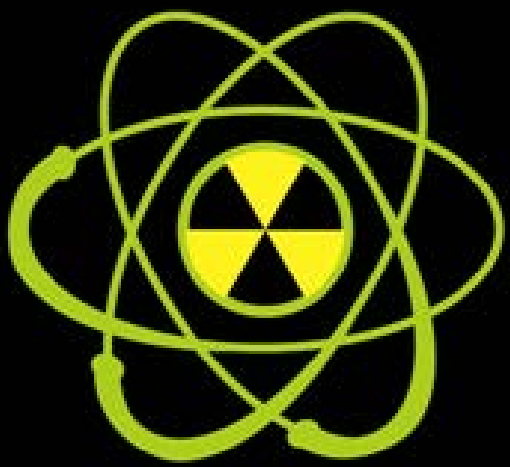
2017

After-Action Report/Improvement Plan
August 28, 2017 Web-Based



EXERCISE OVERVIEW

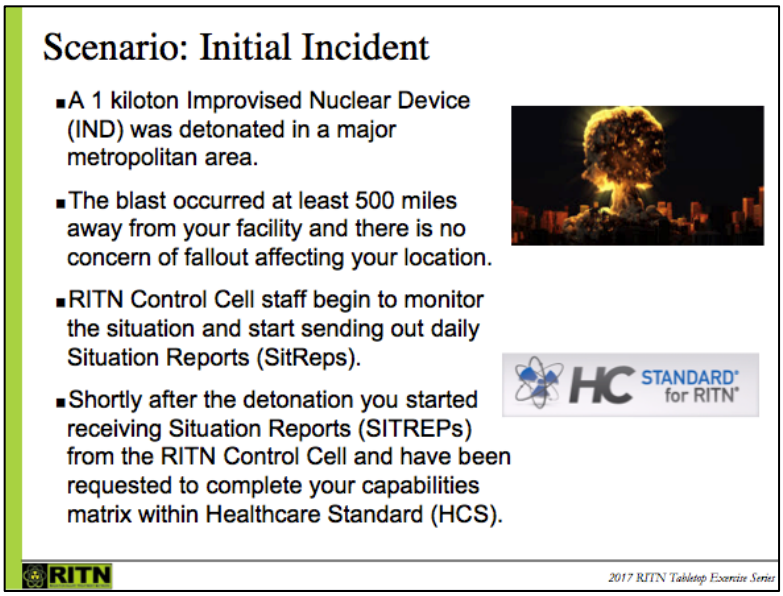
Exercise Name	2017 RITN Tabletop Exercise (TTX)
Exercise Date	August 28, 2017
Scope	This exercise is a distance-based tabletop exercise planned for 2 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response.
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).
Hazard	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 August 28, 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

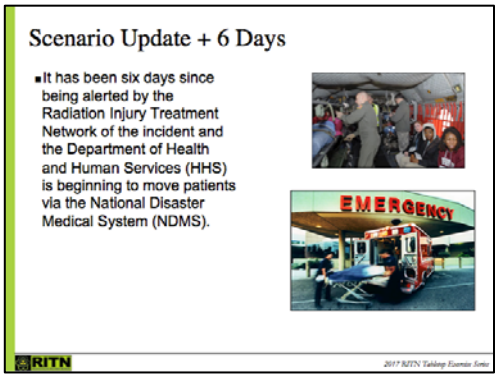


ANALYSIS OF CAPABILITIES

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: The remaining participating centers discussed the challenges they face when completing the Healthcare Standard (HCS) Capabilities Matrix (Figure 3). The two most significant challenges RITN centers indicated having in completing the HCS Capabilities Matrix were: (1) Difficulty in collecting the data, and (2) Confusion with the bed definitions. Only 1 participating RITN center stated difficulty with logging into the system. The remaining 5 participating RITN centers did not report difficulties completing the HCS Capabilities Matrix as many of the centers have redundancies at multiple levels in multiple agencies that include training, instructions, and credentials to access HCS Capabilities Matrix and complete the requested data.

