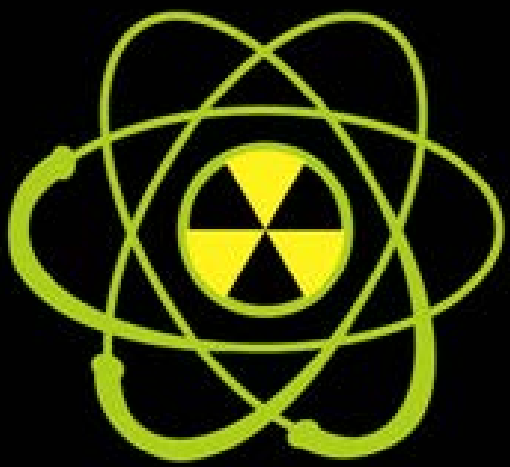
2016

After-Action Report/Improvement Plan
June 1, 2016



EXERCISE OVERVIEW

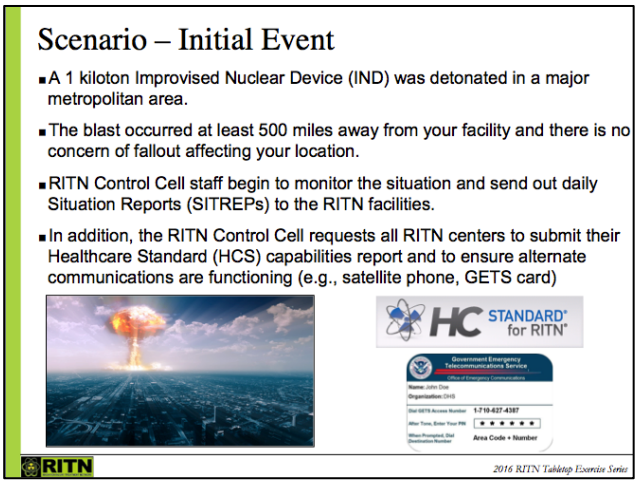
Exercise Name	2016 RITN Tabletop Exercise (TTX)
Exercise Date	June 1, 2016
Scope	This exercise is a distance-based tabletop exercise planned for 2 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response
Mission Area(s)	Response
Capabilities	Public Health & Medical Services
Objectives	**Objective 1:** Conduct internal and external communications that include staff, patients, and visitors as well as the media and other response partners. **Objective 2:** Describe the procedures for establishing a Family Information Center and how information will be shared with family members both on-site and at distant locations. **Objective 3:** Identify just in time training requirements and the resources needed to meet those needs. **Objective 4:** Describe their approaches used for hematopoietic cell transplantation (HCT) in casualties who appear to have received myeloablative doses of radiation.
Threat or Hazard	Radiological
Scenario	Medical surge from a distant radiological incident
Sponsor	Radiation Injury Treatment Network® (RITN) National Marrow Donor Program (NMDP) Office of Naval Research (ONR)
Participating Organizations	Allegheny Health Network – Pittsburgh, PA Banner University Health System – Tucson, AZ Colorado Blood Cancer Institute – Denver, CO

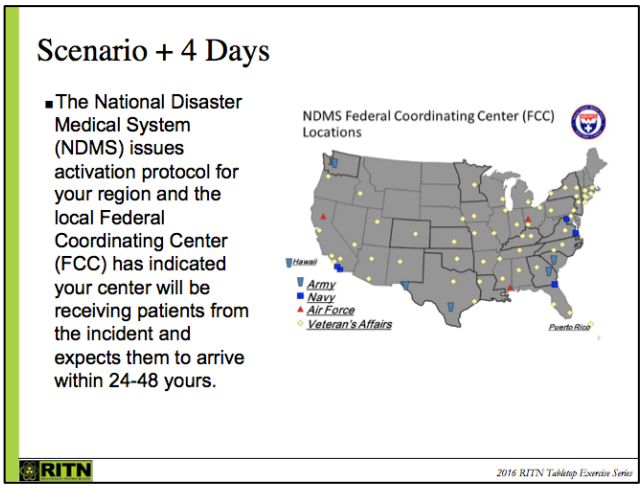
	Hospital of the University of Pennsylvania – Philadelphia, PA New York University – Langone Hospital – New York, NY Presbyterian St. Luke's Medical Center – Denver, CO
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

