



Lessons Learned from a 28 Hospitals and City Agencies: Pediatric Disaster Exercise

DR. MICHAEL FROGEL

NEW YORK CITY PEDIATRIC DISASTER COALITION

NATIONAL HOMELAND SECURITY CONFERENCE

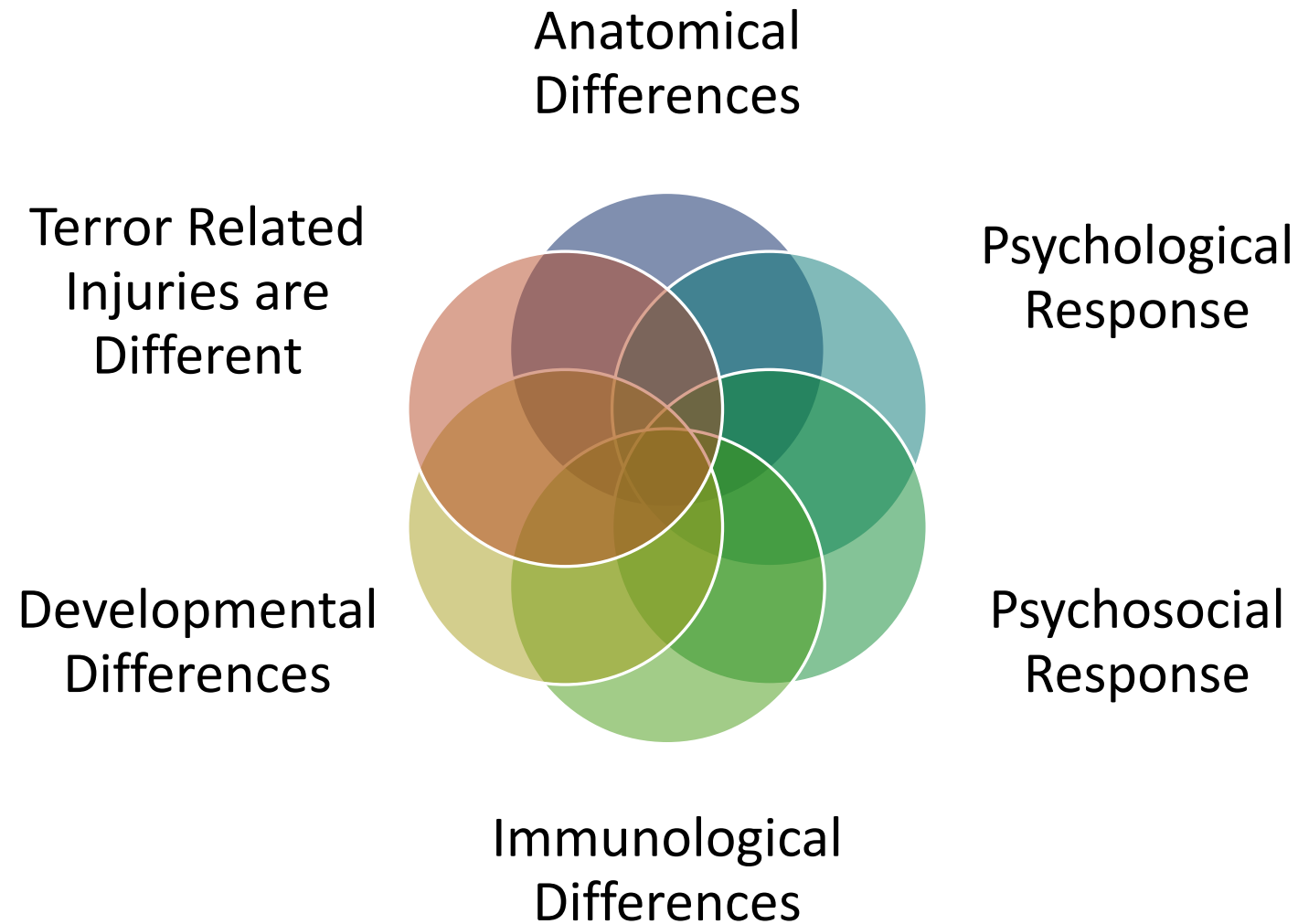
NOVEMBER 18, 2020

Children Today (United States)

- Estimated 78 million people less than 18 years of age
- Roughly 25% of the population
- Largest vulnerable population
- Disabled children
- Tech dependent children
- >10% living at or near the poverty level
- Environment and Response provided by adults



Children are different!



Therefore, the pediatric plan and response to disasters must be tailored to the special needs of children.

Disasters can be.....

Human Conflict Event	Technological Event	Public Health Event Natural Disasters
Explosive device (open vs. closed)	School bus crash, train derailment	Hurricane, tornado, tsunami, earthquake
Anthrax, plague, smallpox cluster	Chicken tainted by Salmonella typhi	Pandemic influenza, SARS, monkeypox
Nerve gas release	Chemical plant leak	Volcanic eruption
Nuclear plant attack	Nuclear plant leak (Three Mile Island)	Radon exposure
Incendiary device	Boiler explosion	Heat wave









Tsunami, Indonesia



Building collapse, Jerusalem



Tornado Oklahoma City



Bus crash, Michigan

Children As Primary Targets (Partial Listing)

- 1838 Blaukaans River, South Africa - Zulus kill 185 children
- 1974 Maalot School occupation after bus attack - 26 dead, 70 injured
- 1995 Murrah Building, Oklahoma City - 19 dead, 66 injured, nursery
- 1998 Elementary school, Jonesboro, Arkansas
- 1999 Columbine High School, Colorado
- 2000- Intifada, Israel
- 2003 Jerusalem Children's Bus (9 killed, 40 wounded)
- 2004 Baghdad US troops giving out candy 35 dead
- 2004 Beslan, Russia (186 dead, school)
- 2006 Platte Canyon High School, Colorado
- 2011 Norway (69/77 dead, summer camp)
- 2012 France Ozar Hatorah Toulouse (3 dead, day school)
- 2012 - Sandy Hook Elementary School Shootings, Newtown
28 dead (20 children), 2 injured
- 2014 Syria: Chemical Weapons
- 2015 Nigeria, Pakistan Schools (100s)
- 2015 IRAQ/Syria: Killings, Slavery (10,000s)
- 2015 Paris Theatre (89)
- 2016 Truck Attack France
- 2017 Concert attack England
- 2018 Gas attacks Syria, Schools Pakistan

And the list goes on...and on...





Murrah Building, Oklahoma City Bombing



World Trade Center, 9/11



Beslan school siege

Moscow theater siege



OKC Bombing

Or Intentional Targets?

