2015

After-Action Report/Improvement Plan

EXERCISE OVERVIEW

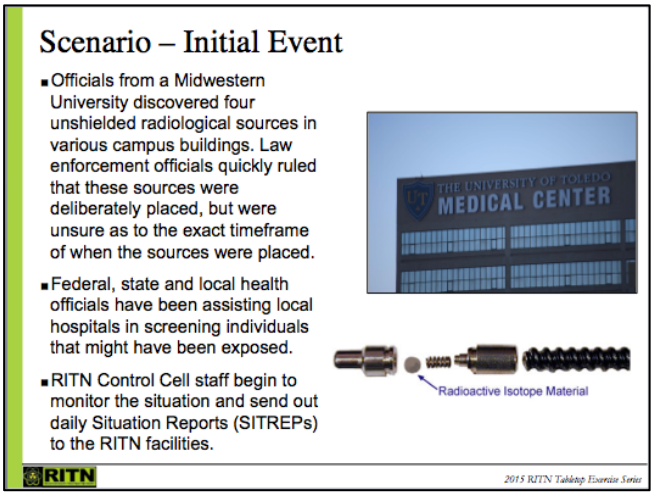
Exercise Name	2015 RITN Tabletop Exercise (TTX)
Exercise Date	May 11, 2015
Scope	This exercise is a distance-based tabletop exercise planned for 2 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response
Mission Area(s)	Response
Capabilities	Public Health & Medical Services
Objectives	**Objective 1:** RITN centers are able to demonstrate the ability to triage and determine initial treatment actions for radiological casualties being transferred from the Federal Coordinating Center (FCC). **Objective 2: R**ITN centers are able to identify the quantity on hand of pharmaceuticals/blood products needed for treatment and identify alternate sources for resupply. **Objective 3:** RITN centers are able to describe how they will handle a surge of sibling typing and how they will coordinate typing of siblings not located at the hospital. **Objective 4:** RITN centers are able to describe the procedures for laboratory testing and treatment of patients with or without neutropenia.
Threat or Hazard	Radiological
Scenario	Radiological Exposure Device
Sponsor	Radiation Injury Treatment Network (RITN) National Marrow Donor Program (NMDP) Office of Naval Research (ONR)
Participating Organizations	Duke Medical Center – Durham, NC Spectrum Health – Grand Rapids, MI Texas Children's Hospital – Houston, TX University of Minnesota Medical Center – Minneapolis, MN

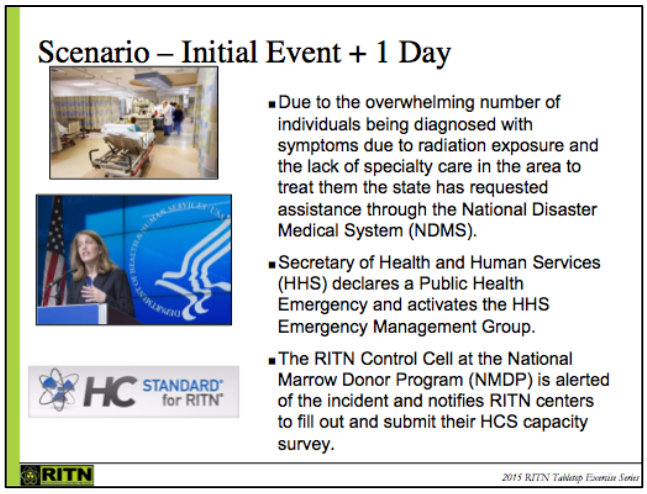
	University of Wisconsin Hospital and Clinics – Madison, WI RITN Control Center – Minneapolis, MN
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

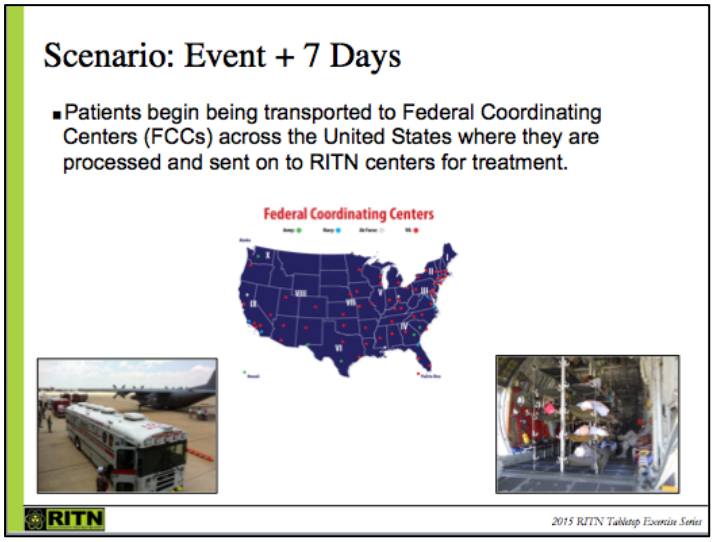
EXERCISE SUMMARY

On May 11, 2015, RITN centers and the RITN Control Cell participated in a tabletop exercise to discuss initial triage and treatment of transported patients who were exposed to a radiological exposure device. 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:





