Pediatric Tabletop Exercise Toolkit for Hospitals

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Chapter 1: Pediatric Tabletop Exercises in Healthcare Settings

Introduction to the Toolkit

This Chapter Discusses:

- Pediatric Tabletop exercises
- Considerations before planning begins
- Instructions for using the toolkit
- Instructions for modifying the toolkit
- Other Resources

A pediatric disaster, either occurring inadvertently, through nature or through intentional means, will significantly stress a hospital's preparedness efforts and the clinical skills of its health care providers, especially in a hospital without pediatric specialists. Tabletop exercises emphasize the importance of using a multidisciplinary approach to respond to a pediatric disaster. Tabletop exercises are designed to encourage free and open exchange of ideas in a low stress environment as well as to familiarize participants with roles, functions, plans, policies and procedures within an institution. They also provide an opportunity for institutions to identify areas of weakness where improvements can be made prior to a catastrophic event.

During tabletop exercises in this toolkit, the participants will be divided into two break-out groups: one for Emergency Department/Clinical representatives and one for Incident Command/Administrative representatives. After the moderator introduces each module, teams are asked to respond to a series of questions. Each team has a facilitator who is asked to monitor the discussion and encourage teams to focus on critical issues raised in each module. Exercise injects, bits of scenario specific information provided to participants, are inserted during these discussion periods. The teams, then, are asked to present their response in a session facilitated by the moderator, before proceeding to the next module. After the last module, a "hot wash" debriefing is conducted to discuss the initial reaction of participants to the drill, outline the major issues and gaps identified by the exercise, and potential next steps to address them.

Considerations Before Planning Begins

Tabletop exercises are an effective way to bring personnel from various hospital or primary care center's clinical departments within small or large, single or multi-institutions together. In order for a tabletop exercise to be effective, senior administration must recognize the importance of being prepared for a pediatric disaster through pre-event planning for all levels of the organization. Senior administration should participate in the tabletop exercise, and encourage key personnel (e.g., Chairman of Emergency Department, Medical Director, Nursing Director) to actively participate as well. Leadership support from the highest levels of the organization is

critical to the success of any exercise program. Senior administration should publicly and visibly endorse the program to the institution's executive staff, setting clear expectations regarding the success of the program.

A pediatric preparedness assessment should be performed on prior staff trainings at the heath care facility. Development of goals and objectives will be dependent on the institutions former experience with drills and staff training. An institution may discover that certain departments have received more training than others. However, regardless of prior training experience, the tabletop exercise will promote communication and intense teamwork among all departments. The frequency of exercises should be based on demonstrated performance in actual events or exercises, as well as local, state and federal mandates.

This toolkit provides a pediatric disaster scenario for general hospitals. The participants will be divided into two break-out groups: one for Emergency Department/Clinical representatives and one for Incident Command/Administrative representatives.

A post exercise evaluation (See Planning and Conducting a Tabletop Exercise: Evaluating the Exercise and Its Impact in Chapter 4) should be performed. This toolkit provides a detailed description of the exercise planning process (Chapter 2), instructions for conducting the exercise (Chapter 3), materials necessary to perform the specific tabletop exercise scenario (Chapters 5-8), and additional materials necessary for conducting any pediatric tabletop exercise in the Appendix.

How to Use This Toolkit

The Tabletop Exercise process is an integrated set of tasks that are described in the six chapters of this toolkit.

Chapter 1 provides a brief overview and purpose of tabletop exercises.

Chapter 2 explains the step-by-step process of planning the exercise.

Chapter 3 gives detailed information on conducting the exercise.

Chapter 4 provides guidance, procedures and tools for conducting the post-exercise evaluation and debriefings.

Chapter 5 provides the Pediatric Blast Exercise Scenario and Tabletop Timeline

Chapter 6 provides Moderator Instructions and Narration

Chapter 7 provides Facilitator Instructions

Chapter 8 provides Evaluator Instructions and Tools

Chapter 9 provides Participant Handouts

The Appendices include:

4. Pre-Event Trusted Agent Worksheet
5. Recommended Participants
6. Sample Sign-in Sheet
7. Exercise Planning Checklist and Timeline
8. Sample Agenda
9. Sample Floor Plan
10. Debriefing Session Guidelines
11. How to Modify Materials for Larger Hospitals
12. List of Acronyms
13. CDC Blast Scenario Fact Sheet

A PowerPoint® slide set of the Pediatric Tabletop Exercise is also provided in a separate document which should be modified by the planner(s) to include hospital specific information.

In addition, each chapter of this Program contains recommended task lists and timeframes for each activity necessary for successful presentation of the Pediatric Tabletop Exercise.

How to Use and Modify Exercise Materials in this Toolkit

Throughout the exercise materials (e.g., PowerPoint® slides, moderator notes, etc.) bracketed/red print text (e.g., [Your City]) should be edited to reflect your institutions policies, procedures, or demographic area. **Be sure that the moderator narrative reflects all changes in the slides.**

The moderator should be cautious not to reveal the nature of the disaster in advance of the scenario. All materials should be handed out in a step-wise fashion, one module at a time.

Chapter 9 contains a Packet of Handouts for Participants which are to be duplicated. The Handout Distribution Table lists the handouts and when they should be distributed to whom. **Remember to revise the bracketed information in all sections.** A Sample Agenda found in Appendix 5 should be modified for your exercise. A Pediatric Blast Fact Sheet is in Appendix 12, and should be duplicated as is for all participants.

The first 19 slides contain a general introduction to tabletop exercises, with an explanation of the organization as well as definition of key players. Then the exercise is divided into three modules,

each culminating with a breakout segment. During each breakout participants will be provided with a situation report and group discussion points. This information will be on the slides and with a hard copy distributed to the participants. After the groups have reported back, then you will go over the critical actions that should have been performed up to that point by each group.

A generic agenda **(see Appendix 5)** has been included in the toolkit. The agenda may be revised by adding your own timeframes (e.g., Introduction 8:00 am – 8:10 am) after each item.

The exercise is designed for use by a small general hospital without a pediatric emergency service, no Pediatric Intensive Care Unit and with a small or no pediatric inpatient ward. **Appendix 8** contains suggestions on how to modify the exercise to ensure a more appropriate experience for a larger hospital with some pediatric resources. *The intent of the exercise is to challenge the institution sufficiently to provide a good learning experience, but not discourage the participants.*

A fifteen-minute break has been written into each scenario. The placement of the break may be changed according to your institution's needs.

Other Pediatric Resources

The following resources might prove useful in preparing your disaster drill:

Children in Disasters: Hospital Guidelines for Pediatrics Preparedness (3rd Edition 2008), developed by the New City Department of Health and Mental Hygiene and the Centers for Bioterrorism Preparedness Planning (CBPP) Pediatric Task Force
http://home2.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml

Foltin G, Shannon M, Schoenfeld D. *Pediatric Terrorism and Disaster Preparedness Resource* AHRQ/AAP 2006. CD Rom, Website and Book.
http://www.ahrq.gov/research/pedprep/pedresource.pdf

Romig L. The JumpSTART Pediatric MCI Triage Tool http://www.jumpstarttriage.com/

Chapter 2: Planning the Exercise

This Chapter Discusses:

- Considerations before exercise planning
- Planning committee
- Planning committee position descriptions
- Roles of the moderator, facilitator, participants, evaluators, and observers
- Defining a tabletop exercise
- Modifying the tabletop exercise
- Breakout group format
- Exercise evaluation
- Scheduling and conducting planning meetings

1. Early Development (*6–8 weeks prior to exercise*)

(a) Determine/recruit members of Planning Committee and Evaluation Team

(b) Establish target date(s) for exercise

Considerations before Exercise Planning

Before you actually begin planning the tabletop exercise, you will want to consider the issues listed below. This will help you to structure, focus, and make the exercise as relevant to your staff and hospital as possible.

Objective of the Exercise

The overarching goal of all pediatric disaster tabletop exercises is for participants and the institution to increase preparedness. Defining what participants should learn depends on a variety of factors including:

- Exercise objectives;
- Population participating;
- Sophistication and experience of an institution and its participants regarding pediatric disaster preparedness; and,
- The availability of pediatric trained staff.

Participants for the Exercise

It is key to identify who will participate in order to develop an appropriate exercise, and knowing the participant population is critical to evaluating an exercise's success. An exercise designed for staff with little training or experience in dealing with a pediatric disaster will emphasize awareness about the emergence of terrorism events targeted at children and the urgent need to begin institutional or departmental planning. An exercise designed for staff well versed in pediatric disaster preparedness will emphasize testing assumptions and identifying gaps in existing plans. An evaluation of success should reflect these differences.

When deciding whom to invite to the exercise, keep the following questions in mind:

What are the objectives of the exercise? Who needs to participate to meet these objectives?

What level(s) of staff will participate? Will having different levels of staff in one exercise influence the groups' ability to communicate freely?

Is there appropriate space available for the number of staff invited?

After determining the above, you can consider qualities of ideal candidates serve on the Planning Committee.

The Planning Committee

A well-organized and dedicated planning committee is the key to successful execution of a tabletop (TT) exercise. The committee members should be knowledgeable of the emergency plans, procedures, equipment and functions that will be tested through the TT exercise process. It is also beneficial if these individuals have experience in emergency management and response. They are expected to maintain confidentiality of the scenario.

The planning committee is responsible for:

- Designing, developing, conducting and evaluating all aspects of the tabletop exercise;
- Developing exercise objectives;
- Tailoring the scenario to the needs of the healthcare facility;
- Determining date of exercise;
- Inviting exercise participants, including senior management and advisors; and,
- Coordinating and/or inviting outside agencies to participate, which may include:
    - Local Department of Health;
    - Local or State Emergency Management Office;
    - Local Police and Fire/Emergency Medical Services ;

- Private Ambulance Service;
- Affiliated Primary Care Centers and/or Home Healthcare Agencies; and,
- Local or Statewide Medical Association.

The first step in conducting a TT exercise is the selection of a **planning committee**. The first three appointments to this committee are the **most important**:

- Planning committee leader;
- Logistical support person; and,
- Administrative support person.

In addition to the first three appointments, 4-5 representatives from among the following departments may be chosen as members of the planning committee:

- Pediatric Clinician/Nurse (this may need to be substituted by other clinician, such as Family Practice if no pediatric clinicians are on staff at your hospital);
- Emergency Department (Director/Manager or Chairperson or Medical Director);
- Surgeon (pediatric surgery, if available or trauma or general surgery);
- Safety, Health and Environmental Affairs;
- Office of Public Affairs/Media Relations; and,
- Disaster Planning or Emergency Management Office.

Invitations to the initial planning committee meeting should be endorsed by senior management/administration.

Members of the planning committee distribute exercise materials during the exercise. They must be familiar with the institution's Emergency Management Plan (EMP) and be able to identify weaknesses in the plan. Membership of the committee should be modified to fit the type and scope of an individual facility.

Committee members are not active participants during the tabletop exercise but may have other roles (e.g., Moderator, Facilitator) that do not require decision-making during the exercise.

The **Planning Committee Leader** should provide the planning committee members with clearly defined roles and responsibilities, and assign specific tasks and timelines to facilitate the exercise planning process and ensure that tasks are not overlooked, forgotten, or identified late in the planning process (see "Exercise Planning Checklist and Timeline", **Appendix 4**).

Taking the time to think ahead and plan for the exercise can mean the difference between a highly beneficial, well executed exercise, versus a muddled, confusing exercise that provides little to no value.

Planning Committee Position Descriptions

Planning Committee Leader

The Planning Committee Leader is responsible for:

- Ensuring the TT exercise is customized to the institution's needs;
- Ensuring that the TT is designed around clearly identified objectives;
- Assigning roles and responsibilities to committee members;
- Collaborating with experts (e.g. Pediatrics, Surgery, Emergency Medicine Physicians, Emergency Management Personnel) to ensure that the scenario is realistic and feasible;
- Providing pre-planning meeting agendas;
- Determining date of exercise;
- Inviting senior level administrators;
- Overseeing the logistics and administrative support staff;
- Approving the final modification on the exercise materials (e.g., PowerPoint® slides, injects);
- Overseeing the exercise evaluation process (See Chapter 4); and,
- Sending After-Action Report to senior administration

The Planning Committee Leader may also be the Moderator during the exercise.

Logistical Support

A member of the planning team responsible for:

- Coordinating the exercise location and securing the space for the day of the exercise;
- Scheduling the date and time of the exercise;
- Organizing the equipment to be used during the exercise (e.g., laptop, projector, microphone);
- Providing enhancements for the exercise which include:
    - Maps;
    - Pictures;

  - Charts;
  - White boards for groups to take notes;
  - Paper/pens for participants to take their own notes; and,
  - Table tents for each breakout group;

- Assuring room set up on day of exercise;
- Coordinating food and refreshments for exercise participants;
- Ensuring all equipment is returned and room is reassembled after exercise; and,
- Keeping abreast of all developments.

Administrative Support

A member of the planning team responsible for preparing all documentation and support materials for the exercise that include the following:

- Participant name badges and titles (if necessary);
- Sign in forms (attendance form) (see sample sign-in sheet, **Appendix 3**);
- Participant's manual;
- Sending out reminder notices about meetings and exercise;
- Maintaining RSVP list (see Recommended Participants list, **Appendix 2**);
- Tracking costs and personnel time;
- Being available to answer or screen questions about drill; and,
- Keeping abreast of all developments;

On the day of the exercise, the administrative support member is responsible for:

- Setting up the room (includes placement of table tents, e.g., Clinical Services, Ancillary Services, etc. and white boards);
- Signing in all exercise participants;
- Distributing name badges (if necessary);
- Distributing exercise materials after each module; and,
- Dispensing and collecting post evaluation forms.

Tabletop Exercise Position Descriptions

Moderator

The **moderator** provides the overall management, control, and direction during the TT exercise. The **moderator** is the "emcee" of the TT exercise; the primary authority for decisions related to initiation, suspension and termination of the TT. Responsibilities include:

- Explaining the TT exercise process;
- Presenting the slides;
- Controlling the timing and flow of the exercise;
- Keeping the TT in "real time";
- Keeping the participants focused on the activities at the facility; and,
- During the TT breakout sessions, the **moderator** decides when to distribute injects to the breakout groups to facilitate problem solving and is responsible for bringing out key issues.

The **moderator** should ideally be a clinical, dynamic individual who has the ability to call on people in the audience to participate. **The moderator must be familiar with the facility's EMP.**

Examples of hospital personnel who may be the moderator include:

- Pediatric Physician;
- Emergency Department Physician; or,
- Trauma Surgeon.

Ideally, it should be someone with pediatric clinical experience.

Facilitator

Facilitators are assigned to each of the two breakout groups. The facilitator's role is to encourage participants to communicate with others playing the exercise (even if it requires walking to another table) and to raise awareness around key issues. The facilitator is neither meant to take the lead in the discussion nor is expected to direct specific actions or responses from the participants. Key functions of the facilitator include:

- Keeping side conversations to a minimum;
- Controlling group dynamics and strong personalities;
- Encouraging all to participate by asking key questions, keeping discussions on track and within established time limits;

- Being aware of local and healthcare facility emergency plans and procedures (Emergency Management Plan);
- Speaking confidently and competently about the subject at hand, yet not dominating the conversation; and,
- Encouraging interaction between breakout groups.

TIP: Planning Committee Members often make excellent facilitators because they are intimately familiar with the objectives and scenario.

Participants

Participants should include healthcare facility personnel who have an active role in responding to an emergency. They will simulate performance of their normal duties and functions during the TT. Participants initiate actions that will control and mitigate the simulated event/ emergency. See Recommended Participants, **Appendix 2** for suggested list of invitees. **All participants should be encouraged to contribute to the discussion.** They should be reminded they are making decisions in a no-fault learning environment.

Evaluators

Evaluators are individuals who observe and document TT activities. They document and evaluate participant performance and the adequacy of the training based on established learning objectives. Evaluators do not interact with participants or interfere with the flow of the exercise. See Chapter 4 for more information about the evaluation process.

Observers

Observers may be present to watch the TT for either official or educational purposes. Observers should not interact with participants, contribute information or opinions, or interfere with the TT in any way. Examples of observers include employees from healthcare facility departments that are not actively participating in the exercise or individuals from outside agencies, who observe selected portions or the entire TT.

2. Planning the Exercise (*4–6 weeks prior to the exercise*)

(a) Schedule planning meetings
(b) Establish purpose
(c) Establish scope
(d) Develop objectives
(e) Review scenario provided in chapter 5.1
(f) Obtain most recent version of hospital's Emergency Management Plan (EMP)
(g) Distribute copies of EMP to members of planning committee
(h) Determine Moderator and 2 Facilitators
(i) Identify participants for exercise (invitee list)
(j) Invite proposed participants/distribute flyers/advertisements for exercise, if applicable
(k) Identify and reserve room (including electronic equipment, e.g. projector, screen) for exercise
(l) Consider space for registration/ beverages and breakout rooms, if applicable
(m) Identify observer/media area, if applicable

Tabletop Exercises Defined

Introduction

TT exercises involve healthcare facility staff or other key personnel in an informal setting, discussing simulated situations. This type of exercise stimulates discussion of various issues regarding a hypothetical situation. It can be used to assess emergency plans, policies, and procedures or to evaluate the types of systems needed to guide the prevention of, response to, and recovery from a defined event. TTs are aimed at facilitating understanding of concepts, identifying strengths and shortfalls, and/or achieving a change in attitude.

Participants are encouraged to discuss issues in-depth and develop decisions through slow-paced problem solving and communicate with appropriate staff to get answers to their questions as they would during a real event (e.g., calling ICU for an admission, calling pediatric specialists, and/or pharmacy for appropriate pediatric dosing).

The effectiveness of a tabletop is derived from the energetic involvement of all participants becoming engaged in the scenario as if it were a real event, and their honest assessment of gaps in preparedness in current institutional emergency policies, procedures, and plans.

Modifying the Tabletop Exercise Based on Healthcare Facility Experience

Exercise objectives are the cornerstone of design and development. The objectives provide a framework for the development of an appropriate scenario and provide exercise evaluation criteria. The exercise objectives should be realistic and measurable. You may choose to alter the objectives of the exercise depending on the audience.

TT exercises may be prepared for healthcare facilities that are more or less advanced in their preparedness. The differences are not related to the rollout of the exercise but to the topics emphasized. For example, a less experienced hospital will need more emphasis on disease recognition and activation of their Incident Command System compared to a more experienced hospital that will proceed more rapidly into the areas of surge capacity building and the provision for mass care. The slides, moderator narrative and breakout group discussion points may be modified according to the needs of the institution.

