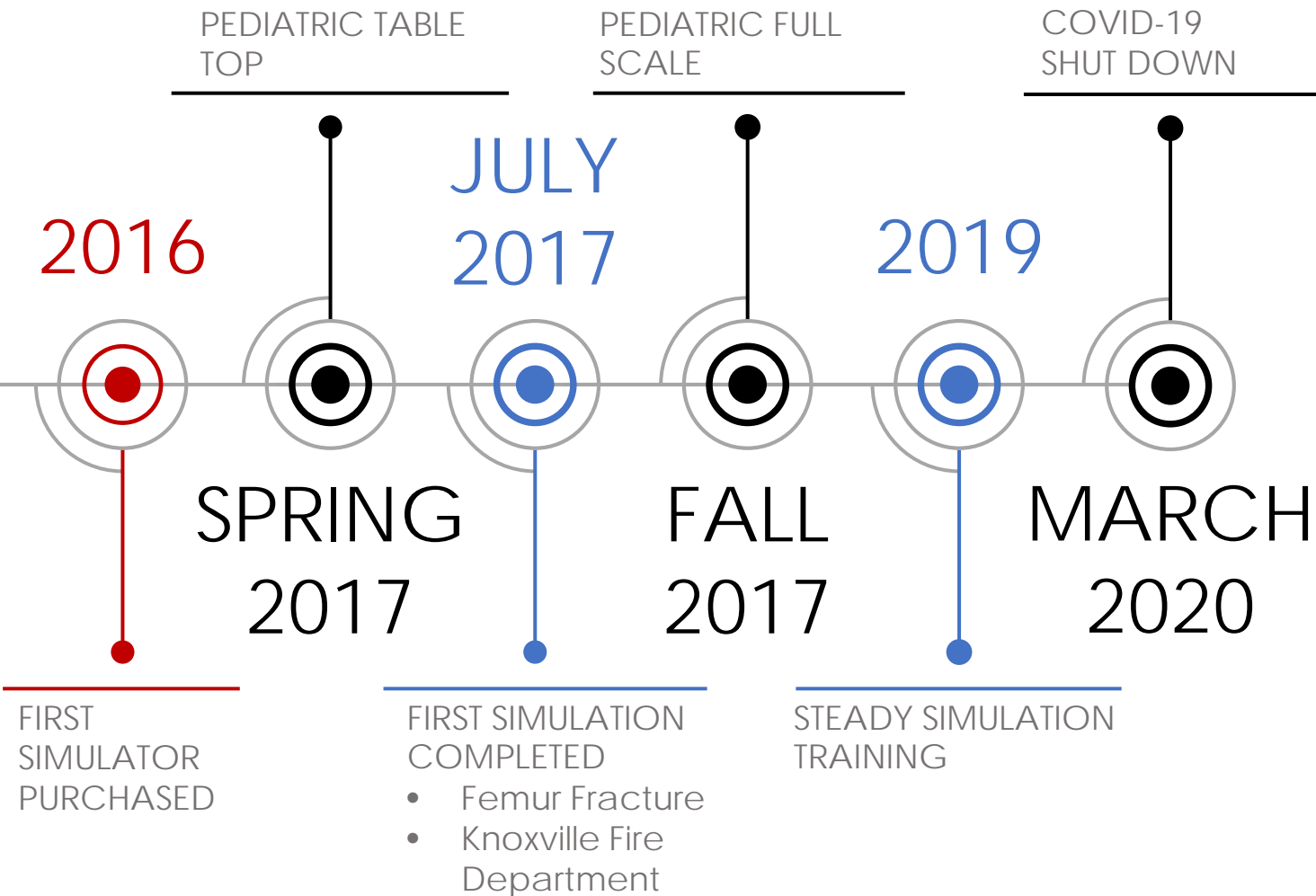
## 2019 Training Numbers

- 89 Simulations
  - Cardiac Arrest
  - Seizures
  - Drowning
  - Sepsis
- 505 Providers Trained
- 872 Providers Total (including lectures)