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
City of Hope National Medical Center	30
Karamanos Cancer Center	250
Northwestern Memorial Hospital	90
University of Alabama-Birmingham Medical Center	192
University of Miami Health System	10
Wake Forest Baptist Medical Center	30
University of Utah Medical Center	15

RITN Center	Number of Patients
TOTAL	617

All RITN centers indicated that the number of patients received would be highly dependent on their medical care needs. Centers discussed the informational needs (such as staffing, type of beds needed, medical supplies) required in order for them to properly prepare to receive any NDMS patients.

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).

Table 2: Intake of Patients with CSC Implemented & Large Facilities

RITN Center	Number of Patients
City of Hope National Medical Center	Unknown
Karmanos Cancer Center	Unknown
Northwestern Memorial Hospital	Unknown
University of Alabama-Birmingham Medical Center	280
University of Miami Health System	40
Wake Forest Baptist Medical Center	50
University of Utah Medical Center	30
TOTAL	**400**

Given these two additional considerations, a majority of the participating RITN centers indicated that use of alternate space within their facility; other hospitals within their corporate structure (or care network) would increase the intake of patients by at least 45%. Facilities indicating unable to determine the increase in patients indicated having a large number of local and regional hospitals and large austere facilities that can be utilized that would be coordinated through either local healthcare coalitions, local public health, and/or emergency management agencies, which would increase the numbers of intake patients significantly. Overall, 4 participating RITN centers identified a total of 400 patients that could be received with implementation of crisis standards of care and incorporating large austere emergency treatment facilities.

Communication with the FCC: If requested by the RITN Control Cell to communicate bed availability directly to their assigned Federal Coordinating Center (FCC), all but 1 of the participating RITN centers were able to quickly determine their facility's bed availability and provide that information to their local FCC, but several indicated that communications with their local FCC would occur via their local healthcare coalition or local emergency management agency.

Outpatient Housing: All participating but 1 of the participating RITN centers indicated that hotels have been identified as part of the planning process to house outpatients during RITN activation as well as traveling family members or others that may have accompanied the transported patient. The 1 RITN center without formal alternate housing agreements in place indicated reliance on the local public health and emergency management agencies to assist with any housing assistance.

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 using electronic bed tracking systems and incorporating their local healthcare coalitions as part of the collaboration with the RITN Control Cell and their local Federal Coordinating Center.

Strength 3: All RITN centers have formal agreements currently in-place with local hotels for accommodations as well as utilizing hospital-owned apartments and other 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.

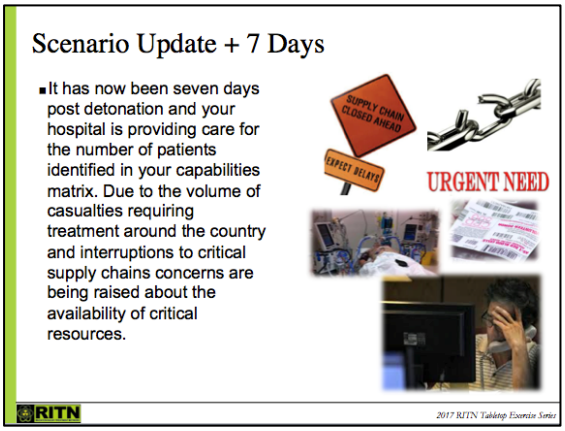
Area for Improvement 2: RITN centers emphasized the need to receive NDMS patient information well in advance of patient transport to the RITN Center. Awareness (or refresher) training should be provided on the NDMS program as well as the end-to-end process to prepare and transport a NDMS patient to a RITN center. 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. Centers would be able to accurately complete the Capabilities Matrix and plan for patient arrival.

Area for Improvement 3: All RITN centers should include planning initiatives to identify viable housing alternatives for outpatients. Alternate housing planning discussions should include local public health, healthcare coalition, and emergency management representatives all of whom may have identified alternate housing options related to other large-scale disaster response efforts.

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: Implementation of Crisis Standards of Care: All participating centers indicated having their own crisis standards of care policy. The centers stated that they relied on overarching guidance from their healthcare coalitions as well as their state policy. The CSC hospital policies incorporated input from internal committees, hospital subject matter experts (e.g. an Ethicist), and the crisis care guidance from external entities (e.g. health coalitions and their State).

