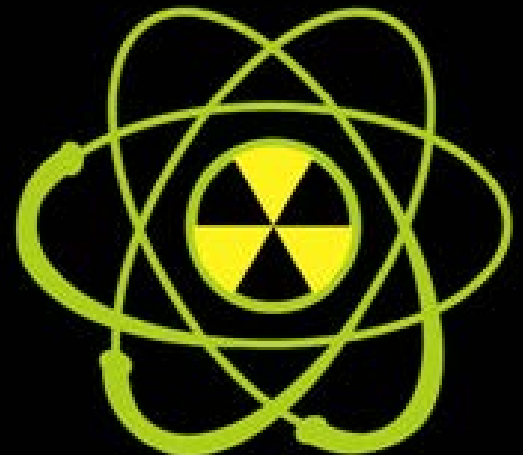


2018

**After-Action Report/Improvement Plan
July 19, 2018**



EXERCISE OVERVIEW

Exercise Name	2018 RITN Tabletop Exercise (TTX)
Exercise Date	July 19, 2018
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	<p>Objective 1: RITN hospital staff is able to identify staffing strategies and plans to ensure adequate staffing during a surge caused by a distant radiological event.</p> <p>Objective 2: RITN hospital staff is able to describe their approaches for triaging patients and determining initial treatment actions for patients with Acute Radiation Syndrome (ARS).</p> <p>Objective 3: RITN hospital staff is able to discuss their procedures for the use of medical countermeasures and other pharmaceuticals in high demand.</p>
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	LDS Hospital – Salt Lake City, UT Mayo Clinic Rochester – Rochester, MN Primary Children’s Medical Center – Salt Lake City, UT Shands Hospital at the University of Florida – Gainesville, FL University of California – San Francisco Medical Center-San Francisco, CA University of Minnesota – Minneapolis, MN University of Rochester/Strong Memorial Hospital – Rochester, NY University of Texas M.D. Anderson Cancer Center – Austin, TX University of Utah – Salt Lake City, UT
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

EXERCISE SUMMARY

On July 19, 2018, RITN centers and the RITN Control Cell participated in a tabletop exercise to discuss RITN centers planning actions to identify staffing strategies and plans to ensure adequate staffing during a surge, describe their approaches for triaging patients and determining initial treatment actions for patients with ARS, and discuss their procedures for the use of medical countermeasures and other pharmaceuticals in high demand following a distant radiological event. 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:

Exercise Scenario Ground Truth

- A 10-kiloton Improvised Nuclear Device (IND) was detonated in a major metropolitan area.
- The blast occurred at least 500 miles away from your facility and there is no concern of fallout affecting your location.
- RITN Control Cell staff begins to monitor the situation and start sending out daily Situation Reports (SitReps).
- All centers are requested to submit daily Healthcare Standard (HCS) capabilities matrix.

Day 4

- The National Disaster Medical System (NDMS) issues activation protocol for your region and the local Federal Coordinating Center (FCC) establishes a Patient Reception Area (PRA) and expects patients to start arriving in the next 24-48 hours.

Day 5

- The first NDMS aircraft begin to arrive at the PRA carrying patients with traumatic injuries. These patients are sent to NDMS hospitals in the area, but your facility has not received any patients at this time.

ANALYSIS OF CAPABILITIES


Module 1: Messaging and Staffing

Participants were provided the following update to the scenario information (Figure 1). Based

Figure 1: Scenario Update Event + 9 Days

Scenario Update + 9 Days

- In the days following the incident your hospital started experiencing a number of staff not reporting for work.
- This issue has escalated over the last two days since rumors and misinformation started being circulated around the hospital and online about the dangers of radioactive patients.
- In addition to staffing shortages numerous inquiries are being made by patients and their families asking if it's still safe to be in the hospital
- PRA staff contact your facility to indicate that they plan to start receiving patients with radiation injuries within the next 24 hours and will begin sending patients to your facility.



RITN

2018 RITN Tabletop Exercise Series

on the scenario inject information, RITN Centers were asked to discuss multiple considerations related to their staff to include messaging. Considerations for messaging included current plans to keep staff safe and the type and method of communication used to inform staff.

Steps to Ensure Staff Safety: RITN centers would activate their hospital incident command/management teams as the immediate action to ensure staff safety. Once the command team has assembled, one of their immediate steps would be to develop and disseminate information to staff following notification from NDMS that patients would be transported. Depending on the number of patients anticipated, message information would be tailored to reflect patients anticipated and the Radiation Safety Office, the hospital PIO, along with other medical specialists, would develop the content and coordination would occur with the department of health and other response partners to ensure message consistency. RITN centers stated that staff messaging would include situational awareness (of the event) as well as the actions being taken at the facility level, reasons the hospital is receiving these patients, and the type of care that will be provided to the patients. Just-in-time training and staff education would be developed with an emphasis on provisions taken and existing protocols that ensure staff

safety. Information would be disseminated via memos, blast emails from hospital leadership, town hall meetings, social media, and staff information sessions.