- Al-Qaeda has publicly asserted the "right" to kill 2,000,000 American children
- "Operations are in stages of preparation"
 - Videotapes confiscated in Afghanistan:
 - Showing al-Qaeda terrorists practicing the takeover of a school
 - The trainees issue commands in English
 - Rehearse separating youngsters into manageable groups
 - Meeting any resistance with violence
 - Some "hostages" are taken to the rooftop, dangled over the edge, then shot



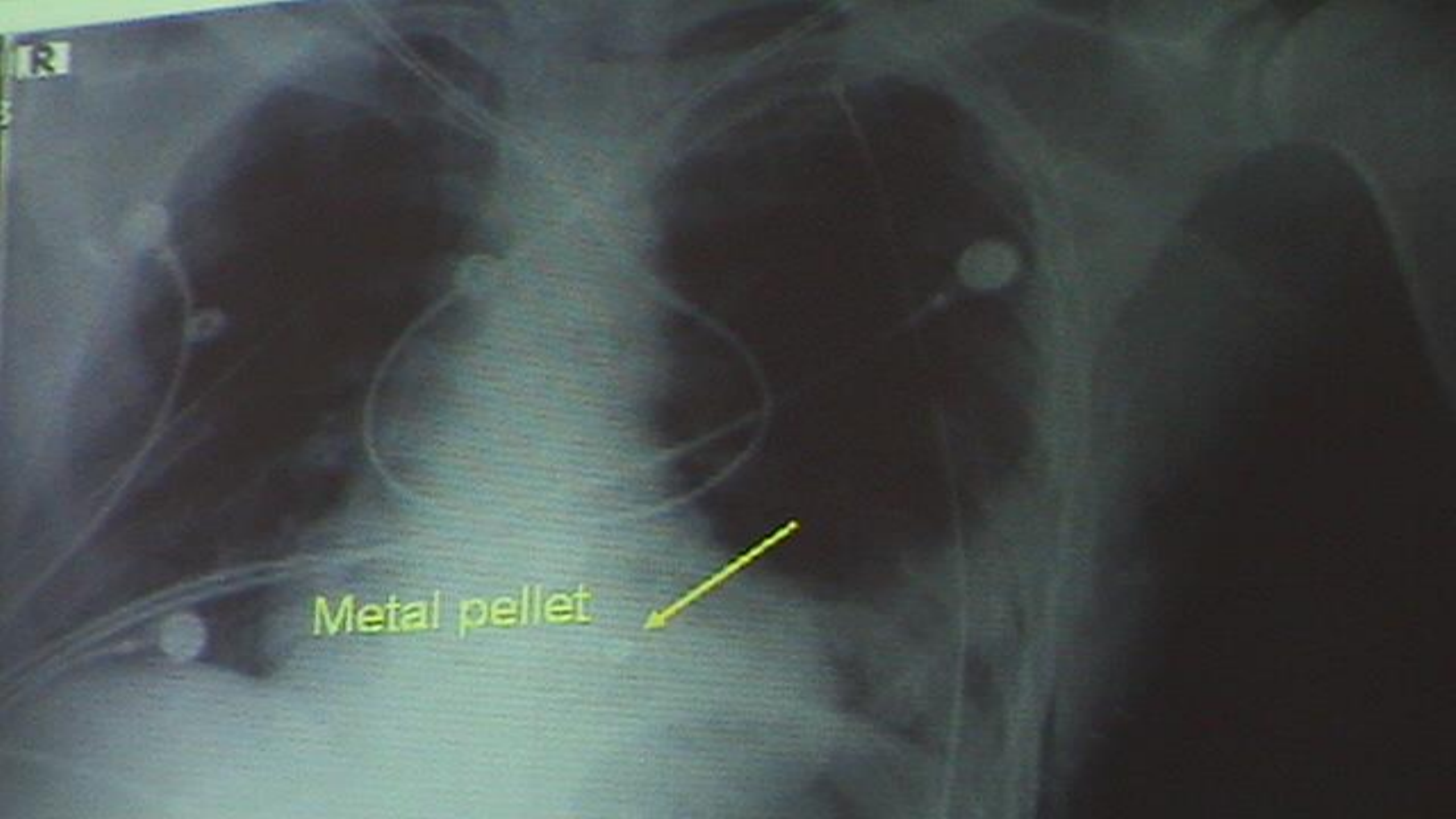


**Jerusalem, Israel
9 killed 40 injured
Women and Children
Bus Attack**



ethanol mixture





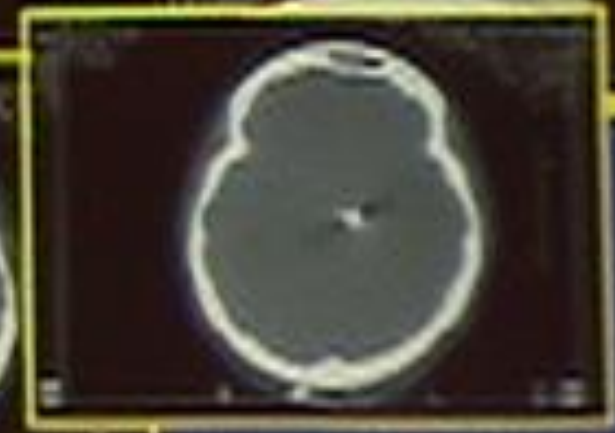
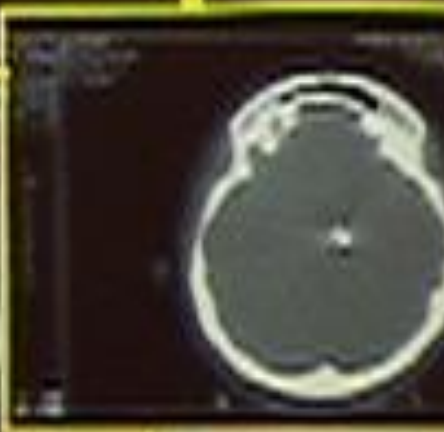
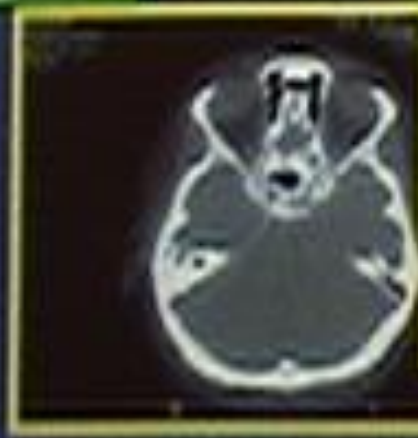
Metal pellet



1

14 Y/O Female

1. Nail Lodged in the Pituitary
2. Mangled Lt Upper Ext
3. Nails In Breast



Specific injury due to a suicide bomber

Chemical MCI



Example children have special needs

Pediatric Generic Decon Issues

- Avoid Separation of Families
- Cannot assume parents can decon child plus self
- Older children may resist due to fear, peer pressure, modesty issues
- Risk of Hypothermia if temp $<98^{\circ}$
- Large volume low pressure hand held hoses
- Beware airway management throughout
- Soap and water only