EXERCISE SUMMARY

On June 1, 2016, 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

Module 1: Planning for Patient Arrival

Staff Training: Centers indicated activation of current plans related to this event as well as their mass casualty plans with 24-48 hours advanced notice of patients arriving to their facilities. Notification would be made to the medical teams, nursing teams, bone marrow transplant (BMT) team, public information officer. Training content would focus on acute radiation syndrome (ARS) as well as resources provided by RITN and would preempt any existing training and meetings regularly scheduled. Centers indicated that training would be available in multiple ways:

- Simulcast throughout the network of hospitals and satellite locations (if part of the hospital network)
- The morning grand rounds for the medical teams
- Online (which is available to all staff) and scheduled classroom sessions
- Daily educational sessions would be adjusted to include material related to this event
- Nurses (in the units) currently receive radiation training and training regarding bone marrow transplants and the center would provide refresher training to their nurses and adjust accordingly

The medical teams would be involved in message content review and all communication would be done via email to leadership and staff.

Information Provided to Current Patients/Families/Others: Centers indicated use of their communications/media relations department as well as patient education centers/education centers if current patients, their families, members of the community receiving care, and outside partners were to be notified/informed. Centers would make education sessions available as well as update any printed materials, such as frequently asked questions (FAQs) handouts. Though the FAQs may require modification, they would include more specific information regarding the incident, radiation from the incident, health impacts, types of patients received, and general information about RITN centers. All information communicated would be developed/reviewed by the medical staff initially and then would go through internal media relations reviewed prior to being disseminated.

External Message Coordination: Website, traditional media, and social media used for education and any messaging required. Once center contracts with a private vendor, which has been utilized for past events. The private vendor can quickly respond to website updates, center

intranet, and interface with the media as a measure to control rumors and ensure accurate, credible information is disseminated to the public. Additional specific coordination efforts included activation of a rumor control line in an effort to mitigate mis-information. One center indicated that victims would be triaged through their emergency department as a measure of maintaining confidence from the staff, existing patients, families, and visitors that the NDMS patients are of no radioactive risk, the hospital is vigilant with safety, and to provide assurance to the media (and the at-large public) no risk of contamination is present.

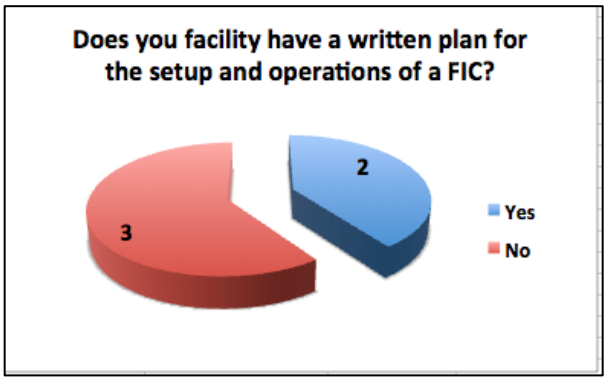
Local media would be staged at pre-designated areas within the facility or on the facility's campus and at least 1 representative from Communications Department (or like department) would be present with the media at the staging area (e.g. a School of Nursing). In general, a physician would be spokesperson making any public statements and fielding questions from the media.

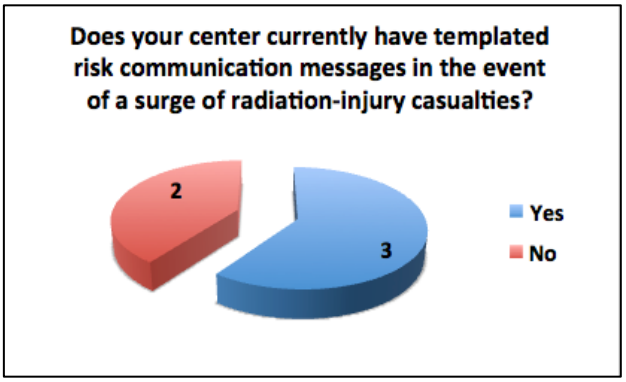
Outside agency coordination would include local and international airports receiving the NDMS air transports. Coordination would also include the FCC. The 24-48 hours prior to patient arrival would allow all the centers to conduct outside agency outreach.

Polls:

Participating facilities were asked if they had a written plan for the setup and operations of a family information center.

Of the 5 participating facilities, 2 centers indicated having a family information center (FIC) plan while 3 of the centers currently do not have a FIC plan.





Facilities were also polled regarding risk communication messaging templates. Of the 5 participating facilities, 3 currently have template risk communication messages in the event of a surge of radiation-injury casualties while 2 centers indicated not having template risk communication messages in the event of a surge of radiation-injury casualties.