Staff Messages: Participating centers stated that reinforcing work safety is the main message communicated to staff; no risk of radiation and that staff are safe. Employees, their families and the patients would be educated on the facts of radiation and the assurance the hospital is a safe work environment, the measures taken to continue a safe work environment, assurances that staff would not become contaminated, and the patients coming are exposed and not contaminated (i.e. the differences between exposure and contamination). Additionally, staff would be provided information regarding the clinical profile of an exposed patient and their potential short-term needs (i.e. days) and 3 participating centers indicated that staff would be available to answer questions. The incident management team in collaboration with the Radiation Safety Officer, the RITN Medical Director, RITN Coordinator, and the Communications Department would draft and approve the messages.

Specific messages would be developed and distributed for both internal and external audiences. External messages would be coordinated through the PIO Office/Communications Office with local health department as well as city, county, state, and the VA. Dissemination platforms would include all social media channels, facility webpage, and traditional media outlets (television and radio). Examples of internal message dissemination provided were:

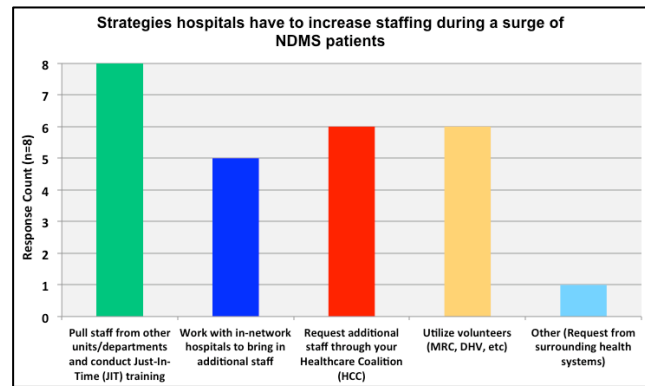
- Internal notification (i.e. Everbridge) and email
- Hospital paging
- Hospital intranet
- Recorded messages sent through internal phone tree

Multiple RITN centers stated that screen savers for their computers would be updated to include information.

Staff Increases: RITN centers discussed multiple strategies to increase staffing levels during a NDMS surge of patients (Figure 2). All participating centers utilized 3 strategies:

- Pull staff from other units/departments and conduct just-in-time training
- Reassign staff from in-network hospitals
- Request staffing support from surrounding health systems as needed.

Figure 2: Strategies to Increase



Though six of the eight participating centers have a process in place to request a waiver so staff/patient ratios can be adjusted, the participating RITN centers indicated no difficulty in reassigning staff internally to support a NDMS surge of patients. Given the staffing depth and the number of days prior to the arrival of NDMS patients, RITN centers demonstrated the capability to quickly identify staff for reassignment to support a surge.

RITN Radiation Safety Course: Seven of the 8 participating RITN centers have a predefined course for non-medical staff for radiation training. The Radiation Safety Officer is primarily responsible for developing the content for non-medical staff and this content is included in annual in-person or online refresher radiation safety training. These existing courses could be easily modifiable for a RITN surge of patients.

Volunteers: Given the events in this scenario, all participating RITN centers currently have policies and procedures in place to credential and utilize medical and non-medical volunteers. RITN centers provided a variety of processes to ensure credentials are appropriate, such as:

- Internal departments verify credentialing
- Mutual Aid Agreements for medical volunteers
- Healthcare Coalition for request and credentialing

All RITN centers indicated a type of supervision policy for non-medical volunteers or partner/shadow policy. Not all RITN centers would utilize medical volunteers, but 5 participating RITN centers stated medical volunteers would be partnered with in-house medical staff with input from the in-house staff on suitability to provide care.

Strengths

The following strengths were demonstrated:

Strength 1: All RITN centers demonstrated that ability to rapidly disseminate a coordinated internal and external message upon notification of the receipt of NDMS patients.

Strength 2: All RITN centers demonstrated and discussed the ability to rapidly augment staffing levels to treat a surge of NDMS patients. Participating centers also stated current plans to augment staff include community partners and use of hiring agencies for non-medical and medical staff support.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: The Radiation Safety Officer should ensure that all medical and non-medical staff completes a predefined radiation safety course. If a predefined radiation safety course is not available, the RSO should work with RITN to identify and complete said course.

Area for Improvement 2: For those without an established credentialing process, RITN centers should include planning initiatives to develop such a process. RITN centers should research existing software platforms to determine if their existing IT infrastructure can support the applications necessary to electronically credential volunteers if a NDMS surge occurs at their facility.

Module 2: Patient Triage and Medical Countermeasures

Participants were provided the following update to the scenario information (Figures 3 and 4).

