Spectrum Health RITN Full-Scale Exercise After Action Report & Improvement Plan

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Sponsored by:

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Exercise Overview

Exercise Name	Spectrum Health RITN Full-scale Exercise
Exercise Date	May 24, 2017
Scope	This was a full-scale exercise, occurring over approximately a half day at multiple locations in the Grand Rapids, Michigan area. Exercise play was limited to simulation of emergency operations among representatives of hospitals, the RITN, and partners in emergency management and public safety in response to receipt of victims with radiological exposures.
Mission Area(s)	Response
Capabilities	*(Core Capability)* Planning *(Core/HP Capability)* Medical Surge *(Target Capability)* EOC (Command Center) Management *(Core Capability)* Operational Communications *(Core/HP Capability)* Emergency Operations Coordination
Objectives	1. Determine if new strategies developed with the Federal Coordinating Center will be effective in the transportation of patients to the Gerald R. Ford International Airport, triaging patients at the airport, and transport to the treatment facility. *Aligned Capabilities:* Planning; Medical Surge. 2. Determine the hospitals' ability to effectively work with local partners in the collaboration of housing, transportation, and assisting patients, visitors, and well-wishers in the community. *Aligned Capabilities:* Emergency Operations Coordination; Operational Communications. 3. Evaluate the effectiveness of opening the Hospital Command Center and managing a surge of inpatients, outpatients, and visitors to the Spectrum Health Medical Center. *Aligned Capabilities:* EOC (Command Center) Management; Medical Surge. 4. Identify the responsibilities and resources needed at Spectrum Health Helen DeVos Children's Hospital who may be receiving pediatric patients that are now experiencing ARS symptoms. *Aligned Capabilities:* Planning; Medical Surge. 5. Determine the hospitals' ability to deal with public concerns and fear related to bringing ARS patients into the community. *Aligned Capabilities:* Operational Communications. 6. Determine if current strategies for Joint Information Centers with the health department, government agencies, and the hospital are sufficient for a RITN incident. *Aligned Capabilities:* Operational Communications.
Threat or Hazard	Human-caused Threat

Scenario	An Improvised Nuclear Device (IND) was detonated in the southwest of downtown Atlanta, Georgia (city population: >500,000) with an 8k-to-10k yield. Severe damage zone: 0.75 miles; moderate damage zone: 2.0 miles; light damage zone: 4.0 miles. The following numbers of patients will be received by Spectrum Health facilities through the RITN: ■ Butterworth Hospital: 85 ■ Helen DeVos Children's Hospital: 40 ■ Blodgett Hospital: 40 At the time these patients arrive in Grand Rapids through the RITN, there are 100 known outpatients being treated at the listed Spectrum Health facilities.
Sponsors	Spectrum Health sponsored this exercise using National Marrow Donor Program funds provided by the Office of Naval Research.
Participating Organizations	A variety of organizations and departments participated in this exercise. A detailed list of participants is provided in Appendix B.
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Exercise Summary

This exercise was implemented by Spectrum Health with the goal of testing its existing capabilities related to the receipt and management of a number of patients arriving through the Radiation Injury Treatment Network (RITN) as a result of a major radiological incident in the nation. Planning for this exercise began in January of 2017 and involved Spectrum Health management and staff from key departments as well as a variety of representatives from local partners in preparedness, the Region 6 Healthcare Coalition, the RITN, and the National Disaster Medical System (NDMS). Many of these entities participated in the exercise as players, and others provided observation and assisted with evaluation.

Early on, the objectives of the exercise and the aligned capabilities to be evaluated were identified to include the following:

1. Determine if new strategies developed with the Federal Coordinating Center will be effective in the transportation of patients to the Gerald R. Ford International Airport, triaging patients at the airport, and transport to the treatment facility. *Aligned Capabilities:* Planning; Medical Surge.
2. Determine the hospitals' ability to effectively work with local partners in the collaboration of housing, transportation, and assisting patients, visitors, and well-wishers in the community. *Aligned Capabilities:* Emergency Operations Coordination; Operational Communications.
3. Evaluate the effectiveness of opening the Hospital Command Center and managing a surge of inpatients, outpatients, and visitors to the Spectrum Health Medical Center. *Aligned Capabilities:* EOC (Command Center) Management; Medical Surge.
4. Identify the responsibilities and resources needed at Spectrum Health Helen DeVos Children's Hospital who may be receiving pediatric patients that are now experiencing ARS symptoms. *Aligned Capabilities:* Planning; Medical Surge.
5. Determine the hospitals' ability to deal with public concerns and fear related to bringing ARS patients into the community. *Aligned Capabilities:* Operational Communications.
6. Determine if current strategies for Joint Information Centers with the health department, government agencies, and the hospital are sufficient for a RITN incident. *Aligned Capabilities:* Operational Communications.

