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RITN RADIATION INJURY TREATMENT NETWORK

City of Hope National Medical Center

Radiological Injury Treatment Network

FULL SCALE EXERCISE

After Action Report

Constant & Associates, Inc.

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SECTION I: EXERCISE OVERVIEW

Exercise Name	City of Hope Radiation Injury Treatment Network Full Scale Exercise
Exercise Date	Tuesday, August 9, 2016 - Thursday, August 11, 2016
Scope	This exercise was designed to test COH's procedures and policies for notification, preparation, activation, operations, and demobilization following a radiological incident.
Mission Area(s)	Response
Core Capabilities	Hospital Preparedness Program (HPP) Capabilities 1. Healthcare System Preparedness 2. Emergency Operations Coordination 3. Information Sharing 4. Medical Surge 5. Responder Safety & Health National Core Capabilities 1. Operational Coordination 2. Intelligence and Information Sharing 3. Environmental Response / Health and Safety 4. Public Health, Healthcare, and Emergency Medical Services 5. Operational Communications
Objectives	1. Activate the COH Hospital Command Center (HCC) and demonstrate effective internal and external communications with the activation of the NDMS, in preparation to receive, place, and care for patients who fit the requirements for the RITN. 2. Conduct rapid discharge and cancellation of elective procedures to open up bed capacity, and submit a Capabilities Report to RITN through the HealthCare Standard (HCS). 3. Prepare for receipt of patients by briefing all staff, deploying additional equipment and supplies, and reviewing departmental capabilities to handle a surge of patients. 4. Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).

	5. Partial activation of the COH National Medical Center HCC on August 10, 2016. 6. Receive and appropriately treat RITN designated patients with marrow toxic injuries from Los Alamitos Joint Forces Training Base through the NDMS and the Federal Coordinating Center (FCC). 7. Coordinate patient tracking and evidence and sample collection as necessary between departments and the HCC. 8. Establish a Family Support Center at COH and activate a liaison to work with other agencies as necessary to facilitate family reunification efforts, including coordination with the City of Duarte Public Safety department, local law enforcement, the American Red Cross, LA County EMS, and out-of-state healthcare and emergency management partners.
Threat / Hazard	Radiological Release
Scenario	The receipt of patients through the NDMS and RITN who have been contaminated with radiation from a thermo-nuclear device at a Colorado baseball game.
Sponsor	City of Hope National Medical Center Radiation Injury Treatment Network and the National Disaster Medical System
Participating Organizations	City of Hope National Medical Center Duarte Public Safety Department National Disaster Medical System and Radiological Injury Treatment Network Disaster Management Area D Coordinator Federal Coordinating Center and VA Long Beach Healthcare System Los Alamitos Joint Forces Training Base American Red Cross Pomona Valley Hospital Medical Center and the Disaster Resource Center Group City of Duarte Los Angeles County Department of Public Health - Radiation Health
Number of Participants	**Day 1:** 44 participants (players) **Day 2:** 18 participants (players) **Day 3:** 78 participants (players/actors)
Number of Controllers and Evaluators	**Day 1:** 7 participants **Day 2:** 1 participant **Day 3:** 23 participants

SECTION II: EXERCISE OBJECTIVES AND CORE CAPABILITIES

Effective evaluation assesses performance against the exercise objectives and documents examples of core capabilities being demonstrated. Understanding the exercise purpose, the capabilities to be assessed, and the associated capability performance objectives will support evaluation planning, design, and selection of appropriate evaluators. By defining requirements early in the exercise and evaluation planning process, the EPT and Lead Evaluator were then able to develop the appropriate evaluation documentation and tools to ensure evaluators were trained and prepared. The exercise endeavored to measure the following capabilities:

HPP Capabilities

1. Healthcare System Preparedness
2. Emergency Operations Coordination
3. Information Sharing
4. Medical Surge
5. Responder Safety & Health

National Core Capabilities

1. Operational Coordination
2. Intelligence and Information Sharing
3. Environmental Response / Health and Safety
4. Public Health, Healthcare, and Emergency Medical Services
5. Operational Communications

The exercises strove to evaluate the following objectives and associated tasks:

Table 1: Exercise Objectives and Tasks

Objectives	Tasks
Day One – August 9, 2016	
1. Activate the City of Hope (COH) National Medical Center Hospital Command Center (HCC) and demonstrate effective internal and external communications with the activation of the National Disaster Medical System (NDMS), in preparation to receive, place, and care for patients who fit the requirements for the Radiological Injury Treatment Network (RITN).	i. Activate the Hospital Incident Command System (HICS) and the HCC at a Level Three (Full Activation) in response to a Radiation Incident within 1 hour of notification of the event and NDMS activation.
	ii. The IC will notify the COH Operator to alert the staff of the emergency by announcing the appropriate code [Code Triage Level III], through the COH notification system, overhead page, and any alternate announcements (email, radio, call lists, etc.).
	iii. The IC or Liaison Officer will notify the following external agencies of activation: LA County Emergency Medical Services (EMS) Agency, City of Duarte Public Safety, Fire, LA County Medical Alert Center, Long Beach VA Hospital / NDMS and the NDMS Coordinator, County Sheriff, Red Cross, the CDC (page 18 of COH EOP), and the Disaster Resource Center (DRC) network.
	iv. Activate and include the Finance branch in HCC activation and HCC operations.
2. Conduct rapid discharge and cancellation of elective procedures to open up bed capacity, and submit a Capabilities Report to RITN through the HealthCare Standard (HCS).	i. The Nursing House Supervisor and/or Administrative Nursing Supervisor will determine if a bed meeting of the Bed Management Team is necessary to facilitate the rapid and efficient discharge of patients.
	ii. If or once activated, the Bed Management Team will evaluate the availability of appropriately qualified staff to meet patient care requirements based on the information given by RITN.
	iii. The Nursing House Supervisor will direct efforts to cancel elective surgery cases, divert patients waiting for admission on a case by case basis, and reschedule return clinic visits in order to open up bed capacity.

Objectives	Tasks
	iv. Discharge any patients no longer meeting medical necessity for acute care no later than (insert time).
	v. Submit Capabilities Report to RITN through the HealthCare Standard (HCS) found at www.ritn.net.
3. Prepare for receipt of patients by briefing all staff, deploying additional equipment and supplies, and reviewing departmental capabilities to handle a surge of patients.	i. Position and deploy existing logistics and supplies to receive patients.
	ii. Conduct just-in-time (JIT) training for all staff related to the standard radiological precautions of time, distance, and shielding, required personal protective equipment, and on-site "frisking/ monitoring" contamination and exposure evaluation procedures.
	iii. Prepare Security staff for incoming patient surge by providing staff briefings, establishing ingress and egress boundaries, confirming visitor policies during RITN patient receipt, and establishing a secure area for press.
	iv. Review COH capacity to run chemistry panels (CHEM) and Complete Blood Counts (CBC) for an influx of patients.
	v. Review HLA laboratory capabilities to handle a surge in patient donor matching needs.
4. Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).	i. Utilize the appropriate Department Resource Request Form in the COH Emergency Operations Plan (EOP) for requests made at the department level and submit to the HCC.
	ii. Ensure adequate supplies of specialized pharmaceuticals, such as Nuepogen, Prussian Blue, and Fligrastem, for patient care by identifying the amount required and suppliers, including private vendors.
	iii. Coordinate with the Disaster Resource Center (DRC) hospitals and other partner agencies/ departments for additional supplies of equipment.

Objectives	Tasks
Day Two – August 10, 2016 (Limited Activity at COH)	
1. Partial activation of the COH National Medical Center Hospital Command Center (HCC).	i. Demonstrate effective internal and external communications in tracking and receiving RITN patient(s) through NDMS.
	ii. Coordinate conference call between COH physicians and REAC/TS.
Day Three – August 11, 2016	
1. Receive and appropriately treat RITN designated patients with marrow toxic injuries from Los Alamitos Joint Forces Training Base through the NDMS and the FCC.	i. Activate the Radiological Emergency Response Team(s) as necessary.
	ii. Assess incoming patients to determine the level of Acute Radiation Syndrome (ARS).
	iii. Activate the Marrow Unrelated Donor (MUD) department and identify potential donor matches for those patients requiring transplants.
	iv. Draft and update the Incident Action Plan (IAP) in the HCC.
	v. Test the ability to resupply blood, platelets, and pharmaceuticals as necessary.
2. Coordinate patient tracking and evidence and sample collection as necessary between departments and the HCC.	i. Assign patient trackers from the Patient Tracking Unit to track all patients entering, as they are processed through care and leaving the hospital.
	ii. Utilize the HICS Form 254 – Disaster Victim Patient Tracking Form, to track all patients, and ensure patient information is regularly updated within ReddiNet.
	iii. Ensure that evidence and sample collection information is included with patient tracking information.
	iv. Coordinate with the Family Care Unit Leader to ensure family member identification and reunification efforts are incorporated into patient tracking efforts.

Objectives	Tasks
3. Establish a Family Support Center at COH and activate a liaison to work with other agencies as necessary to facilitate family reunification efforts, including coordination with the City of Duarte Public Safety department, local law enforcement, the American Red Cross, LA County EMS, and out-of-state healthcare and emergency management partners.	i. Activate and staff the Family Support Center, including the Family Care Unit Leader under the Logistics Section of the HCC.
	ii. The Family Care Unit Leader and the Patient Tracking Unit Leader under the Planning section will coordinate to identify family members of the patients being transported to COH through the NDMS.
	iii. Coordinate with the City of Duarte Public Safety department to request family reunification assistance. Reach out to LA County EMS and the Red Cross for technical assistance.
	iv. Coordinate with law enforcement and FBI as necessary for evidence and sample collection upon request.

SECTION III: EXECUTIVE SUMMARY

The following sections provide an overview of observations that were consistent throughout the entire exercise and thus transcend or form the foundation the analysis of each exercise objective (included in more detail in Section IV).

Strengths

The following strengths were consistent across multiple objectives:

Strength 1: *The coordination required to design, plan, and execute this exercise resulted in stronger relationships between City of Hope National Medical Center and external partners, such as the Disaster Resource Center hospitals, the Federal Coordinating Center and Long Beach VA Hospital, the City of Duarte Public Safety Department, the American Red Cross, Los Angeles County Radiological Health, and the Radiological Injury Treatment Network.*

Analysis: Building relationships emerged as an untested objective throughout this exercise planning process. Multiple organizations and agencies came together to make this exercise a success. The planning process fostered countless conversations that deepened participants' understanding of roles during an RITN activation and NDMS transportation event.

