

A Pediatric MCI: Transitions from Triage to Treating the Patient

Maureen Luetje, DO; Kellie Snooks, DO, MPH



Objectives

- **Review the details of the scene at the Waukesha Christmas Parade Event**
- **Discuss the collaboration between EMS & Hospital Systems on the day of the MCI**
- **Review coordination of care of pediatric patients treated at Children's Wisconsin in the ED & ICU**
- **Discuss lessons learned from our incident.**

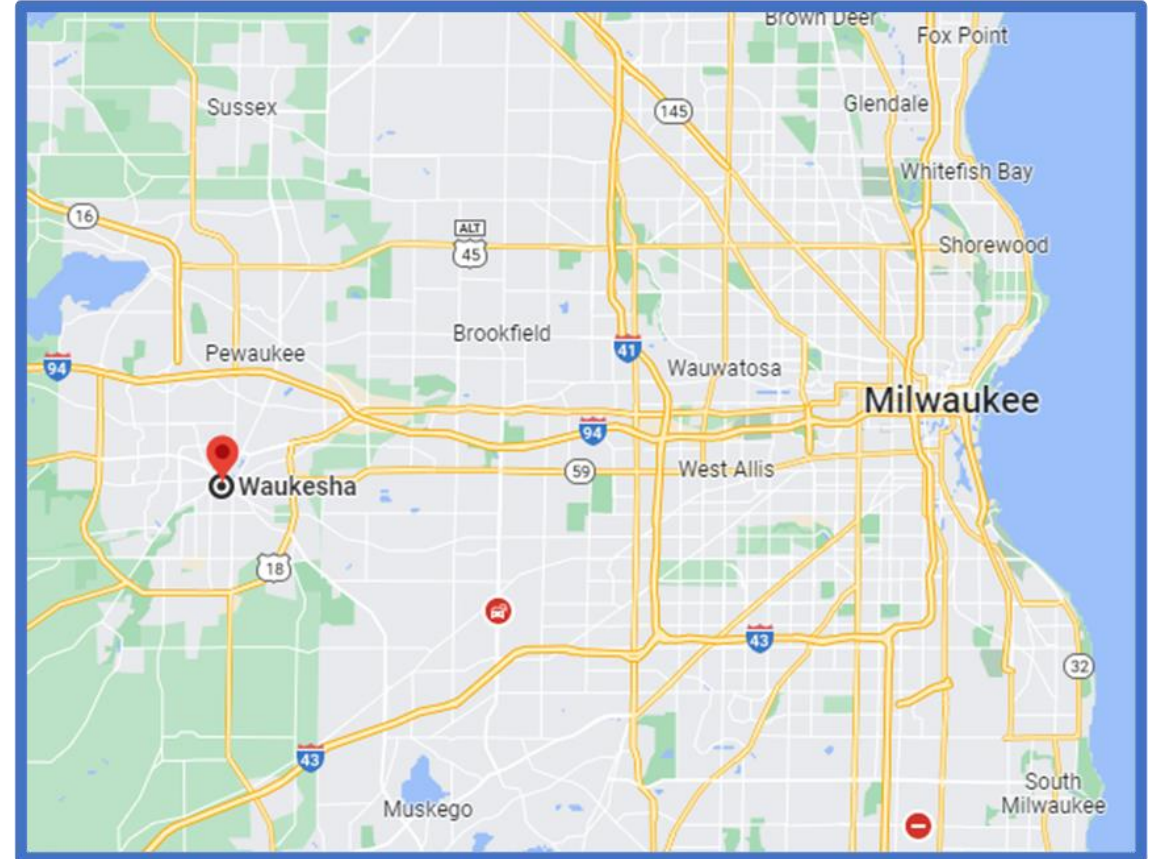
- We have no financial disclosures.

About Us

- Dr. Maureen Luetje
 - Pediatric Emergency Medicine
- Dr. Kellie Snooks
 - Pediatric Critical Care

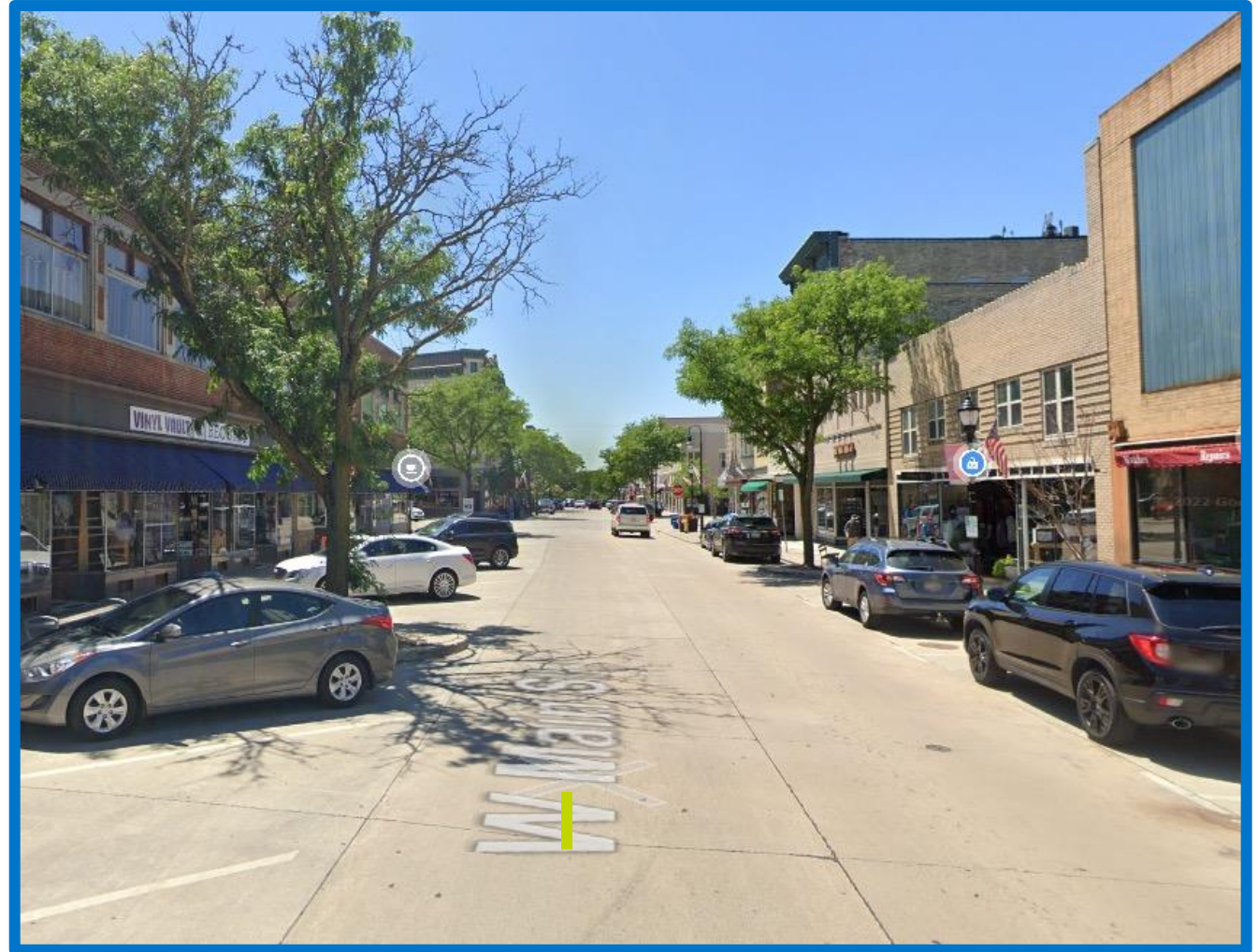
58th Annual Waukesha Christmas Parade 2021