These objectives and capabilities drove the development of the scenario events and evaluation strategy of the exercise. The Master Scenario Events List is provided on the pages that follow.

# (inject)	TIME (when to initiate?)	SOURCE (who initiates this inject?)	FROM (from whom does this inject come?)	TO (to whom is this inject going to?)	METHOD (how will this inject be relayed?)	SCRIPT (if applicable, what is the specific message that will be relayed to the end recipient?)	ACTIONS (what is the expected response from players as a result?)	INSTRUCTIONS (how should this inject be handled by the controller or other participants?)	TASK (what to assess on the evaluation forms?)
1	8:45 AM	All Sites: ED & Command Center Controllers	Controller	All Players	Verbal	"This is an exercise. START EX. The exercise has started. Multiple waves of patients are being transported from the airport. The first wave is due to arrive only moments from now, so prepare appropriately. This is an exercise."	Begin play. Facility prepares effectively (e.g., staff briefed, controlled access set up, eqmt/supplies prepared).	Read script out loud to all players. Contact the Senior Controller only if you are unable to start on time for any reason.	On the EEG: Task #1
2	8:46 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr assigns team members to manage needs of patient surge & effectively performs this activity.	Instruct the Planning Section to request call down to the ED to request that they contact the Command Center regularly about the arrival of incoming patients, and resource needs, etc.	On the EEG: Task #3 Task #4
3	8:46 AM	Butterworth Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BW Admit Group #1"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
4	8:46 AM	Helen DeVos Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"HDV Admit Group #1"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
5	8:46 AM	Blodgett Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BL Admit Group #1"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
6	8:50 AM	Command Center Controller	Controller	Command Center Staff	Verbal	n/a	Cmd Ctr is staffed; key HICS roles assigned.	*Contingency Inject.* If HICS team roles are not assigned and documented (HICS 203/207 on eICS), instruct them to do this, and note on EEG.	On the EEG: Task #3
7	8:55 AM	All Sites: ED Controllers (Command Center Controller take note)	ED Staff	Command Center Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	ED Controllers: Instruct a staff member that they are low on blankets and must call the Command Center to request more. Ensure they send this request, and assess how the Cmd Ctr assists. Command Center Controller: Ensure this elevates to an R&MCC request.	On the EEG: Task #4
8	8:58 AM	Butterworth ED Controller	RITN Patients	Emergency Dept	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
9	9:03 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
10	9:08 AM	Butterworth Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BW Admit Group #2"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
11	9:14 AM	Command Center Controller	Controller	Public Information Personnel	Verbal	n/a	Joint Information System activated. Joint Information Center established.	Inform Public Information Personnel that the local media and community members are demanding information about the ongoing crisis, and if they haven't done so already, instruct them to activate their Joint Information System to work together to address this need.	On the EEG: Task #6
12	9:20 AM	Butterworth ED Controller	RITN Patients	Emergency Dept	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
13	9:20 AM	Helen DeVos ED Controller	RITN Patients	Emergency Dept	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1

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14	9:20 AM	Blodgett ED Controller	RITN Patients	Emergency Dept	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
15	9:25 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
16	9:30 AM	Butterworth Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BW Admit Group #3"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
17	9:30 AM	Helen DeVos Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"HDV Admit Group #2"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
18	9:30 AM	Blodgett Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BL Admit Group #2"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
19	9:35 AM	All Sites: ED Controllers (Command Center Controller take note)	ED Staff	Command Center Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	ED Controllers: Instruct a staff member that they are low on IV solution and must call the Command Center to request more. Ensure they send this request, and assess how the Cmd Ctr assists. Command Center Controller: Ensure this elevates to an R&MCC request.	On the EEG: Task #4
20	9:35 AM	Command Center Controller	24 Hour News 8 Reporter	Public Information Personnel	Verbal	"This is an exercise. This is Tracy Bannon from 24 Hours News 8, covering the Atlanta story. I have some questions… (1) As you're aware, what happened in Atlanta? (2) How many victims were there, and how many are coming to Grand Rapids? (3) Should the local public be concerned about this, and how can they help? (4) There are rumors circulating that this is a governmental conspiracy; can you comment on that? This is an exercise."	Public information requests handled appropriately. Rumors mitigated.	Simulate a 24 News 8 reporter calling by phone by reading the scripted questions to PIO team members to assess what information they give out.	On the EEG: Task #5
21	9:42 AM	Butterworth ED Controller	RITN Patients	Emergency Dept	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
22	9:47 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
23	9:52 AM	Butterworth Actor Controller	RITN Patients	Emergency Dept	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from **"BW Admit Group #4"** to enter the facility with their symptomatology cards.	On the EEG: Task #2
24	9:55 AM	All Sites: ED Controllers	Concerned Local Resident	Front Desk Staff	Verbal	"This is an exercise. Hi, my name is Jamie Keegstra. I'm a local. Everyone says that these patients coming in here are going to expose us all to radiation! Is that true? What am I supposed to tell me kids? My neighbors? We are absolutely terrified! This is an exercise."	Public information requests handled appropriately. Rumors mitigated.	Simulate a concerned local resident by reading the scripted message to the front desk staff to assess what information they give out.	On the EEG: Task #5

