
NICU/Nursery Evacuation Tabletop Exercise Toolkit

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Introduction

Background for the Project

In an effort to provide guidance to Illinois hospitals on planning for the evacuation of the finest and most fragile patient population, Illinois Emergency Medical Services for Children (EMSC) convened an ad-hoc committee in 2008 to assist in the development of a set of evacuation guidelines specific to Neonatal Intensive Care Units (NICU). This multidisciplinary committee of physicians and nurses representing perinatal, emergency preparedness, and public health professionals, educators, and transport specialists came together to develop the Neonatal Intensive Care Unit (NICU) Evacuation Guidelines, which were released in 2009. These guidelines outline key NICU and nursery evacuation components specific to personnel, training, staff roles and responsibilities, transportation, family notification, equipment and supplies, as well as the operational structure related to communication and hospitals prepared to receive NICU and other nursery level patients from an evacuating hospital.

After statewide distribution of these guidelines, EMSC facilitated several NICU/Nursery Tabletop Exercises within our state to further assist hospitals with the implementation and incorporation of these guidelines into their individual hospital Emergency Operations Plans (EOPs).

- In 2009, an initial NICU Evacuation Tabletop Exercise was held in Winfield, Illinois and involved NICU hospitals from Chicago and its western suburbs. The scenario was a severe weather event with resulting power outages that forced an evacuation of a NICU.
- The second NICU Evacuation Tabletop Exercise occurred in 2010 in Springfield, Illinois. This exercise involved NICU and other perinatal level hospitals and agencies from southern Illinois as well as St Louis, Missouri. St Louis is a tremendous asset to the southern sectors of Illinois, which have limited perinatal and pediatric resources. Including St. Louis as a partner is essential in the state's disaster planning and training. The scenario for this exercise was earthquake-related, with a NICU forced to evacuate due to damage sustained to the hospital.
- In 2011, the third evacuation tabletop was conducted in Rockford, Illinois. Northwest Illinois is similar to southern Illinois with respect to limited NICU resources. Two NICUs from Madison, Wisconsin participated in this exercise since these hospitals are resources to the north and northwest sectors of Illinois. The scenario for this exercise was extensive damage to a NICU hospital struck by a tornado, causing the need for an immediate evacuation. An additional component incorporated into this exercise was utilization of non-NICU perinatal level hospitals to hold and manage evacuated patients temporarily while awaiting transport to NICUs outside of the area of the disaster.

All three of these exercises demonstrated unique considerations associated with resource allocation and coordination for mobilizing medically fragile and technologically dependent infants during disasters.

The various resources/tools developed for each of these exercises led to the development of this toolkit, which offers guidance on planning, conducting and evaluating tabletop exercises centered on the NICU/Nursery population.

Reasons to Conduct a Tabletop Exercise

Overview

Evacuation of a NICU or nursery is a high risk activity and requires a carefully planned approach due to the fragile medical condition of these infants, the various medical technology/devices they depend upon for survival and the overall surge capacity/transfer pattern in managing an increase in NICU patients. Historically, perinatal professionals have not been included in disaster planning or exercises, which has led to the needs of the maternal child health (MCH) populations being overlooked.

The overall purpose of tabletop exercises is to gather information that would help to improve the emergency plan and response to an event (1). Tabletops can train staff, identify weaknesses in a plan and response, and provide opportunities to educate staff and improve the emergency operations plan (2).

Advantages (3)

Tabletop exercise offer many advantages. They require less time commitment, cost and resources as compared to other types of exercises. Tabletops are effective methods for reviewing plans, procedures and policies in a low stress and controlled environment. Another advantage of performing a tabletop exercise is its ability to acquaint key personnel with emergency plans, procedures and responsibilities as well as with each other. This can be especially true when an exercise brings together groups such as the emergency preparedness and perinatal professionals who do not typically work together on a day-to-day basis.

Disadvantages (3)

There are also disadvantages to tabletop exercises when compared to other types of exercises. Because tabletops are discussion based exercises, there is a lack of realism. This limits the ability to truly test plans, procedures, staff and emergency response capabilities. There is also an inability to realistically demonstrate system overload during a tabletop exercise.

NICU/Nursery Population and Emergency Preparedness

During a disaster, pregnant women and newborns will be negatively impacted by their environment and social changes within their community, including disruption of their housing, routine medical care, food and water supplies as well as an increased exposure to violence and toxins(2). A review of the literature indicates that pregnant women are at higher risk for complications (such as preterm labor) during a disaster. (2). There is an increased morbidity and mortality as well as long term health consequences for pregnant women and infants affected by disasters (4). During the 2005 hurricane season, which included such devastating storms as Hurricane Katrina and Rita, pregnant women and newborns were among the most vulnerable populations(2). In addition, the stress associated with the disaster is also increased if mothers are separated from their newborns, infants and children (5).

Involvement of perinatal professionals in disaster management is crucial to minimize these risks to women and newborns. However, traditionally the needs of the maternal child health populations have not been addressed, nor are they well understood within

existing disaster plans (5). Pregnant women and neonates have not been well integrated in national preparedness efforts, which has resulted in gaps in guidance for the MCH population (4). These gaps have been identified at the federal, state and local levels. MCH professionals typically are not included on emergency preparedness committees or consulted during the development and updating of hospital emergency operations plans. During the EMSC NICU/Nursery Evacuation Tabletop Exercises, there was an obvious lack of knowledge by emergency preparedness professionals regarding the needs of the maternal child population while the perinatal professionals had little knowledge regarding the emergency response planning within their hospitals. MCH professionals need to be included in emergency planning since they can anticipate issues within this specialized population and identify solutions that have not been previously considered. Disaster training should include education for both groups and include core principles of disaster management and the emergency treatment of high risk populations such as pregnant women and newborns. The inclusion of MCH professionals in planning and training can strengthen interdepartmental relationships, build a stronger multidisciplinary team, and ultimately aid in decreasing the negative health consequences that disasters can have on pregnant women and neonates.

Other Special Patient Populations

Although the primary focus of this Toolkit is the NICU/Nursery population, many of the concepts are applicable to other high risk, resource dependent patient populations as well. For example, pediatric patients, especially children and youth with special health care needs (CYSHCN) have unique characteristics which make them more vulnerable during disasters (5). Many CYSHCN are dependent on technology and their needs should be considered and integrated into planning and training. Other high risk patient areas include: burn, trauma, mental health, and immunocompromised patients. These patient populations and the experts that care for them should be included in disaster planning and training as well.

HSEEP Overview

The Homeland Security Exercise and Evaluation Program (HSEEP) has become the standard in disaster preparedness training exercises. It represents a capability based exercise program that includes a range of exercise activities of varying degrees of complexity and interaction. HSEEP provides a standardized methodology and consistent terminology for designing, developing, conducting, and evaluating all exercises (6). The program provides tools and resources to assist with the building of self-sustained training and exercise programs, and it allows different groups to be able to practice and exercise together seamlessly (7). Within HSEEP, the types of exercises range from discussion based [seminars, workshops and tabletops (TTX)] to operations based exercises [drills, functional exercises (FE) and full scale exercises (FSE)] (7).

This Toolkit is based on the HSEEP process and provides information on how to apply HSEEP concepts and strategies to perform a tabletop exercise involving the Neonatal Intensive Care Unit/Nursery. Many of the planning steps reviewed in this document overlap with steps for operations based exercises. Examples and resources are included at the end of the Toolkit.

