2024

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

Exercise Date: July 16, 2024
Report Date: July 23, 2024

EXERCISE OVERVIEW

Exercise Name	2024 RITN Tabletop Exercise (TTX)
Exercise Date	July 16, 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	University of Pittsburgh Medical Center (Pittsburgh, PA) UAB Medicine (Birmingham, AL) Cooper University Hospital (Camden, NJ) H. Lee Moffitt Cancer Center (Tampa, FL) Atrium Health Wake Forest Baptist (Winston-Salem, NC) Northwell North Shore University Hospital (Manhasset, NY) Baylor University Medical Center (Dallas, TX) Banner University (Tucson, AZ)
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EXERCISE SUMMARY

On July 16, 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 relevant policies and procedures;
- Prepare decontamination capabilities;
- Open internal communications with relevant departments;
- And leverage assistance from additional resources such as additional system-level hospitals.

Four (4) hospitals reported the ability to receive anywhere from 30-180 patients while one hospital indicated that they are not a receiving hospital and therefore have limited space. Hospitals would be able to implement surge protocols between immediately to 24 hours and these changes could be sustained for the duration of the event, if needed, depending upon current patient volumes. 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 7-8 outpatients to nearly 1,000. Factors that would affect these numbers included available staffing, available monitoring resources, space for housing outpatients, and what support patients required. Five (5) 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 resources such as social work, pastoral care, the American Red Cross (ARC), the Veterans' Administration (VA), and RITN. When coordinating public messaging with their healthcare coalitions, hospitals would act as subject matter experts (SMEs) and liaisons between hospital public relations (PR) and the Coalition/emergency medical services (EMS) 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 to direct patients/procedures to facilitate decompression.

Strength 3: All hospitals identified resources available to support staff mental health including social work support, pastoral care, and RITN-provided resources.

Areas for Improvement

The following areas require improvement:

Area for Improvement 1: Facilities were either unclear or unable to outline what resources or support they could provide to local healthcare coalitions related to public messaging or expert reach back on radiation injury. Facilities should work with their local healthcare coalitions to coordinate and determine what, if any, support they can offer during an IND response.

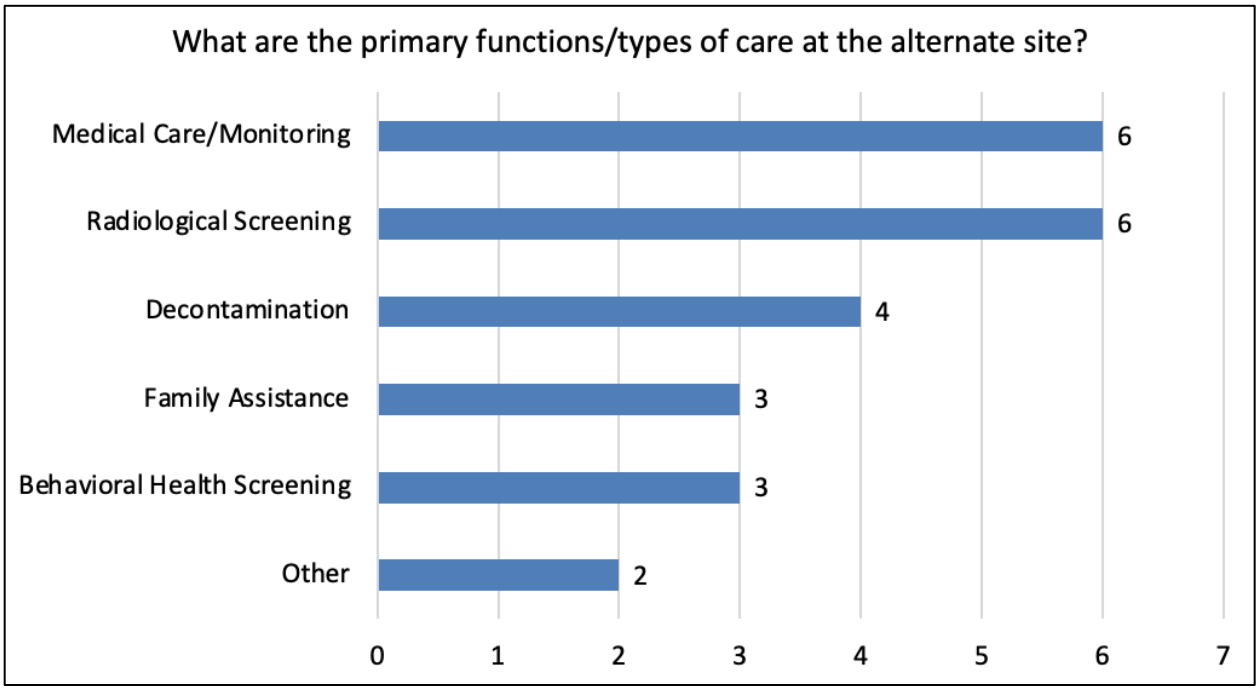
Module 2: Alternate Care Sites

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). Several hospitals would be able to utilize research areas as well as clinic space and tents set up externally while other hospitals indicated that they would be able to stand up spaces that were used during the COVID-19 pandemic.