# (inject)	TIME (when to initiate?)	SOURCE (who initiates this inject?)	FROM (from whom does this inject come?)	TO (to whom is this inject going to?)	METHOD (how will this inject be relayed?)	SCRIPT (if applicable, what is the specific message that will be relayed to the end recipient?)	ACTIONS (what is the expected response from players as a result?)	INSTRUCTIONS (how should this inject be handled by the controller or other participants?)	TASK (what to assess on the evaluation forms?)
25	10:00 AM	ED Controllers	n/a	n/a	n/a	n.a	n/a	Instructions to ED Controllers: The simulation of incoming patients at all ED's is winding down. Play will end at Blodgett and Helen DeVos at 10:30. At that time, the exercise at Butterworth will immediately shift to managing outpatient services at the MARC, so controllers and evaluators at Butterworth's ED should start transitioning over the Auditorium now. You now are serving as MARC controllers and evaluators (next inject: 10:20).	n/a
26	10:05 AM	Command Center Controller	Controller	Public Information Personnel	Verbal	"This is an exercise. This is Blaine Jackson from WZZM 13 News, with some questions about the ongoing disaster down south…(1) What organizations are working together on this situation locally? (3) Will there be a press release or briefing for local news coverage of what's going on? (4) Who will be involved in that, when, where, etc.? This is an exercise."	Joint Information System activated. Joint Information Center established.	Simulate a WZZM 13 news reporter calling by phone by reading the scripted questions to PIO team members to assess what information they give out.	On the EEG: Task #6
27	10:20 AM	Butterworth MARC Controller	RITN Patients	MARC Manager	Patient Arrivals	"This is an exercise. You have just been notified that the MARC's first wave of 25 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
28	10:23 AM	Butterworth MARC Controller (Command Center Controller take note)	MARC Staff	Command Center Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	Instruct a staff member that they have been told they are about to receive a patient who only speaks Farsi and must call the Command Center to request assistance (e.g., an interpreter). Ensure they send this request, and assess how the Cmd Ctr assists.	On the EEG: Task #4
29	10:25 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
30	10:30 AM	All Blodgett Controllers	Controller	All Players	Verbal	"This is an exercise. END EX. The exercise has ended at this facility. We will now transition into the hot wash. This is an exercise."	End play. Start hot wash.	Read script out loud to all players. Transition immediately into the hot wash.	n/a
31	10:30 AM	All Helen DeVos Controllers	Controller	All Players	Verbal	"This is an exercise. END EX. The exercise has ended at this facility. We will now transition into the hot wash. This is an exercise."	End play. Start hot wash.	Read script out loud to all players. Transition immediately into the hot wash.	n/a
32	10:30 AM	Butterworth Actor Controller	RITN Patients	MARC	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from "**Blue Output Group #1**" to enter the MARC with their symptomatology cards.	On the EEG: Task #2
33	10:42 AM	Butterworth MARC Controller	RITN Patients	MARC Manager	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
34	10:47 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
35	10:52 AM	Butterworth Actor Controller	RITN Patients	MARC	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from "**Blue Output Group #2**" to enter the MARC with their symptomatology cards.	On the EEG: Task #2