Strength 2: *This exercise has built a momentum towards greater preparedness and emergency management capabilities at City of Hope as a whole.*

Analysis: While the scenario may have focused on an RITN event, COH staff have benefited from conducting their largest full scale exercise as a facility in terms of response to any hazard. COH does not have an Emergency Room and does not typically receive trauma patients, and as such is not typically involved in emergency response. This exercise has demonstrated to COH staff the capability of their hospital in assisting in a disaster scenario. This has particular meaning in the age of Boston Marathon bombings and Active Shooter events. Testing HCC activation, emergency communications and messaging, and triage will be immensely useful in any hazardous situation.

Strength 3: *Coordinating the COH's RITN full scale exercise with the larger NDMS exercise taking place through the local Federal Coordinating Center allowed all parties involved to observe the entire RITN process, from notification to transport to receipt and treatment.*

Analysis: This has built momentum towards greater regional planning for not only an RITN activation, but for any NDMS event. COH and other NDMS receiving facility staff were able to actively participate in the transport and receipt of patients at the Los Alamitos Joint Forces Training Base, gaining valuable insight into the triage, tracking, and security that NDMS patients go through before arriving at any receiving facility. All participants were given access to training on the JPATS system so that receiving hospitals could track their patients and prepare accordingly before they arrived.

Strength 4: *This exercise saw unprecedented support and participation from COH staff members.*

Analysis: It was expressed many times throughout the exercise that the level of participation on the part of COH staff, especially at time when they were over 100% capacity as a facility, was noteworthy and to be praised. This sets a positive precedent for future exercises and trainings to help encourage other COH staff and departments to become more involved.

Strength 5: *Coordinating a simultaneous decontamination training with the Disaster Resource Center hospitals at COH on the third day of the exercise allowed for a large contingent of other hospital staff to observer the exercise, increasing awareness and interest in the RITN program for other hospitals.*

Analysis: Currently, COH is one of the only RITN receiving facilities in Southern California. Other facilities, such as UCLA and Cedars Sinai had the opportunity through this exercise planning process to see the logistics involved in becoming an RITN facility. As a result, they have expressed interest in potentially becoming additional RITN centers, increasing the RITN network nationally.

Areas for Improvement

Area for Improvement 1: *Communications. Getting the appropriate information to the correct individuals at the right time was difficult throughout the exercise. Players throughout the exercise often resorted to going to Chuck Pickering, who was the Safety Officer but also one of the lead exercise planners.*

Analysis: Communications is always a challenge in any full scale exercise. A number of issues resulted in communication difficulties, including a lack of radios for staff in each area of the hospital participating, a lack of phones in the Family Support Center, a lack of appropriate Labor Pool staff to serve as runners, and a lack of familiarity with the HCC organization and who to contact for certain requests. The various sections of the HCC (Operations, Logistics, etc.) were also siloed into separate rooms, which some felt made it difficult to be aware of conversations or issues happening in other areas. However, having all HCC staff in one large room can make it difficult to streamline discussions. With the upcoming construction going on at COH, it was suggested that a larger, new location for the HCC be identified. Additional radios should be purchased, and additional HCC training conducted for all staff so they are familiar with whom to contact for what purposes. It was also suggested that having a camera with a live video feed between the HCC and the Triage or Treatment

Areas would help as well. Finally, establishing clear policies of what needs to be communicated to the HCC and when will help staff assigned to other areas understand when to ask for help, and when to identify solutions themselves.

Area for Improvement 2: *Patient receipt, decontamination, triage, and treatment were all conducted outdoors during the exercise on Day Three, but many staff commented that this would not necessarily reflect real-world operations. Triage and Treatment would be better served taking place in a commandeered clinic or library area.*

Analysis: The exercise took place outdoors because of concerns of exercise activity interfering with day-to-day operations at the hospital. However, future exercises and trainings should mirror real-world operations as closely as possible. If indoor locations might be used for RITN patient receipt, triage, or treatment, they should be specifically designated locations in the RITN annex of the COH EOP and should be tested to ensure the specifications of each room or building do not interfere with patient care and staff safety.

Area for Improvement 3: *Standard Operating Procedures for an RITN event listed in the EOP for COH were rarely referenced or utilized during exercise play.*

Analysis: While the COH EOP does include a specific RITN annex, and has a dedicated Patient Flow and Infectious Disease Annex that also applies to the receipt of a surge of patients, most players did not read or refer to these plans during play. Though copies of the RITN Concept of Operations were also made available during the exercise, this document was also not referenced widely. Controllers and Evaluators who prompted players with questions about current plans did not receive answers referencing these documents. While it is not uncommon for many hospital staff to be unfamiliar with specific policies or procedures, staff should be aware of the plans and policy documents available to them, and encouraged to reference them during a real event. These plans and policies should be updated and incorporated more fully into staff training opportunities. Job Action Sheets and other Just-In-Time (JIT) Training material should also be advertised to staff as potential resources to utilize.

SECTION IV: ANALYSIS OF CORE CAPABILITIES

The purpose of this After Action Report (AAR) is to provide City of Hope National Medical Center (COH) and its partners with a summary of observations and findings from the full scale exercise. A summary of key strengths and areas for improvement is provided below along with analysis of feedback. Corrective actions regarding COH's response to the exercise are identified along with the agencies and organizations holding responsibility for post-incident improvement in Appendix A: Improvement Plan.

The suggested actions in the Improvement Plan should be viewed as recommendations only.

In some cases, COH may determine that the benefits of implementation are insufficient to outweigh the costs. In other cases, alternative solutions that are more effective or efficient may be identified. COH, and other agencies as appropriate, should review the recommendations and determine the most appropriate action and the resources needed (time, staff, funds) for implementation.

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 2 includes the core capabilities, exercise objectives and performance ratings for each core capability as observed during the exercise and determined by the evaluation team. Because there were multiple days, exercise sites, and evaluators, some objectives received multiple ratings. In order to consolidate the information, the table below only reflects the rating provided on average by evaluators.

Table 2-1: Summary of Core Capability Performance Day 1 (Based on Median PSMU Scores)

HPP Capability	Objective	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Emergency Operations Coordination Information Sharing	1. Activate the City of Hope (COH) National Medical Center Hospital Command Center (HCC) and demonstrate effective internal and external communications with the activation of the National Disaster Medical System (NDMS), in preparation to receive, place, and care for patients who fit the requirements for the Radiological Injury Treatment Network (RITN).	X	-	-	-
Medical Surge Information Sharing	2. Conduct rapid discharge and cancellation of elective procedures to open up bed capacity, and submit Capabilities Report to RITN through the HealthCare Standard (HCS).	X	-	-	-
Healthcare System Preparedness Medical Surge	3. Prepare for receipt of patients by briefing all staff, deploying additional equipment and supplies, and reviewing departmental capabilities to handle a surge of patients.	X	-	-	-

HPP Capability	Objective	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Healthcare System Preparedness Information Sharing Medical Surge	4. Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).	X	-	-	-

Table 2-2: Summary of Core Capability Performance Day 2 (Based on Median PSMU Scores)

HPP Capability	Objective	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Emergency Operations Coordination Information Sharing	1. Partial activation of the COH National Medical Center Hospital Command Center (HCC).	X	-	-	-

Table 2-3: Summary of Core Capability Performance Day 3 (Based on Median PSMU Scores)

HPP Capability	Objective	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Emergency Operations Coordination Information Sharing Medical Surge Responder Safety and Health	1. Receive and appropriately treat RITN designated patients with marrow toxic injuries from Los Alamitos Joint Forces Training Base through the NDMS and the FCC.	X	-	-	-
Medical Surge Information Sharing	2. Coordinate patient tracking and evidence and sample collection as necessary between departments and the HCC.	-	X	-	-
Healthcare System Preparedness Emergency Operations Coordination	3. Establish a Family Support Center at COH and activate a liaison to work with other agencies as necessary to facilitate family reunification efforts, including coordination with the City of Duarte Public Safety department, local law enforcement, the American Red Cross, LA County EMS, and out-of-state healthcare and emergency management partners.	-	X	-	-

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified.
- Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement. Following Homeland Security Exercise and Evaluation Program (HSEEP) recommendations, this section reports observations and analysis from evaluators but does not go into detail regarding recommended corrective actions. Corrective actions are outlined in Appendix A: Improvement Plan. This report evaluates both Hospital Preparedness Program (HPP) Capabilities as well as National Core Capabilities.

Note – the following evaluations are combined from Days One, Two, and Three of the exercise.

HPP CAPABILITY: EMERGENCY OPERATIONS COORDINATION

NATIONAL CORE CAPABILITY: OPERATIONAL COORDINATION / OPERATIONAL COMMUNICATIONS

HPP Capability Description: Emergency operations coordination in healthcare is the ability for healthcare organizations to engage with incident management at the Emergency Operations Center or with on-scene incident management during an incident to coordinate information and resource allocation for affected healthcare organizations. This is done through multi-agency coordination representing healthcare organizations or by integrating this coordination into plans and protocols that guide incident management to make the appropriate decisions.

National Core Capability – Operational Coordination Description: Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

National Core Capability – Operational Communications Description: Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

Objective 1 (Day One): Activate the City of Hope (COH) National Medical Center Hospital Command Center (HCC) and demonstrate effective internal and external communications with the activation of the National Disaster Medical System (NDMS), in preparation to receive, place, and care for patients who fit the requirements for the Radiological Injury Treatment Network (RITN).

TASK: The Incident Commander (IC) will notify the COH Operator to alert the staff of the emergency by announcing the appropriate code [Code Triage Level III] through the COH notification system, overhead page, and any alternate announcements (email, radio, call lists, etc.).

Strengths

The following strengths can be attributed to this task:

Strength 1: *RITN successfully notified the RITN Coordinator of the event and the request for an RITN Capabilities Report. The RITN Coordinator, during discussions, indicated they would call the House Supervisor, who then calls the Admin On Call. The Admin On Call then utilizes Everbridge and a PBX notification to notify the hospital staff.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Additional clarity written down in the RITN section of the EOP would help identify exactly who needs to call who during an RITN request for a capabilities report. The hospital staff were notified successfully, but it was unclear how the HCC staff would be called to report to the HCC and when. It was especially unclear how they would be called to report to the HCC after-hours. The task called for the Incident Commander to take charge of notifying individuals, however, no Incident Commander was assigned during initial notifications.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Those who may be assigned roles within the HCC, either during the day or after-hours, should be notified beforehand of how, when, and from whom they will be notified to report to the HCC in an RITN activation. The Admin on Call may need to be automatically assigned the role of Incident Commander for initial notifications to ensure consistency and efficiency until another Incident Commander is assigned. Many of the players seemed unfamiliar with the Hospital Incident Command System. Quarterly HICS trainings and monthly “mini-drills” testing the notification and call-down portions of response can help hospital staff immensely, especially if there is high turnover.

