

*Recommendations for Increasing  
NYC Pediatric Critical Care Surge Capacity*

DRAFT September 2009



Created by the  
*NYC Pediatric Disaster Coalition &  
New York City Department of Health and Mental Hygiene*





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## How to Use this Document

The aim of this publication, *Guidance Recommendations for Increasing NYC Pediatric Critical Care (PCC) Surge Capacity*, is to serve as a practical resource for New York City Hospitals in planning a response to an emergency involving a large number of pediatric victims. The primary audiences for this document include PCC surge planning committees, administrators, and emergency department personnel. The goal of this document is to provide guidance in creating an individual hospital plan suiting each hospital's needs.

The NYC Department of Health and Mental Hygiene (DOHMH) does not require that hospitals incorporate all the following recommendations. Rather, hospitals should develop a pediatric critical care surge plan consistent with their own local needs, while considering their staffing capabilities, equipment resources, and other unique characteristics and conditions.

This manual assumes that in the case of a large scale incident involving children, hospitals will activate their Hospital Incident Command System (HICS) and the hospital specific emergency response plan. A pediatric surge capacity plan should be an integrated part of the hospital's HICS plan.

Please note, in this document we use two different terms; Pediatric Critical Care Unit (PICU) and Pediatric Critical Care (PCC). While these terms may be used in various ways in different hospitals, in this document we defined them as the following:

- **PICU:** is defined as the physical facility in which patients are hospitalized, monitored and managed.
- **PCC:** is defined as a service consisting of physicians and nurses that extends beyond the PICU boundaries. Critical care, such as Cardiopulmonary Resuscitation, is delivered by PCC personnel anywhere in the hospital, as does the Rapid Response Team. PCC service may also be responsible for sedation and central line placements in patients who do not have to be admitted to the PICU. Also, PICU and step down units are part of the PCC service, and they are different in their acuity levels. Distinction between these definitions is important, especially when we make recommendations regarding PCC assistance in the ED.

## Background

In the event of a disaster or mass casualty incident (MCI) within the New York City metropolitan region involving pediatric patients, the number of young victims could

easily overwhelm existing pediatric resources in New York City hospitals. To accommodate the initial stabilization and treatment of these victims, the EMS system must have a triage system in place that will maximize the potential for pediatric patients being taken to a hospital that has the resources for adequate care. In addition, all hospitals will have to have a surge plan in place for a Mass Casualty Event (MCE), with the aim of increasing the pediatric bed capacity by an additional 200 Pediatric Intensive Care Unit (PICU) beds.

The New York City Department of Health and Mental Hygiene (DOHMH) recognized the need for a city-wide plan for pediatric triage and surge, and to that end, funded a project called the New York City Pediatric Disaster Coalition (PDC). The primary goal of the PDC is to create a coalition of pediatric and emergency preparedness health care institutions and providers to develop an infrastructure that addresses gaps in the ability of the New York City regional health care system to provide effective and timely large scale pediatric care during MCEs. Such efforts necessitate collaborative efforts with representatives of the 26 New York City PICU hospitals, in partnership with key municipal and agencies and healthcare entities including: FDNY, OEM, REMSCO, and GNYHA.

The Schneider Children's Hospital of the North Shore LIJ Health System (SCH/LIJ) and The Center for Pediatric Emergency Medicine of the New York University School of Medicine (CPEM), in collaboration with the Morgan Stanley Children's Hospital of New York Presbyterian (CHONY) at the Columbia University Medical Center (CUMC) and the Komansky Center for Children's Health (KCCH) at the Weill Cornell Medical Center (WCMC) of the New York Presbyterian Hospital (NYPH), the Children's Hospital at Montefiore (CHAM), and the State University of New York (SUNY) Downstate Medical Center successfully competed for this RFP, and have created a Pediatric Disaster Coalition (PDC) for the NYCDOHMH to accomplish and perpetuate this task.

The specific aims of the PDC are to recommend pediatric specific modifications of the New York City Disaster Plan that include the following elements:

1. Enhance its effectiveness and efficiency for all patients, adult and pediatric;
2. Maximize primary transport of pediatric disaster victims to pediatric disaster receiving hospitals (PDRHs) and minimize primary transport of pediatric disaster victims to non-pediatric disaster receiving hospitals (non-PDRHs), thus curtailing the need for secondary transport of pediatric victims to PDRHs;
3. Ensure sufficient surge capability in PDRHs to meet the needs of the pediatric population of New York City for PICU level care.

The narrative and appendices in this document address Element No. 2 above.

## Structure of the Pediatric Disaster Coalition

SCH/LIJ and CPEM have partnered CHONY, KCCH, CHAM, and SUNY to build on previous activities involving CPEM and the SUNY CBPP Pediatric Task Force that have contributed to improving pediatric disaster preparedness in New York City. These centers of excellence in pediatrics have successful histories of working with NYC DOHMH. SCH/LIJ has worked extensively on Surge Capacity issues. CPEM has provided leadership to the Pediatric Disaster Advisory Group in the creation of *Children in Disasters: Hospital Guidelines for Pediatric Preparedness*, editions 1, 2 and 3, as well as the *Pediatric Tabletop Exercise Toolkit for Hospitals*. All the institutions have conducted pediatric tabletop exercises and disaster drills. NYPH has the largest number of PICU, general pediatrics, and pediatric burn center beds in the New York City region, and their fully owned EMS service performs the highest volume of pediatric critical care inter-hospital transports of any New York City EMS agency. New York City is fortunate to have such extensive resources available. Coordination will be the key to optimal care for children in disasters.

The overall project is directed by a *Central Leadership Council*. The Council is comprised of the two Principal Investigators (Michael Frogel, MD, SCH/LIJ, PI, and George Foltin, MD, CPEM, Co-PI), the Project Administrative Director (Marsha Treiber MPS), the Project Coordinator (Avram Flamm, B.EMS, EMT-P) and representatives from SCH/LIJ, CPEM/NYU, CHONY/CUMC, KCCH/WCMC, CHAM, and SUNY. A *Prehospital Field Triage Planning Committee*, led by Dr. Foltin, and a *Hospital Surge Capacity Planning Committee*, led by Dr. Frogel, has been established to meet the project objectives under the direction of the Central Leadership Council and representatives of the NYCDOHMH:

- Create the Leadership and Committee Structure
- Evaluate the current status of the pediatric New York City Disaster Management Program and develop a plan that increases pediatric surge capacity, improves triage, transport and communications capabilities, and collects pediatric specific information for acute care and future planning
- Train an expert group of Pediatric Critical Care trainers through the presentation of a Fundamentals of Pediatric Critical Care Course for Instructors in April of 2009
- Request feedback on current planning documents from regional subject matter experts in pediatric emergency medicine, pediatric critical care medicine, and pediatric surgery at a special meeting of the New York Society of Pediatric Critical Care Medicine on July 9, 2009
- Present progress and committee recommendations to date at the NYC DOHMH Children in Disasters Conference in September 2009, and request feedback on current planning documents
- Develop a plan to actualize PDC future implementation activities for years 2 and 3.

## PICU Surge Plan Compliance with HICS and NIMS

Hospital Incident Command System (HICS) and National Incident Management System (NIMS) plans are important elements in hospital preparedness. These plans provide needed local, state, and national standardization for hospitals' emergency response and recovery strategies. The Pediatric Critical Care Surge Plan (PCCSP) is an integral component of the hospital surge plan and must be compliant with the HICS and NIMS nomenclature and processes. While devising individual PICU surge plans, it is essential to verify that these plans, when fully organized, are incorporated as an integral component in the hospitals' HICS and NIMS plans.

## Laying the Groundwork

Any type of event that generates an increased influx of pediatric critically ill patients within a healthcare system may cause its Pediatric Critical Care Services to become overwhelmed. Despite the fact that the patterns of injury or illness vary greatly based on the type of incident, pediatric critical care preparedness plans for all possible scenarios is essential, as one cannot predict where and how a disaster will strike. Thus, plans to expand all critical care service components have to be readily available. For example, an explosion in a highly populated area may require an increase in surgical critical care treatment needs, whereas a nerve agent release would probably require more medical critical care services.

### *Basic Assumptions*

1. The PCCSP should be linked to the surge plans of the Emergency Department (ED) and the entire hospital.
2. Personnel from the Division of Critical Care Medicine are expected to report to the ED for help should the ED be overcrowded or overwhelmed with critically ill victims, or critical care expertise is needed
3. Critically ill patients, intubated / ventilated and/or hemodynamically unstable, will need to be transported from the ED, with proper human and electronic surveillance. This may require critical care MD's and nurses to escort the patients to imaging suites, the Operating Room (OR) and to the PICU
4. Off-hours mass casualty events are handled with more difficulties than events occurring during work hours, as less staff is available and additional staff may need to be enlisted immediately
5. The PICU, as well as its supporting services, should plan to self-sustain for a minimum of 96 hours without re-supply.
6. Should a state of emergency be declared, customary patient care practice may need to be modified. It is recognized that normal (optimal) standard of care may need to be redefined as 'sufficient standard of care'
7. To calculate staffing needs, an austere nurse-to-patient ratio of 1:3 (or 1:4) may need to be used for sufficient care for critically ill patients.