# (inject)	TIME (when to initiate?)	SOURCE (who initiates this inject?)	FROM (from whom does this inject come?)	TO (to whom is this inject going to?)	METHOD (how will this inject be relayed?)	SCRIPT (if applicable, what is the specific message that will be relayed to the end recipient?)	ACTIONS (what is the expected response from players as a result?)	INSTRUCTIONS (how should this inject be handled by the controller or other participants?)	TASK (what to assess on the evaluation forms?)
36	10:55 AM	Command Center Controller	Controller	Public Information Personnel	Verbal	n/a	Joint Information System activated. Joint Information Center established.	*Contingency Inject.* If the Joint Information Center has not yet developed a specific approach to issuing joint press releases, a joint press conference, etc., instruct them to work on this, and assess how they collaboratively manage these activities.	On the EEG: Task #6
37	11:04 AM	Butterworth MARC Controller	RITN Patients	MARC Manager	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
38	11:07 AM	MARC Controller (Command Center Controller take note)	ED Staff	Command Center Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	Instruct a staff member that two patients are being physically aggressive (but have no weapons) and must call the Command Center to request more security. Ensure they send this request, and assess how the Cmd Ctr assists.	On the EEG: Task #4
39	11:09 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
40	11:14 AM	Butterworth Actor Controller	RITN Patients	MARC	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from "**Bill Outpt Group #3**" to enter the MARC with their symptomatology cards.	On the EEG: Task #2
41	11:20 AM	Command Center Controller	Fox17 Reporter	Public Information Personnel	Verbal	"This is an exercise. This is Taylor Warren from Fox 17 News, calling about the disaster. What kind of information can you give me at this time? This is an exercise."	Public information requests handled appropriately. Rumors mitigated.	Simulate a Fox 17 reporter calling by phone by reading the scripted questions to PIO team members to assess what information they give out. Probe for possible press releases, press conferences, etc.	On the EEG: Task #5
42	11:26 AM	Butterworth MARC Controller	RITN Patients	MARC Manager	Patient Arrivals	"This is an exercise. You have just been notified that the next wave of 20 patients is en route, ETA 10 minutes, so prepare appropriately. This is an exercise."	Facility prepares as needed for incoming patients.	Read script out loud to key players.	On the EEG: Task #1
43	11:31 AM	Command Center Controller	Controller	Planning Section Staff	Phone or 2-Way Radio	n/a	Cmd Ctr effectively manages needs of patient surge.	*Contingency Inject.* If the Command Center has not been notified about incoming patients, any resource needs, etc., have someone contact the ED to request a situation report, and note on EEG.	On the EEG: Task #3 Task #4
44	11:36 AM	Butterworth Actor Controller	RITN Patients	MARC	Patient Arrivals	n/a	Incoming patients assessed, triaged, and managed appropriately.	Instruct actors from "**Bill Outpt Group #4**" to enter the MARC with their symptomatology cards.	On the EEG: Task #2
45	11:40 AM	Butterworth MARC Controller	Angry Local Resident	Front Desk Staff	Verbal	"This is an exercise. Listen, my name is Pat Dykstra, and I live just a few blocks away from here. I don't believe for a second what's going on here. I know for a fact that Atlanta did not get bombed! This is some big government conspiracy just to cover up their own mess. Now, are you gonna level with me, here? What's going on, for real? I demand the truth, right now! This is an exercise."	Public information requests handled appropriately. Rumors mitigated.	Simulate an angry local resident who somehow gained entry to the MARC, and read the scripted message to entry/screening staff in the MARC to assess what information they give out.	On the EEG: Task #5
46	12:00 PM	All Butterworth Controllers	Controller	All Players	Verbal	"This is an exercise. END EX. The exercise has ended. We will now transition into the hot wash. This is an exercise."	End play. Start hot wash.	Read script out loud to all players. Transition immediately into the hot wash.	n/a

The methodology used for control of this exercise involved two main activities. First, controllers stationed in key locations of each participating facility injected artificial messages and instructions to players. Second, multiple series of arriving RITN patients were simulated through use of actors, each with a unique patient profile and wearing a triage tag indicating their relative exposure to radiation as fictitiously having been measured prior to their transport to Michigan. Controllers further were provided contingency injects in order to ensure that all exercise objectives would be tested, allowing for a comprehensive evaluation.

The methodology used for evaluation of this exercise involved the collection of information from dedicated evaluators and the players themselves. Throughout the course of exercise play, evaluators stationed in key locations of each participating facility completed an Exercise Evaluation Guide (EEG) reflecting their assessment of task completion relative to targets based on the exercise objectives. This included both an overall assessment of how well various related tasks were performed, as well a detailed explanation of what each evaluator observed in relation to each task. Following the exercise, one person was assigned to complete a Group Feedback Form during the hot washes at each facility, based on player observations. All findings have been linked to specific exercise objectives and capabilities, and categorized as either strengths or areas for improvement. The information provided in the Analysis of Capabilities section of this report provides a detailed accounting of the results of these evaluation efforts.

Analysis of Capabilities

Aligning exercise objectives and capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned capabilities, and performance ratings as observed during the exercise and determined by the evaluation team. The following rubric was used to assign performance ratings:

- **P:** Performed without challenges
- **S:** Performed with some challenges
- **M:** Performed with major challenges
- **U:** Unable to be performed

Exercise Objective	Aligned Capabilities	P	S	M	U
1. Determine if new strategies developed with the Federal Coordinating Center will be effective in the transportation of patients to the Gerald R. Ford International Airport, triaging patients at the airport, and transport to the treatment facility.	Planning; Medical Surge		✓		
2. Determine the hospitals' ability to effectively work with local partners in the collaboration of housing, transportation, and assisting patients, visitors, and well-wishers in the community.	Emergency Ops Coord; Operational Comms		✓		
3. Evaluate the effectiveness of opening the Hospital Command Center and managing a surge of inpatients, outpatients, and visitors to the Spectrum Health Medical Center.	EOC (Cmmd Ctr) Mgmt; Medical Surge		✓		
4. Identify the responsibilities and resources needed at Spectrum Health Helen DeVos Children's Hospital who may be receiving pediatric patients that are now experiencing ARS symptoms.	Planning; Medical Surge		✓		
5. Determine the hospitals' ability to deal with public concerns and fear related to bringing ARS patients into the community.	Operational Comms	✓			
6. Determine if current strategies for Joint Information Centers with the health department, government agencies, and the hospital are sufficient for a RITN incident.	Operational Comms	✓			

Table 1. Exercise Objectives and Associated Capabilities

Objective 1

Definition

Determine if new strategies developed with the Federal Coordinating Center will be effective in the transportation of patients to the Gerald R. Ford International Airport, triaging patients at the airport, and transport to the treatment facility.