Figure 3: Scenario Update Event + 10 Days

Scenario Update + 10 Days

- The first NDMS aircraft evacuating patients with radiation only injuries arrives at the PRA.
- NDMS officials expect there will be multiple aircraft a day arriving for the next several days.
- Given your facility is one of the few that can provide specialized care for ARS you'll be asked to accept as many as you can.
- Since the incident several vendors have been unable to provide scheduled deliveries of medical supplies due to supply chain disruptions as well as nationwide shortages of critical supplies.
- Specifically, shortages of antibiotics (IV and PO), growth factors, IV fluids, and reagents for lab analyzers. This has caused your hospital to start operating under contingency conditions for supplies

URGENT NEED

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Figure 4: Scenario Update Event + 10 Days

Scenario Update + 10 Days

Source: *Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response*

	Conventional	Contingency	Crisis
Space	Usual patient care space fully utilized	Patient care areas re-purposed (PACU, monitored units for ICU-level care)	Facility damaged/unsafe or non-patient care areas (classrooms, etc.) used for patient care
Staff	Usual staff called in and utilized	Staff extension (brief deferrals of non-emergent service, supervision of broader group of patients, change in responsibilities, documentation, etc.)	Trained staff unavailable or unable to accept/care for volume of patients even with extension techniques
Supplies	Cached and usual supplies used	Conservation, adaptation, and substitution of supplies with occasional re-use of select supplies	Critical supplies lacking, possible re-allocation of life-sustaining resources
Standard of care	Usual care	Functionally equivalent care	Crisis standards of care?

Normal operating conditions Extreme operating conditions

Indicator: potential for crisis standards? Trigger: crisis standards of care?

Dosage calculator is available at: http://www.remm.nlm.gov/ars_wbd.htm

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Based on the scenario inject information, 10 days have elapsed since the detonation and RITN centers are experiencing disruptions to their supply chains and resources as there are nationwide shortages of critical supplies (e.g. IV and PO, growth factors, IV fluids, and reagents for lab analyzers). RITN centers are being asked to accept as many ARS patients as possible.

Patient Reception Area: All participating RITN centers have a formal plan that outlines the process to designate a location to receive patients from the Patient Reception Area where they will be re-triaged and processed for care. Two of the participating RITN centers have a contingency plan for those NDMS patients not admitted; following triage the non-admitted patients would be transported to a local hospital or to faith-based local hospitals. All participating RITN centers stated all patients would be re-triaged at a reception area near their emergency department or at their pre-planned alternate care site; 1 of the 8 RITN centers indicated the process is different than for ambulatory patients with non-life threatening issues (i.e. NDMS patients would go to a different facility, but on the same medical campus).

Adult Patient Treatment: Five of 8 participating RITN centers chose the adult patients to triage and treat. Of note, none of the patients had received growth factors prior to arrival at the RITN center (See Appendix B). Based on the initial triage of patients, RITN centers reached consensus on treating the following patients:

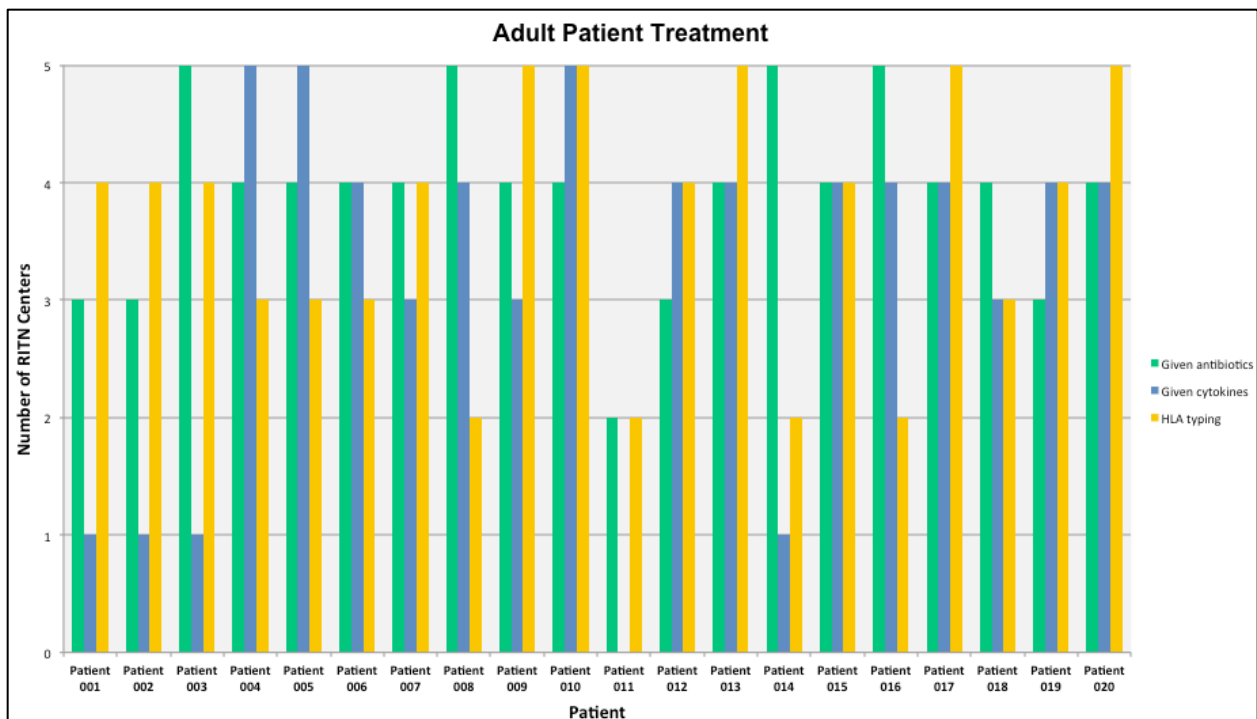
Adult Patient	Treatment Decision
Patient 1	Treat as Outpatient
Patient 4	Treated as Outpatient
Patient 8	Admitted to BMT Bed

