2023

RITN Tabletop Exercise (TTX) After-Action Report/Improvement Plan

Exercise Date: July 18, 2023

EXERCISE OVERVIEW

Exercise Name	2023 RITN Tabletop Exercise (TTX)
Exercise Date	July 18, 2023
Scope	The exercise was a distance-based tabletop exercise scheduled for 2 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
Objectives	**Objective 1:** RITN hospital staff can determine their hospital's capacity to receive casualties (inpatient and outpatient) through the National Medical Disaster System (NDMS) following a mass casualty radiological incident. **Objective 2:** RITN hospital staff can identify staff, equipment, and other resource needs to support patients receiving outpatient care.
Hazard	Radiological
Scenario	Medical surge from a distant radiological incident
Sponsor	Radiation Injury Treatment Network® (RITN) Office of Naval Research (ONR)
Participating Organizations	Allegheny Health Network (Pittsburgh, PA) North Shore University Hospital (Manhasset, NY) Northwestern Memorial Hospital (Chicago, IL) Roswell Park Comprehensive Cancer Center (Buffalo, NY) Temple University Hospital Cancer Center (Philadelphia, PA) UH Seidman Cancer Center (Cleveland, OH) University of California – Davis (Davis, CA) West Virginia University Hospital (Morgantown, WV)
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

EXERCISE SUMMARY

On July 18, 2023, eight RITN centers and the RITN Control Cell participated in an online tabletop exercise to determine their hospital's capacity (e.g., staff, equipment, supplies) to receive inpatient and outpatient causalities through the National Medical Disaster System (NDMS) following a distant, mass casualty radiological event. A facilitated series of exercise tasks were provided to participants for their consideration, response, and group discussion organized by the exercise scenario summary below.

Scenario Summary: The following illustrate the scenario events considered for participant discussion:

Exercise Scenario

- A 10-kiloton Improvised Nuclear Device (IND) was detonated yesterday approximately 500 miles away from your facility. No threat of fallout and no utility interruptions.
- RITN Control Cell staff begin to monitor the situation and start sending out daily situation reports (SitReps) to hospitals.
- RITN hospitals have been requested to start completing their capabilities report and submitting it daily using the RITN Portal.
- Hospitals were instructed to use their current census for exercise purposes when completing the capabilities report.

ANALYSIS OF CAPABILITIES

Exercise Discussion Module 1: Capabilities Report

Exercise participants were tasked to utilize the RITN Portal to complete the Capabilities Report and provide feedback on the process for compiling the necessary data to complete the report along with any challenges experienced. The Capabilities Report gathers information on adult and pediatric hematology/oncology and bone marrow transplant (BMT) beds available, ability to provide outpatient care to both adults and pediatrics, and various pharmaceutical quantities available at the hospital to care for acute radiation syndrome (ARS) patients. All of the eight participating RITN hospitals said there were no challenges with accessing the portal or answering the questions to complete the report., The other hospital units that supported data collection for the report categories included nursing, pharmacy, emergency management, radiation safety, clinical team, inpatient/outpatient service teams, patient throughput, outpatient oncology, laboratory, and administration (this is a collective list but in general the same types of departments were utilized according to hospital report outs).

Seven participating hospitals are part of the NDMS and four are members of the American Burn Association (ABA). A question was posed as to how available bed counts would be deconflicted when reporting to those organizations as well as to RITN. One stated that their internal electronic medical record system and Juvare™ platform for bed reporting would enable deconfliction of total beds and another said that they did not have a specific way to handle this but would overtly state that the beds are not additive (e.g., 12 available beds are for either RITN or NDMS). The activation of hospital command centers is also critical to manage and report bed numbers.

Strengths

The following strengths were demonstrated:

Strength 1: There were no challenges with using the RITN Portal to access and complete the Capabilities Report with bed and pharmaceutical data necessary to respond to patient care needs. All information was completed as part of the exercise.

Strength 2: Multiple hospitals reported a cross disciplinary group that participated together for the exercise which enabled broader situational awareness of response plans and input into the exercise tasks.

Strength 3: Communications internally to staff and across affiliated facilities using mass notification tools and electronic records systems enables rapid activation and information sharing.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Hospitals would benefit from guidance or best practices on how to report bed counts to multiple organizations (NDMS, ABA, state level) to avoid double counting.

Exercise Discussion Module 2: Outpatient Planning

This module focused on the planning and capability for hospitals to receive a surge of outpatients affected by radiation injury, such as surge capacity (e.g., patient care, laboratory testing), communications, and mental/behavioral health considerations.