Strengths

Strength 1: Command. The Incident Commander was prepared and ensured that the team was prepared for the arrival of incoming RITN patients. The Chief Medical Officer recognized the need for constant updating of the numbers and decontamination status of the incoming RITN patients. A Radiation Safety Officer was assigned to provide direction and support on the floor.

Strength 2: Staff Teamwork. Staff members continuously talked with one another to ensure a coordinated response effort, a common operating picture, to cooperatively address issues together, etc. Provision of high-quality and efficient medical care for patients was prioritized. Staff members exhibited a genuine sense of urgency and realism. Staff reviewed relevant policies in InSite when the event was announced overhead.

Strength 3: Resources. The Chief Medical Officer monitored the status of pharmaceutical resources (for both adult and pediatric dosing levels) as well as hospital capacity and potential needed for patient transfers. A Family Reunification Center was set up early in the response. A dedicated staff member was assigned to 4N to address any additional staffing needs if/when they were identified.

Strength 4: Patient Intake. Despite some initial inefficiencies (as articulated below), adjustments were made to improve patient flow, demonstrating critical thinking and adaptability. This exercise provided real-time opportunities for staff to become more familiar with StatBand triage tags and to apply START & JumpSTART. The patient registration process was generally very accurate; any patients slipping through the cracks were quickly identified and addressed.

Areas for Improvement

Area for Improvement 1: Patient Flow

Reference: EOP, RITN Response

Analysis: Initially, there was significant confusion regarding the flow of patients between the patient intake and patient care areas. This made for an initially inefficient patient flow, in which patients migrated from registration to triage to patient rooms. However, staff recognized that this approach was flawed, as patients pre-triaged as “immediate” needed to be tended to first. The decision was made to adjust the flow as migrating patients from triage to registration to patient rooms, which proved more logical and more efficient. It was also noted that, initially, patients were bumping into one another as they were directed/escorted from one area to the next. Later in the exercise, this was adjusted to a one-way patient flow, eliminating this problem. Plans should be updated to reflect the changes made to the order of patient intake activities and the direction of patient flow as above.

Area for Improvement 2: Triage Process

Reference: EOP, RITN Response

Analysis: Staff members expressed confusion regarding the appropriate triage method(s) to be used to properly assess patient needs and priorities. Staff members generally are familiar with

methods such as START and JumpSTART, or ESI. However, given the nature of the disaster, more investigation of and training on triage systems dealing with radiation exposures is needed. HHS-sponsored guidance on this topic is provided at https://www.remm.nlm.gov/radtriage.htm, including a writeup on the "Hospital Approach to Patients Presenting After a Nuclear Detonation." Some also expressed that patients were not grouped by category in the triage area of the facility. Some planning for how and where this should be done in future events is recommended. Also, if it is not already planned for, in order to make for a more efficient and robust overall process, it is recommended that HERT team members be used to assist with the triage process. (Note: for this exercise, multiple HERT team members were used as actor wranglers, so it is possible that plans already call for their assistance with triage; this should be verified.)

Area for Improvement 3: Delegation

Reference: EOP, RITN Response, Staffing Plans

Analysis: It was noted during the exercise that charge nurses were at times taking on too many responsibilities rather than assigning team members to perform some of the needed functions. This included directing patients, securing bed assignments, and running communications between the intake (triage and registration) and treatment areas. It is recommend that plans incorporate a staffing plan that includes operational roles and duties for such areas. As examples, staff members should assigned as patient escorts to explain what's happening and accompany them to patient rooms, and runners/couriers should be assigned to relay message and materials among the different areas of the facility.

Objective 2

Note: This objective primarily relates to the implementation of a Multi-Agency Resource Center (MARC) that was simulated during the latter half of the exercise. It is important to note that, in a real incident, Spectrum Health would not be the lead agency to establish a MARC; this effort would be coordinated by local emergency management. The observations provided below relate specifically to Spectrum Health's involvement in such an activity.

Definition

Determine the hospitals' ability to effectively work with local partners in the collaboration of housing, transportation, and assisting patients, visitors, and well-wishers in the community.

