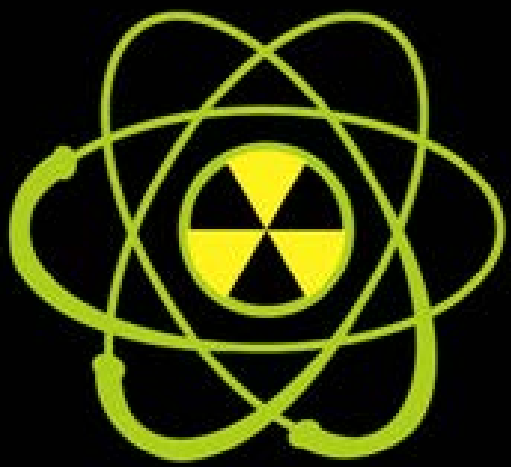
2017

After-Action Report/Improvement Plan
May 30, 2017 Web-Based



EXERCISE OVERVIEW

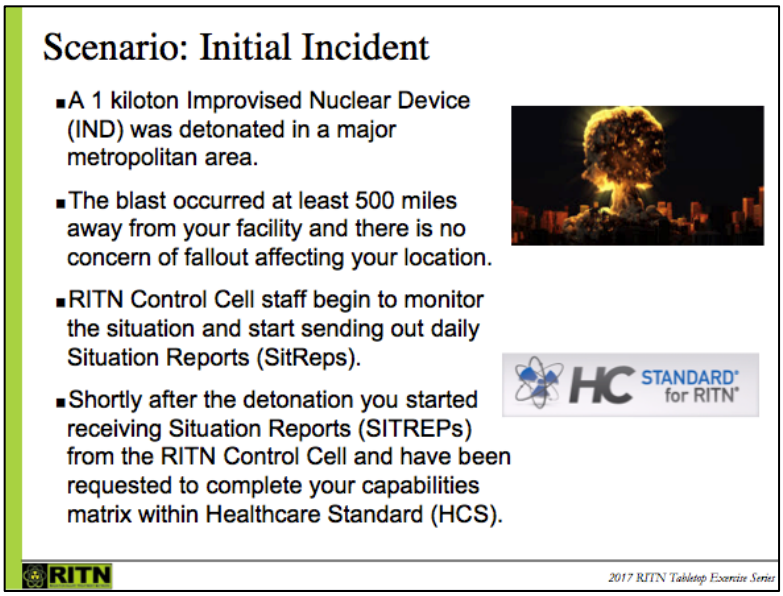
Exercise Name	2017 RITN Tabletop Exercise (TTX)
Exercise Date	May 30, 2017
Scope	This exercise is a distance-based tabletop exercise planned for 2 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response.
Mission Area(s)	Response
Capabilities	Public Health & Medical Services
Objectives	**Objective 1:** Hospital staff are able to determine their hospital's capability to receive casualties (inpatient and outpatient) through the National Disaster Medical System (NDMS) following a mass casualty radiological incident. **Objective 2:** Hospital staff are able to discuss the procedures for implementing Crisis Standards of Care (CSC) at their hospital. **Objective 3:** Hospital staff are able to describe their approaches for triaging patients and determining initial treatment actions for patients with Acute Radiation Syndrome (ARS).
Hazzard	Radiological
Scenario	Medical surge from a distant radiological incident
Sponsor	Radiation Injury Treatment Network® (RITN) National Marrow Donor Program (NMDP) Office of Naval Research (ONR)
Participating Organizations	See Appendix B
Point of Contact	RITN Control Cell RITN@NMDP.ORG

EXERCISE SUMMARY

On May 30, 2017, RITN centers and the RITN Control Cell participated in a tabletop exercise to discuss RITN centers planning actions for patient arrival, crisis standards of care under austere resource and medical management conditions, and medical care and treatment of arriving patients from radiological exposure. A facilitated series of exercise tasks were provided to participants for their consideration, response, and group discussion organized by the exercise scenario summary below.

Scenario Summary: The following illustrate the scenario events considered for participant discussion (Figure 1):

Figure 1: Exercise Scenario Ground Truth

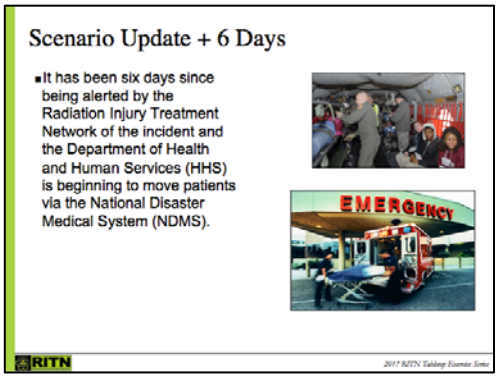


ANALYSIS OF CAPABILITIES

Module 1: Planning for Patient Arrival

Participants were provided the following update to the scenario information (Figure 2). Based on the scenario inject information, RITN Centers were asked to discuss multiple operational considerations regarding the receipt of NDMS patients. Considerations for patient receipt included aggressive changes and overflow into other hospital departments as well as repurposing previously identified space such as dormitories and gymnasiums.