Note that it is highly recommended that those involved in planning exercises should complete an HSEEP course.

The Basics of Tabletop Exercises

Tabletops are primarily discussion based exercises that typically focus on training and familiarization of roles, procedures and responsibilities (5). One of the roles of a tabletop exercise is to problem solve as a group in a stress free and open environment based on a pre-established scenario (3). It allows for a discussion based test of processes and policies in a pre-disaster state without jeopardizing patient safety.

Simple versus enhanced

There are varying levels of complexity for tabletops. The complexity is determined by the objectives for the exercise and is decided upon during the planning stages.

A simple or basic tabletop incorporates a handful of players that respond to a scenario as it unfolds. It can include single or multiple disciplines, may or may not include key decision makers and usually focuses on learning rather than evaluating a system, plan or procedure (8). Simple or basic tabletops should be designed as a stress free setting that encourages open discussion. An example of a simple tabletop for NICU/Nursery evacuation is during a staff meeting as a way to teach and review with NICU staff their role during a specific disaster or hospital wide emergency.

Advanced or enhanced tabletop exercises are conducted to test and evaluate capabilities and identify gaps and inconsistencies in a policy, plan, procedure or system as a whole (8). Multiple functions are tested. Key decision makers are involved and it is typically multidisciplinary. Advanced or enhanced tabletop exercises can be more time pressured, realistic simulations and will involve multiple units or even multiple agencies but still should promote open discussion. An example of an advanced or enhanced tabletop exercise is the EMSC facilitated NICU/Nursery Evacuation Tabletop Exercises outlined earlier in this document since these involved key decision makers from multiple hospitals and agencies.

Length

The length of the tabletop exercise will depend on the complexity of the exercise. A simple or basic tabletop can be completed in less than an hour. Performing a tabletop exercise during a NICU/Nursery staff meeting would involve provision of a scenario to the staff followed by small group work to discuss the course of action. Or, each small group can be assigned a different type of emergency or disaster situation to discuss. The groups then reconvene for an open discussion based on each group's response to the scenario or assigned task.

An advanced or enhanced tabletop that involves multiple units, agencies or organizations can be designed as a half, full or multi-day event. The NICU/Nursery Evacuation Tabletop Exercises facilitated by EMSC were full day events. The length of the exercise will be based on many factors, including the objectives of the exercises, resources, cost and time availability and should be determined during the planning stages.

One unit, intra-facility, or multi-agency

During exercise planning, determine whether the exercise will include only the NICU/Nursery unit, or will it need to involve other units, the entire hospital or

external agencies and other facilities. Use the exercise objectives as a guide for determining the scope and length of the exercise as well as whether the exercise will be a simple or advanced NICU/Nursery evacuation tabletop

Use of breakout sessions

Breakout sessions during tabletop exercises can be very beneficial by dividing a large group of participants into smaller groups in order to focus on a particular strategy, activity or component of a plan (1). Ideally, a facilitator and evaluator should be assigned to each group. Breakout groups are generally more productive if kept to less than 20 people (1).

Some advantages of utilizing breakout sessions during a tabletop include (9):

- Highly interactive and allow for multiple perspectives to be included
- Prompt real time decision making and problem solving
- Allow for discussion on specific details
- More likely to elicit honest comments
- Injects can be used
- Creates accountability by participants

The disadvantages of utilizing breakout sessions during a tabletop include: the need for increased logistical organization during the exercise and the need to secure facilitators and evaluators. In addition, breakout sessions may not be practical during simple or basic tabletops with a small number of participants since it is recommended that breakout groups have a minimum of 5 people in each group (9).

Planning Steps

Needs Assessment

Performing a preparedness needs assessment is the first step in identifying what training is required and the type of exercise needed (9). This needs assessment can help identify the goals and objectives for the NICU/Nursery evacuation tabletop as well as some of the details that will be needed later (i.e. scenario, gaps to address, injects). The other crucial piece of information from a needs assessment is identifying the level of administrative commitment. Since the planning and performing of exercises (regardless of type and size), requires time, staff, and financial resources to prepare and implement, it is vital that hospital/agency administration is committed and agrees to all the necessary financial and staffing support (1). Identifying and addressing difficulties that may exist at this level early in the planning process can help prevent delays and issues later on.

Timeline for Planning

Planning for a tabletop can take weeks to months depending on the resources available to the planners. The timeline for planning is dependent on the number of planning committee members helping to develop the exercise, the type (simple versus advanced) of the exercise, the length of the tabletop, and the number of external agencies involved.

Planning Committee

Commitment to the exercise

The planning committee needs to be dedicated, knowledgeable, and well organized in order to put together a successful tabletop exercise. When forming a planning committee, it is important to identify individuals who are committed to the exercise and are available to help with the planning process. Administrative involvement is critical to the success of the exercise. Their support will help ensure that needed resources will be available, and also encourages and sets expectations for key personnel and staff to participate (1).

Purpose

The purpose of the planning committee is to design, develop, conduct, and evaluate the exercise (6). A successful planning committee is based on several factors: the use of Incident Command System (ICS); use of project management principles; clearly defined roles, responsibilities and requirements; adherence to a standardized design/development process; and the assurance of administrative support(6).

Members

The size of the committee is typically six to eight people. This is a guideline and is influenced by the type of tabletop exercise (simple versus enhanced) and who is involved (unit specific, intra-hospital or multi-agency).

Key representation on the planning committee is crucial and should minimally include the perinatal community as well as the emergency preparedness arena to ensure a well-rounded NICU/Nursery evacuation tabletop exercise that is realistic and addresses the specific needs of both groups. Examples of committee members include: emergency preparedness coordinators, NICU/Nursery personnel (i.e. nurse educators, maternal child directors, neonatologists, and transport team members), safety officers, legal/risk management personnel, emergency department personnel (physicians and nurses), and any additional subject matter experts. It is important to consider expertise, commitment and previous experience/training when identifying members of the planning committee. For example, ensure that some members on the committee have completed HSEEP training in order to ensure HSEEP concepts are included from the outset of planning.

It is important to clarify with committee members (ideally prior to the first planning meeting) that as committee members, it is highly recommended they should not participate in the exercise as players. Since they will have assisted in the development of the scenario and injects, there is the potential for bias if they participate as players. This may impact on their decision to participate on the planning committee.

Roles within the committee

According to HSEEP guidelines, the planning committee should include several components, similar to the Incident Command System (ICS). The three main roles within the committee are the Exercise Planning Leader, Logistics and Administration (9).

Exercise Planning Leader responsibilities include:

- Planning, coordinating and overseeing of all exercise functions
- Monitoring the development of the exercise progress
- Defining the roles and responsibilities of the other members of the planning committee
- Assigning and ensuring tasks are completed
- Ensuring the exercise meets the defined objectives
- Distributing the After Action Report (AAP) following the exercise (6,9).

Logistics role responsibilities include (may involve multiple committee members)

- Coordinating and scheduling the date, time, location, and space of the exercise
- Organizing any equipment, handouts and other necessary items for the exercise
- Setting up the equipment, space, and room for the exercise
- Returning the room and equipment to its original condition after the exercise is complete (9).

Committee members assigned to the Administrative roles need to prepare all documentation and support material that will be needed during the exercise (9). Examples of this includes sign in sheets, name badges, and exercise specific documents (see Document Development section). On the day of the exercise, those assigned to the Administrative role may also assist with room set-up, registering/signing in participants, and gathering evaluation forms (9).

