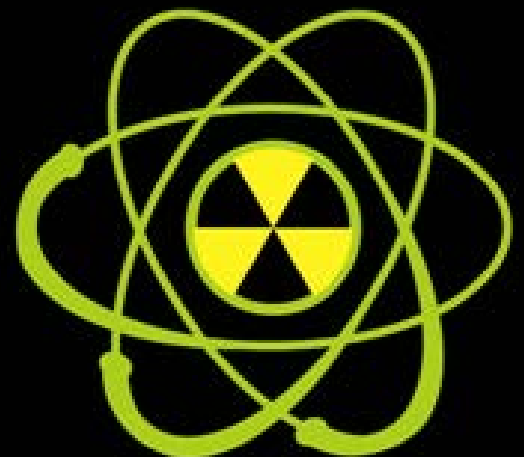


**2018**

**After-Action Report/Improvement Plan**



## EXERCISE OVERVIEW

<b>Exercise Name</b>	2018 RITN Tabletop Exercise (TTX)
<b>Exercise Date</b>	July 12, 2018
<b>Scope</b>	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.
<b>Mission Area(s)</b>	Response
<b>Capabilities</b>	Public Health & Medical Services
<b>Objectives</b>	<p><b>Objective 1:</b> 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><b>Objective 2:</b> 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><b>Objective 3:</b> RITN hospital staff is able to discuss their procedures for the use of medical countermeasures and other pharmaceuticals in high demand.</p>
<b>Hazard</b>	Radiological
<b>Scenario</b>	Medical surge from a distant radiological incident
<b>Sponsor</b>	Radiation Injury Treatment Network® (RITN) National Marrow Donor Program (NMDP) Office of Naval Research (ONR)
<b>Participating Organizations</b>	Avera McKennan Hospital & University Health Center – Sioux Falls, SD Children’s Hospital of Alabama – Birmingham, AL Presbyterian/St. Luke’s Medical Center – Denver, CO Roswell Park Cancer Institute – Buffalo, NY Seattle Cancer Care Alliance – Seattle, WA Spectrum Health – Grand Rapids, MI
<b>Point of Contact</b>	RITN Control Cell <a href="mailto:RITN@NMDP.ORG">RITN@NMDP.ORG</a> (612) 884-8276

## EXERCISE SUMMARY

On July 12, 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: Participating RITN centers indicated a proactive approach would be taken by disseminating information to staff immediately following notification from NDMS that patients would be transported. RITN centers stated that staff messaging would include situational awareness (of the event) as well as the actions being taken at the facility level. The Communications Department would be involved as would access to the Radiation Safety Officer, who would be involved in added staff education and just-in-time training and to ensure messaging and education is consistent with local and state governmental leadership. Information would be disseminated via memos, blast emails from hospital leadership, town hall meetings, or information sessions.

Staff Messages: Participating centers stated the main message communicated to staff is one of safety; 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, and assurances that staff would not become contaminated. 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. RITN centers that are corporate owned would coordinate messaging through the corporate communications division and local and state officials.

Specific messages would be developed and distributed for both internal and external audiences. External message dissemination via a Joint Information Center (with coordination from the hospital Communications/Public Relations Department, city, county, state, and VA/FCC) would involve social media, facility webpage, and traditional media outlets (television and radio). Paper copies of messaging would be distributed to staff and patients. Examples of internal message dissemination provided were:

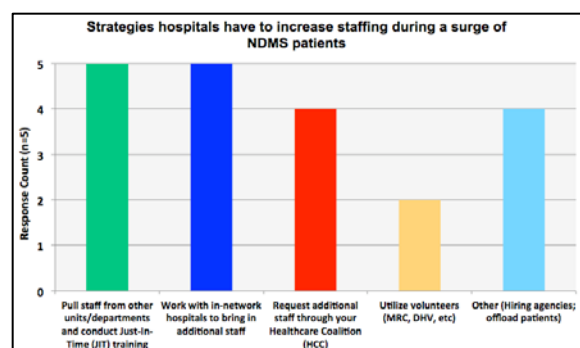
- Internal email
- Hospital paging
- Hospital intranet
- Town hall/leadership meetings
- Patient portals
- Lunch and learn sessions
- Recorded messages sent through internal phone tree

Multiple RITN centers stated that a hotline would be available to staff, their families, patients, and the public to call for further 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 their local healthcare coalition
- Contact a hiring agency
- Reassign staff working in offsite locations (i.e. not main campus)

**Figure 2: Strategies to Increase**



Though four of the five participating centers have a process in place to request a waiver so staff/patient ratios can be adjusted, the participating RITN centers are large regional facilities or

members of corporate health systems that would be able to reassign staff internally to support a NDMS surge of patients. Multiple RITN centers discussed their surge plans, which currently adjusts for staff ratios by utilizing labor pools or reassign staff from their clinics. 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: Three of the 5 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.