Strengths

The following strengths were demonstrated:

Strength 1: All RITN centers demonstrated robust educational and training capabilities as part of their routine operations and they are quickly able to augment those capabilities in a short timeframe or add or replace trainings to educate and train their staff to triage, treat, and medically manage radiological patients.

Areas for Improvement

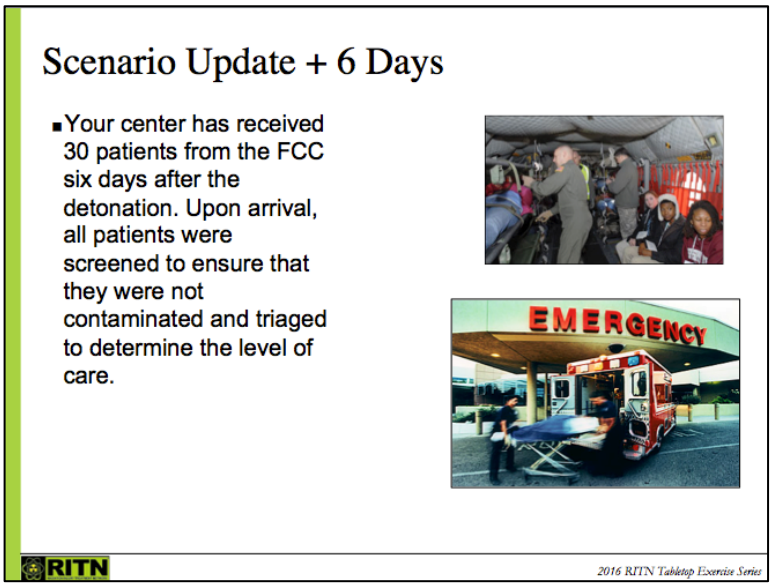
The following areas require improvement:

Area for Improvement 1: All RITN centers should develop a written plan for the staffing, setup, and operation of a Family Information Center. Though two of the 5 participating centers have existing FIC plans, the likelihood is very high that a FIC will be needed should these centers receive NDMS patients. Without planning efforts, effectively operating a FIC within 48 hours of NDMS patient receipt will be very challenging in the absence of formal plans.

Area for Improvement 2: RITN centers should continue to develop internal and external messaging related to the receipt of NDMS patients. As with radiological training materials, the general messaging content can be developed as part of the annual emergency operations plan (EOP) review and updating process. Messaging templates can be developed for current patients/families/those receiving care at your facility as well as messaging templates and FAQs intended for use by local media.

Module 2: Family Information Center

Participants were provided the following update to the scenario to further facilitate discussion.



Plan for Family Information Center: All centers indicated their incident commands would be activated upon notification and establishment of a FIC would be done within 1 hour of notification. A mental and behavioral health specialists would be place on-call and at least 1 hospital administrator present at the FIC. Basic mental health first aid would be conducted and chaplain would be on call as well to provide spiritual care.

Activation & Demobilization of FIC: All centers a call center (or a dedicated line that is staffed) would be established onsite and the FIC would be demobilized as the demand for those services decreased. Operation of the call centers ranged from 12 to 24 hours. RITN centers identified a physical location for the FIC and centers. Centers with pediatric and adult capabilities would establish a FIC for each. The FIC would address the immediate needs of lodging, food, and transportation.

Staffing FIC: The FIC would be staffed from a variety of hospital departments, such as:

- Hospital administration
- Social work (or social services
- Chaplain (or pastoral care)
- Patient relations
- Psychiatric services

- On-call from all hospital disciplines

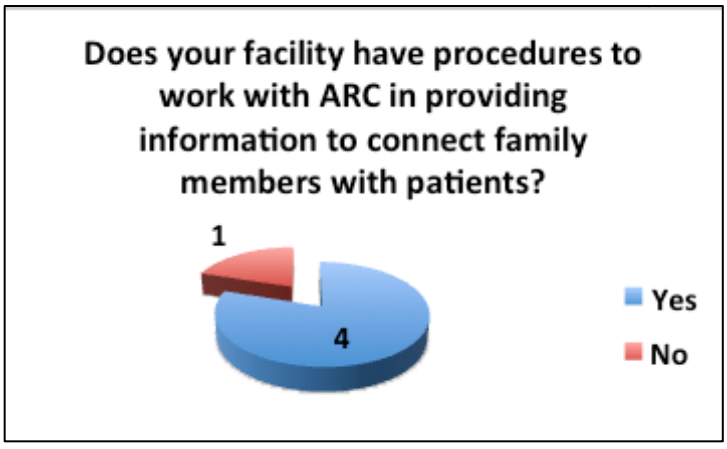
All centers indicated a 24-hour call rotation to operate the FIC.