TASK: Activate the Hospital Incident Command System (HICS) and the HCC at a Level Three (Full Activation) in response to a Radiation Incident within 1 hour of notification of the event and NDMS activation.

Strengths

The following strengths can be attributed to this objective:

Strength 1: *COH possesses the current capabilities and capacities to address a range of medical needs for a surge of 20+ patients with radiological injuries. This was witnessed in the ability of the planning team to prioritize and strategize in preparation to receive patients.*

Strength 2: *A discussion took place as part of the general briefing regarding the essential HICS positions that would be need to be filled for an activation of this type and magnitude as well as the way in which personnel would be physically notified.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *During Day One of exercise play, those in the HCC did not determine their level of activation until a Controller prompted them. Few were aware that in the EOP, an RITN activation constitutes an immediate Level III activation.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Additional training on the RITN annex in the EOP and the Hospital Incident Command System roles is recommended. The annex itself should also be revisited and revised according to the results of this After Action Report. It was mentioned at the After Action Meeting that the level designations used (Level I, II, and III) were not helpful or intuitive for most of the staff. While additional training on the annex is recommended in general, COH leadership did not feel that general staff needed to be aware of the level designations. On the contrary, they felt this would lead to more confusion and debate during an RITN activation. The Lead Safety Officer at COH should be the only designated individual to make level activation determinations.

TASK: Activate and include the Finance branch in HCC activation and HCC operations.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Finance branch was successfully activated and integrated into exercise play.*

Strength 2: *The group walked through the primary, secondary, and tertiary methods for notification in great detail during Day One discussions.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The Finance section was initially unclear in their roles during initial RITN activation and preparation to receive patients.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Job Action Sheets for each role within the various sections of the HCC should be re-examined to include specific recommendations and considerations in an RITN activation. Future emergency preparedness trainings should incorporate the Job Action Sheets and scenario-specific guidelines so all staff are aware they exist and how to use them.

Objective 1 (Day Two): Partial activation of the COH National Medical Center Hospital Command Center (HCC).

TASK: Demonstrate effective internal and external communications in tracking and receiving RITN patient(s) through NDMS.

Strengths

The following strengths can be attributed to this task:

Strength 1: *COH staff were able to participate in the Los Alamitos Joint Forces Training Base exercise and track the ten patients designated by NDMS and RITN for transportation to COH. All ten patients and their profiles were successfully entered into their Joint Patient Assessment and Tracking System (JPATS) and sent to COH.*

Strength 2: *Internally at COH, staff were able to communicate clearly and effectively between the Decontamination, Triage, and Treatment areas.*

Areas for Improvement

The following areas for improvement were noted with this task:

Area for Improvement 1: *Some of the patients designated for transportation to COH should not have been, including a pregnant woman and a patient with traumatic injuries that could not be treated at COH. Part of this was an artificiality of the exercise to test COH's ability to receive complex patients.*

Area for Improvement 2: *Internally, on Day Three, there were not enough radios for responding staff members. Part of this was a result of the fact that controllers and evaluators were utilizing the HCC radios for exercise play.*

Area for Improvement 3: *Internally, on Day Three, communication between the HCC (Flash Building) and the operational areas was sparse. Staff in the various decontamination, triage, and treatment areas, were not aware of whom to contact in the HCC for various requests.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Additional radios should be purchased, and future RITN exercises or trainings should incorporate radio training. Safety Officers should routinely check all radios for potential "dead spots" around campus. Other radio channels should be reserved for HCC activation and use. Certain HCC roles should be pre-assigned a radio. Physicians and nurses should be trained in HCC roles and responsibilities, even if they are not staffing the HCC, so they are aware of who is responsible for assisting with certain requests during an event.

TASK: Coordinate conference call between COH physicians and REAC/TS.

Strengths

The following strengths can be attributed to this task:

Strength 1: *As a result of planning for this effort, COH was able to build relationships and engage in information sharing between COH physicians and REAC/TS staff.*

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: COH EOP, RITN Concept of Operations
Analysis: COH had not yet had an opportunity to test the use of REACT/S technical expertise during an RITN exercise. As such, building the initial relationships and scheduling a REAC/TS call as part of the exercise resulted in a stronger likelihood of this expertise being utilized in an actual event. COH was able to determine the appropriate points of contact and the appropriate expectations in terms of the expertise the REAC/TS staff could offer during an RITN activation. As this call was artificially setup to run as smoothly as possible as part of the exercise, no areas for improvement were noted.

Objective 1 (Day Three): Receive and appropriately treat RITN designated patients with marrow toxic injuries from Los Alamitos Joint Forces Training Base through the NDMS and the FCC.

TASK: Activate the Radiological Emergency Response Team(s) as necessary.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Emails and phone calls activating each position went out in a timely manner.*

Strength 2: *The team was successfully activated in pre-determined roles quickly and efficiently.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The decontamination team, while quickly activated, needed additional training to establish the proper flow through the Decontamination Area, as well as how to efficiently utilize gurneys through the area without cross-contaminating.*

Area for Improvement 2*: A second Radiological Emergency Response Team to staff the second shift was not identified, nor were breaks discussed for Decontamination Area staff.*

Area for Improvement 3: *One of the patients fell in the Decontamination Area during the exercise and it took a while for the staff to respond and assist them.*

Reference: COH EOP, RITN Concept of Operations

Analysis: While the pre-determined Radiological Emergency Response Teams acted and reported to the Decontamination Area quickly, once there they needed additional training. A second, third, and fourth team should be identified amongst other COH staff to provide backups and staff for second, third, and fourth operational periods. Staff also need to be aware that in order to accommodate the influx of patients, they may not be working with supervisors or colleagues that typically hold the assigned incident duties. The Safety Officer needs to ensure those in full decontamination turnouts are taking regular breaks, and that additional chairs and water are provided in this area for staff. An extra staff member should be added to the Radiological Emergency Response Team to provide support and step in as needed, as well as additional volunteers at the Decontamination Area to assist patients while they wait. Patients should be provided with a chair or table to balance with while getting their feet monitored properly. Not having something to balance with puts them at risk of a fall and resulted in the probe being contaminated on several occasions.

TASK: Draft and update the Incident Action Plan in the HCC.

Strengths

There were no strengths attributed to this task.

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The creation of the Incident Action Plan (IAP) was discussed in the HCC briefings, but was not drafted to completion during exercise operations.*

Reference: COH EOP, RITN Concept of Operations

Analysis: COH Staff responsible for creating the IAP did not realize that drafting and updating the IAP was a high priority position task and correspondingly, leadership within the HCC never requested the IAP. Thus, the document was never created or compiled. More training is needed for all staff to understand their roles and more importantly their responsibilities within those roles to increase oversight and accountability of all planning and coordination tasks.

Objective 3 (Day Three): Establish a Family Support Center at COH and activate a liaison to work with other agencies as necessary to facilitate family reunification efforts, including coordination with the City of Duarte Public Safety department, local law enforcement, the American Red Cross, LA County EMS, and out-of-state healthcare and emergency management partners.

TASK: Coordinate with the City of Duarte Public Safety department to request family reunification assistance. Reach out to LA County EMS and the Red Cross for technical assistance.

Strengths

The following strengths can be attributed to this task:

Strength 1: *COH staff in the Family Support Center reached out to the HCC to request assistance from the City of Duarte in setting up an additional outside family assistance center. Because of the City of Duarte Public Safety Departments' involvement in the exercise planning process, City of Hope staff were aware they could request assistance and were able to file the request through the appropriate channels at the HCC and to the SimCell.*

Strength 2: *The American Red Cross participated in exercise planning and helped to mentor Family Support Center staff at COH during the exercise. The American Red Cross was able to provide expertise, training, and guidance on the types of assistance available in an RITN activation for Los Angeles County.*

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: COH EOP, RITN Concept of Operations

Analysis: Due to real-world emergencies, the City of Duarte Public Safety Department was not able to simulate their role in providing overflow assistance with setting up another local Family Assistance Center in the community. However, the strength in having both the City of Duarte Public Safety and the American Red Cross as part of the planning team for this exercise ensured City of Hope staff benefited from their expertise and learned of the assistance each would be able to provide in an RITN activation. While Los Angeles County has officially stated they will not open a County Family Assistance Center for an RITN Activation, given that the victims and family members will primarily be out-of-state, it is recommended that future discussions be held to discuss the role of LA County in an RITN or NDMS activation. Future exercises should more robustly include LA County officials if possible.

TASK: Coordinate with law enforcement and FBI as necessary for evidence and sample collection upon request.

Strengths

There were no strengths attributed to this task.

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: None

Analysis: After further discussions with local law enforcement and the FBI during the planning stages, it was determined most of their involvement in an RITN scenario would be at the scene of the event, rather than at the RITN receiving hospital. COH staff did not reach out to local law enforcement or the FBI during exercise play. As with the family assistance center discussions mentioned above, it is recommended that future discussions be held to discuss the role of local law enforcement and the FBI in an RITN event, and that all future exercises should test these roles.

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HPP CAPABILITY: INFORMATION SHARING

NATIONAL CORE CAPABILITY: INTELLIGENCE AND INFORMATION SHARING

HPP Capability Description: Information sharing is the ability to conduct multijurisdictional, multidisciplinary exchange of public health and medical related information and situational awareness between the healthcare system and local, state, Federal, tribal, and territorial levels of government and the private sector. This includes the sharing of healthcare information through routine coordination with the Joint Information System for dissemination to the local, state, and Federal levels of government and the community in preparation for and response to events or incidents of public health and medical significance.

National Core Capability Description: Provide timely, accurate, and actionable information resulting from the planning, direction, collection, exploitation, processing, analysis, production, dissemination, evaluation, and feedback of available information concerning physical and cyber threats to the United States, its people, property, or interests; the development, proliferation, or use of WMDs; or any other matter bearing on U.S. national or homeland security by local, state, tribal, territorial, Federal, and other stakeholders. Information sharing is the ability to exchange intelligence, information, data, or knowledge among government or private sector entities, as appropriate.