- Waukesha, WI
 - 18 miles west of Milwaukee
 - Population 72,000
- Parade Start Time 1600
- Sunset: 1636
- Temperatures: Low 40's



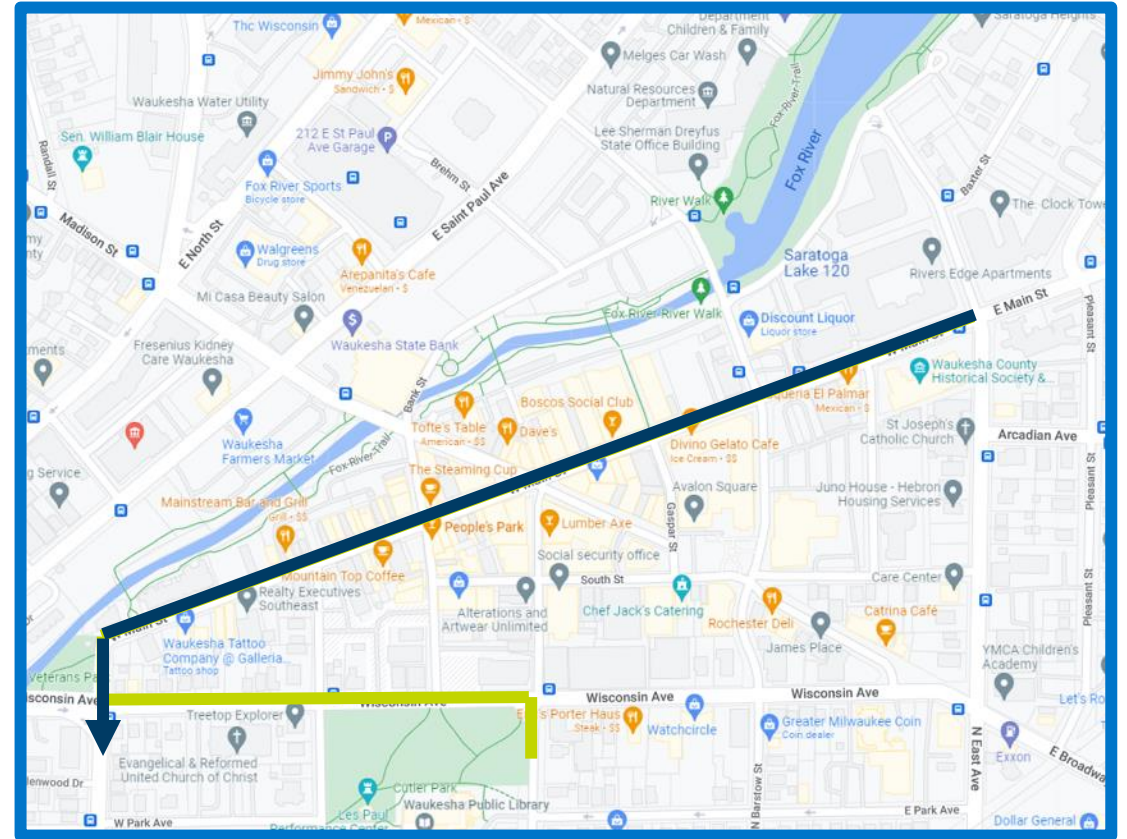
Parade Route

- Parade route just under 1 mile
- Entire route is closed to traffic with barriers
- Fairly open road to start
- Road narrows considerably on entering downtown