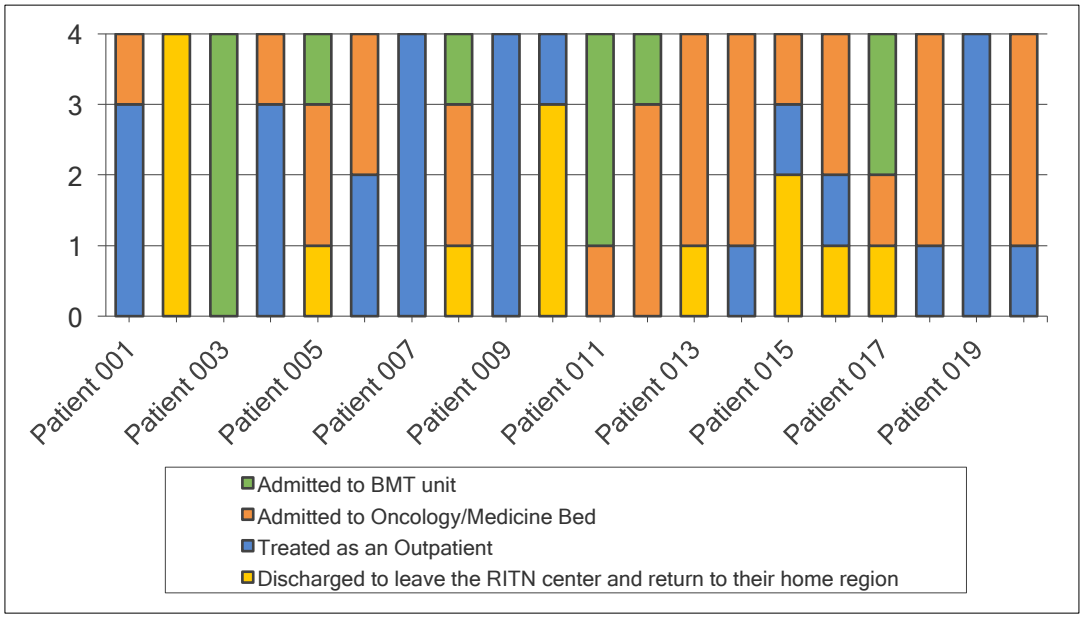


ANALYSIS OF CAPABILITIES

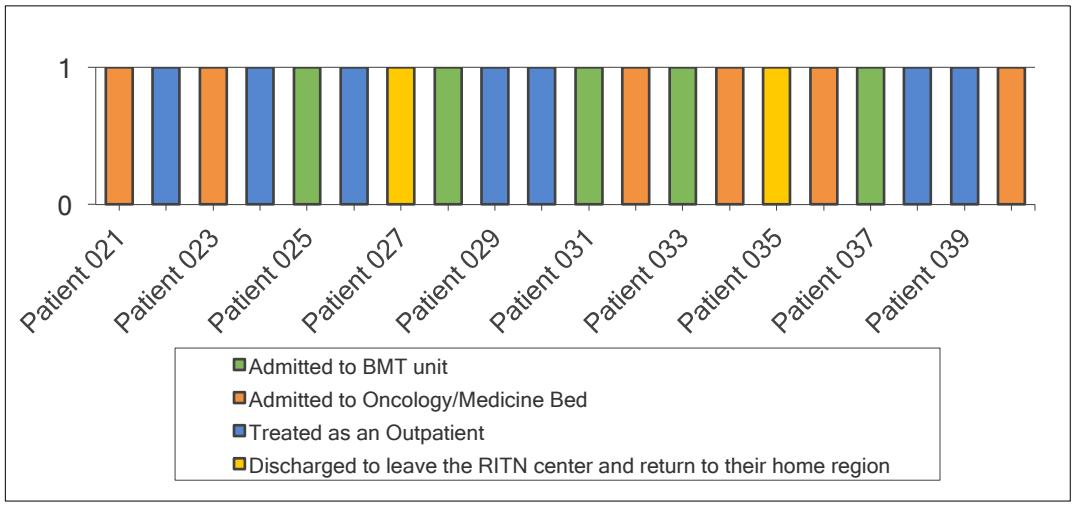
Question Block 1: Triage and Treatment of Patients

Triage and Treatment: The large RITN centers with significantly resourced transplant programs determined triage and treatment could be provided for both adult and pediatric patients (Appendix A). The pediatric RITN center demonstrated the capacity to triage, treat, and medically manage all of the transported patients. Comorbidities were discussed in the overall medical management process.

Adult Patient Triage Outcomes (4 centers)



Pediatric Patient Triage Outcomes (1 center)



A consensus was not reached regarding the definition of "home region" therefore; the RITN centers differed in their triage and treatment of the adult and pediatric patients. Specifically, several centers stated that "discharge and sent home" referred to the patient being monitored on an outpatient basis in their clinic (e.g. not admitted to the hospital but returning in approximately 1 week for testing while several other patients needed to be monitored closely on an outpatient basis by physicians trained to care for those who have been exposed to radiation above normal dosing), and based on test results would be released to return to their home region without further monitoring from the RITN center. For patients that were triaged and sent back to their home region (or needed to see the results of 1 more blood test), in-house social services would be engaged to initiate the coordination of medical care and observation in these patient's hometowns. Further detail regarding follow-up medical care and patient transport services to their hometown was not discussed.