Volunteers: Given the events in this scenario, the RITN centers indicated use of volunteers, but may consider volunteer use for non-critical roles and non-medical care support. RITN centers provided a variety of processes to ensure credentials are appropriate, such as:

- Human Resources process to verify credentialing
- RITN center conducts background checks
- Department of Health maintains a database site to search to verify credentials

All RITN centers indicated a type of partner/shadow policy for credentialed volunteers. Several RITN centers have pre-screened, verified volunteer pools from which to draw medical and non-medical support.

### **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 acquiesce 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](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, but two of the five participating RITN centers have a form plan outlining the process for ARS patients being transported from their PRA. RITN centers anticipate receipt of the NDMS patient manifest within 24 hours prior to the arrival of the patients to their facilities. Three of the 5 RITN centers stated all patients would be re-triaged at a reception area near their emergency department and indicated this process does not differ for ambulatory patients that do not have immediate life threatening issues.

Of the remaining two participating RITN centers, one center does not have an emergency department. Patients would be re-triaged in an outpatient setting in the BMT Clinic, the Acute Care Center, or a designated area dependent on the number of patients received. Another center stated that patients are sent to different locations depending on whether they will be processed as an inpatient or outpatient. If inpatient, the patient would be re-triaged and sent to their Cancer Care Center. If outpatient, then the patient is transported to a designated, integrated Care Campus for medical treatment.

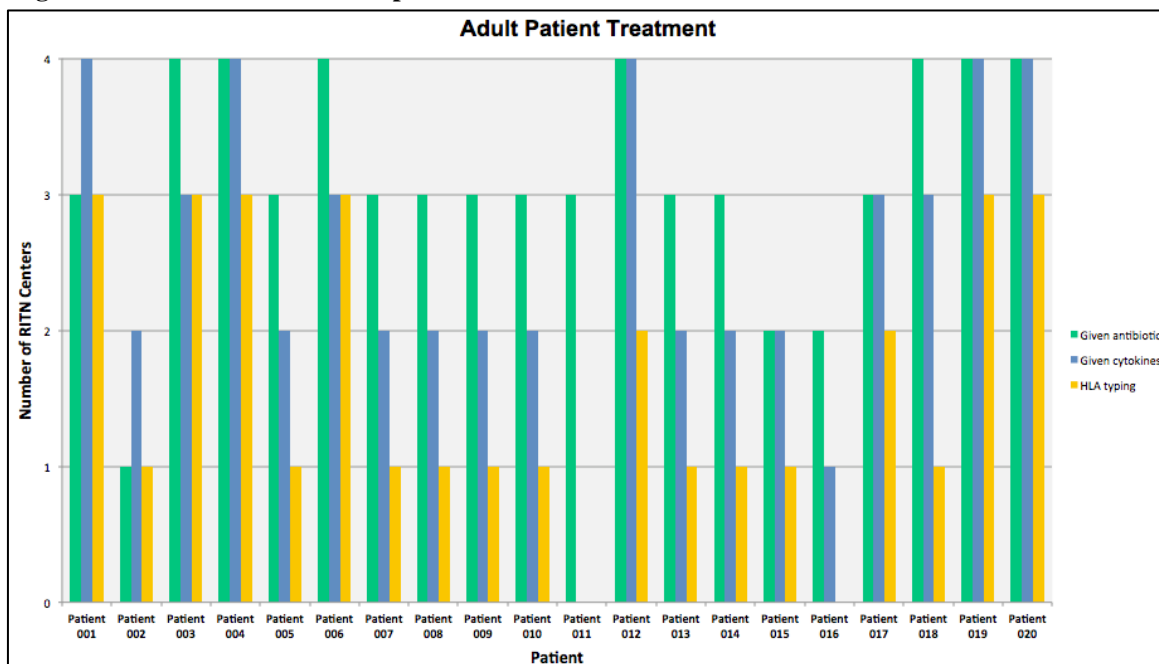
Adult Patient Treatment: Four of 5 participating RITN centers chose the adult patients to triage and treat. Of note, none of the patients had received growth factors prior to arrival at the RITN center (See Appendix B). Based on the initial triage of patients, RITN centers reached consensus on treating the following patients:

Adult Patient	Treatment Decision
Patient 3	Admitted to BMT Bed
Patient 4	Treated as Outpatient
Patient 6	Treated as Outpatient
Patient 9	Treated as Outpatient
Patient 19	Treated as Outpatient

Patient identified for outpatient care would be educated on the signs and symptoms to observe (i.e. the standard outpatient BMT information) including low counts and signs of infection. Also, these patients would be monitored daily at the outset (vitals, blood draws for CBC or CBC with differentials, CMP, ABO) and appointments would be adjusted as needed. Patients would be given the appropriate contact information for housing assistance and directions on where to go for blood draws as well as where to seek medical care if needed. In addition to the above, one RITN center would utilize home care services for blood draws and monitoring as opposed to clinics for these services.

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 1 given cytokines
- Patient 3 given antibiotics
- Patient 4 given antibiotics and cytokines
- Patient 6 given antibiotics
- Patient 12 given antibiotics and cytokines
- Patient 18 given antibiotics
- Patient 19 given antibiotics and cytokines
- Patient 20 given antibiotics and cytokines

RITN centers reached consensus on both a triage decision and medical treatment for Patient 3, Patient 4, Patient 6, and Patient 19.

Pediatric Patient Treatment: The pediatric RITN center 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. Triage and medical management decisions are as follows:

- Seven (7) of the 20 patients would be admitted to the bone marrow transplant unit because of their exposures and comorbidities.
- Six (6) of the pediatric patients would be admitted to hematology/oncology beds
- Three (3) of the pediatric patients were designated for palliative care management only and would be re-assessed once in the palliative care for intensive treatment.
- Three (3) patients were treated as outpatients because their exposures were very low and none of the pediatric patients would be discharged and sent home.
- One (1) of the pediatric patients would be discharged home.
- Patients 28 and 30 (both admitted to BMT Unit) were only patients who would receive antibiotics, cytokines, and HLA typing.
- 6 total pediatric patients would be given antibiotics; 9 total pediatric patients would be given cytokines; and 7 total pediatric patients would be given HLA typing.

The RITN center triaging and treating the pediatric patients would make arrangements for the pediatric patients to be seen periodically in the clinic. Those patients identified for outpatient care would be educated on neutropenic precautions and instructed to seek medical care if they developed a fever, increased vomiting and diarrhea, and mouth sores.

RITN centers discussed processes/procedures to determine whether or not equipment could be reused and sterilized for otherwise disposable equipment. Two RITN centers had a process in place, which had been developed and incorporated into plans by their Materials Management Department/Sterile Processing Department. One RITN center would contact the equipment manufactures and request information on sterilization of their equipment. Another RITN center would extend the time of patient use for the equipment or change the required criteria. Lastly, one RITN centers would consider reuse/sterilization of IV tubing, but the facility has a 96-hour supply onsite for any equipment needed to treat these patients. Once the supply was exhausted, equipment could be sterilized in the autoclave if needed.

### **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:** The REM dose calculator is difficult to use and delays the treatment of NDMS patients at RITN centers. The RSO should provide guidance and training on the use of the REM dose calculator to medical staff involved in the treatment of NDMS patients.

**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.

**Area for Improvement 4:** All participating RITN centers should review their current protocols for crisis standards and include planning considerations for the reuse and sterilization of critical equipment. Plans should include manufacturer contact information for consultation as well as those internal staff and departments (e.g. Materials Management) that may be able to develop reuse protocols.