Use of Injects

To further modify the TT and stimulate conversation, the Moderator may introduce new pieces of information provided to participants or to a subset of participants to prompt discussion and decision-making (e.g., lab results, epidemiologic data, and news reports) during the breakout groups. These are called **injects**. Injects simulate the unpredictable nature of emergencies. Injects are already included in the slide set, but you may chose to develop some institutional specific injects. The inject should be handed to the participant representing the department involved in the decision making process for that topic (e.g., a question about security will be given to the hospital police representative).

Design of Tabletop Exercises

Prior to the exercise, the TT Exercise Planning Committee should determine how to best organize the participants during the TT exercise. The recommended format for this guide is two breakout groups: one for the incident command/administrative group and one for the emergency department clinical group.

Breakout Group Format

The Breakout Group format generally takes 3–4 hours:

- Breakout groups are divided in two types: incident command and emergency department.
- For each breakout group, participants are seated in a circle. **The circular seating arrangement promotes conversation.** A table may or may not be used (see Appendix 6, Sample Floor Plan).
- The scenario is presented to all groups simultaneously.

- Participants assemble into their breakout groups after each module to consider their own probable actions based on their facilities' and departments' plans, policies, and procedures. The breakout groups should be careful to focus only on the material presented in a given module.
- The breakout groups reconvene after each breakout group session to share key points and actions taken with the entire group.
- After the third module, the evaluation process, known as a ""Hot Wash"" occurs (see Chapter 4).

"Report Back" After Module Breakout Group Discussions

The Moderator should ensure that each breakout group assigns a recorder and a reporter before the group discussion.

A **recorder** is an individual participant from each breakout group who documents relevant and final comments from discussions during each module. An effective tool for capturing issues and action items during the TT is an easel pad. This allows the entire group to see comments and ensures that items are not repeated.

A **reporter** is an individual from each breakout group who reports on the group's discussion (from recorder's notes) when the tabletop participants reconvene. The recorder and reporter may be the same person.

After each module breakout group discussion is completed, the **reporter**:

- Summarizes their group's discussion;
- Presents key findings and issues; and,
- Discusses any unresolved issues or questions.

PROS and CONS of Using Break Out Group Format

PROS:

- A highly interactive training model;
- Prompts real time decision making and problem solving;
- More specific detail can be discussed, among peer co-workers;
- More likely to elicit honest comments and criticisms;
- All perspectives are discussed across multiple departments and then shared with the group;
- Injects may be used; and,

- Creates accountability for all members.

CONS:

- Need a minimum of 5 participants per group; and,
- Requires more logistical organization.

Three components of successful breakout groups:

1. Round table used or circular arrangement of chairs for each group.
2. Enough space between tables so that conversations are not overheard between breakout groups.
3. Participants should be able to move freely from one group to another to present queries and obtain answers to questions, when needed.

Hot wash

A hot wash occurs immediately following a tabletop exercise to review key decisions made during the exercise and allows the participants the opportunity to provide immediate feedback.

A hot wash:

- Enables the moderator to capture thoughts, decisions made and other events while they remain fresh in the participants' minds and to describe what was learned;
- Determines any issues or concerns in the hospital's EMP; and,
- Identifies emergency preparedness gaps and proposed areas of improvement and next steps for modifying the hospital's EMP.

Exercise Evaluation

Evaluation is the cornerstone of TT exercises; it documents strengths, weaknesses and opportunities for improvement in a healthcare facility's preparedness and is a critical step in the improvement process. Through evaluation of the exercise, you can assess how well your EMP works for the staff at your institution and the types of changes needed in your EMP to improve preparedness. Instructions on how to conduct a TT evaluation are available in Chapter 4.

Members of Evaluation Team

The evaluation team could be as few as two people or as many as four. An ideal person to conduct the evaluation is a staff person who is able to be relatively unbiased and open to new and possibly unexpected staff feedback following the tabletop and evaluation exercises. Who this person is depends on the size and structure of your facility. He or she should be someone who is not participating in the tabletop exercise (although he or she should be in attendance as an

official **Evaluator**). An institution may decide to hire an outside consultant for this role. For more information about the evaluation process see Chapter 4.

3. Exercise Development (*within 2 weeks of exercise*)

(a) Revise scenario to reflect facility features and SOPs
(b) Modify and finalize chosen scenario slides and associated materials
(c) Develop agenda for the exercise
(d) Finalize After-Exercise Survey
(e) Finalize Agent Fact Sheet
(f) Finalize Participant Narrative
(g) Copy each inject onto separate sheets of paper for distribution during exercise
(h) Make copies of all handouts
(i) Distribute advance materials for exercise to participants, if desired
(j) Develop attendance/sign–in form
(k) Create name tags, if desired

Schedule and Conduct Planning Meetings

The **Planning Committee Leader** and the planning committee should decide on the number of meetings needed (three to four should be sufficient) to successfully design and conduct a given exercise. To effectively host planning meetings, the **Planning Committee Leader** needs access to the facility's EMP. Copies of the most recent version of the facility's EMP should be distributed to all members of the planning committee. The members are expected to familiarize themselves with the EMP before the first scheduled meeting.

These are **suggested** topics for discussion at each meeting (**See Appendix 4**). **The meetings and content may be varied according to your institutions size and needs.**

Meeting #1

The first meeting is held to identify the type, purpose, scope, and objectives of the TT exercise. This meeting should take place approximately six to eight weeks before the tabletop exercise. Topics to be discussed at this meeting may include:

- Purpose and scope of tabletop exercise;
- Development of objectives (Examples of objectives are available in the scenario – see Chapter 5);
- Determination of dates, times and locations for future planning meetings;
- Explanation of logistic and administrative support roles and delegation of these roles to two members:
    - Identification and assignment of responsibility for logistical issues; and

  - Identification and assignment of responsibility for administrative issues;

- Propose date, time, and location for TT exercise; and
- Distribution of scenario to members (Chapter 5) (Reiterate to members that the scenarios cannot be shared with anyone outside of the committee).

Meeting #2

- Review of objectives to ensure they are clearly defined and measurable;
- Identify local issues, concerns or sensitivities;
- Determine optimum duration of TT exercise;
- Determine which tabletop format to use (e.g., single group vs. breakout group format, three vs. four breakout groups);
- Identify participants for the TT exercise (see **Appendix 2**);
- Assign committee member to invite participants to TT exercise;
- Ensure that the committee members understand that they will participate as facilitators or subject matter experts rather than as participants;
  - Determine who will be Moderator and choose a Facilitator for each breakout group;
- Assign responsibilities for exercise documents and presentations/briefings;
- Establish dates for completion of action items and tasks;
- Identify critical tasks for next planning meeting;
- Review each scenario and discuss scenario variables (e.g., pediatric-specific resources, number of casualties) in relation to objectives;
- Finalize Goals and Objectives for TT;
- Determine a setting for scenario, which includes:
  - Time of year for scenario; and,
  - Place;
- Delegate a committee member to modify the chosen scenario to be specific to the healthcare facility and locality issues;
- Develop agenda for TT exercise (see **Appendix 5**); and,
- Identify a room for the TT exercise.

Meeting #3

This is the final forum for reviewing exercise processes and procedures. The committee members should receive final drafts of all exercise materials prior to this meeting. No major changes to the design or scope of the exercise or its supporting documentation should take place at this meeting. Topics for the third meeting include:

- Review all TT logistical tasks (e.g., schedule, registration, equipment, refreshments and special needs);
- Confirm logistical elements including A/V equipment, room configuration and setup, refreshments and schedule;
- Conduct a comprehensive final review of and approve all exercise documents and presentation materials;
- Resolve any open issues related to exercise planning and identify last minute concerns that may arise; and,
- Determine extent of exercise evaluation process and assign responsibility for planning the evaluation (Chapter 4).

Choosing and Modifying a Scenario

This toolkit provides at this time, one pediatric explosive disaster scenarios for hospitals (See Chapter 5). In the future when other scenarios may be developed, a scenario should be chosen based on the purpose and objectives that were decided upon at Meetings #1 & 2. Each scenario involves the entire institution and all of its supporting facilities.

A pediatric disaster TT exercise can test anything from a full response to a major citywide health crisis to a smaller facility-specific protocol such as how to manage patients arriving at their emergency department. The decision of what to test should be based on a needs assessment conducted by the healthcare facility at an earlier date.

Once a scenario has been chosen, the following documents should be modified to reflect your organization's demographics, policies and procedures:

- Goals and Objectives;
- Scenario Injects;
- PowerPoint® slide presentation;
- Narrative for Moderator notes to accompany slide presentation;
- Integrated Timeline;
- Critical Actions; and,

- Patient Profiles.

Information to customize the slides for your facility may be obtained from the local Department of Health, local emergency management team, the fire department and/or police department. If you are unfamiliar with the emergency management system in your area, contact your local Department of Health.

The story-line may be modified; to do this, the planning committee members should consider previous real-world incidents and existing plans that have been developed for popular local attractions or large venues.

Chapter 3: Conducting the Exercise

This Chapter Discusses:

- Coordinating the TT Exercise
- Room set up two breakout groups
- Preparing for tabletop exercise
- Running the exercise
- Moderator and facilitator guidelines
- Conducting the "Hot Wash"
- An after-action plan

The logistics required to arrange a tabletop exercise for your healthcare facility are not difficult but require organization and accurate record keeping. There are checklists included in this toolkit that can make the job more manageable (see Appendix 4).

4. Preparing for the Exercise (*24–72 hours prior to exercise*)

(a) Test electronic equipment (projector/screen, video camera, 2-way radios), if applicable
(b) Procure flip charts, markers, pens, and paper
(c) Provide radio/phone directories (if applicable)
(d) Order refreshments
(e) Provide entire scenario packet (narrative, slides, injects, generic and post-modular questions) to Moderator for review
(f) Review responsibilities with Moderator and Facilitators
(g) Conduct an abbreviated "dry-run" of the exercise presentation

Coordinating the TT Exercise

Characteristics of Room

Two Group Format (see sample layout, Appendix 5)

- Select a room with two tables that can accommodate the chosen number of participants comfortably.
- The room chosen should be equipped with a projection screen, an LCD projector and a computer.

- Identify an area for participant registration. Provide a table large enough for all the name badges/ multiple sign-in sheets if necessary and agendas for the participants.
- A microphone may be necessary for the Moderator and several stand-alone microphones may be necessary for larger (30 or more) groups.
- Identify an area for participant registration. Provide a table large enough for all the name badges/multiple sign-in sheets if necessary and agendas for participants.

Breakout Group Format with 15 –60 participants

Participants may assemble in a large room for the slide presentations and move to an adjoining room or rooms for breakout group discussions or participants may stay in the same room for the slide presentation and breakout group discussions.

- Select a room large enough to accommodate 15-60 participants and that can accommodate the appropriate number of exercise tables and chairs for the 2 groups; or,
- An auditorium may be used for group discussions and an adjoining room or rooms may be used to hold the breakout groups. The entire group of participants would move to the new room or rooms after each module for breakout group discussions.

Room Setup for Two Breakout Groups

Breakout Group Format

- Set up table and chairs (if applicable). Table size depends on the number of participants in each group and number of breakout groups. Leave enough room between the tables to allow the participants to discuss issues without hearing each other's conversations and to freely move to other groups.
- Once the tables and/or chairs are arranged, label each breakout group area with table tents. Table tents provide signage to allow participants to sit in appropriate group.
- Arrange room so that projection screen is in view of all participants. A sample layout is in Appendix 5.

Setup for TT Exercise

- Modify agenda to reflect your time schedule (**Appendix 5**);
- Develop attendance/sign-in forms (see sample **Appendix 3**);
- Create name tags/badges for all participants, including breakout group category under name of each participant;
- Create table tents for breakout group categories (e.g., Administration/EOC, Clinical Services, or Ancillary Services); and,

- Make copies of all TT exercise material handouts for participants (see **Chapter 9** – Handout Distribution Table). The materials are placed in the order to be distributed.

Set up tips: Have extra copies of all exercise materials available

- Provide a flip chart, markers, pens and paper at each breakout group table.
- Order refreshments/food.
- Notify the Security Department about the date and time of the TT exercise. Emphasize that this is a simulated event.
- Provide the Moderator and Facilitators with the entire scenario packet for review with the items provided in Chapter 5 as well as Appendices 5, 9 and 10. Additional information for specific leaders is provided in Chapters 6-8. Scenario packet includes:
  - Agenda (see **Appendix 5**);
  - Scenario and Timeline (Chapter 5);
  - Slide Narrative for Moderator (Chapter 6);
  - Patient Profiles for Facilitators & Evaluators (Chapter 7);
  - Evaluator Skill Sheets for Critical Action Assessment (Chapter 8);
  - List of Acronyms (see **Appendix 9**);
  - Pediatric Blast Fact Sheet (**Appendix 10)**; and,
  - Slides (separate PowerPoint presentation);
- Have several copies of the EMP available for reference.

Running the TT Exercise

Prior to Exercise

The **logistical manager** and **administrative staff** need to be in the room an hour before the exercise is scheduled to begin.

- Post signage that a "Simulated Tabletop Exercise" is occurring.
- Check room set-up for proper table and chair placement.
- Check projector and laptop; run a few slides of the show to test.
- Check **moderator's** lectern and microphone if you are planning to use them.
- For each of the two breakout groups:
  - Place table tents for breakout group which identify the functional area (e.g., Incident Command, Clinical Services) represented.

- Place flip charts, pens, paper, and markers at each breakout group table.

- Set up registration with sign in sheets and name badges. Keep the sign-in sheet so that participants can receive follow-up correspondence such as copies of the After Action Report and the Corrective Action Plan.
- Have all desired handout sheets ready to distribute as per moderator instruction, and a person or persons designated to distribute handouts. The Handout Distribution Table in Chapter 9 delineates the names of the handouts, and when and to whom they should be distributed. Chapter 9 also provides the actual handouts for duplication in their order of distribution.
- Make sure the refreshment/food table is set up properly; call the day before to confirm delivery, and make sure the vendor can get in.

5. Conducting the Exercise (*exercise day*)

(a) Review exercise ground rules with participants
(b) Discuss scope of the tabletop
(c) Review safety and security precautions
(d) Conduct the exercise
(e) Conduct a "Hot Wash"
(f) Distribute and collect After-Exercise Survey

During the TT Exercise

The Moderator should be sure to emphasize the exercise goal(s) to the participants, so that they keep them in mind while working through the exercise.

A Senior Administrator (e.g., CEO, COO, CNO) may speak to the group for 5 minutes before the exercise begins to illustrate the importance of evaluating the facility's Emergency Management Plan by use of a Tabletop Exercise.

Because in reality, the Incident Command and Emergency Department are physically separate, there should be no speaking between tables. Communications should be only through a courier or telephone/radio simulation.

Moderator Guidance

- Add any hints or lessons learned from your own experiences derived from running or participating in exercises to enhance the value of this presentation.
- Encourage communication among participants by asking probing questions (e.g., participant says they will set up a triage tent in the parking lot, ask "Where will you get the tent? How long will it take to set up? Who will keep watch over the supplies 24/7?).

- Keep the participants in "real time", the participants should respond as though the event is currently happening.

Facilitator Guidance:

- Meet with other **facilitators** and **moderator** prior to the exercise to ensure consistency in facilitator activities.
- Let communications and actions evolve naturally.
- Let participants guide the direction of the response actions.
- Allow participants to falter – address faults in the Hot Wash.
- Do not allow participants to act on information they overhear from another table. If they have a question for someone in another group, they must physically walk over and talk to that person.
- Track communications closely to make sure that a group's actions or reactions are exclusively based on, or in response to, information they have received via a communication/action from another group or via an inject.
- Avoid telling the group what to do or giving examples of what other facilities have done.
- Maintain focus of the group; prevent sidebar conversations from distracting the group.

Conducting the Hot Wash

The Hot Wash occurs immediately after completion of Module 3. The Moderator should remind the participants that this a no-fault exercise and they should feel free to be open and honest in their assessment about the TT exercise. It should be clearly stated that the exercise is no longer in progress. The Moderator needs to elicit feedback from each group. The observers, facilitators, and evaluators may be allowed to participate in this session.

During the Hot Wash, the goals and objectives of the exercise are reviewed to see if they have been met.

Goals

Goal 1: Heighten awareness of special pediatric needs during a disaster.

Goal 2: Plan for and implement equipment, staff, and space for the pediatric patient during a disaster.

Goal 3: Enhance comfort and self-efficacy for staff who do not generally deal with the pediatric patient.

Objectives

Objective 1. Specify pediatric ED triage strategy.

Objective 2. Determine pediatric surge capacity.

Objective 3. Activate Incident Command Center.

Objective 4. Identify need and quantity for stock equipment for initial pediatric management including resuscitation**,** airway, ventilation, intubation, vascular access in ED and Hospital Central Supply.

Objective 5. Determine the staffing patterns and critical numbers required for a pediatric disaster.

Objective 6. Identify space for critical and non-critical pediatric patient management

Objective 7. Identify assistance area for families and concerned citizens and media support space.

Objective 8. Recognize the need for screening blast victims for all types of contaminants.

Objective 9. Recognize the need for and facilitate inter-hospital transfer of pediatrics patients.

Objective 10. Ensure best possible care for pediatric blast patients.

After-Action Report

An institution may want to develop an After-Action Report to present to senior administration. An after-action report is a document developed after the exercise that describes the exercise scenario, player activities, preliminary observations, and lists major issues and recommendations for improvement.

Chapter 4: Evaluating the Exercise and Its Impact

This Chapter Discusses:

- Purpose of evaluation
- Timeline for conducting evaluation
- After-exercise survey
- Debriefing session and questionnaire
- Long-term impact assessment

6. Evaluate the Exercise (*within a week after exercise*)

(a) Conduct post-exercise debriefing session

(b) Compile survey results and debriefing session notes

(c) Develop report of results

(d) Share results with participants and other appropriate staff

Evaluation is an invaluable tool for both: 1) assessing the efficacy of the tabletop drill for preparing your hospital's staff for a pediatric disaster; and 2) understanding the strengths, weaknesses and gaps in your hospital's overall preparedness for a pediatric disaster. An evaluation will be strongest and most useful if you begin to plan it in the early stages of your tabletop exercise planning. Preparing for the evaluation at this stage will help you focus on what you would like to achieve through the tabletop exercise and develop objectives to guide the exercise planning.

Purpose of Evaluation

The evaluation component of a tabletop exercise can be used to:

- Assess the impact of the exercise on staff and institutional preparedness;
- Revise pediatric disaster preparedness plans and procedures;
- Identify areas for improvement in pediatric disaster preparedness;
- Develop trainings on specific pediatric disaster-related topics or for specific staff groups; and,
- Inform and improve future pediatric disaster preparedness exercises.

The following is a list of steps intended to help you conduct the evaluation. You can refer to this list to understand the entire process. Each step is explained in more detail in the remainder of this chapter.