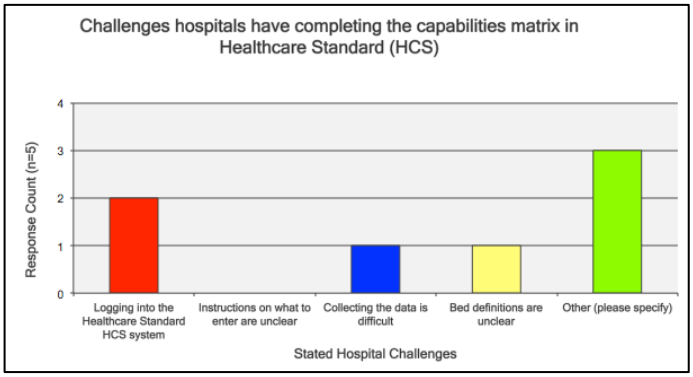
Figure 2: Scenario Update Event + 6 Days



Completion of Capabilities Matrix: Participating centers discussed the challenges they face when completing the Healthcare Standard (HCS) Capabilities Matrix (Figure 3). The challenges cited included:

- Logging into the HCS System
- The numbers (i.e. the demand) are dynamic – the data changes frequently
- Difficult to shift patients into other care environments without understanding criticality of the demand
- Difficulty in collecting data for input into the matrix
- Difficulty with interpretation of the bed definitions
- Other (i.e. number of beds will change based on the event; implementation of CSC may create challenges in completing HCS; estimating staff as well as estimating staffed beds versus available unstaffed beds)

Figure 3: HCS Challenges



Intake of Patients: Aggressive Changes: Participating centers determined the following: The number of inpatients their RITN center could receive with aggressive changes and spill-over into other areas of their hospital (such as ICU or PACU) under the assumption that alternations in the standards of care were required. Examples provided of aggressive changes included aggressive

patient discharges or transfers or a delay in the normal admissions process. The number of inpatients received was reported as (Table 1):

Table 1: Intake of Patients

RITN Center	Number of Patients
Stanford Hospitals	80
UCSF Medical Center	16-20
Medical University of South Carolina	78
Emory	48
Massachusetts General Hospital	10
Total Inpatients Received	**232-236**

All RITN centers indicated that the number of patients received would be highly dependent on their medical care needs. The NDMS patient manifest is needed by the RITN centers in order for them to appropriately plan for the receipt of patients to ensure a variety of resources are available, such as staffing, type of beds needed, and medical supplies. The NDMS expectation is that patients would not be transported to a RITN center until a bed is available. JPATS and/or TRACES, respectively, can provide a system alert to the RITN center regarding transport of the patient, which would alert the facility that the patient is en route.

Intake of Patients: Incorporating Large Facilities: After RITN centers determined the number of inpatients they could receive considering aggressive changes and spill-over, RITN centers determined the number of inpatients they could receive with the previous 2 considerations as well as implementation of crisis standards of care and incorporating large austere emergency treatment facilities previously identified (such as dormitories, gymnasiums or domed stadiums). Given these two additional considerations, one RITN center was able to definitively determine 200 inpatients could be received at their facility. One RITN center reported not considering alternate care sites as part of their inpatient intake planning. Another center determined more than 78 inpatients could be received, but the actual number was not known at the time of the exercise. The remaining center indicated a 500-bed patient reception center is available at their local U.S. Air Force base and the regional healthcare coalition would be involved in identifying additional bed capacity. Finally, one center did not respond.

Communication with the FCC: If requested by the RITN Control Cell to communicate bed availability directly to their assigned Federal Coordinating Center (FCC), all participating RITN centers were able to quickly determine their facility's bed availability and provide that information to their local FCC.

Outpatient Housing: All participating RITN centers indicated that hotels have been identified as part of the planning process to house outpatients during RITN activation. Participating centers

discussed a variety of alternate housing options in the geographic area that have been identified or have entered a formal agreement with the RITN center.

Strengths

The following strengths were demonstrated:

Strength 1: All RITN centers demonstrated the capability to receive patients under a variety of special and unique circumstances such as implementation of crisis standards of care, aggressive discharges or transfers, delayed admission processes, and spill-over into other areas or departments of their facility.

Strength 2: All RITN centers demonstrated and discussed the ability to rapidly determine their immediate bed availability if requested by the RITN Control Cell as well as a current process to provide that information to their local Federal Coordinating Center.

Strength 3: All RITN centers indicated identification of local hotels and alternate housing options for outpatients during RITN activation.

Areas for Improvement

The following areas require improvement:

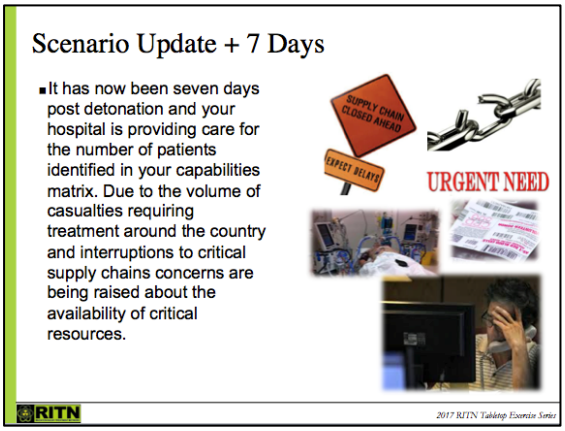
Area for Improvement 1: The data field definitions for the Healthcare Capabilities Matrix should be reviewed to ensure clarity. RITN centers indicated difficulty in accurately reporting the data because they were unclear, for example, on the types of patients being sent and fluctuations in their staffing levels based on the patient demand.