HIPAA Policy: Centers did not indicate having an emergency incident health insurance portability and accountability act (HIPAA) policy, although all centers stated following their current HIPAA policies for the events described in this scenario and consultation with their Legal Departments or Regulatory Compliance Departments for any explanations or modifications needed. Any training for staff would need to be done in-person. Once center indicated they could establish an ad-hoc team to address HIPAA issues as well as family members who would come to their facility looking for loved ones. Online patient tracking systems discussed have provisions for HIPAA privacy in emergency situations.

Minors at the FIC: Specialists would be contacted. Child protective services would be contacted if any of the centers were not able to accommodate treatment of any minors accompanying a NDMS patient. Centers with pediatric hospital affiliations or neighboring pediatric hospitals would contact them for support in the treatment or care of any minors accompanying NDMS patients.

Polls:

Participating RITN facilities were polled regarding existing procedures to work with an external organization such as the American Red Cross (ARC) for family reunification.



Four of the 5 participating centers (80%) stated they have current procedures to contact the American Red Cross to lead efforts to connect family members with patients.

Participating RITN facilities were asked to indicate the types of just-in-time training that can be conducted. The following table illustrates their responses.

Training Type	Number of Facilities
HLA Typing	5
Medical Countermeasures	3
Patient Triage	5
PPE for Staff	5
Risk Communication	5
TOTAL Participating RITN Centers	**5**

All 5 participating RITN centers are able to provide the following just-in-time training: HLA Typing, Patient Triage, personal protective equipment (PPE) for staff, and risk communication, while 3 of the 5 RITN centers are able to provide JITT for medical countermeasures.

Strengths

The following strengths were demonstrated:

Strength 1: Once incident command activated the Family Information Center, all participating RITN centers discussed plans and procedures to staff the FIC across various departments including staff and plans to provide behavioral and mental health services to those in need.

Strength 2: RITN centers demonstrated protocols and involvement of their legal resources (e.g. compliance officer) to adequately accommodate any needed HIPAA interpretation or requirements for an emergency response event.

Strength 3: A majority of the participating RITN centers (80%) currently have plans to notify the American Red Cross and request their support assets well in advance of receipt of NDMS patients.

Strength 4: All RITN centers indicated plans and procedures to conduct just-in-time training for HLA typing, patient triage, staff PPE, and risk communication in preparation to receive NDMS patients.

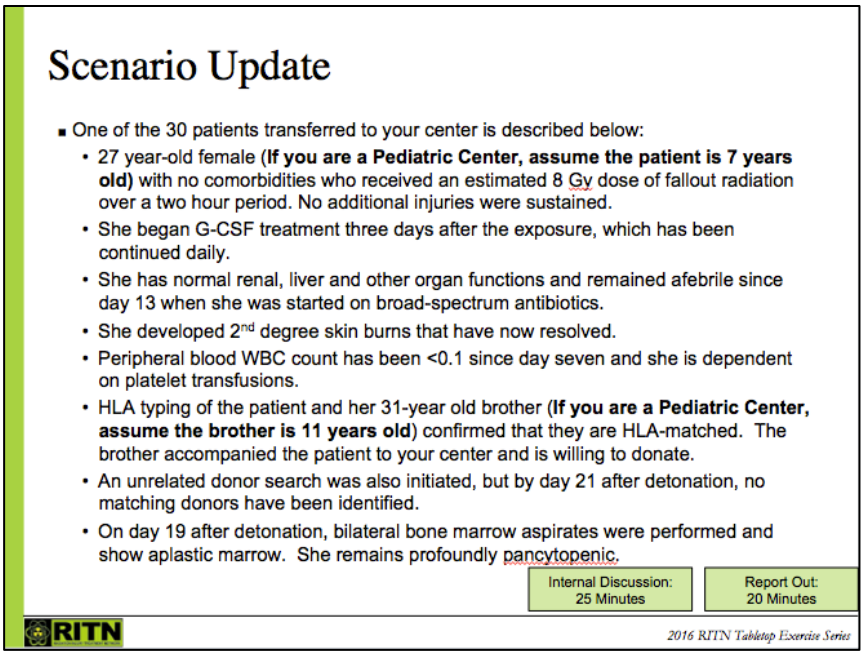
Areas for Improvement

The following areas require improvement:

Area for Improvement 1: All participating RITN centers should develop and or augment their existing medical countermeasures just-in-time training (based on the poll results) 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.

