2015

RITN Web-Based TTX
After-Action Report/Improvement Plan

EXERCISE OVERVIEW

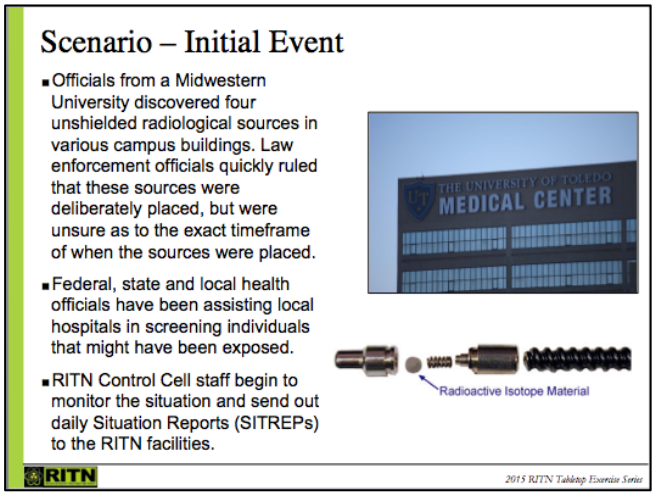
Exercise Name	2015 RITN Tabletop Exercise (TTX)
Exercise Date	May 6, 2015
Scope	This exercise is a web-based tabletop exercise planned for 2 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response
Mission 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:** RITN 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) Office of Naval Research (ONR)
Participating Organizations	Cancer Care Center – Seattle, WA Children's Hospital of Alabama –Tuscaloosa, AL North Shore University Hospital – Manhasset, NY Robert Williams Hospital (Observers) – Providence, RI Stanford Health Care – Palo Alto, CA RITN Control Center – Minneapolis, MN

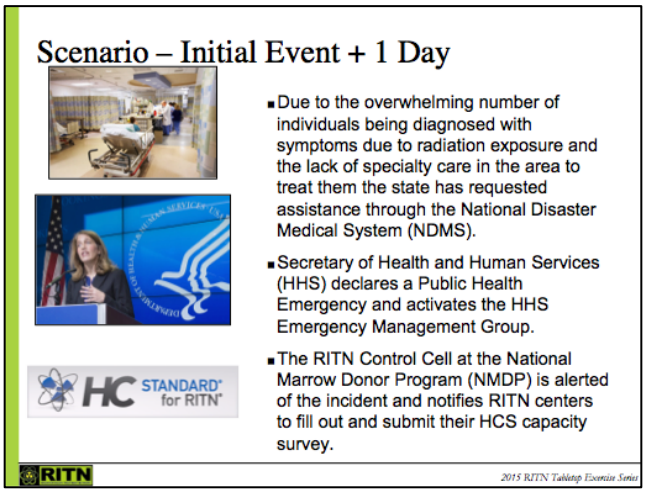
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

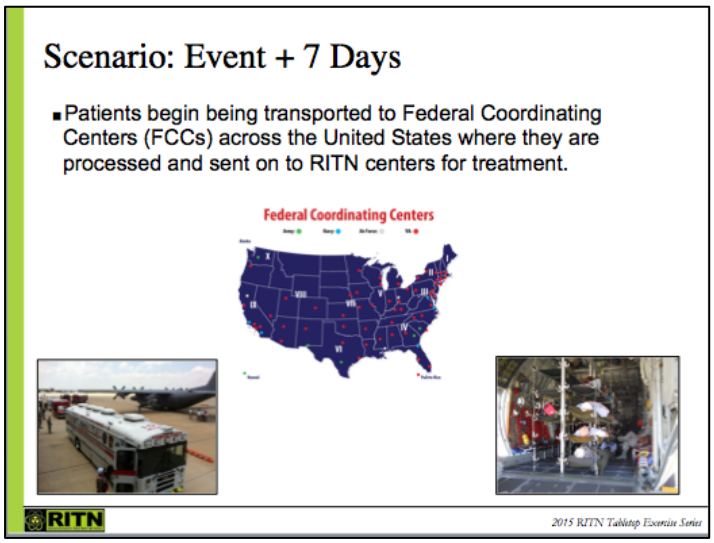
EXERCISE SUMMARY

On May 6, 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:



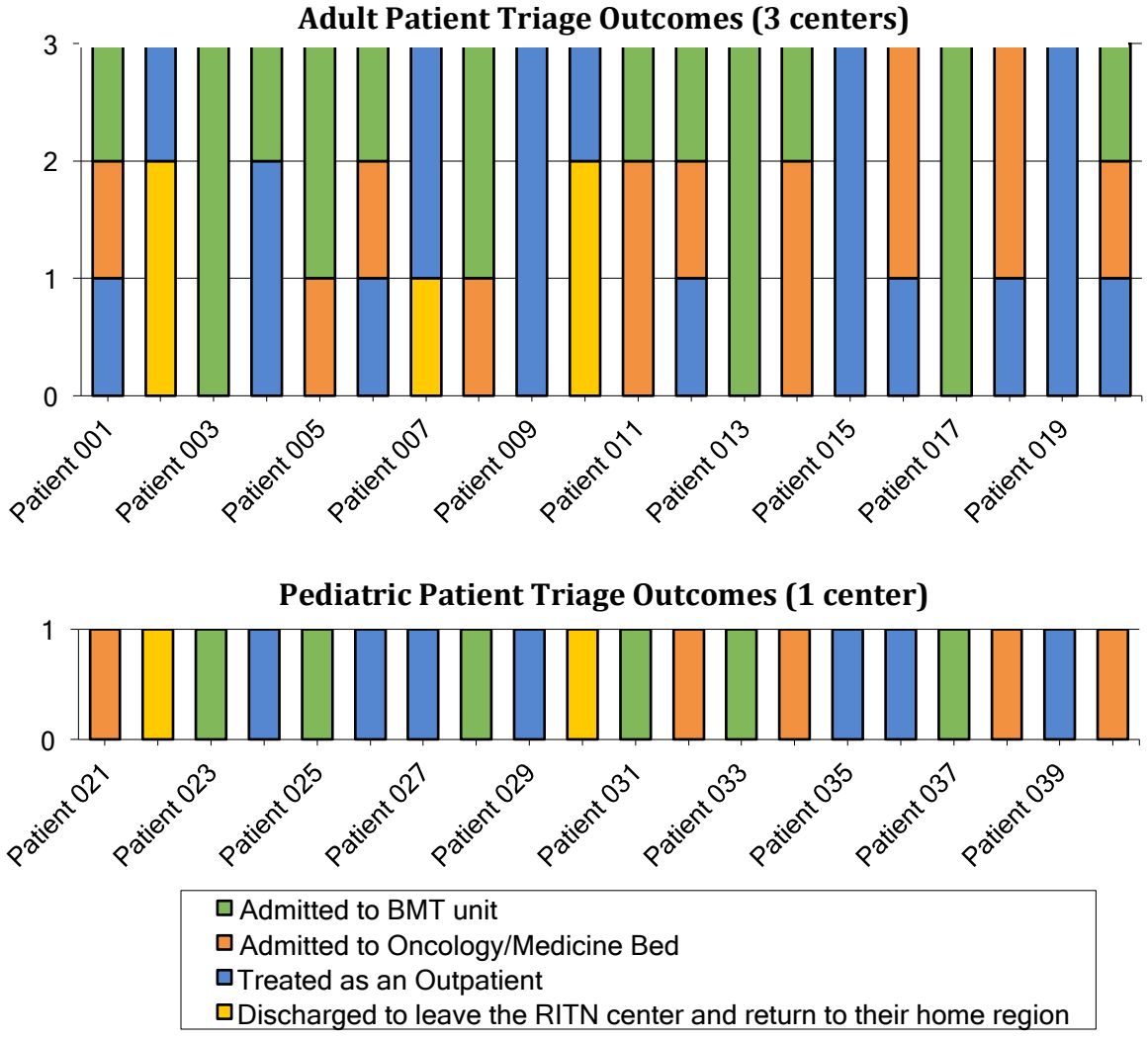




ANALYSIS OF CAPABILITIES

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). Generally, patient cohort was one of the first incident command decisions made as a resource conservation measure and patients would not be admitted unless severe complications were observed; therefore a neutropenic patient would be automatically registered and admitted. Comorbidities as well as patient caregiver competency were two considerations discussed in the overall medical management process.



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.

Lastly, participating centers were unclear whether pediatric patients would be transported to their facility even if they could not provide specialty pediatric medical care.

Strengths

The following strengths were demonstrated:

Strength 1: Participating RITN centers were able to successfully triage and identify treatment needs for all patients presenting at their facility.

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 within all the participating centers either on the transplant unit floor or at one of their onsite clinics. If the volume of blood draws exceeds their capacity, hospital units, such as the Hematology/Oncology Unit would provide support in order to meet the increased demand. All centers had processes in place to address the surge in ordered blood draws.