Objective 1 (Day One): Activate the City of Hope (COH) National Medical Center Hospital Command Center (HCC) and demonstrate effective internal and external communications with the activation of the National Disaster Medical System (NDMS), in preparation to receive, place, and care for patients who fit the requirements for the Radiological Injury Treatment Network (RITN).

TASK: The IC or Liaison Officer will notify the following external agencies of activation: LA County Emergency Medical Services (EMS) Agency, City of Duarte Public Safety, Fire, LA County Medical Alert Center, Long Beach VA Hospital / NDMS and the NDMS Coordinator, County Sheriff, Red Cross, the CDC (page 18 of COH EOP), and the Disaster Resource Center (DRC) network.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Staff on Day One successfully reviewed the activation of the Los Angeles County Multi-Agency Coordination Center (MAC) and how to utilize the MAC to help with patient transfers to other facilities.*

Strength 2: *The planning team outlined the external partners who would be notified during the event as well as the way in which partners will be notified.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *On Day One, other than the IC, the other HCC roles were not assigned until a controller prompted players. This included the Liaison Officer. It was unclear who amongst the players on Day One would be contacting other agencies in the event of an RITN activation.*

Reference: COH EOP, RITN Concept of Operations

Analysis: There was vigorous discussion regarding the tasks and steps that needed to happen to receive RITN patients such as requesting more supplies and contacting surrounding hospitals to inquire about bed capacity. However it was unclear who in the room or during a real incident would implement these tasks. The group needed to clearly identify/assign roles as tasks to avoid duplication or mishandling of efforts.

Objective 2 (Day One): Conduct rapid discharge and cancellation of elective procedures to open up bed capacity, and submit Capabilities Report to RITN through the HealthCare Standard (HCS).

TASK: Submit Capabilities Report to RITN through the HealthCare Standard (HCS) found at www.rtin.net.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The RITN Coordinator successfully transferred the RITN Capabilities Report, and identified a contingency method (fax) when prompted that the internet was down.*

Strength 2: *The RITN Coordinator utilized the expertise and advice of those present in the Helford Command Center to fill out the information required on the RITN Capabilities report accurately and efficiently.*

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: COH EOP, RITN Concept of Operations

Analysis: Some of the staff required an explanation from the RITN observers present on why certain categories were included in the RITN Capabilities Report, such as Peds Hem/Onc and Adult PACU information. The exercise served as a useful training for staff on the meaning behind the required categories on the form.

Objective 4 (Day One): Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).

TASK: Coordinate with the Disaster Resource Center (DRC) hospitals and other partner agencies/departments for additional supplies of equipment.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team determined that resource requests would be sent to the DRC hospitals through the MAC and LA County by phone.*

Strength 2: *The DRC coordinator was promptly included into the discussion to provide the group an overview of DRC supplies and capabilities, and timelines*.

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: An external resource request was not made on Day One or Two of exercise play, in the planning leading up to patient receipt.

Reference: COH EOP, RITN Concept of Operations

Analysis: Though this may have been only an exercise artificiality, staff should not feel hesitant about requesting outside resources from LA County and the DRC in the event of an RITN activation, especially well in advance of patient receipt.

Objective 1 (Day Two): Partial activation of the COH National Medical Center Hospital Command Center (HCC).

TASK: Demonstrate effective internal and external communications in tracking and receiving RITN patient(s) through NDMS (Public Messaging Component – *see previous capability for additional discussion of tracking*).

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Communication Section held robust discussion considering the way and means that City of Hope has at its disposal to disseminate a message of this type to staff, partners, and the public.*

Strength 2: *The Communications Section was able to craft a message to the public during the duration of the exercise.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The Public Information Officer and Communications Team in the HCC were not prepared to quickly create RITN-centered messaging to respond to media and public inquiry.*

Area for Improvement 2: *Some of the information being disseminated from the HCC staff conflicted depending on who was being asked.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Creating RITN-centered press release, fact sheet, and statement templates for quick and easy use during an activation would help to ensure a quicker response. A process for vetting any information being released to the media or the public through Communications and the Public Information Officer at the HCC needs to be integrated into training and exercises, as well as the current RITN-centered annex of the EOP.

Objective 2 (Day Three): Coordinate patient tracking and evidence and sample collection as necessary between departments and the HCC.

TASK: Assign patient trackers from the Patient Tracking Unit to track all patients entering, as they are processed through care and leaving the hospital.

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Strengths

The following strengths can be attributed to this task:

Strength 1: *All patients were assigned wristbands and identified/re-identified from station to station.*

Strength 2: *Patients were transferred accurately and efficiently from area to area (e.g. Decontamination to Triage, Triage to Treatment, etc.). COH staff utilized paper charts to keep track of each patient.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *There is a need for computer access to register and maintain updated patient profiles and resource orders or requests.*

Area for Improvement 2: *Admission Personnel were not present and did not participate in the drill.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Though having paper charts is a helpful contingency, should electronic tracking mechanisms fail, paper charts can often get lost and may be difficult to continuously update. A recommendation is to incorporate three positions for patient tracking – one person to complete the paper chart and wrist band, one to enter the patient profile into ReddiNet or other COH electronic tracking software, and a third to enter the patients' updated information into the NDMS system (JPATS). If electronic tracking mechanisms are used on-site, IT staff or personnel should be on-site or available upon request to help with any issues. Admission personnel should be integrated into additional training and exercise opportunities so they are familiar with these tracking and admission modalities in an RITN activation.

TASK: Utilize the HICS Form 254 – Disaster Victim Patient Tracking Form, to track all patients, and ensure patient information is regularly updated within ReddiNet.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Disaster Victim Patient Tracking Forms were utilized to track all patients, with paper charts.*

Strength 2: *Staff identified the needs of patients and activated and alerted additional COH personnel as necessary.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1*: The Triage Forms used were at least ten years old and were missing basic information categories such as the date of birth.*

Reference: COH EOP, RITN Concept of Operations

Analysis: The forms used in the triage and treatment areas need to be updated and cross-linked to electronic records systems including JPATS, ReddiNet, and other systems utilized at COH.

HPP CAPABILITY: MEDICAL SURGE

NATIONAL CORE CAPABILITY: PUBLIC HEALTH, HEALTHCARE, AND EMERGENCY MEDICAL SERVICES

HPP Capability Description: The Medical surge capability is the ability to provide adequate medical evaluation and care during incidents that exceed the limits of the normal medical infrastructure within the community. This encompasses the ability of healthcare organizations to survive an all-hazards incident, and maintain or rapidly recover operations that were compromised.

National Core Capability Description: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

Objective 2 (Day One): Conduct rapid discharge and cancellation of elective procedures to open up bed capacity, and submit Capabilities Report to RITN through the HealthCare Standard (HCS).

TASK: The Nursing House Supervisor and/or Administrative Nursing Supervisor will determine if a meeting of the Bed Management Team is necessary to facilitate the rapid and efficient discharge of patients.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Nursing House Supervisor successfully completed a methodical bed management team meeting and identified an agreed upon number of open beds – 38 over the course of 72 hours.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The number of beds that City of Hope could make available in an RITN activation often varies greatly from one RITN discussion or event to another.*

Reference: COH EOP, RITN Concept of Operations

Analysis: The number of beds that COH could provide often varies depending on the staff involved and their understanding of their role and need in an RITN activation. Part of this exercise aimed to push COH staff to envision a larger surge of patients than the usual amount they had planned for. A set of guidelines or previously used numbers included in the RITN annex of the EOP could help to assure bed management team members that they are not over or under-promising bed capacity.

TASK: If or once activated, the Bed Management Team will evaluate the availability of appropriately qualified staff to meet patient care requirements based on the information given by RITN.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team successfully determined they had 30 staff available for remote donor consult in addition to the staff required to support up to 38 RITN patients being received at COH.*

Strength 2: *Nursing Staff identified internal and external partners that would be contacted and incorporated into the bed management process.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Assessments of the availability of additional support staff, including staff for the Family Support Center, Admission Staff, Interpreter/Bi-lingual staff and Labor Pool staff should be incorporated into Bed Management Team discussions.*

Area for Improvement 2*: On Day Three of the exercise, Respiratory Therapy specialists were also identified as a need during patient triage and treatment.*

Reference: COH EOP, Patient Flow Annex, RITN Concept of Operations

Analysis: The COH staff quickly identified the physicians needed for remote donor consult during initial discussions on Day One, but on Day Three the need for even more physicians, runners, admission staff, and interpreters became clear. During the exercise on Day Three, COH identified the need for interpreters or other language speakers. They were quickly able to identify a Spanish speaker amongst the present staff, but also encountered additional languages such as Hmong.

As most RITN activations will involve patients coming from out-of-state with different populations, COH may need to quickly access interpreters or interpreting technology not quickly accessible in Los Angeles County. Vendor Agreements with Interpretation Services should be researched and invested in for future RITN events. Admission, Donor Consult physicians, Respiratory Therapy

specialists, Labor Pool, and Volunteer staff should be more fully engaged in future RITN training and exercise events at COH.

TASK: The Nursing House Supervisor will direct efforts to cancel elective surgery cases, divert patients waiting for admission on a case by case basis and reschedule return clinic visits in order to open up bed capacity.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Nursing House Supervisor methodically discussed how COH staff would be able to adjust, make bed space, and admit patients quickly following a surge.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Though some injects during the exercise prompted players to consider transporting patients to other facilities, including a long-term care facility and a local clinic, players did not follow through on how to transport patients to these facilities.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Given the seriousness of a potential RITN event, and the fact that COH is one of the only RITN centers in Southern California, an event that calls upon COH to expand capacity significantly may occur. Future trainings and exercises should push COH staff to walkthrough the process of transporting some of COH's existing patients to nearby facilities, as this can be a very complex process.

TASK: Discharge any patients no longer meeting medical necessity for acute care in a timely manner.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team discussed in depth the current COH bed capacity/potential capacity.*

Strength 2: *The planning group discussed the rational and decision process behind labeling patients that "no longer meet medical necessity for acute care."*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *There is a need for staff to re-evaluate other areas in the hospital and clinics that could potentially be converted into a bed, or the types of patients that could be discharged.*

Reference: COH EOP, RITN Concept of Operations

Analysis: As one of the only RITN centers in California, COH may need to be able to receive a much larger number of patients than the 38 determined during the exercise discussions. Future trainings and exercises should push COH staff to walkthrough the process of transporting some of COH's existing patients to nearby facilities, as this can be a very complex process, as well as tackle specialized patients such as pediatrics.