Area for Improvement 2: RITN centers must receive the NDMS patient manifest in advance of patient transport in order for the appropriate medical care to be delivered. Centers were unclear as to when they would receive the patient information and therefore were having difficulty in accurately completing the Capabilities Matrix and planning for patient arrival. The NDMS patient manifest contains the medical information needed by RITN centers to ensure their planning for patient receipt aligns with the level and type of medical care needed as well as enabling facilities to coordinate within their healthcare coalitions to build capacity at the RITN center.

Module 2: Crisis Standards of Care

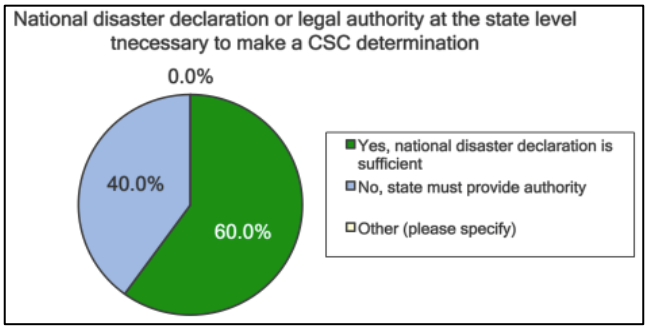
Participants were provided the following update to the scenario information (Figure 4). Based on the scenario inject information, 7 days have elapsed since the detonation and RITN centers are experiencing disruptions to their supply chains and resources are running low given the volume of casualties requiring treatment across the country.

Figure 4: Scenario Update Event + 7 Days



Implementation of Crisis Standards of Care: RITN centers indicated multiple sources, references, or reliance on several entities in developing their internal guidance for implementation of crisis medical care at their facilities. Centers also stated coordination of CSC would occur via their hospital incident command/incident management team and specifically members from their ethics committee, legal, and medical specialists would be involved in decision-making and implementation recommendations. Although three RITN centers stated having a hospital policy in-place to address crisis care, all participating centers indicated they would seek overarching guidance to some degree from state authorities. More than 1 center also stated that RITN considerations are not currently included in their crisis care plans and those plans need to reflect the RITN program.

Figure 5: CSC Authority for Determination



Four (of 5) participating RITN centers have a committee to decide CSC determinations; while 1 center indicated the Chief Medical Officer would make their determinations. External to the centers themselves, 3 of the 5 participating centers indicated a national disaster declaration would be sufficient to implement crisis standards of care at their facility while 2 centers said the state's authority would be needed for their RITN center (i.e. legal authority at the state level must make a CSC determination) (Figure 5). All RITN centers stated state and/or internal committees (e.g. ethics committee and chief medical officer) have provided or would provide ethical codes and guidance for CSC implementation; however, RITN centers indicated county and city entities have not provided ethical codes or guidance. For example, all participating RITN centers indicated their facility would not request guidance from public health

or emergency management on CSC implementation, but facilities stated requests would be made to public health for staffing augmentation (e.g. physicians, hospitalists, nurses). Finally, RITN centers would notify public health, local emergency management, home care agencies, and other hospitals that CSC had been implemented.

In the absence of CSC codes and guidance (i.e. if the scenario events occurred today), RITN centers discussed a variety of priority factors under consideration for making decisions on use of resources, such as (Table 2):

Table 2: Factors Influencing Resource Decisions

Primary Factors Influencing Resource Decisions	
Age of patient(s)	Comorbidities
Severity of exposure	Dosage
Exposure and likelihood of survival as compared to other patients within the group exposed	Availability of resources such as nursing and medical staff
Patients within the transplant system (or already in processing)	Patients who are scheduled for transplant but in complete remission with a donor selected and scheduled for donation
Patients who already have collected their own cells	

One RITN center provided their internal guidance. This guidance is based on a number of exclusion criteria, such as the following:

- Severe burns
- Cardiac arrest
- Severe baseline cognitive impairment
- Advance untreatable neuromuscular disease
- Metastatic malignant disease
- End stage organ failure
- Advance and irreversible immune-compromised disease

RITN centers indicated that public messaging would be coordinated through their facility's public information officer and message dissemination would follow existing plans to communicate with their staff and the public. Messaging would emphasize that the public make attempts to avoid non-urgent care at the RITN center, include frequently asked questions, and be translated into multiple languages.