The number of members within the committee will determine any role overlap as well as the number of tasks assigned to each member.

Meeting schedule

Deciding on the number of meetings and the meeting schedule early during the committee formation process may help identify the time commitment for potential committee members. HSEEP lists six potential planning conferences when developing exercises: Concept and Objectives Meeting, Initial Planning Meeting, Midterm Planning Meeting, Master Scenario Events List (MSEL) Conference, Final Planning Meeting and After Action Conference (6). The number of conferences needed will vary depending on the type and scope of the exercise (7). When planning a discussion based exercise such as a tabletop, all six planning conferences may not be needed. For example, the components of the Concept and Objectives Meeting may be combined within the Initial Planning Meeting; and the MSEL Conference may be integrated into the Midterm Planning Conference.

Responsibilities of the committee

The committee as a whole is responsible for designing, developing, conducting and evaluating all aspects of the tabletop exercise. This may seem daunting, especially if one has never been part of planning a disaster exercise. However, many resources exist to assist and guide all aspects of exercises. This section will present a summary of the main responsibilities of the committee but is not necessarily an all-inclusive list.

An initial responsibility of the planning committee is to determine specifically what will be tested during the tabletop and to define the scope of the exercise (3). This information will be obtained from the needs assessment that was completed initially as well as from any previous exercises or drills that have been conducted. A purpose

statement can then be generated followed by the development of the exercise objectives.

The objectives should be based on the capabilities to be tested and the associated critical tasks; and will be used to write the scenario (7). After the development of the scope of the exercise and the objectives, the type of tabletop can be determined as well as scheduling the date, time and location of the exercise. Next the committee would begin the development of all documents to be used during the exercise including the Situation Manual (SitMan), Master Scenario Event List (MSEL), any player handouts, the Exercise Evaluation Guide (EEG) and the presentation. More information on these documents will be reviewed in the next section.

The committee will also be responsible for providing training to key participants, such as the exercise facilitator and evaluators. Prior to the exercise, the exercise facilitator should be made aware of the committee expectations, become familiar with the scenario, objectives and expected actions from the participants, know when to move on to the next sequence of events in the scenario and be aware of the best way to facilitate the interactions between the participants (1). The tabletop evaluators should also be provided with education prior to the exercise related to exercise expectations, handouts and their role/responsibilities during the exercise as well as during the feedback session (Hot Wash) (1).

Another important responsibility of the committee is to identify the exercise participants and invite them to the exercise. For simple or basic tabletops, this may only include internal hospital staff such as hospital administration, neonatologists and other physicians, NICU and Nursery staff nurses, transport team members, nurse managers, and emergency preparedness personnel. For advanced or enhanced tabletops that involve external agencies and other health care facilities, participants may include local health department staff, home health agencies that assist in follow up care after newborns are discharged from the hospital, emergency management agencies, EMS agencies, other NICU or other perinatal level hospitals, other transport agencies and perinatal administrators.

A consideration during the invitation process is whether to involve local media. The local media can be helpful in conveying to the community that the hospital is working on preparedness activities. Representatives from the local media could be allowed to participate in the opening session that outlines the scenario, however privacy concerns may require their restriction from participating in the rest of the tabletop exercise.

Final responsibilities of the committee include assisting with the evaluation of the exercise and ensuring completion of the improvement plan. These two components will be discussed further.

Document Development

During the course of developing a NICU/Nursery Tabletop exercise, certain documents will need to be produced both before and after the exercise.

Meeting documents

There are two documents that need to be developed for each planning committee meeting as they develop the tabletop exercise. This includes the meeting agenda and meeting minutes.

An agenda should be developed and distributed to the planning committee before each meeting to identify the meeting tasks and discussion. This helps keep the committee on track and meet accomplishments based on the time line established during the initial planning process. After each meeting is completed, a record of the meeting in the form of meeting minutes should be compiled and distributed to the committee members as well.

Exercise documents

Situation Manual (SitMan)

The Situation Manual, or SitMan, is a handbook used primarily for discussion based exercises such as a tabletop. It's role is to provide the background information related to the scope and the objectives of the exercise, and the schedule of the tabletop (7). In addition, the SitMan provides a narrative for the scenario which should be based on the objectives of the exercise and personalized to match the capabilities that need to be tested. The scenario should be realistic and incorporate actual issues that may be encountered in a real situation. For example a scenario requiring evacuation of a NICU due to hurricane damage is more suited for a coastal area than the Midwest. Another consideration when developing the scenario and SitMan is to reflect how a response would actually occur, including the use of the National Incident Management System (NIMS), the Incident Command System (ICS) and the Hospital Incident Command System (HICS).

Typically included in the SitMan are key questions for participants to address during the tabletop. These questions will help drive the discussion during the exercise. The scenario can be broken down into modules/sections and only the parts of the scenario that are under discussion are shared with the participants. This ensures an element of surprise. After a scenario presentation, discussion should occur between the participants. Depending on the number of participants, this can be done with either the entire group or in breakout groups. Participants should review a set of questions for each section that seek to answer "Are we prepared to respond?" and work on meeting the objectives (1). The facilitator should help ensure the discussion centers around the questions and within the scope of the exercise. It may not be necessary to compile a long list of discussion questions within the SitMan. The exercise can be successful with a few carefully written problem statements and questions (3). In addition, it is possible that not all questions will be addressed during the exercise. It is more beneficial for the participants to take the time needed to address issues as thoroughly as possible rather than rush through each question. (3). See Appendix B1 for excerpts from SitMan documents used in previous NICU/Nursery Evacuation Tabletop exercises.

Master Scenario Exercise List (MSEL)

The Master Scenario Exercise List, or MSEL, is a timeline of the events and the expected outcomes for the exercise. MSELs are typically used for operation based exercises but can also be beneficial for discussion based exercises as well.

The MSEL is used by the facilitators/moderators to guide the pace of the exercise and help prompt players' (exercise participants) responses and activities. (7). Included in the MSEL are injects that are used during the exercise, so it should never be shared with players before or during the exercise. Injects are prewritten pieces of information that are inserted into the exercise to prompt discussion or simulate an unexpected situation that occurs during the scenario (9). Injects can be general or unit/institutional/agency specific and are verbally incorporated into the tabletop presentation or can be hand written and delivered to certain breakout groups. Examples of injects during a NICU/Nursery evacuation tabletop include:

- A woman (28 weeks gestation) arrives at the Emergency Department of a hospital that has just been evacuated, is in active labor and delivery is imminent
- After placing two neonates in the same bassinet for evacuation, their ID bands are noted to have fallen off
- Sudden medical air and oxygen failure at a facility
- Family members continue to arrive at the evacuating hospital looking for their infant or other family members
- A NICU patient is assessed as too unstable for evacuation.

The use of injects is helpful in testing and discussing difficult components of a NICU/Nursery evacuation such as ethical issues and other dilemmas, alternate standards of care and communication. Similar to the pre-established discussion questions in the SitMan, not every inject and component of the MSEL may be used. It may be preferred to take time to discuss and resolve any issues or conflicts as appropriate rather than trying to include all the injects. Excerpts from MSELs and injects used in previous NICU/Nursery Evacuation Tabletop exercises are listed in Appendix B2.