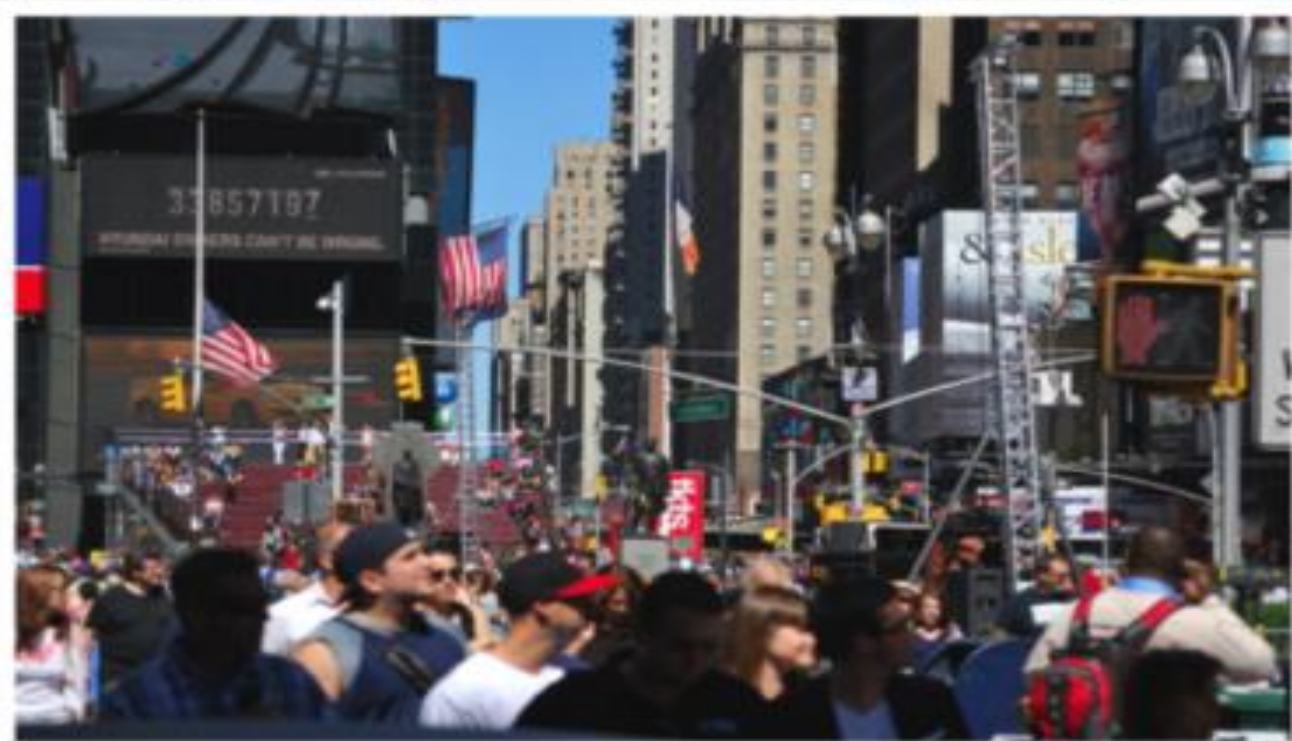
Therefore:

The pediatric plan and response to disasters should be tailored to the special needs of children

**WHAT COULD HAVE
HAPPENED IF THAT BOMB
HAD GONE OFF IN TIMES
SQUARE????**

MAY 1, 2010 SATURDAY EVENING IN MANHATTAN





Times Square Bomb Location

- Across the street from the Lion King Show at the Minskoff Theatre (Seats 1,600)
- Close Proximity to Toys”R”Us
- Close Proximity The Disney Store
- Hundreds of Critically Injured children and adults
- Are we ready ?????? (only 52 beds available at time of incident)



Satellite



Traffic

Live traffic change

Slow Fast



Paramount Times Towing

The Richard Rodgers Theatre

New York Marriott Marquis Times Square

Doubletree Guest Suites Times Square

St Mary the Virgin Church

The World of Disney Store

St Andrews Restaurant and Bar

Toys R Us & Babies R Us Express

Room Mate

One Times Square

Sephora

The Duke On 42nd Street

St James Theatre

Times Square

Hotel Carter

nd St - Po Authority [A, E]

Smith's Restau

nd Club



Pediatric Challenges

- Initial Triage at the Scene (?Pediatric Specific)
- Stay and Play or Scoop and Run
- Primary Transport (Tiering of Hospitals)
- Secondary Transport
- Surge Capacity Capabilities (Space Staff Stuff)
- Disaster Mental Health Issues (ASR, ASD, PTSD, Psychological First Aid, Triage, Treatment)
- Family Reunification
- What about Resiliency
- Ethical Issues

The NYC Pediatric Disaster Coalition (PDC)

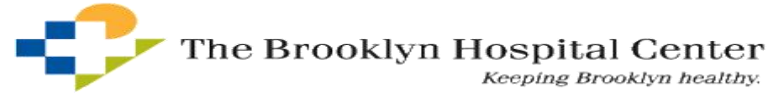




NYC Pediatric Disaster Coalition

- Established in 2008 to prepare NYC for a catastrophic pediatric mass casualty event
- Funded by the Department of Health and Human Services, Assistant Secretary for Preparedness and Response via the NYC Department of Health
- Our Membership Includes:
 - NYC pediatric general and specialty hospitals
 - Community Healthcare providers
 - NYC Fire Department EMS
 - NYC Emergency Management
 - NYC Department of Health and Mental Hygiene
 - and more...

In the beginning, 2008 NYC PDC



October 2020

28 Hospitals, PIRT, MRC, Outpatient Urgent Care Centers, OEM=NYCEM

NYC PDC Coalition based Regional Planning and Response

- Established in 2008 to prepare NYC for a catastrophic MCI involving children and their families
- **Multidisciplinary Coalition Membership:** Pediatric disaster medicine experts, NYC hospitals, Outpatient/Urgent care facilities, FDNY/EMS, NYC Emergency Management, DOHMH, Pediatric Long Term Care Facilities, MRC, ASPR/TRACIE - working with an iterative process and literature review
- **Developing Citywide planning and response from:** incident scene triage, to primary transport to tiered pediatric receiving locations, secondary transport, surge and evacuation that are part of the Citywide Pediatric Disaster Plan
- **Creating site specific Guidelines and Template Plans for Surge and Evacuation of:** Pediatric PICUs, NICUs, Obstetric and Newborn Services, and Pediatric Long Term Care, and Outpatient Urgent Care facilities.
- **Creating self use tools and conducting Functional, Tabletop and Full Scale Exercises to operationalize plans**
- **Increasing pediatric critical care resources through Pediatric Fundamentals of Critical Care Support Courses**
- **Presenting at local, national and international conferences to:** promote pediatric disaster preparedness
- **Responding to real disasters:** H1N1, Superstorm Sandy, Ebola, Haitian earthquake and creating lessons learned and revision of pediatric disaster planning/response

