2024

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

Exercise Date: June 27, 2024
Report Date: July 12, 2024

EXERCISE OVERVIEW

Exercise Name	2024 RITN Tabletop Exercise (TTX)
Exercise Date	June 27, 2024
Scope	The exercise was a distance-based tabletop exercise scheduled for 2.5 hours. Exercise play was limited to RITN facilities to examine the response by RITN hospitals to accommodate patient surge and care to include identifying alternate care sites, and address crisis standards of care.
Mission Area(s)	Response
Capabilities	Medical Surge
Objective	**Objective 1:** RITN hospital staff can determine their hospital's capacity to accept a patient surge from a distant Improvised Nuclear Device (IND) detonation to include staff, space, and supplies. **Objective 2:** RITN hospitals identify alternate care sites that can be used for patient triage, screening, and treatment. **Objective 3:** RITN hospitals discuss the procedures for implementing Crisis Standards of Care (CSC) to include citing plans and expertise that would be leveraged and key decisions.
Hazard	Radiological
Scenario	Medical surge from a distant radiological incident
Sponsor	Radiation Injury Treatment Network® (RITN) Office of Naval Research (ONR)
Participating Organization	Cleveland Clinic (Cleveland, OH) Duke University (Durham, NC) Orlando Health (Orlando, FL) Prisma Health (South Carolina) Thomas Jefferson University (Philadelphia, PA) University of Minnesota (Minneapolis, MN) University of Rochester (Rochester, NY)
Point of Contact	RITN Control Cell RITN@NMDP.ORG (612) 884-8276

EXERCISE SUMMARY

On June 27, 2024, seven Radiation Injury Treatment Network (RITN) centers participated in an online tabletop exercise (TTX) to determine their hospitals' capacity (e.g., staff, equipment, supplies) to receive inpatient and outpatient causalities through the National Medical Disaster System (NDMS) following a 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 points illustrate the scenario events considered for participant discussion:

Exercise Scenario

- A 10-kiloton Improvised Nuclear Device (IND) was detonated in a major metropolitan area.
- The blast occurred at least 500 miles from your hospital and there is no concern of fallout affecting your location.
- RITN Control Cell staff begin to monitor the situation and start sending out daily Situation Reports (SitReps).
- Expect many people to arrive in the next week.
    - Those with mild to moderate trauma and those seeking evaluation for radiation exposure will self-evacuate to other metro areas.
    - Other patients experiencing radiation exposure will be evacuated in the coming days through the NDMS.

ANALYSIS OF CAPABILITIES

Module 1: Patient Surge Capacity

Exercise participants were tasked to complete the exercise survey and provide feedback on compiling the necessary data to complete the report along with any challenges experienced. Six (6) hospitals submitted their responses via the RITN Exercise Survey. Hospitals provided the following list of key initial actions they would undertake to prepare for patient surge:

- Initiate command center;
- Activate policies/units to call in staff;
- Begin decompression to include discharge or transfer of patients out;
- Prepare decontamination capabilities;
- Begin or formalize public information/communications;
- And leverage assistance from additional resources such as the State.

Four (4) hospitals reported the ability to receive anywhere from 10-30 patients while two hospitals indicated that they could take 200-250 patients under crisis standards of care (CSC). Hospitals would be able to implement surge protocols within anywhere from one to 24 hours and these changes could be sustained for two weeks or more, if needed. Patients admitted for elective procedures, patients considered low acuity, or non-critical patients could be transferred out to either facilities with existing agreements or to other facilities within hospitals' systems. The number of outpatients that could be supported for radiation monitoring and outpatient care varied widely depending on the facility from two to unlimited. Factors that would affect these numbers included available staffing, available monitoring resources, available Just-in-Time training (JIT), space for housing outpatients, and what support patients required. Three (3) out of six hospitals reported having a plan for large-scale, long-term complete blood count (CBC) collection from patients arriving from the area surrounding the scene.

The mental health of staff would primarily be supported by hospitals' Employee Assistance Programs (EAPs) in addition to other resources such as social work and pastoral care. When coordinating public messaging with their healthcare coalitions, hospitals would primarily act as subject matter experts (SMEs) providing guidance and support.

Strengths

The following strengths were demonstrated:

Strength 1: Hospitals indicated that they would be able to leverage experience with large-scale COVID testing and vaccination to assist with establishing and maintaining large-scale, long-term CBC testing.

Strength 2: All hospitals were able to identify either system-level facilities or facilities with existing agreements that they could direct patients/procedures to, to help facilitate decompression.