## 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.



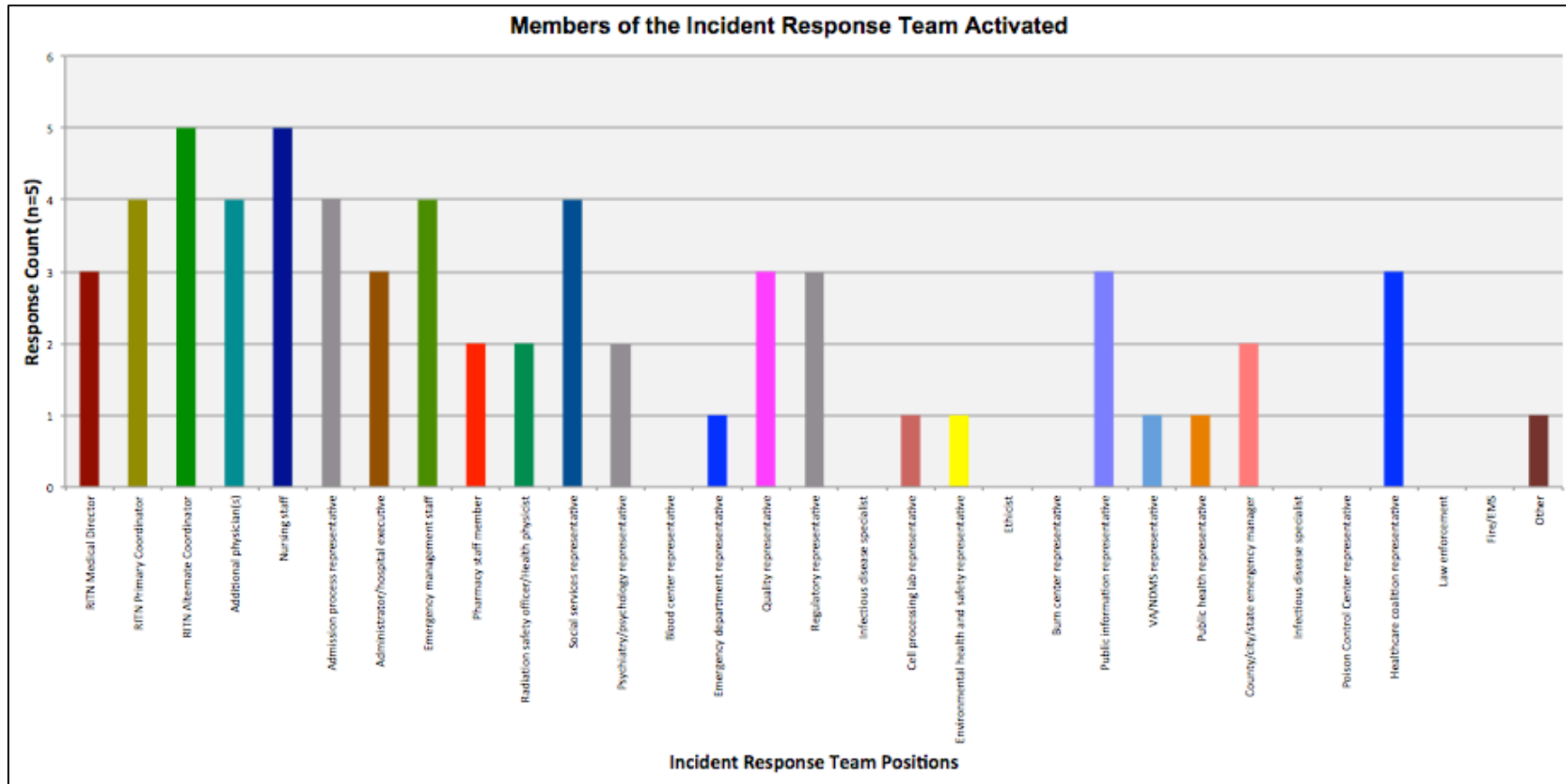
## APPENDIX B: PATIENT DECISIONS & INCIDENT MANAGEMENT TEAM ACTIVATION

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	1	1	2	0	0	4
Patient 002	0	0	2	2	0	4
Patient 003	4	0	0	0	0	4
Patient 004	0	0	4	0	0	4
Patient 005	0	0	2	0	2	4
Patient 006	0	0	4	0	0	4
Patient 007	0	1	3	0	0	4
Patient 008	1	1	0	0	2	4
Patient 009	0	0	4	0	0	4
Patient 010	2	0	1	1	0	4
Patient 011	0	0	1	0	3	4
Patient 012	1	3	0	0	0	4
Patient 013	0	2	0	0	2	4
Patient 014	2	0	1	1	0	4
Patient 015	2	0	0	2	0	4
Patient 016	0	0	2	0	2	4
Patient 017	2	0	0	0	2	4
Patient 018	1	2	1	0	0	4
Patient 019	0	0	4	0	0	4
Patient 020	2	1	1	0	0	4