NYC PDC: Planning Efforts 2019-2020

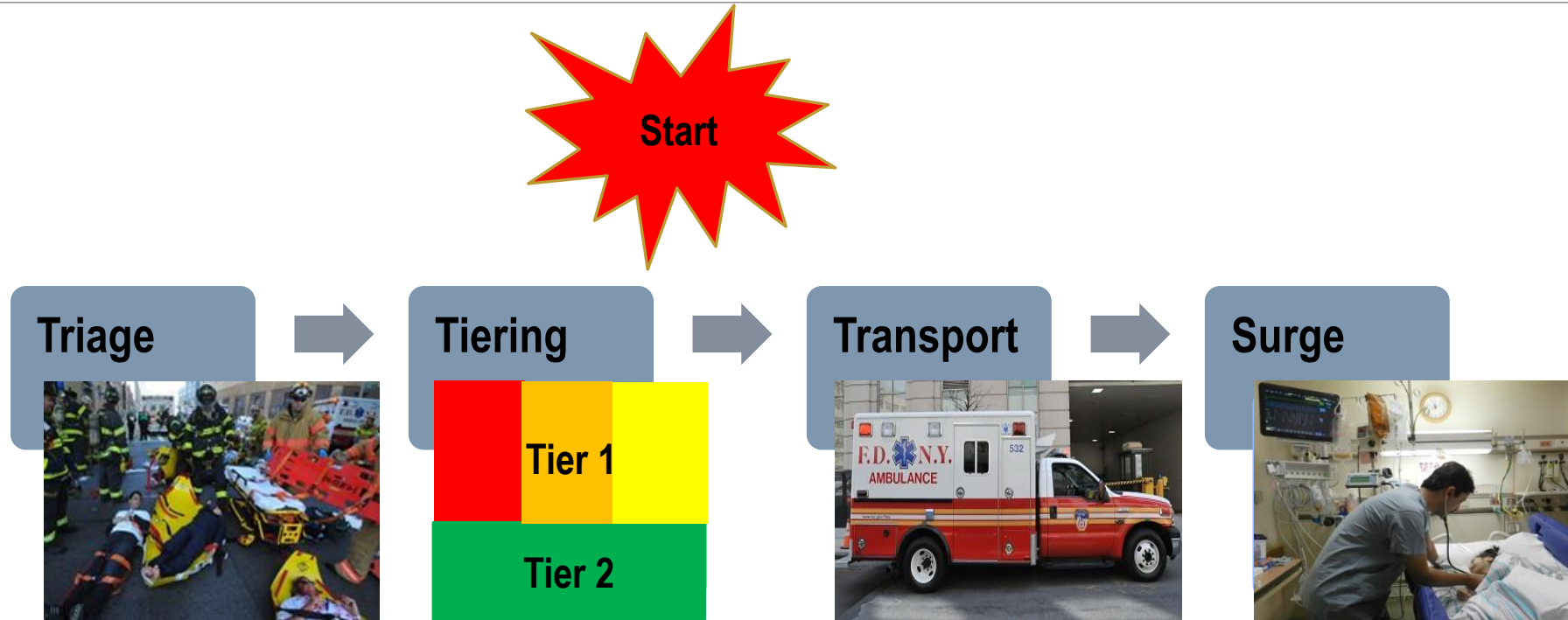
	Total Completed by June 2020	Total Units in NYC	Percent Covered by 2020
Pediatric PICU	20	20	100%
Pediatric Non-PICU	8	8	
NICU Evacuation and Surge	23	39	59%
Obstetric Services Evacuation and Surge	18	39	46%
*Total	79		
	*10 OPD/Urgent + Peds Long Term Care		

NYC Pediatric Disaster Plan Draft

MOVING THE RIGHT CHILD, AT THE RIGHT TIME, TO THE RIGHT PLACE.

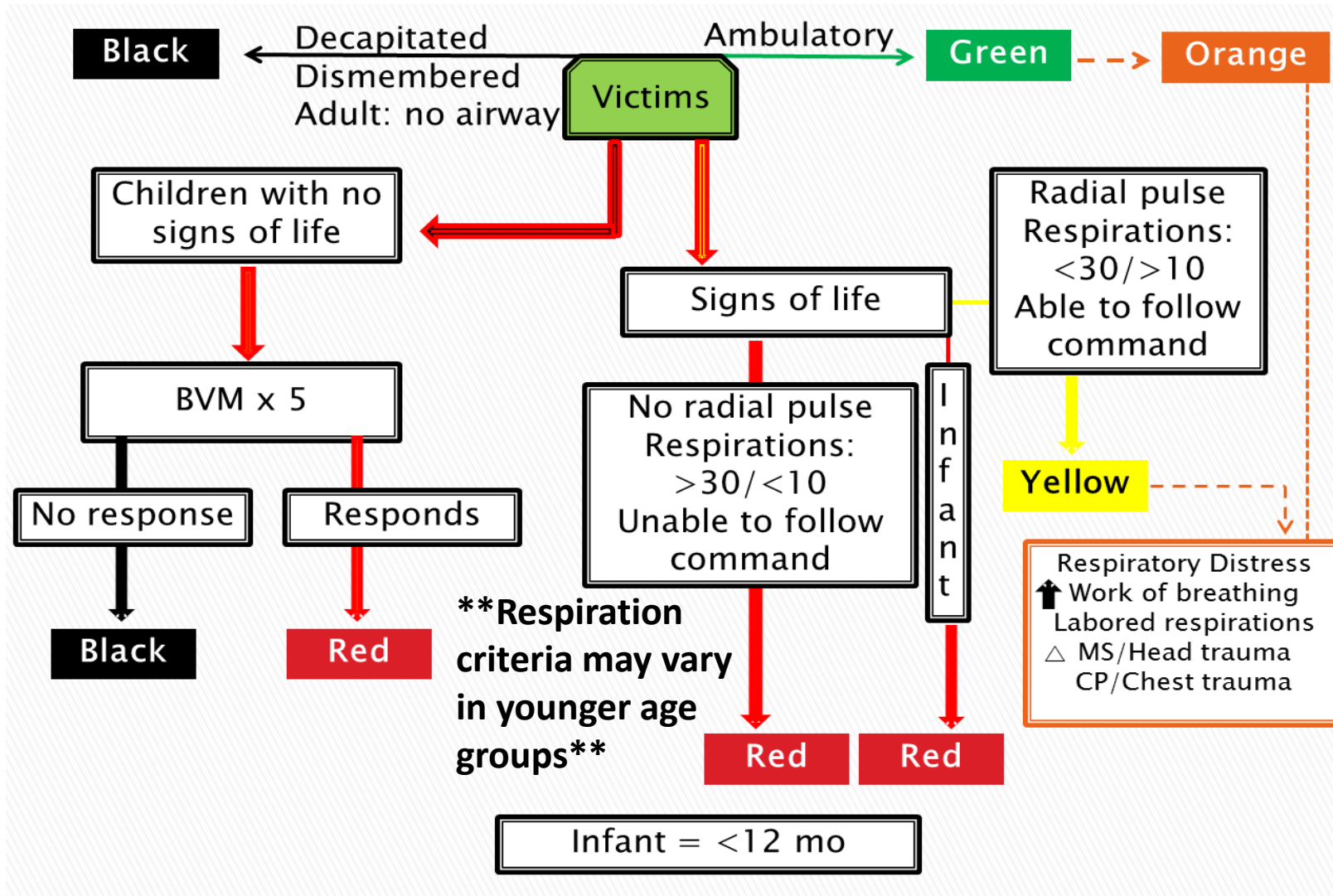


NYC Pediatric Disaster Plan Draft



The PDC and their collaborative planning team created a comprehensive Pediatric disaster plan for NYC from the onset of the event and first response through pediatric intensive care surge