Strength 3: All hospitals identified resources available to support staff mental health including hospital Employee Assistance Programs (EAPs), social work support, and pastoral care.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Three (3) out of six hospitals indicated that they do not currently have a plan for large-scale, long-term CBC collection from patients arriving from the area surrounding the scene. It is recommended that these facilities develop such a plan by leveraging experience from large-scale COVID testing during the 2020-2022 pandemic, sharing plans across hospitals, and/or implementing and utilizing MOUs..

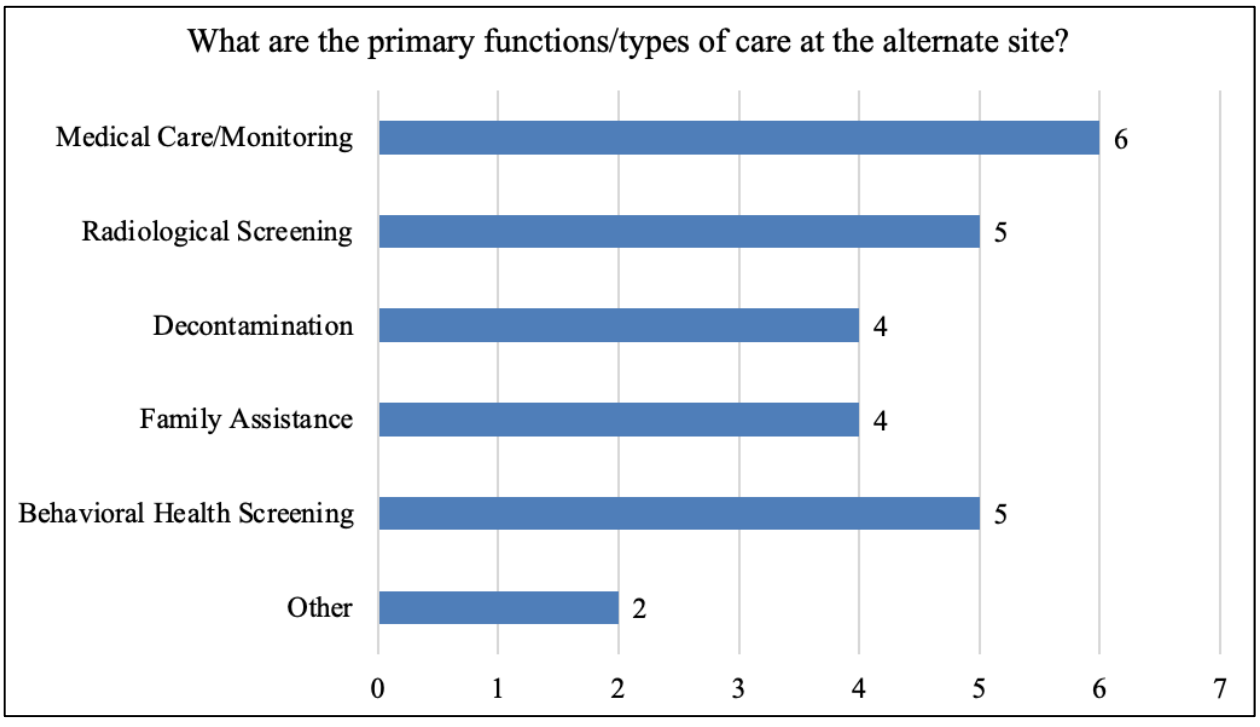
Module 2: Alternate Care Sites

This module focused on alternate care and the resources required to maintain alternate care sites including staff, physical space, and training.

Hospitals identified spaces either within their facilities or outside their facilities that could act alternate care sites (ACS). One hospital reported that they would be able to utilize in-house clinic space for non-critical patients such as physical therapy and dermatology units while other hospitals indicated that they would be able to stand up spaces that were used during the COVID-19 pandemic. Still other hospitals would rely on other hospitals within their parent system to provide ACS space.

Adverse weather that is not considered extreme would not greatly impact decisions. Most hospitals reported having adverse weather plans already in place as well as solutions to common weather-related concerns such as housing or hoteling staff who may be unable to commute to work.

Below is a graphic illustrating the functions/types of care hospitals reported to be offered at ACSs:



"Other" functions or types of care include point of care testing.

ACSs will be staffed by med/surg staff, cancer center staff, volunteers, Emergency Department (ED) staff, Radiation Safety staff, Nuclear Medicine Staff, and, if needed, staff from elective procedure departments who could be redeployed to assist.

