RITN
RADIATION INJURY TREATMENT NETWORK

RITN Improvised Nuclear Device (IND) Tabletop Exercise

After-Action Report/Improvement Plan

April 30, 2014

EXERCISE OVERVIEW

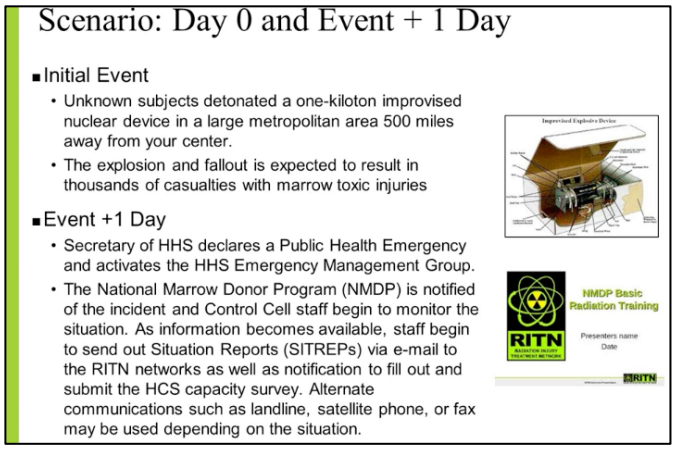
Exercise Name	RITN Improvised Nuclear Device Tabletop Exercise
Exercise Dates	April 30, 2014
Scope	This exercise is a distance-based tabletop exercise planned for 3 ½ hours. Exercise play is limited to RITN facilities and their response partners' collective challenges and considerations for improved and effective response
Mission Area(s)	Response
Capabilities	Medical Surge Healthcare System Preparedness Information Sharing
Objectives	**Objective 1 (Medical Surge):** RITN facilities are able to address the initial actions necessary to prepare for a receipt of victims to include: mobilization of internal radiation response teams; and development of incident objectives. **Objective 2 (Medical Surge):** RITN facilities are able to communicate the procedures necessary to prepare for and perform triage of casualties. **Objective 3 (Healthcare System Preparedness):** RITN facilities are able to describe their involvement and/or awareness of local and regional hospital coalitions as is relates to the coordinated response to a radiation incident. **Objective 4 (Information Sharing):** Facilities are able to conduct internal and external communications to include staff, patients, and visitors as well as the media and other response partners).
Threat or Hazard	Intentional detonation of an improvised nuclear device (IND).
Scenario	Intentional detonation of an improvised nuclear device approximately 500 miles from each participating facility's metropolitan area (or metropolitan statistical area).
Sponsor	Radiation Injury Treatment Network (RITN) U.S. National Marrow Donor Program (NMDP) Office of Naval Reasearch (ONR)

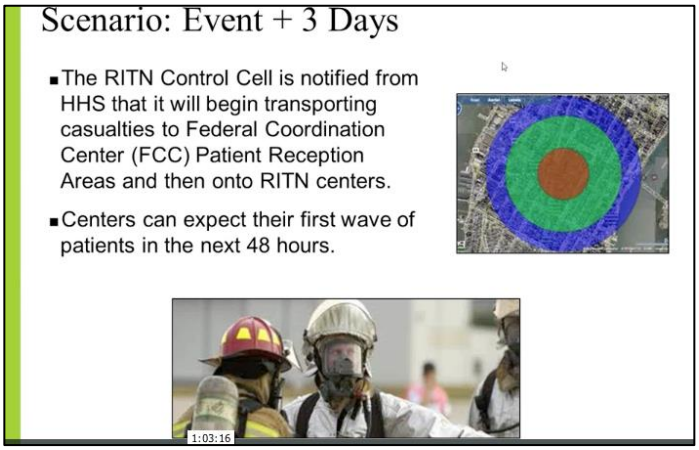
Participating Organizations	Mayo Clinic – Rochester, MN The Mount Sinai Hospital – New York City University Hospitals Seidman Cancer Center – Cleveland, OH West Virginia University Hospitals – Morgantown, WV RITN Control Center – Minneapolis, MN
Point of Contact	Cullen Case Jr., CEM Radiation Injury Treatment Network Jennifer Venero Radiation Injury Treatment Network Curt Mueller Radiation Injury Treatment Network RITN@NMDP.ORG