Triage Modification



FDNY Pediatric Field Triage

- New pediatric triage and transport algorithm
- Categorizes children by size, not age
- Recommends 5 rescue breathes before tagging a child “black” (unsalvageable)
- Classifies all infants as “red” (immediate)
- Adds an “orange” (urgent) up-triage category for respiratory distress and mental status changes

FDNY triage algorithm has been approved by NYC REMAC/REMSCO and NYS SEMAC/SEMSCO

Primary Transport Prioritization of pediatric patients prior to secondary transfer:

- Increases the number of children who will be transferred to definitive pediatric care facilities
- Allows for improved hospital utilization
- Prevents an overwhelming surge into hospitals that do not routinely care for critically injured children
- Minimizes the need for inter-facility transfer for seriously injured children

Operational goal of the PDP

- The operational goal is to provide optimal medical care for the pediatric victims of an MCE by facilitating:
 - (1) Primary (pre-hospital) transport to pediatric capable hospitals, when available and appropriate; and subsequently
 - (2) Secondary (inter-facility) transfer to such hospitals, when available and appropriate, in situations where primary transport was unavailable, or patients self-evacuated to facilities not capable of definitive pediatric care

Proposed FDNY EMS Primary Pediatric Transport to Hospital

- Pediatric Disaster Ambulance Destinations have been tiered based on resources
- FDNY will transport casualties to Tier I or Tier II Pediatric Disaster Ambulance Destinations (PDAD) from the field
- The goal of primary transport:
 - To minimize the need for inter-facility transfer
 - Transport the patient to a pediatric capable hospital with specialized resources so critical pediatric care is not delayed

Pediatric Disaster Ambulance Destination (PDAD)

Tier 1 PDAD

- Committed to pediatric subspecialty care
- Pediatric surgical service
- Pediatric emergency service
- Pediatric intensive care unit
- Pediatric inpatient unit
- Level III nursery
- Comprehensive pediatric subspecialty support
- Anesthesiology, neurosurgery, orthopedic surgery with experience in management of children
- Pediatric disaster plan
- *Currently 17 Tier 1, all boroughs*

Tier 2 PDAD

- Committed to general pediatric care
- Pediatric surgical consultants
- Pediatric resuscitation capable ED
- Pediatric inpatient unit
- Level II nursery
- Pediatric transfer agreement
- Pediatric disaster plan
- Transfers children needing ICU care
- *Currently 11 Tier 2, all boroughs except Staten Island*

Letter of Agreement: All 28 Tier-I and Tier-II PDAD Hospitals

NYC NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Health

Gotham Center
42-09 28th Street
Queens, NY 11101-4132

September 9, 2016

Dear **(Name of EPC)**,

As you are aware, your Chief Executive Officer (CEO) and hospital preparedness staff have agreed that your hospital will serve as a Tier-1 or 2 Pediatric Disaster Ambulance Destination (PDAD) hospital as part of the New York City (NYC) Pediatric Disaster Plan (PDP). The NYC PDP is being implemented to enable the city to respond to disasters involving large numbers of children. A key portion of the plan addresses communications and secondary transport during a major disaster.

In order to fully operationalize this plan, the NYC PDC will be conducting an exercise to test the communications portion of the NYC PDP in the spring of 2017. Tier-1 and Tier-2 PDAD Hospitals will be able to select participation in this exercise as an elective deliverable for the Budget Period 5 (BP5) Hospital Core Contract.

PDC and DOHMH invite **(Hospital Name)** to participate in the PDP exercise. To receive reimbursement for this activity through the BP5 Hospital Core Contract, your hospital will need to:

- Select "Elective Deliverable 3: Pediatric Disaster Plan Communications Exercise" by **October 3rd** during Core elective selection process, which will begin in mid-September;
- Complete a pediatric surge plan for your hospital before May 2017 (**note: if your hospital has not yet completed a surge plan with NYC PDC, you will be invited to participate in a pediatric surge planning program with PDC that will ensure your ability to meet this requirement*);
- Attend 1 kick-Off and 3 planning meetings;
- Participate in the exercise; and
- Submit an After Action Report and Improvement Plan (AAR/IP) to the DOHMH.

To confirm that your hospital will participate in the exercise planning and conduct of the 2017 Pediatric Disaster Plan Communications Exercise, **please sign and date the statement below and email a scan copy of the signed letter of agreement to Wanda Medina (wmedina2@health.nyc.gov) at the DOHMH by Monday, October 3, 2016.**

Thank you for your on-going commitment to care for New York City's children.

Health Care Professional - 2 - September 9, 2016

Sincerely,

Wanda Medina
Senior, Program Manager for Vulnerable Population
Bureau of Healthcare System Readiness, OEPR

I, _____, confirm _____ will
(Name & Last Name of EPC) (Print Hospital Name)

participate in the Pediatric Disaster Plan-Communications Exercise as part of the core elective deliverable three (ED3) from the DOHMH in spring 2017

_____, _____ will serve as the secondary
(Name & Last Name Alt EPC) (Title)

point of contact for this endeavor.

Signature: _____ Date: _____
(Hospital EPC)

PDC/wm

Participating Hospitals: Tier-I PDADs (17)****

- Bronx Lebanon Hospital Center- Concourse Pavilion
- Children's Hospital at Montefiore
- Brooklyn Hospital Center
- Kings County Hospital Center
- Maimonides Medical Center
- New York Methodist Hospital
- Bellevue Hospital Center
- Harlem Hospital Center
- Morgan Stanley Children's Hospital of NYP
- New York Presbyterian Hospital-Weil Cornell Medical Center
- NYU Langone Medical Center
- Elmhurst Hospital Center
- Steven & Alexandra Cohen Children's Medical Center of New York
- Richmond University Medical Center
- Staten Island University Hospital (North)
- Mount Sinai Hospital
- Jacobi Medical Center

**** Tiering designation and hospital participation may change

Participating Hospitals: Tier-II PDADs (11) ****

- St. Barnabas Hospital
- Brookdale University Hospital and Medical Center
- Coney Island Hospital
- NYU Lutheran Medical Center
- University Hospital of Brooklyn- SUNY Downstate Medical Center
- Woodhull Medical and Mental Health Center
- Flushing Hospital Medical Center
- Jamaica Hospital Medical Center
- New York Presbyterian- Queens
- Lincoln Medical and Mental Health Center
- Metropolitan Hospital Center

*****Tiering designation and participating hospital can change over time**

Inter-facility Transfer

Inter-facility transfers may be needed for:

- Self referrals to neighboring facilities
- Pediatric patients taken to facilities that are unable to provide necessary pediatric critical care
- **The inter-facility transfer plan is one of the most critical aspects of the proposed plan**

Pediatric Intensivist Response Team (PIRT)

What is the Pediatric Intensivist Response Team (PIRT)?