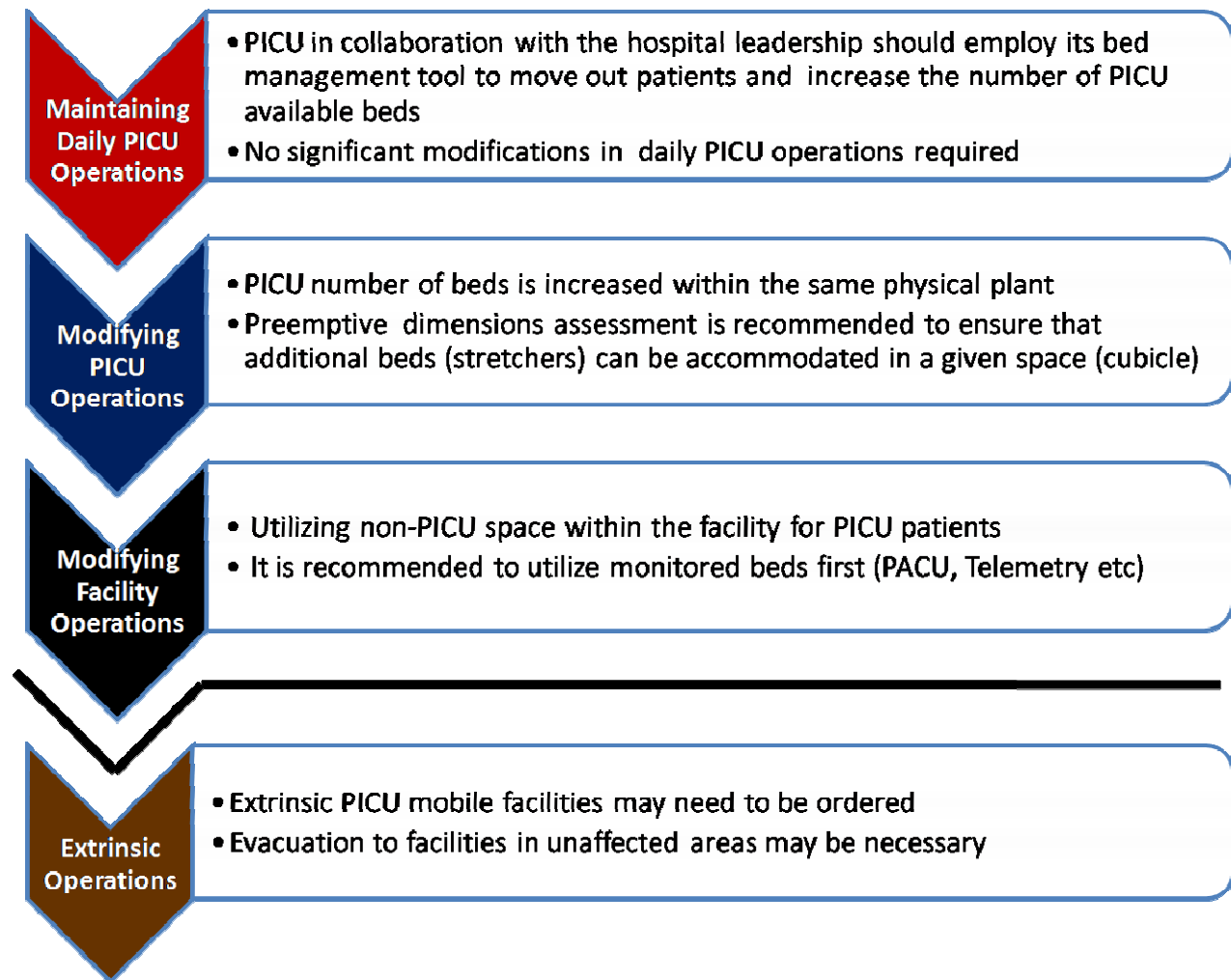
8. It is possible that 30% of staff will not report to work during a disaster, particularly during off hours, due to inability to reach the facility, illness, or personal/family safety concerns.
9. The PCCSP needs to take into account five types of injury or illness (Chemical, Biological, Radiological, Nuclear, or Explosive (CBRNE)) and their special requirements (i.e., supplies, pharmaceuticals, equipment, staff, and other services).
10. The PCC 'surge bed' has to be defined as a unit that requires space, equipment, supplies and staff.
11. Surge response capability should address the following:
  - PICU patient care capacity
  - Type of events
  - Availability of expertise
  - Surge plan implementation that ensures effective, safe and timely victim management
  - All components of the plan should be drilled until adequate level of proficiency is achieved
12. A course in Pediatric Fundamental Critical Care Support (PFCCS) is available. Non-critical care medical staff are encouraged to take the course to increase the number of pediatric critical care providers to be utilized during disasters

## Levels of Pediatric Critical Care Surge Plan Regarding Bed Capacity

It is suggested that before utilizing non-PICU space within a given healthcare system, a plan for expansion of the existing PICU bed capacity should be developed first.

It is recommended that levels of Pediatric Critical Care Surge Plan (PCCSP) regarding bed capacity are determined. It is also suggested that before utilizing non-PICU space within the hospital, a plan for expansion of the existing PICU bed capacity should be developed and implemented first.

The diagram below illustrates how surge response may change with increasing needs. In disasters of extreme magnitude, it is important to keep in mind that surge responses for critical care may progress well beyond the boundaries of a specific hospital and 'extrinsic surge' (extrinsic operations) would have to be considered.



(NYC PDC)

## Disaster Notification of PCC and Interdisciplinary Activities

The PCC service should obtain essential information about the event, by utilizing an 'information module', for successful implementation of its surge plan. This information should include details about the incident itself as well as other related PICU issues such as, resource inventory for uninterrupted PICU operation under the circumstances at hand (appendix A).

## PCC Activities after Disaster Notification

Once a disaster notification is received by the hospital, HICS should be activated and PCC must ensure that a reliable communication system exists among EMS, ED, PICU, and HICS (see communication plan on page 17). The ED attending should seek PCC help in implementing the ED plan.

## ED Preparation and Capacity Expansion for Mass Casualty Incident (MCI)

The ED and PCC must immediately respond to the expected surge in critically ill/injured pediatric patients by ensuring adequate availability of management space and manpower. Specific preparations are required for chemical and/or biological events as per the following suggested guidelines:

### **Suggested guidelines for ED preparation for MCI**

#### **General**

- Establish ED Command Site/desk staffed by the ED charge nurse
- Establish a communication line between the command desk and the EOC/HICS
- Activate Emergency Registration System
- Clear Pediatric ED of all existing ED patients who require extensive care and admit to floors if possible or to other designated areas
- Establish and use a Triage Protocol and designate incoming patients as:  
*Critical by red tags; moderate by yellow tags; mild by green tags*
- Ensure proper staffing of ED in consultation with EOC/HICS to include pediatric critical care nursing
- Ensure proper equipment availability including stretchers for transfer of patients
- Ensure sufficient emergency airway supplies, antidotes, infection control materials and decontamination equipment
- Ensure additional patient care space is made available (ambulatory modules and clinics)
- Direct incoming mild victims (Green tags) to above mentioned additional areas
- Use the ED space primarily for critical/moderate patients (red/yellow tags)

#### **Additional Guidelines for Chemical Events:**

- Ensure that the decontamination facility is ready and operational
- Ensure that adequate staff is available for decontamination
- Ensure that no victims are allowed to enter the ED unless they have been decontaminated
- Open the Family Information and Support Center (FISC) for the 'worried well' and ensure it is appropriately staffed

#### **For Biological Event:**

- Ensure that victims are adequately isolated
- Open FISC for the 'worried well' and ensure it is appropriately staffed

## PCC Staffing

The ED may become overwhelmed with the arriving number of pediatric critically injured victims, and help from PCC will be needed. Initially, this may compromise the critical care service in the PICU in terms of physician coverage and the nurse/patient ratio. However, Critical Care Practice under these circumstances should meet the definition of “Sufficiency of Care” which means that the care provided is sufficient to meet the immediate needs of the victims in the PICU and elsewhere.

The Pediatric Critical Care Surge Plan (PCCSP) should take into account the fact that help might be needed in the ED. The following diagram provides a sample of questions that would help with planning efforts:

The above table does not take into account the possible existence of PFCCS course graduates in the future. When these individuals become available, they will be qualified to assist in the ED and in the PICU during disasters.