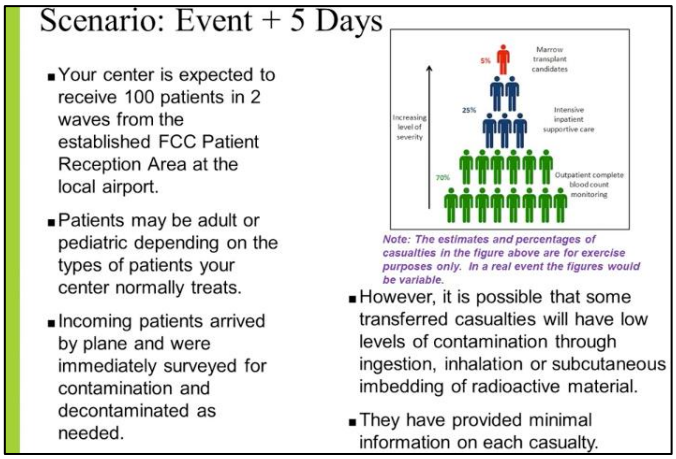
EXERCISE SUMMARY

On April 30, 2014, four RITN facilities and the RITN Control Cell participated in a tabletop exercise to discuss medical surge, resource coordination, public messaging, and healthcare coalition coordination in the receipt of victims following an IND detonation 500 miles from the RITN facility metropolitan area. 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

Task Set 1 Observations: Notifications and Communications

Poll: What are the greatest communications challenges for your facility at this stage? (*n* =4 facilities). Results of the poll indicated communications with other response agencies are the most significant communication challenge faced by the participating RITN facilities (3 facilities) followed by internal – cross-departmental communications (1 facility). None of the participating facilities indicated communication challenges with their Bone Marrow Transplant Team (BMT) or command group or external communications with their Coalition as their greatest challenge.

Immediate preparatory actions: After receipt of the RITN Control Cell's initial SitRep, participating facilities, in general, indicated that a core group within their incident command would be activated. Centers would primarily notify their administrator on-call immediately who would determine the extent of command group activation. Subsequently, the BMT would be notified (i.e. placed on alert) and the activated portion of the command group would begin identification of patients for transfer, those hospital operations for suspension in anticipation of a medical surge, and availability of positive pressure beds.

Staff notifications: Leadership from the hospital as well as regional facilities would likely be notified given the scenario information. Again, a limited incident command team would be activated, which mainly would include the section chiefs and the public information officer; none of the participating facilities indicated activation of the medical/technical specialist at this point. All participating facilities indicated that their BMT would be included in this initial notification. Finally, the emergency department representative would be notified, but notification of all other hospital staff would not occur at this point (in the scenario).

Coordination with partner agencies: In general, partner agency coordination would begin with an initial notification based on the current level of awareness and coordination would include most local and state agencies, such as the department of health and emergency management agency. The partners in the healthcare coalition would be notified, but no other actions, in general would be taken other than initial coordination of information. The Liaison Officer, in particular, was mentioned as the coordinator of information sharing (i.e. 2-way information flow) to/from the RITN facility across the healthcare coalitions. Several facilities mentioned that their ASPR / Hospital Preparedness Program (HPP) representative would be notified. At this point in the event, participating facilities agreed that their local emergency management agency (EMA) might not be activated, but those EMAs participating in the exercise stated that they would consider a declaration of emergency at this point in time mainly to gain access to certain assets/resources to include funds and decision-making authority following an IND event within 500 miles of their metropolitan area.

Coalition compositions differed slightly in their membership among participating RITN facilities. Generally, coalition membership included hospitals/healthcare systems and departments of public health. Emergency management agencies were members in several coalitions discussed and not members in others.

Public Information: Hospital public information officers would not begin drafting press releases at this point in the event. In general, the PIOs and Liaison Officers would be in coordination with activated joint information centers (JIC). The general consensus among participating facilities was the need for a common communication strategy/messaging, which would be achieved through the JIC. Initially, the messaging would state that the RITN facility is part of a national network that provides care to victims of this kind of an event and that further information would be provided, as it became available.

RITN Control Cell - Communications: RITN Control Cell's expectation following an IND event is to disseminate information as it becomes available to them. At this point in the scenario, it is unknown the amount of information that can be shared from ASPR, but the SitReps distributed during the Fukushima Nuclear Crisis in 2012 contained all open source information. In terms of the information provide to ASPR, The RITN Control Cell would provide as much information on RITN centers capabilities to ASPR.