Objective 3 (Day One): Prepare for receipt of patients by briefing all staff, deploying additional equipment and supplies, and reviewing departmental capabilities to handle a surge of patients.

TASK: Position and deploy existing logistics and supplies to receive patients.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team identified the appropriate pharmaceutical supplies through the Pharmacy.*

Strength 2: *The Bed Management Team identified blood supplies as a potential issue, and began planning and preparations for additional blood drives in anticipation of receiving RITN patients.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The current blood supply was unknown to the Bed Management Team, and it was unclear who to contact and include in bed management discussions of blood supplies.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Blood supplies and blood typing were not as incorporated into the exercise as initially hoped. Future trainings and exercises related to RITN activation should more fully incorporate the laboratory and blood donor components of such an event.

TASK: Prepare Security staff for incoming patient surge by providing staff briefings, establishing ingress and egress boundaries, confirming visitor policies during RITN patient receipt, and establishing a secure area for press.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team discussed the need for additional security staff during initial discussions. However, the process was not clear on how they would be informed of the event.*

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: COH EOP, RITN Concept of Operations

Analysis: Security staff notification of an RITN event should be incorporated into the current RITN notification protocols, and a specific HCC role should be assigned this responsibility. Security would likely have been addressed further had the IAP been completed as part of exercise play.

TASK: Review COH capability to run chemistry panels (CHEM) and Complete Blood Counts (CBC) for an influx of patients.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Staff successfully demonstrated coordinating with internal and external partners to medically manage the first wave of victims.*

Areas for Improvement

There were no areas of improvement attributed to this task.

Reference: COH EOP, RITN Concept of Operations

Analysis: None

TASK: Review HLA laboratory capabilities to handle a surge in patient donor matching needs.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team discussed the available physicians needed for donor evaluation in their staffing considerations.*

Strength 2: *The group discussed coordination and communication between the HLA Laboratory and Family Support Center in meeting the need for patient donor matching.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The HLA lab capacity in particular was not discussed during the exercise unless prompted.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Future trainings and exercises should more fully incorporate the HLA Laboratory and their information needs during an RITN activation.

Objective 4 (Day One): Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).

TASK: Utilize the appropriate Department Resource Request Form in the COH Emergency Operations Plan for requests made at the department level and submit to the HCC.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Bed Management Team clearly articulated, during the Day One discussions, the resource request process from each department.*

Strength 2: *The grouped outlined the positions that would be responsible for submitting resource requests. However, this was only done when prompted by a controller.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The Department Resource Request Form, discussed in the EOP, was not mentioned or utilized during the exercise.*

Reference: COH EOP, RITN Concept of Operations

Analysis: If the Department Resource Request Form in the EOP is outdated or no longer valid, the resource request section of the EOP should be revised accordingly.

Objective 1 (Day Three): Receive and appropriately treat RITN designated patients with marrow toxic injuries from Los Alamitos Joint Forces Training Base through the NDMS and the FCC.

TASK: Test the ability to resupply blood, platelets, and pharmaceuticals as necessary.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Blood supply was determined to be adequate to sustain multiple transfusions in the scenario and with the patient profiles submitted. Outside vendors' supplies were determined to be available to replenish the blood supply if in-house collections are not sufficient.*

Strength 2: *There was consistent information exchange between the triage area and the HCC confirming and maintaining inspection of adequate supplies of blood and pharmaceuticals.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Patients may need treatment or support in the Triage Area while waiting for beds. There was a need for some additional medical supplies and fluids in the Triage Area that were not requested from the HCC. There would also be an associated need to meet storage requirements in the Triage Area for blood products, medications, fluids, etc., in order to ensure timely administration.*

Area for Improvement 2: *During the exercise on Day Three, the blood center only received two phone calls regarding blood supply or blood testing. No actual patient test requests came to the blood bank. As a result, the blood bank was not adequately tested during the exercise.*

Area for Improvement 3: *Rapid response boxes were not available.*

Reference: COH EOP, RITN Concept of Operations

Analysis: In future exercises, the patient profiles used should include more patients requiring blood transfusions. If possible, the activation and use of an outside vendor should be tested as part of future exercise objectives. Equipment and medical supplies in the Triage Area should be re-examined to better meet the needs of patients waiting. Rapid response boxes for each area – decontamination, triage, etc. – could be prepared and setup in the HCC to be rapidly distributed to each area if an outdoor organization is used again in the future.

TASK: Assess incoming patients to determine the level of Acute Radiation Syndrome (ARS).

Strengths

The following strengths can be attributed to this objective:

Strength 1: *COH staff were able to evaluate and assess patients accurately given their symptoms.*

Strength 2: *COH physicians, nurses, and support staff were all very compassionate and patient in their care of the patients.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The first wave of patients were in the Decontamination Area for too long as staff re-acquainted themselves with the Decontamination Area procedures, often delaying patient care and sometimes resulting in bottlenecks.*

Area for Improvement 2: *Some of the boundaries between Decontamination and Triage became unclear. This resulted in some cross-contamination as one of the contaminated patients traveled through both areas. The physicians and nurses were also seen crossing from Decontamination to Triage fairly frequently.*

Area for Improvement 3: *There was no security in the Decontamination Area, so some family members were able to wander in.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Having additional supplies at Decontamination and Triage would help to alleviate some of the inevitable delays. This could include integrating runners to supply a steady flow of wheelchairs/gurneys to help patients that may still be waiting in between one station and another. Decontamination staff should run through a practice round of decontamination a few times before the first patient arrives, to ensure efficiency from the start. In addition, having backup portal monitors or requests in to LA County Radiological Health for additional decontamination supplies as soon as the RITN Activation is made can ensure the Decontamination Area has the ability to quickly expand if need be. Additional training and support staff, including security, to monitor area boundaries can help improve staff's techniques of quickly identifying potential cross-contamination dangers.

TASK: Activate the Marrow Unrelated Donor (MUD) department and identify potential donor matches for those patients requiring transplants.

Strengths

The following strengths can be attributed to this task:

Strength 1: *COH Laboratory medical personnel were actively collecting samples for typing to determine potential transplant candidates.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Additional physicians were needed in the Triage and Treatment Areas to provide consults on potential donor matching needs.*

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Reference: COH EOP, RITN Concept of Operations

Analysis: It was noted during the exercise that there were not enough physicians in the triage area to provide consultations to meet the surge of patients. This can be attributed to the fact that the hospital was in reality at capacity and could not dedicate more physicians to the exercise. It was also mentioned that laptops and internet would have been provided during a real incident to help track and speed up the identification process.

Objective 2 (Day Three): Coordinate patient tracking and evidence and sample collection as necessary between departments and the HCC.

TASK: Ensure that evidence and sample collection information is included with patient tracking information.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Patient information was communicated well.*

Strength 2: *Staff in the treatment and triage area described how and where sampling would be conducted for patients as needed. However, no sampling took place during the exercise.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The last four sample collection orders were verbally relayed and later written down on the patient charts. Verbal orders can be difficult to track later on.*

Area for Improvement 2: *The Logistics Section in the Hospital Command Center did not enforce order tracking in the various triage and treatment areas.*

Reference: COH EOP, RITN Concept of Operations

Analysis: COH should assess the need to enter and utilize computer resource tracking, including evidence, personal belonging, and sample collection. In addition, the Logistics Section staff may need additional training or direction to enforce and ensure patient tracking, resource tracking, and sample collection are being tracked across both digital and paper platforms.

TASK: Coordinate with the Family Care Unit Leader to ensure family member identification and reunification efforts are incorporated into patient tracking efforts.

Strengths

The following strengths can be attributed to this task:

Strength 1: *Family members were identified quickly within the various areas of the hospital, whether or not they arrived with the patient or separately. Family members were quickly dispatched to the Family Support Center with a runner or an escort so they did not get lost.*

Strength 2: *Family members were uniformly provided with support services at the Family Support Center, including reunification support. If a family member needed to find or see their family member, the staff at the FSC worked to identify where the patient was located to reassure the family member.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *While utilizing an escort or a runner to dispatch family members to the Family Support Center worked well, COH was short on staff and as a result, skilled staff, such as social services personnel, often escorted the family members. This resulted in a dearth of skilled staff in other locations.*

Area for Improvement 2*: There was no phone or hotline setup at the Family Support Center. When MUD attempted to find a family member for a patient to determine donor matching possibilities, the Hospital Command Center was unable to reach the Family Support Center initially to determine if the patient's family member was there. Ultimately, communication was achieved by utilizing the Controller's radio.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Expanding the labor pool available to COH during an incident of this size and scope would allow for other, less in-demand staff such as custodial or cafeteria staff to serve as runners and escorts for family members. Phones should be added to the

required equipment list for the Family Support Center, and staff there should be trained to be able to setup a hotline for others calling in or being directed from the PBX line. FSC staff should also be equipped with hospital radios and extra runners should traditional communication means fail.

HPP CAPABILITY: HEALTHCARE SYSTEM PREPAREDNESS

HPP Capability Description: Healthcare system preparedness is the ability of a community's healthcare system to prepare, respond, and recover from incidents that have a public health and medical impact in the short and long term. The healthcare system role in community preparedness involves coordination with emergency management, public health, mental/behavioral health providers, community and faith-based partners, state, local, and territorial governments.

Objective 3 (Day One): Prepare for receipt of patients by briefing all staff, deploying additional equipment and supplies, and reviewing departmental capabilities to handle a surge of patients.

TASK: Conduct JIT training for all staff related to the standard radiological precautions of time, distance, and shielding, required personal protective equipment, and on-site "frisking/monitoring" contamination, exposure evaluation, exposure controls and contamination/cross-contamination controls. Utilize REAC/TS technical specialists for JIT training.

Strengths

The following strengths can be attributed to this task:

Strength 1: *On Day Two, REAC/TS specialists were able to provide JIT training and remote consulting on the patient profiles submitted by RITN.*

Strength 2: *The Bed Management team discussed how they would organize JIT training for staff to adjust to patient surge.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1*: While additional decontamination trainings were conducted leading up to the exercise, JIT training materials for decontamination, PPE, and cross-contamination controls should be developed and incorporated more fully into future exercises.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Some of the participants in the treatment and triage areas and the HCC were uncertain in their assigned roles, as they were a departure from their day-to-day roles within the COH System. In the future COH has discussed creating position specific checklists to assist hospital staff in the development, implementation and evaluation of their assigned RITN duties. Job Action Sheets and JIT Training materials should be developed and included in trainings. JIT materials should include slide decks, checklists, talking points, videos, and more.