Patient 13	Admitted to BMT Bed
Patient 17	Admitted to BMT Bed

Patient identified for outpatient care would be educated on the signs and symptoms to observe (i.e. the standard outpatient BMT information with emphasis on exposure and injuries from radiation). Also, these patients would be monitored daily at the outset (vitals, blood draws for CBC or CBC with differentials, CMP, ABO) or a schedule for monitoring would be determined based on the initial blood results and appointments would be adjusted as needed. Patients would be given the appropriate contact information for Infection Control at the RITN center as well as for housing assistance. One RITN center would active their Family Center to coordinate placement of patients and families in local housing.

The following graph displays the number of adult patients that would receive cytokines, antibiotic therapy, and HLA typing. RITN centers reached consensus on the following:

Figure 5: Adult Treatment Therapies



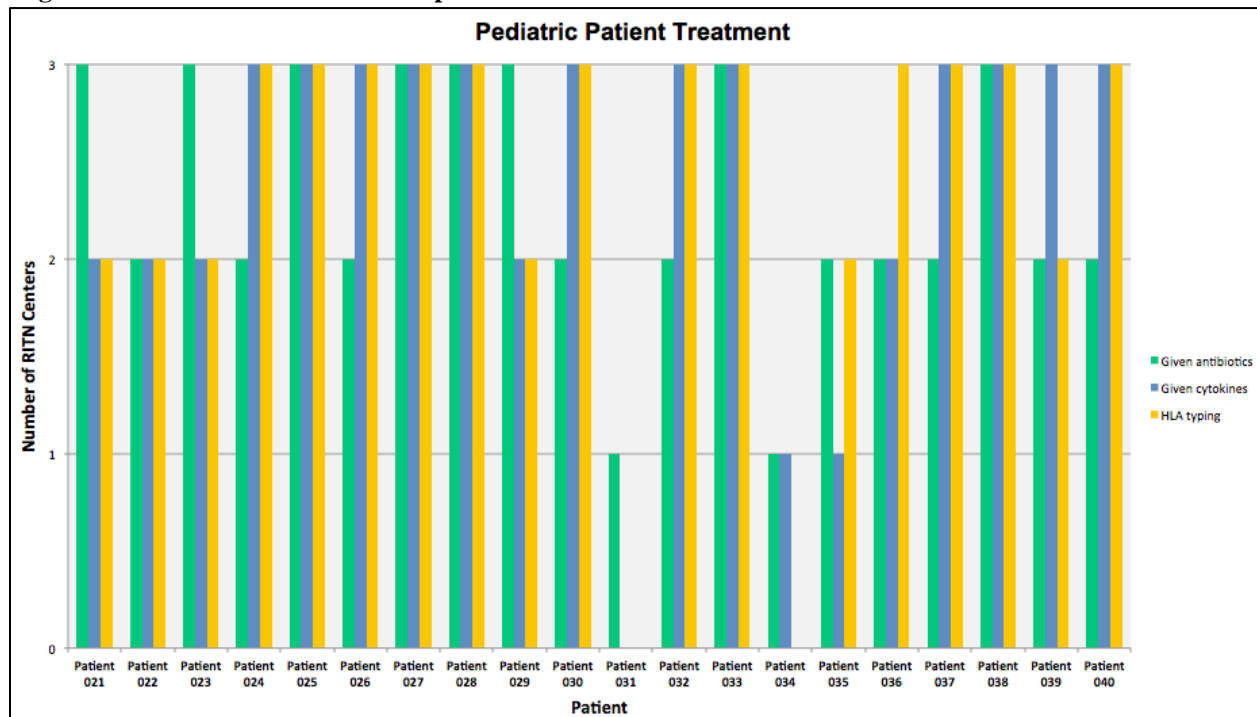
- Patient 3 given antibiotics
- Patient 4 given cytokines
- Patient 5 given cytokines
- Patient 8 given antibiotics

- Patient 9 HLA Typing
- Patient 10 given cytokines and HLA Typing
- Patient 13 HLA Typing
- Patient 14 given antibiotics
- Patient 16 given antibiotics
- Patient 17 HLA Typing
- Patient 20 HLA Typing

Pediatric Patient Treatment: Three RITN centers discussed the pediatric patients for triage and subsequent medical management (see Appendix B). Of note, none of the patients had received growth factors prior to arrival at the RITN center. RITN centers reached consensus for the triage of Patient 31; all other triage decisions differed.