Strengths

The following strengths were demonstrated:

Strength 1: Recognition by RITN facilities that the events of the scenario necessitated limited command group activation as opposed to full incident command, but did include their BMTs as part of the initial notification.

Strength 2: Immediate identification that joint information center is the most effective manner to ensure the coordination of public messaging.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: It was unclear whether or not the medical/technical specialist would be activated given the events within this scenario involved the detonation of an IND.

Task Set 2 Observations: Preparations for Victim Receipt.

Command Group Decisions: The main decisions considered by the activated command group based on the expectation of patient arrival within 48 hours across the four participating RITN facilities were discussed as follows:

- Triage protocol used for medical management.
- Decision processes of in-patient versus outpatient medical care. With the assumption that 70% of the surge victims at the RITN facility would require outpatient care only, hospitals stated more flexibility and options available to them to manage the anticipated medical surge. Accompanying this issue is the coordination of the ongoing needs of those treated on outpatient basis, which will likely require support of the local EMA and the American Red Cross.
- Registration and patient tracking (as well as maintaining patient tracking throughout the surge) would require command level discussion/decisions as challenges with the Joint

Patient Assessment and Tracking System (JPATS) still persist and would result in issues during the hand-off of National Disaster Medical System (NDMS) patients to the receiving RITN facility.

- Once in-patients have been identified for transport during hospital decompression, the command group would have to consider the processes for discharging patient to Long-Term Care Facilities (LTCFs) and re-routing any patients not associated with the medical surge to other facilities (i.e. RITN facility is on standby).
- Decision when to initiate alternate care sites at the RITN facility to minimize the surge on the emergency department.
- Estimation of the current staffing levels to support the anticipated surge as well as the shortages that will likely occur as well as hospital staff to conduct Human leukocyte antigen (HLA) typing.
- Resource shortages that will occur quickly such as blood and linens.
- Determination of supply chain interruptions especially for Neupogen, blood, and linens.
- Family assistance and reunification services.
- Organization and development of just-in-time training. Participants suggested the following as resources to include subject matter experts for use: radiation health physicist, public affairs, specialty nursing, RITN, and the CDC.
- Begin to consider the suspension of certain procedures/operations and activation of hospital continuity of operations plans.

Inpatient Accommodations: Participants briefly discussed the steps within their own facility that would be taken to ensure in-patient accommodations are available as they prepare to receive victims. In general, facilities discussed that need to create space within their facilities to prepare for the medical surge and one example provided is to cohort patients in the general medicine unit as well as cohort patients requiring negative pressure rooms, which would maximize space within the oncology unit.

Coordination Efforts: The participating RITN facilities stated that messaging would be one of the primary coordination efforts needed as they prepared for medical surge. Coordination would be done by the Liaison Officer through the JIC and then through the existing pathways outlined in current plans. Just-in-time education and training was another identified need, especially for triage and provision of basic radiation poisoning (versus radiation contamination) education at the hospital staff level to alleviate their own personal concerns.

Staff Messaging Content: Staff messaging is more of a challenge at the outpatient level than the in-patient level. The guidance, type and level of education provided to staff and the in-patient population was discussed to focus on differentiating between radiation poisoning versus radiation contamination and staff handling/safety measures that would be taken. No further information was discussed.

RITN Control Cell – HCS Capacity Survey Summary: (n=4). In review of the HCS Matrix, participating facilities provided the following staffed bed count information for the following:

- Adult Hematology / Oncology
- Pediatric Hematology / Oncology
- Adult Post-Anesthesia Care Unit (PACU) – type

- Pediatrics PACU - type

A combined bed availability of 99 beds (those indicated as available 'now') across the four categories was available on the day of the exercise with a total dosage availability of 1,324 doses of Filgrastim (dose is greater than or equal to 300 mcg). In 24 hours, the combined staffed bed availability is 115-staffed beds and, in 72 hours, the combined staffed bed availability is 143-staffed beds.

Strengths

The following strengths were demonstrated:

Strength 1: RITN facilities provided a comprehensive listing of the primary decisions faced by their command group in preparation for victim receipt.

Strength 2: RITN facilities stressed the importance of providing staff and the patient population (in-patient and outpatient) the basic information and training to alleviate concerns and reinforcing the realistic aspects of radiation poisoning.