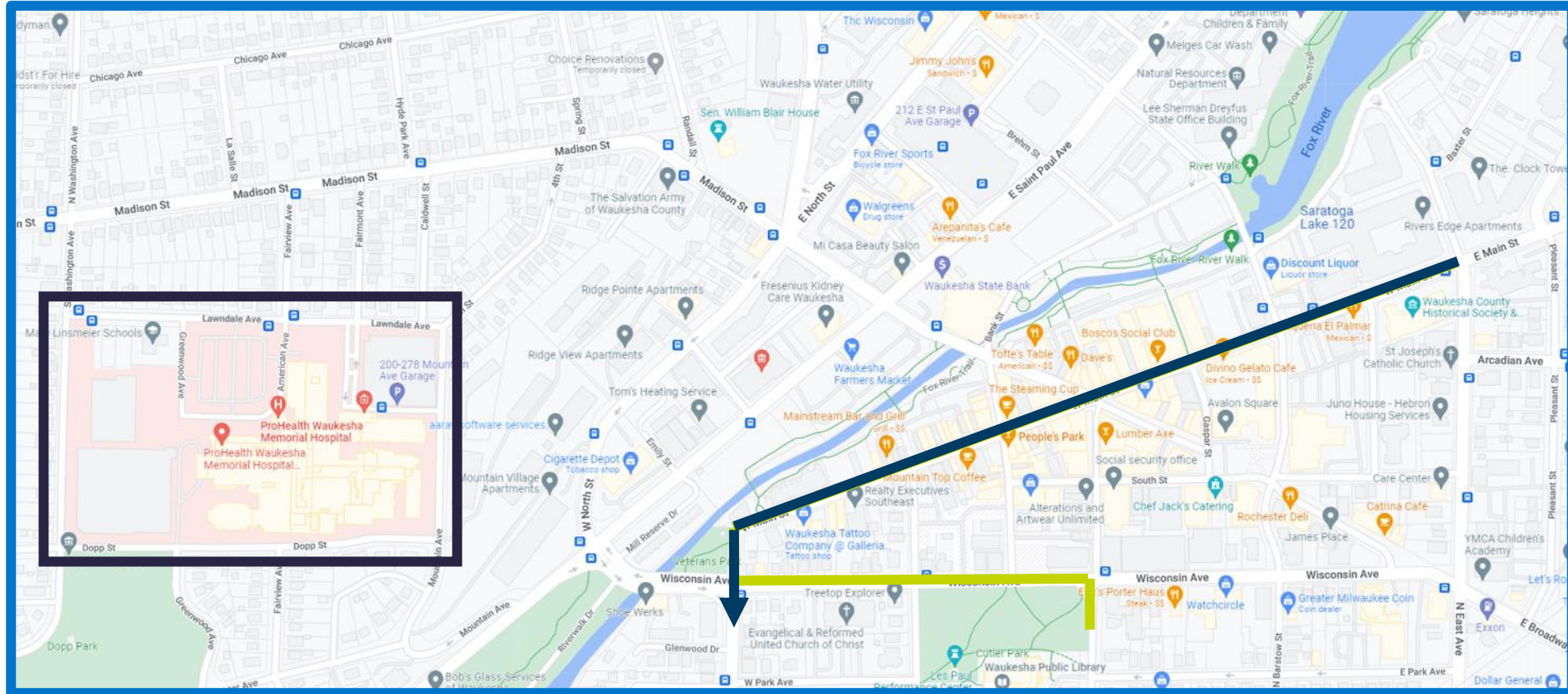


Incident

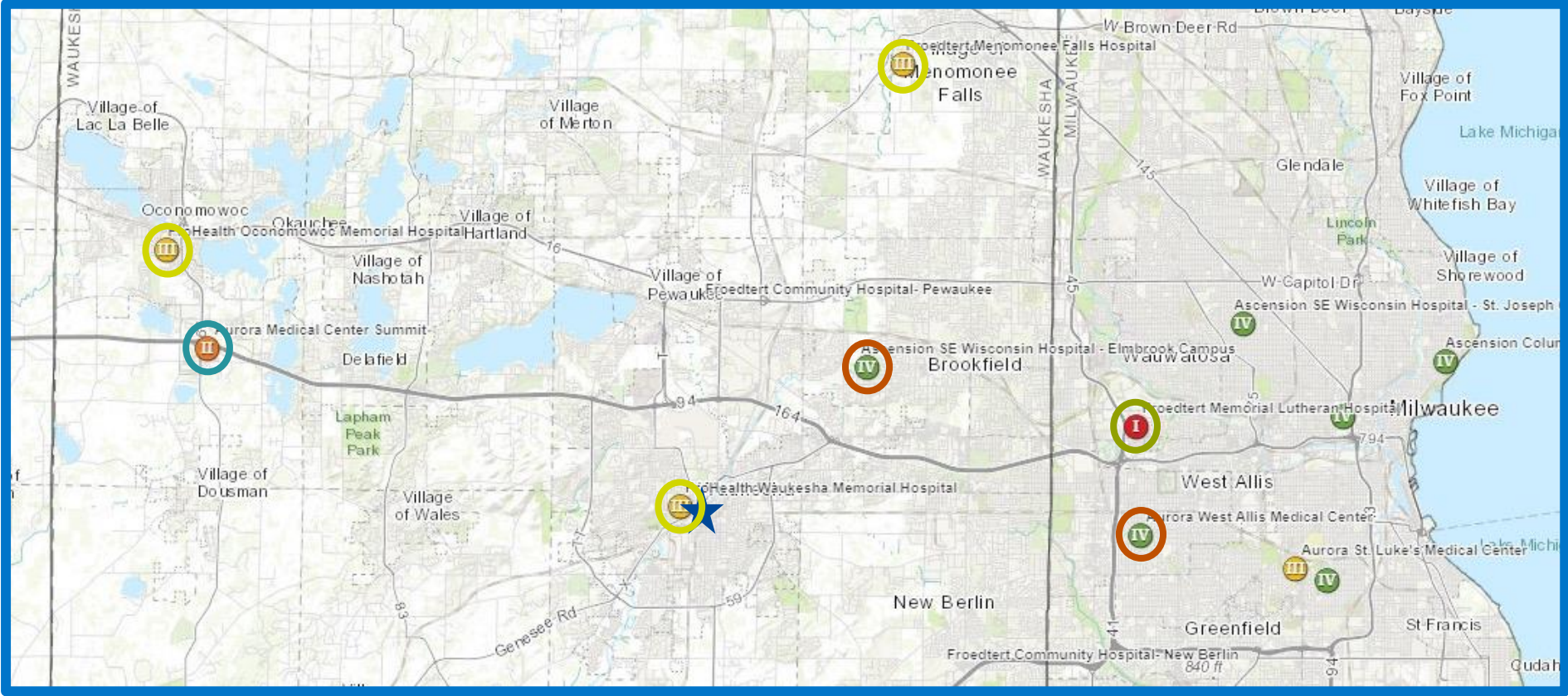
- At 4:39 pm, a red SUV:
 - Breached barricades at the start of the parade route
 - Speed: approximately 40 mph
 - Followed Main Street for 0.6 miles before exiting



Receiving Hospitals



Receiving Hospitals



Field Triage -Community Resources at Parade



Off-Duty Fire/EMS Personnel

City of Waukesha and surrounding
community personnel



Hospital Staff

Nurses, technicians, and support staff

EMS – MCI Field Triage

- Vague Reports of a Disturbance not specifically at parade
 - Man with knife
 - Shots fired
- Minutes later: Police radio- “many people down likely dead.”
- Official EMS dispatch was equally vague- "requesting all available units"



Level 1 Staging
Fire/EMS

Vehicle Enters Parade

City of Waukesha
Fire Station #1

Vehicle Exits Parade

1

2

4

CCP

3

Savanna Hofstetter, APNP
ProHealth Waukesha
Memorial Hospital

ProHealth Waukesha
Memorial Hospital...

Wisconsin Ave

Wisconsin Ave

Wisconsin Ave

Wisconsin Ave

W Park Ave

W Park Ave

E Park Ave

Transit

Liebl Remodeling

Mobil

Dollar General
Dollar store

Greater Milwaukee Coin
Join dealer

Eric's Porter Haus
Steak · \$\$

Watchcircle

Les Paul
Performance Center

Cutler Park
Waukesha Public Library

Evangelical & Reformed
United Church of Christ

Glenwood Dr

Shoe Werks

Bob's Glass Services
of Waukesha

W Ave

Motor Ave

Fairview Ave

Greenwood Ave

Dopp St

Greenwood Ave

Fairview Ave

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EMS– MCI Field Triage

Large area of casualties

- Was this an MCI or were all the injured in front of me?
- Crews split up
- Triage equipment not with everyone who was doing triage
- Took ~15 min before appreciated full scope of incident



EMS– MCI Field Triage

- Psychological Challenge
 - Active Shooter?
 - Pleading families (sick, not as sick, scared, dead)
- City Went Dark
 - Local area power outage in this section of the city
 - Unrelated to tragedy, or was it?
 - Street with multiple injured is now completely dark
- In the mid 30's (F)
 - Lots of layers of clothing
 - Injuries not obvious, difficult to find in the dark and cold

EMS– MCI Field Triage

Mutual Aid Activated

- Law Enforcement
 - 81 off-duty police personnel reported to assist on their own
 - 189 officers brought in through SMART response
- Fire and EMS
 - 23 units from 15 surrounding departments to render aid and transport victims to area hospitals



EMS– MCI Field Triage

- First EMS unit
 - Transported 4 Children, 1 Adult to Waukesha Memorial
 - No ambulance report given
 - 1 min drive, line busy, casualties already at ED
- The Transportation Officer assumed Waukesha Memorial would be overwhelmed and excluded it as a destination for those with scene triage

EMS– MCI Field Triage

- Triage level was used extensively in prioritizing care and transport
- Every patient was triaged or transported within 50 minutes

Public and Law Enforcement – MCI Field Triage

- Police officers: put multiple patients and their family into police car and transported
 - Return and repeat
 - Sickest patients overall
- Public brought multiple patients in single cars to ED
- RNs and Off Duty EMS personnel jumped into random ambulances to assist, and continued to help in ED



EMS– MCI Field Triage

*** The most seriously injured patients were the first to be seen at Waukesha Memorial Hospital***

The 2nd MCI – ProHealth Care ED

- ED and Hospital are full of COVID patients, many boarders, active ED patients
- First phone call from RN at scene 1642
 - 4 min later, First arriving patient, unconscious in police officer arms, standing in arena



Tasks in 4 minutes

Nursing:

- Notify Supervisors to enact MCI plan
 - Call in Off Duty Staff, Set up Command Post, Move patients from high acuity locations, get in house support staff moving to the ED
- Huddle with staff in ED for assignments and next 15 min plan
- Coordinate with registration
- Locate MCI equipment
- Set up Red, Yellow, Green, and Black receiving areas
- Constantly talk on the phone to other managers
- Finish current patient care if possible
- Coordinate with Security
- Set up triage

Tasks in 4 Minutes

Physicians and APPs: (4 Physicians and 2 APPs)

- Change of shift – ask leaving team to stay
- Write as many discharges and admit orders as possible
- Write any needed orders on current patients
- Review anticipated patient assignments and roles
 - Assign Job Action Sheets/ Roles / Responsibilities / Reporting Structure



First 15 Minutes

- 11 Critically Ill Pediatric Patients Arrived in the First 13 minutes
- 10 of 11 had major head and facial injuries
 - Many required emergent airway management
- Dozens of patients need to be triaged
 - Rudimentary triage of yellow/green to one area
 - More critical patients to other area
 - All patients went through one entrance, due to a hospital wide lock-down for the "active shooter"

First 15 Minutes

- First patient : Child, not breathing, faint pulse (black/dead)
- All pediatric patients initially
- All Red/Immediate, except one Yellow/Delay
- One adult : triage coded Black/Dead - Asystole

Gap Before Second Wave

- Evaluate Life Threats in Red/Immediate area
 - In-house OB Anesthesiologist came to ED
 - “assess everyone’s airway”
 - Intubated multiple patients who did not have an ED provider at bedside
 - ED pharmacist ordered bulk sedatives and pain meds
 - Moved room to room with anesthesia and providers
- All initial patients had immediate life threats stabilized

Second Wave and Extra Help

- Call system for staff support: “Many Children Dying Respond Now”
 - Dramatic, but not informative
- Staff forget annual MCI training
 - MCI, “Respond to Staging at _____. Enter via door _____. This is not a drill.”
- Colleagues called into the ED and asked “how are things going?”