Adverse weather that is not considered extreme would not greatly impact decisions. Most hospitals reported a preference for indoor ACSs to avoid any potential weather-related issues but most also had solutions to common weather-related concerns.

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



"Other" functions or types of care include virtual family assistance and behavioral health screenings.

ACSs will be staffed by Med/Surg staff, Cancer Center staff, Pharmacy staff, Radiation Safety staff, Nuclear Medicine Staff, volunteers, nursing and other resource pool staff.

Only one hospital would require the use of volunteers to staff an ACS while the other five hospitals either would not or were unsure if volunteers were required. Volunteers would be

obtained from internal volunteer services, nursing or medical students, and recent retirees. Just-in-time (JIT) training would primarily include basic training on radiation as well as administrative ACS operations such as the registration process. 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 evaluation of the patients presenting to the hospital. Waivers would either be requested or are already in place. As long as the hospital has adequate staffing and resources, 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, in many cases beginning immediately.

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.

Strength: All hospitals are prepared to adjust staff-to-patient ratios to some degree depending upon staff availability and waivers.

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.

Area for Improvement 2: Three (3) out of six hospitals were unsure if volunteers would be required to staff a ACS. It is recommended that hospitals clarify this and outline it in any existing ACS plans.

Module 3: Crisis Standards of Care

Several triggers exist for implementing CSC including fully-employed surge capacity, insufficient critical resources, and the inability of mutual aid agreements to provide necessary resources. There are strategies and plans utilized during the COVID-19 pandemic response that exist to prolong care capacity given a shortage of resources. Regarding the need for a national disaster declaration, three hospitals indicated that it would be sufficient to implement CSC and three hospitals indicated that they were unsure if it would be sufficient to implement CSC. Two responding hospitals have their own CSC plan, three would rely on overarching guidance from the state, and one hospital is unsure. Half of responding hospitals reported having an established committee that makes the decision to implement CSC, two hospitals were unsure if a committee exists, and one hospital does not have a committee.

Four (4) of the responding hospitals have ethical codes/guidance in place at the state/city/county level regarding the implementation and use of CSC. For those hospitals where ethical codes/guidance don't exist, triage and a decision by medical directors would determine the use of resources. When integrating CSC guidance into public messaging, the approach would be to include information that is concise and transparent but not too specific as to how decisions are being made. Ensuring that public that messaging is consistent when providing updates as additional data is obtained will be key.

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: Ethical codes, policies, or other priority determining factors exist across all hospitals regarding decision making on the use of resources.

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 July 16, 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
Atrium Health Wake Forest Baptist	Rebecca Damron Jennings	
Atrium Health Wake Forest Baptist	Ryan Minnix	
Atrium Health Wake Forest Baptist	Tina Hillard	
Atrium Health Wake Forest Baptist	David Holder	
Atrium Health Wake Forest Baptist	Dr. Pomper	
Atrium Health Wake Forest Baptist	Brandi Anders	
Atrium Health Wake Forest Baptist	Mike Brienza	
Atrium Health Wake Forest Baptist	Kim Stanbery	
Atrium Health Wake Forest Baptist	Jonathan Lambird	
Atrium Health Wake Forest Baptist	Cory Kassen	
Banner University Tucson	Cary Nesbitt	
Banner University Tucson	Laura Lee	
Banner University Tucson	Cassandra Jack	
Banner University Tucson	Cera Slawski	
Banner University Tucson	Patrick Bunker	
Baylor University Medical Center	Angela Bruner	
Baylor University Medical Center	Brian Lugo	
Baylor University Medical Center	Rob Monaghan	
Baylor University Medical Center	Robin Morton	
Baylor University Medical Center	Harold Polk	
Baylor University Medical Center	Sienna Priddy	
Baylor University Medical Center	Todd Skaggs	
Cooper University	Roger Strair	
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Participating Organizations		
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Northwell North Shore	Marina Willie	
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Northwell North Shore	Cindy Gomez	
Northwell North Shore	Ilyssa Kritz	
Northwell North Shore	Gintu James	
Northwell North Shore	Kelli Cole	
Northwell North Shore	Laura DeDomenico	
Northwell North Shore	Sobi Mathai	
Northwell North Shore	Ana Hernandez	
Northwell North Shore	Mattias Nyitray	
Northwell North Shore	Steven O'brien	
Northwell North Shore	Eugenio Silvestrini Hernandez	
Northwell North Shore	Ruthee Lu Bayer	
Northwell North Shore	Cristie Geddes	
Northwell North Shore	Antoinette DeSisso	
Northwell North Shore	Eileen Fitzgerald	
UAB Hospital	Melinda Rodgers	
UAB Hospital	Natalie McRae	
UAB Hospital	Heather Tayloe	
UAB Hospital	Dana Stinson	
UAB Hospital	John Hooper	
UAB Hospital	Stefano Mugnaini	
UAB Hospital	Robert Health, Jr.	
UAB Hospital	Tami Long	
UAB Hospital	Brandon Wright	
UAB Hospital	Ronny Taylor	
UAB Hospital	Tiffany Hayes	
UAB Hospital	Lakeidra Mims	
UAB Hospital	Brandon Wright	
UAB Hospital	Teresa Teer	
UAB Hospital	Joel Evans	