- Provides prioritization triage consultation service to FDNY EMS for secondary inter-facility transfer of patients
- Volunteer Pediatric Intensivists
- Serve under NYC Medical Reserve Corp umbrella
- All currently practice at PICUs in NYC
- Provide SME for ESF8 function
- On call 24/7 with primary and secondary physician

PIRT's Role in the PDP

1. Upon activation of the PDP, sending hospital will contact FDNY EMS to request a transfer
2. FDNY EMS will collect basic data and details of patient's injuries or illness
3. FDNY EMS will relay the request and information to PIRT Physician on call
4. PIRT Physician will triage/prioritize the patients based on acuity and need for specialized services, and relay this information to FDNY EMS
5. FDNY EMS will use this information as well as the list of available beds in PDADs to determine inter-facility transfer destinations

PIRT's Role in the PDP

6. FDNY EMS will assign PDAD
7. Sending physician will then speak with receiving PDAD physician
8. FDNY EMS will utilize available 911 and other resources
9. FDNY EMS may also use specialized pediatric transport services if available
10. FDNY EMS will be notified upon completion of transfer

Activation of PIRT






Once an operational declaration has been made that a disaster involves a significant number of pediatric patients with the potential of further escalation, the Pediatric Intensivist Response Team (PIRT) will be activated upon request by FDNY. The PIRT will be staffed by one or more PIRT physicians. In cases of extreme disaster, a second PIRT physician may be required.

Patient Information Shared between FDNY & PIRT (Secondary Transfer Request Form)

- a. Patient identifier
- b. Patient age or size (infant, toddler, child, adolescent)
- c. Nature of injury/injuries
- d. Respiratory Support (i.e. CPAP, BIPAP, etc.)
- e. Medications
 - Chronic
 - Currently administered
- f. Vital signs
 - Blood Pressure ___/___
 - Heart Rate _____
 - Respiratory Rate _____
 - O2 Saturation/ETCO₂ (if available) _____
 - Glasgow Coma Scale _____
 - Pupils: fixed and dilated unequal equal and reactive
- g. Co-morbidities
- h. Chronic Medical Conditions
- i. Radiological/US/Laboratory critical finding

Patient Information Shared between FDNY & PIRT (Secondary Transfer Request Form)

PIRT assigns priority and FDNY assigns destination

-  RED – Immediate Transfer
-  ORANGE – Urgent Transfer
-  YELLOW – Delayed Transfer
-  GREEN - Do not transfer; treat at current hospital unless there is a change in status
-  BLACK – Expectant/Expired (PIRT physician may speak to sending hospital physician in these types of cases if necessary)
 - DEFFERED until deactivation

New York City Pediatric Disaster Plan Exercise



Exercise Description

Description: This exercise was a functional exercise (virtual) planned for a maximum of six hours for exercise play and Hot Wash activity. The exercise included 28 hospitals that care for pediatric patients in New York City and the following agencies; New York Fire Department (FDNY), New York City Emergency Management (NYCEM), the New York City Department of Health and Mental Hygiene (DOHMH), New York City Medical Reserve Corps (MRC) and the Pediatric Intensivist Response Team (PIRT). The exercise was designed to prepare New York City for a catastrophic pediatric event. The scope included hospital surge, communications, activation of the NYC Pediatric Disaster Plan and secondary transport.

Exercise Scenario

Scenario: It is a Thursday morning, approximately 8AM, with spring like weather conditions. An explosion of unknown origin occurs on a school bus at a nearby school. Patients begin to arrive to your hospital that have been self-evacuated. You learn from FDNY that several ambulances are headed your way with patients of various acuity levels. Similar incidents have taken place throughout New York City.





Exercise Goals

To validate Tier 1 and Tier 2 Pediatric Disaster Ambulance Destinations (PDAD) hospitals' ability to surge in response to a large pediatric disaster, triage and prioritize patients requiring secondary transport, and communicate with response agencies during an activation of the NYC Pediatric Disaster Plan.

- Test and improve communications with staff.
- Test and improve communications with city agencies.
- Test and improve hospitals' Pediatric Surge Capacity plans and response.
- Identify space, staffing, equipment needs for pediatric disaster.
- Hospitals to identify and triage patients who require secondary transfer to another facility.

Assess interagency and hospital communication related to coordination of secondary transport during an activation of the draft NYC Pediatric Disaster Plan.



Hospital Goals

- Evaluate Tier 1 and Tier 2 Pediatric Disaster Ambulance Destination (PDAD) hospital surge response plans for mass casualty incidents involving an influx of critical and non-critical pediatric patients and list areas for improvement for individual hospitals and the overall response
- Evaluate PDAD hospitals surge event internal communications capability during a mass casualty incident involving an influx of critical and non-critical pediatric patients
- Identify utilization of surge space, staffing and equipment resources for Tier 1 and Tier 2 PDADs in response to a mass casualty incident involving an influx of critical and non-critical pediatric patients
- Demonstrate PDAD hospitals' ability to triage patients who require secondary transfer and communicate patient information and transfer requests appropriately



Agency Goals

Assess interagency and hospital communication related to coordination of secondary transport during an activation of the draft NYC Pediatric Disaster Plan.

- Demonstrate central coordination of secondary transport of pediatric patients when the draft NYC Pediatric Disaster Plan is activated
- Demonstrate the ability of the Pediatric Intensivist Response Team to receive patient information, prioritize patients for secondary transport, and communicate patient prioritization to the FDNY Operations Center
- Demonstrate the ability to assign receiving hospitals and transportation assets through a centralized FDNY/ EMS functional operations center

Core Capabilities

- Planning
- Operational Coordination
- Operational Communications
- Situational Assessment
- Public Health, Healthcare, and Emergency Medical Services
- Critical Transportation
- Health and Social Services
- Special Needs Population Planning

Key Milestones



PDP Exercise

Participants Roles and Expectations

- ✓ Convene a hospital planning team
- ✓ Complete a Pediatric Disaster Plan +/- PICU
- ✓ Review and Revise Your Plan
- ✓ Attend at least 3 planning meetings plus controller/evaluator training session(s)
 - ✓ **Identify three representatives from your hospital to attend the controller/evaluators training.** These controllers and evaluators should be individuals who will not be players in the exercise.
- ✓ Host external evaluators at your facility
- ✓ Participate in the exercise at your facility
- ✓ Conduct hot wash
- ✓ Attend after action conference
- ✓ Complete individual hospital after action report and improvement plan