After 7 days post-detonation, RITN centers discussed those laboratory resources that may be in greatest demand. Though dependent on the size of the RITN center and availability of resources, most centers indicated that laboratory staff shortages would be one of their most significant

concerns. Additionally, supplies such as reagents, collection tubes, HLA supplies, blood draw supplies, and their capabilities to perform CBCs and virology testing would be severely taxed approximately 2-weeks post-detonation and receipt of patients. One RITN center indicated their core laboratory could process 10,400 CBCs with differentials with current supplies for 5 to 7 days and their outpatient services – hours of operation Monday – Friday and no holiday hours – can perform 3,200 CBCs with differentials over the course of 8 days. Other centers reported 1,900 and 2,160, respectively as their maximum throughput of CBC with differentials processed daily, while another center stated 300 would be processed per hour (as opposed to a daily reporting). Lastly, centers indicated their donor services would be significantly challenged at this point and plans would need to be implemented to recruit and process donors. For example, one RITN center's plan for donor services would include setup/operation of 3 fixed collection centers, 2 trucks, and 3 coaches. The Medical Reserve Corp and local hospitals would be asked for volunteers to assist operation of their donor centers. Lastly, all RITN centers generally indicated little to no testing may be delayed given the events in the scenario. One center indicated HLA typing might be delayed, while other centers discussed that results reporting would likely be delayed. All centers stated that the staffing levels in the laboratory would significantly influence the type of testing that would be delayed or deferred.

Strengths

The following strengths were demonstrated:

Strength 1: RITN centers discussed existing policies or were able to quickly develop a process to assemble the appropriate guidance content, request assistance from the necessary experts or authorities, and implement crisis standards of care if needed.

Strength 2: RITN centers demonstrated plans and protocols to rapidly disseminate information to their staff and to the public and the resources to provide public messaging in multiple languages.

Strength 3: RITN centers demonstrated continuity planning to address laboratory resource shortages over an extended response timeframe to procure necessary staffing and supplies.

Strength 4: RITN centers were able to approximate a maximum number of CBC with differentials that could be processed daily in their laboratories, which at a minimum, would assist their ability to anticipate the type and amount of resource shortages to anticipate under the conditions in this scenario.

Areas for Improvement

The following areas require improvement:

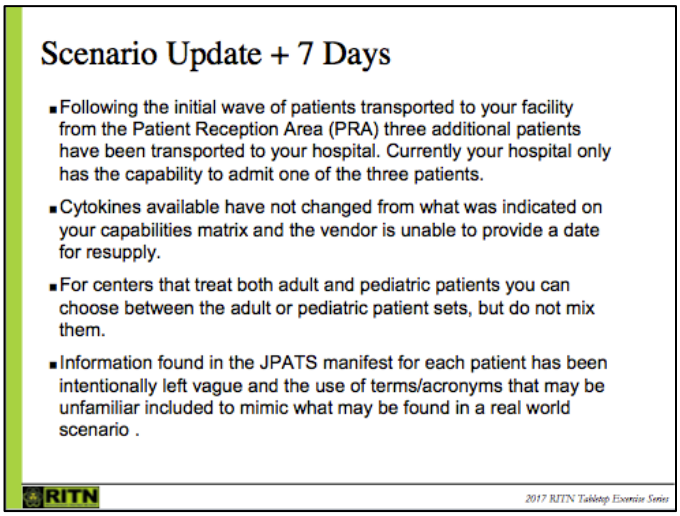
Area for Improvement 1: As part of improvement planning, RITN centers should review their policies or plans for CSC and ensure considerations related to the RITN program (such as the

patients they may receive and impacts to their current inpatient population) are included in their crisis care policies and plans.

Area for Improvement 2: All RITN centers should review their laboratory supply chain as part of continuity of operations planning and confirm any existing laboratory supply vendor agreements that additional quantities of reagents, collection tubes, HLA supplies, blood draw supplies, and supplies related to CBCs and virology testing could be secured under the events described in this scenario. Additionally, RITN centers should identify laboratory technician/staff to augment their existing levels and initiate discussions with those local/regional healthcare partners to explore mechanisms for the RITN center to utilize their staff if needed.

Module 3: Patient Treatment

Figure 6: Scenario Update Event + 7 Days



Participants were provided the following update to the scenario information (Figure 6). Based on the scenario inject information, 3 additional patients were transported to their RITN center following the initial wave of patients from the Patient Reception Area. Hospitals were instructed that they could admit one of the three patients transported to them based on their current capabilities to medically treat and manage the patient. RITN centers were also provided with patient profiles for these 6 patients.

Medical Management of the 1 Additional Patient: Three RITN centers decided to assess the adult patients and admit 1 of them. The medical management of these patients is as follows (Table 3):