Objective 4 (Day One): Coordinate resource requests for blood, pharmaceuticals, and personal protective equipment as necessary according to California's Standardized Emergency Management System (SEMS), including coordination with the county and the Medical and Health Operational Area Coordinator (MHOAC).

TASK: Utilize the appropriate Department Resource Request Form in the COH Emergency Operations Plan for requests made at the department level and submit to the HCC.

Strengths

The following strengths can be attributed to this objective:

Strength 1: *The planning team discussed the entire request process from analyzing gaps to confirming receipt of requested materials on Day One.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *On Day Three, resource requests took place, for the most part, verbally and no particular request forms were used. In addition, the HCC Logistics Section did not enforce resource request tracking at each of the locations.*

Reference: COH EOP, RITN Concept of Operations

Analysis: The HCC Logistics section in particular could benefit from additional training. Logistics needs to be able to hold other branches and sections accountable for using the appropriate resource request forms internally, not simply to submit but also to aid in tracking and to contribute to completion of the IAP. Instructions on filling out these forms should be incorporated into the Job Action Sheets for all assigned roles in each area, so they are familiar with how to submit and track a resource request.

TASK: Provide mental health services to the appropriate patients and their families.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The location of the Family Support Center worked very well. The Hope Village Office was far enough away to ensure a calmer, quieter environment for distressed family members, yet close enough to allow runners and escorts to help family members navigate the campus to find their relatives. However, it was suggested that additional signage would help family members to locate it.*

Strength 2: *During exercise planning and conduct, social services staff demonstrated robust support and participation, including training on Family Support Center protocols and policies before the exercise to ensure mental health and other support services were adequately addressed during the exercise.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *It was unclear how staff would be notified or trained on how to interact with family members or how to answer their questions.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Family Support JIT Training materials or reference cards could assist physicians and nurses preparing to receive RITN patients better answer questions and support or console distressed patients and their families.

Objective 3 (Day Three): Establish a Family Support Center at COH and activate a liaison to work with other agencies as necessary to facilitate family reunification efforts, including coordination with the City of Duarte Public Safety department, local law enforcement, the American Red Cross, LA County EMS, and out-of-state healthcare and emergency management partners.

TASK: Activate and staff the Family Support Center, including the Family Care Unit Leader under the Logistics Section of the HCC.

Strengths

The following strengths can be attributed to this task:

Strength 1: *The Family Care Unit Leader was activated as part of the Hospital Command Center organization within the Logistics Section.*

Strength 2: *Social work staff were available and staffed the FSC to provide needed support services. Roles were assigned quickly and efficiently within the Family Support Center.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *Because of the lack of phones in the Family Support Center, staff were trying to use their cell phones but many had issues with charging. Additional cell phone chargers should be stocked in the Family Support Center and other rapid response boxes as a contingency.*

Area for Improvement 2: *Some of the tasks completed by the Family Support Center staff should have been coordinated through the HCC Logistics section, such as researching hotel rooms and food for family members.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Having a rapid response box or “go kit” for the Family Support Center would help to establish phone, internet, and resource access quickly when activated. This kit should include a local hotel list, Social Services department contact phone number for children, Red Cross contact information, taxi vouchers, a Finance section point of contact for obtaining cash, gift cards, guidance for unaccompanied minors, chargers, laptops, copiers, and tracking forms. This kit could also include JIT training on psychological first aid and reunification in an RITN scenario. A timeline should be established for sending updates on how many family members have arrived and registered at the Family Support Center to both the HCC and the Triage or Treatment areas of the hospital.

TASK: The Family Care Unit Leader and the Patient Tracking Unit Leader under the Planning section will coordinate to identify family members of the patients being transported to COH through the NDMS.

Strengths

The following strengths can be attributed to this task:

Strength 1: *A representative from the Family Care Unit was assigned to the treatment and triage area to provide behavioral health service and assist able and non-critical patients to the family assistance center.*

Strength 2: *The quality of the family care services provided were considered a big strength for this exercise. It is true that the Family Support Center will likely require more resources given the larger number of patients and the increased logistical issues involved in managing them on a longer term basis. However the quality of services offered establishes an encouraging precedent exemplifying City of Hope's incomparable reputation for patient care.*

Areas for Improvement

The following areas for improvement were noted for this task:

Area for Improvement 1: *The Family Support Center had difficulty communicating with the Triage Area. Though there were established communication channels from the Family Care Unit Leader to the HCC, there were no clearly established communication channels to the Triage and Treatment Areas, which the FSC needed to connect with to ensure continuity of patient and family member tracking.*

Reference: COH EOP, RITN Concept of Operations

Analysis: Having a runner or liaison in the Triage, Treatment, and Decontamination Areas specifically tasked with coordinating and communicating with the Family Support Center and the Family Care Unit Leader / Patient Tracking Unit Leader at the HCC would help to streamline communication amongst all three locations.

HPP CAPABILITY: RESPONDER SAFETY & HEALTH

NATIONAL CORE CAPABILITY: ENVIRONMENTAL RESPONSE / HEALTH AND SAFETY

HPP Capability Description: Emergency operations coordination regarding healthcare is the ability for healthcare organizations to engage with incident management at the Emergency Operations Center or with on-scene incident management during an incident to coordinate information and resource allocation for affected healthcare organizations. This is done through multi-agency coordination representing healthcare organizations or by integrating this coordination into plans and protocols that guide incident management to make the appropriate decisions.

***National Core Capability Description*:** Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.

Note: There were no dedicated objectives or tasks related to these capabilities. However, it was the request of the Exercise Planning Team that these capabilities continue to be included in exercise evaluation considerations, in relation to staff safety during decontamination efforts.

Strengths

The following strengths can be attributed to this capability:

Strength 1: *Decontamination Area staff successfully detected radiation on two of the patients who had been artificially equipped with false radiation sources.*

Strength 2: *Los Angeles County Radiological Health participated in exercise planning and conduct, and were able to provide mentoring and expertise to the Decontamination Area staff, as well as additional supplies and equipment to help expand capacity.*

Areas for Improvement

The following areas for improvement were identified for this capability:

Area for Improvement 1: *During the exercise on Day Three, two of the patients were artificially equipped with false radiation sources to test the decontamination capabilities of the staff. While staff successfully detected radiation on both patients, their contaminated status was not always clearly communicated to the staff in the Triage or Treatment areas, resulting in some cross-contamination between areas and putting the staff and patients at risk.*

Area for Improvement 2: *Staff members conducting the surveys of patients in the Decontamination Area need to be consistent and pace themselves across all patients in order to ensure full coverage and detection. Survey techniques were not appropriate for the equipment being used. The manufacturer recommendations were exceeded and the equipment was simply not designed to perform at the speed and distance for contamination monitoring. They also used inappropriate technique by turning the probe head upside down to monitor under arms and bottom of feet rather than instructing the victim to roll their arms so the underside could be monitored without contaminating the probe face. The same was true when monitoring the bottom of shoes. There were also some instances where the probe face touched patients and was not checked or decontaminated.*

Area for Improvement 3: *Decontamination Area staff were tasked with too many responsibilities, making it difficult for them to complete tasks efficiently while still maintaining staff and patient safety.*

Reference: COH EOP, RITN Concept of Operations

Analysis: It is recommended that additional staff at the Decontamination Areas to greet patients and take down basic information, as well as to communicate with the HCC and scribes to take notes will help to free up Decontamination Area staff to concentrate on surveys of patients. Establishing two corridors – one for contaminated victims and one for those who are not contaminated – will help to avoid pushing contamination through the existing setup and endangering staff. Additional security can also help to better delineate the boundaries between each area and keep family members, staff, and patients safe. COH leadership and staff should develop, train and adhere to sufficient contamination control practices and procedures. Including a white board in the monitoring/decon area can help staff record and monitor the background reading, the action level threshold and what time the last background was checked.

APPENDICES

APPENDIX A: IMPROVEMENT PLAN (IP)

This IP has been developed specifically for the City of Hope National Medical Center as a result of their Radiological Injury Treatment Network (RITN) full scale exercise conducted over a three-day period from August 9 to August 11, 2016.