Areas for Improvement

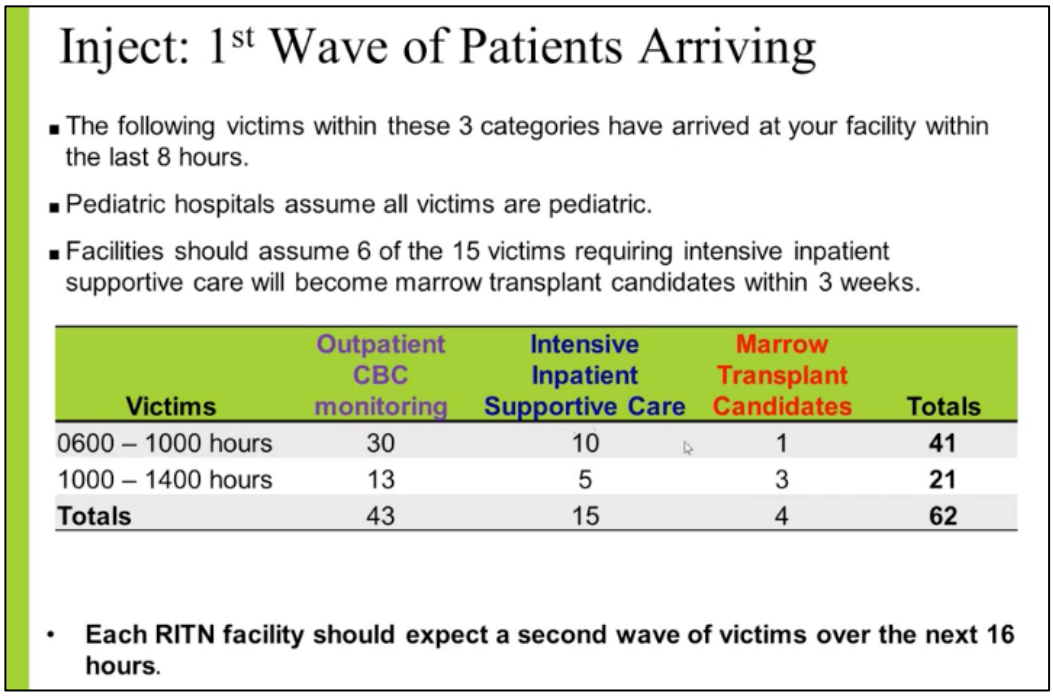
The following areas require improvement:

Area for Improvement 1: None.

Task Set 3 Observations: 1st Wave of Medical Surge

Poll: Which statement best describes the level of awareness and training for your healthcare coalition on what's expected to respond to a RITN event? (n = 4). Two facilities indicated that awareness and training for the coalition is extremely high. One facility indicated a low level of training and one facility indicated there was somewhat low level of awareness and training.

Following this second poll, an inject was presented for participant consideration regarding specific information of patients in the first wave of medical surge:



Inject: 1st Wave of Patients Arriving

- The following victims within these 3 categories have arrived at your facility within the last 8 hours.
- Pediatric hospitals assume all victims are pediatric.
- Facilities should assume 6 of the 15 victims requiring intensive inpatient supportive care will become marrow transplant candidates within 3 weeks.

Victims	Outpatient CBC monitoring	Intensive Inpatient Supportive Care	Marrow Transplant Candidates	Totals
0600 – 1000 hours	30	10	1	**41**
1000 – 1400 hours	13	5	3	**21**
Totals	43	15	4	**62**

- **Each RITN facility should expect a second wave of victims over the next 16 hours.**

Healthcare Coalition Coordination for Medical Surge: RITN facilities described the coordination necessary with their healthcare coalitions to manage this first wave of medical surge. Facilities indicated that statewide coordination of beds and facilities availability was necessary.

Command and Control: All participating facilities stated that their incident command positions would generally be the same from one operational period to the next with the exception of the addition of a medical/technical specialist to the command group if this were not already activated during the immediate notification of the administrator on-call and the section chiefs.