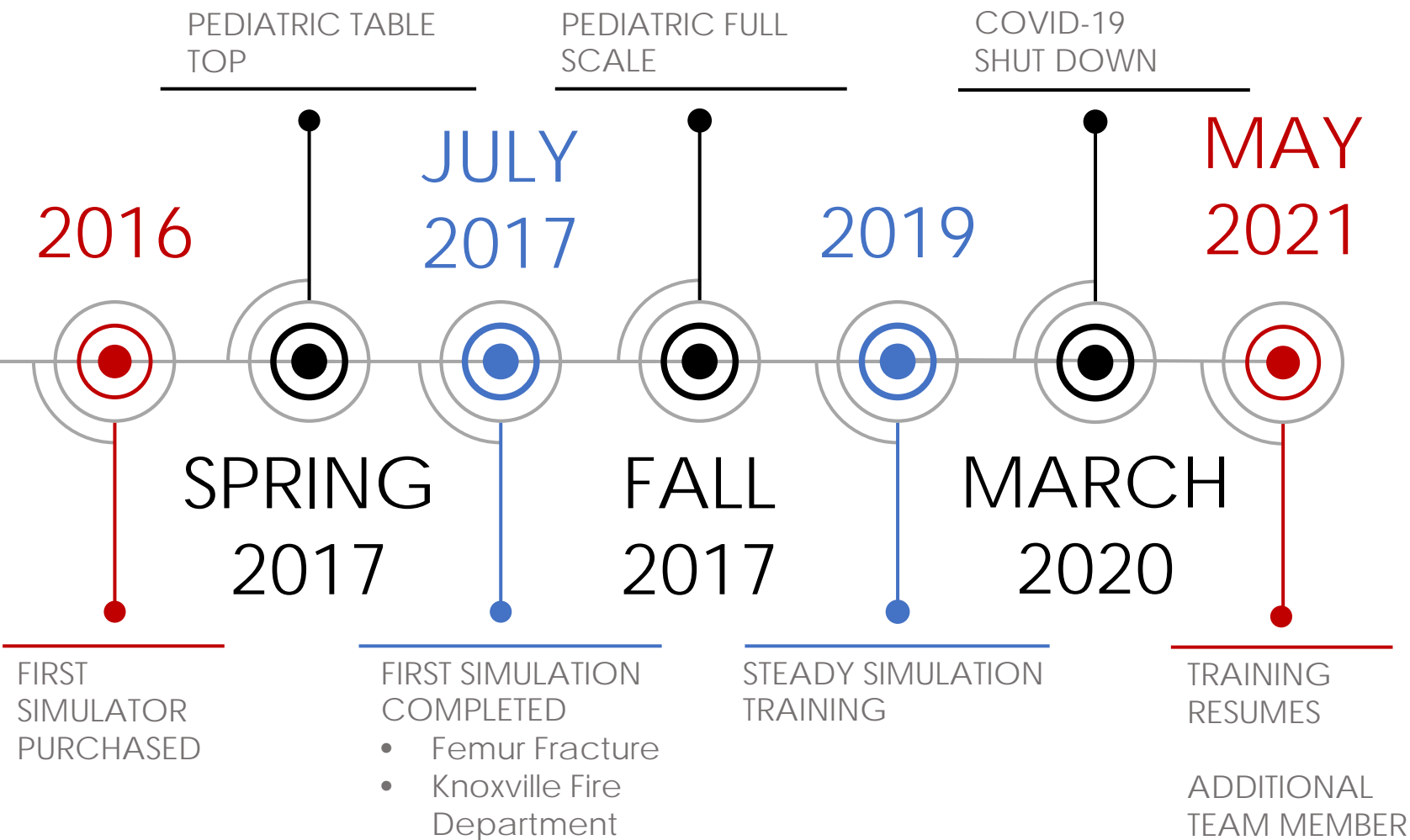
# Pediatric Simulation Timeline



# Pediatric Simulation Timeline