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	1	0	0	0	1
Patient 022	0	1	0	0	0	1
Patient 023	0	1	0	0	0	1
Patient 024	0	1	0	0	0	1
Patient 025	0	1	0	0	0	1
Patient 026	0	1	0	0	0	1
Patient 027	0	0	0	0	1	1
Patient 028	1	0	0	0	0	1
Patient 029	1	0	0	0	0	1
Patient 030	1	0	0	0	0	1
Patient 031	0	0	1	0	0	1
Patient 032	1	0	0	0	0	1
Patient 033	0	0	0	0	1	1
Patient 034	0	0	1	0	0	1
Patient 035	0	0	0	1	0	1
Patient 036	0	0	1	0	0	1
Patient 037	0	0	0	0	1	1
Patient 038	1	0	0	0	0	1
Patient 039	1	0	0	0	0	1
Patient 040	1	0	0	0	0	1

Members of the Incident Response Team Activated for the Exercise



## APPENDIX C: EXERCISE PARTICIPANTS

Participating Organizations	
Avera McKennan Hospital & University Health Center	Kevin Schlosser
Avera McKennan Hospital & University Health Center	Karee Wicks
Avera McKennan Hospital & University Health Center	Michelle White
Avera McKennan Hospital & University Health Center	Rochelle Rentschler
Avera McKennan Hospital & University Health Center	Lisa Hansen
Avera McKennan Hospital & University Health Center	Jay Crarholt
Avera McKennan Hospital & University Health Center	Crystal Erstad
Avera McKennan Hospital & University Health Center	Mary Thompson
Avera McKennan Hospital & University Health Center	Sandy Frentz
Avera McKennan Hospital & University Health Center	Adam Frichs
Avera McKennan Hospital & University Health Center	Alexis Crisp
Avera McKennan Hospital & University Health Center	Amber Huisman
Avera McKennan Hospital & University Health Center	Lacey Roberts
Avera McKennan Hospital & University Health Center	Janie Arens
Avera McKennan Hospital & University Health Center	Emily Laible
Avera McKennan Hospital & University Health Center	Lynn DeYary
Avera McKennan Hospital & University Health Center	Sam Hill
Avera McKennan Hospital & University Health Center	Regan Smith
Avera McKennan Hospital & University Health Center	Dawn Ver Hoven
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Avera McKennan Hospital & University Health Center	Denise Haisch
Avera McKennan Hospital & University Health Center	Garth Gonseth
Avera McKennan Hospital & University Health Center	Stacy Reismeir
Avera McKennan Hospital & University Health Center	Jill Casanova
Avera McKennan Hospital & University Health Center	Traci Hollingshead
Avera McKennan Hospital & University Health Center	Jill Sisson
Avera McKennan Hospital & University Health Center	Matt McQuisten
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Children's Hospital of Alabama	Colleen Dever
Children's Hospital of Alabama	Melissa Espinoza
Children's Hospital of Alabama	Teresa Meadows
Children's Hospital of Alabama	Jamie Davidson
Children's Hospital of Alabama	Rookie Gage