All but 1 participating RITN centers stated that a national disaster declaration is sufficient to implement crisis care at their facility. The 1 RITN center stated that one individual (e.g. Incident Commander or Chief Medical Officer) has the authority to make CSC determinations.

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 3):

Table 3: 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
Stem Cell Transplant Team	

RITN centers indicated that public messaging regarding CSC would be coordinated through a joint information center with significant involvement of the hospital Communications Department/ Public Relations Department and the Public Information Officer. The emphasis would be message coordination at all levels from the State, all local agencies, and the hospital.

After 7 days post-detonation, RITN centers discussed those laboratory surge capabilities and all centers demonstrated local and/or regional laboratory surge support. Though dependent on the size of the RITN center, most centers indicated that laboratory staff and laboratory supplies (such as reagents, collection tubes, HLA supplies, blood draw supplies) would become severely depleted and shortages would occur in less than 1-week timeframe.

Table 4: Laboratory Surge Capacity

RITN Center	Max. CBCs with Differentials (Given Expected Resource Constraints)
City of Hope National Medical Center	300 per day
University of Alabama-Birmingham Medical Center	2,000 per day
University of Miami Health System	4,000
Wake Forest Baptist Medical Center	1,500 per day
University of Utah Medical Center	Not provided

A majority of the participating RITN centers stated that all outpatient, routine testing, and chemistries would be delayed/deferred along with any elective surgeries. 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

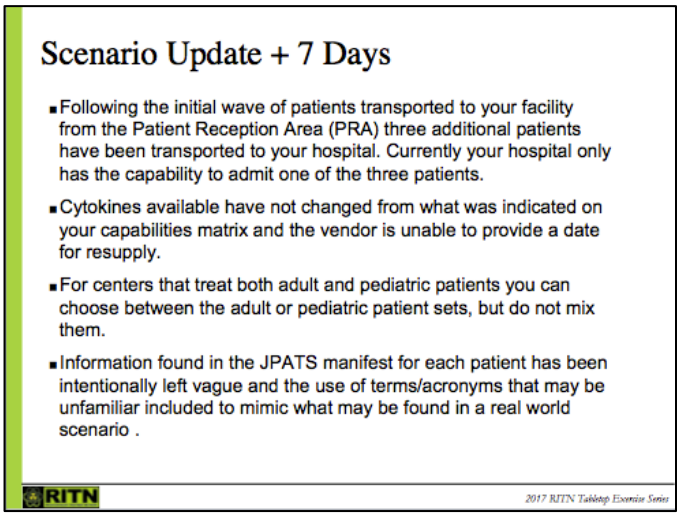
The following areas require improvement:

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: All participating RITN centers decided to assess the adult patients and admit 1 of them. The medical management of the admitted patients is as follows (Table 6):

Table 6: Adult Patient Management

Admitted Patient Management: Adults			
Decisions: Adults	**Patient 1**	**Patient 2**	**Patient 3**
Admit or Outpatient*	No	Yes 1 Center	Yes 3 Centers
Estimated dose upon arrival**	Dose: 3.0 grey Range: 3.0 – 5.0 grey	Dose: 4.0 grey Range: 3.2 – 6.0 grey	Dose: 9.0 grey Range: 7.0 – 11.0 grey
Administer G-CSF	Yes 3 Centers	Yes 4 Centers	Yes 3 Centers
Prophylactic antimicrobials***	Yes 4 Centers Acyclovir Fluconazole Cypofpime Escylovere Microputigen Ciprofloxin	Yes 1 Center Acyclovir Fluconazole Levaquin Ciprofloxin	None
Treatment antimicrobials***	No	Yes 3 Centers Vancomycin IV Zosyn Doxycycline	No
Hydration (or other treatment)	Yes	Yes	Yes
Lab work, Consultations	• HLA typing, Daily CBC with	• Daily CBC with differentials, HLA	• Daily CBC with differentials, blood

Admitted Patient Management: Adults			
Decisions: Adults	**Patient 1**	**Patient 2**	**Patient 3**
	differentials, Type & screen, chemistries, metabolic panel, • Heme/BMT consult, transplant consult, Social work, psychology, dietary	typing, blood cultures, chemistries, glucose monitoring • Consult with infectious disease, wound care management, medical oncology, endocrinology	cultures, type and screen, intravenous fluids, HLA typing, • Consults include BMT/Hematology comfort care, psychology, social services
*RITN centers did not reach consensus on patient admissions. **Centers calculated a wide range for the estimated dose upon arrival for the adult patients. ***Centers did not reach consensus regarding prophylactic and treatment microbials.			