# Pediatric Simulation Timeline

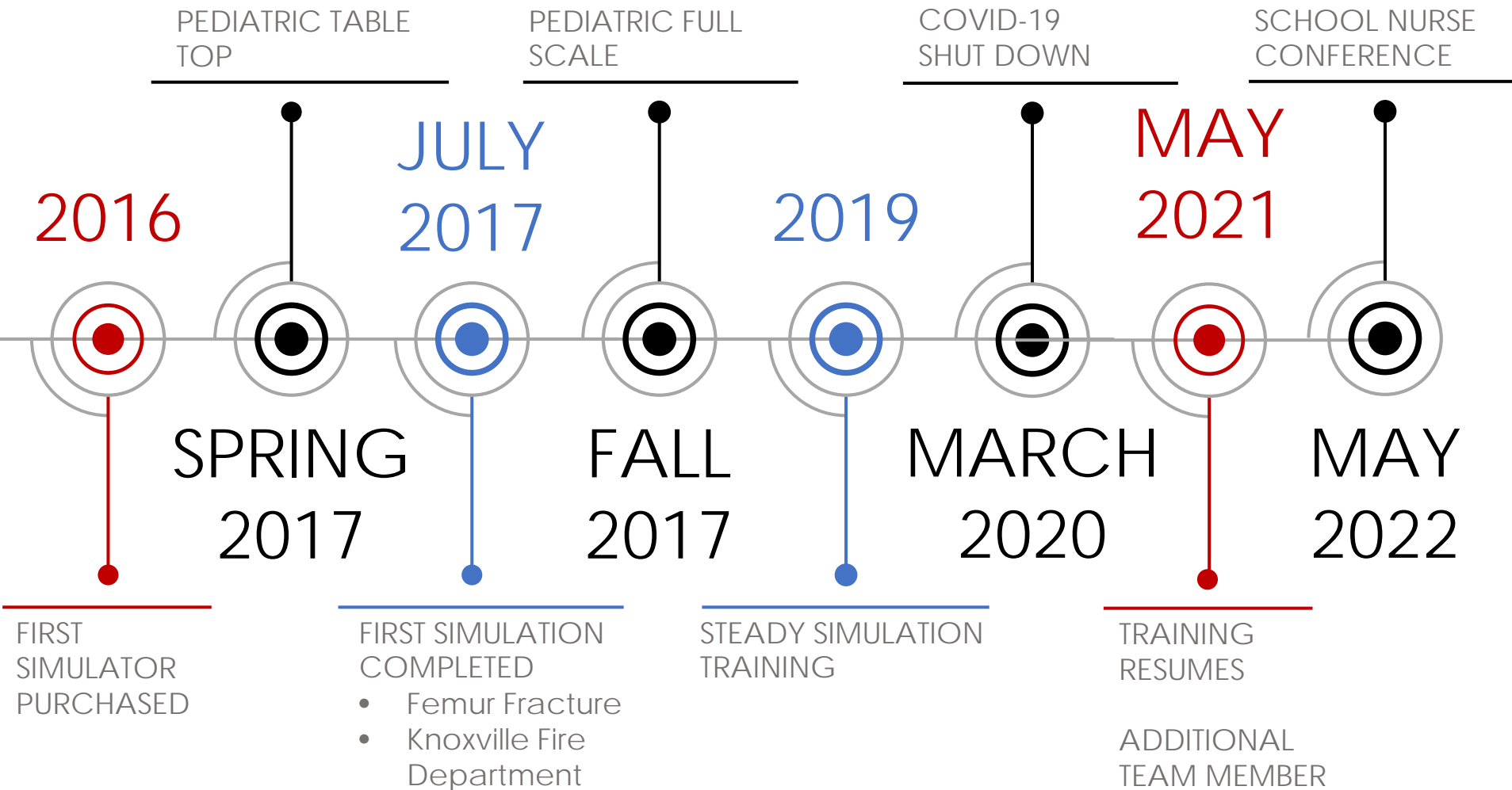


## Representation Matters