Steps for Conducting an Evaluation (in brief)

1. Determine and document the objectives for your institution.
2. After participants are identified, based on the exercise objectives, determine a sub-group of these participants that will be in the debriefing session.
3. Choose separate **moderators** to (a) conduct the exercise, and (b) conduct the evaluation.
4. Revise instruments to make them relevant to hospital.
5. If desired, identity stenographers or note takers to record tabletop exercise and debriefing session.
6. Conduct tabletop exercise.
7. Immediately after exercise, administer After-Exercise Surveys (**Appendix 10 and 11**).
8. Within a week of exercise, hold debriefing session.
9. Three to twelve months after the exercise, administer the long-term impact assessment.
10. Analyze and disseminate results to key stakeholders in emergency preparedness at your institution.

Conducting the Evaluation

Lead Evaluator

It is important to identify a lead evaluator and member of the evaluation team early on in the TT planning process- preferably within the first or second meeting of the planning committee. As stated in Chapter 2, an ideal person to lead the evaluation is a hospital staff person who is able to be relatively unbiased and open to new and possibly unexpected staff feedback following the tabletop and evaluation exercises. Who this person is depends on the size and structure of your hospital. The lead evaluator should not participate in the tabletop exercise and should not be an immediate supervisor of any of the participants. Some ideas of possible lead evaluators are:

- A hospital emergency preparedness program coordinator or director of pediatrics;
- An administrative manager;
- Medical, pediatric or nursing staff person; or,
- Risk Manager or Quality Improvement Manager.

Depending on hospital resources, it is also possible to hire an outside consultant to assist with evaluation activities such as designing or administering the After-Exercise Survey or conduct the debriefing session and analyze results. (See also Conducting a debriefing session).

The next step after selecting a lead evaluator is to review and tailor each of the following evaluation tools so each tool will be as useful as possible for your hospital and your exercise objectives. The purpose of each tool is explained below.

Template Evaluation Tools

Included here are descriptions of some template evaluation tools to assist you in evaluating your tabletop exercise, including:

- After-exercise survey;
- Debriefing questionnaire; and,
- Guidelines for assessing long-term exercise impact.

These tools are designed to be flexible, offering options for tailoring the tool to match various exercise goals and participant populations. The **After-Exercise Questionnaire for Participants** (Chapter 9) is intended to assess exercise impact and participant satisfaction. The **Exit Questionnaire for Facilitators and Evaluators** (Chapter 8) provides an opportunity for staff running the exercise to provide their immediate impressions of the preparedness demonstrated by the participants. The **Debriefing Session Questionnaire** (Appendix 7) features questions designed to elicit further feedback from participants in a more open-ended format. Finally, the **Guidelines for Assessing Long-Term Impact** are to assess the impact of an exercise on an institution's pediatric disaster preparedness 3 –12 months after the exercise (in this chapter). Following are further descriptions of each tool.

Timeline for Conducting Evaluation	
Activity	**Time**
Hot Wash	Immediately following conclusion of Module 3
After Exercise Surveys	Immediately after the Hot Wash
Debriefing Questionnaire	Within 7 days of the Tabletop Exercise

Long-Term Impact Assessment	Within 7-10 days of the Tabletop Exercise
Develop Corrective Action Plan	Within 1 month after the Tabletop Exercise
Track Lessons Learned	Within 1 month after the Tabletop Exercise

7. Post Exercise Activities (*no more than one month after exercise*)

(a) Develop Corrective Action Plan

(b) Track Corrective Actions

(c) Track Lessons Learned

(d) Recognition

After-Exercise Surveys

Purpose of After-Exercise Survey

An **After-Exercise Survey** is an opportunity to gather information from each exercise participant about general satisfaction with the exercise, specific areas where knowledge was/was not gained, and comments and suggestions participants have about the exercise. The survey should be distributed to all participants of the tabletop exercise and collected before the participants leave the exercise.

Goals of an **After-Exercise Survey** include:

1. Assessing the self-reported impact of the exercise on participants' pediatric disaster preparedness;
2. Determining the impact of the exercise on knowledge of participants in a variety of areas related to pediatric disaster preparedness; and,
3. Gathering suggestions for how to make future exercises most valuable for participants.

The **Exit Questionnaire for Participants** template (Chapter 9) includes three sections:

1. General impact: Measures participants' general perceptions of the impact and value of the exercise (Questions 1-3);
2. Knowledge impact: Identifies areas related to pediatric disaster preparedness where respondents increased their knowledge base, and specifically identifies new information learned during the exercise (Questions 4-10); and,

3. General participant feedback: Gathers various comments from participants as to their likes, dislikes and recommendations as to the form and content of the exercise (Questions 11-12).

The **Exit Questionnaires for Facilitators and Evaluators** template (Chapters 7 & 8) includes 12 questions concerning the performance of the participants in meeting the goals and objectives of the exercise. Questions cover such topics as use of a pediatric specific triage tool, surge capacity, staffing, supplies, treatment and disposition.

Debriefing Questionnaire

Debriefing Session

A debriefing session is a short (45-60 minute) group discussion in which a small group of participants assemble ideally within a week after the exercise to discuss in detail their experiences with the exercise.

Purpose of Debriefing session

A debriefing session offers the opportunity for participants to voice perceptions about the exercise. Goals of a debriefing session include:

1. Discovering in detail the impact of the exercise on participants and the institution;
2. Identifying how future exercises might be improved; and,
3. Probing responses to the After-Exercise Survey; exploring responses and clarifying comments.

Participants for Debriefing Session

Participants in the debriefing session should be:

- A small subset of exercise participants (8-12 people); and,
  - From a variety of departments and/or levels (if applicable).

Note: It is important that participants feel comfortable speaking frankly in the session. If having staff from different levels makes this a problem, then having more than one group is encouraged.

Leader for Debriefing Session

An appropriate leader for the debriefing session is:

- Objective and neutral;
- Knowledgeable about the exercise and its goals; however, not involved in the design or conduct of the exercise;

- Skilled at encouraging and mediating group discussion;
- A staff person who has not participated in the tabletop but who has observed it; and,
- An outside consultant.

The person conducting the debriefing section should only pose the questions and not answer them his/herself to avoid biasing the debriefing session.

See **Appendix 7** for guidelines on how to conduct a debriefing session.

Long-Term Impact Assessment

Purpose of Long-Term Impact Assessment

In the "Hot Wash" portion of the exercise, participants are encouraged to identify the institution's strengths and weaknesses, and to develop a list of next steps to increase pediatric disaster preparedness. Performing an assessment of long-term impact is crucial in order to determine if questionable policies and practices have been addressed effectively and how the exercise may have assisted this process.

Determine Objectives

Determine the major objective(s) of performing a long-term impact assessment. For example, possible objectives are to:

- Gauge the more lasting impact of the tabletop exercise;
- Assess the effectiveness of the tabletop exercise; and,
- Concretely measure what changes have occurred in terms of hospital policy, organization, education and pediatric disaster preparation plans as a result of the tabletop exercise.

Identify Sources of Information

Decide who the most appropriate people are to answer questions about long-term impact. When deciding whom to gather information from, consider which departments, levels within departments and roles can provide the information needed based on the long-term impact assessment objectives. Also consider the method to be used to gather information (see below).

Choose a method to gather information

According to the objectives and evaluation budget, determine the best method to gather the information needed to assess long-term impact. Following are possible methods that can be used alone or in combination.

Long-Term Impact Assessment Information Gathering Methods

	Advantages	*Disadvantages*
Written Survey	Do not need to schedule time for survey May be sent or delivered to respondent	Process may be slower, respondent has to go through more steps to complete the survey and he/she may ignore it Respondents need to contact a point person if he/she has questions about survey
Phone Interview	Can be completed quickly May be more convenient for respondents Survey administrator can probe for more information or clarify areas of uncertainty Respondent does not need to fill out survey and may offer more detail	Limited by the constraints of a phone conversation—miss some of respondents' subtle communication Less rapport established through phone conversation than in person
In-person interview	Increases ability to have a clear and detailed exchange of information	May be more difficult and costly to set up
Review of emergency management plan	Can be scheduled whenever is convenient for evaluator, very flexible Can concretely assess changes in plan before and after tabletop exercise	Does not include the viewpoint and perspectives of people who participated in table top Changes in a written plan may or may not reflect staff awareness of the changes and whether the plan has been effectively operationalized Takes more time to complete review

Long-Term Impact Assessment Tool Development

- After deciding on the objectives of the long-term impact assessment, determine who can best provide the information necessary to complete the assessment, and what method will work best. A tool(s) can be developed. Here are examples of possible questions that can be asked:
- Please talk about any changes in your hospital or department's pediatric preparedness since the TT exercise was conducted, for example:
  - Has anything changed? If so, what?
  - Have there been improvements? If so, what?
  - Have there been setbacks? If so, what?
  - To what extent do you attribute the changes to your tabletop exercise experience?
- What continue to be barriers in pediatric preparedness at your hospital or in your department? What strategies are you using to counter these barriers?
- Has anything happened in your hospital's experiences in the last 3 months to make pediatric preparedness seem more or less relevant to hospital training?
- In retrospect, what was the most helpful aspect of the tabletop exercise for your staff, do you think?
- What was the least helpful part of the tabletop exercise? How would you conduct an exercise differently in the future to improve its value for preparing your hospital/department for responding to a pediatric disaster?

Performing an assessment of long-term impact is key to determining if policies and practices brought up in the Hot Wash have actually been addressed and to what degree the exercise facilitated this process.

Chapter 5: Pediatric Disaster Blast Tabletop Exercise Scenario and Timeline

The following section gives a summary of the Pediatric Disaster Blast Tabletop Exercise scenario and a timeline of the events that occur during the drill. Any area in [RED] should be modified by the trusted agent(s) a primary hospital planner with the hospital specifics. The **moderator, facilitators and evaluators** should all receive a copy of this chapter. Participants should not be told of the contents prior to the drill.

The Scenario

An explosion of unknown etiology occurs at a grade school play on the stage of [LOCAL ELEMENTARY SCHOOL] during a concert for parents. It is [TIME] on a [WEATHER] in [MONTH]. The school is located a [DISTANCE] from the hospital. There are multiple injured children including several who are critical. Some parents will carry patients directly into the ER, some children will be brought in by school staff and will not have parents with them; Ambulances will bring the rest. Once the media hears about the blast, they will descend on the ER in addition to other family members and concerned citizens.

Integrated Notational Timeline: Pediatric Blast Tabletop Exercise

Exercise

The following is an integrated timeline so that the **moderator, facilitators and evaluators** will know what each group should be considering or possible actions at a given point in time. When it becomes clear that a group isn't moving forward, the facilitator may use the stimulation points to assist the group in meeting the tabletop objectives.

Module One

Time 00:00

- *Event*

  PATIENT 1 arrives

  9 year-old girl arrives carried by hysterical parent who informs staff many additional injured are on their way. Child in pain holding her eyes, tearing and crying.

  Child refuses to open eyes because too painful

  P 110; R 30; BP 120/80; GCS 15

Time 00:05

- *Event*

  PATIENT 2 arrives

  12-year-old girl arrives with both parents covered in dust having difficulty breathing. Parent gives history of known asthma, no intubations, no PICU admissions; on Advair and Proventil rescue. Now she has expiratory wheezing with accessory muscle retraction.

  P 105; R 30; BP 120/70; GCS 15; O2 Sat 93

Time 00:10

- *Event*

  PATIENT 3 arrives.

  6 year old girl brought in by ambulance screaming she cannot see; numerous lacerations across face, neck, and chest; large soft tissue avulsion of L thigh; ongoing hemorrhage; and evidence of shrapnel penetrations. She has poor peripheral perfusion

  P 120; R 28; BP 85/60; GCS 15

Time 00:11

INJECT #2

An explosion of unknown etiology occurs at an elementary school on the stage of the auditorium during a concert for parents. The school is located four blocks from the hospital.

STOP CLOCK

First Breakout Group

(After situation report and discussion questions distributed; Duration – fifteen minutes)

A situation report and break-out group discussion questions are presented in slide form by the moderator. Moderator will give instructions to the two tables on completing situation reports and listing actions and needs on white boards. The facilitators for each table will handout the **Emergency Department/Clinical Table Module 1 Handouts** and the **Incident Command Module 1 Handouts** to each respective table. Handouts are available in Chapter 9 Participant Handouts.

Situation Report #1

Patients with blast injuries:

In ED	[3]
Patients admitted	[0]
Ventilated Patients	[0]
Total worried well in ED	[~15]
Fatalities	[0]

Total available beds by department:

Emergency Department	[3]
Med/Surg (larger children)	[10]
PICU	[2]
Other	[3]

Suggested Facilitator, Moderator, and Evaluator Actions during Break-out (fifteen minutes)

Facilitators and Moderator can stimulate discussion by encouraging the answers to the following questions:

- Are you experiencing a pediatric disaster?
- Would your emergency response plan/EOC be activated?
- Describe specific communication needs and how to address them.
- What are your staffing, supply and environmental needs at this point?
- How will your hospital meet the current demand for pediatric care (beds, staffing, supplies, etc.)?

Evaluators will use Evaluator Checklist for Module I to record if critical actions have been met.

Critical Action Assessments for 1st Breakout– ED

The following list includes critical actions that should be considered and listed by the Emergency Department group during first breakout group.

- Identify and use pediatric chart for drug dosage and equipment size.
- Notify administration of need to declare disaster; sets up ED for MCI response
- Prepare Situation Report
- Identify need for additional staffing requirements; begin contacts
- Institute pediatric triage methodology for MCI

Critical Action Assessments for 1st Breakout- IC

The following list includes critical actions that should be considered and listed by the Incident Command group during first breakout group.

- Command Center Established – roles assigned
- Establish liaison with outside agencies
- Obtain situation report from ED
- Determine hospital-wide staffing expertise for pediatrics with necessary personal data (e.g. pagers)
- Determine necessity for hospital lock-down

Break-out Groups Report Back

At the end of the 15 minutes, the moderator should bring all participants into discussion with each group reporting the actions they instituted. The moderator will ask the critical action

assessment questions for each group. At the conclusion of discussion the clock should be restarted.

*RE-START CLOCK *

Module Two

Time 00:20

- *Event*

  Volunteer ambulance arrives with 2 patients

Time 00:23

- *Event*

  PATIENT 4 arrives

  7 year old girl brought in by ambulance with severe respiratory distress and absent breath sounds R side; numerous lacerations across chest, and abdomen; tender R abdomen with no bowel sounds or peritoneal signs present.

  Poor perfusion P 140 R 38 BP 80/50 GCS 14

Time 00:26

- *Event*

  PATIENT 5 arrives

  11-year old male brought in by ambulance with facial burns; agonal respirations; and lacerations on face and upper neck.

  P 60; R 4; BP 80/50; GCS 4

Time 00:30

INJECT #2

No available Stretchers – ED requests more from Command Center

Time 00:30

INJECT #3

OEM request statements from Command Center, ED etc.

Time 00:39

INJECT #4

Staff becomes anxious that Geiger counter is being used; VERY anxious “is this radiologic event.” What would you do to respond to Staff concerns?

Time 00:40

- *Event*

  PATIENT 6 arrives.

  11-year old girl brought in by teacher. She is unresponsive and missing left arm and left leg. Wounds are wrapped in crepe paper.

  P 0; R 0; BP 0/0; GCS 0

  Patient 6 is declared dead

Time 00:45

INJECT #5

No staff available to transport patients to CT. How would you respond to need for increased staffing?

Time 00:46

- *Event*

  PATIENT 7 arrives

  11-year-old girl brought in by teacher loudly sobbing and screaming “Don’t touch me!” and hits or bites anyone who tries to hold her.

  P 100; R 28; BP 130/90; GCS 14

Time 00:55

INJECT #6

OR call, asks where are the patients, why they haven’t been transferred

Time 00:56

INJECT #7

Over 100 family members, concerned citizens and media try to get in through ED entrance.

STOP CLOCK

Second Breakout Group

(After situation report and discussion questions distributed; Duration – fifteen minutes)

A situation report and break-out group discussion questions are presented in slide form by the moderator. Moderator will give instructions to the two tables on completing situation reports and listing actions and needs on white boards. The facilitators for each table will handout the **Emergency Department/Clinical Table Module 2** and **Handouts** and the **Incident Command Module 2 Handouts** to each respective table. Handouts are available in Chapter 9 Participant Handouts.

Situation Report #2

Patients with blast injuries:

In ED	[7]
Patients admitted	[2]
Ventilated Patients	[2]
Total worried well in ED	[~35]
Fatalities	[1]
Transfers (Requested/Sent)	[2]

Total available beds by department:

Emergency Department	[0]
Med/Surg (larger children)	[5]
PICU	[0]
Other	[1]

Suggested Facilitator, Moderator, and Evaluator Actions during second Break-out

Facilitators and Moderator can stimulate discussion by encouraging the answers to the following questions:

- How will you handle the increasing number of injured? Worried well? Hysterical parents?
- Where and how will you set up triage?
- Where will you identify and admit all unaccompanied pediatric patients?
- How will you keep track of all pediatric patients?
- What supply and materials management issues will be critical to address?
- What are your communication needs?

The evaluators will use Evaluator Checklist for Module II to record if critical actions have been met.

Critical Action Assessments for 2nd Breakout- ER

- Begin pre-triage screening for radiation
- Ensure all patients identified
- Establish safe child area; request IC assistance as needed
- Clear ED of all possible non-urgent patients
- Recognize ED over surge capacity; request additional personnel, stretchers, ICU, OR space; ED holds EMS stretchers if not already done (If surgeon went to OR, request replacement for stabilization of arriving ED patients)
- Request security and PR
- Request IC inform/educate hospital personnel re: radiation risk
- Inform IC of fatality (Recognize need for emotional support for staff and families)
- Request IC support for stretchers, transport personnel
- Order blood
- Request additional security
- Situation Report to IC (including staffing, equipment, on-call for OR, on-call for transfer, number waiting to be seen, number discharged, number of deaths)
- Provide triaging of calls from individuals seeking location of loved ones.

Critical Action Assessments for 2nd Breakout– IC

- Determine necessity for hospital lock-down
- Ensure pre-triage screening for contamination initiated
- Ensure all patients identified
- Ensure safe child area established
- Establish media information center; provide space for outside press
- Ensure ED is cleared of all possible patients
- Provide “Just in Time” training for staff
- Provide space for bereavement; establish family information center; arrange for food, communication; contact ME

- IC arranges for stretchers, transport and additional personnel
- Ensure crime scene integrity and evidence collection
- Facilitate any other agency's mission
- Ensure all patients identified and locatable
- IC contacts NYPD for outside security
- IC requests Situation Report from ED if not provided
- Provide triaging of calls for individuals seeking location of loved ones

Break-out Groups Report Back

After Break-out Report, the moderator will ask the critical action assessment questions for each group. Moderator will then announce a 15 minute break.