In conjunction with the completed table above it is also recommended that PCC designates teams as follows:

### Management in the PICU: Attendings + Fellows + Nurses

Enlisting staff during off hours	Yes	No	Drilled (y/n)	Comments
1. Is a communication plan for enlisting additional staff in place				
2. Does the plan address concerns that might impede staff arrival during off hours and while dangerous circumstances exist				

PCC practice	Yes	No	Drilled (y/n)	Comments
1. Will CC nurse/patient ratio be changed				
2. Will CC fellows be allowed to function independently				
3. Will CC attendings work in shifts providing 24/7 coverage				
4. Will CC staff be involved in intra-hospital transport of patients				

(NYC PDC)

- Management in the ED: Fellows + Nurses
- Transport (inter- and intra-hospital): Nurses + Residents

## Increasing the Number of Critical Care Providers

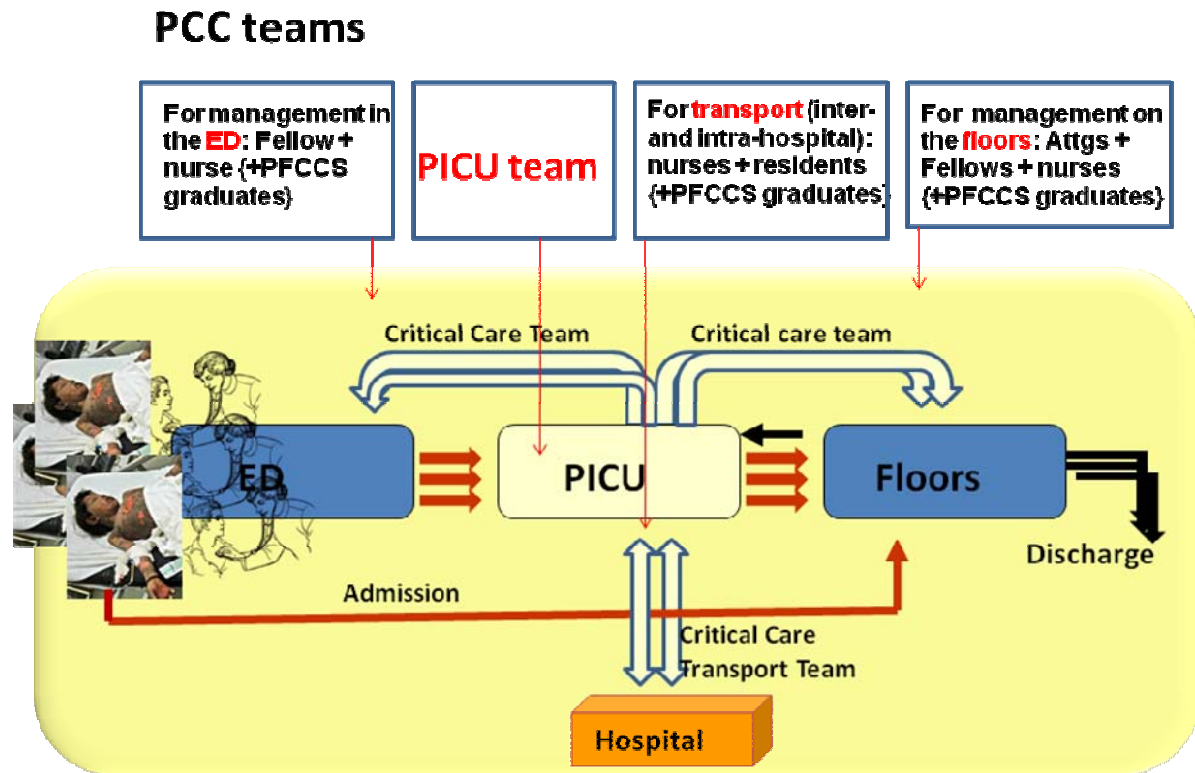
It is recommended that New York City hospitals sponsor the training of some Pediatric Critical Care faculty to become certified instructors to teach a course in Pediatric Fundamentals Critical Care Support (PFCCS). The faculty members to take this instructor course should be identified and specified in the PCCSP.

The following categories of care providers will be encouraged to take the course given by PFCCS instructors:

- Non-Critical Care MD's
- ED fellows
- Chief residents
- CC nurse specialists
- PA's

Having graduates of the PFCCS will enable additional staff to be assigned to the aforementioned teams (see diagram below):

- PICU: Attendings + Fellows + Nurses + PFCCS graduates
- ED: Fellow + nurse + PFCCS graduates
- Transport (inter- and intra-hospital): Nurses + Residents + PFCCS graduates
- Wards: Nurses + Residents + PFCCS graduates



(NYC PDC)

### Enlisting Additional Staff

Staff shortage is expected during mass casualty events and the need to enlist additional personnel may be inevitable. Staff concerns during a disaster may be an impediment to successful enlisting efforts, and as a result the practice of PCC may need to change. It is recommended that a communication plan for enlisting staff in an emergency is available. The following table is an example as to the necessary information for identification of individuals, their roles and the teams to which they are assigned.

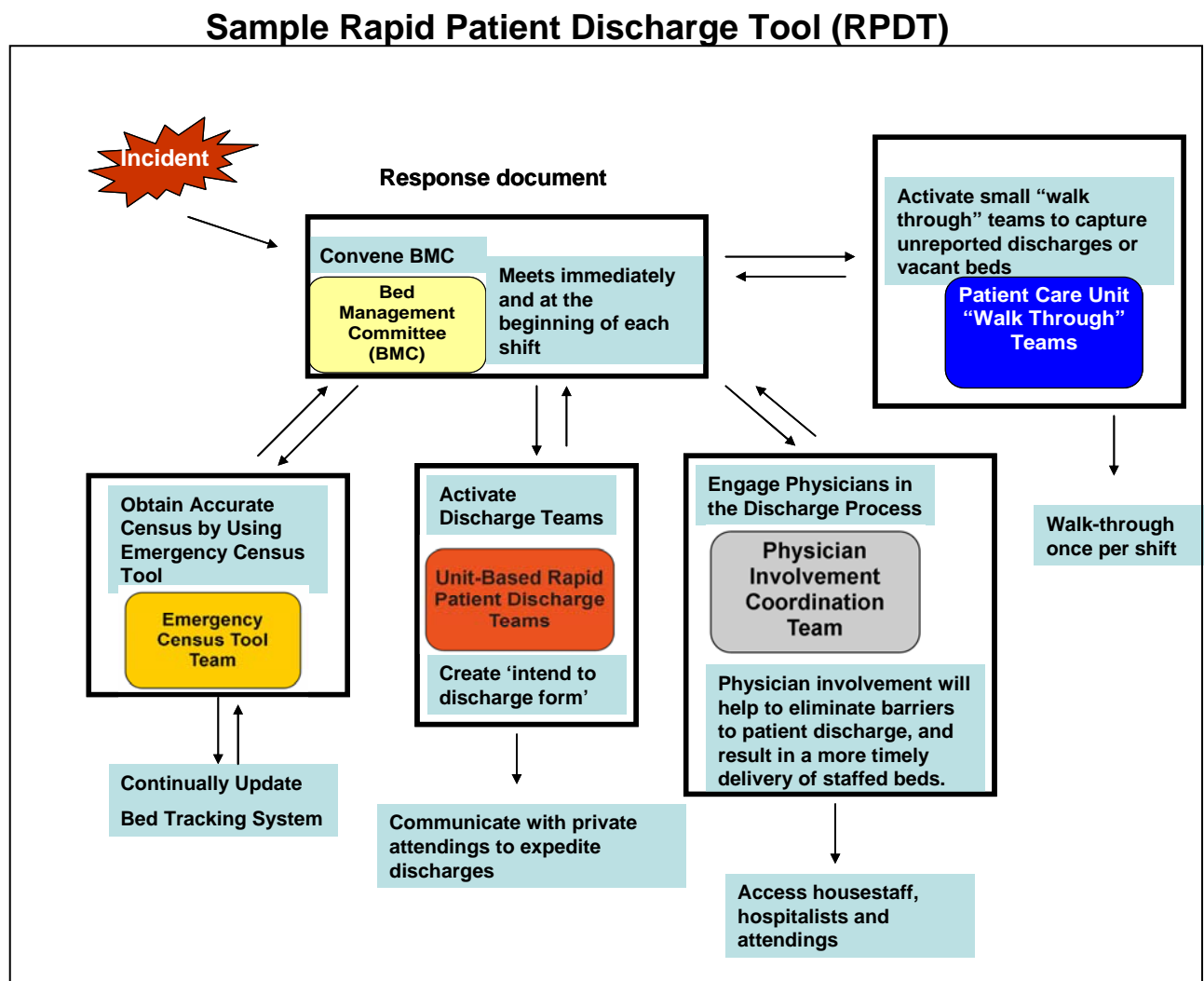
Name	Role	Team	Cell #	email
J. Downs MD	Intensivist	PICU	516-xxx-xxxx	<a href="mailto:jdowns@lij.edu">jdowns@lij.edu</a>
D. Gary PA	PFCCS graduate	ED	917-xxx-xxxx	<a href="mailto:Dgary@NSHS.edu">Dgary@NSHS.edu</a>

(Schnider Children's Hospital)

## Increasing PCC Bed Availability and Capacity

Increasing bed availability is feasible through rapid transfer or discharge of patients from the PICU. This entails utilization of an effective tool that is used by the hospital and includes a Bed Management Committee with its helping teams (see below). The principles of rapid discharge of patients are based on the fact that patients who do not require immediate medical attention, and their illness may be manageable on an outpatient basis, are sent home or to other facilities.