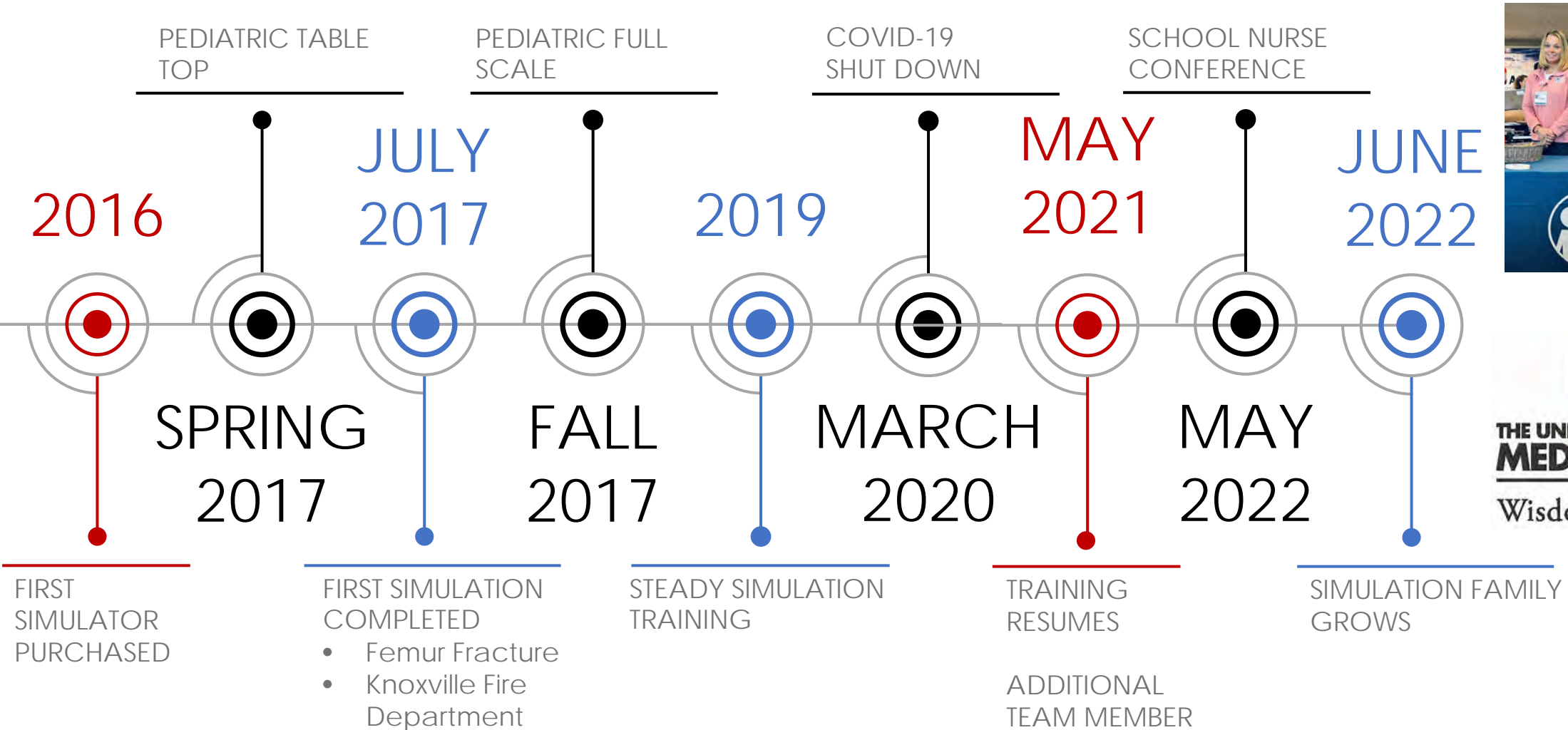
- Trauma presentation
- Perfusion assessment
- Skin anomalies (i.e. rash)