Fifteen minute break

RE-START CLOCK

Module Three

Time 00:57

- *Event*

  PATIENT 8 arrives

  5-year-old girl brought in by parents with scant blood on arms, covered in dust, Minor abrasions to arms, and appropriate reactions to parents

  P 115; R 25; BP 90/60; GCS 15

Time 00:57

INJECT #8

FDNY reports to ED Triage Officer no HAZMAT radiologic contaminants

Time 00:59

- *Event*

  PATIENT 9 arrives

  9-year-old boy walks in with parents covered in dust with appropriate reactions to parents and staff.

  P 95; R 18; BP 100/70; GCS 15

Time 00:60

INJECT #9

ED staff is demonstrating stress and fatigue. Rumors circulating within hospital of additional dirty bomb explosions in other areas in the region

Time 01:06

INJECT #10

Ambulance crews inquire about hospital status. They are being held in ED for extended periods of time (EMS stretchers being used)

STOP CLOCK

Third Breakout Group

(After situation report and discussion questions distributed; Duration – ten minutes)

A situation report and break-out group discussion questions are presented in slide form by the moderator. Moderator will give instructions to the two tables on completing situation reports and listing actions and needs on white boards. The facilitators for each table will handout the **Emergency Department/Clinical Table Module 3** and **Handouts** and the **Incident Command Module3 Handouts** to each respective table. Handouts are available in Chapter 9 Participant Handouts.

Situation Report #3

Patients with blast injuries:

In ED	[9]
Patients admitted	[6]
Ventilated Patients	[2]
Total worried well in ED	[~40]
Fatalities	[1]
Transfers (Requested/Sent)	[2]

Total available beds by department:

Emergency Department	[0]
Med/Surg (larger children)	[0]
PICU	[0]
Other	[0]

Suggested Facilitator, Moderator, and Evaluator Actions during second Break-out

Facilitators and Moderator can stimulate discussion by encouraging the answers to the following questions:

- How will you set up screening at entrances to your facility?
- How are you communicating with staff, patients, families, outside agencies?
- What type of support are you providing for staff? How are you dealing with staff fatigue? Mental health issues?
- What are the current policies to assure staff safety?

Critical Action Assessments for 3rd Breakout – ED

- Notify IC of FDNY report of no radiologic contaminants
- Notify MIS of need for emergency/disaster charts numbers available for continuity of patient care;
- Ensure availability of supplies and equipment; Request IC arrange for additional supplies
- Inform IC of need to relieve staff
- Provide updated Situation Report to IC
- Request IC contact FDNY for ambulance diversion

Critical Action Assessments for 3rd Breakout- IC

- Ensure MIS and registration has sufficient number emergency/disaster charts available for continuity of patient care
- Provide "Just in Time" training to public
- Establish early discharge from inpatient service unit and ambulatory care services
- Provide swing/ converted space for non-critical patients
- Additional calls to hospital staff to come in; assign staff where needed
- Obtain correct info from NYPD, FBI, OEM and issues report to staff
- Determine capacity of OR, inpatient service and ICU
- Determine staffing expertise for pediatrics; page more as necessary
- Arrange for transfer of patients to larger hospital
- Contact FDNY; provide Situation Report; request ambulance diversion

Break-out Groups Report Back (ten minutes)

After Break-out Report, the moderator will ask the critical action assessment questions for each group. The evaluators will use checklist to record if critical actions have been met. The evaluators will use Evaluator Checklist for Module II to record if critical actions have been met.

Hotwash to Follow 3rd Breakout Discussion

At the completion of the discussion of the third breakout discussion the moderator would then lead the participants through the post drill debriefing, also called a hotwash. The questions asked during the hotwash include the following:

Goals:

1. Was awareness heightened of special pediatric needs during a disaster?
2. Was there a plan for and implementing equipment, staff, and space for pediatric patients during a disaster?
3. Did this drill enhance comfort and self-efficacy for staff who do not generally deal with the pediatric patient?

Objectives:

4. Did the emergency department specify a pediatric triage strategy?
5. Did the hospital incident command determine pediatric surge capacity?
6. Did the hospital activate Incident Command Center?
7. Was the need and quantity for stock equipment for initial pediatric management including resuscitation, airway, ventilation, intubation, vascular access in ED and Hospital Central Supply identified?.
8. Did IC determine the staffing patterns and critical numbers required for a pediatric disaster?
9. Was space identified for critical and non-critical pediatric patient management?
10. Was an assistance area for families and concerned citizens and media support space identified and created?
11. Did staff recognize the need for screening blast victims for all types of contaminants?
12. Did staff recognize the need for and facilitate inter-hospital transfer of pediatrics patients?
13. Did staff ensure best possible care for pediatric blast patients?

Future Considerations for pediatric preparedness for the hospital

1. How well does did the Emergency Management Plan address pediatric surge capacity?
2. Based on earlier decisions, what might have done differently (hindsight)?
3. What was learned during this tabletop exercise?
4. What are the hospital's Pediatric Emergency Preparedness strengths?
5. What are the weaknesses/gaps in the Emergency Preparedness Plan?
6. What should be the hospital's next steps in preparedness to address pediatric patients?
7. List and prioritize five short and long-term actions for follow-up.

Conduct Post-Drill Evaluation

At the conclusion of the hotwash, the moderator should instruct participants to complete the post-drill evaluations that were included in the **Participant Handouts for Module 3.**

Thank participants and conclude drill.

Patient Profiles for Facilitators and Evaluators

Patient profiles are used by the ED/Clinical group to determine triage, treatment and disposition of the patients. The following profiles are for use by the ED/clinical group facilitator and evaluators, and they should have them all in a packet provided at the beginning of the exercise. This version of the profiles lists the necessary **treatment** and **interventions**, as well as **disposition** of the patients. In Chapter 9, there will be patient profiles for the ED group where there will be blank areas for the participants to fill in their suggested treatment and disposition. The participant version of the patient profiles should be distributed at the beginning of each breakout group.

MODULE 1

PATIENT 1

Description

9 year-old girl arrives carried by hysterical parent who informs staff many additional injured are on their way

Child in pain

Holding her eyes, tearing and crying

Child refuses to open eyes because too painful

Vital Signs, GCS, Obvious Injuries

P 110; R 30; BP 120/80; GCS 15

Treatment Check Off

__ Exposure

__ Secondary exam reveals no other obvious injuries

__ Local anesthetic applied to both eyes

__Flouriscene exam to both eyes reveals 20% corneal abrasions

Additional treatment before hospital discharge, but NOT using resources from Red pts:

__ Ophthalmology consult w slit lamp exam

__ Tetanus booster if needed

__ Ophthalmologic antibiotics

__ Follow-up

Actual Injuries

Bilateral corneal abrasions

Disposition

Treat and Release with close ophthalmologic follow-up

PATIENT 2

Description

12-year-old girl arrives with both parents

Covered in dust

Difficulty breathing

Parent gives history of known asthma, no intubations, no PICU admissions; on advir and proventil rescue

Expiratory wheezing with accessory muscle retraction

Vital Signs, GCS, Obvious Injuries

P 105; R 30; BP 120/70; GCS 15; O2 Sat 93

Expiratory wheezing

Accessory muscle retraction

Appropriate reactions to parent

Treatment Check Off

__ Exposure (change out of dusty clothes)

__ Secondary exam negative, except for wheezing, decreased breath sounds and retractions

__ Albuteral nebulizer, steroids

__ Follow-up for psychological first aid

Actual Injuries

None

Reactive airway disease secondary to environmental irritant

Disposition

Treat and Release

PATIENT 3

Description

6 year old girl brought in by ambulance
Screams she cannot see
Numerous lacerations across face, neck, and chest
Large soft tissue avulsion of L thigh
Ongoing hemorrhage
Shrapnel penetrations
Poor peripheral perfusion

Vital Signs, GCS, Obvious Injuries

P 120; R 28; BP 85/60; GCS 15
shrapnel penetrations
poor peripheral perfusion

Treatment Check Off

__Stop hemorrhage

__Oxygen

__IV access,

__Spine immobilization

__IV antibiotics

__Tetanus toxoid

__Head CT (if available SXR if not)

__Chest X ray

Actual Injuries

Blood loss

Shock, compensated

Shrapnel penetration

Large thigh soft tissue defect

Disposition

OR for irrigation and primary repair or stabilize and transfer

MODULE 2

PATIENT 4

Description

7 year old girl brought in by ambulance

Severe respiratory distress

Absent breath sounds R side

Numerous lacerations across chest, and abdomen;

Tender R abdomen

No bowel sounds, peritoneal signs present

Vital Signs, GCS, Obvious Injuries

Poor perfusion P 140 R 38 BP 80/50 GCS 14

Poor perfusion

Tender R abdomen

No bowel sounds

Peritoneal signs present

Treatment Check Off

__Oxygen

__Needle decompression R lung

__Chest tube R lung

__IV access

__IV fluids

__Abdominal X ray or CT scan

__Surgical repair Liver laceration and small bowel perforation

Actual Injuries

Right pneumothorax

Liver laceration

Perforated small bowel

Compensated shock

Disposition

OR for laporotomy and repair

PATIENT 5

Description

11-year old male brought in by ambulance

Facial burns

Agonal respirations

Lacerations on face and upper neck

Vital Signs, GCS, Obvious Injuries

P 60; R 4; BP 80/50; GCS 4

Treatment Check Off

__Assisted ventilation

__Spine immobilization

__Intubation

__Ventilation

__Vascular access

__Volume resuscitation until re perfused

__Volume restriction

__Intravenous antibiotics (dose)

__Tetanus toxoid

__Dry gauze applied to facial burns,

__CT (if available, SXR if not).

__ Chest X ray

Actual Injuries

Blast Lung

Smoke Inhalation

Shrapnel penetration

Superficial - no CNS or penetration

Disposition

Immediate transfer after intubation

PATIENT 6

Description

11-year old girl brought in by teacher

Unresponsive

Missing left arm and left leg

Wounds are wrapped in crepe paper

Vital Signs, GCS, Obvious Injuries

P 0; R 0; BP 0/0; GCS 0

Traumatic amputations

Treatment Check Off

__Recognize patient is not salvageable

__Triage to black category

__Remove from immediate resuscitation area

__Chaplain or Psych service for parents

Actual Injuries

Traumatic amputations

Cardiac arrest

Disposition

Morgue

Family IC notification

MODULE 3

PATIENT 7

Description

11-year-old girl brought in by teacher

Loudly sobbing and screaming “Don’t touch me!” and hits or bites anyone who tries

Severe acute stress reaction

Vital Signs, GCS, Obvious Injuries

P 100; R 28; BP 130/90; GCS 14

Severe acute stress reaction.

Treatment Check Off

__ Psychological first aid

__ Sedation

Actual Injuries

Severe acute stress reaction

Disposition

Treat and release

PATIENT 8

Description

5-year-old girl brought in by parents

Scant blood on arms

Covered in dust

Minor abrasions to arms

Appropriate reactions to parents

Vital Signs, GCS, Obvious Injuries

P 115; R 25; BP 90/60; GCS 15

Minor abrasions to arms;

Appropriate reactions to parents

Treatment Check Off

__ Exposure

__ Secondary exam negative

__ Local first aid to abrasions (bacitracin)

__ Follow-up for psychological first aid

Actual Injuries

Minor abrasions to arms

Disposition

Treat and release

PATIENT 9

Description

9-year-old boy walks in with parents

Covered in dust

Appropriate reactions to parents, staff

Vital Signs, GCS, Obvious Injuries

P 95; R 18; BP 100/70; GCS 15

Covered in dust

Appropriate reactions to parents

Treatment Check Off

__ Exposure

__ Secondary exam negative

__ Follow-up for psychological first aid

Actual Injuries

None

Disposition

Treat and release

Chapter 6: Moderator Instructions and Narration

Moderator

The **moderator** provides the overall management, control, and direction during the TT exercise. The **moderator** is the "emcee" of the TT exercise; the primary authority for decisions related to initiation, suspension and termination of the TT. Responsibilities include:

- Explaining the TT exercise process;
- Presenting the slides;
- Controlling the timing and flow of the exercise;
- Keeping the TT in "real time"; and,
- Keeping the participants focused on the activities at the facility.

During the TT breakout sessions, the **moderator** decides when to discuss injects with the breakout groups to facilitate problem solving and is responsible for bringing out key issues.

The **moderator** should ideally be a clinical, dynamic individual who has the ability to call on people in the audience to participate. **The moderator must be familiar with the facility's EMP.**

During the TT Exercise

The moderator should be sure to emphasize the exercise goal(s) to the participants, so that they keep them in mind while working through the exercise.

Moderator Guidance

- Add any hints or lessons learned from your own experiences derived from running or participating in exercises to enhance the value of this presentation.
- Encourage communication among participants by asking probing questions (e.g., participant says they will set up a triage tent in the parking lot, ask "Where will you get the tent? How long will it take to set up? Who will keep watch over the supplies 24/7?).
- Keep the participants in "real time", the participants should respond as though the event is currently happening.

Use of Injects

To further modify the TT and stimulate conversation, the Moderator may introduce new pieces of information provided to participants or to a subset of participants to prompt discussion and decision-making (e.g., lab results, epidemiologic data, and news reports) during the breakout

groups. These are called **injects**. Injects simulate the unpredictable nature of emergencies. Injects are already included in the slide set, but you may chose to develop some institutional specific injects of your own. Injects should be handed to the participant representing the department involved in the decision making process for that topic (e.g., a question about security will be given to the hospital police representative).

HOT WASH

The moderator conducts the hot wash immediately after completion of Module 3, to review key decisions made during the exercise and allow the participants the opportunity to provide immediate feedback. The moderator will capture thoughts, decisions made and what was learned while they remain fresh in the participants' minds. The moderator will determine any issues or concerns regarding the hospital's EMP. S/he will identify emergency preparedness gaps, proposed areas of improvement and the next steps for modifying the hospital's EMP.

The moderator should remind the participants that this a no-fault exercise and they should feel free to be open and honest in their assessment about the TT exercise. It should be clearly stated that the exercise is no longer in progress.

During the Hot Wash, the goals and objectives of the exercise are reviewed to see if they have been met.

TT Goals	**Fully Met = 1**				
	1	2	3	4	5
Goal 1: Heighten awareness of special pediatric needs during a disaster.					
Goal 2: Plan for and implement equipment, staff, and space for the pediatric patient during a disaster.					
Goal 3: Enhance comfort and self-efficacy for staff who do not generally deal with the pediatric patient.					

TT Objectives	Fully Met = 1				
	1	2	3	4	5
Objective 1. Specify pediatric ED triage strategy.					
Objective 2. Determine pediatric surge capacity.					
Objective 3. Activate Incident Command Center.					
Objective 4. Identify need and quantity for stock equipment for initial pediatric management including resuscitation, airway, ventilation, intubation, vascular access in ED and Hospital Central Supply.					
Objective 5. Determine the staffing patterns and critical numbers required for a pediatric disaster.					
Objective 6. Identify space for critical and non-critical pediatric patient management.					
Objective 7. Identify assistance area for families and concerned citizens and media support space.					
Objective 8. Recognize the need for screening blast victims for all types of contaminants.					
Objective 9. Recognize the need for and facilitate inter-hospital transfer of pediatrics patients.					
Objective 10. Ensure best possible care for pediatric blast patients.					

In addition to the contents of this chapter, the Moderator should be provided with a complete copy of chapter 5.

NARRATIVE FOR MODERATOR

[Hospital Name]

Please note: Slides are in a separate PowerPoint document. All modifications in slides for your institution should be reflected in this narrative.

Pediatric Blast Disaster Tabletop Exercise

Slide 1 – Pediatric Disaster Tabletop Exercise

Welcome, and thank you for your time today. My name is [your name]. Our goal today is to challenge your thinking and to work collaboratively to improve the pediatric disaster response capability at [Your Facility].

Slide 2 – What is a Tabletop?

Briefly explain the rationale for conducting this exercise and define a tabletop: **A tabletop exercise is a facilitated analysis of an emergency situation in an informal, stress-free environment.** It is designed to elicit constructive discussion as participants examine and resolve problems based on existing operational plans and identify where those plans need to be refined.

Slide 3 – Primary Goal

Prepare non-pediatric specialty hospitals for disasters involving pediatric evaluation, treatment and transfer.

Slide 4 – Exercise Goals

Goal 1: Heighten awareness of special pediatric needs during a disaster.

Goal 2: Plan for equipment, staff, and space needs for the pediatric patient during a disaster.

Goal 3: Enhance comfort and self-efficacy for staff who do not generally deal with the pediatric patient.

Slide 5 – Rules of the Exercise

1. Only existing staff on site at the time of the event will provide initial patient care.
2. Respond based on your facility's current capability.
3. Interact with other breakout groups as needed.
4. Play the exercise as if it is presently occurring.

5. Allow for artificialities of the scenario – it's a tool and not the primary focus.

6. Participants should plan to stay in the room.

Slide 6 – Rules of the Exercise (cont'd)

7. All procedures should be described correctly; correct performance will be assumed.

8. Mistakes are part of the learning process. Varying viewpoints are expected.

9. Consider different approaches and suggest improvements to current resources, plans, and training.

10. The Evaluators will be evaluating the system and not the participant.

Slide 7– Exercise Format

You {participants} will engage in an interactive tabletop exercise. Over the next two hours a continuing scenario is presented in three modules. Each module portrays a segment of time in a simulated pediatric event in [Name of your city, borough, or county, etc.]

This is an interactive facilitated tabletop exercise with three modules.

There are breakout group sessions after the first two modules, which are both followed by a moderator facilitated discussion with each breakout group reporting back on the actions taken.

After the third and final module there is a facilitated plenary discussion with all participants.

A Hot Wash is the final component of the exercise followed by an exercise evaluation.

Explain "Hot Wash" – an open discussion at the end of the exercise allowing participants to provide instant feedback about immediate lessons learned and to identify barriers/gaps in current procedures as well as allowing recorders to immediately capture the information.

Slide 8 – Situations & Assumptions

1. Staff members sent to the OR, ICU or performing a procedure are unavailable to care for additional patients until actual time has elapse to do the specific procedure.

2. Experts called will not arrive until an hour from time of notification.

3. Hospital security will be the only personnel available to maintain order, crowd control, etc. The local police will not be available.