The tool is designed to assist the hospital administrators and emergency managers in preparing for and responding to unexpected increases in patient volume by providing them with adaptable plans for rapid patient discharge. It requires a Bed Management Committee (BMC) as the committee overseeing four activities (see figure).

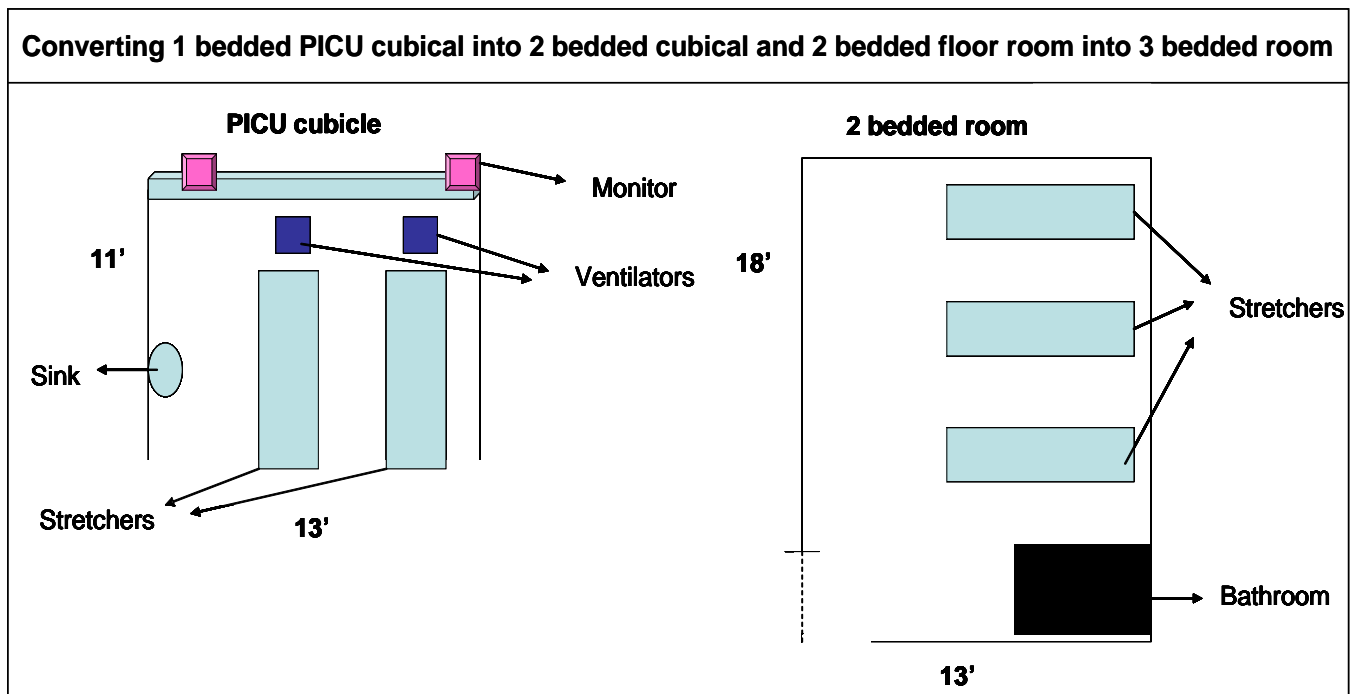


(Schnider Children's Hospital)

Since regular floor wards may need to accept patients from the PICU somewhat earlier and more acutely ill than usual, a higher level of human surveillance with additional supervision may be required, as well as utilization of a PCC floor team as mentioned earlier (see diagram 'PCC teams').

## Increasing Bed Capacity within PICU

Expanding bed capacity by accommodating more beds in a given space in the PICU can be established by following the diagram below, which is an example of Schneider Children's Hospital measurements to increase bed capacity in the PICU and on the floors.



(Schneider Children's Hospital)

## Rapid PCC Expansion to Non-PICU Clinical Areas

Expanding bed capacity is also feasible by utilizing non-PICU areas within the hospital while adhering to the following definition of 'surge bed' and its requirements:

A 'PCC surge bed' is a unit that requires:

- ☐ Physical space to accommodate a bed or a stretcher



- Staffing for continued critical care at a sufficient standard
- Equipment and supplies to manage victims of CBRNE events

A patient in a 'surge bed' requires:

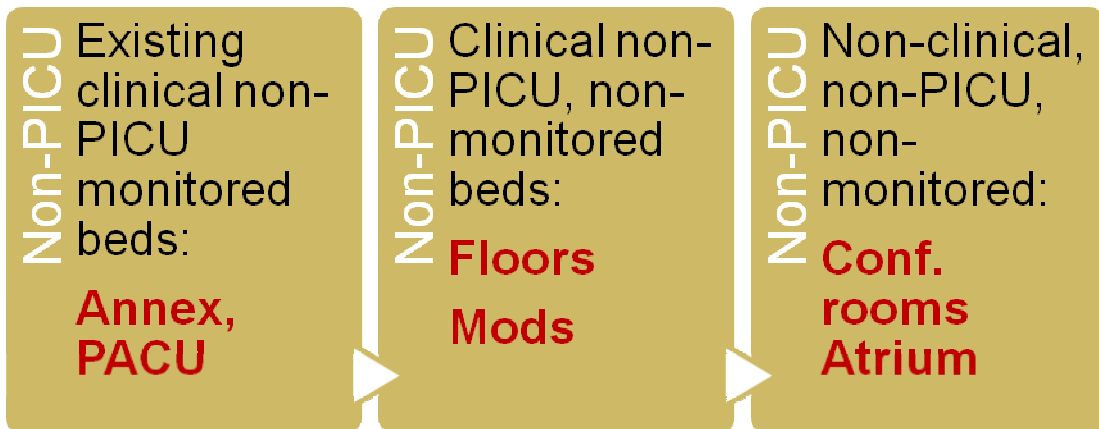
- Human surveillance
- Electronic surveillance (monitors)
- Functioning life support delivery systems (ventilators, dialysis etc)

The diagram below depicts the generic requirements for expanding PCC beds into non-PICU areas.

Rapid PCC expansion tool

**Generic PCC requirements for non-PICU area**

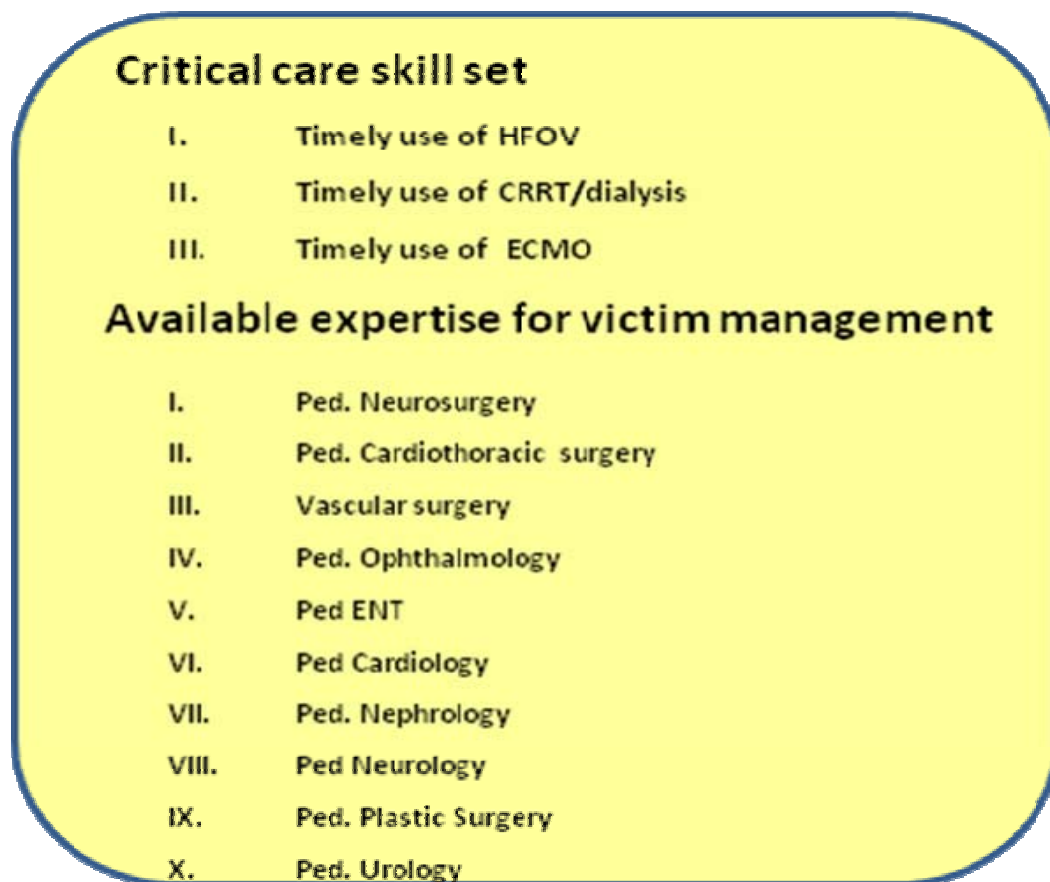
<p><b>Enough electrical power</b></p> <p><b>Oxygen</b></p> <p><b>Compressed air</b></p> <p><b>Suction power</b></p>	<p><b>Management team for the non-PICU areas:</b></p> <p><b>Attgs + Fellows + nurses</b></p>
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## Optimizing Victim Management

Pediatric critically injured victims may require specific pediatric surgical procedures and/or expertise. This expertise should be provided to them in a safe, timely and effective manner. PCC service should also have the expertise of managing patients with multi-organ system dysfunction

The following diagram provides a list of some important services and skill set for the PCCSP. This list contains some options that are not available at all hospital. Each hospital should follow this list according to available resources.