# Pediatric Simulation Timeline

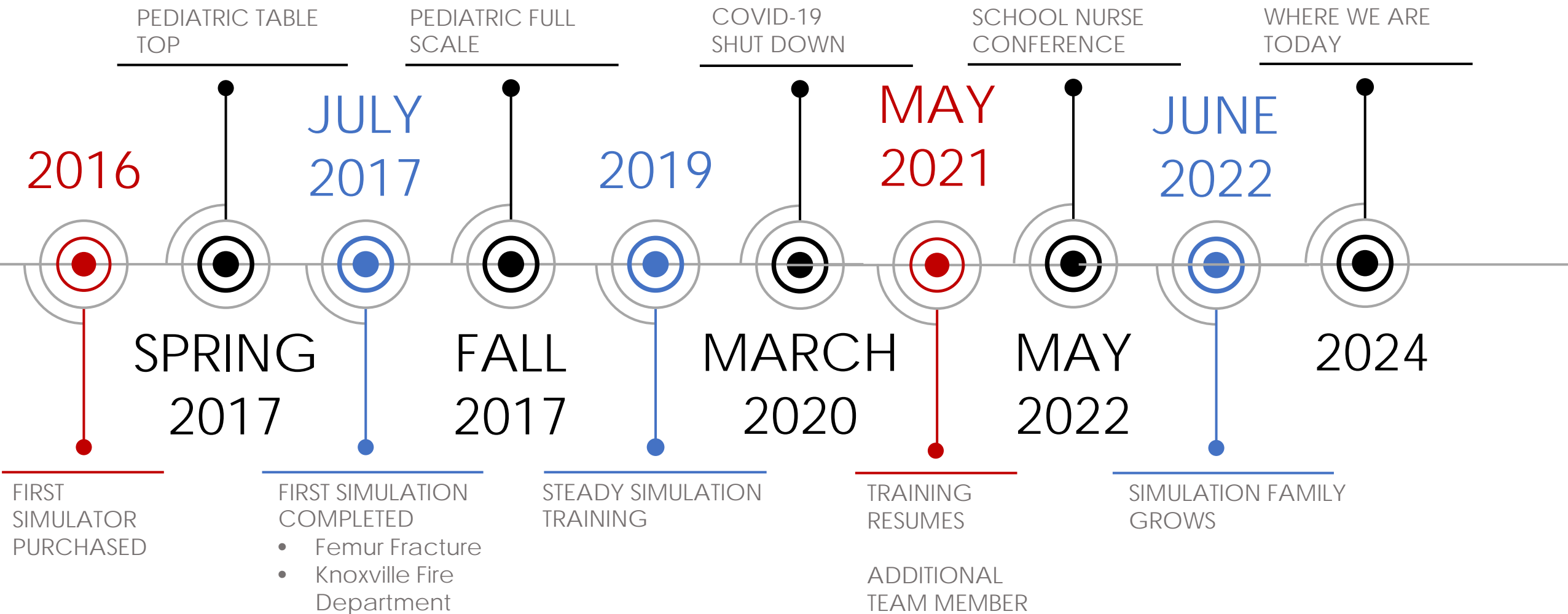


# Pediatric Simulation Timeline





# Pediatric Simulation Timeline



# Where We Are Today



#NHCPC24



# Where We Are Today



#NHCPC24





# 2023 Training Numbers

- 180 Simulations
  - Abusive Head Trauma
  - DKA
  - Ventilator Training
  - Airway Management
  - Vital Signs
- 180 Simulations
  - 728 EMS
  - 70 Nurses

#NHCPC24



# Coming Soon...



# Coming Soon...



#NHCPC24



# Coming Soon...

**AMBULANCE RECEIPT**  
Destination: \_\_\_\_\_ Via: \_\_\_\_\_ Time: \_\_\_\_\_  
Tag Number: 4869  
EA1004869  
WRISTBAND  
EMT  
Personal Property Receipt

**TRANSPORTATION RECEIPT**  
Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
First: \_\_\_\_\_ Last: \_\_\_\_\_  
Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Religious Pref: \_\_\_\_\_  
Blat Injury: \_\_\_\_\_ AFN: \_\_\_\_\_  
Dermatome: \_\_\_\_\_ Contusion: \_\_\_\_\_ Abrasion: \_\_\_\_\_ Puncture/abrasion: \_\_\_\_\_ Burn: \_\_\_\_\_ Tenderness: \_\_\_\_\_ Laceration: \_\_\_\_\_ Swelling: \_\_\_\_\_ Other: \_\_\_\_\_

**TRIAGE TAG**  
EA1004869  
GCS Tx In: E: \_\_\_\_\_ M: \_\_\_\_\_ V: \_\_\_\_\_ Time: \_\_\_\_\_  
GCS Tx Out: E: \_\_\_\_\_ M: \_\_\_\_\_ V: \_\_\_\_\_ Time: \_\_\_\_\_  
Known Allergies: \_\_\_\_\_  
Treatment Administered/Comments: \_\_\_\_\_  
Time: \_\_\_\_\_ Drug Solution: \_\_\_\_\_ Dose: \_\_\_\_\_

**START triage system**  
Initial Ribbon Triage  
Risk to walk on command:  MINOR  
No respirations after head tilt:  DECEASED  
Respirations after head tilt:  IMMEDIATE  
Respirations over 12 per minute:  IMMEDIATE  
Pupils - equal/pupil absent (no eye opening):  IMMEDIATE  
Meds - stable - unable to follow simple commands:  IMMEDIATE  
All Others:  DELAYED

**MORGUE**  
Pulseless/ Non-Breathing  
Pulseless/ Non-Breathing

**IMMEDIATE**  
Life Threatening Injury  
Life Threatening Injury

**DELAYED**  
Serious Non Life Threatening  
Serious Non Life Threatening

**MINOR**  
Walking Wounded  
Walking Wounded

**CONTAMINATED**

**Triage Tag Receipt Holder**  
Ambulance Treatment Agency: \_\_\_\_\_ Ambulance: \_\_\_\_\_ Page: \_\_\_\_\_  
First Name: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_ DOB: \_\_\_\_\_ Time: \_\_\_\_\_



#NHCP24



# National Benchmarks - Hospitals



## 1.1 Pediatric Readiness Recognition Programs

**Program Goal:** To increase the percent of hospitals with an ED recognized through a statewide, territorial, or regional standardized program that are able to stabilize and/or manage pediatric emergencies.