PROHEALTH CARE



Children's
Wisconsin



Second Wave and Extra Help

- APPs arrived from home
 - Re-triage everyone in Yellow/Delay and Green/Minor
 - Write orders and stabilize

"What was lacking in organization, we made up for in sheer volume of providers and staff"



CT – Secondary ED Triage

- Back up ED physicians arrive- critical patients are all lining up for CT scans
 - Secondary triage/reassessment in the CT hallway
- Radiologists and Neurosurgeon all in CT control room, reading live images.
- Their task is to answer 2 questions:
 1. OR Now or OR Later or No OR
 2. Transfer Now or Later or Re-evaluate with ED disposition



PROHEALTH CARE



Children's
Wisconsin



Summary

- 34 Patients Received at WMH in 56 minutes
 - 23 Pediatric patients
 - 1 to OR at WMH and admitted to floor
 - 11 Adult patients
 - 4 Admitted to WMH
 - 1 Deceased
- 11 Critical Patients Transferred to CW





Children's Wisconsin

- Freestanding, 298-bed pediatric acute care hospital located in Wauwatosa, Wisconsin (Milwaukee)
- Level 1 Pediatric Trauma Center

CW Emergency Department

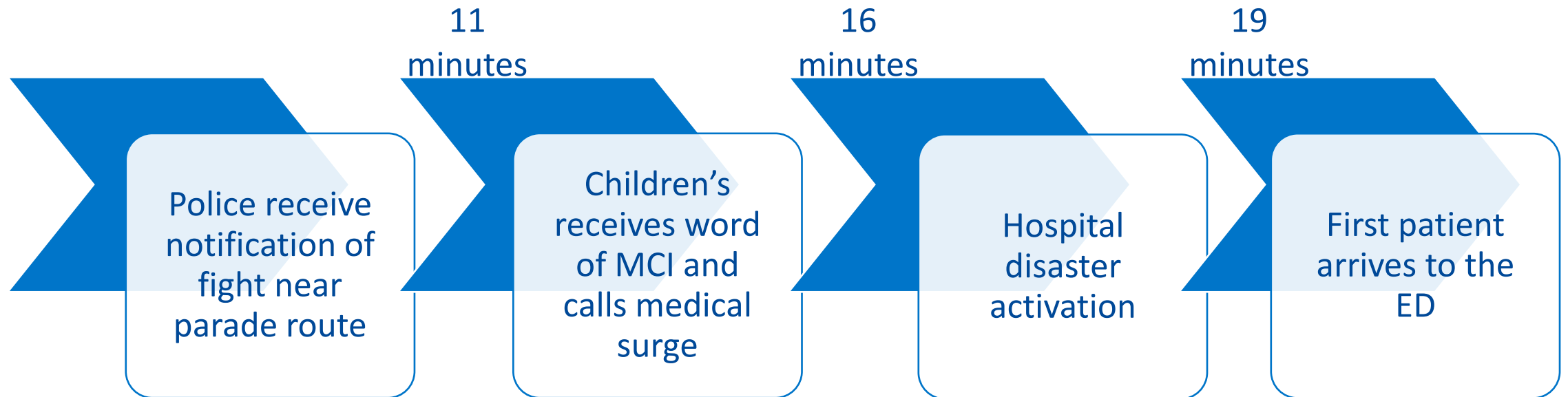
- 36-bed, pediatric ED:
 - 2 trauma rooms
 - 7 ALS rooms
 - 13 acute care rooms
 - 14 clinical exam rooms



Children's Wisconsin Weekend Staffing (ED)

- PEM Attending Physicians: 3-4
- PEM Fellow Physicians: 1
- APPs (Pediatric NPs, PAs): 3
- Residents (Peds, FP, EM): 5
- Nurses: 15-17
- HUCs/Communicators: 1-2

35 minutes: What do you do?



Where to focus your preparation on:

Resources

Communication

Triage

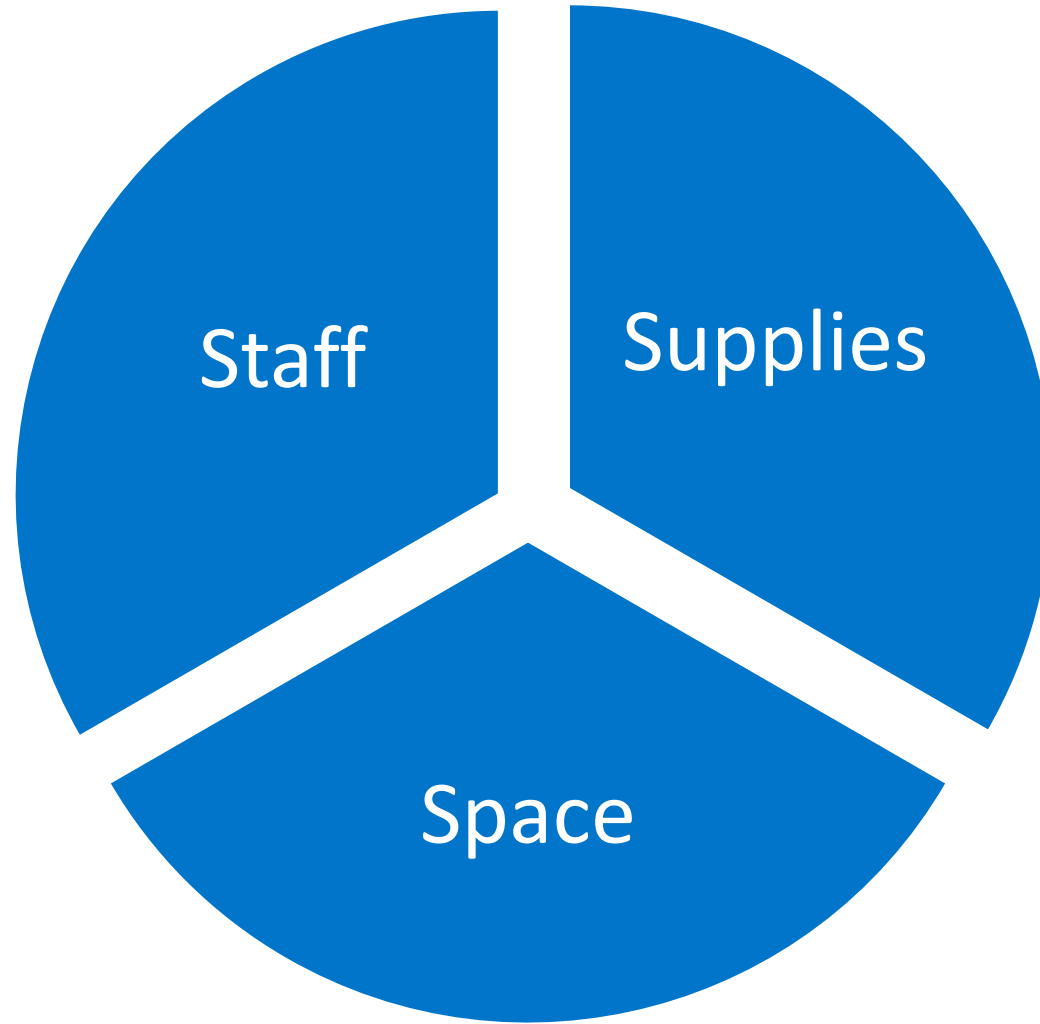
Where to focus your preparation on:

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Triage

Resources



Staff Response (ED)

- ED Physician Response
 - ED Surge/MCI Activated
 - 6 PEM attending and fellow physicians responded in person
 - all other physicians placed on stand-by, many called in for direct instructions

Staff Response (ED)

- ED Physician Response
 - ED Surge/MCI Activated
 - 6 PEM attending and fellow physicians responded in person
 - all other physicians placed on stand-by, many called in for direct instructions
- ED Nursing
 - Initial alert placed nurses on stand-by, second alert called all nurses within 15-minute radius to come in



Typical Evening ED Staffing

- PEM Attending Physicians: 4
- PEM Fellow Physicians: 1
- APPs (Pediatric NPs, PAs): 3
- Residents (Peds, FP, EM): 5
- Nurses: 17
- HUCs/Communicators: 1

Typical Evening ED Staffing + Surge Influx

• PEM Attending Physicians:	4	+ 6	= 10
• PEM Fellow Physicians:	1	+ 2	= 3
• APPs (Pediatric NPs, PAs):	3	+ 3	= 6
• Residents (Peds, FP, EM):	5	+ 3	= 8
• Nurses:	17	+13	= 30
• HUCs/Communicators:	1	+ 1	= 2

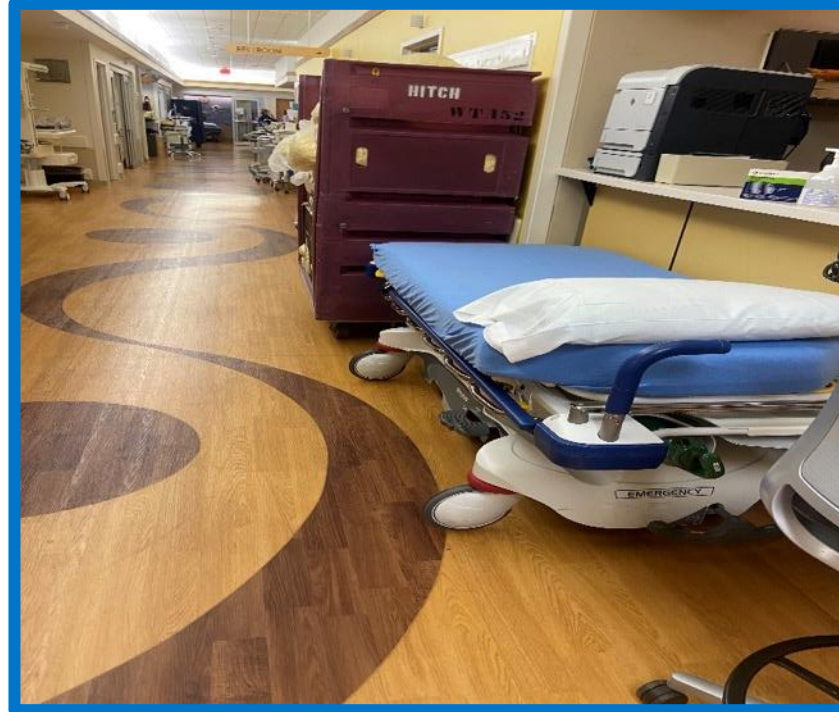
Preparation – Organize staff

- Establish a clear structure/chain-of-command (Hospital Incident Command System activation)
- Should be clear who is in charge of the ED
Everyone needs to know their assignment/role
- Preparation starts long before any incident occurs...
→ Disaster exercises and drills are important!



Supplies

- Consideration for increased need of:
 - Airway equipment
 - IV equipment
 - Extra beds



- Supply chain manager was looped in quickly to ensure availability of supplies/equipment
- Off-site storage access secured, if needed

Space

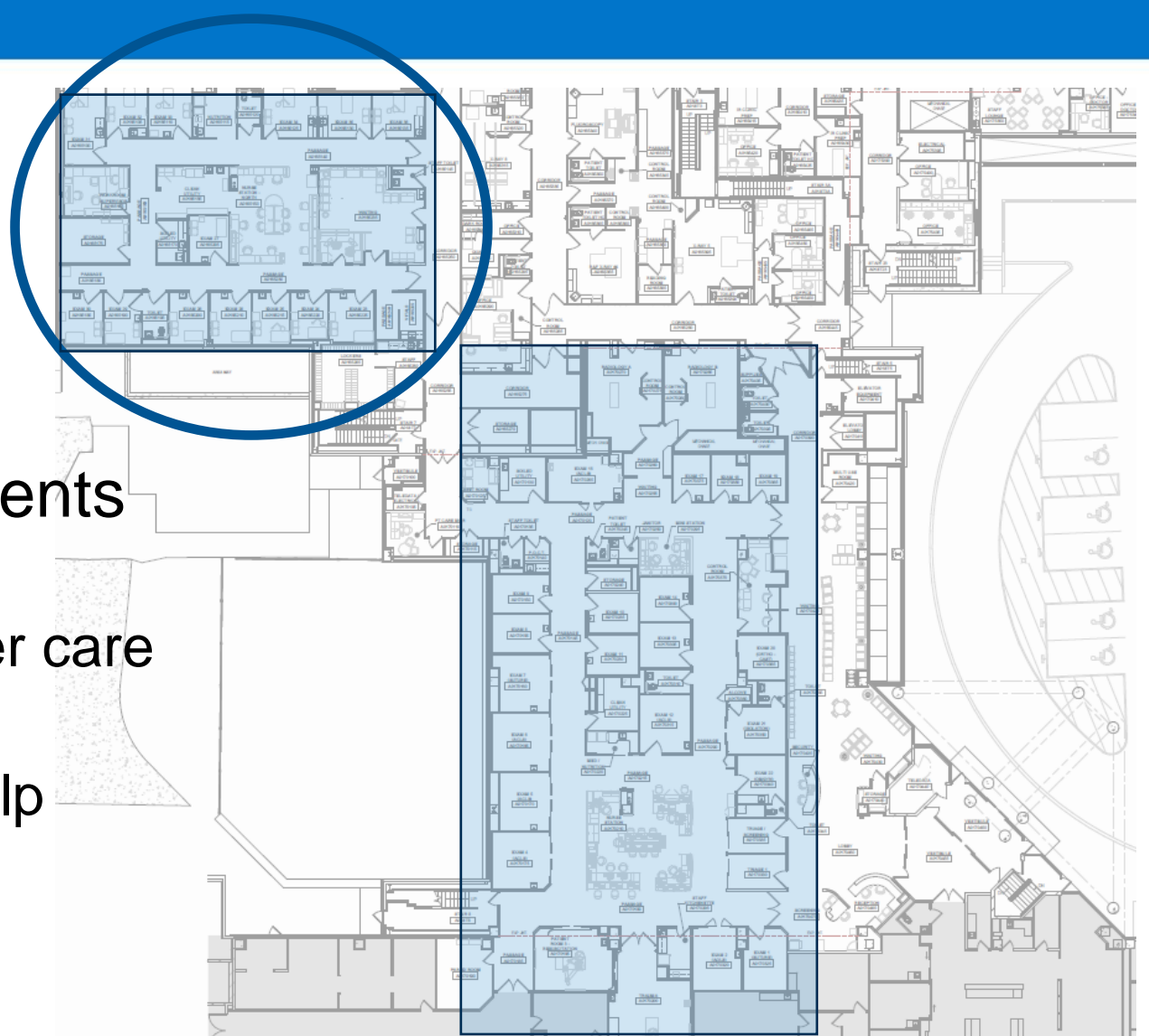
Reverse Triage

- A way to identify patients deemed safe for early discharge or expedited admission, to make room for incoming surge of patients
- Cleared out **9** ED rooms within 15 minutes