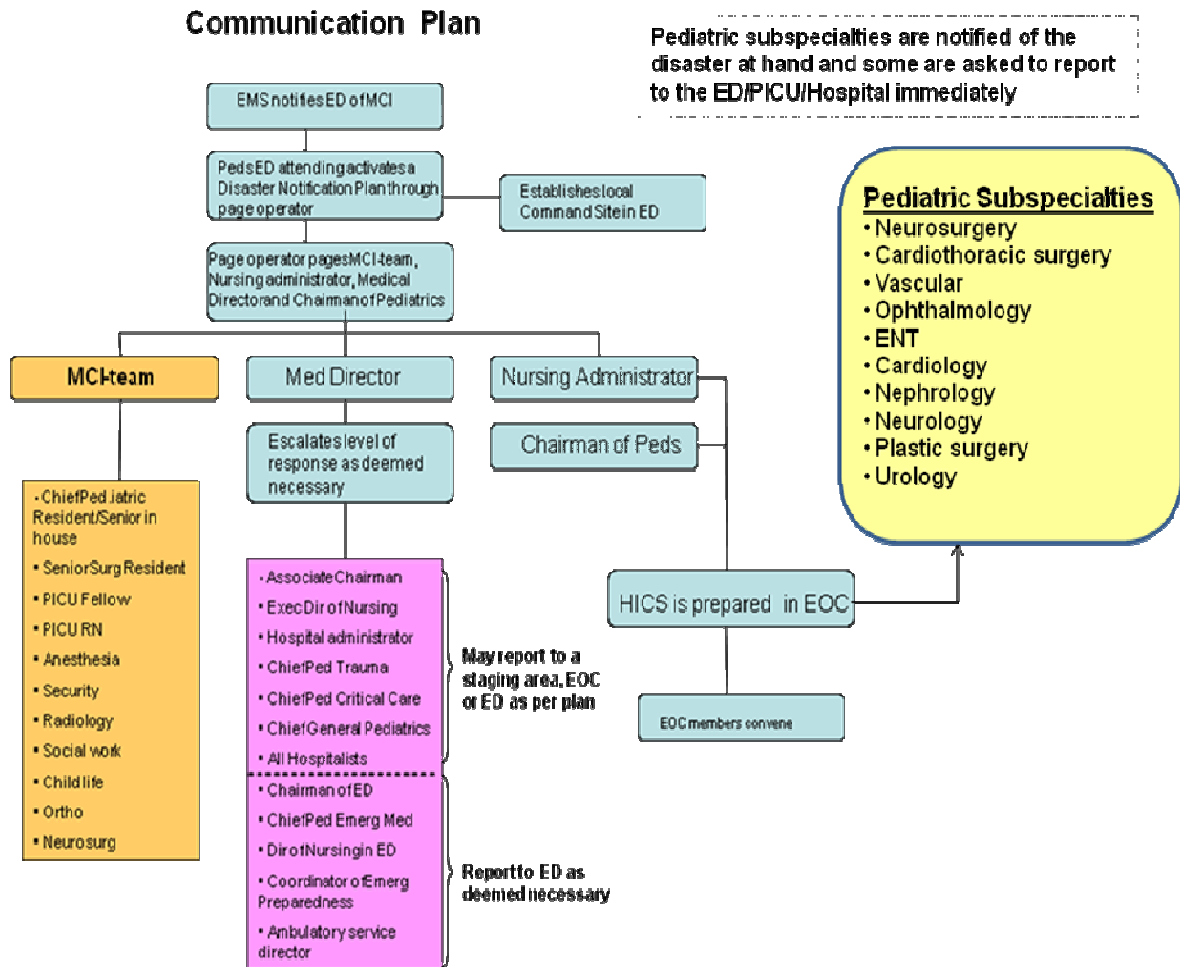


(NYC PDC)

## Communication plan

The communication plan (see example below) ensures that clinical services, ancillary services and administration staff are notified and some are asked to report to the hospital immediately.

### Sample Communication Plan



(Schnieder Children's Hospital)

## Preparing PICU to Self Sustain for 96 Hours

In order for the pediatric critical care service to self sustain for a considerable period of time it must have:

- On-going discussions about discharge/transfer options
- PICU shift coverage by all staff
- Equipment and supplies
- Ancillary support services
- Adequate infrastructure

The table below shows categories of recommended provisions for the PCC service to self sustain for 96 hours.

### **Availability of PICU equipment/supplies**

- General supplies
- Ventilators + tubing
- Dialysis (CRRT) + cartridges
- Invasive and non-invasive monitors

### **Other medical services**

- Laboratory
- Pharmacy
- Radiology
- Dietary
- Fatality management

### **Infrastructure and amenities**

- Power
- Oxygen
- Water
- Environmental management
- Laundry
- Information system

An itemized list of items needed for the PCC to self sustain for 96 hours should be modified to fit the needs to be generated by each hospital program.

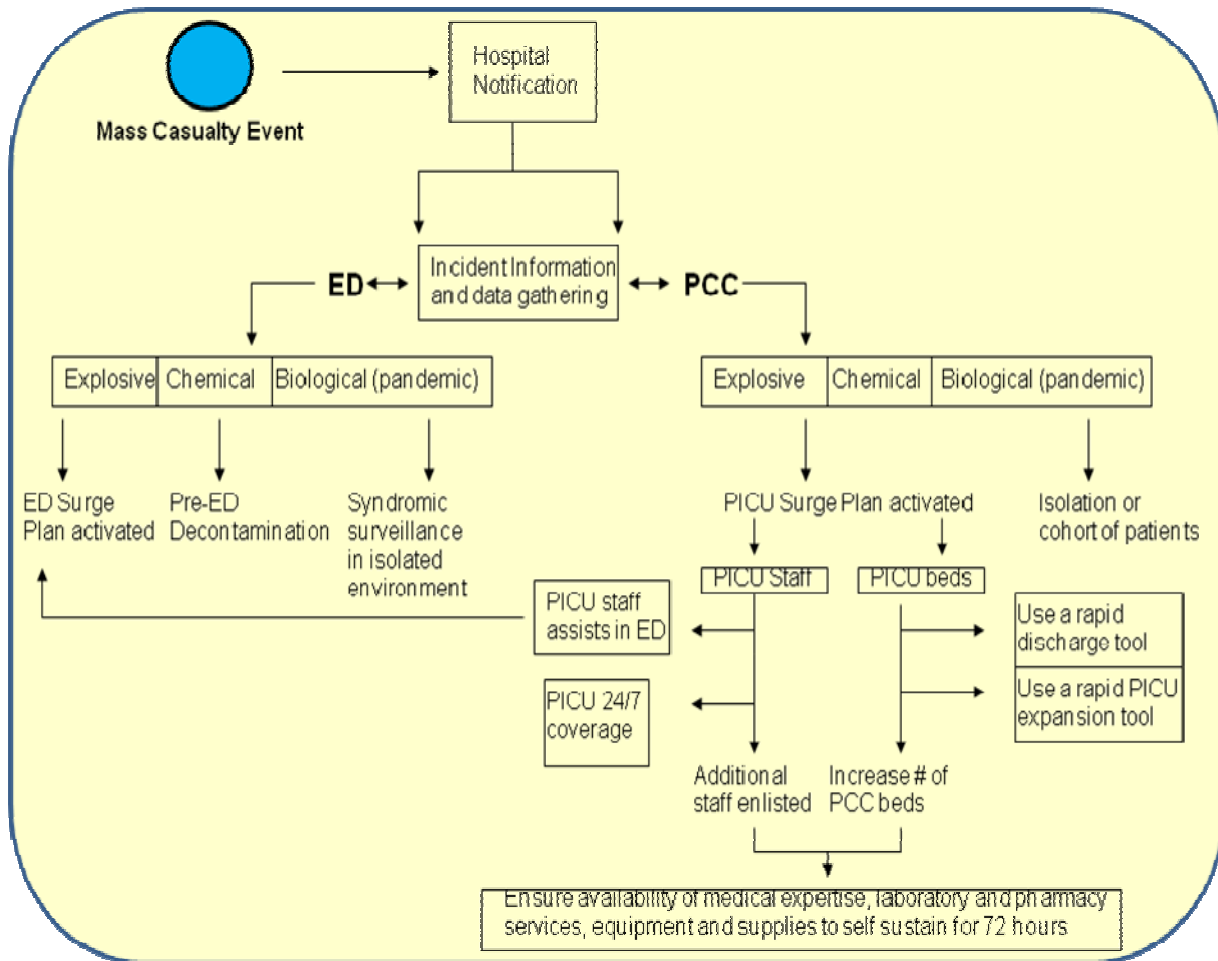
In addition to all of the above, the hospital and the PICU should be prepared to surge for CBRNE victims, in the event of a nerve agent attack, a vesicant agent attack, a blood agent attack, a pulmonary agent attack, and a biological agents event.