Outpatient Care: The biggest concern with regards to outpatient care was available staffing (ambulatory areas and labs) to surge and understanding the type of care/treatment the patients will need. Outpatients would be calculated in partnership with the hematology and oncology departments in order to determine a strategy for ongoing assessment and care. The Hospital Incident Command System (HICS) would be opened to evaluate capabilities and designate care locations based on the needs of the incoming patient population. All hospitals identified utilizing outpatient facilities to support laboratory blood draws and analysis; as affiliated facilities the clinical care team is easily able to access results through the electronic charting system.

The majority of hospitals have a plan for outpatient care needs for example in their RITN Standard Operating Procedure (SOP) or hospital Emergency Management/Operations Plan. Models and experience exists for housing and transporting patients based on real world events (e.g., Hurricanes Katrina and Sandy sheltering). At least one other hospital mentioned having partnerships in place with ride share services and shuttle companies to support patient movement to the outpatient care facilities.

Social workers and human resources would be utilized to support the financial and social work aspects of outpatient coordination of care and logistics.

Literature: All but one of the participating hospitals reported not having have specific literature prepared for patient and family education for a radiation injury patient surge. Hospitals would leverage existing materials to provide information on radiation exposure to both staff and patients/families. Many cited the resources and templates available from the RITN website as the main source of information. Two additional examples of literature and training were provided:

- Materials from 2015 full scale RITN exercise included flyers; this information can be posted to the hospital website and/or patient MyChart for ease of viewing (West Virginia)
- Just-in-time training plans/materials exists that can be implemented for staff to care for a surge of radiation patients (Allegheny Health)

Screening Questions: Hospitals cited existing tools such as the Quality Oncology Practice Initiative (QOPI, https://practice.asco.org/quality-improvement/quality-programs/quality-oncology-practice-initiative) that can be leveraged and modified to ask patients additional

questions such as sibling information to support donor needs, past medical history, etc. Existing mental health teams are in place to work with oncology populations and would be engaged to support this response to include the use of routine assessment tools for transplant patients (augment question set for radiation injury patients).

It is expected that in this type of national level disaster the CDC may release information so hospitals would align with federal guidance and questions as appropriate.

Strengths

The following strengths were demonstrated:

Strength 1: Memoranda of Understanding (MOUs) and relationships with partners (e.g., Red Cross, NDMS) are strong; drills have emphasized roles and responsibilities.

Strength 2: Hospital plans to mobilize resources (e.g., staff, beds, mass care) have been strengthened following real world events such as hurricanes, COVID-19 pandemic, and fire.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Staffing is the major limiting factor for hospitals to respond to any medical surge event to include radiation injury patients. Just-in-time training and other available online training can be offered to staff to build capability internally (to respond to radiation incidents).

Area for Improvement 2: Radiation exposure literature needs to be incorporated into plans. This can be accomplished by leveraging the information available on the RITN website (https://ritn.net/resources/response-planning-and-guidance-resources) and documenting the procedures for rapid dissemination of the information in plans. Connecting with internal radiation oncology and behavioral health departments may identify other tools or guidelines that can be used for this population; this also should be referenced in plans.

Area for Improvement 3: Consistent information for the public is critical; a RITN one pager targeted to the public/media would be useful so that all hospitals are not creating independent messages.

Area for Improvement 4: Specific screening questions for radiation injury outpatients do not exist at the majority of hospitals. There are tools that exist for transplant patients so in consult with radiation oncology and behavioral health; hospitals should modify tools and incorporate into plans for this specific incident response.

Area for Improvement 5: Laboratory throughput may present a challenge; hospitals that anticipate limitations in laboratory capability or capacity should evaluate other facilities in the area that can support the surge blood collection and testing to include establishing plans and agreements with the identified facilities.

Area for Improvement 6: Review and strengthen mass care plans to include specific details that pertain to a RITN patient response (i.e., patient education, family assistance).

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2023 RITN Tabletop Exercise conducted on July 18, 2023. RITN centers can utilize this table to organize the opportunities for improvement to augment and develop their own corrective actions. The improvement plan is intended to strengthen the response of RITN hospital core capabilities identified in this report.