Table 3: Adult Patient Management

Admitted Patient Management: Adults			
Decisions: Adults	**Patient 1**	**Patient 2**	**Patient 3**
Admit or Outpatient	No	No	Yes
Estimated dose upon arrival	Dose: 4.7 grey Range: 4.7 – 6.0 grey	Dose: 3.2 grey Range: 3.0 – 4.0 grey	Dose: 7.4 grey Range: 7.0 – 9.0 grey
Administer G-CSF	Yes	Yes	Yes
Prophylactic antimicrobials*	Fluconozole acyclovir Quinolone Levoquin	Fluconozole acyclovir Quinolone Levoquin	Fluconozole acyclovir** Quinolone Levoquin
Treatment antimicrobials	Yes – Zocin 1 Center	Yes – Zocin 1 Center	Yes – Zocin 2 Centers
Hydration (or other treatment)	Yes 1 Center	Yes 1 Center	Yes 3 Centers
Lab work, Consultations	• IV fluids as needed, Daily CBC with diff, BMP, LFT's every 2-3 days, type and screen every three days, • Heme/BMT consult, Social work, HHS liaison for outpatient, SAT team for housing, food, contacts, repatriation	• Leg wound care, IV Fluids as needed, Daily CBC with diff, BMP, LFT's every 2-3 days, type and screen every 3 days, • Heme/BMT consult, Social services consult, HHS liaison for outpatient, SAT	• IV fluids, probably not eating and drinking due to exposure, would be admitted. • Daily CBC with diff, BMP, LFT's every 3 days, Type and screen every three days. • Others considered dicentric chromosome assays if possible

Admitted Patient Management: Adults			
Decisions: Adults	**Patient 1**	**Patient 2**	**Patient 3**
	• Assess on ongoing basis for other consult needs as course progresses.	team for housing, food contacts, repatriation • Assess on ongoing basis for other consult needs as course progresses. • Continue to watch for need for this patient to be admitted. May not survive without transplant.	• Heme/BMT consult, as this patient most likely will not respond to Granix, may not survive even with transplant, needs full supportive care. • Symptoms described do not match assumed exposure. • Heme/BMT consult to sort this out, Social service consult. Other consults as the patient continues to be assessed.
*Centers did not reach consensus on the prophylactic antimicrobial to administer to each patient. **2 RITN centers would administer prophylactic antimicrobials to Patient 3; 1 RITN center would not			

Two RITN centers assessed the pediatric patients and decided to admit one of them. The medical management of the admitted patients is as follows (Table 4):

Table 4: Pediatric Patient Management

Admitted Patient Management: Pediatrics			
Decisions: Pediatrics	**Patient 4**	**Patient 5**	**Patient 6**
Admit or Outpatient	Yes	No	No
Estimated dose upon arrival	Dose: 3.0 grey	Dose: 2.0 grey	Dose: See range Range: 2.0 – 3.0 grey
Administer G-CSF	Yes	No	Yes
Prophylactic antimicrobials*	Fluconozole acyclovir Levoquin Ciprofloxin Diflucan	Fluconozole acyclovir** Levoquin Ciprofloxin Diflucan	Fluconozole acyclovir** Levoquin Ciprofloxin Diflucan
Treatment antimicrobials	No	Yes – Non specified 1 Center	No
HLA Typing	Yes	No	No
Hydration (or other treatment)	Yes 1 Center	Yes 1 Center	Yes 3 Centers
Lab work, Consultations	• HLA typing, daily CBC with	• Daily CBC with diff, CMP, glucose	• Daily CBC with diff, CMP, transfusion support.

Admitted Patient Management: Pediatrics			
Decisions: Pediatrics	**Patient 4**	**Patient 5**	**Patient 6**
	differential, CMPs, transfusion support • Chest X-ray and EKG if patient becomes febrile or has symptoms of infection • Consult Pediatric Heme/Onc, transfusion medicine, hematopoietic stem cell transplantation, radiology oncology, mental health, endocrinology, ophthalmology, pain service, dermatology, gastroenterology, radiation safety	• Consult Pediatric Heme/Onc, transfusion medicine, hematopoietic stem cell transplantation, radiology oncology, mental health, endocrinology, ophthalmology, pain service, dermatology, gastroenterology, and radiation safety.	• Consult Pediatric Heme/Onc, transfusion medicine, hematopoietic stem cell transplantation, radiology oncology, mental health, endocrinology, ophthalmology, pain service, dermatology, gastroenterology, and radiation safety.
*RITN centers did not reach consensus on the prophylactic antimicrobial to administer to each patient or on which patients receive prophylactic antimicrobials. **RITN centers would administer prophylactic antimicrobials to Patient 4; 1 RITN center would not administer prophylactic antimicrobials to Patient 5 and Patient 6.			

Strengths

The following strengths demonstrated:

Strength 1: Each participating RITN center demonstrated capability to medically manage admit of an additional patient following receipt of the initial wave of patients including the immediate provision of medical and mental/behavioral consultations necessary based on the patient's need.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: RITN centers should continue to discuss medical management of complex patient types such as those provided in this exercise. Consensus could not be reached among centers as well as within centers (i.e. HIMT and medical specialists) on a consistent approach to medically manage their assessed patients (either adult or pediatric) and whether or not to admit patients for continued care. Continued discussion through training and exercises will provide an opportunity for the medical care teams to assemble and discuss the complex medical profiles of the NDMS patients they may receive given the events of this exercise scenario.

CONCLUSION

This report augments existing planning/training/exercising programs related to RITN center receipt and medical management of radiologically exposed patients transported to their center and their capabilities to provide medical care in austere situations in which crisis standards of care have been implemented. The strengths validate well-established aspects of the plans while the opportunities for improvement provide information to enhance, refine, or improve existing plans, protocols, policies, procedures, and systems. It is anticipated that the improvement plan will be incorporated into the efforts of each participating RITN center to strengthen the response of the radiation injury treatment network of hospitals and healthcare systems as it relates to the core capabilities identified in this report.