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 on a consistent estimated dose upon arrival for the adult patients. 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 August 28, 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

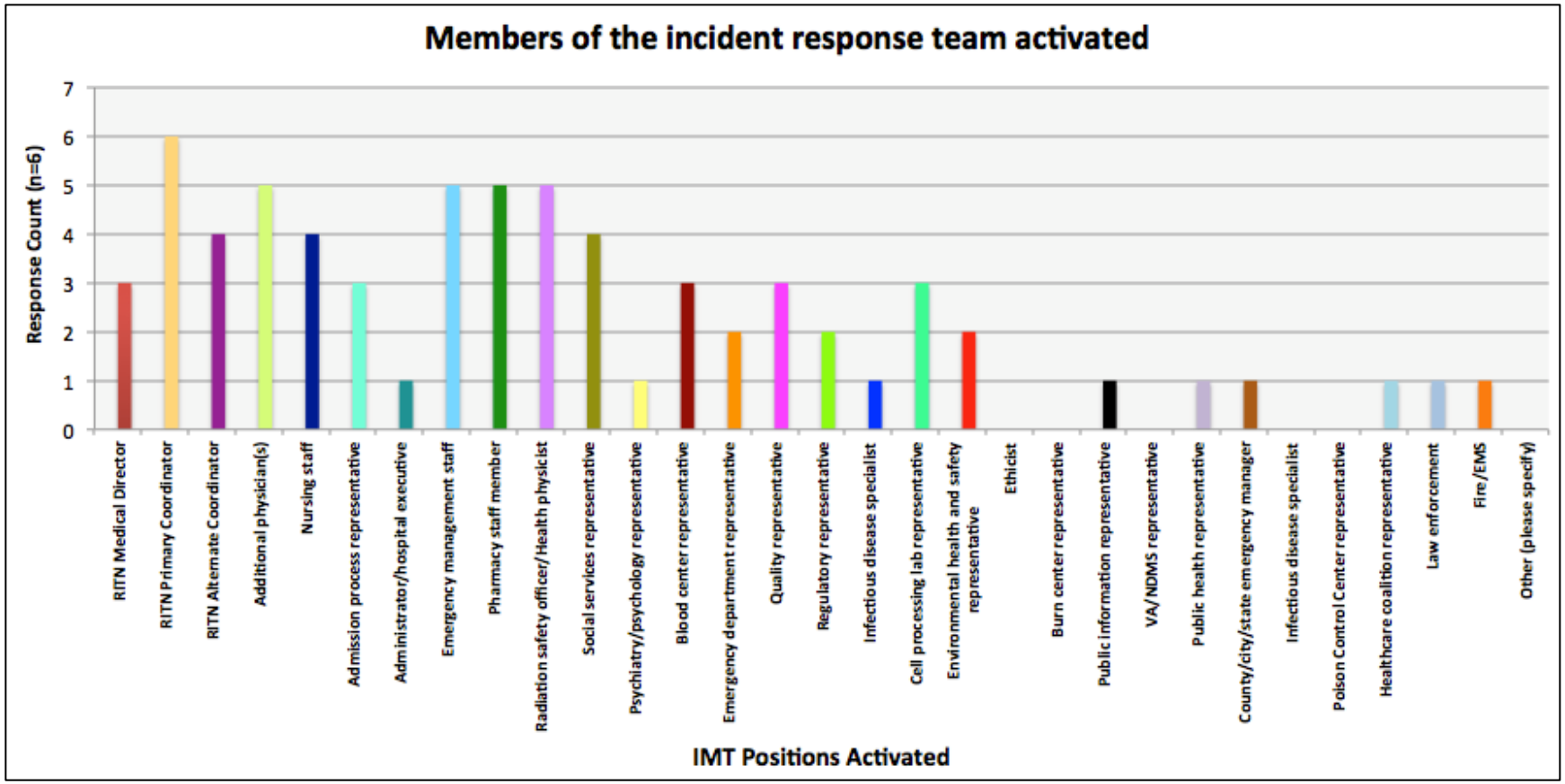
Participating Organizations	
City of Hope National Medical Center	Amber Bill
City of Hope National Medical Center	Randall Heyn-Lamb
City of Hope National Medical Center	Juan Mas
City of Hope National Medical Center	Nellie Garcia
City of Hope National Medical Center	Chatchada Karanes
City of Hope National Medical Center	Carl Kildoo
City of Hope National Medical Center	Anin Boonjalukra
City of Hope National Medical Center	Terry Crammer
City of Hope National Medical Center	Kathryn Torres-Nicolas
City of Hope National Medical Center	Monica Munaretto
City of Hope National Medical Center	Gary Gorospe
City of Hope National Medical Center	Elizabeth Davidson
City of Hope National Medical Center	Elaina Corbett
Franciscan Health	Jeff Morgan
Franciscan Health	Diana Leonard
Franciscan Health	Anne Edwards
Barbara Ann Karmanos Cancer Center	Lisa Engles
Barbara Ann Karmanos Cancer Center	Joe Uberti
Barbara Ann Karmanos Cancer Center	Laura Zubeck
Barbara Ann Karmanos Cancer Center	Michael Joiner
Barbara Ann Karmanos Cancer Center	Cindy Murray
Barbara Ann Karmanos Cancer Center	Lynne Moseley
Barbara Ann Karmanos Cancer Center	Jason Smith
Barbara Ann Karmanos Cancer Center	Ashley Leece
Barbara Ann Karmanos Cancer Center	Suanne Dorr
Barbara Ann Karmanos Cancer Center	Sue Walker
Barbara Ann Karmanos Cancer Center	Stephen Smith
Barbara Ann Karmanos Cancer Center	Leaonard Murdock
Barbara Ann Karmanos Cancer Center	Jeremy Kittredge
Barbara Ann Karmanos Cancer Center	Jenny Atlas
Barbara Ann Karmanos Cancer Center	Lisa Engles
Barbara Ann Karmanos Cancer Center	Joe Uberti
Barbara Ann Karmanos Cancer Center	TH Clark
Barbara Ann Karmanos Cancer Center	Mary Ann Northcote