Participating Organizations		
UAB Hospital	Corelyou Mobley	
UAB Hospital	Sandra Rudolph	
UAB Hospital	Duane Prater	
UAB Hospital	Brian Bowman	
	Jess Murray	
UAB Hospital	Jose Lima	
UAB Hospital	Ashlea Herrero	
UAB Hospital	Bill Mayfield	
UAB Hospital	Ashley Lovingood	
Alabama Department of Public Health – Jefferson Health Care Coalition Coordinator	Julie Cobb	
Jefferson County Emergency Management Agency	Baylee Pope	
JCEMA	Edmond Jones	
University of Pittsburg	Nancy Buris	
University of Pittsburgh	Shelley Cameron	

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 July 16, 2024, exercise were asked to rank the usefulness of the tabletop exercise; **100% rated it as "Very Useful."**

Strengths

- *We have a fantastic emergency management team and an outstanding public health department/healthcare coalition. We all work together to provide plans and I am sure we could weather such a disaster with flying colors!*
- *Over the years, we have been able to get more internal players involved in our RITN program. This has significantly improved our preparedness capabilities and leadership engagement*
- *We have a very robust team that manages our incident command center with lots of experience in its leadership.*
- *We are a part of a network of hospitals that could mount a regional response should one be needed.*
- *Our Emergency Management Officer was able to educate our team today on many aspects of our organization's ability to respond to an RITN activation.*
- *Thorough the discussions today, new staff to the program were able to obtain a rather detailed overview of how our hospital and health system can access resources during a mass casualty/RITN event.*
- *Our program has a strong basis for large scale communication, and we routinely run drills for major catastrophic events. These processes allow us to be better prepared to act when needed. This also means that all stakeholders have had current communication and have current strong relationships to work through such an event.*

Challenges

- *I believe mental health would be a challenge but not one that could not be overcome. General fear and panic would be hard to overcome, however.*
- *Lack of supplies, staff that might quickly become fatigued, etc.*

- *Lack of knowledge which I am trying to educate on the RITN more.*
- *There is still some unclarity regarding the logistics and reimbursements should we ever be activated for an RITN event. We would like to participate in/observe a functional exercise and eventually do our own internally.*
- *Since COVID, we have struggled with staff recruitment and retention. That would probably be our biggest challenge. Other challenges would include lack of knowledge related to exposure to radiation and feeling comfortable being around exposed patients.*
- *Challenges exist in the difference in responding to a theoretical event versus real life incident. Perhaps a section on the medical care required, or some case studies on how to treat the patients.*
- *The biggest challenge we would face is leveraging partnerships with other healthcare networks. This would be a challenge because we utilize different EMR. We would likely need to pull resources not necessarily spaces which would be a smoother transition.*

Future Exercises

- *I would like to see more attention placed on the actual patients that may need a transplant. More explanation of the numbers affected.*
- *History and description of RITN. Great opportunity to hear the different perspectives and responses to mass casualty incidences from other facilities.*
- *Cost reimbursement. RITN support for outpatient housing and transport (Does RITN partner with big hotel chains and transport companies like Uber and Lyft?).*
- *After attending the RITN conference, I am very interested in including the need for veterinarians in our next exercise.*
- *I think the discussions were helpful but did not allow the exercise to end on time. Perhaps saying it is a 3 hour exercise would be more in alignment with required discussions.*
- *In the future it would be great to mix and match teams to discuss as if we were our own new institution. Essentially if you could build the perfect hospital for this scenario what would it look like.*

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