4. Your EMS system will not be available to assist in hospital for triage, patient care or transfer.

Slide 9 – Set-up

There will be two tables set-up: one for Clinical/Emergency Department Staff; the other for Incident Command staff. The timeframe is as follows:

- Introduction/ half hour
- Exercise/2 hours
- Debriefing/half hour

Slide 10 – Breakout Groups

There are two groups for the breakout sessions: Incident Command Center as per HEICS and ED/Clinical services. Each participant has been assigned to a group. Interaction between groups is strongly encouraged, as would happen during a real event.

Slide 11 – Incident Command Center

The Incident Command Center is comprised of representatives from the services listed on the slide.

Slide 12 – Emergency Department/Clinical Services

The Emergency Department/Clinical Services group is comprised of representatives from the services listed on the slide.

Slide 13 – Participant Roles: Moderator

The Moderator serves as the host or “emcee” of the tabletop exercise. He or she manages the flow of the exercise, presents new scenario data in the form of modules or injects; provides key questions or issues for participants to consider; keeps the exercise on time; and does not participate in the breakout group discussions.

Slide 14 – Participant Roles: Facilitator

Each breakout group will be assigned one Facilitator. The Facilitator is responsible for monitoring group discussions, ensures that the group stays on track and considers key questions and issues. Prior to the exercise, each Facilitator is provided with prepared guidelines and questions to consider during discussions. They are not expected to lead conversation, but to keep discussion on topic and encourage communication between breakout groups.

Slide 15 – Participant Roles: Evaluator

Each breakout group will be assigned one Evaluator. The Evaluator summarizes the tabletop exercise’s ability to assess its impact on staff and institutional preparedness. The Evaluator identifies areas for improvement in hospital pediatric disaster preparedness and suggests revisions or new policies.

Slide 16 – Participant Roles: Observer

Observers watch the tabletop exercise. They do not interact with participants, contribute information or opinions, or interfere with the exercise in any way. Depending on the level of expertise of the Observers and their reason for attending the exercise, you might choose to have them complete an Exit Questionnaire.

Slide 17 – Participant Roles: Players

Each player will be assigned to either the ED/Clinical or Incident Command Group. Each player will represent his/her department and area of expertise, and will be asked for responses about clinical care, administrative decisions and communication within your group, with the other group, and how one would communicate with families.

Slide 18 – [Your] Hospital

This slide presents information about our hospital including the number of available certified beds, staffed beds, FTEs, annual or monthly pediatric and adult ED visits in our facility, as well as the number of ICU beds, ORs etc.

Slide 19 – [Your] Hospital

This slide lists the number of pediatric ED visits as well as Staffing numbers, certified pediatric beds, crash carts, pediatric capable staff, nursery and/or NICU staff (if applicable).

Slide 20 – Module One

Now we will begin with Module One.

Slide 21 – THE EVENT

The participants will be in the dark about the actual event when the first patients arrive.

Slide 22 – General Info About Your Location

Today is [day & time]. The current local weather is [temp & weather].

Slide 23 – 00:00 Patient 1

We will be distributing patient profiles to the ED/Clinical table so they don't have to copy what is on the slide. They should decide what general treatment and disposition each patient requires. There will also be a form to summarize the situation and to request additional supplies, equipment and staffing. These forms will be filled out and given to the IC table.

Patient 1 is a 9 year-old girl who arrives carried by an hysterical parent who informs staff many additional injured are on their way. The child is in pain, holding her eyes, tearing and crying. She refuses to open eyes because it is too painful. You can see her vital signs on the handout which you may refer back to as the exercise continues.

Slide 24 – 00:05 Patient 2

Patient 2 is a 12 year-old girl who arrives with both parents. She is covered in dust and has difficulty breathing. Her parent gives a history of known asthma, no intubations, no PICU admissions. She is on Advair and Proventil rescue. She exhibits expiratory wheezing with accessory muscle retraction.

Slide 25 – 00:10 Patient 3

Patient 3 is a 6 year old girl brought in by ambulance. She is screaming that she cannot see. She presents with numerous lacerations across face, neck, and chest; a large soft tissue avulsion of her left thigh. She has ongoing hemorrhage, shrapnel penetrations, and poor peripheral perfusion.

Slide 26 – Inject #1

An explosion of unknown etiology occurs in the auditorium at [school near you]. An elementary school class is performing on the stage of the auditorium during a concert for parents. The school is located [distance] from the hospital.

Slide 27 – STOP CLOCK

Slide 28 – First Breakout Group

You are going to have ten minutes for group discussion. However, before you begin, we are supplying you with a situation report.

Slide 29 – Situation Report #1

Slide 30 – Module One: Breakout Group Discussion

The following are discussion points you should consider.

Are you experiencing a pediatric disaster?

Would your emergency response plan/EOC be activated?

Describe specific communication needs and how to address them.

What are your staffing, supply, and environmental needs at this point?

How will your hospital meet the current demand for pediatric care (beds, staffing, supplies, etc.)?

Please choose someone from your group who will report back the answers to these questions.

Slide 31 – First Breakout Group Report Back

Who is reporting for Incident Command? ED/Clinical?

Slide 32 – Critical Action Assessment – ED/Clinical

These are the critical actions that the ED/Clinical Group should have covered by this point in the scenario:

- Identify and use pediatric chart for drug dosage and equipment size
- Notify administration of need to declare disaster; sets up ED for MCI response
- Prepare Situation Report
- Identify need for additional staffing requirements; activate call/age system
- Institute pediatric triage methodology for MCI

Slide 33 – Critical Action Assessment – IC

These are the critical actions that the Incident Command Group should have covered by this point in the scenario:

- Command Center established – roles assigned
- Establish liaison with outside agencies
- Obtain situation report from ED
- Determine hospital-wide staffing expertise for pediatrics with necessary personal data (e.g. pagers)
- Determine necessity for hospital lockdown

Slide 34 – RE-START CLOCK

Slide 35 – Module Two

Slide 36 – 00:23 Patient 4

Patient 4 is a 7-year old girl brought in by ambulance. She is in severe respiratory distress with absent breath sounds on her right side. She has numerous lacerations across chest and abdomen. She has a tender R abdomen, no bowel sounds, and peritoneal signs are present.

Slide 37 – 00:26 Patient 5

Patient 5 is an 11-year old male brought in by ambulance. He has facial burns, agonal respirations and lacerations on his face and upper neck.

Slide 38 – 00:30 Inject #2

There are no available stretchers, so the ED requests more from the Command Center. How would you address the need for stretchers and bed space in the ED?

Slide 39 – 00:30 Inject #3

The Office of Emergency Management requests statements from the Command Center, ED etc.

Slide 40 – 00:39 Inject #4

Staff is becoming very anxious that Geiger counter is being used. They want to know, "is this a radiologic event?" What would you do to respond to Staff concerns?

Slide 41 – 00:40 Patient 6

Patient 6 is an unresponsive11-year old girl brought in by teacher. The child has a missing left arm and left leg. Her wounds are wrapped in crepe paper.

Slide 42 – 00:40 Patient 6

Patient 6 is declared DOA in the Emergency Department. Who has declared her dead? Where do you put her body? How do you handle staff upset? Who informs the teacher?

Slide 43 – 00:45 Inject #5

No staff available to transport patients. How would you respond to the needs for increased staffing?

Slide 44 – 00:46 Patient 7

Patient 7 is an 11-year-old girl brought in by teacher. The child is loudly sobbing and screaming "Don't touch me!" and hits or bites anyone who tries. She is suffering from a severe acute stress reaction.

Slide 45 – 00:55 Inject #6

Someone from the OR calls asking where are the patients? Why haven't any been transferred?

Slide 46 – 00:56 Inject #7

Over 100 family members, concerned citizens and media try to get in through ED entrance.

Slide 47 – STOP CLOCK

Slide 48 – Second Breakout Group

You are going to have ten minutes for group discussion. Here is the second situation report.

Slide 49 – Situation Report #2

Slide 50 – Module Two: Breakout Group Discussion

The following are discussion points you should consider.

How will you handle the increasing number of injured? Worried well? Hysterical parents?

Where and how will you set up triage?

Where will you identify and admit all unaccompanied pediatric patients?

How will you keep track of all pediatric patients?

What supply and materials management issues will be critical to address?

What are your communication needs?

Again, please choose someone from your group who will report back the answers to these questions.

Slide 51 – Second Breakout Group Report Back

Who is reporting for Incident Command? ED/Clinical?

Slide 52 – Critical Action Assessment – IC

These are the critical actions that the ED/Clinical Group should have covered by this point in the scenario:

- Ensure pre-triage screening for contamination initiated
- Ensure safe child area established
- Establish media information center; provide space for outside press
- Ensure ED is cleared of all possible patients
- Provide “Just in Time” training for staff
- Provide space for bereavement; establish family information center; arrange for food, communication; contact ME

Slide 53 – Critical Action Assessment – IC (continued)

- Arranges for stretchers, transport and additional personnel
- Ensure crime scene integrity and evidence collection

- Facilitate any other agency's mission
- Ensure all patients identified and locatable
- Contact NYPD for outside security
- Request ED Situation Report from ED if not provided
- Provide triaging of calls for individuals seeking location of loved ones

Slide 54 – Critical Action Assessment – ED

These are the critical actions that the Incident Command Group should have covered by this point in the scenario:

- Begin pre-triage screening for radiation
- Ensure all patients identified
- Establish safe child area; request IC assistance as needed
- Clear ED of all possible non-urgent patients
- Recognize ED over surge capacity; request additional personnel, stretchers, ICU, OR space; ED holds EMS stretchers if not already done (If surgeon went to OR, request replacement for stabilization of arriving ED patients)

Slide 55 – Critical Action Assessment – ED (continued)

- Request security and PR
- Request IC inform/educate hospital personnel re: radiation risk
- Identify and inform IC of fatality (Recognize need for emotional support for staff and families)
- Request IC support for stretchers, transport personnel

Slide 56 – Critical Action Assessment – ED (continued)

- Order blood
- Request additional security
- Situation Report to IC (including staffing, equipment, on-call for OR, on-call for transfer, number waiting to be seen, number discharged, number of deaths)

- Contact EOC re: situation, needs and place requests on HERDS

Slide 57 – BREAK

You will now have a break. Bathrooms are located [location]. Please be back in your seats in 15 minutes. Thank you.

Slide 58 – RE-START CLOCK

Slide 59 – Module Three

Slide 60 – 00:57 Patient 8

Patient 8 is a 5-year-old girl brought in by her parents. There is scant blood on her arms which have minor abrasions. She is covered in dust. She demonstrates appropriate reactions to her parents.

Slide 61 – 00:57 Inject #8

Local EMS agency reports to ED Triage Officer that there are no HAZMAT radiologic contaminants.

Slide 62 – 00:58 Patient 9

Patient 9 is a 9-year-old boy who walks in with his parents. He is covered in dust. He demonstrates appropriate reactions to his parents and staff.

Slide 63 – 00:60 Inject #9

ED Staff is demonstrating stress and fatigue. Rumors are circulating within hospital of additional dirty bomb explosions in other areas in the region. What actions would you take to respond to staff stress? What actions would you take to respond to rumors about other explosions?

Slide 64 – 01:06 Inject #10

Ambulance crews inquire about hospital status They are being held in ED for extended periods of time (EMS stretchers being used). How would you respond to questions from EMS crews and need for stretchers?

Slide 65 – STOP CLOCK

Slide 66 – Third Breakout Group

You are going to have eight minutes for group discussion. Here is the third situation report.

Slide 67 – Situation Report #3

Slide 68 – Module Three: Breakout Group Discussion

The following are discussion points you should consider.

How will you set up screening at entrances to your facility?

How are you communicating with staff, patients, families, outside agencies?

What type of support are you providing for staff? How are you dealing with staff fatigue? Mental health issues?

What are the current policies to assure staff safety?

Again, please choose someone from your group who will report back the answers to these questions.

Slide 69 – Third Breakout Group Report Back

Who is reporting for Incident Command? ED/Clinical?

Slide 70 – Critical Action Assessment – ED

These are the critical actions that the ED/Clinical Group should have covered by this point in the scenario:

- Notify IC of FDNY report of no radiologic contaminants
- Notify MIS of need for emergency/disaster charts numbers available for continuity of patient care
- Ensure availability of supplies and equipment; Request IC arrange for additional supplies
- Inform IC of need to relieve staff
- Provide updated Situation Report to IC
- Request IC contact FDNY for ambulance diversion

Slide 71 – Critical Action Assessment – IC

These are the critical actions that the Incident Command Group should have covered by this point in the scenario:

- Ensure MIS and registration has sufficient number emergency/disaster charts available for continuity of patient care

- Provide “Just in Time” training to public
- Establish early discharge from inpatient service unit and ambulatory care services
- Provide swing/ converted space for non-critical patients
- Additional calls to hospital staff to come in; assign staff where needed

Slide 72 – Critical Action Assessment – IC (continued)

- Obtain correct info from NYPD, FBI, OEM and issue report to staff
- Determine capacity of OR, inpatient service and ICU
- Determine staffing expertise for pediatrics; page more as necessary
- Arrange for transfer of patients to larger hospital
- Contact FDNY; provide Situation Report; request ambulance diversion

Slide 73 – HOT WASH

Slide 74 – HOT WASH – Goals

Were the goals for this exercise met??

Goal 1: Heighten awareness of special pediatric needs during a disaster.

Goal 2: Plan for and implement equipment, staff, and space for the pediatric patient during a disaster.

Goal 3: Enhance comfort and self-efficacy for staff who do not generally deal with the pediatric patient.

Slide 75 – HOT WASH – Objectives

Were the objectives for this exercise met??

Objective 1. Specify Pediatric ED triage strategy.

Objective 2. Determine pediatric surge capacity.

Objective 3. Activate Incident Command Center.

Objective 4. Identify need and quantity for stock equipment for initial pediatric management including resuscitation, airway, ventilation, intubation, vascular access in ED and Hospital Central Supply.

Objective 5. Determine the staffing patterns and critical numbers required for a pediatric disaster.

Slide 76 – HOT WASH – Objectives (continued)

Objective 6. Identify space for critical and non-critical pediatric patient management

Objective 7. Identify assistance area for families and concerned citizens and media support space.

Objective 8. Recognize the need for screening blast victims for all types of contaminants.

Objective 9. Recognize the need for and facilitate inter-hospital transfer of pediatrics patients.

Objective 10. Ensure best possible care for pediatric blast patients.

Slide 77 – "HOT WASH" – Future Considerations

1. How well does your Emergency Management Plan address pediatric surge capacity?
2. Based on your earlier decisions, what might you have done differently (hindsight)?
3. What have you learned during this tabletop exercise?

Slide 78 – "HOT WASH" – Future Considerations

4. What are the hospital's Pediatric Emergency Preparedness strengths?
5. What are the weaknesses/gaps in the Emergency Preparedness Plan?
6. What should be the hospital's next steps in preparedness?
7. List and prioritize five short and long-term actions for follow-up.

PLEASE BE SURE TO FILL OUT YOUR EVALUATION FORMS.

Thank you for attending. We hope it has been helpful to you.

Chapter 7: Facilitator Instructions

Facilitators are assigned to each of the two breakout groups. The facilitator's role is to encourage participants to communicate with others playing the exercise (even if it requires walking to another table) and to raise awareness around key issues. The facilitator is neither meant to take the lead in the discussion nor is expected to direct specific actions or responses from the participants.

Key Functions

- Keeping side conversations to a minimum;
- Controlling group dynamics and strong personalities;
- Encouraging all to participate by asking key questions, keeping discussions on track and within established time limits;
- Being aware of local and healthcare facility emergency plans and procedures (Emergency Management Plan);
- Speaking confidently and competently about the subject at hand, yet not dominating the conversation; and,
- Encouraging interaction between breakout groups via courier or simulated telephone/radio usage.

Guidance

- Meet with other **facilitators** and **moderator** prior to the exercise to ensure consistency in facilitator activities.
- Let communications and actions evolve naturally.
- Let participants guide the direction of the response actions.
- Allow participants to falter – address faults in the Hot Wash.
- Do not allow participants to act on information they overhear from another table. If they have a question for someone in another group, they must physically walk over and talk to that person.
- Track communications closely to make sure that a group's actions or reactions are exclusively based on, or in response to, information they have received via a communication/action from another group or via an inject.
- **Avoid telling the group what to do or giving examples of what other facilities have done.**
- Maintain focus of the group; prevent sidebar conversations from distracting the group.

In addition to the contents of this chapter, the Facilitators should be provided with a complete copy of chapter 5.

Facilitator Exit Questionnaire

	not met				fully met
1. Did the hospital identify the need for a pediatric specific triage tool for disaster victims?	1	2	3	4	5
2. Did the hospital determine that ED surge capacity was met, called a disaster, and activated incident command team?	1	2	3	4	5
3. Did the hospital identify the need and quantity for stock equipment for pediatric resuscitation, including airway, ventilation, intubation, and vascular access?	1	2	3	4	5
4. Did the hospital ensure that the ED and Hospital Central Supply had sufficient stock in for a pediatric disaster?	1	2	3	4	5
5. Did the hospital have a plan to procure supplies if they weren't available or they ran out?	1	2	3	4	5
6. Did the hospital have a plan for delivery of supplies from Central Supply to ED and other areas?	1	2	3	4	5
7. Did the hospital determine the staffing patterns and critical numbers required for pediatric disaster victims for medical, nursing, transport, surgical, anesthesia staff, other security, mental health, dietary?	1	2	3	4	5
8. Did the hospital recognize the need for screening blast victims for radiation contamination, and identified correct methods for screening?	1	2	3	4	5
9. Did the hospital identify space for critical and non-critical pediatric patients, families looking for pediatric victims, and extra space to cover surge capacity during a pediatric disaster?	1	2	3	4	5
10. Did the hospital appropriately treat patients?	1	2	3	4	5
11. Did the hospital institute a plan for inter-hospital transfer of patients once pediatric surge capacity is reached (i.e. who does it, who will accept, what and who has to travel with patient, how is family informed)?	1	2	3	4	5
12. Did the hospital determine appropriate disposition of patients?	1	2	3	4	5

Chapter 8: Evaluator Instructions and Tools

Evaluators

Evaluators are individuals who observe and document TT activities. They document and evaluate participant performance and the adequacy of the training based on established learning objectives. Evaluators do not interact with participants or interfere with the flow of the exercise.

After each Break-out Group Report, the evaluators will use the checklists provided in this chapter to record if critical actions have been met.

During the Hotwash, the evaluators will assist the Moderator in evaluating whether the goals and objectives have been met.

The Evaluator will fill out the Exit Questionnaire before leaving the TT.

In addition to the contents of this chapter, the Evaluators should be provided with a complete copy of chapter 5.