Participating Organizations	
Barbara Ann Karmanos Cancer Center	AB
Barbara Ann Karmanos Cancer Center	Megan Semeraz
Barbara Ann Karmanos Cancer Center	Linda Scott
Barbara Ann Karmanos Cancer Center	Sheila Finch
Barbara Ann Karmanos Cancer Center	Cheryl Grey
Barbara Ann Karmanos Cancer Center	Deborah Gibbs
Barbara Ann Karmanos Cancer Center	Charlotte Brown
Barbara Ann Karmanos Cancer Center	Kathleen Coyles
Barbara Ann Karmanos Cancer Center	Rick Herame
Barbara Ann Karmanos Cancer Center	Tomoco Avila
Barbara Ann Karmanos Cancer Center	Ann Payne
Barbara Ann Karmanos Cancer Center	Jaclyn Cortopassi
Barbara Ann Karmanos Cancer Center	Nanci Burrows
Barbara Ann Karmanos Cancer Center	Valerie Fred
Barbara Ann Karmanos Cancer Center	Lisa McDowell
Barbara Ann Karmanos Cancer Center	Elizabeth Smythe
Barbara Ann Karmanos Cancer Center	Maureen Hubbell
Barbara Ann Karmanos Cancer Center	Scott Berkseth
Barbara Ann Karmanos Cancer Center	Michael Stellini
Barbara Ann Karmanos Cancer Center	Amanda Cheney
Barbara Ann Karmanos Cancer Center	Kevin Landon
Barbara Ann Karmanos Cancer Center	Susan Adams
Barbara Ann Karmanos Cancer Center	Amber Pitts
Barbara Ann Karmanos Cancer Center	Kyle Quirk
Barbara Ann Karmanos Cancer Center	Karen Baranowski
Barbara Ann Karmanos Cancer Center	Linda Remington
Northwestern Memorial Hospital	Amy Russer
Northwestern Memorial Hospital	Karyn Hartman
Northwestern Memorial Hospital	Ricardo Sumugod
Northwestern Memorial Hospital	Simret Goitim
Northwestern Memorial Hospital	Tom Shook
Northwestern Memorial Hospital	Jeanne Martinez
Northwestern Memorial Hospital	Mike Benson
Northwestern Memorial Hospital	Debra Bergander
Northwestern Memorial Hospital	Robynn Leidig
Northwestern Memorial Hospital	Lisa Fuller