Four (4) out of six hospitals indicated that volunteers would be required to provide staffing support at their ACSs. Volunteers would be obtained from county and federal resources, activated volunteer management plans, medical reserve corps (MRCs), nursing or medical students, first responder agencies, and local healthcare coalitions. Just-in-time (JIT) training on radiation injuries, hospital policies, burn treatment, and general ACS operations would be the primary training necessary for standing up an ACS. All hospitals indicated that staffing ratios would need to be adjusted as a result of an increase in patient numbers. Staffing ratios would be adjusted depending on the acuity of the patients presenting to the hospital. As long as the hospital has adequate staffing and resources, there would be no major immediate impact on routine patient care. ACSs could be sustained for days to months as needed with the understanding that it would begin to impact patient care delivery at some point.

Strengths

The following strengths were demonstrated:

Strength 1: Plans and procedures already exist for standing up ACSs; hospitals are also able to draw on previous experience with patient surge and ACS operations from the COVID-19 pandemic.

Strength 2: Numerous resources exist for staffing ACSs including volunteers and redeployed staff.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: The length of time an ACS could be activated and the impact on routine patient care is reliant upon the resources available, especially staff.

Module 3: Crisis Standards of Care

Several triggers exist for implementing CSC including a disaster declaration from either the state or federal level, patient volumes over a specific amount of time, length of emergency department (ED) wait time, and critical shortages of key resources. There are, however, strategies that exist to prolong care capacity given a shortage of resources including existing 96-hour plans, altered admission criteria, and telehealth capabilities. Regarding the need for a national disaster declaration, three hospitals indicated that it would be sufficient to implement CSC, one hospital indicated that it would not be sufficient to implement CSC, and two hospitals indicated that they were unsure if it would be sufficient to implement CSC. Additionally, half of the responding hospitals have their own CSC plan, and the other half rely on overarching guidance from their state. Regardless, all hospitals have either a committee or a specific authority person who makes decisions and determinations regarding CSC implementation at the facility.

Half of the responding hospitals indicated that there are ethical codes/guidance in place in their state/city/county regarding the implementation and use of CSC. For those hospitals where ethical codes/guidance don't exist, either a panel of leadership, ethics, and legal personnel would be convened to make decisions and plans or existing allocation of scarce resources plans would be implemented. When integrating CSC guidance into public messaging, information about what CSC is, why it is used, why it is being used in a specific incident, what it means to current and new patients, and what the public can expect can all be included to the extent that it allows for the public's easy understanding of anticipated operations, the situation, or expected outcomes.

Strengths

The following strengths were demonstrated:

Strength 1: Hospitals are aware of and understand the triggers that exist either within their facilities or at the state/federal level for implementing CSC.

Strength 2: Committees or persons in authority exist across all responding hospitals who make decisions and/or determinations regarding CSC.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Understanding whether a national disaster declaration is sufficient to implement CSC or if there is a legal authority at the state level that makes that determination would be beneficial for those hospitals that are unsure.

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2024 RITN Tabletop Exercise conducted on June 27, 2024. 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		
Organization	Name	Email Address
Cleveland Clinic	Joe Farinella	
Cleveland Clinic	Andy Miller	
Duke	Nancy Austin	
Duke	Paul Barnette	
Duke	Nelson Chao	
Duke	Elizabeth Eubanks	
Duke	Bethany Henshall	
Duke	Jacob Keller	
Duke	Joel Ross	
Duke	David Schile	
Duke	Aaron Smith	
Duke	Susan Violet	
Duke	Chu Wang	
Duke	Jason Zivica	
Duke	Kari Leonard	
Duke	Kyle McMichael	
Duke	Kristen Ammen	
Duke	Emily Guthrie	
Orlando Health, Inc.	Erin Hicks	
Orlando Health, Inc.	Eric Alberts	
Orlando Health, Inc.	Megan Smith	
Orlando Health, Inc.	Lisa Lambert	
Orlando Health, Inc.	Lori Larson	
Orlando Health, Inc.	Yerika Quinones	
Orlando Health, Inc.	Michael Moore	
Prisma Health	Travis White	
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Prisma Health	Cheryl Martinez	
Prisma Health	Kim Cole	
Prisma Health	William Jones	
Prisma Health	Suzanne Fanning	
Prisma Health	Eric Ossmann	
Prisma Health	Brian Laney	
Prisma Health	Jordan Bradway	