The following graph displays the number of pediatric patients that would receive cytokines, antibiotic therapy, and HLA typing. RITN centers reached consensus on the following:

Figure 6: Pediatric Treatment Therapies



The	Pediatric Patient	Treatment Therapies
	<i>Patient 21</i>	Antibiotics
	<i>Patient 23</i>	Antibiotics
	<i>Patient 24</i>	Cytokines and HLA Typing
	<i>Patient 25</i>	Antibiotics, Cytokines, HLA Typing
	<i>Patient 26</i>	Cytokines and HLA Typing
	<i>Patient 27</i>	Antibiotics, Cytokines, HLA Typing
	<i>Patient 28</i>	Antibiotics, Cytokines, HLA Typing
	<i>Patient 29</i>	Antibiotics
	<i>Patient 30</i>	Cytokines and HLA Typing
	<i>Patient 31</i>	NO cytokines and HLA Typing
	<i>Patient 32</i>	Cytokines and HLA Typing
	<i>Patient 33</i>	Antibiotics, Cytokines, HLA Typing
	<i>Patient 36</i>	HLA Typing
	<i>Patient 37</i>	Cytokines and HLA Typing
	<i>Patient 38</i>	Antibiotics, Cytokines, HLA Typing
	<i>Patient 39</i>	Cytokines
	<i>Patient 40</i>	Antibiotics, Cytokines, HLA Typing

RITN center triaging and treating the pediatric patients would be educated on neutropenic precautions and instructed to seek medical care if they developed a fever, increased vomiting and diarrhea, and bleeding. Generally, all pediatric patients would be monitored at outpatient clinics.

RITN centers discussed processes/procedures to determine whether or not equipment could be reused and sterilized for otherwise disposable equipment. One of the three participating RITN centers triaging and treating pediatric patients only re-use equipment that could run through their autoclave. The other 2 RITN centers triaging and treating pediatric patients do not have a process or plans in place to reuse and sterilized otherwise disposable equipment.

Strengths

The following strengths were 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: All RITN centers should develop a formal plan for the transport of ARS patients from their Patient Reception Area. Staff safety precautions and recommendations

should be included in this plan and the Radiation Safety Officer should participate in the plan's development.

Area for Improvement 2: All RITN centers should develop (or review and update) policies or procedures regarding the reuse and sterilization of otherwise disposable equipment for circumstances of critical shortages. Considerations for planning include: stockpiling disposable equipment needed for NDMS patients and re-supply agreements from neighboring facilities for equipment needed for NDMS patients only.

Area for Improvement 3: All participating RITN centers should develop and or augment their existing just-in-time training for HLA typing and medical countermeasures pertaining to the receipt of victims that were exposed to radiological material. This training should be developed as part of improvement planning following this exercise.

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 2018 RITN Tabletop Exercise conducted on July 19, 2018. 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.