Strengths

The following strengths were demonstrated:

Strength 1: All RITN centers had the capacity and resources to treat adult and pediatric patients. The only pediatric RITN center participating in this exercise had the capacity and resources to triage and treat all 20 pediatric patients.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: RITN should determine from the NDMS Program their policy on distribution of pediatric patients to facilities that do not have the capability to provide pediatric medical care. RITN centers should be informed of the NDMS Program policy.

Area for Improvement 2: RITN centers should identify the entities responsible for coordinating transport and continued medical management of those patients released to return to their home regions.

Question Block 2: Lab Draws and Pharmaceuticals

Outpatient Lab Draws: Outpatient lab draws will be conducted at all the participating centers in their adult BMT clinics or cancer clinics or emergency department or in the outpatient facility. All centers the capability to meet the increase and had processes in place to address the surge in ordered blood draws.

Housing: Overall, all RITN centers demonstrated multiple options to address any housing concerns for adult and pediatric patients and stated involvement of social services to address housing issues. The housing options available to the patients and families included:

- On-campus apartment and/or hotel housing owned (or partially owned) by the hospital or the university.
- Hope Lodge, which was located in close proximity to the centers.
- Ronald McDonald House also in close proximity to the centers (though usually at or near operating capacity).

One of the RITN centers indicated rooms in their apartments are specially designed for BMT patients with no carpeting on the floors and solid surfaces throughout the living space. With respect to cost, patient and families receive a reduced rate at all apartment and hotels as the centers all indicated having agreements or contracts in place to assist patients and families and the Ronald McDonald House costs $20 per day, but the fee is waved for those families unable to afford the cost. Hope Lodge is at no cost to patients and families.

Blood Products: According to current procedures, all centers stated admitted patients would receive irradiated and leukoreduced blood products.

G-CSF Stocks: Currently, all the participating centers have sufficient stockpiles of G-SCF. Specific amounts are as follows:

RITN Center	Quantity
Spectrum Health	13,560 micrograms
Texas Children's Hospital	Supply sufficient
University of Minnesota	150 mg
University of Wisconsin Health and Medical	293.4 mg (inpatient and ambulatory clinics)

Additionally, wholesalers and suppliers are able to provide rapid re-supply. Only concern discussed, if there is a national run on G-CSF, then that would cause problems. Local distributors can re-supply in a day.

Patient Increase: The additional 20 patients would not constitute a significant increase in the need for G-CSF. Instead, an increase in demand would be noted and monitored, but all centers stated adequate management for a 20 patient increase.

Vial Splitting: Generally, none of the RITN centers split vials of G-CSF; although one center indicated vial splitting for their pediatric patients. All centers have protocols developed to split vials to reduce G-CSF waste as needed.

Pharmaceuticals: The 20 additional patients (adult or pediatric) would not introduce added risk to pharmaceutical supply (anti-bacterial, anti-fungal, anti-HSV, or Anti-PCP) at any of the centers. Additionally, none of these pharmaceuticals are reported as being in short supply or on back order from the manufacturer. If re-supply was needed, all centers stated vendors/supplies could deliver requested quantities in less than 24 hours and one center stated for direct requests from the center to the supplies, a driver would transport resources within 3 to 4 hours.

Strengths

The following strengths were demonstrated:

Strength 1: RITN possess the current capabilities and capacities to address a range of medical needs for a surge of 20 patients exposed to a RED to include lab draws, outpatient/family housing, existing cache of G-CSF, and specific pharmaceuticals.

Strength 2: All RITN centers (that are not pediatric hospitals) were able to triage and medically management adult and pediatric patients.

Areas for Improvement

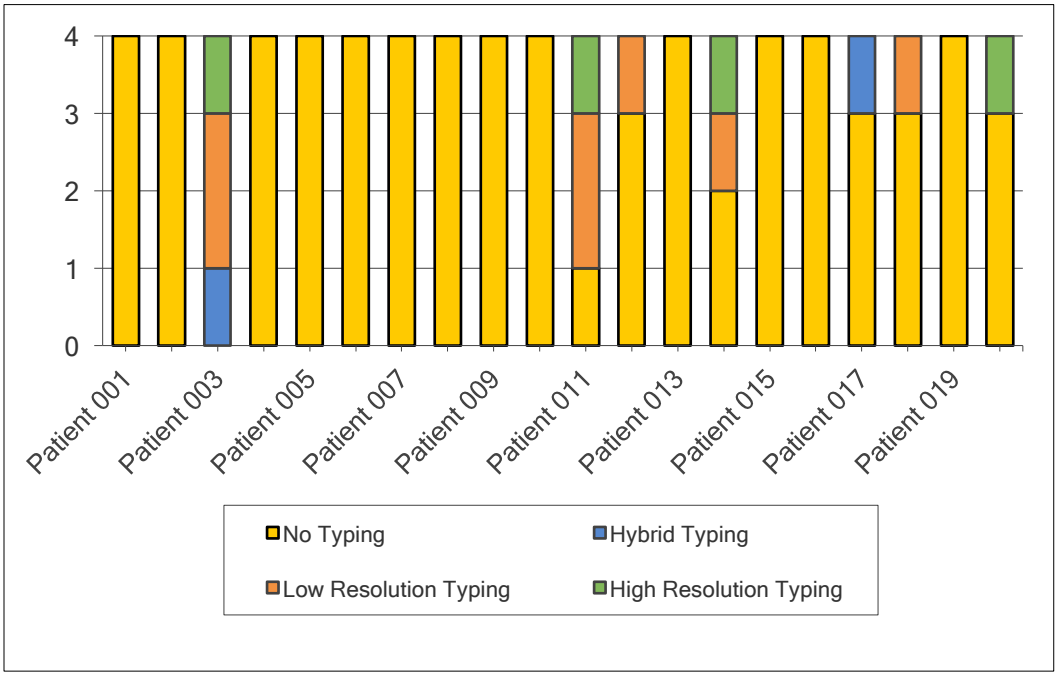
The following areas require improvement:

Area for Improvement 1: The RITN Program should initiate discussions with the NDMS Program to identify reimbursement or payment plans for patient and family housing costs for those transported out of their region for medical care. RITN centers stated any costs for housing comes at the patient and/or family's expense and the RITN Program should confirm whether or not subsidy or full reimbursement is possible through the NDMS Program.

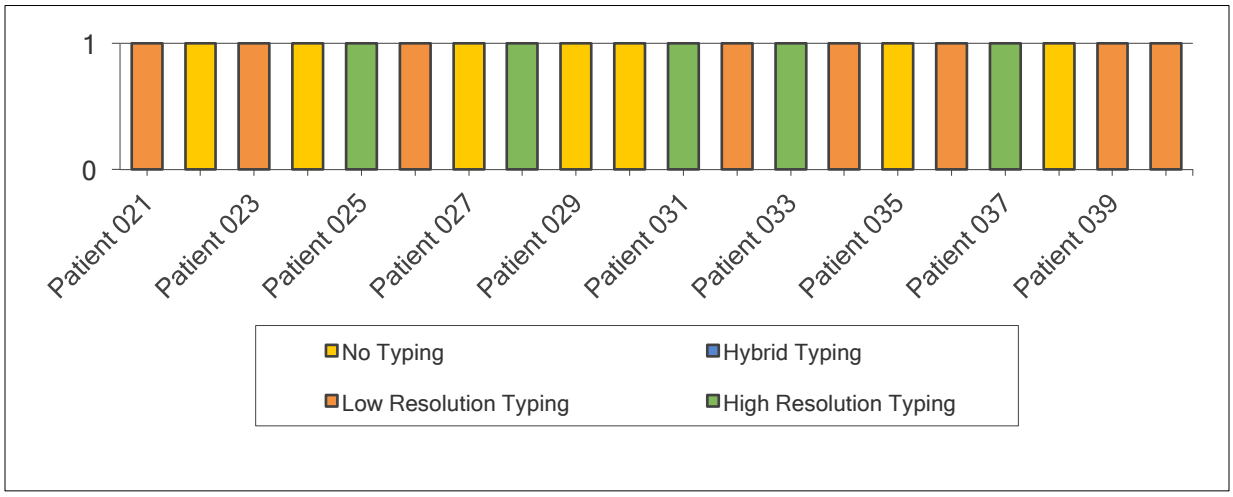
Question Block 3: HLA Typing

HLA Typing: The patients admitted to the transplant units would undergo immediate low resolution HLA typing. Concern regarding patient 11 was discussed due to comorbidity as well as age. This particular RITN center would not consider patient 11 as an immediate transplant candidate.

Note: Spectrum Health did not provide HLA Typing information.



Below are the typing decisions for the pediatric hospital (Texas Children's Hospital) for the 20 pediatric patients triaged and treated.



Sample Retrieval: Centers use blood sample or buccal swab for patient HLA typing.

Laboratory: RITN centers have capabilities to perform the HLA typing in-house or on campus. Those without this internal typing capability utilized either a regional blood donor center or sought assistance from the NMDP.

Timing of Results: Low resolution typing results would be available within 24 hours for those centers with in-house or campus laboratories. If samples are sent to an external laboratory, the turnaround time for results is an average of 5 – 7 days.

Siblings: If the siblings have been identified or location known, a kit (i.e. swabs with instructions or instructions to see their physician to get the sample) would be sent overnight with an overnight return expected. Hospital staff such as a search coordinator arranges sibling typing for those who do not live within the region with the possibility of conducting a telephone conference with siblings as needed.

Surge: All of the RITN centers indicated the capability and laboratory capacity to handle up to 100 typing for low resolution. In excess of 100, centers would request assistance from other academic centers or the NMDP, especially in the instance of international donors.

Donor Assistance: Any donor assistance needed would be coordinated with NMDP. Generally, centers would heavily rely on NMDP for identification of individuals that have already been typed and are in the registry.

Strengths

The following strengths demonstrated:

Strength 1: RITN facilities demonstrated the coordination necessary as well as the planning needed to medically manage the first wave of victims including those requiring transplantation.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Follow-up on regional patient tracking systems such as DMS for RITN facilities to determine whether or not their patient tracking systems can be modified/enhanced for regional, online access enabling seamless tracking of NDMS patients.

Area for Improvement 2: As part of continued response planning, determine the level of support community non-profit organizations, such as the Ronald McDonald House, can provide regarding family housing support. Planning components to address may include staffing needs,

resource levels and re-supply alternatives, costs (if any back to the hospital) or donation structures, legal parameters, and terms and conditions of the organization.