Module 3: Patient Treatment

Participants were provided the following update to the scenario to further facilitate discussion.



Patient Treatment (27 year old): Centers would proceed with HCT, as the patient remains profoundly pancytopenic as well as aplastic at day 21 since detonation. Centers recognized differences in the preparative regimen that may be administered as well as use of the brother's peripheral blood stem cells versus bone marrow, but generally all centers indicated FluBu2 + ATG for the preparative regimen and bone marrow hematopoietic stem cell transplantation (especially if there is no contraindication to standard Cy/ATG sibling allogeneic transplant for severe aplastic anemia). Centers indicated utilization of ATG for T-cell depletion in this instance based on the scenario information. If the brother matched only for 1 haplotype, centers generally agreed the protocol would be use of PB-HSCT, Flu/Cy/TBI (200) with post transplant Cy and Fk 506 GVHD (graft versus host disease) prophylaxis.

All centers indicated the course of action would not be impacted if the patient was 67 years old and the brother was 64 years old provided there is confirmation of a low-standard risk. One of the main reasons provided for maintaining the course of action was that the patient still remained aplastic at 21 days after detonation.

If patient was 1 year old and brother was 3 years old, the pediatric RITN center participating would proceed with transplantation and would not repeat a marrow assessment until a time determined by the medial team following the transplant surgery. The preparative regimen would

include ATG with GVHD prophylaxis. Bone marrow from the brother would be used unless preoperative infection was present. The haplotransplant would be performed along with *in vitro* T-cell depletion. All other participating centers indicated their top priority would be to identify a pediatric facility capable of providing care and arranging transport to that facility.

Strengths

The following strengths demonstrated:

Strength 1: Each participating RITN center demonstrated capability to medically manage a patient in need of a transplant 21 days following detonation/significant radiation exposure including discussing altering medical care (if appropriate) for an elderly patient and pediatric patient as stated in the exercise scenario.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: RITN centers treating adult only patients should confirm their plans and procedures to prepare and transport a pediatric patient receiving radioactive fallout dosage to a pediatric facility that can provide transplantation services and a continuum of medical and social services care. The adult RITN centers stated they would arrange transport of a pediatric patient, but did not discuss details such as: receiving pediatric hospital/medical, existing contract with an ambulance provider that will transport patients exposed/received radiological material, air transport vendor that would transport this type of patient, and medical team (if needed) to accompany the patient.

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 and their capabilities to communicate internally and externally. 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: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2016 RITN Tabletop Exercise conducted on June 1, 2016. RITN centers can utilize this table to organize the opportunities for improvement to augment and develop their own corrective actions.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element[1]	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: [Capability Name]	1. [Area for Improvement]	[Corrective Action 1]					
		[Corrective Action 2]					
		[Corrective Action 3]					
	2. [Area for Improvement]	[Corrective Action 1]					
		[Corrective Action 2]					

[1] Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: EXERCISE PARTICIPANTS

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Members of the Incident Response Team Activated for the Exercise

Position	Allegheny Health Network	Banner University Medical Center – Tucson	NYU Langone Medical Center	Presbyterian St. Luke's Medical Center
RITN Medical Director	☐	☐	☐	☐
RITN Primary Coordinator	☐	☐	☐	☐
RITN Alternate Coordinator	☐	☐	☐	☐
Additional physician(s)	☐	☐		
Nursing staff	☐	☐	☐	☐
Admission process rep	☐			☐
Admin / hospital executive		☐		☐
Emergency mgt staff	☐	☐	☐	
Pharmacy staff member				
Radiation safety officer / Health physicist	☐	☐	☐	
Social services rep		☐		☐
Psychiatry/psychology rep		☐		☐
Blood center rep				☐
Emergency department rep		☐	☐	
Quality rep				☐
Regulatory rep	☐			☐
Infectious disease specialist		☐		
Cell processing lab rep	☐	☐		☐
Environ health and safety rep		☐		
Ethicist				
Burn center rep	☐			
Public information rep	☐	☐	☐	☐
VA/NDMS rep				
Public Health rep		☐		
County/city/state emergency manager		☐		
Poison control center rep				
Healthcare coalition rep		☐	☐	
Other	Manager, Cancer Institute	Law Enforcement Fire/EMS Security Child Life Specialist Chaplains Social Workers Case Management Red Cross Salvation Army	Patient Relations	Nurse Educator Nurse Practioner