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2017 RITN Tabletop Exercise conducted on May 30, 2017. RITN centers can utilize this table to organize the opportunities for improvement to augment and develop their own corrective actions.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element[1]	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: [Capability Name]	1. [Area for Improvement]	[Corrective Action 1]					
		[Corrective Action 2]					
		[Corrective Action 3]					
	2. [Area for Improvement]	[Corrective Action 1]					
		[Corrective Action 2]					

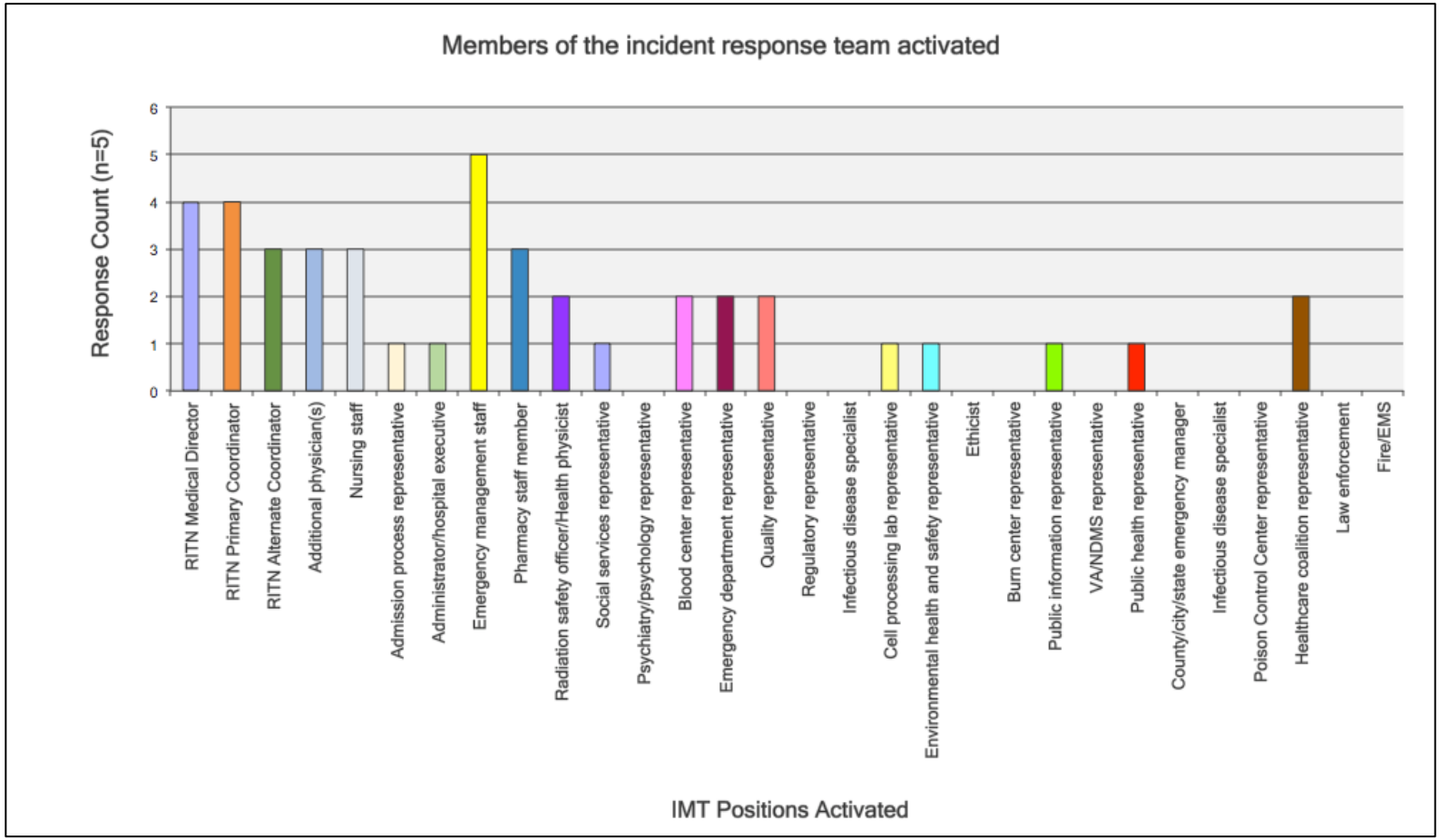
[1] Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Emory University Hospital	Adela Salame-Alfie
Emory University Hospital	Amelia Langston
Emory University Hospital	Daniela Casbourne
Emory University Hospital	Ziad Kazzi
Emory University Hospital	Eungjoe Kim
Emory University Hospital	Sam Sharter
Massachusetts General Hospital	David Reisman
Massachusetts General Hospital	Susan O'Donnell
Massachusetts General Hospital	Alison Parmar
Massachusetts General Hospital	Robert Krupa
Massachusetts General Hospital	Paul Biddinger
Massachusetts General Hospital	Jacquelyn Nally
Massachusetts General Hospital	Samantha Luk
Massachusetts General Hospital	Kay Hanger
Massachusetts General Hospital	Thomas Spitzer
Massachusetts General Hospital	Kerry Collier
Massachusetts General Hospital	Adrienne Daigle
Massachusetts General Hospital	Daniel Skolnick
Massachusetts General Hospital	Laura Listro
Massachusetts General Hospital	Sheryl Savino
Massachusetts General Hospital	Elisabeth Lopez
Massachusetts General Hospital	Laura White
Medical University of South Carolina	Elizabeth Williams
Medical University of South Carolina	Cindy Kramer
Medical University of South Carolina	Colleen Butcher
Medical University of South Carolina	Carrie Moore
Medical University of South Carolina	Michelle Hudspeth
Medical University of South Carolina	Beverly Horne
Medical University of South Carolina	Kathy Edwards
Medical University of South Carolina	Melinda Biller
Medical University of South Carolina	Brian Fletcher
Medical University of South Carolina	Scott Person
Stanford University Healthcare	Adam Garcia
Stanford University Healthcare	Kristina Esmond