CONCLUSION

This report augments existing planning/training/exercising programs related to RITN center triage and medical management of radiologically exposed patients transported to their center. The strengths validate well-established aspects of the plans while the opportunities for improvement provide information to enhance, refine, or improve existing plans, protocols, 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: PATIENT LISTS AND TRIAGE DECISIONS

Adult Patients

Adult Patient Clinical Profile	Duke University Medical Center	University of Minnesota BMT Program
Patient ID: 001 Sex: Male Age: 22 Height: 6'1" Weight: 180lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 45 Granulocytes: 0.8 Lymphocytes: 0.2	Admitted to Oncology / Medicine Bed	Treated as an Outpatient
Patient ID: 002 Sex: Male Age: 19 Height: 5'8" Weight: 245lbs Comorbidities/Symptoms: Diabetes **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 280 Granulocytes: 5 Lymphocytes: 2.00	Discharged to leave the RITN center and return to their home region	Discharged to leave the RITN center and return to their home region
Patient ID: 003 Sex: Female Age: 22 Height: 5'6" Weight: 135lbs Comorbidities/Symptoms: Fever, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 18 Granulocytes: 0.4 Lymphocytes: 0.1	Admitted to BMT unit	Admitted to BMT unit
Patient ID: 004 Sex: Male Age: 31 Height: 5'11" Weight: 170lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 100 Granulocytes: 1 Lymphocytes: 0.4	Admitted to Oncology/Medicine Bed	Treated as an Outpatient
Patient ID: 005 Sex: Male Age: 64 Height: 5'10" Weight: 170lbs Comorbidities/Symptoms: Hypertension, coronary artery disease, diarrhea, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 10 Granulocytes: 0.1 Lymphocytes: 0.01	Admitted to Oncology/Medicine Bed	Discharged to leave the RITN center and return to their home region
Patient ID: 006 Sex: Female Age: 55 Height: 5'9" Weight: 140lbs Comorbidities/Symptoms: Rheumatoid arthritis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 70 Granulocytes: 1.2 Lymphocytes: 0.3	Admitted to Oncology/Medicine Bed	Treated as an Outpatient
Patient ID: 007 Sex: Female Age: 21 Height: 5'6" Weight: 125lbs Comorbidities/Symptoms: Severe depression **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 165 Granulocytes: 1.6 Lymphocytes: 0.5	Treated as an Outpatient	Treated as an Outpatient
Patient ID: 008 Sex: Female Age: 73 Height: 5'6" Weight: 155lbs Comorbidities/Symptoms: Multilobar pneumonia, fever, cough	Admitted to Oncology/Medicine Bed	Discharged to leave the RITN center and return to their home region

Adult Patient Clinical Profile	Duke University Medical Center	University of Minnesota BMT Program
Lab results upon arrival at your center: *all results are represented as ×10⁹ C/L* Platelets: 12 Granulocytes: 0.2 Lymphocytes: 0.0		
Patient ID: 009 Sex: Male Age: 61 Height: 5'9" Weight: 175 Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 100 Granulocytes: 1.1 Lymphocytes: 0.5	Treated as an Outpatient	Treated as an Outpatient
Patient ID: 010 Sex: Male Age: 20 Height: 6'4" Weight: 195lbs Comorbidities/Symptoms: Crohn's disease **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 190 Granulocytes: 7 Lymphocytes: 2.10	Discharged to leave the RITN center and return to their home region	Discharged to leave the RITN center and return to their home region
Patient ID: 011 Sex: Female Age: 74 Height: 5'1" Weight: 115lbs Comorbidities/Symptoms: Stage IV breast cancer, anal fissure, fever **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 15 Granulocytes: 0.1 Lymphocytes: 0.03	Admitted to BMT unit	Admitted to BMT unit
Patient ID: 012 Sex: Female Age: 57 Height: 5'7" Weight: 315lbs Comorbidities/Symptoms: Morbid obesity, hypertension, diabetes **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 60 Granulocytes: 0.4 Lymphocytes: 0.2	Admitted to Oncology/Medicine Bed	Admitted to Oncology/Medicine Bed
Patient ID: 013 Sex: Female Age: 24 Height: 5'4" Weight: 135lbs Comorbidities/Symptoms: ITP, diarrhea **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 4 Granulocytes: 0.1 Lymphocytes: 0.0	Admitted to Oncology/Medicine Bed	Discharged to leave the RITN center and return to their home region
Patient ID: 014 Sex: Male Age: 57 Height: 6'2" Weight: 180lbs Comorbidities/Symptoms: Fever, rhinorrhea **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 95 Granulocytes: 0.7 Lymphocytes: 0.3	Admitted to Oncology/Medicine Bed	Admitted to Oncology/Medicine Bed
Patient ID: 015 Sex: Male Age: 22 Height: 5'2" Weight: 135lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 110 Granulocytes: 1.5 Lymphocytes: 1	Discharged to leave the RITN center and return to their home region	Discharged to leave the RITN center and return to their home region
Patient ID: 016 Sex: Female Age: 81 Height: 5' Weight: 150lbs Comorbidities/Symptoms: Glaucoma, Parkinson's, UTI **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L*	Treated as an Outpatient	Discharged to leave the RITN center and return to their home region