APPENDIX C: PARTICIPANT FEEDBACK

RITN Centers were asked to provide some brief feedback on an online questionnaire following the exercise. There were three 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.	
Allegheny Health Network	*Our center has participated in the RITN tabletops drills and has found that the exercise increases communication and visibility between multiple departments that would be potentially called upon to care for RITN patients. We believe our center has a strong base of caregivers willing to assist if called upon.*
Banner University Medical Center - Tucson	*Strong response teams and strong community response teams.*
Hospital of the University of Pennsylvania	*No response provided.*
NYU Langone Medical Center	*Ability to quickly accommodate influx of patients and provide for maximum safety of patients, staff, and visitors.*
Presbyterian – St. Luke's Medical Center	*We have a strong emergency plan with city wide contacts to support our RITN emergency plan. We have a large team of trained MD's APP's, and nursing staff to care for patients and lead teams of others should we need to expand our reach. We have a dedicated psychosocial team including psychologist and social workers along with nutritionists, pharmacist, transplant coordinators and more to help round out all aspects of care a patient would need. We have an experienced cellular therapy department and collect and process both marrow and PBSC in house. Lastly, we have the support of our senior administration team and their commitment to work with us to meet the needs of these 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.	
Allegheny Health Network	*We believe that trying to control rumors and misinformation during an actual incident would be a challenge. Assistance from a crisis management team would be paramount to dealing with an incident.*
Banner University Medical Center - Tucson	*Family reunification, Sufficient number of trained personnel.*
Hospital of the University of Pennsylvania	*No response provided.*
NYU Langone Medical Center	*We needed more discussion on SOPs, but this proved to be helpful in fleshing out our procedures.*
Presbyterian – St. Luke's Medical Center	*1) We identified that we would like more information on the HIPPA guidelines in an emergency so that we can plan to be compliant yet acknowledging that we would be operating under altered medical standards. Is there information already in place to help us address this question? 2) We also talked about the challenge of coming up with appropriate verbiage to address radioactivity and the fears that we would encounter from our staff, patients, families and the public in response to an incident.. Suggestions of a script from the RITN were made.*

List and briefly discuss elements to address for future RITN exercises.	
Allegheny Health Network	*The social/media questions were helpful, please keep that content in future drills. Addition of security related questions may be also helpful.*
Banner University Medical Center - Tucson	*Ensure broader audience for education & training within the organization. Developing a broader list of community resources Guidance on donor selection and pre-HCT regimens.*
Hospital of the University of Pennsylvania	*No response provided.*

List and briefly discuss elements to address for future RITN exercises.	
NYU Langone Medical Center	*Incorporate more information on what to expect from RITN before we receive patients, such as patient care information and history, amount of family coming with them, and transportation method (and who is transporting).*
Presbyterian – St. Luke's Medical Center	*I have appreciated participating in each exercise, as we seem to need to address topics that we may have only touched on and not really thought through. I think an exercise pulling many of these scenarios together would be helpful where the entire team would be involved and need to bring their particular specialty to the table.*

APPENDIX D: ACRONYMS

Acronym	Term
AAR	After Action Report
ARC	American Red Cross
ARS	Acute Radiation Syndrome
ASPR	Assistant Secretary for Preparedness and Response
ATG	Anti-Thymocyte Globulin
BMT	Bone Marrow Transplantation
Cy	Cyclophosphamide
EOP	Emergency Operations Plan
FCC	Federal Coordinating Center
FIC	Family Information Center
FluBu2	Fludarabine, intravenous Busulfan
GCSF	Granulocyte Colony-Stimulating Factor
GETS	Government Emergency Telecommunications Service
GVHD	Graft Versus Host Disease
Gy	Gray
HCT	Hematopoietic Cell Transplantation
HHS	Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
HLA	Human Leukocyte Antigen
HSCT	Hemetopoietic Stem Cell Transplantation
IND	Improvised Nuclear Device
JITT	Just In Time Training
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
ONR	Office of Naval Research
PB	Peripheral Blood
PPE	Personal Protective Equipment
REACTS	Radiation Emergency Assistance Center/Training Site
RITN	Radiation Injury Treatment Network
SITREP	Situation Report
SNS	Strategic National Stockpile
TBI	Total Body Irradiation

Acronym	Term
TTX	Tabletop Exercise
WBC	White Blood Count