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
1.	HPP Capability: Emergency Operations Coordination National Core Capability: Operational Coordination / Operational Communications	*It was unclear how the HCC staff would be called to report to the HCC and when. It was especially unclear how they would be called to report to the HCC after-hours.*	The RITN Annex of the COH EOP should be revised and additional guidelines included related to who calls whom during an RITN initial request for a Capabilities Report. This could take the form of a decision algorithm or communications directory. Quarterly HICS Trainings and monthly "mini-drills" testing the call-down and notification-only portions of response are recommended.	COH	Chuck Pickering City of Hope Emergency Management Committee		
2.	HPP Capability: Emergency Operations Coordination National Core Capability: Operational Coordination / Operational Communications	*During Day One exercise play, those in the HCC did not determine at what level to activate until a Controller prompted them to. Few were aware that in the EOP, an RITN activation constitutes an immediate Level III activation.*	Additional training on the RITN annex in the EOP is recommended, once it is revised and updated. This workshop or training should be offered to as many COH staff as possible, and any department that will help to staff the HCC should be included.	COH	Chuck Pickering City of Hope Emergency Management Committee		
3.	HPP Capability: Emergency Operations Coordination National Core	*The Finance section was initially unclear in their roles during initial RITN activation and preparation to receive patients.*	Job Action Sheets for each role within the various sections of the HCC should be re-examined to include specific recommendations and considerations in an RITN activation.	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
	Capability: Operational Coordination / Operational Communications						
4.	HPP Capability: Emergency Operations Coordination National Core Capability: Operational Coordination / Operational Communications	*Internally, on Day Three, there were not enough radios for responding staff members.* *In addition, communication between the HCC (Flash Building) and the operational areas was sparse.* *Staff in the various decontamination, triage, and treatment areas were not aware of whom to contact in the HCC for various requests.*	Additional radios should be purchased, and future RITN exercises or trainings should incorporate radio training. Other radio channels should be reserved for HCC activation and use. Certain HCC roles should be pre-assigned a radio. Physicians and nurses should be trained in HCC roles and responsibilities, even if they are not staffing the HCC, so they are aware of who is responsible for assisting with what requests during an event.	COH	Chuck Pickering City of Hope Emergency Management Committee		
5.	HPP Capability: Emergency Operations Coordination National Core Capability: Operational Coordination / Operational Communications	*The decontamination team needed additional training to establish the proper flow through the Decontamination Area, as well as how to efficiently utilize gurneys through the area without cross-contaminating.* *A second Radiological Emergency Response Team to staff the second shift was not identified, nor were breaks discussed for Decontamination Area staff.* *One of the patients fell in the Decontamination Area during the exercise and it took a while for the staff to respond and assist them.*	Convene additional decontamination trainings for staff testing various expanding and decompressing patient flow models. A second, third, and fourth team should be identified amongst other COH staff to provide backups and staff for second, third, and fourth operational periods. The Safety Officer needs to ensure those in full decontamination turnouts are taking regular breaks, and that additional chairs and water are provided in this area for staff. Identified Safety Managers should	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
			participate in the COH emergency preparedness committee for greater future incident situational awareness. An extra staff member should be added to the Radiological Emergency Response Team to provide support and step in as needed, as well as additional volunteers at the Decontamination Area to assist patients while they wait. Patients should be provided with a chair or table to balance with while getting their feet monitored properly.				
6.	HPP Capability: Emergency Operations Coordination National Core Capability: Operational Coordination / Operational Communications	*The Incident Action Plan was discussed in the HCC briefings, but was not drafted during exercise operations.*	More training is need for all staff to understand their roles and more importantly their responsibilities within those roles to increase oversight and accountability of all planning and coordination tasks.	COH	Chuck Pickering City of Hope Emergency Management Committee		
7.	HPP Capability: Information Sharing National Core Capability: Intelligence And Information Sharing	*Initially on Day One, other than the Incident Commander, the other HCC roles were not assigned until a controller prompted players. This included the Liaison Officer. It was unclear who amongst the players on Day One would be contacting other agencies in the event of an RITN activation.*		COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
8.	HPP Capability: Information Sharing National Core Capability: Intelligence And Information Sharing	*An external resource request was not made on Day One or Two of exercise play, in the planning leading up to patient receipt.*	Future trainings and exercises should walkthrough the resource request process in more detail in order to familiarize staff with what is available and how to file a request. Staff in the HCC should familiarize themselves with the DRC's Inventory List, which notes the equipment and supplies available from other DRC hospitals.	COH	Chuck Pickering City of Hope Emergency Management Committee		
9.	HPP Capability: Information Sharing National Core Capability: Intelligence And Information Sharing	*The Public Information Officer and Communications Team in the HCC were not prepared to quickly create RITN-centered messaging to respond to media and public inquiry.* *Some of the information being disseminated from the HCC staff conflicted depending on who was being asked.*	Create RITN-centered press release, fact sheet, and statement templates for quick and easy use during an activation. A process for vetting any information being released to the media or the public through Communications and the Public Information Officer at the HCC needs to be integrated into training and exercises, as well as the current RITN-centered annex of the EOP.	COH	Chuck Pickering City of Hope Emergency Management Committee		
10.	HPP Capability: Information Sharing National Core Capability: Intelligence And Information Sharing	*There is a need for computer access to register and maintain updated patient profiles and resource orders or requests.* *Admission Personnel were not present and did not participate in the drill.*	Incorporate three positions for patient tracking – one person to complete the paper chart and wrist band, one to enter the patient profile into ReddiNet or other COH electronic tracking software, and a third to enter the patients' updated information into the NDMS system: JPATS. Ensure tablets, laptops, cell phone chargers, and Wi-Fi information is included in rapid response boxes or "go-kits" for each area. If electronic tracking mechanisms are	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
			used on-site, IT staff or personnel should be on-site or available upon request to help with any issues. Admission personnel should be integrated into additional training and exercise opportunities.				
11.	HPP Capability: Information Sharing National Core Capability: Intelligence And Information Sharing	*The Triage Forms used were at least ten years old and were missing basic information categories such as date of birth.*	The forms used in the triage and treatment areas need to be updated and cross-linked to electronic records systems including JPATS, ReddiNet, and other systems utilized at COH.	COH	Chuck Pickering City of Hope Emergency Management Committee		
12.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The number of beds that City of Hope could open up in an RITN activation often varies greatly from one tabletop discussion to another.*	A set of guidelines or previously used numbers included in the RITN annex of the EOP could help to assure bed management team members that they are not over or under-promising bed capacity.	COH	Chuck Pickering City of Hope Emergency Management Committee		
13.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*Assessments of the availability of additional support staff, including staff for the Family Support Center, Admission Staff, Interpreter/Bi-lingual staff and Labor Pool staff should be incorporated into Bed Management Team discussions.* *On Day Three of the exercise, Respiratory Therapy specialists*	Research and establish vendor agreements with Interpretation Services for future RITN events. Admission, Donor Consult physicians, Respiratory Therapy specialists, Labor Pool, and Volunteer staff should be more fully engaged in future RITN training and exercise events at COH.	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
		were also identified as a need during patient triage and treatment.					
14.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*There is a need for staff to re-evaluate other areas in the hospital and clinics that could potentially be converted into a bed, or the types of patients that could be discharged.*	As part of the RITN annex in the EOP, establishing a list of recommended, contingency areas and bed types that can be converted if needed would be a handy reference guide.	COH	Chuck Pickering City of Hope Emergency Management Committee		
15.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The current blood supply was unknown to the Bed Management Team, and it was unclear who to contact and include in bed management discussions of blood supplies.*	Future trainings and exercises related to RITN activation should more fully incorporate the laboratory and blood donor components of such an event.	COH	Chuck Pickering City of Hope Emergency Management Committee		
16.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*It was unclear how and when Security at COH would be notified of an RITN activation.*	Security staff notification of an RITN event should be incorporated into the current RITN notification protocols, and a specific HCC role should be assigned this responsibility.	COH	Chuck Pickering City of Hope Emergency Management Committee		
17.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The HLA lab capacity in particular was not discussed during the exercise unless prompted.*	Future trainings and exercises should more fully incorporate the HLA Laboratory and their information needs during an RITN activation.	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
18.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The Department Resource Request Form, discussed in the EOP, was not mentioned or utilized during the exercise.*	If the Department Resource Request Form in the EOP is outdated or no longer valid, the resource request section of the EOP should be revised accordingly. Guidelines on proper resource request tracking should be included on all Job Action Sheets.	COH	Chuck Pickering City of Hope Emergency Management Committee		
19.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*There was a need for additional medical supplies and fluids to be available in the Triage Area.* *There would also be an associated need to meet storage requirements in the Triage Area for blood products, medications, fluids, etc. in order to ensure timely administration.* *During the exercise on Day Three, the blood center only received two phone calls regarding blood supply or blood testing. No actual patient test requests came to the blood bank. As a result, the blood bank was not adequately tested during the exercise.*	In future exercises, the patient profiles used should include more patients requiring blood transfusions. If possible, the activation and use of an outside vendor should be tested as part of future exercise objectives. Equipment and medical supplies in the Triage Area should be re-examined to better meet the needs of patients waiting. Rapid response boxes for each area – decontamination, triage, etc. – could be prepared and setup in the HCC to be rapidly distributed to each area if an outdoor organization is used again in the future.	COH	Chuck Pickering City of Hope Emergency Management Committee		
20.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The first wave of patients were in the Decon Area for too long, often delaying patient care and sometimes resulting in bottlenecks.* *Some of the boundaries between Decontamination and Triage became unclear. This resulted in some cross-contamination.* *The physicians and nurses were*	Having additional supplies at Decontamination and Triage would help to alleviate some of the inevitable delays. This could include integrating runners to supply a steady flow of wheelchairs/gurneys to help patients that may still be waiting in between one station and another. Decontamination staff should run through a practice round of	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
		also seen crossing from Decontamination to Triage fairly frequently. *There was no security in the Decontamination Area, so some family members were able to wander in.*	decontamination a few times before the first patient arrives, to ensure efficiency from the start. In addition, having backup portal monitors or requests in to LA County Rad Health for additional decontamination supplies as soon as the RITN Activation is made can ensure the Decontamination Area has the ability to quickly expand if need be. Additional training and support staff, including security, to monitor area boundaries can help improve staff's techniques of quickly identifying potential cross-contamination dangers.				
21.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency Medical Services	*The Logistics Section in the Hospital Command Center did not enforce order tracking in the various triage and treatment areas.*	COH should assess the need to enter and utilize computer resource tracking, including evidence, personal belonging, and sample collection. In addition, the Logistics Section staff may need additional training or direction to enforce and ensure patient tracking, resource tracking, and sample collection are being tracked across both digital and paper platforms.	COH	Chuck Pickering City of Hope Emergency Management Committee		
22.	HPP Capability: Medical Surge National Core Capability: Public Health, Healthcare, and Emergency	*COH was short on staff and as a result, often skilled staff such as social services personnel escorted the family members.* *This resulted in a dearth of skilled staff in other locations.*	Expanding the labor pool available to COH during an incident of this size and scope would allow for other, less in-demand staff such as custodial or cafeteria staff to serve as runners and escorts for family members. Phones should be added to the	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
	Medical Services	*There was no phone or hotline setup at the Family Support Center.*	required equipment list for the Family Support Center, and staff there should be trained to be able to setup a hotline for others calling in or being directed from the PBX line. FSC staff should also be equipped with hospital radios and extra runners should traditional communication means fail.				
23.	HPP Capability: Healthcare System Preparedness	*Additional training is required for the decontamination area staff to avoid cross-contamination.*	Just-In-Time Training materials for decontamination, PPE, and cross-contamination controls should be developed and incorporated more fully into future exercises.	COH	Chuck Pickering City of Hope Emergency Management Committee		
24.	HPP Capability: Healthcare System Preparedness	*It was unclear how staff would be notified or trained on how to interact with family members or how to answer their questions.*	Family Support Just-In-Time Training materials or reference cards could assist physicians and nurses preparing to receive RITN patients better answer questions and support or console distressed patients and their families.	COH	Chuck Pickering City of Hope Emergency Management Committee		
25.	HPP Capability: Healthcare System Preparedness	*Because of the lack of phones in the Family Support Center, staff were trying to use their cell phones but many had issues with charging.* *Some of the tasks being tackled by Family Support Center staff should have been coordinated through the HCC Logistics section, such as researching hotel rooms and food for family members.*	Having a rapid response box or “go kit” for the Family Support Center would help to establish phone, internet, and resource access quickly when activated. This kit should include a local hotel list, Social Services department phone number for children, Red Cross contact information, taxi vouchers, a Finance section point of contact for obtaining cash, gift cards, guidance for unaccompanied minors, chargers, laptops, copiers, and tracking forms. This kit could also include just-in-time training on psychological first aid and	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
			reunification in an RITN scenario. A timeline should be established for sending updates on how many family members have arrived and registered at the Family Support Center to both the HCC and the Triage or Treatment areas of the hospital.				
26.	HPP Capability: Healthcare System Preparedness	*The Family Support Center had difficulty communicating with the Triage Area – there were no clearly established communication channels to the Triage and Treatment Areas, which the family support center needed to connect with to ensure continuity of patient and family member tracking.*	Having a runner or liaison in the Triage, Treatment, and Decontamination Areas specifically tasked with coordinating and communicating with the Family Support Center and the Family Care Unit Leader / Patient Tracking Unit Leader at the HCC would help to streamline communication amongst all three locations.	COH	Chuck Pickering City of Hope Emergency Management Committee		
27.	HPP Capability: Responder Safety and Health National Core Capability: Environmental Response / Responder Health and Safety	*Some of the patients were artificially contaminated – their status was not always clearly communicated to the staff in the Triage or Treatment areas, resulting in some cross-contamination between areas and putting the staff and patients at risk.* *Staff members conducting the surveys of patients in the Decontamination Area need to be consistent and pace themselves across all patients in order to ensure full coverage and detection.* *Survey techniques where not appropriate for the equipment being used.*	Having additional staff at the Decontamination Areas to greet patients and take down basic information, as well as to communicate with the HCC and scribes to take notes will help to free up Decontamination Area staff to concentrate on surveys of patients. Establishing two corridors – one for contaminated victims and one for those who are not contaminated – will help to avoid pushing contamination through the existing setup and endangering staff. Additional security can also help to better delineate the boundaries between each area and keep family members, staff, and patients safe.	COH	Chuck Pickering City of Hope Emergency Management Committee		