Participating Organizations	
Children’s Hospital of Alabama	Joe Chewing
Children’s Hospital of Alabama	Fred Goldeva
Children’s Hospital of Alabama	Jacque Jones
Children’s Hospital of Alabama	Hilary Haines
Presbyterian/St. Luke’s Medical Center	Pat Wagner
Presbyterian/St. Luke’s Medical Center	Bryan Bender
Presbyterian/St. Luke’s Medical Center	Vic Vigil
Presbyterian/St. Luke’s Medical Center	Lisa Dowd
Presbyterian/St. Luke’s Medical Center	Patricia Owens
Presbyterian/St. Luke’s Medical Center	Vicki Snider
Presbyterian/St. Luke’s Medical Center	Nicole Martinez
Presbyterian/St. Luke’s Medical Center	Gail Croan
Presbyterian/St. Luke’s Medical Center	Trista Carelock
Presbyterian/St. Luke’s Medical Center	Sarah Villani
Presbyterian/St. Luke’s Medical Center	Hannah McNally
Presbyterian/St. Luke’s Medical Center	Michelle Kosik
Presbyterian/St. Luke’s Medical Center	Carijo West
Presbyterian/St. Luke’s Medical Center	Alireza Eghtedar
Presbyterian/St. Luke’s Medical Center	Julie Stewart
Presbyterian/St. Luke’s Medical Center	Melissa Sommers
Presbyterian/St. Luke’s Medical Center	Tara Gregory
Roswell Park Cancer Center	Lisa Privitere
Roswell Park Cancer Center	Sophia Balderman
Roswell Park Cancer Center	Barbara Bambach
Roswell Park Cancer Center	Diane Bartella
Roswell Park Cancer Center	Nicole Bolender
Roswell Park Cancer Center	Patrick Byrne
Roswell Park Cancer Center	Leslie Calender
Roswell Park Cancer Center	George Chen
Roswell Park Cancer Center	Jeremie Dellapenta
Roswell Park Cancer Center	Renee De Wald
Roswell Park Cancer Center	Kristin DeAngelo
Roswell Park Cancer Center	Karen Dubel
Roswell Park Cancer Center	Eileen Duman
Roswell Park Cancer Center	Nicole Gerber
Roswell Park Cancer Center	Pamela Giesie

Participating Organizations	
Roswell Park Cancer Center	Theresa Hahn
Roswell Park Cancer Center	Richard Harvey
Roswell Park Cancer Center	Thomas Harvey
Roswell Park Cancer Center	Megan Herr
Roswell Park Cancer Center	Christine Howe
Roswell Park Cancer Center	Susan Johnson
Roswell Park Cancer Center	Rose Kumpf
Roswell Park Cancer Center	Laura Markel
Roswell Park Cancer Center	Philip McCarthy
Roswell Park Cancer Center	Patricia Meyer
Roswell Park Cancer Center	Bridget Newsome
Roswell Park Cancer Center	Stephan Schinnagel
Roswell Park Cancer Center	LuAnn Stevens
Roswell Park Cancer Center	Donna Swinnich
Roswell Park Cancer Center	Johnny Tolbert
Roswell Park Cancer Center	Kathleen West
Seattle Cancer Care Alliance	Rachel Lane
Seattle Cancer Care Alliance	Jackie Jacques
Seattle Cancer Care Alliance	Timothy Ehling
Seattle Cancer Care Alliance	Rowena Fish
Seattle Cancer Care Alliance	Sandra Olson
Seattle Cancer Care Alliance	Rusty Thurmon
Seattle Cancer Care Alliance	Eve Worthington
Seattle Cancer Care Alliance	Anthony Satterte
Seattle Cancer Care Alliance	Marni Schatzman
Seattle Cancer Care Alliance	Pam Gregory
Seattle Cancer Care Alliance	Erica Karlontz
Seattle Cancer Care Alliance	Kirsten Caughran
Seattle Cancer Care Alliance	Lisa Getzendaner
Seattle Cancer Care Alliance	Liz Kindred
Seattle Cancer Care Alliance	Aaron Resnick
Seattle Cancer Care Alliance	Laurie Corner
Seattle Cancer Care Alliance	Suni Elgar
Spectrum Health	Mike Gregg
Spectrum Health	Bruce Rossman
Spectrum Health	Kathi VandeGuchile

Participating Organizations	
Spectrum Health	Pat Drapor
Spectrum Health	Adam Mencarelli
Spectrum Health	Jeremy Kamps
Spectrum Health	Melissa Steenunyk
Spectrum Health	Hunter Stahl
Spectrum Health	Brianna Andersen
Spectrum Health	Jeff Skinner
Spectrum Health	Tim Scotlten
Spectrum Health	David Berkhof
Spectrum Health	Warren Billett
Spectrum Health	Evan Boote
Spectrum Health	Derrick Jackson
Spectrum Health	Doug Devries