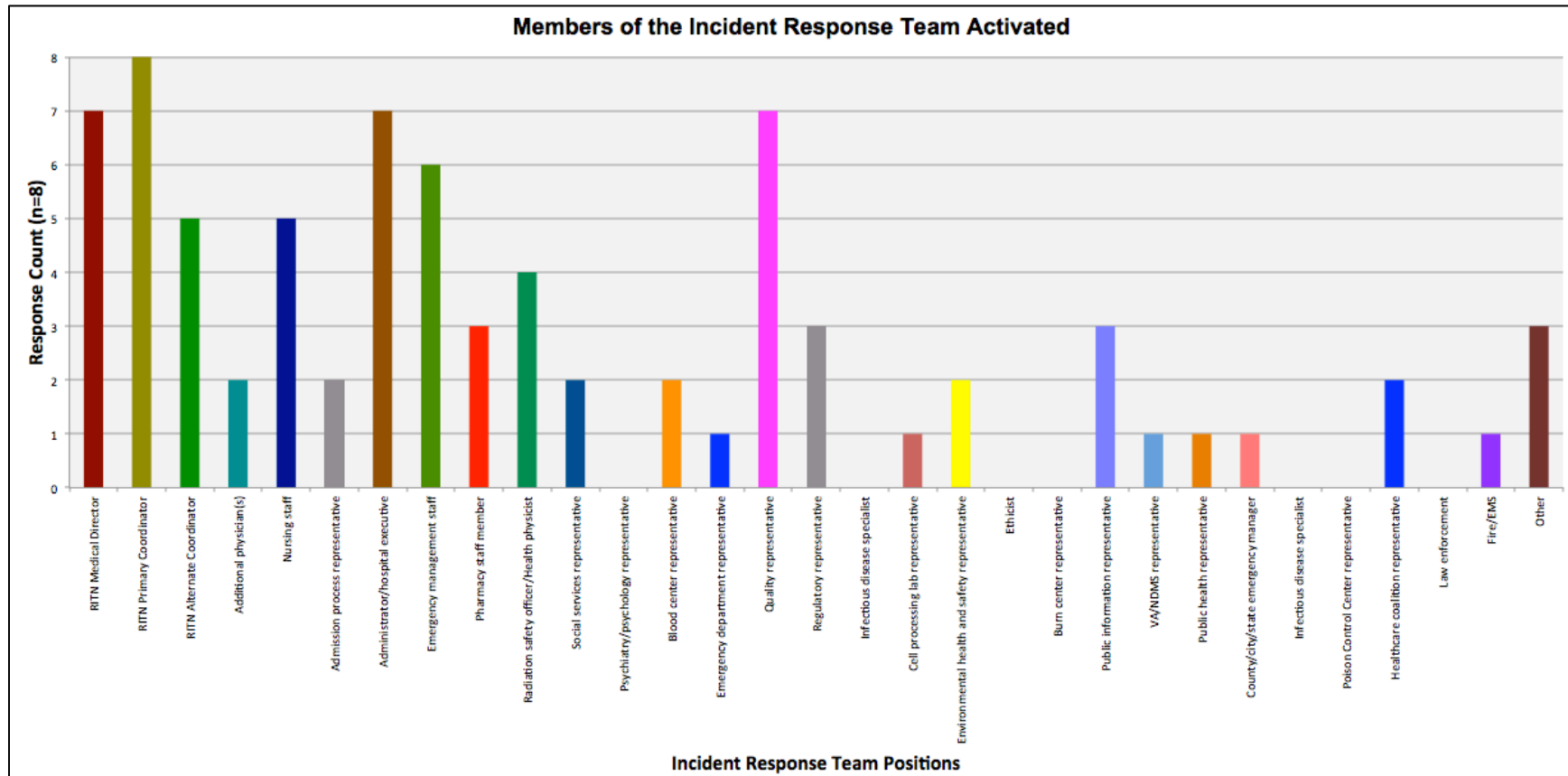
APPENDIX B: PATIENT DECISIONS & INCIDENT MANAGEMENT TEAM ACTIVATION

The following tables depict the adult and/or pediatric patient medical management decisions.

Adult Patient Triage						
	Admitted to BMT bed	Admitted to hematology/oncology bed?	Treated as an outpatient	Discharged to home / shelter	Provided palliative care only	Total
Patient 001	0	0	5	0	0	5
Patient 002	2	0	3	0	0	5
Patient 003	4	1	0	0	0	5
Patient 004	0	0	5	0	0	5
Patient 005	1	3	1	0	0	5
Patient 006	1	0	4	0	0	5
Patient 007	4	0	0	0	1	5
Patient 008	5	0	0	0	0	5
Patient 009	1	0	4	0	0	5
Patient 010	3	2	0	0	0	5
Patient 011	0	0	4	1	0	5
Patient 012	3	0	1	0	1	5
Patient 013	5	0	0	0	0	5
Patient 014	1	2	1	1	0	5
Patient 015	3	1	0	0	1	5
Patient 016	1	0	4	0	0	5
Patient 017	5	0	0	0	0	5
Patient 018	1	2	1	0	1	5
Patient 019	1	2	1	0	1	5
Patient 020	2	1	2	0	0	5

Pediatric Patient Triage						
	Admitted to BMT bed	Admitted to hematology/oncology bed?	Treated as an outpatient	Discharged to home / shelter	Provided palliative care only	Total
Patient 021	0	2	1	0	0	3
Patient 022	1	1	1	0	0	3
Patient 023	1	2	0	0	0	3
Patient 024	0	2	1	0	0	3
Patient 025	0	2	1	0	0	3
Patient 026	0	2	1	0	0	3
Patient 027	2	1	0	0	0	3
Patient 028	1	2	0	0	0	3
Patient 029	1	2	0	0	0	3
Patient 030	1	1	1	0	0	3
Patient 031	0	0	3	0	0	3
Patient 032	0	2	1	0	0	3
Patient 033	2	0	1	0	1	3
Patient 034	0	1	2	0	0	3
Patient 035	1	1	0	1	0	3
Patient 036	0	2	1	0	0	3
Patient 037	2	0	1	0	0	3
Patient 038	2	1	0	0	0	3
Patient 039	0	2	1	0	0	3
Patient 040	0	2	1	0	0	3