Strengths

Strength 1: Collaboration. Multiple agencies were represented in the MARC, which was simulated in in the auditorium. The simulated MARC served to assess a variety of basic needs of incoming RITN patients and families, and identify solutions to meet such needs. Participation in this effort among Spectrum Health and local partners validated that a cooperative and collaborative MARC can be successfully activated to provide this service.

Areas for Improvement

Area for Improvement 1: Breadth of Support

Reference: Plans for Establishing a Local MARC

Analysis: While Spectrum Health would not be a lead agency to coordinate a local MARC, and this exercise served as only a snapshot of what that entity might look like in a real-world incident, this exercise activity did provide a basis to test the basic concept of a MARC. Evaluators noted that the MARC optimally should involve a breadth of supporting agencies that can meet a wider range of basic needs services in the community. If not already incorporated into existing MARC plans, it is recommended that local planners reach out to Kent County DHHS for their assistance in the MARC, given their considerable expertise in meeting various basic needs through family assessment and case management. DHHS can provide assistance with housing, transportation, clothing, food, medical and mental health care, prescription medication, mobility/accessibility issues, and much more – essentially most anything to promote a stable transition.

Objective 3

Definition

Evaluate the effectiveness of opening the Hospital Command Center and managing a surge of inpatients, outpatients, and visitors to the Spectrum Health Medical Center.

Strengths

Strength 1: HIMT. On the Hospital Incident Management Team (HIMT), staff members were assigned to the necessary key HICS roles of Incident Commander, Public Information Officer, Liaison Officer, Safety Officer, Operations Section Chief, Planning Section Chief, and Logistics Section Chief. Key support positions likewise were assigned. The PIO collaborated successfully with personnel from other organizations, including at State level, to address joint public information needs.

Strength 2: IT. The HIMT's use of eICS proved extremely efficient toward management of the overall incident. Communication systems such as direct messaging, pager, email, WebEOC, and others further made for a quiet and highly productive Hospital Command Center.

Strength 3: Tactical Leadership. Out on the floor, it was noted that the charge nurses provided excellent leadership, direction, and guidance to staff as they strived to meet the medical needs of the large numbers of incoming RITN patients.

Strength 4: Medical Surge. The institution's surge plans was implemented; this included surging incoming RITN patients to a designated area of 4 North at Butterworth Hospital. When a lack of beds was identified, additional areas in the facility were discussed and requests for assistance were made to accommodate patients at other facilities via the Region 6 Medical Coordination Center. The exercise provided a good opportunity to validate use of eICS and other tools for documentation purpose, as well as the necessary resources (staffing and equipment) to manage a medical surge incident.

Areas for Improvement

Area for Improvement 1: Familiarity with Surge Resources

Reference: EOP, Medical Surge Plans

Analysis: Evaluators noted that some HIMT members were not fully knowledgeable about the capabilities and capacity of in-house medical surge resources such as 4 North. To address this, it is recommended that all key HIMT members be provided a brief orientation on medical surge plans and resources such as this. It is further recommended that a concise written overview of such resources be developed for inclusion in HIMT materials for quick reference during an incident.

Area for Improvement 2: HCC Responsiveness

Reference: EOP, HCC/HIMT Staffing Plan

Analysis: During the exercise, multiple injects and spontaneous scenario events compelled all three facilities to reach out to the Hospital Command Center (HCC) to obtain additional materials and other supports, given the impact of the medical surge. During the hot washes, staff from all three facilities reported that obtaining a response from the HCC sometimes was delayed; on at least two occasions, staff reported having been placed on hold for over 20 minutes. Consequently, staff in patient care areas sometimes circumvented the HCC's support by directly obtaining assistance from other departments. This violates the chain of command; all requests must flow through the HCC. It is recommended that the number of call-takers in the HCC be expanded to address this issue.

Objective 4

Definition

Identify the responsibilities and resources needed at Spectrum Health Helen DeVos Children's Hospital who may be receiving pediatric patients that are now experiencing ARS symptoms.

Strengths

Strength 1: Family Reunification. Appropriate actions were taken for pediatric patients whom had become separated from their parents during the fictitious transition from the airport to the hospitals.

Areas for Improvement

Area for Improvement 1: Staffing Needs

Reference: EOP, RITN Response, Staffing Plans

Analysis: Participants at Helen DeVos Children's Hospital reported on three gaps in staffing toward providing optimal service in the context of the receipt of a large number of pediatric patients through RITN: (a) The hospital would need to have a hematologist-oncologist on hand to assist with assessment and medical care. (b) The hospital would need to have more volunteers on hand to help hold and rock infant patients. (c) The hospital would need to assign patient escorts who are sensitive to the needs of young patients to explain what's happening and accompany them to patient rooms.

Objectives 5 & 6

Note: Because the exercise activities related to these two objectives reflected similar and linked public information functions, the outcomes for these two objectives are addressed together below.

Definition

Determine the hospitals' ability to deal with public concerns and fear related to bringing ARS patients into the community. Determine if current strategies for Joint Information Centers with the health department, government agencies, and the hospital are sufficient for a RITN incident.