Housing: All participating centers demonstrated multiple housing alternatives for outpatients and their families. All centers stated involvement of social services along with existing partnerships with community organizations as the first step to address housing issues. Both the American Red Cross and the Ronald McDonald House were options though limited space to accommodate the outpatient numbers and families would likely exceed the Ronald McDonald House's capacity on most days. All centers suggested local hotels as a final alternative though availability may also be an issue depending on time of year, day(s) of the week, and tourism demands. Several centers questioned payment of hotel bills if hotels were the only option available to outpatients and their families. All facilities would encounter an issue if medium and long-term housing is needed to include the financial burden placed on patients, their families, and/or the centers.

Blood Products: According to current procedures, all centers stated 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
Children's Hospital of Alabama	22,000 units
North Shore University	96 units
Seattle Cancer Care Alliance	10,000 mg
Stanford Medical Center	78.72 mg

Additionally, wholesalers and suppliers are able to provide rapid re-supply.

Patient Increase: The additional 20 patients would not constitute a significant increase in the need for G-CSF; all centers reported an increase of 10 mg or less in their usage. Instead, an increase in demand would be noted and monitored, but all centers stated adequate management for a 20 patient increase.

Vial Splitting: With exception of two participating centers, all routinely reduce G-CSF waste by splitting vials. Doses are split under a laminar hood, which is anticipated to continue during a surge event. The two centers that do not routinely split vials have a plan to do so under direction of hospital Pharmacy.

Pharmaceuticals: The 20 additional patients 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 supplies became low, requests for re-supply would be coordinated through existing healthcare coalitions, local and regional transplant community networks, local university hospitals and healthcare systems.

Strengths

The following strengths were demonstrated:

Strength 1: RITN centers 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.

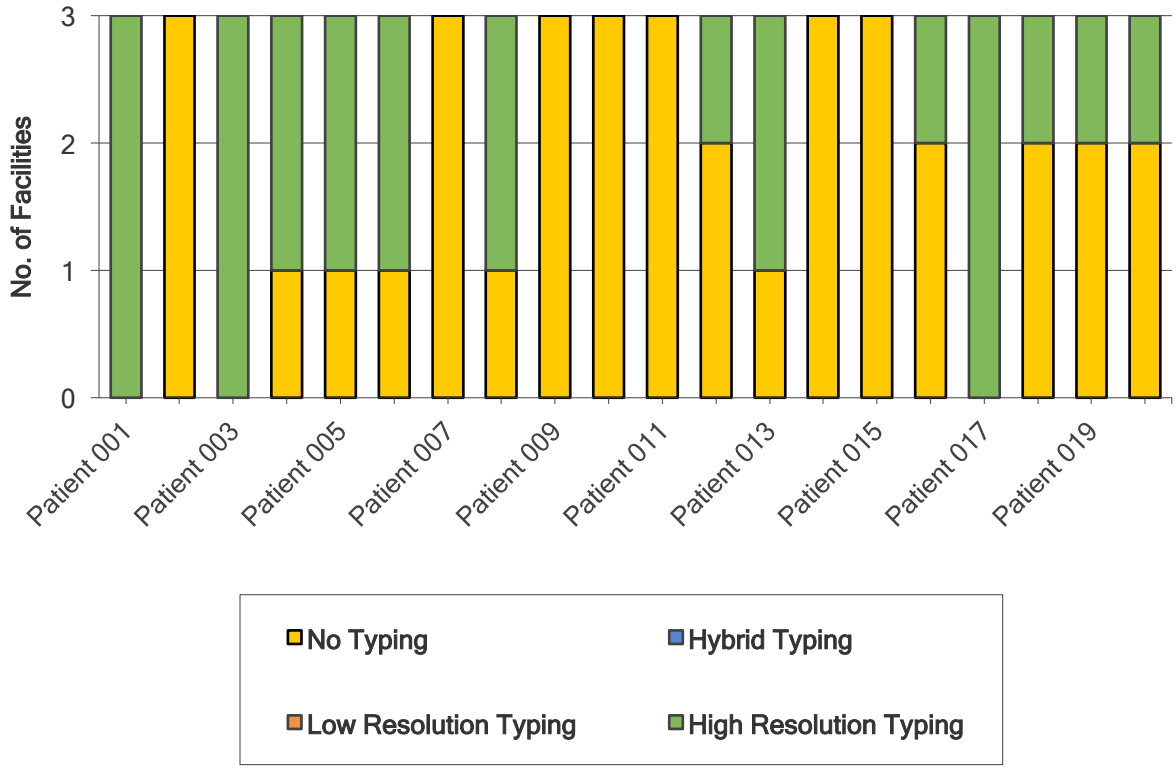
Areas for Improvement

The following areas require improvement:

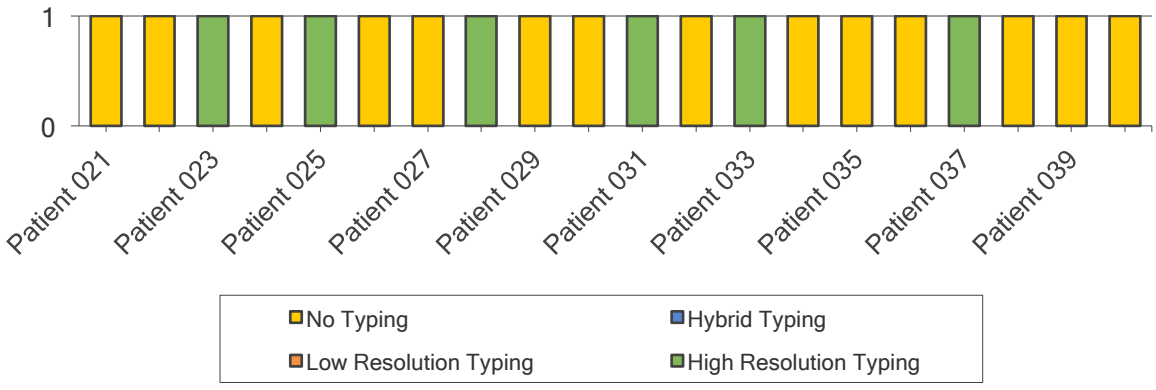
Area for Improvement 1: RITN centers should address any medium and long-term housing issues that outpatient and their families from outside the region may face if the only housing alternative is local hotels. None of the centers discussed plans to address medium and long-term housing issues for these patients.

Question Block 3: HLA Typing

HLA Typing: The patients admitted to the transplant units would undergo immediate high resolution HLA typing. Several centers also included patient 12 and patient 20 for high resolution typing. See below for a summary of the adult HLA typing determinations by patient.



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



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

Laboratory: Several RITN centers have capabilities to perform the HLA typing in-house. Those without this internal typing capability, external laboratories are used and contracts were stated to be current.

Timing of Results: Class 1 low resolution typing and Class 2 high resolution is 3 – 5 days turnaround for results reporting with an additional day to complete all high resolution typing. If samples are sent to an external laboratory, the turnaround time for results is an average of 5 – 7 days.

Siblings: Hospital staff such as a search coordinator arranges sibling typing for those who do not live within the region. Buccal swabs are included with instruction for overnight mailing from and to the RITN center intended for high resolution typing.

Surge: All RITN centers would rely on the NMDP if sibling typing were needed for more than 100 samples.

Donor Assistance: Any donor assistance needed would be coordinated with NMDP. Generally, sibling donors will not be transplant matches (in more than 50% of the cases) and centers would heavily rely on NMDP for donor match identification.

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

Adult Patient Clinical Profile	
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 $\times 10^9$ C/L* Platelets: 45 Granulocytes: 0.8 Lymphocytes: 0.2	**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 $\times 10^9$ C/L* Platelets: 280 Granulocytes: 5 Lymphocytes: 2.00
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 $\times 10^9$ C/L* Platelets: 18 Granulocytes: 0.4 Lymphocytes: 0.1	**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 $\times 10^9$ C/L* Platelets: 100 Granulocytes: 1 Lymphocytes: 0.4
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 $\times 10^9$ C/L* Platelets: 10 Granulocytes: 0.1 Lymphocytes: 0.01	**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 $\times 10^9$ C/L* Platelets: 70 Granulocytes: 1.2 Lymphocytes: 0.3
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 $\times 10^9$ C/L* Platelets: 165 Granulocytes: 1.6 Lymphocytes: 0.5	**Patient ID: 008** Sex: Female Age: 73 Height: 5'6" Weight: 155lbs Comorbidities/Symptoms: Multilobar pneumonia, fever, cough **Lab results upon arrival at your center:** *all results are represented as $\times 10^9$ 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 $\times 10^9$ C/L* Platelets: 100 Granulocytes: 1.1 Lymphocytes: 0.5	**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 $\times 10^9$ C/L* Platelets: 190 Granulocytes: 7 Lymphocytes: 2.10
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 $\times 10^9$ C/L* Platelets: 15 Granulocytes: 0.1 Lymphocytes: 0.03	**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 $\times 10^9$ C/L* Platelets: 60 Granulocytes: 0.4 Lymphocytes: 0.2
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 $\times 10^9$ C/L* Platelets: 4 Granulocytes: 0.1 Lymphocytes: 0.0	**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 $\times 10^9$ C/L* Platelets: 95 Granulocytes: 0.7 Lymphocytes: 0.3
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 $\times 10^9$ C/L*	**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*