Initial Medical Management: Decompression of patients, if not initiated, would be one of the first response actions to occur in parallel to confirming whether or not the normal supply chains remain intact. Triage protocols were stated as having already been established as well as medical management radiation victims which include those presenting or arriving with radiation injury, poisoning, contamination as well as any with blast effect trauma. Decontamination would be performed again at the RITN facility even though decontamination already had occurred at the Regional Coordinating Center (RCC) and then victims would be placed within the hospital depending on their medical needs. Once again, one of the main operational elements is to ensure victims are separated and isolated from the emergency department. The American Red Cross would be contacted for support in the provision of housing for families of the victims.

Victims Requiring Transplant: For those victims requiring transplant, they would be prioritized by the existing performance status upon evaluation, which also include determination/identification of other destabilizing injuries that influence the priority ranking. The American Red Cross would support identification of siblings in the disaster area for blood typing and crossing. Donors would be bought to the RITN facility in addition to the simultaneous search of the donor database.

BMT: For the four participating RITN facilities, all members of their BMT are currently internal and their time to respond was stated as being brief (no specific time was provided).

Patient Tracking: Facilities would use their existing patient tracking systems. One facility stated their current state patient tracking system interfaces with the JPATS, but further information was not provided or discussed.

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: While facilities generally have an existing relationship with their coalition, there is still a need to further plan at the local level how the RITN centers can coordinate response with other healthcare providers.

Task Set 4 Observations: 2nd Wave Medical Surge.

An inject was presented for participant consideration regarding specific information of patients in the second wave of medical surge:

Inject: 2nd Wave of Patients Arriving

Victims	Outpatient CBC monitoring	Intensive Inpatient Supportive Care	Marrow Transplant Candidates	Totals
1400 – 1800 Hours	9	2	3	**14**
1800 – 2100 Hours	10	3	0	**13**
2100 – 2359 Hours	7	4	0	**11**
Totals	26	9	3	**38**

- **Facilities should assume 4 of the 9 victims requiring intensive inpatient supportive care will eventually worsen in condition and become marrow transplant candidates within 3 weeks (4-5 weeks after the IND detonation).**
- **Additionally, your facility is beginning to receive walk-ins who are driving from as far away as 4 hours.**
  - **Several are asking if relatives are in your facility**
  - **Many are claiming to be experiencing "weird symptoms" and looking for treatment**
  - **Casualties arrive with radiation injuries only (i.e. there are no trauma or burn injuries)**

Resource Shortages: With the second wave of victims arriving within hours of the first wave, RITN facilities discussed the following resources (medical and non-medical) as being in short supply or would become in short supply:

- Staffing was the primary concern indicated by the participating facilities. At the larger RITN facilities, command group anticipated that more staff would be available than normal because of the event to assist with medical management of the 2nd wave of patients. But, if patients required a higher/greater level of medical care, nursing shortages would quickly become an issue.
- Supply chain disruptions could be an issue for smaller RITN facilities or those facilities not located in densely populated areas, as many hospitals in densely populated regions are cancer care facilities and would have assets available to support the RITN facility.
- Marrow transplant candidates would cause coordination concerns with the management of the 2nd wave of victims. The challenges would be in locating donor matches along with the overall timing aspects involved with donor identification. Medical support of the donor transplant patients would likely require coordination with American Red Cross to include blood product donation management. Added issues discussed with marrow transplant candidates were those around infection control, prophylaxis, and then the ongoing management of the facility's inpatient versus intensive outpatient care.
- Managing large numbers of patients with severe radiation sickness would be difficult. Ensuring sufficient isolation and staff would be a challenge if a facility reaches capacity. Managing the patients with minor illness (i.e. outpatients who require CBC monitoring) would require coordinating with city resources to house and transport patients that were transferred from other areas. This is currently a capability that has not been explored in detail.
- Smaller RITN facilities would be faced with the following in short supply: treatment rooms and staffed beds; Neupogen; blood; and platelets. Additionally, outpatient housing and vendor co-dependencies were also provided as issues.

Role of Healthcare Coalitions in Patient Discharge: Participants described the role of their regional healthcare coalitions as providing assistance in the transport to long-term care facilities and other regional hospitals for care. The coalitions would also support placement of patients (and their families) in the community with the management of risk and community education as previously discussed to include radiation poisoning versus contamination.

- Placing people back in a community and lack of risk to the public. As people have been sent back home with radiation treatment, there is no issue or danger or risk to others. Public reception is a concern.
- Large centers – may not have to discharge inpatient population. But discharge would go to LTCFs.
- Children Hospitals – knowledge skill set to handle pediatric surge because numbers of BMT management aren't high annually.
- Discharge would be educational issue – subjects of radiation poisoning and people are NOT radioactive.