Participating Organizations	
Northwestern Memorial Hospital	Bob Ryan
Northwestern Memorial Hospital	Kourtnie Williams
Northwestern Memorial Hospital	Liz Even
Northwestern Memorial Hospital	Kristen March
Northwestern Memorial Hospital	Stephen Adams
Northwestern Memorial Hospital	Kehinde Adekola
University of Alabama-Birmingham	Robert Meath
University of Alabama-Birmingham	Diana Tate
University of Alabama-Birmingham	Melinda Rodgers
University of Alabama-Birmingham	Jeri May
University of Alabama-Birmingham	Nicole Watts
University of Alabama-Birmingham	Donna Salzman
University of Alabama-Birmingham	Bill Mayfield
University of Alabama-Birmingham	Bob Shepard
University of Alabama-Birmingham	Marisa Marques
University of Alabama-Birmingham	Wendy Madden
University of Miami Health System	RITN Medical Director
University of Miami Health System	RITN Primary Coordinator and Program Manager
University of Miami Health System	RITN Alternate Coordinator and Quality Manager
University of Miami Health System	SCTP Physician
University of Miami Health System	SCTP Physician
University of Miami Health System	SCTP ARNP
University of Miami Health System	SCTP ARNP
University of Miami Health System	SCTP Nurse Manager
University of Miami Health System	Kassandra Lage
University of Miami Health System	Walter Lamar
University of Miami Health System	Seyyedeh Saneeymehri
University of Miami Health System	Radiation Safety Officer / Health Physicist
University of Miami Health System	Social Service Rep
University of Miami Health System	Cara Benjamin
University of Miami Health System	Business Manager
University of Miami Health System	Vincent Torres
University of Miami Health System	Beatrice Georges
University of Miami Health System	Trent Wang

Participating Organizations	
University of Miami Health System	Joseph Vota
University of Miami Health System	Shreya Shah
University of Miami Health System	Nicole Doell
University of Miami Health System	Miriam Levy
University of Miami Health System	Antonio Jimenez
University of Utah	Francesca Paglione
Wake Forest Baptist Medical Center	David Howell
Wake Forest Baptist Medical Center	D. Scott West
Wake Forest Baptist Medical Center	Robert Reece
Wake Forest Baptist Medical Center	Frank Sizemore
Wake Forest Baptist Medical Center	Vicki Lagerwey
Wake Forest Baptist Medical Center	Karen Rike
Wake Forest Baptist Medical Center	Scarlett Hutchens
Wake Forest Baptist Medical Center	Amanda Smith
Wake Forest Baptist Medical Center	David Hurd
Wake Forest Baptist Medical Center	LeAnne Kennedy
Wake Forest Baptist Medical Center	Jonie Chilson
Wake Forest Baptist Medical Center	Jeff Ingle
Wake Forest Baptist Medical Center	Kathy Flowers
Wake Forest Baptist Medical Center	Kenneth Wian
Wake Forest Baptist Medical Center	April Roberson
Wake Forest Baptist Medical Center	Ken Bishop
Wake Forest Baptist Medical Center	David Holder