Adult Patient Clinical Profile	
Platelets: 110 Granulocytes: 1.5 Lymphocytes: 1	*are represented as ×10⁹ C/L* 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	**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
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	**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

Pediatric Patient Clinical Profile	
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**	**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**
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	**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
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	**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
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	**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
Patient ID: 029 Sex: Male Age: 7 Height: 4'1 Weight: 55lbs 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

Pediatric Patient Clinical Profile	
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 $\times 10^9$ C/L* Platelets: 15 Granulocytes: 0.1 Lymphocytes: 0.03	**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 $\times 10^9$ C/L* Platelets: 60 Granulocytes: 0.4 Lymphocytes: 0.2
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 $\times 10^9$ C/L* Platelets: 4 Granulocytes: 0.1 Lymphocytes: 0.0	**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 $\times 10^9$ C/L* Platelets: 95 Granulocytes: 0.7 Lymphocytes: 0.3
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 $\times 10^9$ C/L* Platelets: 110 Granulocytes: 1.5 Lymphocytes: 1	**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 $\times 10^9$ C/L* Platelets: 78 Granulocytes: 0.9 Lymphocytes: 0.8
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 $\times 10^9$ C/L* Platelets: 3 Granulocytes: 0.1 Lymphocytes: 0.01	**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 $\times 10^9$ C/L* Platelets: 80 Granulocytes: 1.1 Lymphocytes: 0.5
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 $\times 10^9$ C/L* Platelets: 135 Granulocytes: 1 Lymphocytes: 0.25	**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 $\times 10^9$ C/L* Platelets: 60 Granulocytes: 0.3 Lymphocytes: 0.2

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 6, 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		
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Seattle Cancer Care Alliance	Cheryl West	
Seattle Cancer Care Alliance	Kristen Kindsvogal	
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Participation Breakdown by RITN Center

Position	Children's of Alabama	North Shore Health System	Stanford Health Care	Seattle Cancer Care Alliance
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 rep.				
BMT coordinators		✔		

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.	
Children's Hospital of Alabama	*Availability and flexibility of beds and cross-trained nursing staff. HEPA-filtration and adjacency of Hem/Onc and BMT units.*
North Shore University Hospital	*We are large transplant center with adequate supplies and access to other hospitals within our heath system for additional supplies, equipment and manpower.*
Seattle Cancer Care Alliance	*We feel we are strong with the clinical piece, this level of surge was very manageable for us. We have both emergency management and clinical integrated. We are a large center with lots of expertise, so we can easily absorb a small surge.*
Stanford Hospital and Clinics	*Quick assessment by the pharmacy and laboratory. Willingness to work together to accommodate an influx in patients.*

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.	
Children's Hospital of Alabama	*Housing for outpatients could become a challenge. We only have 1 staff member who does pre-transplant workups, scheduling, HLA typing, donor searches, etc. This could pose a challenge for us.*
North Shore University Hospital	*No response provided*

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.	
Seattle Cancer Care Alliance	*Housing, payment (always), volume (higher would be an issue), location of sibs/ family.*
Stanford Hospital and Clinics	*The perception of other patients within the hospital of being near patients who were exposed to a radioactive source. Surge is always difficult with overcrowding in the facility.*

List and briefly discuss elements to address for future RITN exercises.	
Children's Hospital of Alabama	*As a first-time participating center, we appreciated the fact that the exercise was primarily focused on the clinical response to a mass radiation exposure casualty. In the future we will want to bring in our community partners, emergency management staff, and senior hospital leadership to evaluate our ability to mobilize other resources necessary to respond to such an event. Please note that we are responding on behalf of Children's of Alabama which is affiliated the University of Alabama at Birmingham. They will be responding separately as well.*
North Shore University Hospital	*No response provided*
Seattle Cancer Care Alliance	*No response provided*
Stanford Hospital and Clinics	*Involvement of PIOs to develop messaging to other patients so that they are not worried. It would be a good way to involve PIOs with clinical staff with a special knowledge set.*

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