Cancer Centers and Pediatric Hospitals: Cancer centers and pediatric hospital roles were briefly discussed as part of the RITN facility response. Specifically, cancer centers would have an

integral involvement in performing and managing blood transfusions as well as ongoing patient monitoring. Pediatric hospital involvement is dependent on the level of care provided annually for transplantation.

Messaging for Relatives: Several examples were provided by the four facilities regarding messaging to victim relatives. These included activation of hotlines with prepared scripts, enlisting social work staff to interact with the families, and support request from the American Red Cross.

Worried-Well Messaging: Facilities indicated improvement-planning efforts from real events as well as lessons learned indicating that importance of disseminating a consistent, well-coordinated public messaging. Education is very significant in managing the worried-well. Examples provided included use of public service announcements and establishment and operation of receiving stations (with local health department support). The PIO would be providing information to the JIC on radiation poisoning with the main goal of trying to minimize the numbers of worried-well from presenting to the emergency departments.

Strengths

The following strengths demonstrated:

Strength 1: RITN facilities demonstrated a realistic assessment of the resource shortages they would face as the second wave of victims arrives at their facility.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: RITN Centers need to work through their coalitions and EMAs to explore planning elements of care and shelter of those with relatively minor radiation illness (e.g. outpatient CBC monitoring).

CONCLUSION

This report augments existing planning/training/exercising programs related to hospital response to two waves of medical surge of victims exposed to harmful levels of radiation following an IND detonation. The strengths validate well-established aspects of the plans while the opportunities for improvement provide information to enhance, refine, or improve existing plans and systems. The exercise planning team developed detailed objectives and evaluation criteria to ensure that the most critical needs to medically manage 100 victims with radiological poisoning across their region. It is anticipated that the improvement plan will be incorporated into the efforts of each participating hospital 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. These are not in any particular order and are provided unedited to avoid intent changes.

During the participant hot wash several common themes were identified, including:

- Regardless of geography, RITN facilities had similar hospital response actions given the scenario, faced many of the same resource issues, and managed two waves of medical surge similarly.
- Small centers participating in the exercise were challenged with the 100 victim medical surge.
- Participating centers have good existing relationships with their Coalition partners.

Some immediate recommendations for improvement were identified, including:

- Outpatient population coordination needs to occur beyond the RITN facility's capabilities.
- Regarding medical surge, larger RITN facilities can accommodate a 100-victim medical surge with fewer issues versus smaller RITN facilities. Consider "breaking the system" and "breaking the plans" for larger facilities.
- Further planning is necessary between the RITN centers and EMAs and others to plan for the care and shelter of NDMS patients that are brought to their city that require outpatient services.

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN facilities participating in the RITN Improvised Nuclear Device Tabletop Exercise conducted on April 30, 2014. RITN Centers can utilize this table to organize the opportunities for improvement to augment and develop corrective actions that are specific to their facility.

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

Organization	Participant Name
Mayo Clinic	Theresa Sanneman
Mayo Clinic	Deb Teske
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Mayo Clinic	Cheryl Nimtz
Mayo Clinic	Pat Hlawka
Mayo Clinic	Aaron Tande
Mayo Clinic	Kevin Torgerson
Mayo Clinic	Glenn Sturchio
Mayo Clinic	Nathan Van Brunt
Mayo Clinic	Terry Schoonover
Mayo Clinic	Robin Goetz
Mayo Clinic	Cheryl Brugger
Mayo Clinic	Estelle Souchet
Mayo Clinic	Lisa Douglas
Mayo Clinic	Michael Thieke
Mayo Clinic	Marla LeFebre
Mayo Clinic	Bryan Anderson
Mayo Clinic	Christopher Arendt
Mayo Clinic	Kim Gaines
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Mt. Sinai Hospital	Lagrimas Fausto
Mt. Sinai Hospital	Toni Mailly
Mt. Sinai Hospital	Elisa Gordon
Mt. Sinai Hospital	Amy Elitzer
Mt. Sinai Hospital	Lisa Nanlal
Mt. Sinai Hospital	Lavonia Francis
Mt. Sinai Hospital	Amy Johnson
Mt. Sinai Hospital	Rose-Marie Faotio
Mt. Sinai Hospital	Sharon Tindle
Mt. Sinai Hospital	Virginia Ross-Dodds
Mt. Sinai Hospital	Ladislao Decenteceo