Space

Surge space

- Relocation of current ED patients to separate (gold) ED area
 - Hospitalist attendings took over care
 - ED APPs assisted
 - Pediatric residents came to help



Where to focus your preparation on:

Resources

Communication

Triage

Communication



OSH Direct Line



White Board



Mini-ED Teams



Expedited Admissions

Patient Transfer Process

- Transferring hospital/physician places a call to CW:
 - CW Referral Line
 - Direct ED phone main line
- Call received by HUC/Communicator
 - Patient and referring center information placed into EMR
- Call placed on hold until picked up by PEM physician
 - Verbal report regarding patient
 - Mode of transport determined
- Separate nurse referral phone call made with similar process



Alterations to Referral Process

- HUC/Communicator also 9-1-1 Dispatch Operator
 - She recognized that existing referral processes were insufficient for incoming patients
- CW identified one of the doctors to become the transport physician-
personal cell phone number was provided to Waukesha Memorial ED
doctors
 - All referral conversations occurred directly between providers
- Nursing phone calls eliminated all together

Direct Phone Line

Waukesha Memorial ED

- Disposition of patients with transfer plan
- Discuss patient management and resuscitation needs
- Priority of transfers

Children's Wisconsin ED

- Preparation of age/size with injuries and status
- Prepare appropriate sized equipment
- Alert specialists

White Board

- At entrance, an ED physician and registration representative:
 - Triage by ED physician
 - Quick registration using pre-made disaster names
 - Patient is given a disaster name, ID band and basic info obtained
 - White board served as master room/patient list

White Board

- Patient name
- Age
- Known Injuries
- Bed assignment
- Dispo: OR vs admit
- Imaging Priority

A whiteboard in a hospital setting, divided into columns for patient information. The columns are labeled: Triage color, Ems #, Arrival time, Rm #, Name, Injury cc, Medical team, RN, Imaging, Labs, meds, dispo, priority #, and Comments ID info. The board is currently blank.

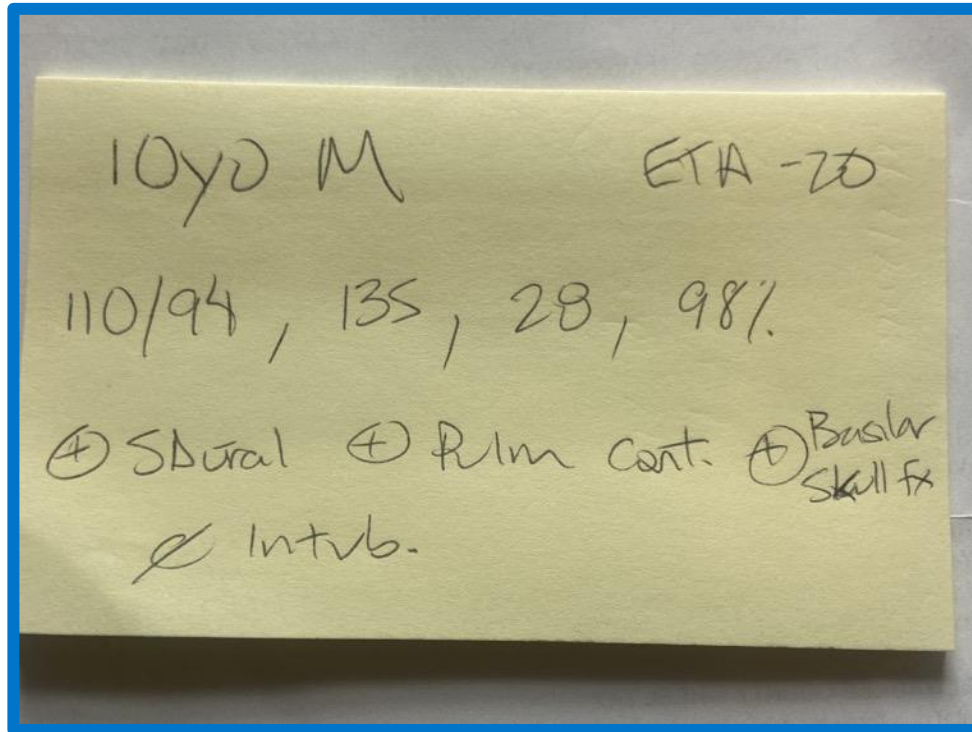
Triage color	Ems #	Arrival time	Rm #	Name	Injury cc	Medical team	RN	Imaging	Labs	meds	dispo	priority #	Comments ID info
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Mini-ED Teams

- Staff assigned into multi-disciplinary teams and given a room/area
- Each room staffed with:
 - PEM or ICU physician
 - Nurse
 - Advanced practice provider
 - Respiratory therapist
 - Care Partner



Mini-ED Teams



- Assigned a patient when report received
- Given pre-arrival information
- Time-out to know who everyone was and what role they would play
- Discuss potential plan for patient arrival

Expedited Admissions

- All parties were stationed in the ED, which allowed direct communication and accelerated the admission process:
 - Critical care attending
 - General surgery resident
 - Neurosurgery resident

***Patient care manager

Where to focus your preparation on:

Resources

Communication

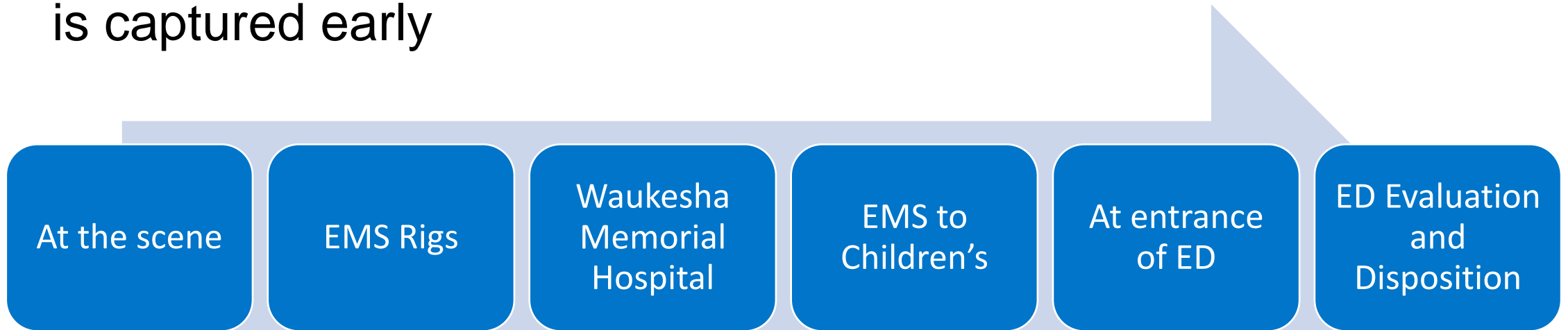
Triage

Triage

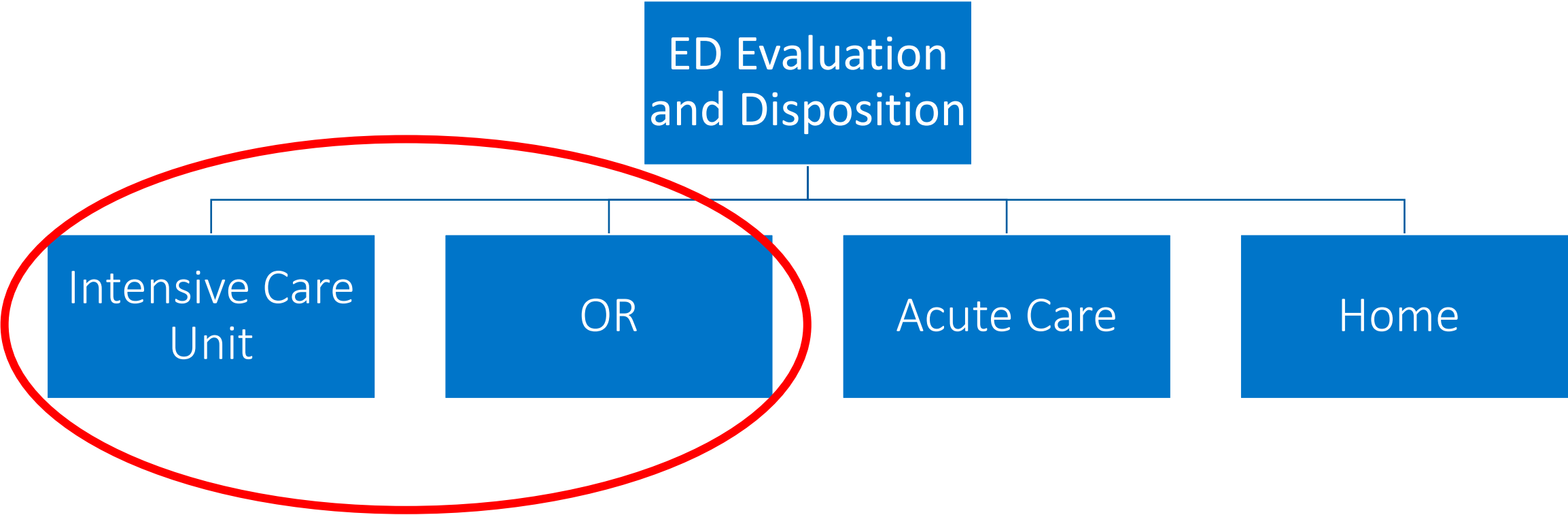
- **Triage** is the most important clinical decision in mass casualties
 - Use most skilled, experienced person available
 - All should practice mass casualty triage (drills/exercises)

Triage

- Triage and re-triage was embedded into every transition in care
- Performing re-triage helps ensure that patient decompensation is captured early



Critical Care beyond the ED



CW Pediatric Intensive Care Unit



- 72-bed, pediatric ICU:
 - 48 general PICU beds
 - 24 Cardiac ICU beds
 - 3 floors
- All ICU rooms can transition into an OR

Children's Wisconsin Weekend Staffing (PICU)

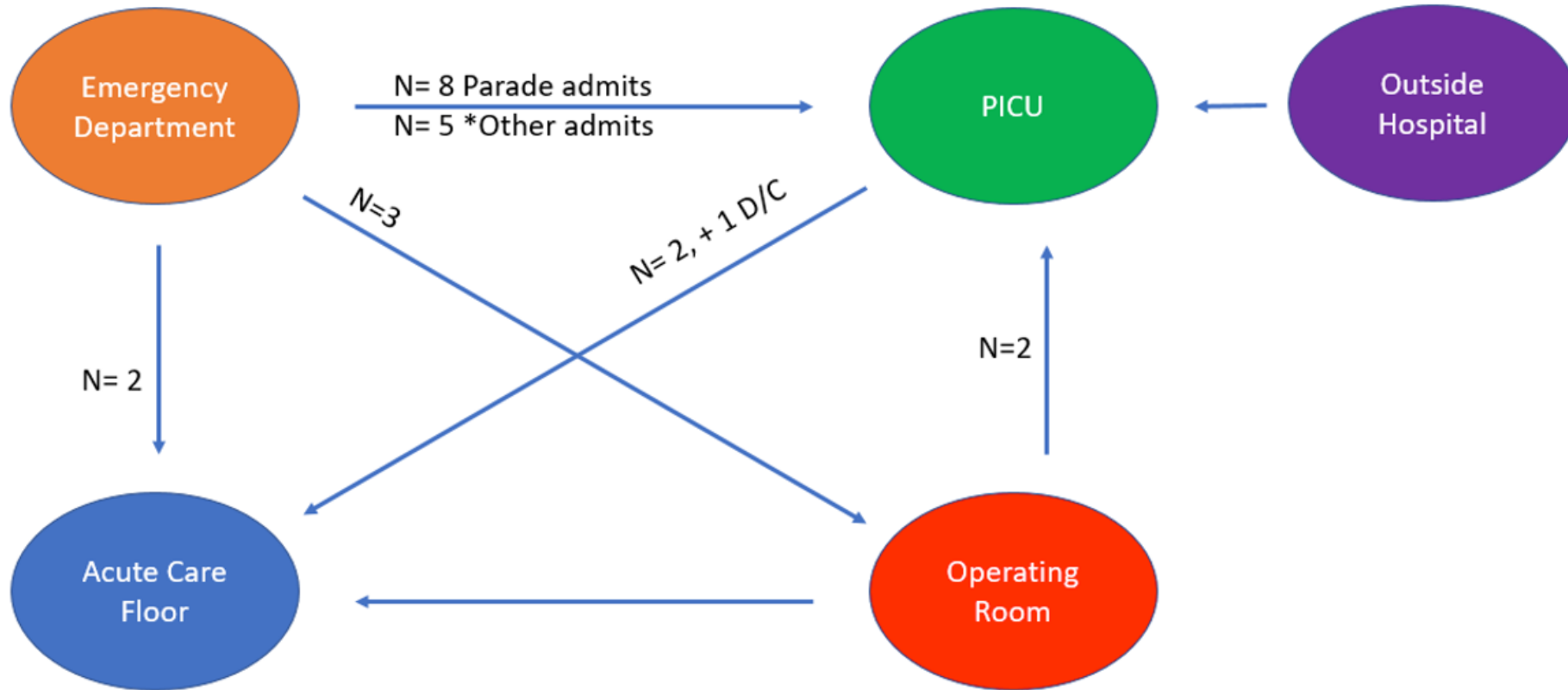
- PICU Attending Physicians: 1
General PICU, 1 Cardiac ICU
- PICU Fellow Physicians: 1-3
- APPs (Pediatric NPs, PAs): 1-3
- Nurses: 1.5 RN to 1 patient
- RCP: 6
- HUCs/Communicators: 1-2

Pediatric Critical Care Response

- Providers on site assisted in ED for triage of critically ill patients
- Provider Surge response activated an additional:
 - 16 Pediatric Critical Care (PCC) Attendings
 - 8 PCC fellows
 - 17 PCC Advanced Practice Providers
- RN Surge utilized organizational external disaster activation communication to all critical care nursing staff
 - Response provided enough resources to provide critical care resources to all PICU patients