Adult Patient Clinical Profile	Duke University Medical Center	University of Minnesota BMT Program
Platelets: 78 Granulocytes: 0.9 Lymphocytes: 0.8		
Patient ID: 017 Sex: Male Age: 20 Height: 6'2" Weight: 170lbs Comorbidities/Symptoms: Anorexia, fatigue, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 3 Granulocytes: 0.1 Lymphocytes: 0.01	Admitted to Oncology/Medicine Bed	Discharged to leave the RITN center and return to their home region
Patient ID: 018 Sex: Female Age: 66 Height: 5'4" Weight: 140lbs Comorbidities/Symptoms: COPD, history of larynx cancer, oral HSV lesion **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 80 Granulocytes: 1.1 Lymphocytes: 0.5	Admitted to Oncology/Medicine Bed	Admitted to Oncology/Medicine Bed
Patient ID: 019 Sex: Male Age: 46 Height: 5'6" Weight: 150lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 135 Granulocytes: 1 Lymphocytes: 0.25	Treated as an Outpatient	Treated as an Outpatient
Patient ID: 020 Sex: Male Age: 23 Height: 5'2" Weight: 185lbs Comorbidities/Symptoms: Down syndrome, asthma **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 60 Granulocytes: 0.3 Lymphocytes: 0.2	Admitted to Oncology/Medicine Bed	Treated as an Outpatient

Pediatric Patients

Pediatric Patient Clinical Profile	Texas Children's Hospital
Patient ID: 021 **Sex: Male Age: 6 Height: 3'10" Weight: 45lbs** Comorbidities/Symptoms: None **Lab results upon arrival at your center**: *all results are represented as ×10⁹ C/L* **Platelets: 45 Granulocytes: 0.8 Lymphocytes: 0.2**	Admitted to Oncology / Medicine Bed
Patient ID: 022 Sex: Male Age: 9 Height: 4'7" Weight: 75lbs Comorbidities/Symptoms: Diabetes **Lab results upon arrival at your center**: *all results are represented as ×10⁹ C/L* **Platelets: 280 Granulocytes: 5 Lymphocytes: 2.00**	Discharged to leave the RITN center and return to their home region
Patient ID: 023 Sex: Female Age: 3 Height: 3'2" Weight: 35lbs Comorbidities/Symptoms: Fever, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 18 Granulocytes: 0.4 Lymphocytes: 0.1	Admitted to BMT unit
Patient ID: 024 Sex: Male Age: 7 Height: 4'3" Weight: 60lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 100 Granulocytes: 1 Lymphocytes: 0.4	Treated as an Outpatient
Patient ID: 025 Sex: Male Age: 5 Height: 3'5" Weight: 45lbs Comorbidities/Symptoms: Kawasaki's in remission, diarrhea, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 10 Granulocytes: 0.1 Lymphocytes: 0.01	Admitted to BMT unit
Patient ID: 026 Sex: Female Age: 5 Height: 3'7" Weight: 40lbs Comorbidities/Symptoms: Asthma **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 70 Granulocytes: 1.2 Lymphocytes: 0.3	Treated as an Outpatient
Patient ID: 027 Sex: Female Age: 4 Height: 3'5" Weight: 40lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 165 Granulocytes: 1.6 Lymphocytes: 0.5	Treated as an Outpatient
Patient ID: 028 Sex: Female Age: 11 Height: 4'9" Weight: 100lbs Comorbidities/Symptoms: Multilobar pneumonia, fever, cough **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 12 Granulocytes: 0.2 Lymphocytes: 0.0	Admitted to BMT unit
Patient ID: 029 Sex: Male Age: 7 Height: 4'1 Weight: 55lbs	Treated as an Outpatient

Pediatric Patient Clinical Profile	Texas Children's Hospital
Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 100 Granulocytes: 1.1 Lymphocytes: 0.5	
Patient ID: 030 Sex: Male Age: 13 Height: 5'2" Weight: 135lbs Comorbidities/Symptoms: Crohn's disease **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 190 Granulocytes: 7 Lymphocytes: 2.10	Discharged to leave the RITN center and return to their home region
Patient ID: 031 Sex: Female Age: 14 Height: 5'6" Weight: 120lbs Comorbidities/Symptoms: Anal fissure, fever **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 15 Granulocytes: 0.1 Lymphocytes: 0.03	Admitted to BMT unit
Patient ID: 032 Sex: Female Age: 8 Height: 4'2" Weight: 110lbs Comorbidities/Symptoms: Morbid obesity **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 60 Granulocytes: 0.4 Lymphocytes: 0.2	Admitted to Oncology/Medicine Bed
Patient ID: 033 Sex: Female Age: 11 Height: 4'8" Weight: 95lbs Comorbidities/Symptoms: ITP, diarrhea **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 4 Granulocytes: 0.1 Lymphocytes: 0.0	Admitted to BMT unit
Patient ID: 034 Sex: Male Age: 14 Height: 6'1" Weight: 170lbs Comorbidities/Symptoms: Fever, rhinorrhea **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 95 Granulocytes: 0.7 Lymphocytes: 0.3	Admitted to Oncology/Medicine Bed
Patient ID: 035 Sex: Male Age: 10 Height: 4'5" Weight: 65lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 110 Granulocytes: 1.5 Lymphocytes: 1	Treated as an Outpatient
Patient ID: 036 Sex: Female Age: 9 Height: 4'6" Weight: 85lbs Comorbidities/Symptoms: Congenital blindness **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 78 Granulocytes: 0.9 Lymphocytes: 0.8	Treated as an Outpatient
Patient ID: 037 Sex: Male Age: 12 Height: 4'9" Weight: 55lbs Comorbidities/Symptoms: Anorexia nervosa, fatigue, stomatitis **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 3 Granulocytes: 0.1 Lymphocytes: 0.01	Admitted to BMT unit