Participating Hospitals (Tier 1)

- Bronx Lebanon Hospital Center- Concourse Pavilion
- Children's Hospital at Montefiore
- Brooklyn Hospital Center
- Kings County Hospital Center
- Maimonides Medical Center
- New York Methodist Hospital
- Bellevue Hospital Center
- Harlem Hospital Center
- Morgan Stanley Children's Hospital of NYP
- New York Presbyterian Hospital - Weil Cornell Medical Center
- NYU Langone Medical Center
- Elmhurst Hospital Center
- Steven & Alexandra Cohen Children's Medical Center of New York
- Richmond University Medical Center
- Staten Island University Hospital (North)
- Mount Sinai Hospital
- Jacobi Medical Center

Participating Hospitals (Tier 2)

- St. Barnabas Hospital
- Brookdale University Hospital and Medical Center
- Coney Island Hospital
- NYU Lutheran Medical Center
- University Hospital of Brooklyn- SUNY Downstate Medical Center
- Woodhull Medical and Mental Health Center
- Metropolitan Hospital Center
- Flushing Hospital Medical Center
- Jamaica Hospital Medical Center
- New York Presbyterian- Queens
- Lincoln Medical and Mental Health Center

Other Participants

Included:

- Pediatric Disaster Coalition (PDC)
- Dept. of Health and Mental Hygiene (DOHMH)
- Fire Dept. of New York (FDNY)
- New York City Medical Reserve Corps (NYC MRC)
- New York City Emergency Management (NYCEM)
- Pediatric Intensivist Response Team (PIRT)

Exercise Players

- Incident Command/EOC
- Pediatric Critical Care*
- Pediatric Department
- Emergency Department
- Imaging
- Surgery/Trauma /Anesthesia/Subspecialty Staff
- Operating Room Staff
- Nursing
- Respiratory Therapy
- Facilities
- Admitting/Bed Management
- Mental Health/Social Services/Child Life
- Security

Exercise Process/Documents (HSEEP)

- ExPlan
- Master Scenario Events List (MSEL)
- MSEL Questions in real time (>100)
- Patient Profiles (70)
- Rapid Patient Discharge
- Surge
- Secondary Transport/Hospital Forms
- Exercise Evaluation Guide
- Participant Feedback Forms
- Site-specific hot wash
- Global hot wash
- After action meeting
- After action report & improvement process
- Lessons learned and plan revisions

Reasons for Patient Transfer

Reasons for transfers included:

- Hospital was beyond surge capacity
- Patients required higher level of care
- Patients need subspecialty care (Common examples found were PICU, NICU, Burn Unit, Psych, Vascular, Trauma, OBGYN, Neuro, Orthopedics, Cardiothoracic)

Secondary Transfer Process






- All hospitals designate a minimum of 4 patients who require secondary transport
- Hospitals complete secondary transfer forms
- Transfer forms sent to FDNY
- 8 hospitals selected for transfer communication process
- FDNY contacts MRC/PIRT/NYCEM
- PIRT completes patient transfer triage and designation and sends to FDNY
- FDNY contacts transferring and receiving hospitals
- Transfer and receiving hospitals handshake
- Transfers are completed by FDNY

Patient Information Shared between FDNY & PIRT

- a. Patient identifier
- b. Patient age or size (infant, toddler, child, adolescent)
- c. Nature of injury/injuries
- d. Respiratory Support
- e. Medications
 - Chronic
 - Currently administered
- f. Vital signs
 - Blood Pressure ___/___
 - Heart Rate _____
 - Respiratory Rate _____
 - O2 Saturation (if available) _____
 - Glasgow Coma Scale _____
 - Pupils: fixed and dilated unequal equal and reactive
- g. Co-morbidities

Patient Information Shared between FDNY & PIRT

PIRT assigns priority and FDNY assigns destination

-  RED – Immediate Transfer
-  ORANGE – Urgent Transfer
-  YELLOW – Delayed Transfer
-  GREEN - Do not transfer; treat at current hospital unless there is a change in status
-  BLACK – Expectant/Expired (PIRT physician may speak to sending hospital physician in these types of cases if necessary)
 - DEFFERED until deactivation

Feedback and Evaluation

Hot Wash:

At the conclusion of exercise play, controllers facilitate a Hot Wash to allow players to discuss strengths and areas for improvement, and evaluators to seek clarification regarding player actions and decision-making processes. All participants may attend; however, observer attendance is optional. The Hot Wash should not exceed 60 minutes.

Participant Feedback Forms:

Participant Feedback Forms provide players with the opportunity to comment candidly on exercise activities and exercise design. Participant Feedback Forms should be collected at the conclusion of the Hot Wash.

Exercise Evaluation Guides:

EEGs assist evaluators in collecting relevant exercise observations. EEGs document exercise objectives and aligned core capabilities, capability targets, and critical tasks. Each EEG provides evaluators with information on what they should expect to see demonstrated in their functional area. The EEGs, coupled with Participant Feedback Forms and Hot Wash notes, are used to evaluate the exercise and compile the After-Action Report (AAR).

Evaluation Process



FOUR EVALUATORS PER HOSPITAL:

- Two Internal Evaluators (From each hospital)
- Two External Evaluators (From MRC or OEPR)

EVALUATORS WERE STATIONED:

- In the EOC
- Floating
 - (Rapid Patient Discharge-PICU,-ED, Surge areas)
 - FISC/Mental Health, Public Affairs, Pediatric Safe Area

Role of the Evaluator

- Evaluate and provide feedback on a designated functional area of the exercise
- Evaluators will assess and document participants' performance against established emergency plans and exercise evaluation criteria, in accordance with HSEEP standards
- **The Evaluator should be an individual who will not be a player in the exercise.**

Evaluation Categories

Communications

EOP

Surge

Tracking

Transfer

Supplies

Staffing

Evaluation Tool Scoring Process- 1-4

4

Performed without
Challenges

3

Performed with
Some Challenges

2

Performed with
Major Challenges

1

Unable to be
Performed

Summary of Evaluation Scores

On a scale of 0-4...

- Highest performing hospital scored a 3.96/4.0 overall.
- Lowest performing hospital scored a 1.93/4.0 (This hospital was only able to conduct a limited exercise due to individual site limitations).
- The total average score overall of all 28 hospitals was 3.57/4.0. (These scores account for the total average of all the critical tasks scored combined).
- The total average scores of all hospitals by category are as follows:
 - Communications (3.65)
 - Emergency Operations Plans (3.67)
 - Surge (3.58)
 - Staffing (3.62)
 - Tracking (3.50)
 - Supplies (3.42)
 - Transfer (3.38)

Exercise Outcomes

The following positive outcomes of the exercise were identified:

- **100% OF HOSPITALS** participated in the exercise
- **100% OF HOSPITALS** participated in the exercise site-specific and group hot wash
- **100% OF HOSPITALS** responded fully to all the MSEL SurveyMonkey questions
- **82% OF EXERCISE EVALUATION GUIDES** were received from the evaluators via SurveyMonkey
- **75% OF HOSPITALS** of hospitals completed secondary transfer forms via SurveyMonkey

Hotwash Takeaways

During the hotwash all hospitals responded to the following questions:

- What went well during the exercise?
- What did not go well during the exercise?
- What would you do differently next time?