Exercise Evaluation Guide (EEG)

The Exercise Evaluation Guide or EEG is a tool for the exercise evaluators to collect and interpret observations from the players during the exercise (7). There are many variations to the layout and content of the EEG. It is important to ensure that the EEG is easy to use, has enough space to record observations, mirrors the capabilities and objectives being tested during the exercise and has the expected tasks the players should accomplish. The information gathered in the EEG will help in the development of the After Action Report, which will be discussed in the Evaluating the Exercise section of this document. See Appendix B3 for excerpts from EEGs used in previous NICU/Nursery Evacuation Tabletop exercises.

Participant evaluations

Developing an evaluation form for the exercise participants is also beneficial. Since the NICU/Nursery Tabletop is likely one of a series of exercises involving the unit or the facility, the information gathered from the participants can help improve future exercises (logistically as well as content related) and ensure the learning objectives were met. For example, if the players comment that there were too many injects and they did not have enough time to focus on a specific issue, allow more time during future exercises to improve the overall learning experience.

Participant handouts

Handouts for the players are another set of documents the planning committee will need to consider developing and providing during the NICU/Nursery tabletop exercise. The handouts should include the exercise agenda as well as any quick reference materials the players may need such as policies, procedures or logistical considerations. As mentioned earlier, a knowledge deficit typically exists between the perinatal and emergency preparedness arenas. Including background information in the handout materials provides information that they can refer to and learn from during the exercise. For example, in the 2011 EMSC NICU/Nursery Evacuation Tabletop exercise, handouts were provided to the players that provided an overview of the Illinois and Wisconsin perinatal systems as well as the Illinois and Wisconsin Emergency Medical Services (EMS) Systems.

Conducting the Exercise

Location

The location for the exercise is important. The space needs to be large enough to accommodate all the participants and any equipment needs. For a unit specific exercise (simple or basic tabletop), the location could be on the unit in the NICU/Nursery break room. For large exercises that involve multiple agencies and hospitals, a conference room or center may be more appropriate.

Equipment Needs

The equipment needed is again dependent on the size of the tabletop. A unit specific (basic or simple tabletop) may have less equipment needs than an advanced or enhanced tabletop. AV equipment for the slide presentation, microphones for large groups, food and beverage consideration for full-day events, and materials such as Emergency Operation Plans, maps, HICS forms, paper, and pens are all items that need be considered and secured before the day of the exercise. There are online electronic programs as well as consultants that can be contracted to develop and coordinate the tabletop exercise through computer based programs. If this option is used, identify computer and other equipment requirement needs well before the day of the exercise.

Presentation

The presentation that is utilized during the tabletop helps set the stage for the exercise (3). Basic information that should be included in the presentation includes:

- review of the ground rules for the exercise
- discussion of the scope of the tabletop
- review of safety and security procedures
- welcoming, briefing and narrative information (3,9).

The discussion questions and injects can also be included in the presentation. The formality of the presentation is, like many components of a NICU/Nursery tabletop, dependent on the size of the tabletop and the needs of the group. A presentation can be an informal combination of written and oral information for a simple or basic tabletop. A formal slide presentation is typically utilized, especially during the larger advanced or enhanced tabletop exercises. Using pictures, video clips, sound effects and

other media options regardless of the method of presentation may help set the tone of the exercise and add to the realism of the scenario.

Participants

In general, the specific participants in the NICU/Nursery tabletop exercise should be determined during the early planning process by the planning committee. The list of participants may include internal staff as well as external agencies depending on the size and scope of the exercise. The goals, objectives and task capabilities that are to be tested during the exercise will also help guide the invitation list so determining the general skill set and background of the participants is important. There are many roles that participants can play during a tabletop. These will be reviewed next.

Moderators/Facilitators

The term moderators and facilitators are typically used interchangeably. The moderator/facilitator provides the overall management, control and direction during the exercise (9). They are essentially the Emcee of the day, presenting the narrative, explaining the process and encouraging the participants to interact and discuss the issues presented. They are also responsible for limiting side conversations and determining the appropriate use of the injects. When identifying the person to facilitate the tabletop, look for someone with good communication skills, strong facilitation skills, and familiarity with the facility or agency emergency operations plans. Having a co-facilitator or moderator that is familiar with the perinatal system and has NICU/Nursery experience may be beneficial as well.

Evaluators

The evaluators will play a key role during the exercise to capture the information needed to determine if the goals, objectives and capability tasks were achieved. Through the use of the EEGs, evaluators become the "record keepers" and will observe the players' performance and the degree to which they perform the expected tasks and meet the objectives (1,9). The evaluators can have varying degrees of interaction with the players, and should receive specific instruction prior to the exercise as to the degree of interaction. Some exercises restrict interaction with the participants to only observation of their behavior and responses, while other exercises allow limited interaction to help stimulate conversation if the participants need assistance. However, the evaluator must never tell the participants how they should respond. If multiple facilities and agencies are participating in the NICU/Nursery tabletop, evaluators should not evaluate their own facility or agency to avoid any bias and unintentional assisting with completing tasks.

Observers

Observers play a passive role in the exercise and attend in order to watch the exercise (9). They have no interaction with the players, nor do they contribute anything during the exercise itself. They can, however, contribute their observations during the Hot Wash as well as in the evaluation of the exercise.

Players

The participants performing tasks and responding to injects during the exercise are considered the players. They have an active role in the scenario, and initiate actions based on the information provided in the scenario and injects (9). All players should be encouraged to contribute to the exercise. In simple or basic tabletops, the players can be from any level within the institution. For enhanced or advanced tabletop exercises, the players are typically those in decision making positions within the institution or agency.

Recorders/Scribes

Having pre-assigned recorders or scribes at the tabletop can be extremely helpful to gather information that is exchanged during the exercise. During enhanced or advanced tabletops, break out groups/sessions may be utilized. This can create difficulty recording discussions and identifying best practices that are shared. By assigning a recorder or scribe to each breakout group/session, the evaluation process and the resulting After Action Report can be more complete. During the exercise, the recorder or scribe should have minimal interaction with the players.

Other Considerations

Arranging the workspace

It is desirable to arrange the participants in such a way that promotes discussion. Circular tables or U-shaped table arrangements allow participants to face each other which promotes open discussion. Ensuring that all participants are able to see the presentation and facilitator is also important to consider. If breakout sessions are planned, prearranging accommodations for these smaller groups by having chairs and tables set up will help conserve time.

Controlling and sustaining momentum and ensuring involvement of all players

During any exercise, especially one that lasts for many hours or multiple days, sustaining the momentum of the participants and the exercise can be challenging. There are several ways that organizers of an exercise can help to maintain the interest level and the momentum of the exercise. Some of these include (3):

- Use multiple modules or stages within the exercise
- Vary the exercise pace
- Maintain a good balance to ensure adequate time is given for issue discussion/problem resolution
- Watch for signs of frustration
- Keep it simple

Ensuring that all participants are engaged and contributing to the exercise is important and can help sustain momentum as well. Suggestions on ways to accomplish this include (3):

- Organize the messages or injects so everyone must address a question or problem

- Provide extra encouragement to those who appear hesitant to participate
- Work to draw out the solution from players who are struggling with a problem instead of prompting them with a solution
- Model behaviors that favor good communication (i.e. maintain eye contact, acknowledge comments in a positive manner, assure a nonjudgmental attitude)

Hot Wash

The Hot Wash is essentially a review of the performance within the exercise and occurs immediately at the end of the exercise (1,9). It provides an opportunity to review key decisions that were made, identify strengths, weaknesses and any gaps discovered during the exercise, and determine issues and concerns with policies and procedures that were utilized during the exercise (9). The Hot Wash also provides an opportunity to identify whether the goals and objectives of the exercise were met. Facilitators, evaluators, players, and observers can all provide feedback during the Hot Wash. The recorder/scribe plays a vital role during the Hot Wash since they need to capture all feedback so it can be incorporated into the After Action Report as well as identify which individuals, units, departments, or agencies commit to undertaking action plans to resolve the gaps. Examples of questions that can be asked to illicit information from the participants during the Hot Wash include (6):

- What actions/steps were taken/discussed in response to the scenario?
- What actions/steps should have been taken/discussed in response to the scenario according to existing policies/plans?
- What caused this difference?
- What was the effect of that difference?
- What should be learned from this?
- What improvements need to be implemented?