PICU Treatment and Triage



**N= 8 patients to OR within 24 hours of incident

PICU Based Command Center

TRAUMA PICH * PT IN ROOM

Bed/Pt	✓ - PATIENT DE UNION	RN	PROVIDER
* bed [pt name]		RN name ✓parent	Attending APP/fellow
age/injury/+/-ETT			
* bed [pt name]		RN name ✓parent	Attending APP/fellow
age/injury/+/-ETT			
bed [pt name] age		RN name	Attending APP/fellow
age/injury/+/-ETT			
* bed [pt name]		RN name ✓parent	Attending APP/fellow
age/injury/+/-ETT			
* bed [pt name]		RN name ✓parent	Attending APP/fellow
age/injury/+/-ETT			
* bed [pt name]		RN name ✓parent	Attending APP/fellow
age/injury/+/-ETT			

PICU Based Command Center

Medical PICU * in ROOM
✓ - parent

<u>Bed/Pt</u>	<u>RN</u>	<u>PROVIDER</u>
bed pt name age injury / +/- ETT	RN name ✓ parent	Attending APP/Fellow
* bed pt name age injury / +/- ETT	RN name ✓ parent	Attending APP/Fellow
* bed pt name age injury / +/- ETT * transfer to TRAUMA PICU	RN name ✓ parent	Attending APP/Fellow

<u>OPEN BEDS</u>	
<u>TRAUMA PICU</u>	<u>Medical PICU</u>
#1	#1
#2	#2
#3	#3
#4	#4
#5	#5
	#6
	#7

Supplies & Equipment in the PICU

- Supply Chain Warehouse- not staffed as this occurred on a Sunday
 - Hospital Command Center communication activated necessary personnel
- Volume of Neurological Injuries
 - Neurosurgical supplies
- National Vendor support in days following

Family Centered Care in the PICU

- Social work and Chaplains played key roles on night of incident in unifying patients and families
 - Family Liaison contact
 - Visitor Limitations given COVID precautions
- Importance of Interpreter Services
 - Spanish in house at our institution 24/7

PICU Coordination of Care

- All patients had similar injury patterns so assigned teams helped avoid confusion of injuries and plans
- Standardized hand-off of care once command center closed and patients stabilized

Mental Health Impact

- No Pediatric Psychologist on site or on call
- Command center alerted division chief
 - Decision made to wait until Monday morning
- Monday morning huddle with PICU team
 - Cleared clinic and meeting schedule
 - All families seen on day 1 of admission
- Outpatient support following incident for families
- Staff support
- Hotline received a total of 90 Calls

Summary of MCI Patients

- 18 Pediatric Patients from the MCI
 - 9 Level 1 Traumas
 - 9 Trauma Consults
- 4 patients to the Operating Room directly from the ED
- 10 patients admitted to the ICU that night
- 1 patient discharged from the ED

Lessons Learned - Pro Health ED

- Make MCI registration as easy as possible
 - Include patient photo
- Need paper chart initially and must follow with patient
 - Couldn't tell who had already evaluated a patient
- Triage with colored ribbons
 - Marker was good, but smudged



Lessons Learned – Pro Health ED

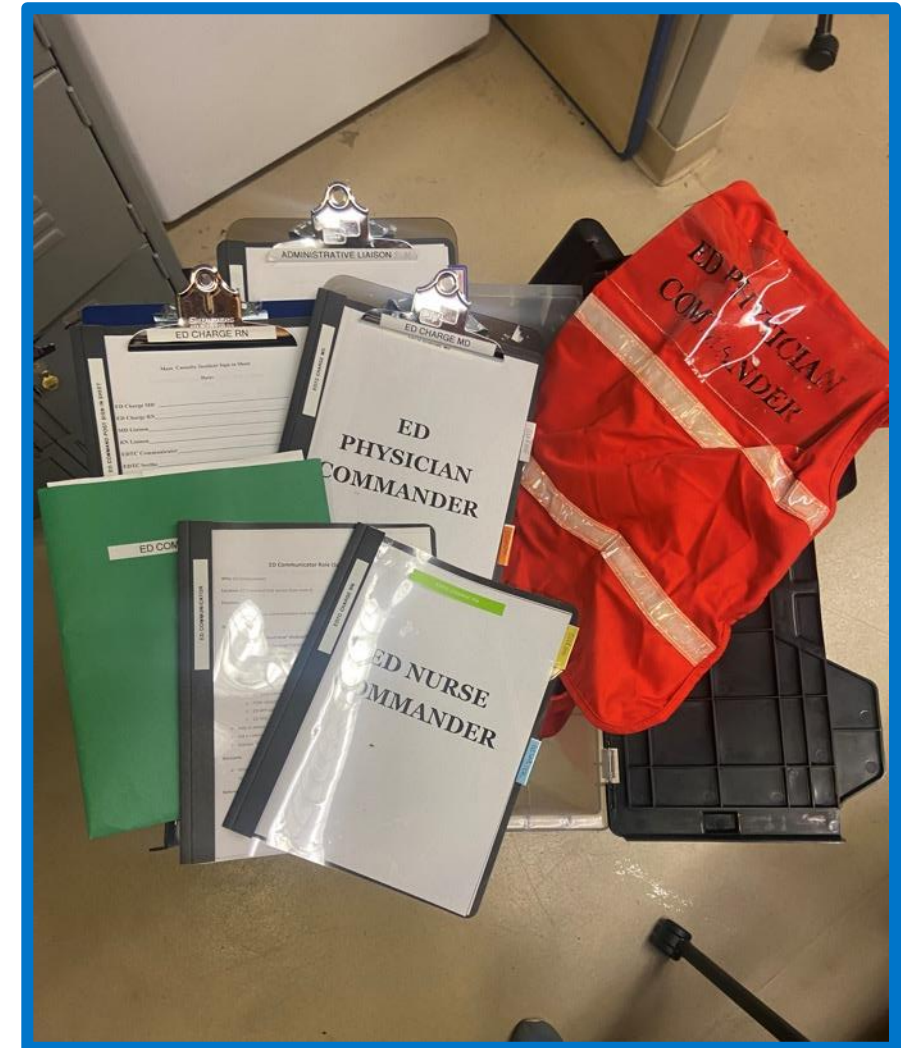
- Clear message when requesting off duty help
 - Use staging area
- Headsets or earpieces for in hospital radios
- Know your resources before the incident
 - You will have to make things up as you go



Lessons Learned - CW ED

Disaster plans and drills... and cheat sheets:

- Checklist for disaster prep needs
- Simple ID forms and pre-arrival forms
- Pre-templated trauma flow sheets
- Hand-off sheets for partially worked up patients
- Reunification Checklists



Lessons Learned – CW ED

Communication

- Direct phones lines for EMS and/or outside hospital
- Need to ensure that information is disseminated to inpatient teams, to help with their prep as well
- Easier visualization of roles:
 - hats, vests, tape across chest with role/name



Lessons Learned – CW ED

Triage and Flow

- Whiteboard for ED central command
- ICU and surgery representatives in the ED
- Impact on many teams and the need for staggered shifts for staff to continue the ongoing response throughout that evening and next day



Lessons Learned - CW PICU team

- Hospital Based Command center closed once situation stabilized in ED
 - impacted downstream ability for supplies as on-going resuscitation occurred in PICU
- Blunt Force vs Penetrating trauma
- Interpreter services and on-going system strain
 - Cancellation of elective OR cases

Lessons Learned - CW PICU team

- Mental Health Response
 - Staff and Families
- Importance of PICU involvement in Disaster Planning at our institution

“Nothing was unsettled. Nothing was chaotic. Every patient received exactly what they needed.”

Dr. Charles “Barry” Rothschild

Joyous Expectations: Healing From a Christmas Tragedy. Pediatric Critical Care
Medicine



Questions?