No.	HPP and Core Capabilities	Area for Improvement	Corrective Action	Primary Responsible Organization	Responsible POC	Start Date	Completion Date
			COH leadership and staff should develop, train to and adhere to sufficient contamination control practices and procedures. Including a white board in the monitoring/decon area to help staff record and monitor the background reading, the action level threshold and what time the last background was checked.				

APPENDIX B: SCHEDULE OF EVENTS

Exercise Schedule Note: All Times Indicated are Pacific Standard Time, and are TENTATIVE				
August 9, 2016				
Start	**End**	**Event**	**Location**	**Attended By:**
1300		Exercise Setup, C/E and Player Briefing	COH	All Participants
1400		StartEx: RITN notifies City of Hope National Medical Center (COH) of nuclear disaster and requests Capabilities Report	COH	COH RITN Task force
1410		COH Activates the National Medical Center Hospital Command Center (HCC), conducts JIT training and demonstrates effective internal and external communications	COH	COH RITN Task Force
	1600	COH] RITN Task Force compiles and submits Capabilities Report	COH	COH RITN Task Force
1600	1700	Venue Hot-Wash followed by C/E Debriefing	COH	COH RITN Task Force
August 10, 2016 **NOTE: August 10th exercise activity focuses on the NDMS / FCC Exercise, not COH**				
Start	**End**	**Event**	**Location**	**Attended By:**
0800	1300	Limited EOC Activation: COH Receives RITN designated patients through NDMS and coordinates patient tracking	COH	COH RITN Task Force (select players)
August 11, 2016				
Start	**End**	**Event**	**Location**	**Attended By:**
0800		Controller/Evaluator Sign-In	COH	All Exercise Controller / Evaluators
0830		Exercise Control Communications Check	COH	All Exercise Venues
0830		Participant Registration	COH	All Exercise Participants
0845		Introduction and Exercise Overview	COH	All Exercise Participants
0845		Site Walkthrough for Decon Training Participants	COH	All Training Participants
0930		STARTEX	COH	All Exercise Participants
	1200	ENDEX	COH	All Exercise Participants
1200	1300	Venue Hot-Wash followed by C/E Debriefing	All Exercise Venues	COH RITN Task Force
September 1, 2016				
Start	**End**	**Event**	**Location**	**Attended By:**
2 hours (approx.)		After Action Meeting	COH	COH RITN Task Force

APPENDIX C: ACRONYMS

Acronym	Definition
AAR	After Action Report
AAR / IP	After Action Report / Improvement Plan
ARS	Acute Radiation Syndrome
CBC	Complete Blood Counts
CDC	Center for Disease Control and Prevention
CE	Controller / Evaluator
COH	City of Hope National Medical Center
DRC	Disaster Resource Center
EEG	Exercise Evaluation Guide
EMS	Emergency Medical Services
EOP	Emergency Operations Plan
EndEx	End of Exercise
EPT	Exercise Planning Team
ExPlan	Exercise Plan
FBI	Federal Bureau of Investigation
FCC	Federal Communication Commission
FSE	Full Scale Exercise
FRS	Family Radio Service
HCC	Hospital Command Center
HCS	Health Care Standards
HLA	Human Leukocyte Antigen
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise and Evaluation Program
IAP	Incident Action Plan
IC	Incident Commander / Incident Command
IP	Incident Plan / Improvement Plan
JPATS	Joint Patient Assessment and Tracking System
LA	Los Angeles
MAC	Multi-Agency Coordination Center
MD	Medical Doctor
MHOAC	Medical and Health Operational Area Coordination
MSEL	Master Scenario Events List
MUD	Marrow Unrelated Donor
NDMS	National Disaster Medical System
PBX	Private Branch Exchange
REAC/TS	Radiation Emergency Assistance Center / Training Site
RITN	Radiological Injury Treatment Network
RN	Registered nurse
SEMS	Standardized Emergency Management System
StartEx	Start of Exercise
VA	Veterans Affairs

APPENDIX D: FEEDBACK FORM SUMMARIES

The following information was extracted from Participant Feedback Forms completed during the Workshop. A total of 34 participants provided their feedback for inclusion in the After Action Report. Feedback provided by participants on the exercise was very positive – many commented that the exercise demonstrated unprecedented participation and exemplary teamwork across multiple disciplines. Upon completion of the exercise, participants felt they were better prepared to handle the capabilities and hazards addressed.

Table 3: Feedback Form Question 3 Average Responses

Assessment Factor	Strongly Disagree 1	2	3	4	Strongly Agree 5
Pre-exercise briefings were informative and provided the necessary information for my role in the exercise.	0%	9%	21%	41%	15%
The exercise scenario was plausible and realistic.	0%	3%	18%	41%	24%
Exercise participants included the right people in terms of level and mix of disciplines.	0%	3%	12%	50%	21%
Participants were actively involved in the exercise.	0%	3%	6%	38%	38%
Exercise participation was appropriate for someone in my field with my level of experience/training.	0%	3%	3%	47%	29%
The exercise increased my understanding about and familiarity with the capabilities and resources of other participating organizations.	0%	3%	12%	29%	38%
The exercise provided the opportunity to address significant decisions in support of critical mission areas.	0%	6%	3%	47%	39%
After this exercise, I am better prepared to deal with the capabilities and hazards addressed.	0%	3%	3%	41%	35%

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Feedback Form Highlights

- **56%** of participants felt the pre-exercise briefings were informative and helped provide the necessary information for their role in the exercise.
- **66%** of participants indicated that the scenario used was plausible and relevant to them.
- **71%** of participants agreed that the participants included the right mix of people in terms of level and mix of disciplines.
- **76%** of participants felt that everyone was actively involved in the exercise.
- **76%** of participants felt that participation was appropriate given their level of experience and training.
- **65%** felt that the exercise increased their understanding of the capabilities and resources of other participating organizations.
- **86%** agreed that the exercise provided an opportunity to address significant decisions in support of mission critical areas.
- **76%** agreed they left the exercise better prepared to deal with the capabilities and hazards addressed.

Select Participant Comments

The following is a select sample of the comments received to some of the additional questions on the Participant Feedback Form.

Strengths:

- Strong internal communication inside the Family Support Center
- Strong collaborative, team effort
- Calm and focused attitude of the participants – everyone took the drill seriously
- Good mix of disciplines represented in the players
- Smooth transitions from one station to the next
- Actors were great; great participation from the nursing students
- Social Worker participation was wonderful
- Physicians participated in the entire exercise
- Great learning experience decontaminating actual "patients" and learning how to communicate with triage, decon, and the Hospital Command Center
- Great compassion and medical skill shown to patients
- Outdoor organization allowed for space to "spread out"
- Varied perspectives led to good discussions on Day One
- RITN participation on Day One led to helpful explanations of RITN policies
- Large number of participants was a success
- Good adaptable communication capabilities
- Good scenario

Recommendations:

- Need clarity on financial assistance policies for family members and family member registration process
- Need to use ICS 214 to track requests and status updates
- More nursing and physician staff as well as runners, interpreters, case workers, admission, and security staff
- Additional supplies such as gurneys, wheelchairs, beds,
- Medical Record Numbers were not clear
- Improve communications – especially if phone or electronic means not available
- Need better patient registration and documentation systems
- Need Pediatrics and Surgical Team to support the Triage Area
- Need additional training for our staff on radio etiquette
- Need increased security coverage to handle media inquiries and family members
- Communication Room needs to be closer to the Command Center
- Need to have an Everbridge “Cheat Sheet” for new users
- Need clearer definition of roles in each area or station
- Need IT support if issues arise
- Consider having the Planning and Operations branches in one location/room
- House extra in-patient beds somewhere on-site, near Triage/Treatment
- Have introductions at the beginning, before the exercise starts (such as on Day One) as there are often new faces around
- Have more refreshments around
- Helford Command Center too small or tight to have a lot of participants staffing it
- Security should be present for initial discussions and HCC activation
- We need to consider available outpatient resources that we can use in an RITN activation
- Would be helpful to have a flow chart of patient flow from the start of the disaster to the admission or treatment at COH. This would help with family messaging as well
- Be more clear in invitations and exercise directions on where we are to report
- Need more coffee!
- Need templates for media statements and an FAQ for staff to help answer questions from the public
- Exercise ended abruptly – need a smoother ending in future drills
- Conflicting information was being discussed – need to clarify who needs to approve all information going out
- Need to better define for the players how triaging requests should occur
- Need to improve communication between the HCC and other operational areas