## 1.2 Pediatric Emergency Care Coordinators

**Program Goal:** To increase the percent of hospitals with an ED that have a designated nurse, physician, or both who coordinates pediatric emergency care.



## 1.3 Weigh and Record Children's Weight in Kilograms

**Program Goal:** To increase the percent of hospitals with an ED that weigh and record children in kilograms.



## 1.4 Disaster Plan Resources

**Program Goal:** To increase the percent of hospitals with an ED that have a disaster plan that address the needs of children.



#NHCP24





# National Benchmarks - Prehospital



## 2.1 Pediatric Readiness Recognition

**Program Goal:** To increase the percent of prehospital EMS agencies recognized through a statewide, territorial, or regional standardized pediatric readiness program that can stabilize and/or manage pediatric emergencies.



## 2.2 Pediatric Emergency Care Coordinators

**Program Goal:** To increase the percent of prehospital EMS agencies in the state that have a designated individual(s) who coordinates pediatric emergency care.



## 2.3 Use of Pediatric-Specific Equipment

**Program Goal:** To increase the percent of prehospital EMS agencies in the state that have a process that requires prehospital practitioners to physically demonstrate the correct use of pediatric-specific equipment.



## 2.4 Disaster Plan Resources

**Program Goal:** To increase the percent of prehospital EMS agencies that have a disaster plan addressing the needs of children.