## 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 4.0 (out of 5.0). Number of responses = 4.8.**

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.	
Children's Hospital of Alabama	<i>Strengths would be that we have a very detailed emergency plan in place that does include radiation injury. Many of the scenarios related to staffing and supplies are addressed in this policy. It was a nice exercise to review and discuss. Another strength would be that we have a very diverse and experienced team. It was helpful to see everyone at the table use their area of knowledge to have a positive impact on working through a scenario.</i>
Presbyterian/St. Luke's Medical Center	<i>We appreciate participating in these events and are always given good questions to think about. We feel that we can identify the strength of our staff and providers as a huge asset to us. Our team is growing and we feel that we would have many resources to help lead teams of nurses in caring for these patients. We have identified that education for our staff is important and we are working on ways to incorporate this on an ongoing basis.</i>
Roswell Park Cancer Institute	<i>Roswell has a very dedicated and knowledgeable clinical staff to include our radiation safety officer, who works as a cohesive team. Our disaster people on location, county and state representatives are extremely well versed in the rollout and activation for a disaster. They had such important input during our tabletop exercise and already set up additional meetings with the RITN team at Roswell.</i>
Seattle Cancer Care Alliance	<i>Medical expertise Close connections with disaster planning within county and state.</i>
Spectrum Health	<i>The triage at our reception center to determine inpatient/outpatient locations. We feel that this will decrease the drain on the ED and the main campus. Our communication with external community partners and the years of working together has created an environment of trust and cooperation.</i>

<b>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.</b>	
Children's Hospital of Alabama	<i>Really just lack of experience in dealing with something like this. While all the plans are in place, this is dealing with a different kind of casualty than you would "normally" deal with.</i>
Presbyterian/St. Luke's Medical Center	<i>I think the lack of information is always a challenge and yet recognize that this is very likely to be the same in a real life situation. Resource allocation is hard to determine until you actually have arrived the patients so the planning may not always line up with the actuality and we would need to regroup and shift our planning to provide better coverage for our patients. As an aside, I wonder if we could get more assistance from the RITN in knowing about community resources available during disasters ie- what does our city/state already have in place as well as country wide, and who does what.</i>
Roswell Park Cancer Institute	<i>Roswell is in need of refining the triage of patients, staffing appropriately if our system becomes overwhelmed, adjustment of our standard of care and updating our RITN SOP. More hospital staff need to be aware of the purpose of RITN, although we have come a long way...so much further to go!</i>
Seattle Cancer Care Alliance	<i>RITN training and education/awareness for general staff. Need to identify plan for volunteer services.</i>
Spectrum Health	<i>The RITN training online has been under utilized by our staff. The triaging must be done by a trained staff member in radiological exposure. These are limited. We are used to triage by trauma and that wont work in this setting.</i>

<b>List and briefly discuss elements to address for future RITN exercises.</b>	
Children's Hospital of Alabama	<i>We think training in 2019 would be excellent. We interested in things that apply to pediatrics. We also have had some turnover and feel an educational session would be beneficial. Thank you!</i>
Presbyterian/St. Luke's Medical Center	<i>We have had different aspects to consider with each table top exercise over the years. Although it would be challenging, I think it would be interesting to try a scenario that combines many of the modules that we have addressed and put it into one event to really get the flow of</i>

List and briefly discuss elements to address for future RITN exercises.	
	<i>an event down.</i>
Roswell Park Cancer Institute	<i>The tabletop participants want more details. It is very hard for the medical team to make decisions and not knowing the impact of their triage decisions. Although the knowledge and insight gained by the disaster team for recognizing what plans need to be developed are too many to mention! The area that we struggle with is not the medical aspect but the disaster implementation. Who, what and where is the unknown. When the situation moves from inside your walls to the outside world...the written plan is somewhat of a mystery. More on the support and resources that become activated during a disaster, please.</i>
Seattle Cancer Care Alliance	<i>List of non-pharmaceutical resources to order and distribute for materials management. Development of communication tool for where patients are in the system, and how to reunite families with patients after treatment After patients successfully treated and unable to return home, what would be next steps (town destroyed) How are we going to be paid for services rendered.</i>
Spectrum Health	<i>Triage Tool. There was discussion in the past of RITN creating a triage tool that would be easily used by our triage needs. If that were created, that would be great to be used in a TTX setting.</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