Module 1: Evaluator Check List – Incident Command Table

Evaluator Name: Date:

Critical Actions Incident Command Table	Fully Met = 1				
	1	2	3	4	5
Command Center Established – roles assigned					
Establish liaison with outside agencies					
Obtain situation report from ED					
Determine hospital-wide staffing expertise for pediatrics with necessary personal data (e.g. pagers)					
Determine necessity for hospital lock-down					
Other _____					
Other_____					
Other _____					
Other _____					
Comments on IC during 1st Breakout					

Module 2: Evaluator Check List – Incident Command Table

Evaluator Name: Date:

Critical Actions Incident Command Table	Fully Met = 1				
	1	2	3	4	5
Ensure pre-triage screening for contamination initiated					
Ensure safe child area established					
Establish media information center; provide space for outside press					
Ensure ED is cleared of all possible patients					
Provide "Just in Time" training for staff					
Provide space for bereavement; establish family information center; arrange for food, communication; contact ME					
Arrange for stretchers, transport and additional personnel					
Ensure crime scene integrity and evidence collection					
Facilitate any other agency's mission					
Ensure all patients identified and can be located					
Contact NYPD for outside security					
Request Situation Report from ED if not provided					
Provide triaging of calls for individuals seeking location of loved ones					
Other _____					

Other _____					
Other _____					
Comments on IC during 2nd Breakout					

Module 3: Evaluator Check List – Incident Command Table

Evaluator Name: Date:

Critical Actions Incident Command Table	Fully Met = 1				
	1	2	3	4	5
Ensure MIS and registration has sufficient number emergency/disaster charts available for continuity of patient care					
Provide "Just in Time" training to public					
Establish early discharge from inpatient service unit and ambulatory care services					
Provide swing/ converted space for non-critical patients					
Additional calls to hospital staff to come in; assign staff where needed					
Obtain correct info from NYPD, FBI, OEM and issues report to staff					
Determine capacity of OR, inpatient service and ICU					
Determine staffing expertise for pediatrics; page more as necessary					
Arrange for transfer of patients to larger hospital					
Contact FDNY; provide Situation Report; request ambulance diversion					
Other_____					
Other_____					
Other_____					
Other_____					

Comments on IC during 3rd Breakout

Module 1: Evaluator Check List – ED/Clinical Table

Evaluator Name: Date:

Critical Actions ED/Clinical Table	Fully Met = 1				
	1	2	3	4	5
Identify and use pediatric chart for drug dosage and equipment size.					
Notify administration of need to declare disaster; sets up ED for MCI response					
Prepare Situation Report					
Identify need for additional staffing requirements; begin contacts					
Institute pediatric triage methodology for MCI					
Other _____					
Other_____					
Other _____					
Other _____					
Other _____					
Comments on ED during 1st Breakout					

Module 2: Evaluator Check List – ED/Clinical Table

Evaluator Name: **Date:**

Critical Actions ED/Clinical Table	Fully Met = 1				
	1	2	3	4	5
Begin pre-triage screening for radiation					
Ensure all patients identified					
Establish safe child area; request IC assistance as needed					
Clear ED of all possible non-urgent patients					
Recognize ED over surge capacity; request additional personnel, stretchers, ICU, OR space; ED holds EMS stretchers if not already done (If surgeon went to OR, request replacement for stabilization of arriving ED patients)					
Request security and PR					
Request IC inform/educate hospital personnel re: radiation risk					
Inform IC of fatality (Recognize need for emotional support for staff and families)					
Request IC support for stretchers, transport personnel					
Order blood					
Request additional security					
Situation Report to IC (including staffing, equipment, on-call for OR, on-call for transfer, number waiting to be seen, number discharged, number of deaths)					
Provide triaging of calls from individuals seeking location of loved ones.					
Establish media information center; provide space for outside press					

Other _____					
Other _____					
Comments on ED during 2nd Breakout					

Module 3: Evaluator Check List – ED/Clinical Table

Evaluator Name: Date:

Critical Actions ED/Clinical Table	Fully Met = 1				
	1	2	3	4	5
Notify IC of FDNY report of no radiologic contaminants					
Notify MIS of need for emergency/disaster charts numbers available for continuity of patient care					
Ensure availability of supplies and equipment; Request IC arrange for additional supplies					
Inform IC of need to relieve staff					
Provide updated Situation Report to IC					
Request IC contact FDNY for ambulance diversion					
Other _____					
Other _____					
Other _____					
Other _____					
Comments on ED during 3rd Breakout					

Evaluator Exit Questionnaire

	not met				fully met
1. Did the hospital identify the need for a pediatric specific triage tool for disaster victims?	1	2	3	4	5
2. Did the hospital determine that ED surge capacity was met, called a disaster, and activated incident command team?	1	2	3	4	5
3. Did the hospital identify the need and quantity for stock equipment for pediatric resuscitation, including airway, ventilation, intubation, and vascular access?	1	2	3	4	5
4. Did the hospital ensure that the ED and Hospital Central Supply had sufficient stock in for a pediatric disaster?	1	2	3	4	5
5. Did the hospital have a plan to procure supplies if they weren't available or they ran out?	1	2	3	4	5
6. Did the hospital have a plan for delivery of supplies from Central Supply to ED and other areas?	1	2	3	4	5
7. Did the hospital determine the staffing patterns and critical numbers required for pediatric disaster victims for medical, nursing, transport, surgical, anesthesia staff, other security, mental health, dietary?	1	2	3	4	5
8. Did the hospital recognize the need for screening blast victims for radiation contamination, and identified correct methods for screening?	1	2	3	4	5
9. Did the hospital identify space for critical and non-critical pediatric patients, families looking for pediatric victims, and extra space to cover surge capacity during a pediatric disaster?	1	2	3	4	5
10. Did the hospital appropriately treat patients?	1	2	3	4	5
11. Did the hospital institute a plan for inter-hospital transfer of patients once pediatric surge capacity is reached (i.e. who does it, who will accept, what and who has to travel with patient, how is family informed)?	1	2	3	4	5
12. Did the hospital determine appropriate disposition of patients?	1	2	3	4	5

Chapter 9: Participant Handouts

HANDOUT Distribution Table

When	*What*	*To Whom*
Beginning of Module 1 Breakout Group	Patients Profiles 1, 2, 3	ED/Clinical Table participants
	Situation Report including Suggested Break-out Group Discussion Points	all participants
	Blank Summary Situation Report	For ED/Clinical Table participants to fill out and give to IC Table
Beginning of Module 2 Breakout Group	Patients Profiles 4, 5, 6	ED/Clinical Table participants
	Situation Report	all participants
	Blank Summary Situation Report	For ED/Clinical Table participants to fill out and give to IC Table
Beginning of Module 3 Breakout Group	Patients Profiles 7, 8, 9	For ED/Clinical Table participants to fill out and give to IC Table
	Situation Report	all participants
	Blank Summary Situation Report	For ED/Clinical Table participants to fill out and give to IC Table
	After Exercise Exit Questionnaire	all participants

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 1

PATIENT 1

Description

9 year-old girl arrives carried by hysterical parent who informs staff many additional injured are on their way

Child in pain

Holding her eyes, tearing and crying

Child refuses to open eyes because too painful

Vital Signs, GCS, Obvious Injuries

P 110; R 30; BP 120/80; GCS 15

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 1

PATIENT 2

Description

12-year-old girl arrives with both parents

Covered in dust

Difficulty breathing; expiratory wheezing with accessory muscle retraction

Parent gives history of known asthma, no intubations, no PICU admissions; on advir and proventil rescue

Vital Signs, GCS, Obvious Injuries

P 105; R 30; BP 120/70; GCS 15; O2 Sat 93

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 1

PATIENT 3

Description

6 year old girl brought in by ambulance/ Screams she cannot see

Numerous lacerations across face, neck, and chest/ Shrapnel penetrations

Large soft tissue avulsion of L thigh

Ongoing hemorrhage/ Poor peripheral perfusion

Vital Signs, GCS, Obvious Injuries

P 120; R 28; BP 85/60; GCS 15

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED/CLINCIAL AND IC PARTICIPANT HANDOUT -- Breakout 1

Situation Reports – Module One

Patients with blast injuries:

In ED	[3]
Patients admitted	[0]
Ventilated Patients	[0]
Total worried well in ED	[~15]
Fatalities	[0]

Total available beds by department:

Emergency Department	[3]
Med/Surg (larger children)	[10]
PICU	[2]
Other	[3]

Suggested Break-out Group Discussion Points

Are you experiencing a pediatric disaster?

Would your emergency response plan/EOC be activated?

Describe specific communication needs and how to address them.

What are your staffing, supply, and environmental needs at this point?

How will your hospital meet the current demand for pediatric care (beds, staffing, supplies, etc.)?

ED/CLINICAL PARTICIPANT HANDOUT – Breakout 1

Summary Situation Report – Module One

During the breakout session, the ED/Clinical Group will provide a tally for Incident Command using this form.

Patients

_____# of Patients in ED total

_____ # of Patients in ED related to incident

_____# of Patients Requiring OR (if no OR availability, add to transfer of patients)

_____# of Patients Requiring Admission to Pediatric Critical Care (if no pediatric critical care add to transfer of patients)

_____# of Patients Requiring Admission to Gen Ped/Med Surgical

_____# of Patients awaiting discharge from ED

_____# Fatalities due to incident

_____# of Patients requiring transfer

_____ # ventilators used

Requests for Additional:

Medications

Supplies

Staff

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

PATIENT 4

Description

7 year old girl brought in by ambulance

Severe respiratory distress

Absent breath sounds R side

Numerous lacerations across chest, and abdomen;

Tender R abdomen/No bowel sounds, peritoneal signs present

Vital Signs, GCS, Obvious Injuries

Poor perfusion P 140 R 38 BP 80/50 GCS 14

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

PATIENT 5

Description

11-year old male brought in by ambulance

Facial burns

Agonal respirations

Lacerations on face and upper neck

Vital Signs, GCS, Obvious Injuries

P 60; R 4; BP 80/50; GCS 4

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

PATIENT 6

Description

11-year old girl brought in by teacher

Unresponsive

Missing left arm and left leg

Wounds are wrapped in crepe paper

Vital Signs, GCS, Obvious Injuries

P 0; R 0; BP 0/0; GCS 0

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED/CLINICAL AND IC PARTICIPANT HANDOUT

The **moderator** will provide participants with the following situation report and suggested breakout group discussion points that they can use to stimulate conversation once the breakout groups commence.

Situation Report – Module Two

Patients with blast injuries:

In ED	[7]
Patients admitted	[2]
Ventilated Patients	[2]
Total worried well in ED	[~35]
Fatalities	[1]
Transfers (Requested/Sent)	[2]
Total available beds by department:	
Emergency Department	[0]
Med/Surg (larger children)	[5]
PICU	[0]
Other	[1]

Suggested Break-out Group Discussion Points

How will you handle the increasing number of injured? Worried well? Hysterical parents?

Where and how will you set up triage?

Where will you identify and admit all unaccompanied pediatric patients?

How will you keep track of all pediatric patients?

What supply and materials management issues will be critical to address?

What are your communication needs?

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

Summary Situation Report – Module Two

During the breakout session, the ED/Clinical Group will provide a tally for Incident Command using this form.

Patients

_____# of Patients in ED total

_____ # of Patients in ED related to incident

_____# of Patients Requiring OR (if no OR availability, add to transfer of patients)

_____# of Patients Requiring Admission to Pediatric Critical Care (if no pediatric critical care add to transfer of patients)

_____# of Patients Requiring Admission to Gen Ped/Med Surgical

_____# of Patients awaiting discharge from ED

_____# Fatalities due to incident

_____# of Patients requiring transfer

_____ # ventilators used

Requests for Additional:

Medications

Supplies

Staff

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 3

PATIENT 7

Description

11-year-old girl brought in by teacher

Loudly sobbing and screaming "Don't touch me!" and hits or bites anyone who tries

Severe acute stress reaction

Vital Signs, GCS, Obvious Injuries

P 100; R 28; BP 130/90; GCS 14

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

PATIENT 8

Description

5-year-old girl brought in by parents

Scant blood on arms

Covered in dust

Minor abrasions to arms

Appropriate reactions to parents

Vital Signs, GCS, Obvious Injuries

P 115; R 25; BP 90/60; GCS 15

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 2

PATIENT 9

Description

9-year-old boy walks in with parents

Covered in dust

Appropriate reactions to parents, staff

Vital Signs, GCS, Obvious Injuries

P 95; R 18; BP 100/70; GCS 15

Injury Identified

__ Dead on Arrival
__ Severe Head Trauma
__ Severe Blunt Abdominal Trauma
__ Respiratory Failure/ Pneumothorax
__ Limb amputation
__ Burn
__ Fractures
__ Respiratory Distress
__ Lacerations
__ TM ruptured
__ Agitation acute traumatic stress
__ Other_____

Management Needed

__ Intubation
__ Assisted Ventilation
__ Nebulized meds for reactive airway
__ IV or IO access
__ Fluid Resuscitation
__ Blood Transfusion
__ Antibiotics
__ Pain meds
__ Limb immobilization
__ Suture of lacerations
__ Psych consult
__ Sedation
__ Other_____

Disposition

__ Discharge to home
__ Discharge, awaiting care-giver
__ Transfer Operating Room / Surgeon
__ Needs Admission to Pediatric Critical Care bed
(pts may need transfer)
__ Needs Admission to Inpatient pediatric bed
__ Needs Transfer to outside hospital for Pediatric critical care, burn care, general pediatric unit
__ Transfer to Morgue, contact Morgue Pastoral Services

ED /CLINICAL and IC PARTICIPANT HANDOUT -- Breakout 3

Module Three

The **moderator** will provide participants with the following situation report and suggested breakout group discussion points that they can use to stimulate conversation once the breakout groups commence.

Situation Report #3

Patients with blast injuries:

In ED	[9]
Patients admitted	[6]
Ventilated Patients	[2]
Total worried well in ED	[~40]
Fatalities	[1]
Transfers (Requested/Sent)	[2]

Total available beds by department:

Emergency Department	[0]
Med/Surg (larger children)	[0]
PICU	[0]
Other	[0]

Suggested Break-out Group Discussion Points

How will you set up screening at entrances to your facility?

How are you communicating with staff, patients, families, outside agencies?

What type of support are you providing for staff? How are you dealing with staff fatigue? Mental health issues?

What are the current policies to assure staff safety?

ED /CLINICAL PARTICIPANT HANDOUT -- Breakout 3

Summary Situation Report – Module Three

During the breakout session, the ED/Clinical Group will provide a tally for Incident Command using this form.

Patients

_____# of Patients in ED total

_____ # of Patients in ED related to incident

_____# of Patients Requiring OR (if no OR availability, add to transfer of patients)

_____# of Patients Requiring Admission to Pediatric Critical Care (if no pediatric critical care add to transfer of patients)

_____# of Patients Requiring Admission to Gen Ped/Med Surgical

_____# of Patients awaiting discharge from ED

_____# Fatalities due to incident

_____# of Patients requiring transfer

_____ # ventilators used

Requests for Additional:

Medications

Supplies

Staff

After-Exercise Evaluation Form for Participants

Please circle your answer to the following questions (Questions 1-3):

1. I learned a significant amount of new information about pediatric blast terrorism preparedness by participating in this exercise.

STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE

2. This exercise gave me an opportunity to practice utilizing my knowledge and skills related to pediatric blast terrorism preparedness.

STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE

3. I feel this exercise was valuable to me in preparing for a possible pediatric blast terrorism event.

STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE

Please answer yes or no to the following questions, and give specific details where applicable. Please write legibly - your feedback is very important!

(Questions 4-10) During this exercise, did you learn anything you did not know before re:

4. Your hospital's pediatric disaster preparedness response plan (e.g. where it is located, content, when it should be activated)?

   a. Yes (please specify)

   b. No

5. Communication resources available to you in an emergency (e.g. dedicated phone/fax lines, where/how to access communication resources, etc)?

a. Yes (please specify)

b. No

6. Your hospital's incident command system (e.g. who are the incident commanders, who activates the emergency response plan, its role, etc.)

a. Yes (please specify)

b. No

7. Your specific role in your hospital's plan for pediatric disaster response?

a. Yes (please specify)

b. No

8. Your hospital or department's emergency communication tree (e.g. how staff in your department will be contacted with important information)?

a. Yes (please specify)

b. No

9. Your hospital can deal effectively with the mental health needs of the community in the case of a pediatric blast terrorism event (e.g. triaging, allaying concerns of community)?

a. Yes (please specify)

b. No

10. The role of your local or state health department in the case of a pediatric blast terrorism event (e.g. when they should be contacted, what number to call, resources available to hospitals, etc)?

a. Yes (please specify)

b. No

11. What did you **like/not like** about the format or content of this exercise?

12. What **suggestions** do you have to make the exercise a better learning experience?

APPENDICES

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Appendix 1: Pre-Event Trusted Agent Worksheet

(filled out a minimum of 1 week before drill; for use by moderator and evaluators)

Trusted Agent_____ Phone_____

Title_____ Fax_____

Hospital_____ Email_____

Append: Hospital Incident Command Table of Organization

Emergency Department Resources: Information anticipated *at the time* of the event:

Staffing numbers		
Doctors		
Nurses		
PAs		
NPs		
Transporters		
Clerks		
Actual # of stretchers		
Equipment numbers available without calling central supply		
ED Equipment includes sizes (where applicable) and numbers:		
Beds		
ET tubes		
Laryngoscope blades		
C-collars		
Backboards		
Vascular access/IO needles		
Child size masks and bags		
Block of pre-assigned chart numbers for Disaster patients		
ID bracelets		
Medications Guidelines for pediatric dosing readily available and location known to staff (length-based resuscitation tape and weight or age-based chart/table/booklet for tables and liquid medications)		
Pediatric IV flow drip rate charts		

Operating Room Resources

# OR's	
# OR's in use (OB & GI may have OR type space)	
# OR, nursing and anesthesia staffing	
Staff trained to handle children?	
Surgeons	
Nurses	
Anesthesiologists	
Average length of time for typical surgery/time OR will be vacated	

Availability and OR staff knowledge of location of the following:

Pediatric equipment		
Medication charts for common pediatric medications		
Pediatric IV flow drip rate charts		
Length-based resuscitation tapes (e.g. Broselow Tapes)		

ICU Resources

# beds	
# open beds	
# physician and nurse staffing	
Staff trained to handle children?	
Physicians	
Nurses	
Does ICU handle pediatric patients?	
What lowest age limit?	

Availability and ICU staff knowledge of location of the following:

Pediatric equipment		
Medication charts for common pediatric medications		
Pediatric IV flow drip rate charts		
Length-based resuscitation tapes (e.g. Broselow Tapes)		

Inpatient Service

# beds	
# open beds	
# physician and nurse staffing	
Staff trained to handle children?	
Physicians	
Nurses	
Does ward handle pediatric patients?	
What lowest age limit?	