**A list of required antidotes, antibiotics and antivirals should be generated by hospitals and be readily available should a disaster strike**

## Summary

The following flowchart describes the activities expected of the PCC service and the ED in response to a disaster notification (see action sheet for PCC in Appendix B).

### Pediatric Critical Care (PCC) Surge Flowchart



## **Check List for Preparing PCCSP**

It is recommended that in preparing the PCCSP for a health system, the following check list is followed.

- Determine levels of PCCSP
- Determine involvement of PCC in ED activities
- Develop a plan to enlist additional staff when needed
- Develop a plan to ensure 24/7 PICU coverage by intensivists
- Develop a plan to train non-intensivists by PFCCS
- Develop guidelines for changing nurse/patient ratio for critically ill patients
- Develop a plan for increasing the # of beds in the PICU
- Develop a plan for expanding PCC to non-PICU areas
- Develop a plan for optimizing victim management during a disaster
- Ensure PCC can self sustain for 96 hours without re-supply
- Ensure PCC is ready to manage CBRNE victims

## *References*

Kelen GD, McCarthy ML: The science of surge. *Acad Emerg Med* 2006; 13:1089–1094

Health Resources and Services Administration, US Department of Health and Human Services: Fiscal Year 2004 Continuation Guidance, National Bioterrorism Hospital Preparedness Program. Critical benchmark No. 2-1: Surge Capacity: Beds. Available at: <http://www.hrsa.gov/bioterrorism/hrsa04biot.htm#beds>

Kanter RK, Moran JR: Hospital emergency surge capacity: An empiric New York statewide study. *Ann Emerg Med* 2007; 50:314–319

Phillips S: Current status of surge research. *Acad Emerg Med* 2006; 13:1103–1108

Rothman RE, Hsu EB, Kahn CA, et al: Research priorities for surge capacity. *Acad Emerg Med* 2006; 13:1160–1168

Health Systems Research: Altered Standards of Care in Mass Casualty Events. Rockville, MD, Agency for Healthcare Research and Quality, 2005. AHRQ publication 05-0043

Skidmore S, Wall WT, Church JK: Modular emergency medical system: Concept of operations for the acute care center. Available at:

<http://www.nnemrs.org/documents/Acute%20Care%20Center%20-%20Concept%20of%20Operations.pdf>

Hupert N, Cuomo J: Computer staffing model for bioterrorism response. Available at:

<http://www.ahrq.gov/research/biomodel.htm>.

Hick JL, O’Laughlin DT: Concept of operations for triage of mechanical ventilation in an epidemic. *Acad Emerg Med* 2006; 13:223–229

Rubinson L, Nuzzo JB, Talmor DS, et al: Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics:

Recommendations of the Working Group on Emergency Mass Critical Care. *Crit Care Med* 2005; 33:2393–2403

Kanter RK, Moran JR: Pediatric hospital and intensive care unit capacity in regional disasters: Expanding capacity by altering standards of care. *Pediatrics* 2007; 119:94–100

Kanter RK, Andrade J, Boeing N, et al: Professional consensus on altered standards of hospital care in disaster surges. *Abstr. Acad Emerg Med* 2007; 14:S190

Davis DP, Poste JC, Hicks T, et al: Hospital bed surge capacity in the event of a mass casualty incident. *Prehosp Disaster Med* 2005; 20:169–176

Kelen GD, Kraus CK, McCarthy ML, et al: Inpatient disposition classification for the creation of hospital surge capacity. *Lancet* 2006; 368:1984–1990



Randolph AG, Gonzales CA, Cortellini L, et al: Growth of pediatric intensive care units in the US from 1995 to 2001. *J Pediatr* 2004;144:792–798

Centers for Disease Control and Prevention: Predicting casualty severity and hospital capacity. Available at: <http://www.bt.cdc.gov/masscasualties/capacity.asp>

Peleg K, Aharonson-Daniel L, Stein M, et al: Gunshot and explosion injuries: Characteristics, outcome, and implications for care of terror-related injuries in Israel. *Ann Surg* 2004; 239:311–318

Kanter, RK. Strategies to improve pediatric disaster surge response: Potential mortality reduction and tradeoffs *Crit Care Med* 2007; 35:2837–2842

## **Other Resources**

*Pediatric Terrorism and Disaster Preparedness: A Resource for Pediatricians*. AHRQ Publication Nos. 06(07)-0056 and 06(07)-0056-1, October 2006. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/research/pedprep/resource.htm>

Bioterrorism Hospital Preparedness Program, New York City Department of Health and Mental Hygiene, *Hospital Guidelines for Pediatric Preparedness, 3rd Edition*, August 2008 2. <http://www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml>

Bioterrorism Hospital Preparedness Program, New York City Department of Health and Mental Hygiene *New York City Hospital Pediatric Resource Directory July 2008* [www.nyc.gov/html/doh/downloads/pdf/bhpp/hepp-peds-resdir-july08.pdf](http://www.nyc.gov/html/doh/downloads/pdf/bhpp/hepp-peds-resdir-july08.pdf) - 2008-08-04

Foltin G, Tunik M, Cooper A, Treiber M. *Pediatric Disaster Preparedness: A Resource for Planning, Management and Provision of Out-of-Hospital Emergency Care*. New York, NY: Center for Pediatric Emergency Medicine, 2008.

“Pediatric Issues in Disasters and Multicasualty Incidents” in Foltin GL, Tunik MG, Cooper A, Markenson D, Treiber M, Skomorowsky A, eds. *Paramedic TRIPP: Teaching Resource for Instructors in Prehospital Pediatrics Version 1.0*: Center for Pediatric Emergency Medicine; 2002.

Boyer EW, Fitch J, Shannon M. Pediatric Hospital Surge Capacity in Public Health Emergencies (Prepared under Contract No. 290-00-0020). AHRQ Publication No. 09-0014. Rockville, MD: Agency for Healthcare Research and Quality, January 2009

Chung S, Danielson J, Shannon M. School-Based Emergency Preparedness: A National Analysis and Recommended Protocol (Prepared under Contract No. 290-00-0020) AHRQ Publication No. 09-0013. Rockville, MD: Agency for Healthcare Research and Quality, December 2008

## Appendix A: Suggested Information Module

### 1. Incident details useful for initiating PICU response plan:

#### General Information

##### **Time Points: helps determine hospital/PICU response time**

- When did the event happen
- When did first notification arrive at the ED/HICS/PICU
- When are first victims expected to arrive in the hospital's ED

##### **The affected zone: enables better understanding as to what to expect**

- Where did the event happen
- What are the dimensions of the affected zone
- Are there critical (or dangerous) assets in the zone
- What is the zone's population characteristics (pediatric vs. adult victims)

#### PICU responders

##### **Personnel: who should report to the PICU**

- Intensivists/fellows
- Consultants (surgical disciplines)
- Respiratory therapy
- Nursing
- Security

#### PICU special activities

##### **Preparing the PICU to accommodate victims**

- Is there a need to decontaminate prior to PICU admission
- Is there a need to evacuate or transfer existing patients
- Is there a need to isolate/cohort
- Is there a need to secure the PICU area
- Is there a need to manage victims in other hospital sites in addition to the PICU

### Information flow for an ongoing situational awareness in the PICU

#### **Communications:**

- Are all Incident Command Centers (ED, Hospital, EMS, etc) connected
- Are EMS/Fire/Police/Hazmat/Hospital's ED/PICU connected with each other
- Is there satellite imagery (GPS/GIS) available

#### **Uninterrupted information flow**

- Are all field units and hospital units connected for exchange of information via:
  - PDA
  - Tablets/Blackberries
  - Cell phones/Voice over IP

### Security:

#### **Security for uninterrupted PICU function**

- Perimeter security

### Victim Documentation and Tracking

#### **Records**

#### **Software**

### Quality of victim management

#### **Victim Flow: No impedance to victim flow**

- Use of a rapid discharge tool
- Use of a PICU expansion tool

#### **Personal Protective Equipment (PPE) and Safety**

- Are all care providers proficient in PPE use
- Are PPE sets available to all

#### **Equipment and Supplies: can the PICU self sustain for 72 hours**

- Sufficient antidotes and medications

#### **Rotation of Staff: 24/7 coverage**

- Staff should self sustain on a 24/7 basis

#### **Level of disruption of hospital operation**

- Will the OR be in full operative capacity
- Will the ED and outpatient clinics handle routine patient visits
- How and when will the hospital/PICU normal function be restored to enable routine patient care