Pediatric Patient Clinical Profile	Texas Children's Hospital
Patient ID: 038 Sex: Female Age: 7 Height: 3'11" Weight: 60lbs Comorbidities/Symptoms: Acute asthma exacerbation **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 80 Granulocytes: 1.1 Lymphocytes: 0.5	Admitted to Oncology/Medicine Bed
Patient ID: 039 Sex: Male Age: 15 Height: 5'9" Weight: 130lbs Comorbidities/Symptoms: None **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 135 Granulocytes: 1 Lymphocytes: 0.25	Treated as an Outpatient
Patient ID: 040 Sex: Male Age: 6 Height: 3'10" Weight: 50lbs Comorbidities/Symptoms: Down syndrome, asthma **Lab results upon arrival at your center:** *all results are represented as ×10⁹ C/L* Platelets: 60 Granulocytes: 0.3 Lymphocytes: 0.2	Admitted to Oncology/Medicine Bed

APPENDIX B: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2015 RITN Tabletop Exercise conducted on May 11, 2015. 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 C: EXERCISE PARTICIPANTS

Participating Organizations	
Dane County (WI) Public Health	Tristen Jordan
Dane County (WI) EMS	Michael Lohmeier
Duke University	Joel Ross
Duke University	Nelson Chao
Duke University	Terry Yoshizumi
Duke University	Krista Row Nichols
Duke University	Jennifer Frith
Duke University	Robert Reiman Jr.
Duke University	Gabriel Alcantara
Duke University	Amy Pierson
Duke University	Christine Krieman
Duke University	Elizabeth Sito
Duke University	Jason Zivica
Duke University	Ashley Morris
Durham Veterans Affairs Medical Center	Michael Boucher
Durham Veterans Affairs Medical Center	James Payne
Durham County LEPC	David Marsee
Durham County CERT	Mike Shiflett
Spectrum Health	Ken Shawl
Spectrum Health	Mark Van Dyke
Spectrum Health	Kathi VandeGuchte
Spectrum Health	Larah Wildern
Spectrum Health	Stephanie Williams
Spectrum Health	Kathy Miller
Spectrum Health	Darcie Beebe
Spectrum Health	Evan Boote
Spectrum Health	Julie Bulson
Spectrum Health	Sheri Chatterson
Spectrum Health	James Fahner
Spectrum Health	Julie Nelson
Spectrum Health	Linda Schaltz
Spectrum Health	Tim Scholten

Participating Organizations	
Spectrum Health	Julie Scholten
Texas Children's Hospital	Kathyrn Leung
Texas Children's Hospital	Igoc-Yen Nguyen
Texas Children's Hospital	Amy Puglia
Texas Children's Hospital	Angela Smith
Texas Children's Hospital	Bernadette Burttschel
University of Minnesota Medical Center	Leslie Parran
University of Minnesota Medical Center	Patrich Devlin
University of Minnesota Medical Center	Dan Johnson-Powers
University of Minnesota Medical Center	Joanne Aaser
University of Minnesota Medical Center	Tim Krepski
University of Minnesota Medical Center	Robert Dangerfe
University of Minnesota Medical Center	Elaine Stenstrup
University of Minnesota Medical Center	Patty Kleinke
University of Minnesota Medical Center	Mark Thayer
University of Minnesota Medical Center	Mandy Seymour
University of Minnesota Medical Center	Don Moschkevi
University of Minnesota Medical Center	David Dixon
University of Minnesota Medical Center	Molly Delaney
University of Minnesota Medical Center	Ann Hagerman
University of Minnesota Medical Center	Andy Kurtzweil
University of Minnesota Medical Center	Melisa Strichevz
University of Minnesota Medical Center	Patti Herzog
University of Minnesota Medical Center	Beth Andrews
University of Minnesota Medical Center	Mary Magillion
University of Minnesota Medical Center	Arne Angaard
University of Minnesota Medical Center	Kinda Mealners
University of Minnesota Medical Center	Jina Forys
University of Wisconsin	Kristen Audet
University of Wisconsin	Kim Brandt
University of Wisconsin	Marisa Bartlett
University of Wisconsin	Teri Mitchell
University of Wisconsin	Sarah Morrow
University of Wisconsin	Ben Wiler