Strengths

Strength 1: Rumor Control. In at least one facility, security personnel appropriately and calmly handled a fictitious local community members arriving at the ED who was portrayed as upset and concerned about rumors related to the incoming RITN patients. (This actor citizen was under the understanding that these patients would pose a threat to the local community, and that a government cover-up of the real nature of the incident in Atlanta had occurred.) Further, the simulated Joint Information Center (JIC) issued public information messages using multiple platforms to dispel rumors and address the concerns of the public. This included establishment of a hotline to assist with questions regarding family members and to provide assistance with family reunification.

Strength 2: JIS/JIC. Spectrum Health management participated in a simulated JIC along with multiple other local agencies to collaboratively address public information needs. At one point, a charge nurse's telephone number was leaked; however, this was rapidly addressed by standing up a hotline to keep the general public and other key stakeholders informed. The JIC's effort's also included activation of a banner on the system's intranet to keep staff adequately informed about the incident. This exercise provided the opportunity to validate the ability of local partners in implementing a viable Joint Information System (JIS), including activation of a JIC.

Areas for Improvement

No significant areas for improvement were identified in relation to these two objectives. Spectrum Health and local partners should continue to maintain and build on their plans and resources for implementation of a local JIS and activation of a JIC.

Appendix A: Improvement Plan

This IP has been developed for Spectrum Health as a result of the 2017 Spectrum Health RITN Full-Scale Exercise, as conducted on May 24, 2017. To fully meet the intent of this exercise, it is incumbent upon the organization to define and track all corrective actions, responsible parties, points of contact, start dates, and completion dates. All corrective actions below have been classified according to the capability elements of planning, organization, equipment, training, and exercises.

Objective	Observation	Corrective Action	Capability Element	Responsible Party	Start Date	Completion Date
1. Arrival and care for RITN patients	1.1 Patient Flow	1.1.1 Update plans to carry out triage sorting prior to registration, and a one-way patient flow through the facility.	Planning			
	1.2 Triage Process	1.2.1 Orient staff on radiation exposure triage algorithms.	Training			
		1.2.2 Update plans to sort patients by triage group to expedite care for those requiring immediate attention.	Planning			
		1.2.3 Ensure plans call for use of HERT to assist with triage.	Planning			
	1.3 Delegation	1.3.1 Assign supportive tasks to patient escorts and runners/couriers.	Organization			
2. Implementation of a MARC	2.1 Breadth of Support	2.1.1 If not already planned for, request involvement of DHHS in MARC operations.	Organization			
3. HCC management and medical surge	3.1 Familiarity with Surge Resources	3.1.1 Provide brief orientation on medical surge resources to HIMT.	Training			
		3.1.2 Develop written overview of medical surge resources for reference.	Training			
	3.2 HCC Responsiveness	3.2.1 Increase number of call-takers in HCC to assist with operational needs.	Organization			

Objective	Observation	Corrective Action	Capability Element	Responsible Party	Start Date	Completion Date
4. Care for pediatric RITN patients	4.1 Staffing Needs	4.1.1 Plan for assistance from hematologist-oncologist.	Organization			
		4.1.2 Plan for more volunteers to assist with infant patients.	Organization			
		4.1.3 Plan for use of pediatric patient escorts.	Organization			

Appendix B: Exercise Participants

Federal	
National Disaster Medical System; Federal Coordinating Center; John D. Dingell VA Medical Center	Radiological Injury Treatment Network
State	
MDHHS – CHECC	Michigan State Police
Regional	
Michigan Region 6 Healthcare Coalition	
Local	
City of Grand Rapids Fire Department	Kent County Emergency Management
City of Grand Rapids Police Department	Kent County Health Department
Kent County Administrator's Office	Kent County RACES
NGO	
American Red Cross of West Michigan	Kent County Medical Reserve Corps
Private	
AMR *(observation)*	Spectrum Health Blodgett Hospital
Gerald R. Ford International Airport *(observation)*	Spectrum Health Butterworth Hospital
	Spectrum Health Helen DeVos Children's Hospital
Support	
CEMA, Inc.	

Appendix C: Participant Feedback

In addition to providing observations that were integrated into the Analysis of Capabilities section of the AAR, participants were provided the opportunity to score eight factors related to the exercise overall. The graph below depicts the results of this additional data gathering effort. Each exercise factor was expressed as a statement. Each statement was scored using a numerical range of one to five, where a score of one indicated that participants "strongly disagree" with a statement, and a score of five indicated that they "strongly agree" with a statement. Overall, it can be defensibly stated that participants agree or strongly agree with all eight of the exercise factor statements that they were asked to assess.