Members of the Incident Response Team Activated for the Exercise



APPENDIX C: EXERCISE PARTICIPANTS

Participating Organizations	
LDS Hospital	Christopher Chun
LDS Hospital	Linda Meaux
LDS Hospital	Melissa Parra
LDS Hospital	Daanish Hoda
LDS Hospital	Karen Armatage
LDS Hospital	Kirsten Mills
LDS Hospital	Rob Dent
Mayo Clinic Rochester	Elizabeth Zimmermann
Mayo Clinic Rochester	Jo Granberg
Mayo Clinic Rochester	Brian Zmolek
Mayo Clinic Rochester	Tom Graham
Mayo Clinic Rochester	Jay Johnson
Mayo Clinic Rochester	William Hogan
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Primary Children's Medical Center	Cheryl Gerdy
Primary Children's Medical Center	Rebekah Hoffner
Shands Hospital at the University of Florida	Carey Hudson
Shands Hospital at the University of Florida	Ebbin Spellman
Shands Hospital at the University of Florida	Kendall Gibson
Shands Hospital at the University of Florida	Natalie Dotson
Shands Hospital at the University of Florida	Tracie Kilcrease
Shands Hospital at the University of Florida	Shani King
Shands Hospital at the University of Florida	Ashley Richards
Shands Hospital at the University of Florida	Dannielle Obermeier
Shands Hospital at the University of Florida	Jamei Dess
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University of California-San Francisco Medical Center	Jennifer Check
University of California-San Francisco Medical Center	Barbara Feldhuasa
University of California-San Francisco Medical Center	Hannah O'Donivan
University of California-San Francisco Medical Center	Francine Sneddon
University of California-San Francisco Medical Center	Marjorie Smallwood
University of California-San Francisco Medical Center	James Cook
University of California-San Francisco Medical Center	Jewelyn Alcantar
University of California-San Francisco Medical Center	Kristen Bole

Participating Organizations	
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University of Minnesota	Margaret Macmillon
University of Minnesota	Sue Haight
University of Minnesota	Stacia Binchuel
University of Minnesota	Chris Lemme
University of Minnesota	Janet Ziegler
University of Minnesota	Ann Hagerman
University of Minnesota	Joel Joshua
University of Minnesota	Jennifer Grant
University of Minnesota	Linda Meulnes
University of Minnesota	Brian Vetter
University of Minnesota	Claudio Brunson
University of Minnesota	Connie Weston
University of Minnesota	Kris Kaus
University of Minnesota	Kim Nelson
University of Minnesota	Lisa Van Orsow
University of Minnesota	Eleanor Leary
University of Minnesota	Patti Herzog
University of Minnesota	Kathi VandeGuchile
University of Rochester Medical Center/Strong Memorial Hospital	David Conover
University of Rochester Medical Center/Strong Memorial Hospital	David Bujak
University of Rochester Medical Center/Strong Memorial Hospital	Mike Sayers
University of Rochester Medical Center/Strong Memorial Hospital	Meg Blaney
University of Rochester Medical Center/Strong Memorial Hospital	Jane Liesell
University of Rochester Medical Center/Strong Memorial Hospital	Myra Coppage
University of Rochester Medical Center/Strong Memorial Hospital	Sharon Swift
University of Rochester Medical Center/Strong Memorial Hospital	Jeff Quinn
University of Rochester Medical Center/Strong Memorial Hospital	Mark Cavanaugh

Participating Organizations	
University of Rochester Medical Center/Strong Memorial Hospital	Patrick Byrne
University of Rochester Medical Center/Strong Memorial Hospital	Jenna Podlucky
University of Rochester Medical Center/Strong Memorial Hospital	Kate Millu
University of Rochester Medical Center/Strong Memorial Hospital	Mike Ellis
University of Rochester Medical Center/Strong Memorial Hospital	Adam Melaragno
University of Rochester Medical Center/Strong Memorial Hospital	Rhona Henry
University of Rochester Medical Center/Strong Memorial Hospital	Anne McKennon
University of Rochester Medical Center/Strong Memorial Hospital	Aaron Cignarale
University of Rochester Medical Center/Strong Memorial Hospital	Johnny Tolbert
University of Rochester Medical Center/Strong Memorial Hospital	George Dorgan
University of Texas – MD Anderson Cancer Center	Lori Griffin
University of Texas – MD Anderson Cancer Center	Brian Owosani
University of Texas – MD Anderson Cancer Center	Gregory Botz
University of Texas – MD Anderson Cancer Center	Adam Timko
University of Texas – MD Anderson Cancer Center	Dana Willis
University of Texas – MD Anderson Cancer Center	Margaret Meyer
University of Texas – MD Anderson Cancer Center	Sairah Ahmed
University of Texas – MD Anderson Cancer Center	Kalifa Kelly
University of Texas – MD Anderson Cancer Center	Vhrku Bhaketa
University of Texas – MD Anderson Cancer Center	Harshitha Vemulapalli
University of Texas – MD Anderson Cancer Center	Edward Guerrero
University of Texas – MD Anderson Cancer Center	Kathie Nemeth
University of Utah	Kip Thompson
University of Utah	Francesca Paglione

APPENDIX D: 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 = 8.