Participating Organizations	
University of Wisconsin	Gian Galassi
University of Wisconsin	Anne Mock
University of Wisconsin	Anne Moseley
University of Wisconsin	Carla Friffin
University of Wisconsin	Chris Corrigan
University of Wisconsin	Barb Lujel
University of Wisconsin	Bob Kneeland
University of Wisconsin	Richard Murphy
University of Wisconsin	Maras Kelley
University of Wisconsin	Bethaney Campbell
University of Wisconsin	Lynn Olson
University of Wisconsin	Aaron Stefferhager
University of Wisconsin	Jason Timm
University of Wisconsin	Wayne Abbott
University of Wisconsin	Dwight Shelton
University of Wisconsin	Walter Longo
University of Wisconsin	Vicki Hubbard
University of Wisconsin	John Marx
University of Wisconsin	Sue Rees
University of Wisconsin	Kelly Jung
University of Wisconsin	Mickey Kaiser
University of Wisconsin	Rebecca Evans

Members of the Incident Response Team Activated for the Exercise

Position	Texas Children's Hospital	Spectrum Health	Duke University Medical Center	University of Minnesota BMT Program
RITN Medical Director	✔	✔	✔	✔
RITN Primary Coordinator	✔	✔	✔	✔
RITN Alternate Coordinator	✔	✔		✔
Additional physician(s)	✔	✔		✔
Nursing staff	✔	✔	✔	✔
Admission process representative	✔			
Administrator/hospital executive	✔		✔	✔
Emergency management staff	✔	✔	✔	✔
Pharmacy staff member	✔		✔	✔
Radiation safety officer/Health physicist	✔	✔	✔	
Social services representative	✔			
Psychiatry/psychology representative				
Blood center representative		✔		✔
Emergency department representative	✔			✔
Quality representative	✔			✔
Regulatory representative	✔			✔
Infectious disease specialist				
Cell processing lab representative	✔			
Environmental health and safety representative				
Ethicist				
Burn center representative				
Public information representative				
VA/NDMS representative				
Public Health representative				
County/city/state emergency manager	✔		✔	
Poison control center representative				
Healthcare coalition representative				
CERT			✔	

APPENDIX D: PARTICIPANT FEEDBACK

RITN Centers were asked to provide some brief feedback on an online questionnaire following the exercise. There were four questions asked with related responses are included below. 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 for this exercise was 5.0 (out of 5.0).

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.	
Duke University Medical Center	*We feel like we have a strong regional network that would provide support and assistance in an emergency surge event. If we really had the space available we could provide appropriate high quality care.*
Texas Children's Hospital	*We feel that our strength would be our past experiences with mass-casualty events such as hurricanes Katrina, Rita and Ike. The Houston Medical Center has learned from these incidences and continues to test and revise their disaster plans. Tropical Storm Allison caused extensive flooding and subsequent evacuation and closure of several hospitals. When Texas Medical Center (TMC) hospitals were unable to accept patients, a devastating ripple effect occurred throughout the region as patients were diverted to other hospitals and overcrowding resulted. Following this event, the (HRG) Houston Receiving Group (hospitals identified as mass casualty receiving hospitals) increased to include 12 more acute care facilities and developed a 50-member Community Hospital Subcommittee. These 2 groups later merged into one hospital planning group, the Houston Area Hospitals Emergency Management Collaborative (HAHEMC), developed with the unique needs of the healthcare system as its focus. Texas Children's Hospital has also teamed with MD Anderson Cancer Cetenter's RITN group to discuss how both institutions will work together to respond to an RITN event. Both institutions' Emergency Management leaders are in contact and help to keep our regional coalition team updated with new developments within RITN.*
University of Minnesota BMT Program	*Estimating of calculations of radiation exposure Web-based exercise was much better organized.*

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.	
Duke University Medical Center	*The assumption that bed space would be available is a large one. In reality that would be a limiting factor. Communications with coordinating agencies and with the public in the event of a radiation emergency would need to be handled carefully to avoid misunderstanding (and potentially hysteria).*
Texas Children's Hospital	*One of our challenges would be to educate the hematology/oncology providers. Since we may use their unit for admissions, the providers and nursing staff need to be familiar with the RITN and the possibility of a radiation casualty. Also, our Emergency Department needs education on involvement in RITN.*
University of Minnesota BMT Program	*Electronic order sets. The ones on REMM are not electronic.*

List and briefly discuss elements to address for future RITN exercises.	
Duke University Medical Center	*We need to engage better with our counterparts in pediatric bone marrow transplant. They are a completely separate operating group within the hospital. While they are aware of RITN and participate as a cord blood bank, we need to coordinate with them better on these sorts of activities. In discussion during today's drill the participants agreed that it would be helpful to establish an internal RITN email list to maintain better flow of information and cohesion since some of the participants on interact once a year at these drills.*
Texas Children's Hospital	*For future exercises, it would be nice to have the scenario address more members of the RITN response team so that they are engaged in the exercise.*
University of Minnesota BMT Program	*Surge testing of triage and actual receipt of patients.*

APPENDIX E: ACRONYMS

Acronym	Term
AAR	After Action Report
ASPR	Assistant Secretary for Preparedness and Response
BMT	Bone Marrow Transplantation
EEG	Exercise Evaluation Guide
FCC	Federal Coordinating Center
GCSF	Granulocyte Colony-Stimulating Factor
HCS	Healthcare Standard
HEPA	High-Efficiency Particulate Absorption
HHS	Health and Human Services
HLA	Human Leukocyte Antigen
HPP	Hospital Preparedness Program
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
RED	Radiological Exposure Device
RITN	Radiation Injury Treatment Network
SITREP	Situation Report
SME	Subject Matter Expert
TTX	Tabletop Exercise