#NHCPC24



# Stroke & Trauma Simulation Project

Overview



#NHCPC24



Katie Hall  
BA, Critical Care Paramedic,  
IC, NRP  
Stroke Coordinator

(865) 305-3792  
khal1@utmck.edu



#NHCPC24



# Stroke & Trauma Simulation

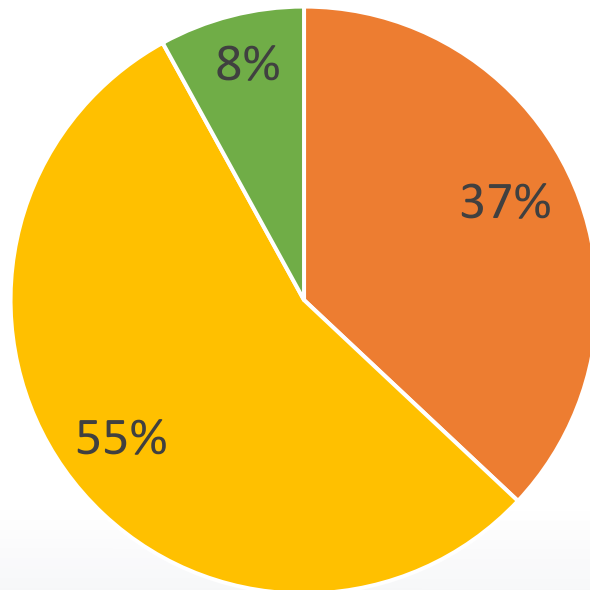


#NHCP24

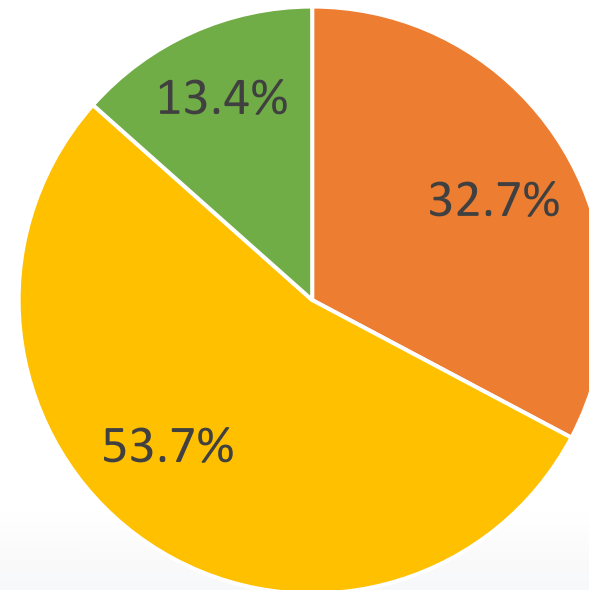


# Stroke & Trauma Simulation

Trauma



Stroke



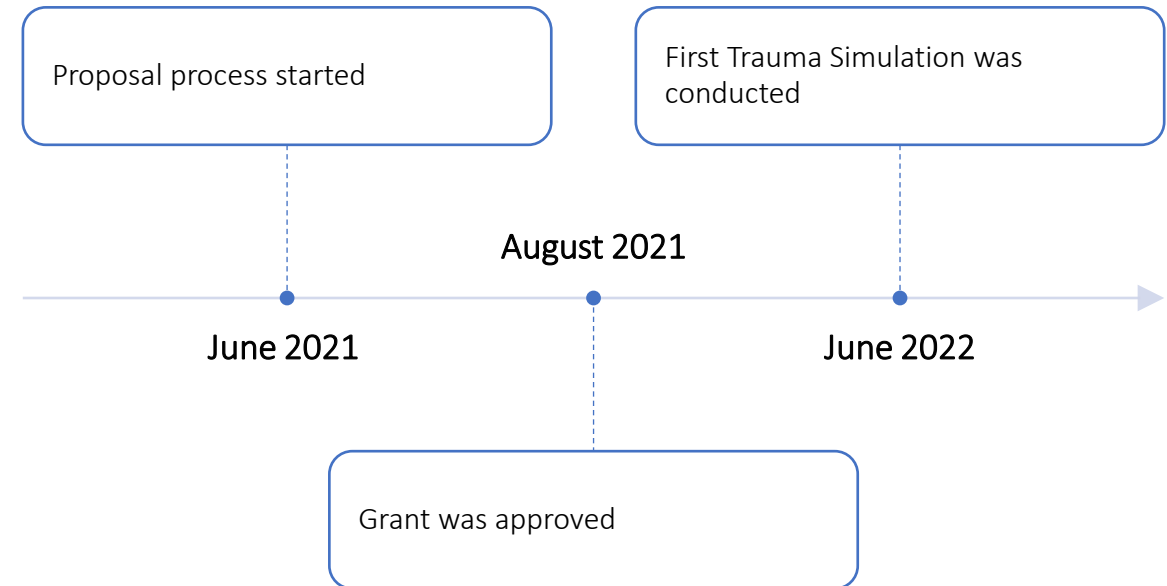
- Referring Hospital
- Ambulance/Air Medical
- Private Vehicle