Participating Organizations	
Stanford University Healthcare	Trisha Jenkins
Stanford University Healthcare	Michele Blazek
Stanford University Healthcare	Lance Phillips
Stanford University Healthcare	Daniel Ramberger
Stanford University Healthcare	Scott Skiles
Stanford University Healthcare	Jennifer Winder
Stanford University Healthcare	Laurie Friedman
Stanford University Healthcare	Donna Healy
Stanford University Healthcare	Teresa Reyna
Stanford University Healthcare	Sally Arai
Stanford University Healthcare	Tom Roussin
Stanford University Healthcare	Gabe Gamman
Stanford University Healthcare	Samuel Nkansah
Stanford University Healthcare	Kathy Harris
Stanford University Healthcare	Brandon Bond
Stanford University Healthcare	Marina Zamarnon
Stanford University Healthcare	Jamie Stone
University of California-San Francisco Medical Center	Brandon Holmes
University of California-San Francisco Medical Center	Collin Ma
University of California-San Francisco Medical Center	Enrico Joaquin
University of California-San Francisco Medical Center	James Cook
University of California-San Francisco Medical Center	Jordan Cathey
University of California-San Francisco Medical Center	Sandhya Kharbanda
University of California-San Francisco Medical Center	Jennifer Check

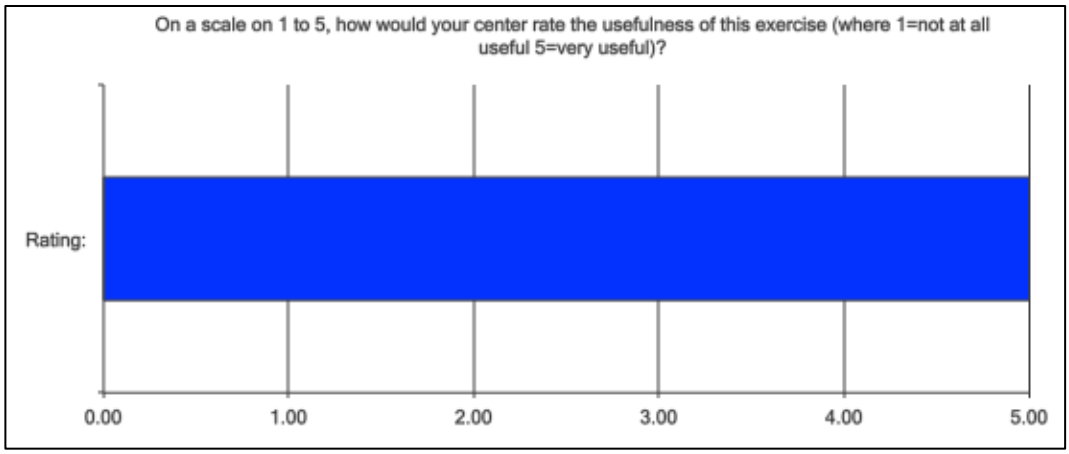
Members of the Incident Response Team Activated for the Exercise



APPENDIX C: PARTICIPANT FEEDBACK

RITN Centers were asked to provide some brief feedback on an online questionnaire following the exercise. The comments below are not in any particular order and are provided unedited to avoid intent changes.

Note: The average rating provided by the participating RITN centers regarding the usefulness of this exercise was 5.0 (out of 5.0). Number of responses = 5.