Evaluating the Exercise

Purpose

The evaluation of the NICU/Nursery evacuation tabletop is a compilation of the essential components of the exercise (9). It identifies the strengths, weaknesses, opportunities for improvement, the steps taken in response to the scenario and the best practices that were identified during the tabletop. It also assesses the impact that the exercise and the response had on the players. For example, as mentioned previously, many perinatal professionals have never been included or involved in disaster planning and may never have even imagined an event occurring that would force them to evacuate their NICU or nursery. Being involved in a tabletop where they need to react to a scenario of this type can be an eye opening experience for both NICU/Nursery staff as well as emergency management personnel. The information obtained while evaluating the tabletop can be used to develop future training specific to the needs of the NICU/Nursery and its high risk patient population. Lastly, the evaluation process helps to identify gaps in policies and procedures and presents an opportunity for a unit, hospital or agency to make necessary revisions.

Evaluation Process

The first step in the evaluation process is ensuring that the evaluators utilize and document on the EEG during the exercise. Immediately following the end of the exercise is the Hot Wash which was previously discussed, and provides evaluation feedback. Another evaluative component is obtaining an Exercise Survey or Participant Evaluation from all participants immediately following the exercise. Ideally, much of the feedback from the participants is shared during the Hot Wash but administering an Exercise Survey/Participant Evaluation provides another opportunity to gather additional feedback.

After gathering evaluation information, the next step is to analyze the EEGs, Exercise Survey/Participant Evaluation and the Hot Wash. The three steps in analyzing the information are (6):

1. identify issues
2. determine the root cause
3. develop recommendations for improvement.

To determine the root cause of an identified issue, evaluators of the overall exercise need to look at why each expected action occurred or did not occur. This will help drive the development of recommendations and lessons learned.

The final steps in the evaluation process are the development of the After Action Report, conducting an After Action Conference, and finally, formulating and implementing the Improvement Plan. These will be discussed next in more detail.

After Action Report

The After Action Report (AAR) is the record of what occurred during the exercise and is used to implement changes (6). The AAR includes the exercise scenario, any activities and observations, identified strengths and areas for improvement (9). The AAR also analyzes the capabilities that were determined during the planning stages and if the corresponding tasks were completed during the exercise. Information gathered from the EEGs and Hot Wash should be utilized to develop the AAR. An After Action Report should be developed after every exercise (, and finalized within 45 days of the tabletop completion. See Appendix B4 for excerpts of AARs from EMSC's NICU/Nursery Evacuation Tabletop Exercises.

After Action Conference

The After Action Conference, which normally occurs within five weeks of the exercise, allows key personnel that attended the tabletop as well as the planning committee to review and provide feedback on the draft AAR (7). It is during the After Action Conference that a draft of the Improvement Plan (IP) is developed (6). Any corrective actions and recommendations that are developed can then be assigned to those who will be responsible for implementing these actions as well as establish the due dates for completion (7).

Improvement Plan

The Improvement Plan (IP) is a matrix that identifies key recommendations and corrective actions, the timeline for completion and the responsible person for completion of the task (6). The plan should be developed within 45 days of the exercise and is created at

the same time as the After Action Report (6). The recommendations and corrective actions should be linked to the capabilities identified during the planning process and should be a mix of short and long term goals. Some of the recommendations may focus on an individual unit or policy while others may require multiple agencies or hospitals to collaborate in order to achieve the goal. It is important to assign the person or agency that will be responsible for completing the action items. Also include a reasonable timeline for the completion of the improvement(s). See Appendix B5 for an excerpt from an EMSC NICU/Nursery Evacuation Tabletop Exercise.

Next Steps

In order for the NICU/Nursery Evacuation tabletop to be successful, follow-up is needed to ensure the lessons learned, recommendations, and corrective actions are implemented. Creating a concrete timeline with next steps can help ensure a forward moving momentum for improved preparedness (1). The Exercise Planning Leader or assigned lead will be responsible for tracking the actions taken to meet the IP. Follow up exercises and tabletops should be scheduled and conducted to test the effectiveness of the actions and recommendations taken to address the areas of improvement identified in the AAR/IP. Another option is for NICU/Nurseries to advance to more operational based exercises such as a functional or a full scale exercise. This would involve the actual movement of simulated patients, equipment and resources and further test evacuation capabilities in an even more realistic manner.

Conclusion

Over the course of the three years that EMSC facilitated NICU/Nursery Evacuation Tabletops within the State of Illinois, there were many lessons learned related to the needs of neonates during disasters, the perinatal and emergency preparedness arenas and the professionals that work in these areas, and performing tabletop exercises that involve both of these groups.

Tabletop exercises involving NICU and Nursery patients address the unique nuances associated with resource coordination in mobilizing technologically dependent infants. Since many potential ethical implications and ramifications are associated with the evacuation, triage and prioritizing of NICU patients, tabletop exercises can serve a key role in bringing these issues to the forefront for discussion.

The evacuation of a NICU is rare. However, a successful evacuation requires comprehensive planning in order to maximize patient safety in a changing environment (10). Illinois EMSC strongly recommends that NICU/nursery and emergency management personnel work collaboratively to test and enhance their evacuation plans, through exercises. It is hoped that this document is an assistive resource in these efforts.

Appendix A: References

1. World Health Organization (WHO). (n.d.) A guide for conducting table-top exercises for national influenza pandemic preparedness.
2. Orlando, S., Danna, D., Giarratano, G., Prepas, R. & Barker Johnson, C. (2010). Perinatal considerations in the hospital disaster management process. *JOGNN*, 39, 468-479.
3. Federal Emergency Management Agency (FEMA). (n.d.). Unit 5: The tabletop exercise.
4. Jorgensen, A. M., Mendoza, G. J., & Henderson, J. L. (2010). Emergency preparedness and disaster response core competency set for perinatal and neonatal nurses. *JOGNN*, 39, 450-467.
5. Association of Maternal and Child Health Programs (AMCHP). (2007). State emergency planning and preparedness recommendations for maternal and child health populations.
6. Department of Homeland Security (DHS)/ Illinois Emergency Management Agency (IEMA). (n.d.) Homeland security exercise and evaluation program (HSEEP) training course.
7. HSEEP summary handout
8. Osaki, C. (n.d.). Preparing for public health emergencies: A tabletop exercise. Northwest Center for Public Health Practice. University of Washington: Seattle.
9. Center for Pediatric Emergency Medicine (CPEM). (2008). Pediatric tabletop exercise toolkit for hospitals, 2nd edition. New York City Department of Health and Mental Hygiene Health Care Emergency Preparedness Program
10. Illinois Emergency medical Services for Children (EMSC). (2009). Neonatal Intensive Care Unit (NICU) Evacuation Guidelines.