Participating Organizations		
Prisma Health	Jason Kirk	
Prisma Health	Aaron Dix	
Thomas Jefferson	Edward Jasper	
Thomas Jefferson	Joseph Anton	
Thomas Jefferson	Usama Gergis	
Thomas Jefferson	Michael Dugan	
University of Minnesota	Patti Herzog	
University of Minnesota	Rolf Nymo	
University of Minnesota	Joel Joshua	
University of Minnesota	Chris Koontz	
University of Minnesota	Angelique Anderson	
University of Minnesota	Nathan Mohammed	
University of Minnesota	Angela Kramer	
University of Minnesota	Jennie Entgelmeier	
University of Minnesota	Darcy Malard Johnson	
University of Minnesota	Caprice Vanderkolk	
University of Minnesota	Christina Paik	
University of Minnesota	Lara Fangel	
University of Minnesota	Cheryl Chin	
University of Rochester	Kate McLlu	
University of Rochester	Meg Blaney	
University of Rochester	David Chafetz	
University of Rochester	Jaclyn Wilmarth	
University of Rochester	Sandra Lindskoog	
University of Rochester	Michael Ellis	
University of Rochester	Eric Huselton	
University of Rochester	Kristen O'Dwyer	
University of Rochester	Sharon Swift	
University of Rochester	Joe Capuaro	
University of Rochester	Diane Bulloch	
University of Rochester	Zach Cavaluzzi	
University of Rochester	Bob Carroll	
University of Rochester	Elizabeth Wensel	
University of Rochester	Andrew LeBlanc	
University of Rochester	Tom Sanders	
University of Rochester	Rob Johnson	
University of Rochester	Mike Likaly	

Participating Organizations		
University of Rochester	Scott Howard	
University of Rochester	Steve Holmes	
University of Rochester	Patrius Reagan	
University of Rochester	Jane Lavless	
University of Rochester	Holly Moynihan	

APPENDIX C: PARTICIPANT FEEDBACK

RITN Centers were asked to provide feedback via an online questionnaire following the exercise. The comments below are organized by observed strengths, challenges, and recommendations for future exercises.

Participating hospitals in the June 27, 2024, exercise were asked to rank the usefulness of the tabletop exercise; **50% rated it as "Very Useful," 40% rated it as "Somewhat Useful," and 10% were "Neutral" about its usefulness.**

Strengths

- It was helpful to have our local team members present, the command center participate, and of course of emergency preparedness officer, all the input and working together on these tabletops brought us all together for more planning, and it also has helped with awareness of who are the RITN centers and the roles. Always well received and this year we had a few new faces.
- We have some of the world's experts in planning for these events. Our hospital emergency management team is excellent and well-integrated into our local coalition.
- The size and flexibility of Cleveland Clinic. As a large health system, we have more options to respond than a smaller center. Cleveland Clinic has significant expertise with respect to activation of our Incident Command Center along with deep operational experience and dedicated personnel in Emergency Management who have participated in instances when our Incident Command Center has been "live". This helps us from a readiness standpoint and is a strength.
- We have significant radiation expertise and a strong emergency management program.
- Having our internal team collaborate during this exercise with a different than normal scenario for us. Furthering our internal preparedness towards radiation mass casualty incident patients.
- Teamwork and a willingness to accomplish what is willing to be done for the patients and community.

Challenges

- Everyone is so busy and spread so thin it is hard to carve out 2 hours for a tabletop exercise, but we have asked multiple individuals from different areas to attend.
- Dealing with the worried well who will show up spontaneously.

- Alleviating staff worries about treating patients exposed to radiation.
- Access to routine supplies, blood products, and growth factors in a highly disrupted supply chain situation.
- Coordinating internal and external communication, as many of our internal experts do not frequently interact with Emergency Management personnel.
- No real surge capacity in healthcare. RITN centers would not be able to absorb such a large number of victims.
- Staffing, resources, and communications to ease fear.
- Space for patients is our biggest challenge. Staffing is our second challenge in a mass casualty.

Future Exercises

- Finance and billing for surge capacity and out-of-state insurance.
- Asking us questions is helpful but I can only capture this group of people once a year for a couple of hours. Would it be possible to flip it and have a Q and A session where we submit questions to RITN and have time to discuss?
- Leveraging RITN expertise to help non-RITN hospitals manage these victims given the limited surge capacity of the RITN sites.
- When the exercise link is shared it should be designated and listed by facility not by person.
- Several people join at each site, which not all were able to join this exercise due to space allocation.
- Have the breakout rooms work properly.
- Collaboration between other facilities would be important.
- Review our current emergency management plans and resources for treatment spaces.
- Partnering with other healthcare systems during a mass casualty.

APPENDIX D: ACRONYMS

Acronym	Term
AAR	After Action Report
ACS	Alternate Care Site
ARS	Acute Radiation Syndrome
BMT	Bone Marrow Transplant
CBC	Complete Blood Count
CSC	Crisis Standards of Care
EAP	Employee Assistance Program
IND	Improvised Nuclear Device
JIT	Just-in-Time
MRC	Medical Reserve Corps
NDMS	National Medical Disaster System
ONR	Office of Naval Research
RITN	Radiation Injury Treatment Network
SitReps	Situation Reports
SME	Subject Matter Expert
TTX	Tabletop Exercise