Availability and Inpatient staff knowledge of location of the following:

Pediatric equipment		
Medication charts for common pediatric medications		
Pediatric IV flow drip rate charts		
Length-based resuscitation tapes (e.g. Broselow Tapes)		

Appendix 2: Recommended Participants

Organizers

Moderator

Facilitators

Evaluators

Observers

Trusted Agent from Hospital

Incident Command

Incident Command

Safety

Public Affairs

Risk Management

Security

Environmental Services

Radiation Safety

Materials Management

Employee Health

Ancillary Services

- Pharmacy
- Laboratory
- Radiology

Emergency Department/Clinical Services

Emergency Medicine

Nursing

Surgery

Respiratory Therapy

Anesthesia

PICU

NICU

Pediatric Inpatient

Social Work

Appendix 3: Attendance Sign In Sheet

[YOUR] HOSPITAL

Pediatric Blast Table Top Exercise

[DATE]

Name	Department/Title	Signature
	Moderator	
	Facilitator (Clinical)	
	Evaluator (Clinical)	
	Observer (Clinical)	
	Facilitator (IC)	
	Evaluator (IC)	
	Observer (IC)	

Appendix 4: Tabletop Exercise Checklist and Timeline

This checklist and timeline is intended to provide the Tabletop Exercise Planner with an organizational tool to manage the exercise planning process from beginning to end. The timeline provided along the side of the table is a rough estimate based on NYC DOHMH experience with actual hospital tabletop exercises. Your experience may vary.

Complete 6 – 8 weeks prior to the

Task	Start Date	End Date	Staff Assigned	Status
1. Early Development				
Determine/recruit members of Planning Committee and Evaluation Team				
Establish target date(s) for exercise.				
2. Planning the Exercise				
Schedule planning meetings				
Establish purpose				
Establish scope				
Develop objectives				
Review all scenarios				
Obtain most recent version of hospital's Emergency Management Plan (EMP)				
Distribute copies of EMP to members of planning committee				
Choose a scenario				
Determine which tabletop model to use				
Determine Moderator and 3-4 Facilitators (if breakout model is to be used)				
Identify participants for exercise (invitee list)				
Invite proposed participants/distribute flyers/advertisements for exercise, if applicable				
Identify and reserve room (including electronic equipment, e.g. projector, screen) for exercise.				

Complete 6 – 8 weeks prior to the

Complete within 2 weeks of

Complete 24 – 72 hours

Task	Start Date	End Date	Staff Assigned	Status
Consider space for registration/ beverages and breakout rooms, if applicable)				
Identify observer/media area, if applicable				
3. Exercise Development				
Revise scenario to reflect facility features and SOPs				
Modify and finalize chosen scenario slides and associated materials				
Develop agenda for the exercise				
Finalize After-Exercise Survey				
Finalize Agent Fact Sheet				
Finalize Participant Narrative				
Copy each inject onto separate sheets of paper for distribution during exercise				
Make copies of all handouts				
Distribute advance materials for exercise to participants, if desired				
Develop attendance/sign–in form				
Create name tags, if desired				
4. Preparing for the Exercise				
Test electronic equipment (projector/screen, video camera, 2-way radios), if applicable				
Procure flip charts, markers, pens, and paper.				
Provide radio/phone directories (if applicable)				
Order refreshments				
Provide entire scenario packet (narrative, slides, injects, generic and post-modular questions) to Moderator for review				
Review responsibilities with Moderator and Facilitators				
Conduct an abbreviated “dry-run” of the exercise presentation				

Complete 6 – 8 weeks prior to the

- Conduct debriefing session **within a week after the exercise.**
- Complete and share report, lessons learned

Task	Start Date	End Date	Staff Assigned	Status
5. Conducting the Exercise				
Review exercise ground rules with participants				
Discuss scope of the tabletop				
Review safety and security precautions				
Conduct the exercise				
Conduct a "Hot Wash"				
Distribute and collect After-Exercise Survey				
6. Evaluate the Exercise				
Conduct post-exercise debriefing session				
Compile survey results and debriefing session notes				
Develop report of results				
Share results with participants and other appropriate staff				
7. Post Exercise Activities				
Develop Corrective Action Plan				
Track Corrective Actions				
Track Lessons Learned				
Recognition				

Appendix 5: Suggested Agenda

Introduction to Disaster Drills	[8:00 – 8:30 am]
Module One	[8:30 – 9:00 am]
Situation briefing	
Breakout groups	
Plenary reporting/discussion	
Module Two	[9:00 – 9:30 am]
Situation briefing	
Breakout groups	
Plenary reporting/discussion	
Break	[9:30 – 9:45 am]
Module Three	[9:45 – 10:15 am]
Situation briefing	
Breakout groups	
Moderated discussion	
Hot Wash	[10:15 – 10:45 am]
Wrap-up and next steps	[10:45 – 10:55 am]
Evaluations	[11:55 – 12:00 pm]

Appendix 6: Sample Floor Plan

Table for staff person with handouts

Communication between tables is via courier or simulated phone/radio

Incident Command Table

Moderator

Slide Presentation

Emergency Department /Clinical Table

Table for Sign in sheet Agenda Refreshments

Appendix 7: Debriefing Session

Guidelines

A debriefing session is a short (45-60 minute) group discussion in which a small group of participants (8 –10) assemble after the exercise to discuss in detail their experiences with the exercise.

Components of a Session

Staff

Debriefing Session Leader

The Debriefing Session Leader leads the session, asking participants questions, probing for details, and facilitating the group's discussion.

Notetaker(s)

One or two persons in addition to the facilitator should observe the session, taking detailed notes on the discussion. The notetaker(s) should sit at the perimeter of the group and generally do not participate

Space

The session should take place at a location convenient to participants in a quiet, private room. Participants can be seated around a table or, if no table is available, chairs should be arranged in a circular shape to promote discussion.

Equipment needed

Notepaper and a pen/pencil for each participant

Tape recorder (optional)

Structuring the discussion

Begin the group with an introduction in which the Debriefing Session Leader:

Introduces him/herself and the notetaker(s) and describes their roles in the session.

Makes a statement about the purpose of the session in the context of the lessons learned from the recent tabletop exercise and preparedness goals of the institution.

Assures the group the session is confidential- no comments will be attributed to individuals.

Encourages participants to be vocal and honest about their experiences.

Example of Introduction: Thanks for agreeing to come to this debriefing. The reason we organized this group was to obtain your ideas about the TT exercise. We'd like to hear more about whether or not it was useful to you, why or why not, and recommendations you have for improving our hospital's emergency response plans based on what you have learned from this experience. It will be valuable for us to have this feedback from you.

Tips for Debriefing Leader:

Allow 5 or 10 minutes for participants to greet each other, make themselves comfortable and get refreshments. At the time, be respectful of the value of participants' time, as well as assessing the group dynamic throughout the focus group. Let participants leave early if they seem restless and you think you've already addressed all the questions.

It's fine to allow some group pauses and silences after asking each question and prior to asking probes. This allows participants time to gather their ideas.

Try rephrasing questions that are met with silence to encourage different ways of thinking about the topic.

Supportively ask more talkative or dominating participants to allow others in the groups to share their views.

Debriefing Questionnaire

The Debriefing Questionnaire is developed by the staff from the individual institution based on the needs of the hospital as outlined by the planning committee. After the introduction, the Debriefing Session Leader begins discussion by asking, one-by-one, pre-prepared questions and appropriately probing the group to explore pertinent areas more deeply as needed. It is important to consider the goals of your exercise and its evaluation when deciding what questions to include in the debriefing discussion.

Some suggested questions and probes include:

What did/didn't you like about the exercise?

Probe: What did you like about the content of the exercise (e.g. the scenarios, the discussion)?

Probe: What did you like about the format or structure of the exercise (e.g. schedule, groups)?

What are some of the new things you learned from the exercise?

Probe: What was the most important thing you learned form the exercise?

What, if anything, would you have liked to have covered but didn't get to discuss in the exercise?

Are there barriers that exist that make it difficult for staff to receive pediatric preparedness training?

Probe: What might help break down these barriers?

Do you believe your institution is more prepared for a pediatric disaster as a result of the exercise?

Probe: Specifically, why/why not?

How did you like the format of the exercise? What worked for you and what did not?

Appendix 8: How to Modify Materials for Larger Hospitals

Formula to stress the system without overwhelming it

- Use at least 1 more pediatric critical patient than you have Pediatric ICU beds
- Use 1 more pediatric patient who needs surgery than you have pediatricians or surgeons to handle the case
- Use 3-4 more pediatric moderately injured who need admission than you have inpatient beds
- Use a minimum of 5-10 green triage pediatric patients who need space in a separate area

Stressors for Large Hospitals

- Increase the numbers of patients presenting to the ED
- Have the incident occur on a weekend
- Have less availability of staff and supplies
- There is radiation
- Staff have children at site of the explosion

Additional Injects

- Switchboard overloaded – no calls can get through.
- A patient is the child of ED Nurse
- Incident commander is on vacation
- Parents looking for their children

Additional Patient Profiles

For hospitals that elect to increase the number of patients additional profiles have been provided in four categories:

- Walking wounded
- Moderate/Needs Stabilization
- Critical Care/OR
- DOA

Select those which will further tax your system without overloading it. These are formatted for the Moderator/Facilitator package. You will need to modify them to match the ones for the ED clinical group by removing actual treatment and disposition and adding summation to reverse side. You will need to add it to slide set, narrative, and renumber slides throughout this document.

ADDITIONAL PATIENT 1 Walking Wounded

Description

12 y/o M, near explosion site, where there was an adjacent store room, as per teacher who brought patient into ED

L side, T-shirt is tattered, possible chemical burn

Vital Signs, GCS, Obvious Injuries

P80, RR 20, BP 120/80, GCS 15

Treatment Check Off

__Erosive chemical exposure (remove clothing, and thoroughly irrigate affected area)

__Topical first aide

__Td booster

__Sterile dressings applied

__Pain meds

__Topical antibiotics to prevent secondary infection

__Pain meds prn

Actual Injuries

1-2 degree chemical burn

BSA 10% affected, no grafting nor debridement needed

Disposition

Discharge with follow-up to primary physician

ADDITIONAL PATIENT 2 Walking Wounded

Description

5-year-old girl with one flip flop, accompanied by hysterical father

Foot without flip flop covered in blood

Child is consolable and playful

Is in pain and pulls lower left extremity away from any handling

Vital Signs, GCS, Obvious Injuries

P100, RR 25, BP 110/70, GCS 15

Treatment Check Off

__ Thoroughly clean lower left extremity

__ Lidocaine

__ Exploration of embedded foreign body in the palmer aspect of the left foot.

__ Foreign body removal

__ X-ray s/p foreign body removal shows no foreign body present, complete removal accomplished

__Sterile dressing

Actual Injuries

Embedded glass in foot

Disposition

Discharge with follow-up to primary physician

Antibiotics to prevent secondary infection

ADDITIONAL PATIENT 3 Walking Wounded

Description

13 year-old male tried to jump a mid-sized fence, brought in by teacher.

5 cm laceration along the inner thigh of the right lower extremity

Active bleed

Vital Signs, GCS, Obvious Injuries

P 90, RR 20, BP 120/80, GCS 15, O2 sat 100% on RA.

Treatment Check Off

- __ ABC stable
- __ Intermediate laceration through dermis to epidermis
- __ Slow active bleed
- __ Hemostasis with pressure
- __ Laceration repair in ED
- __ Td toxoid

Actual Injuries

Right lower extremity laceration of the medial aspect of proximal thigh

Disposition

Discharge with follow up to primary physician

Antibiotics to prevent secondary infection

ADDITIONAL PATIENT 4 Walking Wounded

Description

12-year-old male brought in by parent

Loudly sobbing

Physically aggressive

Inconsolable

Harmful to others

States he "prefers" to die than live with what he's just lived through, regarding seeing a friend of his lose his arms in the explosion

Vital Signs, GCS, Obvious Injuries

P95, RR 22, BP 125/80, GCS 15, O2 sat unobtainable because patient pulled probe off.

Treatment Check Off

__ ABC stable

__ Psychiatric evaluation

__ Sedative medication

Actual Injuries

Acute stress disorder

Suicidal ideation

Disposition

Admit to psychiatric ward

ADDITIONAL PATIENT 5 Walking Wounded

Description

5-year-old female brought in by hysterical parents

Scant blood on arms

Covered in soot

Minor abrasions on arms and back

Parents convinced that patient has abdominal trauma, kidney trauma or intra-abdominal bleed – despite any arguments as to the contrary.

Vital Signs, GCS, Obvious Injuries

P 110, RR 25, BP 110/70, GCS 15, pulse Ox: 100%

Treatment Check Off

__ ABC stable

__ Thoroughly cleanse bloody areas and explore if needed

__ No signs of acute abdomen

__ Psychological First Aid for parents

__ Bacitracin and local first aid to abrasions

Actual Injuries

Minor superficial abrasions

Disposition

Treat and Release

Refer parents to social worker, or designated staff to deal with their “concerns”

ADDITONAL PATIENT 6 Walking Wounded

Description

9-year-old male walks in with parents

Hyperactive, can't stand still

Covered in dust

Cupping left hand with right hand

Complains of pain to the back of hand

Vital Signs, GCS, Obvious Injuries

P 80, RR 20, BP 110/70, GCS 15, Pulse Ox: 100% on RA.

Treatment Check Off

__ ABC stable

__ Swelling and bruising to the dorsal aspect of the left hand

__ Left hand x-ray

__ Pain medication

__ Immobilizing splint to left hand and wrist

Actual Injuries

ADHD

Left fifth metacarpal fracture

Disposition

Treat and release

Follow-up with primary physician or orthopedist in 5-7 days

ADDITONAL PATIENT 7 Walking Wounded

Description

13-year-old brought in by coach, was playing football during the explosion. He lost his focus when he heard the explosion, and made a weird twist of his left foot, causing him to fall to the ground clutching his foot in pain.

Vital Signs, GCS, Obvious Injuries

P 85, RR 23, BP 120/80, GCS 15, O2 Sat 100% on RA.

Swelling and bruising to the dorsal aspect of the left foot

Treatment Check Off

__ ABC stable

__ Left foot x-ray

__ Posterior orthoglass splint formed, molded and applied.

__ Patient given crutches.

__ Second foot X-ray shows well aligned fragments of the 5th metatarsal

Actual Injuries

Foot Fracture

Disposition

Treat and release

Follow-up with primary physician or orthopedist in 5-7 days

Crutches

ADDITIONAL Patient 8 Walking Wounded

Description

10 year-old female brought in by teacher. Complains of chest wall pain, after being hit with flying debris

Scant blood over chest and abdomen

Vital Signs, GCS, Obvious Injuries

P 90, RR 23, BP 115/73, GCS 15, Pulse Ox 100% on RA.

Treatment Check Off

__ Local first aide to abrasions

Actual Injuries

Minor abrasion to chest and abdomen

Disposition

Treat and release

ADDITIONAL PATIENT 9 MODERATE INJURY

Description

14-year-old female patient, arrives hysterically screaming “she’s blind”, frightened and inconsolable.

Adolescent in pain

Holding her R eye, tearing/crying, blood coming from eye

Refuses to open eye

Vital Signs, GCS, Obvious Injuries

P 98, RR20, BP 110/76, GCS 15

Embedded shrapnel in conjunctiva, crossing iris

Treatment Check Off

__ Exposure

__ Sedatives and pain meds to calm hysterical child,

__ Florescence exam positive for corneal abrasions

__ Ophthalmology consult

__ Slit lamp exam and FB removal

__ Tetanus booster

__ Antibiotic drops

__ Sterile eye patch

Actual Injuries

Penetrating corneal foreign body

Corneal abrasions

Disposition

Treat and Release with close follow-up with ophthalmologist

ADDITIONAL PATIENT 10 Moderate Injury

Description

9-year old female arrives with teacher slow to respond to verbal commands, responsive to painful stimulus. Otherwise alert and awake. Teacher states patient was hit over the head, directly over left side of face/head.

Vital Signs, GCS, Obvious Injuries

P 98, RR20, BP 110/76, GCS 13

Evidence of acute hearing loss

Treatment Check Off

__ Conductive hearing loss to the left ear

__ Left tympanic membrane has air rushing out, as patient blows her nose, as per patient

__ Otoscopic exam

__ Cover left ear

Actual Injuries

Left tympanic membrane rupture

Disposition

Follow-up with ENT

ADDITONAL PATIENT 11 Moderate Injury

Description

6-year-old female hit by falling heavy debris (brick) as per witness, brought in by parent

Right upper extremity pain

No deformity

Vital Signs, GCS, Obvious Injuries

P 120, RR 25, BP 110/68, GCS 15

Treatment Check Off

__ Right upper extremity with good perfusion, crepitus, without posterior deformity

__ Orthopedist consult

__ Plaster Cast applied

__ Post cast x-ray shows same good alignment of fragments

Actual Injuries

Right upper extremity closed radius/ulnar fracture

Disposition

Treat and release; follow-up with orthopedist

ADDITONAL PATIENT 12 Moderate Injury

Description

6-year-old male hit by flying heavy debris, large wood shrapnel, as per witness; brought in by parent

Right lower extremity pain and no deformity

Open laceration and active bleeding

Vital Signs, GCS, Obvious Injuries

P 120, RR 25, BP 110/68, GCS 15

Treatment Check Off

__ Good perfusion of right lower extremity

__ Crepitus

__ No posterior deformity

__ Foreign body noted after thorough irrigation and exploration of open wound

__ Right lower extremity x-ray

__ Laceration repaired at bedside in ED.

Actual Injuries

Right lower extremity contusion

Right lower extremity laceration

Disposition

Treat and release with follow-up with primary physician

CRITICAL CARE

ADDITIONAL PATIENT 13 Critical Care

Description

8-year old male brought in by good Samaritan stating having heard screams he went into an area of the explosion where fire erupted and found patient unconscious. He scooped him up and drove him to ED.

Soot at base of nostrils, dark nasal mucosa

Excessive use of respiratory accessory muscles

Poor air entry

Conscious now upon arrival to ED.

Slightly confused, alert, awake and oriented x 3

Vital Signs, GCS, Obvious Injuries

P 130, RR 38, GCS 12, O2 sat 89% on RA

Treatment Check Off

__Exposure – fire inhalation

__CXR (+) patchy increased density

__ 100% O2, if no response Hyperbaric O2

__ CBC – check Hb, CO (carbon monoxide) levels

Actual Injuries

Fire inhalation, burnt airways

Hypoxemia

Disposition

Admit to PICU

ADDITIONAL PATIENT 14 Critical Care

Description

5-year-old male brought in by parents, presenting with bilateral lower and upper extremity burns

circumferential burn over the right lower extremity

good strength and tone

moves all extremities

Vital Signs, GCS, Obvious Injuries

P 135, RR 30, BP 120/80, GCS 15, O2 sat 100% on RA.