Appendix B: Sample Documents for NICU/Nursery Evacuation Tabletops

The following section has excerpts from documents used in EMSC's NICU/Nursery Evacuation Tabletop Exercises. Sections that are included provide a general overview of each document and the key components that could be included.

- B1: Situation Manual (SitMan)
- B2: Master Scenario Exercise List (MSEL)
- B3: Exercise Evaluation Guide (EEG)
- B4: After Action Report (AAR)
- B5: Improvement Plan(IP)

B1: NICU/Nursery Evacuation Tabletop Situation Manual (SitMan)

INTRODUCTION

Background

Of the many potential disasters faced today, an earthquake in Illinois may pose a threat to the stability of the physical structure and utilities of residential and business sectors including healthcare facilities. When standards of patient care cannot be met or the safety of the facility infrastructure is compromised, hospital administrators need to assess the hospital's capabilities and strategize a process for the continuum of care. This may include a partial or total evacuation of hospital units. Generally, the evacuation of any critical care patient is a high risk operation. However, evacuating the tiniest and most fragile patients in the Neonatal Intensive Care Unit (NICU) entails unique care nuances necessitating a well-planned evacuation and transfer of care execution.

Purpose

The purpose of this exercise is to provide participants an opportunity to utilize the IL EMSC 2009 NICU Evacuation Guidelines, and evaluate current hospital evacuation plans and capabilities for a response to an earthquake that causes the evacuation of NICU patients. The exercise will focus on surge capacity, accessing staff, patient tracking, communications, and evacuation.

Scope

This exercise emphasizes the coordinated efforts of hospital emergency planners, NICU and nursery administrators and first responders to successfully mobilize NICU and nursery patients to other facilities in response to a power outage from a storm system passing through the southern Illinois and St. Louis area.

Target Capabilities

- Communications
- Medical Surge
- Medical Supplies Management and Distribution

** Note: These target capabilities were selected from the HSEEP list for purposes of this exercise. Hospitals may opt to design their exercises by also selecting additional criteria from accrediting bodies such as Joint Commission**

Exercise Objectives

Exercise design objectives are focused on improving understanding of a response concept, identifying opportunities or problems, and/or achieving a

change in attitude. The exercise will focus on the following design objectives selected by the exercise planning team:

1. *Surge Capacity.* Determine strengths and weaknesses in current plan governing the integration of various response resources for managing patient flow beyond daily NICU and nursery census. Determine if Level II and Level II+ nurseries have done any planning to provide higher levels of service for a temporary period of time. Identify critical issues and potential solutions.
2. *Accessing Staff.* Review existing protocols or plans (i.e., call tree or emergency notification systems) for contacting additional staff needed for NICU and nursery evacuation intricacies and/or surge capacity needs.
3. *Patient Tracking.* Assess the adequacy and practicality of interfacility transport agreements and plans to interface with receiving hospitals and external agencies such as American Red Cross (ARC). Discuss how transfer of care (hand-off procedures) information will be coordinated between evacuating and receiving hospitals and shared with NICU / nursery patient's family. Determine how infants will be identified – ID band/sticker. Determine equipment and medication needed (i.e., thermoregulatory, respiratory, nutritional needs etc.).
4. *Communication.* Discuss options to provide timely and accurate information to the patient's family and assist in minimizing chaos. Review plans to preclude dissemination of conflicting data. Assess facility's ability to provide real time bed availability information on Hospital Health Alert Network (HHAN). Assess communication flow between affected facility and IL Regional Hospital Coordinating Center (RHCC)/POD System, and RHCC/POD to RHCC/POD communication. Assess facility's communication contingency plans and be able to utilize alternate methods of communication when main communications lines are damaged.
5. *Evacuation.* Assess the facility's evacuation plan. Consider use of NICU evacuation guidelines in pre-planning phase of NICU / nursery evacuation plan.

Exercise Structure

This will be a multimedia, facilitated tabletop exercise. Players will participate in the following three distinct modules:

- Module 1: Incident Notification
- Module 2: Initial Response
- Module 3: Ongoing Operations

Each module begins with a multimedia update that summarizes the key events occurring within that time period. Following the updates, participants review the situation and engage in functional group discussions of appropriate response issues. The functional groups are as follows:

- Hospitals
- Emergency Management
- Public Health
- Transport
- Partners

Following these functional group discussions, participants then enter into a facilitated caucus discussion in which a spokesperson from each group presents a synopsis of the group's actions based on the scenario.

MODULE 1: INCIDENT NOTIFICATION

April 26, 2010 0200 hours

A magnitude 5.9 earthquake strikes Missouri with epicenter approximately 45 miles south of St. Louis. The earthquake damaged virtually all buildings around the epicenter and caused moderate damages in the city of St. Louis itself and surrounding areas.

April 26, 2010 0215 hours

The New Madrid Fault Line is the prolific source of this intraplate earthquake in southern portions of Missouri and Illinois leading to cumulative effects.

April 26, 2010 0230 hours

A seismic aftershock propagated to St. Louis resulting in a magnitude 3.4 temblor. Observers in St. Louis called it "severe" and claimed that it had duration of 10-12 minutes.

This event caused localized flooding due to ruptures of water mains along with damages to surface roads and disruptions to utilities including water and electricity.

Key Issues

- Damage caused by earthquake
- Power outages and telephones lines are damaged. No estimates on time for restoring power and phone usage.
- Generator power is in use.
- Family members are flooding hospitals with phone calls regarding the safety of their infants in the NICU and nurseries.
- Traffic concerns due to road closures from flooding and falling debris from the earthquake
- Unpredictable aftershocks
- Ground destruction delaying arrival/departure for first responders.

B2: NICU/Nursery Evacuation Tabletop Master Scenario Event List (MSEL)

Preface

The purpose of publishing the Master Scenario Events List (MSEL) Package is to provide central exercise control team members a complete edition of the MSEL. Lead exercise controllers, evaluators and observers may use this document to track exercise play.

Exercises are the culmination of training toward a higher level of preparedness. This document was produced with the help, advice, and assistance of planning team members from selected hospitals in IL EMS Regions.

The information in this document is current as of the date of publication and is subject to change as dictated by the Exercise Planning Team.

Important!

This Handout contains information about the events of the exercise and should be safeguarded from disclosure before and during the exercise. Only designated controllers, observers and evaluators should have access to this handout.

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Part 1: Exercise Objectives

Part 2: Master Scenario Events List (Summary)

Part 3: Master Scenario Events List (Expanded)

Part 1: Exercise Objectives

- Overarching Objectives
- Participating Hospitals' Objectives
 - Evacuating Hospitals
 - Receiving Hospitals
 - RHCC/POD Hospitals
- Community Partners Objectives
 - Transport
 - IDPH
 - IEMA
 - ARC

Part 2: Master Scenario Events List (Summary)

NICU Evacuation TTX

April 26, 2011

MASTER SCENARIO EVENTS LIST (Summary)

Event #	Optional	Event Time	Event Description	Responsible Controller	Recipient Player(s)	Expected Outcome of Player Action
		0930	STARTEX		All	FYI
MODULE ONE: INCIDENT NOTIFICATION						
01		1000	The National Weather Service has issued severe thunderstorms and tornado warnings covering much of Northwest Illinois. Reports of the funnel cloud sightings come in from the Rockford area. Local radio and news broadcasts are reporting severe thunderstorms with 50-70 MPH winds.		All	Hospitals to begin process of activating their severe weather alerts.
02			Flash floods and road debris are causing some ground transportation issues. Staff at a local hospital report to their emergency management coordinator that they spot golf ball sized hail as they look out their windows. Patients are concerned with the hail pounding on the windows and the high winds.		All	Begin actions to alert hospital administration/ management

Part 3: Master Scenario Events List (Expanded)

NOTE: On the following pages are several examples of detailed MSEL injects, often times referred to as implementer message forms. These are examples of injects drawn from the exercise for which the preceding MSEL Summary was written. In an actual MSEL Package, every line within the MSEL Summary would have a corresponding detailed MSEL inject. These would be distributed to those controllers that have responsibility for delivering the respective injects.