Organization	Participant Name
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Mt. Sinai Hospital	Alan Levine
Mt. Sinai Hospital	Jesus Mercado
Mt. Sinai Hospital	Nathaniel Bravo
Mt. Sinai Hospital	Josephy Widewsky
Mt. Sinai Hospital	Sunny Wong
Mt. Sinai Hospital	Raquel Franklin
Mt. Sinai Hospital	Don Candone
Mt. Sinai Hospital	Jacob Kamen
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Mt. Sinai Hospital	Elaine Meszatos
Mt. Sinai Hospital	William Van Wart
Mt. Sinai Hospital	Zachary Galitzeck
Mt. Sinai Hospital	Kevin Chason
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University Hospitals Seidman Cancer Center	Bob Sabol
University Hospitals Seidman Cancer Center	Jeffrey Cule
University Hospitals Seidman Cancer Center	Jane Reese
University Hospitals Seidman Cancer Center	Deb Liedtke
University Hospitals Seidman Cancer Center	Michael Mulholland
University Hospitals Seidman Cancer Center	Robert Fox
University Hospitals Seidman Cancer Center	Linda Cabral
University Hospitals Seidman Cancer Center	Marcella Pokorny
University Hospitals Seidman Cancer Center	Robert Maitta
University Hospitals Seidman Cancer Center	Basem William
University Hospitals Seidman Cancer Center	Brenda Coom
University Hospitals Seidman Cancer Center	Berni McQuigg
University Hospitals Seidman Cancer Center	Richard Creger
West Virginia University Hospitals	David Staten
West Virginia University Hospitals	Crystal Peck
West Virginia University Hospitals	Aaron Kocsis
West Virginia University Hospitals	Ash Broadwater
West Virginia University Hospitals	Will Dougherty
West Virginia University Hospitals	Paul Galla for (Dan Bazzolli)
West Virginia University Hospitals	J. David Shields
West Virginia University Hospitals	Jodi Hall
West Virginia University Hospitals	Tammie Ritenour
West Virginia University Hospitals	Stephanie Fragale
West Virginia University Hospitals	Aaron Cumpston

Organization	Participant Name
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West Virginia University Hospitals	David Custer
West Virginia University Hospitals	Michael Craig
West Virginia University Hospitals	Deborah Falconi
West Virginia University Hospitals	Kathy Webster
West Virginia University Hospitals	Kathy Watkins
West Virginia University Hospitals	Londia L Goff
West Virginia University Hospitals	Kathy Klepfel
West Virginia University Hospitals	Amanda Fuller

Positions Activated for the Exercise

Position	Mayo Clinic (MN)	Mt. Sinai (NY)	Seidman Cancer Center (OH)	West Virginia Univ. Hospitals
RITN Medical Director		X	X	X
RITN Primary Coordinator		X	X	X
RITN Alternate Coordinator		X	X	X
Additional physician(s)	X	X	X	
Nursing staff	X	X	X	X
Admission process representative	X	X		
Administrator/hospital executive		X		
Emergency management staff	X	X	X	X
Pharmacy staff member	X	X	X	X
Radiation safety officer/Health physicist	X	X		X
Social services representative	X	X		X
Psychiatry/psychology representative		X		
Blood center representative	X	X	X	X
Emergency department representative	X	X	X	X
Quality representative		X		X
Regulatory representative		X		
Infectious disease specialist	X	X		
Cell processing lab representative	X	X	X	X
Environmental health and safety representative		X		
Ethicist				
Burn center representative	X			
Public information representative	X	X	X	
VA/NDMS representative				
Public Health representative	X			
County/city/state emergency manager	X			
Poison control center representative				
Healthcare coalition representative	X	X		

APPENDIX C: 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.