Right lower extremity pulseless

Treatment Check Off

__ Pain meds

__ Silvadene Cream

__ Local first aide, wet, sterile dressing

__ 24h-48h watch in ICU, debridement of any necrotic tissue

__ Later patient to OR, once stable and debrided to have skin grafting done

Actual Injuries

2-3 degree burns >40% Body surface area

Disposition

Admit to ICU for stabilization

Later OR for grafting

Transfer to Burn Care Center

ADDITIONAL PATIENT 15 Critical Care

Description

13-year-old female brought in by ambulance via stretcher, unable to move her left lower extremity. Fire fighters extracted patient from being pinned under a support beam for 20 minutes. Patient complains of red urine.

Vital Signs, GCS, Obvious Injuries

P 120, RR 25, BP 110/70, GCS 15, O2 Sat 100% on RA

Lower left extremity very painful to touch

Swelling and ischemia to lower left extremity

Treatment Check Off

__ Urine dip for blood

__ Blood work

__ IV fluid given to maintain good urinary output

__ Pain meds

__ Consider Urine alkalinization vs. Mannitol

__ Patient placed under observation to follow kidney function

Actual Injuries

Rhabdomyolysis

Acute renal failure secondary to myoglobinuria

Compartment syndrome possible need for fasciotomy

Disposition

Admit for observation

Later OR for fasciotomy tomorrow if not improved compartment syndrome

ADDITIONAL PATIENT 16 Critical Care

Description

10-year-old male brought in by parents, reporting falling and hitting head against stairs.

Headache

Bilateral periorbital bruising

Acute onset of rhinorrhea

Vital Signs, GCS, Obvious Injuries

P 110, RR 23, BP 110/70, GCS 15, O2 Sat 98% on RA

Treatment Check Off

__ Look for occipital crepitus, Battle's sign and raccoon eyes consistent with basilar skull fracture

__Head CT

__ Check for CSF leak secondary to skull fracture

__ "Head-up" position, avoidance of coughing sneezing, nose blowing and straining

__ Laxatives, restricting oral intake, use of steroids, diuretics or osmotically active medications

__ Prophylactic antibiotics

Actual Injuries

Basilar skull fracture

Head injury

CSF leak

Disposition

Admit to ICU

Repeated lumbar for CSF drainage

Patient should be followed closely for at least one year for signs of recurrent or occult rhinorrhea and warned about the increased risk for meningitis.

ADDITIONAL PATIENT 17 Critical Care

Description

5-year-old male, brought in by school teacher while running to get outside, ran into a door frame, after tripping, hitting left side of head. Unconscious for 20 seconds.

Fluid coming from left ear

Patient cannot hear out of that ear.

Vital Signs, GCS, Obvious Injuries

P 120, RR 28, BP 90/60, GCS 15, O2 98% on RA

Treatment Check Off

__ Check for crepitus over temporal bone

__ Check for conductive hearing loss to the L ear

__ Head CT Scan

__ Otoscopic exam

Actual Injuries

Left temporal bone Fracture, with secondary CSF leak, via left ear

Left tympanic membrane rupture

Disposition

Admit to PICU for observation

ADDITIONAL PATIENT 18 Critical Care

Description

10-year-old male brought in by ambulance states he was thrown in a blast, causing him to slam against a corner of the building, while outside running.

Chest pain exacerbated with deep breathing.

Vital Signs, GCS, Obvious Injuries

P 120, RR 28, BP 90/60, GCS 15

Tachycardia

Crepitus over body of sternum

Crepitus over right clavicle

Treatment Check Off

__ Chest CT

__ IV fluids to stabilize BP

Actual Injuries

Cardiac contusion

Sternal fracture

Disposition

Admit to CCU for observation

ADDITONAL PATIENT 19 Critcal Care

Description

8-year-old female brought in by ambulance via stretcher had slammed against monkey bars with chest/thorax, falling from the blast.

Vital Signs, GCS, Obvious Injuries

P 130, RR 45, BP 100/60, GCS 15, Pulse Ox: 89% on RA

Shortness of breath

Treatment Check Off

__ Decreased breath sounds on left side

__ Nebulized O2 administered

__ Chest X-ray

Actual Injuries

Lung contusion

Disposition

PICU for 24 hour observation

ADDITIONAL PATIENT 20 Critical Care

Description

5-year-old male thrown by blast, hit left side of head, brought in unconscious by school teacher.

Fluid coming from left ear

Still unresponsive upon arrival to ED

Vital Signs, GCS, Obvious Injuries

P 100, RR 35, BP 120/80, GCS 6, O2 sat 95% on RA.

Treatment Check Off

__ Head CT

__ Assisted ventilation

__ Endotracheal intubation

__ CO2 35

__ Maintain BP

__ Otoscopic exam

Actual Injuries

Left temporal bone fracture

Cerebrospinal fluid leak via left ear

Subdural hematoma

Left tympanic membrane rupture

Disposition

Transfer to Neurosurgery tertiary care facility

OR to drain subdural hematoma to relieve midline shift

ADDITIONAL PATIENT 21 Critical Care

Description

6-year-old female hit by falling heavy debris (brick) as per witness, brought in by parent
Left upper extremity pain and deformity

Vital Signs, GCS, Obvious Injuries

P 120, RR 25, BP 110/68, GCS 15
Flexed wrist with posterior deformity
Bulge consistent with dislocation of radial fragment
Open wound over deformity.

Treatment Check Off

__ Left upper extremity x-ray

__ Orthopedist consult

Actual injuries

Left upper extremity open radius/ulnar fracture

Disposition

Admit to Ortho OR

PATIENT 12

Description

9-year-old male complaining of shortness of breath brought in by ambulance via stretcher
Hemoptysis

Vital Signs, GCS, Obvious Injuries

P 130, RR 45, BP 100/60, GCS 15, Pulse Ox: 89% on RA
Decreased breath sounds on left side

Treatment Check Off

__ Chest x-ray CXR

__ Chest Tube placement in ED

Actual injuries

Left lung laceration

Tension hemothorax

Posterior 4th rib fracture

Disposition

OR to repair left lung and stabilize patient

DOA

ADDITONAL PATIENT 22 DOA

Description

10-year-old female brought in by a Good Samaritan stating he went into an area of the explosion, where fire erupted having heard screams, found patient unconscious, scooped her up and drove her to ED.

Patient now rag-doll hypotonia upon arrival to ED.

Slightly confused, unresponsive.

Vital Signs, GCS, Obvious Injuries

Weak P 30, apneic, GCS 8, O2 sat unobtainable

Soot at base of nostrils, dark nasal mucosa

Weak respiratory accessory muscle use, poor air entry on route

Treatment Check Off

__ Exposure – fire inhalation

__ Endotracheal tube placement

__ Assisted ventilation

__ 100% O2, if no response Hyperbaric O2 via ventilator

__ CBC – check Hb

__ CPR; PEA on EKG

Actual Injuries

Fire inhalation, burnt airways

Hypoxemic brain injury > 5min – brain death

Disposition

Pronounce dead, discuss with medical examiner

Appendix 9: List of Acronyms

BP	Blood Pressure
CEO	Chief Executive Officer
CNO	Chief Nursing Officer
COO	Chief Operating Officer
DOA	Dead on Arrival
DOH	Department of Health
ED	Emergency Department
EMP	Emergency Management Plan
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ER	Emergency Room
ET	Endotracheal Tube
FBI	Federal Bureau of Investigation
FDNY	Fire Department of New York
GCS	Glasgow Coma Scale
GPS	Global Positioning System
HazMat	Hazardous Material
HCW	Healthcare Workers
HERDS	Hospital Emergency Response Data System
ICP	Intra-cranial Pressure
IC	Incident Command
ICS	Incident Command System
ICU	Intensive Care Unit
ID	Identification
IO	Intraosseus
IV	Intravenous
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
MCI	Multiple Casualty Incident
ME	Medical Examiner
MIS	Medical Information System
NICU	Neonatal Intensive Care Unit
NP	Nurse Practitioner

NYPD	New York Police Department
OEM	Office of Emergency Management
OR	Operating Room
P	Pulse
PA	Physician's Assistant
PICU	Pediatric Intensive Care Unit
PPE	Personal protective equipment
PR	Public Relations
R	Respiration
SNS	Strategic National Stockpile
TT	Tabletop exercise

APPENDIX 10: CDC Disaster Blast Fact Sheet

MASS CASUALTIES

Explosions and Blast Injuries: A Primer for Clinicians

Key Concepts

- Bombs and explosions can cause unique patterns of injury seldom seen outside combat.
- The predominant post explosion injuries among survivors involve standard penetrating and blunt trauma. Blast lung is the most common fatal injury among initial survivors.
- Explosions in confined spaces (mines, buildings, or large vehicles) and/or structural collapse are associated with greater morbidity and mortality.
- Half of all initial casualties will seek medical care over a one-hour period. This can be useful to predict demand for care and resource needs.
- Expect an "upside-down" triage - the most severely injured arrive after the less injured, who bypass EMS triage and go directly to the closest hospitals.

Background

Explosions can produce unique patterns of injury seldom seen outside combat. When they do occur, they have the potential to inflict multi-system life-threatening injuries on many persons simultaneously. The injury patterns following such events are a product of the composition and amount of the materials involved, the surrounding environment, delivery method (if a bomb), the distance between the victim and the blast, and any intervening protective barriers or environmental hazards. Because explosions are relatively infrequent, blast-related injuries can present unique triage, diagnostic, and management challenges to providers of emergency care.

Few U.S. health professionals have experience with explosive-related injuries. Vietnam era physicians are retiring, other armed conflicts have been short-lived, and until this past decade, the U.S. was largely spared of the scourge of mega-terrorist attacks. This primer introduces information relevant to the care of casualties from explosives and blast injuries.

Classification of Explosives

Explosives are categorized as **high-order explosives** (HE) or **low-order explosives** (LE). HE produce a defining supersonic over-pressurization shock wave. Examples of HE include TNT, C-4, Semtex, nitroglycerin, dynamite, and ammonium nitrate fuel oil (ANFO). LE create a subsonic explosion and lack HE's over-pressurization wave. Examples of LE include pipe bombs, gunpowder, and most pure petroleum-based bombs such as Molotov cocktails or aircraft improvised as guided missiles. HE and LE cause different injury patterns.

Explosive and incendiary (fire) bombs are further characterized based on their source. "Manufactured" implies standard military-issued, mass produced, and quality-tested

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weapons. "Improvised" describes weapons produced in small quantities, or use of a device outside its intended purpose, such as converting a commercial aircraft into a guided missile. Manufactured (military) explosive weapons are exclusively HE-based. Terrorists will use whatever is available – illegally obtained manufactured weapons or improvised explosive devices (also known as "IEDs") that may be composed of HE, LE, or both. Manufactured and improvised bombs cause markedly different injuries.

Blast Injuries

The four basic mechanisms of blast injury are termed as primary, secondary, tertiary, and quaternary (Table 1). "Blast Wave" (primary) refers to the intense over-pressurization impulse created by a detonated HE. Blast injuries are characterized by anatomical and physiological changes from the direct or reflective over-pressurization force impacting the body's surface. The HE "blast wave" (over-pressure component) should be distinguished from "blast wind" (forced super-heated air flow). The latter may be encountered with both HE and LE.

Explosions and Blast Injuries
(continued from previous page)

Table 1: Mechanisms of Blast Injury

Category	Characteristics	Body Part Affected	Types of Injuries
Primary	Unique to HE, results from the impact of the over pressurization wave with body surfaces.	Gas filled structures are most susceptible - lungs, GI tract, and middle ear	- Blast lung (pulmonary barotrauma) - TM rupture and middle ear damage - Abdominal hemorrhage and perforation - Globe (eye) rupture - Concussion (TBI without physical signs of head injury)
Secondary	Results from flying debris and bomb fragments	Any body part may be affected	- Penetrating ballistic (fragmentation) or blunt injuries -Eye penetration (can be occult)
Tertiary	Results from individuals being thrown by the blast wind	Any body part may be affected	- Fracture and traumatic amputation - Closed and open brain injury
Quaternary	- All explosion-related injuries, illnesses, or diseases not due to primary, secondary, or tertiary mechanisms. - Includes exacerbation or complications of existing conditions.	Any body part may be affected	- Burns (flash, partial, and full thickness) - Crush injuries - Closed and open brain injury - Asthma, COPD, or other breathing problems from dust, smoke, or toxic fumes - Angina - Hyperglycemia, hypertension

LE are classified differently because they lack the self-defining HE over-pressurization wave. LE's mechanisms of injuries are characterized as due from ballistics (fragmentation), blast wind (not blast wave), and thermal. There is some overlap between LE descriptive mechanisms and HE's Secondary, Tertiary, and Quaternary mechanisms.

Table 2: Overview of Explosive-related Injuries

System	Injury or Condition
Auditory	TM rupture, ossicular disruption, cochlear damage, foreign body
Eye, Orbit, Face	Perforated globe, foreign body, air embolism, fractures
Respiratory	Blast lung, hemothorax, pneumothorax, pulmonary contusion and hemorrhage, A-V fistulas (source of air embolism), airway epithelial damage, aspiration pneumonitis, sepsis
Digestive	Bowel perforation, hemorrhage, ruptured liver or spleen, sepsis, mesenteric ischemia from air embolism
Circulatory	Cardiac contusion, myocardial infarction from air embolism, shock, vasovagal hypotension, peripheral vascular injury, air embolism-induced injury
CNS injury	Concussion, closed and open brain injury, stroke, spinal cord injury, air embolism-induced injury
Renal Injury	Renal contusion, laceration, acute renal failure due to rhabdomyolysis, hypotension, and hypovolemia
Extremity injury	Traumatic amputation, fractures, crush injuries, compartment syndrome, burns, cuts, lacerations, acute arterial occlusion, air embolism-induced injury

Note: Up to 10% of all blast survivors have significant eye injuries. These injuries involve perforations from high-velocity projectiles, can occur with minimal initial discomfort, and present for care days, weeks, or months after the event. Symptoms include eye pain or irritation, foreign body sensation, altered vision, periorbital swelling or contusions. Findings can include decreased visual acuity, hyphema, globe perforation, subconjunctival hemorrhage, foreign body, or lid lacerations. Liberal referral for ophthalmologic screening is encouraged.

Selected Blast Injuries

Lung Injury

"Blast lung" is a direct consequence of the HE over-pressurization wave. It is the most common fatal primary blast injury among initial survivors. Signs of blast lung are usually present at the time of initial evaluation, but they have been reported as late as 48 hours after the explosion. Blast lung is characterized by the clinical triad of apnea, bradycardia, and hypotension. Pulmonary injuries vary from scattered petechae to confluent hemorrhages. Blast lung should be suspected for anyone with dyspnea, cough, hemoptysis, or chest pain following blast exposure. Blast lung produces a characteristic "butterfly" pattern on chest X-ray. A chest Xray is recommended for all exposed persons and a prophylactic chest tube (thoracostomy) is recommended before general anesthesia or air transport is indicated if blast lung is suspected.

Ear Injury

Primary blast injuries of the auditory system cause significant morbidity, but are easily overlooked. Injury is dependent on the orientation of the ear to the blast. TM perforation is the most common injury to the middle ear. Signs of ear injury are usually present at time of initial evaluation and should be suspected for anyone presenting with hearing loss, tinnitus, otalgia, vertigo, bleeding from the external canal, TM rupture, or mucopurulent otorhea. All patients exposed to blast should have an otologic assessment and audiometry.

Abdominal Injury

Gas-containing sections of the GI tract are most vulnerable to primary blast effect. This can cause immediate bowel perforation, hemorrhage (ranging from small petechiae to large hematomas), mesenteric shear injuries, solid organ lacerations, and testicular rupture. Blast abdominal injury should be suspected in anyone exposed to an explosion with abdominal pain, nausea, vomiting, hematemesis, rectal pain, tenesmus, testicular pain, unexplained hypovolemia, or any findings suggestive of an acute abdomen. Clinical findings may be absent until the onset of complications.

Brain Injury

Primary blast waves can cause concussions or mild traumatic brain injury (MTBI) without a direct blow to the head. Consider the proximity of the victim to the blast particularly when given complaints of headache, fatigue, poor concentration, lethargy, depression, anxiety, insomnia, or other constitutional symptoms. The symptoms of concussion and post traumatic stress disorder can be similar.

Emergency Management Options

- Follow your hospital's and regional disaster system's plan.
  Expect an "upside-down" triage - the most severely injured arrive after the less injured, who by-pass EMS triage and go directly to the closest hospitals.
  Double the first hour's casualties for a rough prediction of total "first wave" of casualties.
- Obtain and record details about the nature of the explosion, potential toxic exposures and environmental hazards, and casualty location from police, fire, EMS, ICS Commander, regional EMA, health department, and reliable news sources.
- If structural collapse occurs, expect increased severity and delayed arrival of casualties.

Medical Management Options

- Blast injuries are not confined to the battlefield. They should be considered for any victim exposed to an explosive force.
- Clinical signs of blast-related abdominal injuries can be initially silent until signs of acute abdomen or sepsis are advanced.
- Standard penetrating and blunt trauma to any body surface is the most common injury seen among survivors. Primary blast lung and blast abdomen are associated with a high mortality rate. "Blast Lung" is the most common fatal injury among initial survivors.
- Blast lung presents soon after exposure. It can be confirmed by finding a "butterfly" pattern on chest X-ray. Prophylactic chest tubes (thoracostomy) are recommended prior to general anesthesia and/or air transport.
- Auditory system injuries and concussions are easily overlooked. The symptoms of mild TBI and posttraumatic stress disorder can be identical.
- Isolated TM rupture is not a marker of morbidity; however, traumatic amputation of any limb is a marker for multi-system injuries.
- Air embolism is common, and can present as stroke, MI, acute abdomen, blindness, deafness, spinal cord injury, or claudication. Hyperbaric oxygen therapy may be effective in some cases.
- Compartment syndrome, rhabdomyolysis, and acute renal failure are associated with structural collapse, prolonged extrication, severe burns, and some poisonings.
- Consider the possibility of exposure to inhaled toxins and poisonings (e.g., CO, CN, MetHgb) in both industrial and criminal explosions.
- Wounds can be grossly contaminated. Consider delayed primary closure and assess tetanus status. Ensure close follow-up of wounds, head injuries, eye, ear, and stress-related complaints.
- Communications and instructions may need to be written because of tinnitus and sudden temporary or permanent deafness.

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This Explosives Primer was developed from published and unpublished sources. If quoted, please cite date and time as changes will be made as new information becomes available or is cleared for public distribution.

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