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.	
LDS Hospital/University of Utah	<i>The three hospitals in Utah will be able to work together to triage the patients and determine which hospital they will be directed to.</i>
Mayo Clinic Rochester	<i>Good internal coordination; deeply resource/well staffed; annual participation in multiple casualty training events.</i>
Primary Children's Medical Center	<i>We are part of a cohesive group of three hospitals that can work together and share resources. We are in the process of getting our local Hospital Association more information so that they can help us in a time of need.</i>
Shands Hospital of the University of Florida	<i>The ability for people in our group to get to the answers together.</i>
University of California – San Francisco Medical Center	<i>I think we have a strong communications network for staff. Messaging. We have a pretty thorough Emergency Action Plan. We have dedicated physicians and RNs.</i>
University of Minnesota	<i>We had many roles with a lot of experience attending our session and felt we could quickly create and sustain an organized plan. We have many policies in place to guide us in an event like this that allow us to flex work and resources with our hospital, clinic, lab and cell therapy lab all in close proximity to one another.</i>
University of Rochester Medical Center/Strong Memorial Hospital	<i>We have very strong community partners, as evidenced by our attendance today. County, state and federal attendees.</i>
University of Texas – MD Anderson Cancer Center	<i>We are a large institution and have access to many resources both personnel and physical supplies in our network. We have a great emergency management system in place. We have cancer experts well versed in radiation exposure and patients with very compromised immune systems.</i>

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.	
LDS Hospital/University of Utah	<i>How to get more training out to non-BMT personnel.</i>
Mayo Clinic Rochester	<i>Difficult to engage all echelons of medical care required for training event; summer schedules present coordination challenges for robust ttx.</i>
Primary Children's Medical Center	<i>We need to get in touch with our RSO to see what kind of educational materials they have and make sure they are aware of our RITN status. We also need to work on just in time education for staff and families.</i>
Shands Hospital of the University of Florida	<i>Challenges would be the ability to effectively triage patients, without compassion fatigue.</i>
University of California – San Francisco Medical Center	<i>We thought that if staff were called upon to work at 100% during a surge, one area of need would be for staff and family childcare availability. We have not designated specific criteria for the implementation of crisis standards of care.</i>
University of Minnesota	<i>We identified gaps in how many staff had not been through the RITN education modules. We feel our leadership in our BMT program should view them. We had a difficult time finding REMM info (other than the link provided). We are going to explore possibly having a link for clinicians from our BMT homepage out to our Radiation Safety homepage (where the calculators and treatment guides could be linked). We also identified that we should have a brief call and connect annually with our community and emergency system resources.</i>
University of Rochester Medical Center/Strong Memorial Hospital	<i>Staff training/education: appreciate the awareness of RITN medical and non-medical training available and will consider making this mandatory education. Impact of outpatient BMT/Hem staff in monitoring outpatients that only require observation/labs (which will likely be the majority of RITN patients we receive).</i>
University of Texas – MD Anderson Cancer Center	<i>We have a great emergency management plan but need to ensure we have a specific, written plan for RITN incidents. We need to get more people from various ancillary departments on board and involved in RITN to be fully prepared for an incident like admissions, lab, blood bank, etc.</i>

List and briefly discuss elements to address for future RITN exercises.	
LDS Hospital/University of Utah	<i>Would like more info from RITN about payment to the hospitals for this treatment.</i>
Mayo Clinic Rochester	<i>Change patient information cards; exercise dates moved to winter.</i>
Primary Children’s Medical Center	<i>It is useful to be able to discuss how we will manage large groups of people (i.e. housing, medications, supplies). It is helpful to think how we will handle teaching our general staff about caring for radiation patients.</i>
Shands Hospital of the University of Florida	<i>How to manage supply shortages.</i>
University of California – San Francisco Medical Center	<i>For future exercises we would like to bring in DPH to get a clearer picture of what happens on the NDMS side.</i>
University of Minnesota	<i>I would like to see the moderator walk through 1 or 2 patient scenarios online as we watch. Show us the scenario, have a physician discuss the patient, show us where and how to use the calculators and then discuss how the physician would treat that patient.</i>
University of Rochester Medical Center/Strong Memorial Hospital	<i>More discussion of outpatient management.</i>
University of Texas – MD Anderson Cancer Center	<i>We could always use more on logistics of how the patients will arrive and the staging at those arrival points. Also, more awareness of partners that we can access for more help during a crisis.</i>

APPENDIX E: ACRONYMS

Acronym	Term
AAR	After Action Report
ARS	Acute Radiation Syndrome
ASPR	Assistant Secretary for Preparedness and Response
BMT	Bone Marrow Transplantation
CNE	Continuing Nursing Education
COA	Commission on Accreditation
DHV	Disaster Health Volunteer
FCC	Federal Coordinating Center
G-CSF	Granulocyte-Colony Stimulating Factor
Gy	Gray
HCC	Healthcare Coalition
HCS	Healthcare Standard
HCT	Hematopoietic Cell Transplantation
HEM	Hematology
HHS	Health and Human Services
HLA	Human Leukocyte Antigen
HPP	Hospital Preparedness Program
IND	Improvised Nuclear Device
IV	Intravenous
JIT	Just-In-Time
MRC	Medical Reserve Corps
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
ONC	Oncology
ONR	Office of Naval Research
PACU	Post-Anesthesia Care Unit
PO	Orally
PRA	Patient Reception Area
RITN	Radiation Injury Treatment Network
RSO	Radiation Safety Officer
SITREP	Situation Report
SME	Subject Matter Expert
TTX	Tabletop Exercise