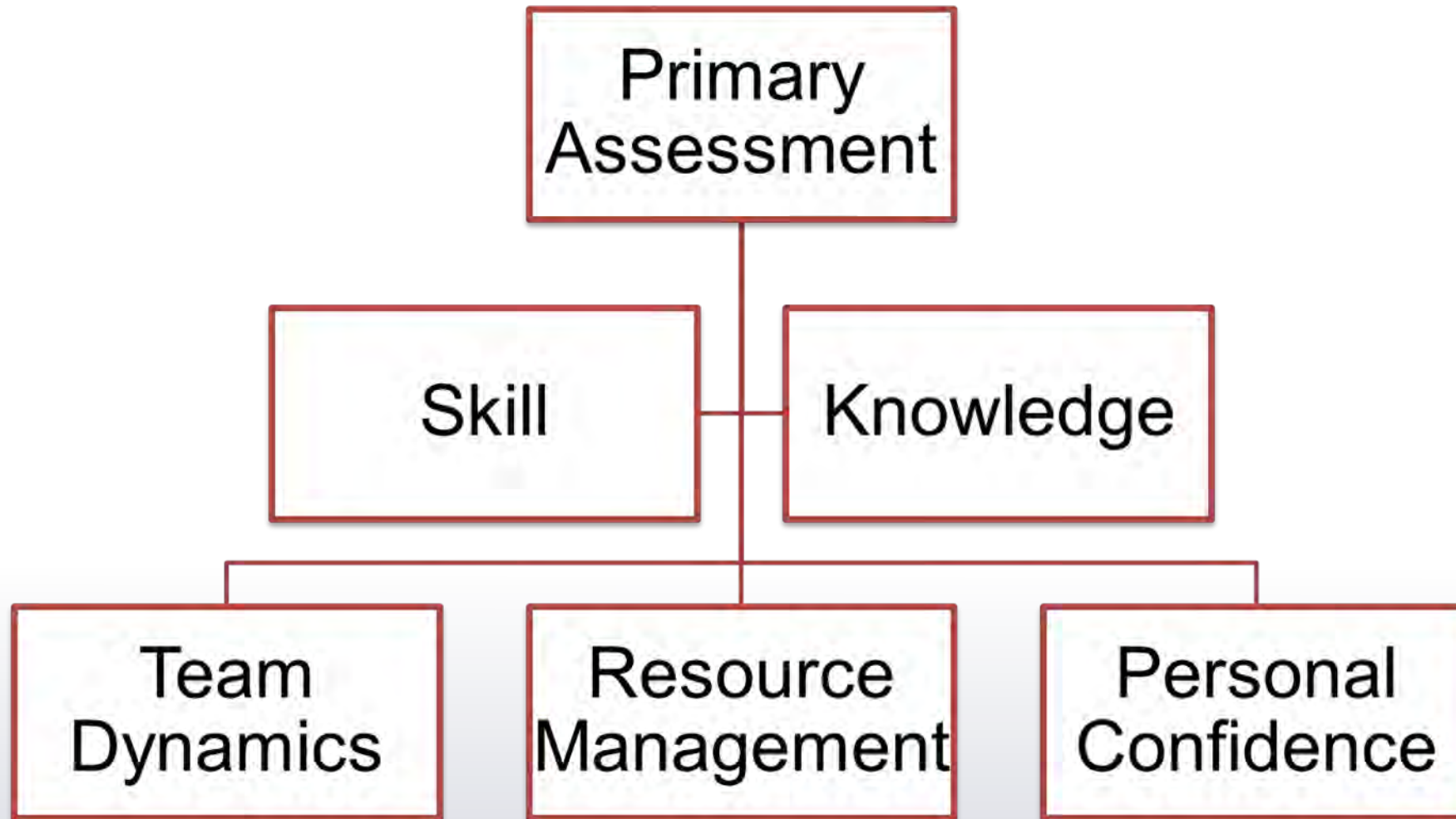
# Stroke & Trauma Simulation



Our grant allowed us to receive 2 adult manikins, one of which is specially designed for trauma, and we received one pediatric manikin.



# Stroke & Trauma Simulation



# Stroke & Trauma – Incorporating Challenges

## EMS

- Scene Safety
- Weather
- Geography
- Bystanders
- MCI
- Availability of ambulances
- Distance

## Referring Hospitals

- Staffing
  - Shortages
  - Level of comfort
- Availability of equipment
  - Blood
  - Imaging / Read Times
  - TNK/TPA
  - Thrombectomy
- Transfer Capabilities
  - Location of helipad
  - EMS availability





# Stroke & Trauma Simulation



#NHCPC24



# 2022 Simulations

13 Simulations



Safety  
Spooktacular

189 Providers  
Educated (not  
including lectures)

#NHCPC24



# 2023 Simulations

23 Simulations



Simulation  
Saturday

412 Providers  
Educated (not  
including lectures)

#NHCPC24





#NHCPC24



# Simulation Saturday



#NHCPC24



# Simulation Saturday – Monroe County



#NHCPC24



# Simulation Saturday – WSCC



#NHCPC24



# Future Endeavors

- Pediatric and Trauma Simulations will continue across our region this year and into the coming years.
- UT Brain and Spine is utilizing the adult simulators to teach stroke education to EMS, Fire, Rescue, and Emergency Medicine Staff.
- At the end of 2024, UT Trauma Services and UT Regional Perinatal plan to hold simulations together to address obstetric trauma patients and imminent deliveries resulting from traumatic incidents.
- We plan to hold an EMS, Fire, Rescue Simulation Saturday in spring of 2025 with Roane State Community College.
- We plan to hold a nursing Simulation Saturday in the Fall of 2025 with Carson Newman University.





# QUESTIONS?

**KATIE HALL**  
STROKE COORDINATOR

**KHALL1@UTMCK.EDU**  
**(865) 305-3792**

**OSEANA BRATTON**  
OUTREACH & TRAUMA  
PROGRAM MANAGER

**OMB RATTON@ETCH.COM**  
**865-541-8523**



**KETCOALITION.ORG**