## **2. PICU resource inventory beyond the hospital's storage [is it complete, adequate and readily accessible]**

### Location:

#### **Places in which PICU resource inventory may exist and utilized**

- Blood Banks/Blood Centers
  - Blood products
- Community Pharmacies
  - Additional medications
- Emergency Medical Services
  - Vehicles
  - Tents/mobile hospitals and PICU's
  - Ventilators
  - Monitors
- Home Health Agencies
  - Ventilators
- Community hospitals
  - Medications
  - Equipment/supplies
- Outpatient Dialysis Centers
  - Dialysis equipment and supplies
- Public Health Departments
  - Ventilators
  - Vaccinations
  - Laboratories
- Red Cross/Red Crescent
  - Stretchers
  - Vehicles
- Rehabilitation Facilities & Hospitals
  - Ventilators
  - Monitors

### General categories of resources:

#### **Categories of equipment and supplies that might be required**

- Antibiotics
- Antidotes/Antitoxins
- Vaccines
- IV Fluids
- Major Medical Equipment
- Medical Supplies
- Blood Products
- MD's
  - Intensivists
  - Surgeons
  - Consultants
- RN's

Medical Therapists

Beds/stretchers

Ancillary staff

- Pharmacists
- Technicians
- Drivers
- Security officers

Specific resources:

**Specific resources that might be required for CBRNE victims**

**Treatment of victims of biological warfare agents**

**Antibiotics**

- IV Cipro 200MG Doses
- IV Levofloxacin 500mg Doses
- IV Penicillin Doses
- IV Penicillin G—4 million doses
- Oral Amoxicillin 500mg Doses
- Oral Cipro 500MG Doses
- Oral Doxycycline 100mh Doses
- Oral Levofloxacin 500mg Doses
- Oral Ofloxacin 200mg Doses
- Oral Rifampin 150mg Doses
- Oral Tetracycline 500mg Doses
- Streptomycin IM—1 gram vials

**Antivirals**

- Oseltamivir (Tamiflu)

**Vaccinations**

- Smallpox

**Treatment of victims of chemical warfare agents**

- Atropine
- Pralidoxime
- BAL
- Sodium-nitrite
- Sodium-thiosulfate
- Beta-blockers
- N-acetylcysteine
- Benzodiazepines
- Dilantin

**Treatment of radiological disasters**

- Potassium Iodide

## Appendix B Sample Action Sheet for Initiating PICU Surge Capacity Plan

### Responsible person for activating the plan:

- Pediatric Critical Care Attending on duty
- and/or the Chief of the Division

**Mission:** Help prepare the hospital and the pediatric critical care service to handle an excessive number of critically ill/injured pediatric patients during a disaster.

Date PCC surge plan activated: _____	Time PCC surge activated: _____
Date PCC surge plan deactivated _____	Time PCC surge deactivated _____
Name of Pediatric CC attending/chief: _____	
Signature: _____	
Hospital Command Center (HCC) Location: _____ Telephone: _____	
Fax: _____ Other Contact Info: _____ Radio Title: _____	

	Time	Initial
Obtain incident briefing (see attached situation report)		
Prepare PICU for CBRNE if necessary <ul style="list-style-type: none"> <li>➤ Chemical agents</li> <li>➤ Biological agents</li> </ul>		
Record the Number of pediatric critically ill patients expected _____		
Gather and brief PCC staff		
Enlist additional staff		
Transfer/discharge patients from the PICU <ul style="list-style-type: none"> <li>• use your rapid patient discharge tool</li> </ul>		
Determine whether PICU expansion of bed capacity is needed. Then attempt to accommodate more beds in a given PICU space and/or utilize non-PICU facilities within the hospital		
Create PCC teams for victim management: <ul style="list-style-type: none"> <li>• in ED</li> <li>• on the floors</li> <li>• on transport</li> </ul>		
Send designated staff members to assist ED if needed		
Prepare for patient arrival		
Ensure PCC service can self sustain for 96 hours by: <ul style="list-style-type: none"> <li>➤ Having on-going discussions about discharge/transfer options</li> <li>➤ PICU 24/7 coverage by staff</li> <li>➤ Asking for necessary equipment and supplies to be available</li> <li>➤ Asking ancillary support services to be available</li> <li>➤ Having the needed infrastructure</li> </ul>		
<b>Documents/Tools</b>		
<ul style="list-style-type: none"> <li>• Guidance Recommendations for Increasing NYC PICU Surge Capacity</li> <li>• Your hospital and your PCC surge capacity plans</li> </ul>		

## **Situation report (SitRep) for PICU surge:**

Planners of surge capacity tools should devise a template for obtaining a situation report (SitRep) with the following suggested data:

1. Where did the event happen?
  - What is the location of event?
  - Obtain address of event?
  - Are there more than one event site?
2. When did the event happen
  - How long ago did event start?
3. What is the nature of event?
  - Is the event conventional or CBRNE?
  - What is the mechanism of the event?
  - Are there pediatric victims involved?
  - Is the event on-going?
4. What are the safety hazards?
  - Are victims contaminated?
  - Is Decontamination being performed on scene?
  - Is there a need for isolation/ positive pressure rooms
  - Are there any safety concerns/ hazards?
5. How many victims?
  - Obtain number if victim?
  - How many of total are pediatric patients?
6. What are the conditions of the victims?
  - Are victim conditions known?
  - How many patients will be arriving at the hospital ventilated?
7. When is the first victim expected to arrive at the hospital
8. Who is transporting the victims to the hospital?

**Appendix C**

**SURGE CAPACITY EXPANSION TOOL (example Schneider Children’s Hospital)**

BED AVAILABILITY and ISOLATION ROOMS in TRADITIONAL CLINICAL AREAS							
Date & Time:				Name/Title (of person completing form):			
Units & Rooms	Isolation: Y/N – UV & Neg. Pressure	*Avail ability Status	Additional # of beds per room	**Additional Required Equipment	# of Possible Hallway beds	Maximum # of possible beds per room	Comments
MED 2							
Room 209							
Bed A	yes						1 Chained hepafilter/UV Machine
Room 210							
Bed A	Yes						
Room 211							
Bed A							
B							
C							

\* A - available; SA – shortly available (within 2 hours); AP – Availability pending (within 12 – 24 hours); UA - unavailable

\*\* PO – pulse oximeter; OT – Oxygen tank; OS – oxygen splitter; SM – suction machine



**Appendix D**

**SURGE CAPACITY EXPANSION TOOL** (example Schneider Children’s Hospital)

<b>BED AVAILABILITY and ISOLATION ROOMS in NON-TRADITIONAL CLINICAL AREAS</b>							
<b>Units &amp; Rooms</b>	<b>Max # of beds</b>	<b>*Availability Status</b>	<b>Additional # of beds per room</b>	<b>**Additional Required Equipment</b>	<b># Possible Hallway beds</b>	<b># Possible beds to be used</b>	<b>Comments</b>
Ped. Endoscopy	6						
Ped. PACU	8						
Ped. ASU	6						
Urgi center	7						
Annex	3						
<b>TOTAL</b>							

\* A - available; SA – shortly available (within 2 hours); AP – Availability pending (within 12 – 24 hours); UA - unavailable

\*\* PO – pulse oximeter; OT – Oxygen tank; OS – oxygen splitter; SM – suction machine

**Appendix E**

**SURGE CAPACITY EXPANSION TOOL (example Schneider Children’s Hospital)**

<b>NON-CLINICAL AREAS</b>							
<b>Units &amp; Rooms</b>	<b>Max # of beds</b>	<b>*Availability Status</b>	<b>Additional # of beds per room</b>	<b>**Additional Required Equipment</b>	<b># Possible Hallway beds</b>	<b># Possible beds to be used</b>	<b>Comments</b>
Hem/Onc Clinic New + Old	19						
Cardiology Mods	7						
Conference rooms (337, 301, 408, 417)	6						
Playrooms x 4	8-12						
Annex	12-14						
Fourth floor	30						
Atrium	60						
<b>TOTAL</b>							

\* A - available; SA – shortly available (within 2 hours); AP – Availability pending (within 12 – 24 hours); UA - unavailable  
 \*\* PO – pulse oximeter; OT – Oxygen tank; OS – oxygen splitter; SM – suction machine

**Appendix F**

**SURGE PLANNING MASTER** (example Schneider Children's Hospital)

<b>BED AVAILABILITY in TRADITIONAL CLINICAL AREAS</b>							
<b>Units &amp; Rooms</b>	<b>Isolation beds</b>	<b>Regular beds that are readily available</b>	<b>Beds that will be available within 2 hours</b>	<b>Beds that will be available within 12-24 hours</b>	<b># possible hallway beds</b>	<b>Beds that are added beyond regular capacity</b>	<b>TOTAL</b>
<b>Med 2</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>BMT</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Adol Med</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>PICU</b>							
<b># of beds</b>							
<b>Comments</b>							