Event #	10	Event Time:	(Expected)	(Actual)
Via:	Oral	Objective(s):	Evacuation	*
Who Delivers?	Facilitator	Recipient Player(s):	All	
Event Description:				
An immediate evacuation of the NICU and Nursery at the local hospital has been initiated.				
Inject #1:				
<p>Three of the in-patient mothers who have infants in the NICU are resisting the evacuation process. They are concerned about leaving without their infants. Each are attempting to enter the NICU to check on their infants.</p> <p>In the general nursery wing, mothers whose newborns who are rooming in with them are standing around at the nurse's station requesting updates on the status of the hospital and the evacuation process. Several mothers are upset about not being able to call their families.</p> <p>One mother is seen near the unit stairwell with her infant.</p> <p>Family members who have been unable to contact the hospital for updates on their infants and/or mothers due to the phone lines not functioning have begun to arrive at the local hospital.</p>				
Expected Action(s):			Notes	
<input type="checkbox"/> Staff are familiar with evacuation routes and plans <input type="checkbox"/> Security measures during an evacuation process will be implemented including : <ul style="list-style-type: none"> ○controlling access to a locked unit during a power outage ○identification verification process of all mothers/family members and newborns ○safety measures for arriving family members <input type="checkbox"/> Alternative methods of communication will be activated to: <ul style="list-style-type: none"> ○contact family members to provide updates on infants and mother to avoid chaos and increased number of people arriving at the hospital <input type="checkbox"/> Coordinate with family to pick up infants and mothers who will receive expedited discharge				
Expected Outcome:			Notes	
<input type="checkbox"/> Emergency preparedness training for all NICU staff members to include evacuation routes and equipment use. <input type="checkbox"/> Emergency preparedness plans will include communication with family, alternate security measures for locked units during power outages, and alternate identification processes during an evacuation.				

B3: NICU/Nursery Evacuation Tabletop Exercise Evaluation Guide (EEG)

Evacuation Exercise Evaluation Guide

Capability description:

Capability Description:

EVACUATION IS THE CAPABILITY OF THE HOSPITAL TO EFFECTIVELY MOVE PATIENTS TO ANOTHER AREA OF THE HOSPITAL OR TO AN ALTERNATE LOCATION (I.E. ALTERNATE CARE SITE, OTHER HOSPITALS).

Hospital/Agency:	Name of Exercise: NICU/Nursery Evacuation TTX
Location: Illinois	Date:
Evaluator:	Evaluator Contact Info:
<i><u>Note to Exercise Evaluators:</u> Only review those activities listed below to which you have been assigned. Please note in the above space who you evaluated.</i>	
<i><u>Note to Exercise Observers:</u> Please note at each entry who the review is for (i.e. specific hospital/agency or the exercise as a whole)</i>	

Corresponding Activities and Tasks

Activity # 1: Pre-mitigation and Preparedness	
Task	Assessment
1. The hospital's NICU/Nursery evacuation needs have been formally assessed and documented within the overall hospital emergency operations plan (EOP) to include specialty equipment and transport needs (i.e. air, ground ambulances) – Refer to the NICU Evacuation Guidelines for specifics. <i>(May be a part of the hospital's total evacuation plan)</i>	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A
2. The hospital's NICU/Nursery evacuation response procedures (i.e. physical patient movement policies, plans and procedures to include horizontal and vertical, power versus no-power evacuation (elevators), stairwell priorities, equipment needs, standard operating procedures for preparing and moving isolettes) have been documented prior to the event in f the overall hospital emergency operations plan (EOP).	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A
Activity # 2: Event Response	
Tasks	
1. The designated hospital incident command staff members were able to establish a functional incident action plan using the documented plan (s) and availability assessment to include projected time needed to evacuate.	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A
2. The designated individual (s) / team (s) assigned with executing evacuation performed in accordance with the established procedures.	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A
3. The hospital's physical patient movement policies, plans and procedures to include horizontal and vertical, power versus no-power evacuation (elevators), stairwell priorities, equipment needs, were implemented according to the procedures indicated in the overall hospital emergency operations plan (EOP).	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A
<i>Subjective – The individual / group assigned with this task responded well.</i> a. <i>The individual / team was poised and composed.</i> b. <i>The individual / team knew where to find the necessary information.</i> c. <i>The individual / team performed the task at the appropriate time without delay.</i>	Time: Task Completed? <input type="checkbox"/> Full <input type="checkbox"/> Part <input type="checkbox"/> Not <input type="checkbox"/> N/A

B4: NICU/Nursery Evacuation Tabletop After Action Report (AAR)

EXECUTIVE SUMMARY

The 2011 NICU/Nursery Evacuation Tabletop Exercise was conducted to provide hospitals within the Illinois Perinatal System a facilitated discussion to evaluate current hospital evacuation plans and capabilities in response to a situation that causes the evacuation of patients from Level III Neonatal Intensive Units (NICU) as well as other level nurseries. The Illinois EMSC 2009 NICU Evacuation Guidelines provide hospitals with an opportunity to utilize this document in the pre-planning phase of their evacuation plans. The target capabilities that were going to be tested were Communication, Medical Surge, and Medical Supplies Management and Distribution.

The NICU/Nursery Evacuation TTX Planning Committee was composed of both Perinatal and Emergency Medicine Professionals from several hospitals as well as staff from Illinois Emergency Medical Services for Children and Illinois Department of Public Health. The exercise planning team designed a tabletop exercise involving a tornado related scenario which caused significant damage to a hospital requiring an immediate evacuation of their Level III NICU and nursery. The scenario was crafted with the intent to prompt the evacuating hospital to utilize local hospitals with Level II and II-E perinatal level designation to act as an Alternate Treatment Site during the immediate evacuation and then be transferred from there to a Level III NICU.

Based on the exercise planning team's deliberations, the following objectives were developed for the NICU/Nursery Evacuation Tabletop Exercise:

Objective 1: Surge Capacity - Determine strengths and weaknesses in current plan governing the integration of various response resources for managing patient flow beyond daily NICU and nursery census. Determine if Level II and Level II-E nurseries have done any planning to provide a higher level of service for a temporary period of time. Identify critical issues and potential solutions.

Objective 2: Accessing Staff - Review existing protocols or plans (i.e., call tree or emergency notification systems) for contacting additional staff needed for NICU and nursery evacuation intricacies and/or surge capacity needs. Identify credentialing issues and solutions if staff is needed to assist with care in an out of state hospital.