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.	
Mount Sinai (NY)	There is sufficient equipment to detect and monitor radiological contamination to triage and decontaminate patients. Leaders of the BMT program are knowledgeable about the RITN program and can assist with triage and treatment of patients with radiation injury/illness.
West Virginia Univ. Hospitals	Our emergency alert notification systems - Live Process and WV Ready, allows for immediate notification of alerts and to assess bed capacity and resources throughout the state. Our MOU coalition of hospitals allows for better coordination of response and resources.
Mayo Clinic (MN)	Robust capability exists to care for marrow toxic injury patients. There is good relationship/collaboration between internal departments and with external partners.
Seidman Cancer Center (OH)	Our emergency management drills have prepared us to activate quickly and efficiently. Multiple individuals in the organization are aware and trained in emergency preparedness best practices.

Based on discussions today, please briefly describe 1 or 2 challenges to respond to a radiation mass casualty incident as described in this scenario.	
Mount Sinai (NY)	Capability to manage large numbers of patients with severe radiation sickness would be difficult. Ensuring sufficient isolation and staff would be a challenge if our current facility reaches capacity. Managing the patients with minor illness who would require monitoring would require coordinating with city resources to house and transport patients that were transferred from other areas. This is currently a capability that has not been explored in detail.
West Virginia Univ. Hospitals	We currently do not have a statewide patient tracking system. We also need to develop a "just in time" education model/algorithm for patient assessment and treatment. No known established link to the PCC.
Mayo Clinic (MN)	Management of outpatients, primarily due to external lodging/care, tracking issues. Information management - internal messaging/external messaging

Seidman Cancer Center (OH)	One major challenge is the housing of "walking wounded"; patients needing outpatient treatment but not housed at the hospital. We have the ambulatory sites and services available to provide care, but would have to coordinate with agencies like the Red Cross to house the patients.

What are some of the unique considerations that should be considered for further planning between your RITN facility and Healthcare Coalitions to collectively respond to a radiation mass casualty incident?	
Mount Sinai (NY)	Housing and transportation of patients relocated from the affected areas
West Virginia Univ. Hospitals	Geographic and rural based health care challenges. We are the only transplant center in the state. Some hospitals in our coalition are located 3 to 4 hours away.
Mayo Clinic (MN)	We are integrated within the SEMN Disaster Health Coalition (www.semndhc.org); Mayo Clinic is the corporate sponsor for the Coalition and provides preparedness and operational support to the Coalition. Additional disaster exercises will help improve operational coordination amongst Coalition partners.
Seidman Cancer Center (OH)	Housing of people we would treat outpatient and perhaps better public awareness of the nature of radiation injuries. Given the likelihood of disasters both man-made and natural, more information should be distributed regarding protecting one's self in a pandemic and the nature of radiation injuries. Make it clear that radiation burns do not make one radioactive.

List and briefly describe elements to address for future RITN exercises.	
Mount Sinai (NY)	Identifying additional or alternate care locations establishing pre event messaging, addressing sheltering or hoteling for relocated patients

West Virginia Univ. Hospitals	It would be helpful to discuss the scenario of many hospitals and clinics all accessing the same vendors for drugs used to treat the patients. Does the SNS include GCSF? We briefly discussed in this scenario, dealing with the worried well and walk-ins. It would be helpful to further discuss how to better prepare for higher volumes of this type of patient/family also.
Mayo Clinic (MN)	Perhaps a focused exercise on information management - internal/external messaging would be beneficial.
Seidman Cancer Center (OH)	

Lastly, the four centers were asked to rate the usefulness of the exercise.

On a scale of 1-5 (1 ranking not useful and all and 5 ranking very useful), the four responses rated an average of 3.25.

APPENDIX D: ACRONYMS

Acronym	Meaning
AAR	After Action Report
ASPR	Assistant Secretary for Preparedness and Response
BMT	Bone Marrow Transplant
CDC	U.S. Centers for Disease Control
ED	Emergency Department
EMA	Emergency Management Agency
FCC	Federal Coordinating Center
HHS	U.S. Department of Health and Human Services
HLA	Human Leukocyte Antigen
HPP	Hospital Preparedness Program
ICS	Incident Command System
IND	Improvised Nuclear Device
JIC	Joint Information Center
JPATS	Joint Patient Assessment and Tracking System
LTCF	Long Term Care Facility
mcg	Microgram
NDMS	National Disaster Medical System
NMDP	U.S. National Marrow Donor Program
PACU	Post-Anesthesia Care Unit
PCC	Poison Control Center
PPE	Personal Protective Equipment
PIO	Public Information Officer
RITN	Radiation Injury Treatment Network
SitRep	Situational Report
USN	United States Navy
VA	Veterans Administration