**Appendix G**

**SURGE PLANNING MASTER** (example Schneider Children’s Hospital)

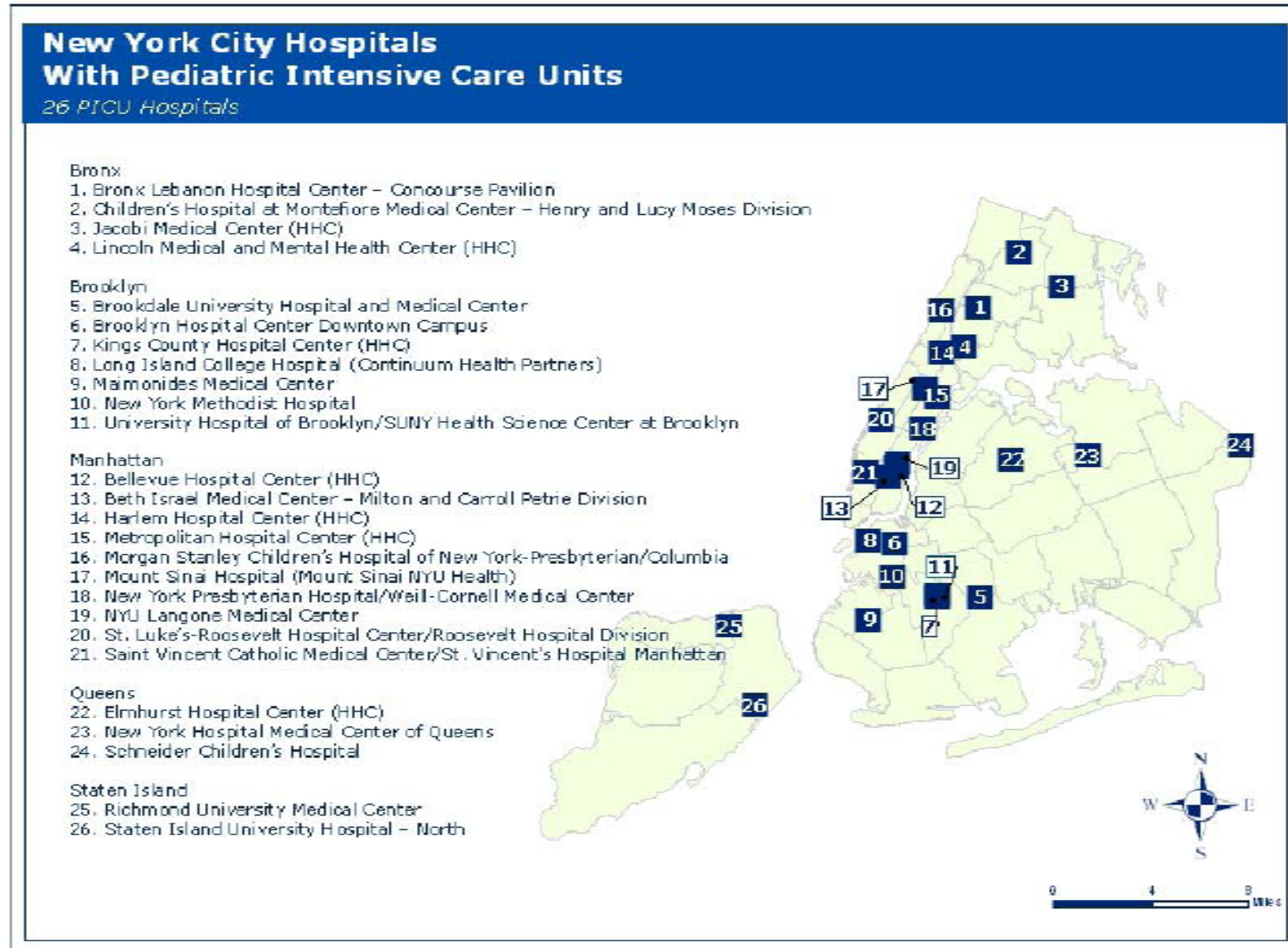
<b>NON-TRADITIONAL CLINICAL</b>							
<b>Units &amp; Rooms</b>	<b>Isolation beds</b>	<b>Regular beds that are readily available</b>	<b>Beds that will be available within 2 hours</b>	<b>Beds that will be available within 12-24 hours</b>	<b># possible hallway beds</b>	<b>Beds that are added beyond regular capacity</b>	<b>TOTAL</b>
<b>Pediatric Endoscopy</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Pediatric PACU</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Pediatric ASU</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Urgi center</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Annex</b>							
<b># of beds</b>							
<b>Comments</b>							

**Appendix H**

**SURGE PLANNING MASTER** (example Schneider Children’s Hospital)

<b>NON-CLINICAL</b>							
<b>Units &amp; Rooms</b>	<b>Isolation beds</b>	<b>Regular beds that are readily available</b>	<b>Beds that will be available within 2 hours</b>	<b>Beds that will be available within 12-24 hours</b>	<b># possible hallway beds</b>	<b>Beds that are added beyond regular capacity</b>	<b>TOTAL</b>
<b>Atrium</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Hem/Onc Clinic</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Cardiology Mods</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Conference Rooms</b>							
<b># of beds</b>							
<b>Comments</b>							
<b>Playroom</b>							
<b># of beds</b>							
<b>Comments</b>							

**APPENDIX I**



(NYCDOH)



**SUMMARY STATISTICS OF NYC  
HOSPITALS WITH PEDIATRIC RESOURCES**

Borough	Number of NYC Hospitals WITH Pediatric In-Patient Beds	Number of NYC Hospitals WITHOUT Pediatric In-Patient Beds
Bronx	6	5
Brooklyn	13	3
Manhattan	14	7
Queens	9	4
Staten Island	2	1
<b>Total</b>	<b>44</b>	<b>20</b>

\*Only one NYC PICU Hospital reported not having pediatric in-patient beds: St. Luke's-Roosevelt Hospital Center-Roosevelt Hospital Division (Manhattan).

Borough	Number of NYC Hospitals WITH Pediatric Intensive Care Units	Number of NYC Pediatric Hospitals WITHOUT Pediatric Intensive Care Units
Bronx	4	3
Brooklyn	7	6
Manhattan	10	8
Queens	3	6
Staten Island	2	0
<b>Total</b>	<b>26</b>	<b>23</b>

Borough	Number of NYC Hospitals WITH Neonatal Intensive Care Units
Bronx	6
Brooklyn	10
Manhattan	12
Queens	7
Staten Island	2
<b>Total</b>	<b>37</b>

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**ACRONYMS**

ALS Advanced Life Support  
BLS Basic Life Support  
BMC Bed Management Committee  
CBPP Centers for Bioterrorism Preparedness Planning  
CBRNE Chemical, Biological, Radiological, Nuclear, and Explosive  
CCP Casualty Collection Point  
CFR Certified First Responder  
CHAM Children's Hospital at Montefiore  
CHONY Morgan Stanley Children's Hospital of New York Presbyterian  
CIMS City Incident Management System  
CPEM Center for Pediatric Emergency Medicine  
CSHCN Children with Special Health Care Needs  
CUMC Columbia University Medical Center  
ESF Emergency Support Function  
EMS Emergency Medical Services  
FDNY Fire Department of New York  
GNYHA Greater New York Hospital Association  
HazMat Hazardous Materials  
HICS Hospital Incident Command System  
IMS Incident Management System  
KCCH Komansky Center for Children's Health  
MCE Mass Casualty Event  
MCI Mass Casualty Incident  
NIMS National Incident Management System  
NRF National Response Framework  
NYCDOHMH New York City Department of Health and Mental Hygiene  
NYCHHC New York City Health and Hospitals Corporation  
NYPH New York Presbyterian Hospital  
NYSDOH New York State Department of Health  
OEM New York City Office of Emergency Management  
OMA Office of Medical Affairs  
PCC Pediatric Critical Care  
PCCSP Pediatric Critical Care Surge Plan  
PDC Pediatric Disaster Coalition  
PDRH Pediatric Disaster Receiving Hospitals  
PFCCS Pediatric Fundamentals Critical Care Support  
PICU Pediatric Intensive Care Unit  
PPE Personal Protective Equipment  
REMAC Regional Emergency Medical Advisory Committee of New York City  
REMSCO Regional Emergency Medical Services Council of New York City  
RFP Request for Proposal  
RPDT Rapid Patient Discharge Tool  
RPM Respirations/Pulse/Motor response  
RTAC the Regional Trauma Advisory Committee of New York City  
SAR Search and Rescue  
SCH/LIJ Schneider Children's Hospital of the North Shore LIJ Health System  
SitRep Situation Report  
SUNY State University of New York  
TAC Technologically Assisted Children  
WCMC the Weill Cornell Medical Center