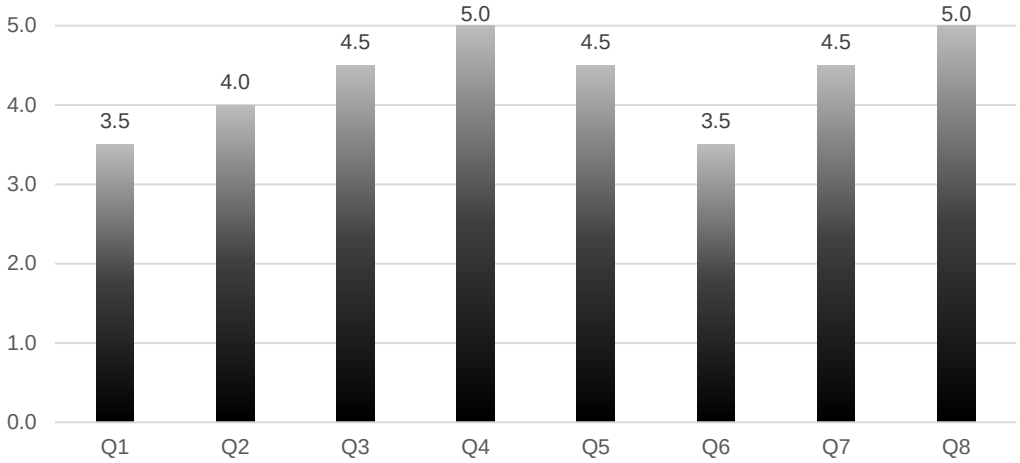

Table C1. Participant Feedback Summary

Key to Table C1

Q1: Pre-exercise briefings were informative and provided the necessary information for all exercise participants.

Q2: The exercise scenario was plausible and realistic.

Q3: Exercise participants included the right people in terms of level and mix of disciplines.

Q4: Participants were actively involved in the exercise.

Q5: Exercise participation was appropriate for all participants, based on their individual fields of work and levels of experience/training.

Q6: The exercise increased participants' understanding about & familiarity with the capabilities and resources of other participating organizations.

Q7: The exercise provided the opportunity to address significant decisions in support of critical mission areas.

Q8: This exercise allowed participants to validate existing strengths and identify areas for improvement to specific capabilities.

Participants further were provided the opportunity to articulate their recommendations on how future exercises can be improved or enhanced. The following is a summary of such recommendations:

- Initial briefing did not adequately address the exercise scenario or roles for the players. More detailed information was needed. To address this, CEMA recommends use of a more detailed player briefing document and buffering of time for this purpose, prior to StartEx.
- Information contained in the alerts sent over the six days prior to the exercise did not result in briefing of some staff members on what was theoretically happening in the scenario, and what was going to happen during the exercise. To address this, CEMA recommends that key management and supervisors be requested to confirm dissemination of such messages to their staff.
- A few staff members had real-world patients and were also part of the exercise, presenting a safety concern. To mitigate this in the future, CEMA recommends developing a staff backup plan prior to the exercise so that real-world patient needs are met while the exercise can continue seamlessly.
- A better timeline for briefing and preparation of actors is needed. Actors also need to be staged in better locations (i.e., close to but not in the play area).
- More realistic victim portrayal is needed: use of wheelchairs/stretchers for non-ambulatory patients, and better guidance/instructions for actors to act out their roles. To address the latter portion of this, CEMA recommends use of a two-sided actor sheet in future exercises, with one side for viewing by clinician players, and the other side for use only by actors, including instructions in lay terms.
- A better plan for managing the flow of actors is needed, including how to recycle actors and use of more actor wranglers.
- More time is needed for player and actor briefings. To address this, CEMA recommends simply building in more time for these activities prior to StartEx and/or providing written exercise orientation materials in the days prior to the exercise to players and actors.
- The mock patient naming conventions made it difficult to document patients on the floor. To address this, CEMA recommends use of hyphenated names that all start with the naming convention. E.g., “CNRDISASTER-Lopez.” In this case, data entry will still alpha sort starting with the naming convention, but players on the floor can more simply and easily refer to such a patient as Lopez.
- Per Blodgett staff, the supply chain staff were not made aware of the exercise, and therefore did not respond to the exercise. The expectation was that they would have provided a supply cart, customized to the exercise scenario ahead of time. This can be addressed through provided written exercise orientation materials and requesting management confirmation that pre-exercise messages are received by all necessary staff, as suggested above.
- Initiation of the exercise was not properly announced at Blodgett, causing confusion about when it actually started. To address, CEMA recommends that controllers in future exercises clearly announce StartEx to all players present, as well as have a staff member contact the switchboard to request overhead announcement of StartEx.
- For future RITN exercises specifically, provide the full patient manifest to staff prior to patient arrivals. According to RITN representatives, such a manifest would be provided ahead of time so that the receiving facility can prepare for arrival of the listed patients.
- Involve the Transfer Center in future exercises like this.