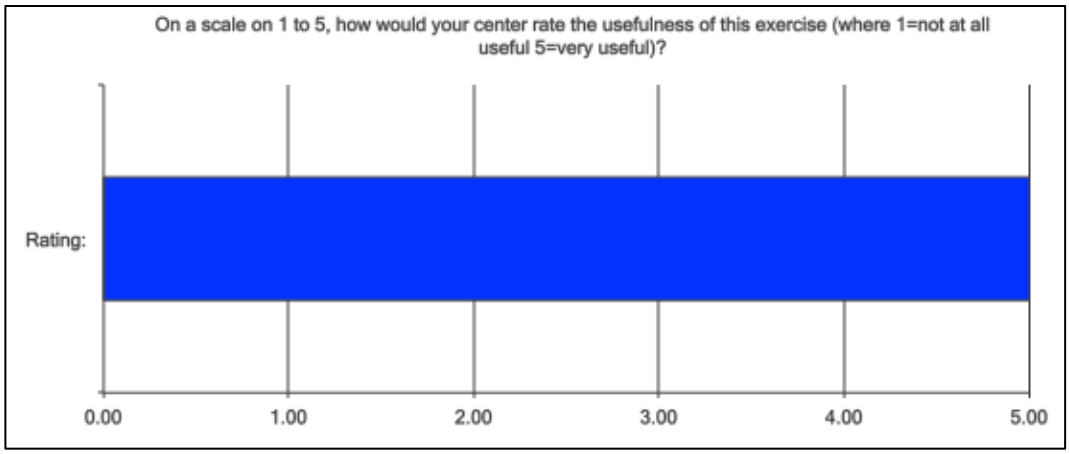
Members of the Incident Response Team Activated for the Exercise



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 = 4.



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.	
City of Hope National Medical Center	*Knowledge of care standards and radiation exposure Partnerships with our FCC and County EMS agencies Current partnerships with hotels and other support services for patients / families.*
Karmanos Cancer Center	*Great participation.*
Northwestern Memorial Hospital	*Strong participation across the hospital and reinforcement of existing plans.*
University of Alabama-Birmingham Medical Center	*After completing the exercise, we are very impressed with exercise as a whole and our hospital's level of preparedness as a whole. We have all the pieces in place to respond to such an emergency.*
University of Miami Health System	*Proactive attitude when it comes to being prepared for such scenario and willingness of all parties to be involved in the best practices for our institution and patient needs.*

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.	
Wake Forest Baptist Medical Center	*The team is very comfortable working together internally as well as with EMS and government officials. Team also takes these events seriously and appreciates the opportunity to practice and think about these events.*
University of Utah Medical Center	*Really good exercise and beneficial. Increased comfort level with the level of detail in current SOPs.*

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.	
City of Hope National Medical Center	*Need to work on the family assistance center* *Need to work on education for physicians for bed management and CSC.*
Karmanos Cancer Center	*CSC and look at those plans and policies.*
Northwestern Memorial Hospital	*Potential challenges may center on resource allocations and coordination with other RITN centers locally.*
University of Alabama-Birmingham Medical Center	*Challenges might include access to meds, housing. We have housing available, but it is a challenge sometimes to house our regular patients.*
University of Miami Health System	*We currently have 3 facilities which are coming under single licensure, which will require support from Medical Executive Committee along with all parties involved in activity today to come up with best practices and CSC policies, including standards specific to SCT patient needs.*
Wake Forest Baptist Medical Center	*Bed availability and staffing could be a challenge. Also, the ability to obtain medications and supplies if there are nationwide shortages.*
University of Utah Medical Center	*Incorporation with multi-disciplinary teams.*

List and briefly discuss elements to address for future RITN exercises.	
City of Hope National Medical Center	*Lab / HLA typing logistics* *family assistance* *Financial processes and working with the FCC.*
Karmanos Cancer Center	*Increased level of patients in the exercise as well as addressing scarce resources in future exercises.*
Northwestern Memorial Hospital	*Exercise with other Chicago RITN centers plus external response agencies to exercise supply shortages and other aspects associated with the RITN program.*
University of Alabama-Birmingham Medical Center	*Future exercises might address guidelines for actions to take when critical people are not available. Perhaps protocols that could be developed for this. Inclusion of JPATS.*
University of Miami Health System	*The exercises provided were adequate. Also, the cross talk between different institutions was beneficial. Sharing of information and SOPs between institutions and having that available and easy to access can help facilitate best practices.*
Wake Forest Baptist Medical Center	*Possible multiple events occurring at once.*
University of Utah Medical Center	*Exercise should include the multi-disciplinary teams.*

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