Positive Feedback

- The scenario and number of patients was challenging, however yielded excellent results
- Overall excellent exercise with important lessons learned
- Good engagement and morale of hospital staff members
- Hospitals emphasized that communications was essential to success and that they had accomplished the task
- The exercise was an excellent project for testing hospital surge and communications
- The exercise allowed the testing of critical communication in real time and with multiple departments
- Using ambulatory care space and personnel was very effective in helping with the surge of patients.
- Rapid assessment of Space/Staff/Stuff
- Some hospitals reported positively on their capability to care for all of the patients in the scenario

Room for Improvement

- Issues related to blood/blood product supplies and ventilator capabilities yielded very important lessons learned
- Some facilities were able to absorb all of the patients in the scenario while others were challenged
- There are challenges associated with allocating space for an influx of patients of this magnitude
- Some hospitals reported the need for adding to their technology capabilities , including laptops, Ipads, etc. to speed up processing of information, tracking and internal hand offs.
- Difficulties with pulling staff in from home/offsite during a disaster of this magnitude
- Not all areas in every hospital are served by overhead and in some areas dead spots exist

Other Feedback

- Using social media has many pros but cons as well
- It was difficult to be the controller and answer all of the questions.
- Place staff controllers at each impacted area to facilitate communication and staff interaction
- There was a need to add support staff for controller and evaluators
- Send real-time updates to all controllers via emails as events in the drill are happening, have an update come in to their email. Update by update, rather than having the Controller read each update from a piece of paper.
- Where possible, drive the exercise via WebEx, perhaps a PowerPoint show that drives the incident so that the timekeeping is universal to all facilities participating.
- A smaller exercise or tabletop prior to the exercise would have been beneficial
- There is a need to provide “caretakers” for pediatric patients

Key findings from MSEL Questions Responses

Surge Beds/ Capacity

- Added 1105 Surge Beds (baseline pediatric inpatient unit beds 1039) – double capacity
- Added 254 PICU Surge Beds (baseline 224 beds) – more than double capacity
- 304 ED Critical Care Surge Beds
- 312 ED Non-Critical Care Surge Beds
- 203 OR Surge beds
- 268 Adult Medical ICU Surge Beds
- 120 Additional Adult Surgical ICU Surge Beds
- 342 Pediatric Ventilator capable surge beds
- NICU total surge beds available after rapid patient discharge 247

Key Findings from Responses to MSEL Questions

Communications:

- Over 70% of the participating hospitals utilized phone calls, emails, text messaging, and face-to-face discussions to communicate situational awareness
- Almost all hospitals were able to communicate with staff and to contact them about coming in during the surge event

Supplies:

- Over half (54%) of participating hospitals reported having gaps in their pediatric supplies during the exercise due to the influx of critical patients
- 6 hospitals reported not having a burn cart to deploy during a disaster

Key Findings from MSEL Question Responses (Cont.)

Staffing:

- Some hospitals had difficulty providing pediatric subspecialty services such as, Neurosurgery, Ear Nose and Throat (ENT), Orthopedics, Plastics, Vascular Surgery and Trauma Surgery
- 100% of Hospitals created Mental Health Response Teams for patients and Staff

Transfer:

- All hospitals were able to identify patients requiring secondary transport and to provide information on the transport form
- Only 39% of participating hospitals identified appropriate staff to accompany patients during FDNY secondary transport
- The Fire Department was able to send the Pediatric Intensive Care Review Team a list of patient's for secondary transport and subsequently receive the PIRT's triage and prioritization patient list

Key Findings from MSEL Question Responses (Cont.)

Patient Tracking:

- 93% of hospitals were able to track patients during the event
- 70% of the participating hospitals utilized paper to track and register patients, approximately 50% also used electronic methods

Surge: Mental Health/Risk Communications

- 100% of hospitals established Family Information Service Centers for Reunification
- 100% of Hospitals created Mental Health Response Teams for patients and Staff
- 100% of Hospitals established an area for press briefings and a designated Public Information Officer

Additional Questions

- Was your hospital able to accommodate all patients and deliver appropriate care? If no, what were the obstacles in space/staff/stuff? (**Yes- 22, No – 5**)
- Was there a problem with enough blood product supply and pediatric ventilators? (**Yes- 15, No – 12**)
- Were there any gaps in specific staff that created problems with delivering patient care? (e.g. Neurosurgery coverage) (**Yes - 16, No – 11**)
- Did your institution benefit from participation in the exercise and improve your pediatric disaster preparedness program based on lessons learned? (**Yes- 27, No – 0**)

Lessons Learned

- Working directly with hospitals to create and implement pediatric specific surge/evacuation plans as part of overall preparedness improved surge and secondary transport capabilities.
- Conducting multiple group and individual exercise planning meetings yielded many valuable changes in hospital plans even before the exercise took place.
- Assessing the availability of sufficient pediatric subspecialty and intensive care staff for a surge of critically ill pediatric patients is necessary for good outcomes.
- Adult staff and surge capabilities should be incorporated in to the pediatric surge response, especially at Tier-2 hospitals.
- Disaster mental health issues should be addressed for children families and hospital staff with the provision of adequate staff and appropriate space.
- A Family Reunification and Information Service Center (FISC) should be part of Surge planning.

Lessons Learned (Cont.)

- Preparing sufficient on site pediatric surge equipment and supplies is essential especially:
 - Ventilators
 - Blood/Blood Products
 - Burn Supplies
- There is a need for “babysitters” to care for pediatric patients throughout the hospital process thereby freeing clinical staff to participate in patient care.
- Site specific areas should be pre-designated and staffed for various surge tasks.
- Begin triaging patients for secondary transport early during a surge event.
- Utilize Ambulatory Care Resources for space staff staff and integrate in to hospital plans.
- It is important to have sufficient personnel to assist the controller/incident commander in data collection, communications and reporting during exercises and real time events.
- Situational awareness and communication with staff and agencies is essential.

Planning is a Continuous Process





Thank You for your Time!

Dr. George Foltin

P.I.

NYC Pediatric Disaster Coalition

gfoltin@maimonidesmed.org

Dr. Michael Frogel

Co-P.I.

NYC Pediatric Disaster Coalition

mikefrogel@gmail.com

John Jermyn

Project Director

NYC Pediatric Disaster Coalition

jjermyn@maimonidesmed.org

Website:

www.pediatricdisastercoalition.org

Email:

info@pediatricdisastercoalition.org

Video of Exercise:

<https://www.youtube.com/watch?v=1g1bGj-Rb4>

Sofia Rivera-Perez

Project Coordinator

NYC Pediatric Disaster Coalition

SRperez@maimonidesmed.org