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

Participating Organizations			
Last Name	**First Name**	**Email Address**	**Organization**
Beirne	Lauren		Northwestern Memorial
Pugh	Johnathon		Northwestern Memorial
Gersman	Jennifer		Northwestern Memorial
Fuller	Lisa		Northwestern Memorial
Bresnaham	Andrew		Northwestern Memorial
Sumugod	Ricardo		Northwestern Memorial
Schoblocher	Molly		Northwestern Memorial
Moreira	Jonathan		Northwestern Memorial
Smith	Jeff		Northwestern Memorial
Cummins	Sarah		Northwestern Memorial
Meier	Steve		Northwestern Memorial
O'Shaughnessy	Laura		Northwestern Memorial
Privitere	Lisa		Roswell Park
Boersch	Trish		Roswell Park
Gerber	Nicole		Roswell Park
Mundy	Anita		Roswell Park
Swinnich	Donna		Roswell Park
Braun	Brian		Roswell Park
Stone	Christopher		Roswell Park
Smith	Sean		Roswell Park
Klubek	Melinda		Roswell Park
Howe	Christine		Roswell Park
Hughes	Erin		Roswell Park
McCabe	Elizabeth		Roswell Park
Sweeney	Kimberly		Roswell Park
Dames	Urias		Roswell Park
McCarthy	Philip		Roswell Park
Glenns-Segal	Stephanie		Roswell Park
Myszka	Stephanie		Roswell Park
Morton	Rebecca		Roswell Park
Pleskow	Jordan		Roswell Park
Abdelmessieh	Peter		Temple University
O'Connor	Dawn		Temple University
Dever	Jeffrey		Temple University
Bodison	Kurt		Temple University
Bellerjeau	Margaret		Temple University
Sanchez	Tim		UC Davis Health
Schafer	Charles		UC Davis Health
Bolan	Charles		UC Davis Health
Martin	Alana		UC Davis Health
Glenn	Kellie		UC Davis Health
Rostel	Emily		UC Davis Health
Spurgeon	Kristina		UC Davis Health

Esparza	Enrique		UC Davis Health
Metheny	Leland		UH Seidman
Sabol	Robert		UH Seidman
Kolk	Merle		UH Seidman
Fazal	Salman		Allegheny Health
Stover	Lori		Allegheny Health
Cockerham	Paula		Allegheny Health
Zoroya	Anthony		Allegheny Health
Garrasi	Elizabeth		West Virginia U Hosp.
Versmessen	Brian		West Virginia U Hosp.
Goff	Londia		West Virginia U Hosp.
Walker	Dmitry		West Virginia U Hosp.
Pratt	Ashley		West Virginia U Hosp.
Douglas	Melanie		West Virginia U Hosp.
Weiler	Phoebe		West Virginia U Hosp.
Colebank	Heather		West Virginia U Hosp.
Veltri	Lauren		West Virginia U Hosp.
Voight	Devan		West Virginia U Hosp.
Mays	Kendra		West Virginia U Hosp.
Spitznogle	Carol		West Virginia U Hosp.
Fitzgerald	Eileen		North Shore Uni. Hosp.
Rambhia	Ami		North Shore Uni. Hosp.
La Sala	Tom		North Shore Uni. Hosp.
Bayer	Ruthee-Lu		North Shore Uni. Hosp.
Arata	Tom		North Shore Uni. Hosp.
Dunseath	Vicki		North Shore Uni. Hosp.
Fitzgerald	Eileen		North Shore Uni. Hosp.
Pavlovic	Larissa		North Shore Uni. Hosp.
DeSisso	Antoinette		North Shore Uni. Hosp.
Gomez	Cindy		North Shore Uni. Hosp.
Campay	Donald		North Shore Uni. Hosp.
DeDominico	Laura		North Shore Uni. Hosp.
Yoshida-Hay	Miyuki		North Shore Uni. Hosp.
Daniel	Summer		North Shore Uni. Hosp.

APPENDIX C: PARTICIPANT FEEDBACK

RITN Centers were asked to provide feedback via an online questionnaire following the exercise to include ranking the utility of the exercise and recommendations for future RITN exercises. Number of responses received = 8.

Very Useful = 75% (6/8)

Somewhat Useful = 25% (2/8)

Future exercise recommendations provided by participating RITN hospitals included the following:

- Radiation Dispersal Device at a major tourist center or sporting event.
- Development of standard literature for patients and caregivers (plus guidance from RITN on what to include).
- Evaluation of entire health system resources to respond to a patient surge.
- More education from radiation experts on response.
- Utilize a video or multi-media to introduce scenario or educational components followed by breakout sessions to answer module questions.
- Evaluation of supply chain impacts (e.g., medications).
- Deliver patient profiles to work through transfers, patient care decisions and placement, etc.

APPENDIX D: ACRONYMS

Acronym	Term
AAR	After Action Report
ARC	American Red Cross
CBC	Complete Blood Count
CLIA	Clinical Laboratory Improvement Amendments
HLA	Human Leukocyte Antigens
ICS	Incident Command System
IND	Improvised Nuclear Device
MOU	Memorandum of Understanding
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
ONR	Office of Naval Research
PCC	Poison Control Center
RITN	Radiation Injury Treatment Network
RSO	Radiation Safety Officer
SNS	Strategic National Stockpile
TTX	Tabletop Exercise