Objective 3: Patient Tracking - Assess the adequacy and practicality of interfacility transport agreements and plans to interface with receiving hospitals and external agencies. Discuss how transfer of care (hand-off procedures) information will be coordinated between evacuating and receiving hospitals and shared with NICU / nursery patient's family. Determine how infants will be identified – ID band/sticker. Determine equipment and medication needed (i.e., thermoregulatory, respiratory, nutritional needs etc.).

Objective 4: Communication - Discuss options to provide timely and accurate information to the patient's family and assist in minimizing chaos. Review plans to preclude dissemination of conflicting data. Assess Illinois facilities' ability to provide real time bed availability information on Hospital Health Alert Network (HHAN). Assess border state hospitals' ability to provide real time bed availability information. Assess communication flow between affected facility and IL Regional Hospital Coordinating Center (RHCC)/POD System, RHCC/POD to RHCC/POD communication, and out of state facilities. Assess facility's communication contingency plans and be able to utilize alternate methods of communication when main communications lines are damaged.

Objective 5: Evacuation - Assess the facility's plan for immediate evacuation. Consider use of NICU evacuation guidelines in pre-planning phase of NICU/nursery evacuation plan.

The purpose of this report is to analyze exercise results, identify strengths to be maintained and built upon, identify potential areas for further improvement, and support development of corrective actions.

Major Strengths

Evacuation of patients from an NICU/Nursery is an uncommon and high risk activity. It requires a carefully planned approach due to the medically fragile condition of these infants, the various medical technology/devices they depend upon for survival, and the overall surge capacity/transfer pattern in managing an increase in NICU/Nursery patients. The major strengths identified during this exercise are outlined below.

Primary Areas for Improvement

Throughout the exercise, several opportunities for improvement were identified by hospitals, RHCC/POD hospitals and community partners with respect to their ability to respond to the incident. The primary areas for improvement are broken down into Communication, Accessing Resources, Training, and Future Exercises. Recommendations are outlined with each identified area for improvement.

SECTION 2: EXERCISE DESIGN SUMMARY

Exercise Purpose and Design

The NICU/Nursery Evacuation Tabletop Exercise was prepared to provide participants an opportunity to utilize the Illinois EMSC 2009 NICU Evacuation Guidelines. In addition, it was intended to assist emergency management and NICU/Nursery staff in evaluating their current hospital evacuation plans and capabilities for responding to a severe weather/tornado related incident that causes the need for an immediate evacuation of NICU/Nursery patients. Participants learned the importance of the unique intricacies involved in mobilizing NICU/Nursery patients, some of the issues and regulatory concerns that should be addressed during an evacuation, and the issues and regulatory

concerns surrounding the utilization of other perinatal level facilities to care for NICU patients temporarily as an Alternate Treatment Site. This exercise was designed in conjunction with the Illinois Department of Public Health and border state public health departments.

Exercise Objectives, Capabilities, and Activities

Capabilities-based planning allows for exercise planning teams to develop exercise objectives and observe exercise outcomes through a framework of specific action items that were derived from the Target Capabilities List (TCL). The capabilities listed below form the foundation for the organization of all objectives and observations in this exercise. Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail.

Based upon the identified exercise objectives below, the exercise planning team has decided to demonstrate the following target capabilities, activities and tasks during this exercise:

Objective 1: Surge Capacity

Determine strengths and weaknesses in current plan governing the integration of various response resources for managing patient flow beyond daily NICU and nursery census. Determine if Level II and Level II-E nurseries have done any planning to provide a higher level of service for a temporary period of time. Identify critical issues and potential solutions.

Target Capability: Medical Surge

Activity 1: Pre-event Mitigation and Preparedness:

- Hospitals will have in place and documented within their Emergency Operation Plans the procedures to accommodate a surge of NICU/Nursery patients (i.e. patient movement, expedited discharge).
- Designated hospital incident command and NICU/Nursery staff members will be aware and have received training on these procedures.

Activity 2: Event Response

- Designated NICU/Nursery staff will implement the surge capacity procedures including utilization of non-traditional patient care spaces; expediting well newborn discharges; transferring less critical NICU/Nursery patients to outlining hospitals outside of event area; and process for meeting increased staff requirements.
- Designated hospital incident command will identify the steps needed to provide NICU patient care/services temporarily at a non-NICU facility serving as an Alternate Treatment Site.

SECTION 3: ANALYSIS OF CAPABILITIES

This section of the report reviews the performance of the exercised capabilities, activities, and tasks. In this section, observations are organized by capability and

associated activities. The capabilities linked to the exercise objectives of NICU/Nursery Evacuation Tabletop Exercise are listed below, followed by corresponding activities. Each activity is followed by related observations, which include references, analysis, and recommendations.

Capability 2: Medical Surge

Capability Summary:

Medical surge is the capability to rapidly expand the capacity of the existing patient census in order to provide triage and subsequent medical care for victims of a disaster/crisis. This includes providing care to patients at the appropriate clinical level of care within sufficient time to achieve recovery and minimize medical complications. Further, this capability refers to an event resulting in a number or type of patients that overwhelm the day to day acute care medical capacity leading in increased need of personnel, support functions, physical space and logistical support (clinical and non-clinical equipment and supplies).

Activity 1: Pre-event Mitigation and Preparedness

- **Observation (Strength):** Most of the participating hospitals had a surge plan in place that incorporated some aspects of the NICU/Nursery.
- **Observation (Area for Improvement):** Less than half of the participating hospitals had identified and included within their EOP steps for credentialing external staff prior to the exercise. Incorporating credentialing steps can assist with accessing increased staffing resources during times of surge or other events. Due to the specialized nature of the NICU, all NICU professionals are encouraged to register with IL Helps in Illinois.

Activity 2: Event Response

- **Observation (Strength):** The exercise provided the opportunity for hospitals to discuss what steps needed to be taken and staffing/equipment/services that would be needed in order to provide NICU patient care temporarily at a non-NICU facility serving as an Alternate Treatment Site.
- **Observation (Area for Improvement):** HICS forms were made available at each table during the exercise. However, a minimal number of hospitals have provided HICS training to their NICU/Nursery staff. Hospitals are encouraged to provide HICS education and training to all staff and utilized this system during events.

B5: NICU/Nursery Evacuation Tabletop Improvement Plan

IMPROVEMENT PLAN (IP)

This IP has been developed specifically for both the Emergency Preparedness and Perinatal communities in Illinois and Wisconsin as a result of the NICU/Nursery Evacuation Tabletop Exercise conducted on April 26, 2011. These recommendations draw on the After Action Report, the After Action Conference and the exercise hot wash.

Capability	Activity	Observation	Recommendation	Capability Element	Agency POC	Start date	Completion Date
Communication	Pre-event Mitigation and Preparedness	Gaps in routine training on alternate communication procedures and devices	Incorporate communication procedures and devices into exercises and training at the hospital for NICU/Nursery staff as well as those who will part of incident command.	Training			
Medical Surge	Demobilization	Minimal discussion occurred regarding CISM for staff after disasters	Hospitals should incorporate the need to provide staff with CISM after a disaster into their EOP especially since many difficult ethical dilemmas can arise during disasters and the NICU/Nursery patient population	Planning			
Medical Supplies Management and Distribution	Pre-event Mitigation and Planning	There was a lack of documentation with hospital's EOPs about specific equipment and evacuation consideration for the NICU/Nursery population	Evacuation equipment, procedures and other considerations involving NICU/Nursery should be developed and incorporated into the EOP and practiced during training and exercises.	Planning Training			