Based on discussions today, please briefly describe the 1 or 2 strengths demonstrated by your organization's ability to respond to a radiation mass casualty incident as described in this exercise scenario.	
Emory University Hospitals	*Participation. Ability to leverage broader healthcare system for capacity and resources. Large outpatient capability.*
Massachusetts General Hospital	*Strengths include medical management as well as university support and existing infrastructure.*
Medical University of South Carolina	*We have a strong Emergency Preparedness Department (EPD) that is familiar with RITN and the scenario's presented. They would be able to quickly assemble the BMT team (also strong) and can assess patients for need for increased care. Strong commitment from other departments such as pharmacy and the labs. EPD has strong working relationship with city and state for emergencies, as well as internal emergency plans*

Based on discussions today, please briefly describe the 1 or 2 strengths demonstrated by your organization's ability to respond to a radiation mass casualty incident as described in this exercise scenario.	
Stanford University Healthcare	*Many services were available to participate today. Strength was that people thoughtfully participated in all ways that they were able and took the scenario seriously to think about their daily patients and treatment of theoretical ones. It was rare and great practice. We are going to start a surge plan for the blood center because it would be anticipated that inefficiencies or staffing inadequacies may waste donations.*
University of California-San Francisco Medical Center	*Due to our location on the coast and annual threat of hurricane we have a robust emergency management and disaster preparedness team. They have developed strong ties with local and state organizations that can quickly mobilize and have systems in place to rapidly communicate and coordinate.*

Based on discussions today, please briefly describe the 1 or 2 challenges demonstrated by your organization's ability to respond to a radiation mass casualty incident as described in this exercise scenario.	
Emory University Hospitals	*Creating rapid bed space. Crisis standards of care implementation as related to patients with ACS.*
Massachusetts General Hospital	*Our crisis standards of care are determined by the EOC and as outlined are very general- more specific guidelines would be helpful. Also, I could not find any direct connection between our hospital and MDMS.*
Medical University of South Carolina	*In a situation as in the exercise, it is always unclear about how to describe bed availability on an oncology unit. In an actual emergency, we would be looking for inpatients on the oncology and other units who could be discharged or transferred to other units to receive care. It is possible that with a surge of patients, some would be sent to other types of floors and it would be imperative to have strong communication within the hospital to share the care goals. Also would be a challenge to identify outpatient resources and facilities that could be used to monitor patients daily. We do have resources to care for outpatients but again, it would be difficult to know how many scheduled outpatient appointments could be changed as many of our outpatients still require a great deal of follow up such as lab work and transfusions.*

Based on discussions today, please briefly describe the 1 or 2 challenges demonstrated by your organization's ability to respond to a radiation mass casualty incident as described in this exercise scenario.	
Stanford University Healthcare	*We are worried about staff panic and call out. We saw a lot of staff irrational worry around Ebola and this would likely be worse and would create staffing issues. Pharmaceuticals are ordered every day. This would mean that we would only be guaranteed a short supply of what we have on hand - supply chain may be interrupted. We order per daily patient volume only. We would like to update our NDMS MOU.*
University of California-San Francisco Medical Center	*Housing is a constant concern for our current patients as well as any arriving as part of this scenario. We depend on local hotels who give discounts to our patients. As we are one of the top tourist destinations in the country this could impact the availability of rooms. Our hope is that the local air and navy base facilities would be of use to us in an emergency opening up 500 beds in their patient receiving area. Our review of current mobilizing agents (Neulasta and Neupogen) was a surprise. Our par levels were much lower than we had expected. We determined that we would have been able to only treat a dozen patients for a week before our current stock was gone.*

List and briefly discuss elements to address for future RITN exercises.	
Emory University Hospitals	*Patient tracking and SNS capabilities as they relate to RITN.*
Massachusetts General Hospital	*Continuing to explore what other centers are doing for crisis standards of care and how to increase emergency staffing in case of emergency.*
Medical University of South Carolina	*More discussion about strategies to provide outpatient care for patients who have been brought to centers for care. Discussion about CSC with oncologists across the country to come to agreement (if possible) about standards of care in an emergency situation so that everyone across the country has an idea of how to allocate scarce resources.* *Thanks, this was a great experience and I think we all learned a great deal!*

List and briefly discuss elements to address for future RITN exercises.	
Stanford University Healthcare	*Please send the date possibilities and objectives sooner if possible. We were not able to get some key participants engaged early on and objectives months before may help that. Clinical schedules are built out 6 months in advance!* *Thank you for the great scenario. It was of great value to us as always.*
University of California-San Francisco Medical Center	*Based on our concern over our par levels of Neulasta and Neupogen, we thought it might be of use to determine how much the national supplier (McKesson) would have on hand as well as how they would determine who gets additional supplies and who would make that decision?*

APPENDIX D: ACRONYMS

Acronym	Term
AAR	After Action Report
BMT	Bone Marrow Transplantation
BMP	Bone Marrow Program
CBC	Complete Blood Count
CMP	Comprehensive Metabolic Panel
CSC	Crisis Standards of Care
EKG	Electrocardiogram
FCC	Federal Coordinating Center
GCSF	Granulocyte Colony-Stimulating Factor
HCS	Healthcare Standard
HCT	Hematopoietic Cell Transplantation
HHS	Health and Human Services
HLA	Human Leukocyte Antigen
IV	Intravenous
IND	Improvised Nuclear Device
JPATS	Joint Patient Assessment and Tracking System
LFT	Liver Function Test
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
ONR	Office of Naval Research
PACU	Post Anesthesia Care Unit
PPE	Personal Protective Equipment
RITN	Radiation Injury Treatment Network
SAT	Suicide Assessment Team
TRACES	Web based system to move and track patients
TTX	Tabletop Exercise