

**2022**

**RITN Tabletop Exercise (TTX)  
Situation Manual (SitMan)**

## PREFACE

There are two options for how your organization completes the RITN Tabletop Exercise in 2022; the first is to participate in a web-based exercise facilitated by the Mier Group and the RITN Control Cell. The second option is to conduct the exercise independently, as you have in the past. We encourage you to participate in the web-based exercise, if convenient. If you plan to participate in the web-based exercise, please register for one of the six sessions through this link by June 22, 2022 <https://register.gotowebinar.com/rt/5644283989424796172>. If you plan to coordinate the exercise yourself, please use these materials to coordinate and conduct your exercise and then submit the answers to the questions in this packet.

If participating in one of the web-based TTXs **answers must be submitted within 3 days** from the exercise to receive credit. For centers conducting the exercise on their own, answers must be submitted by **August 31, 2022**. Only one person should submit answers for each RITN center. The web link for answer submission is:

<https://www.surveymonkey.com/r/2022TTX>

## EXERCISE PARTICIPANTS

This exercise should be completed with a group of appropriate staff members. To determine exercises participants the **RITN Coordinator should work with hospital emergency management staff to review the exercise materials** and identify what departments/organizations would be required.

## EXERCISE OVERVIEW

<b>Exercise Name</b>	2022 RITN Tabletop Exercise (TTX)			
<b>Web Based Exercise Dates</b> --- <i>Registration Required</i>		<b>Eastern Time</b>	<b>Central Time</b>	<b>Pacific Time</b>
	June 28, 2022	Start: 11:00AM End: 12:30PM	Start: 10:00AM End: 11:30AM	Start: 8:00AM End: 9:30AM
	July 12, 2022	Start: 3:00PM End: 4:30PM	Start: 2:00PM End: 3:30PM	Start: 12:00PM End: 1:30PM
	July 19, 2022	Start: 2:00PM End: 3:30PM	Start: 1:00PM End: 2:30PM	Start: 11:00AM End: 12:30PM
	July 20, 2022	Start: 11:00AM End: 12:30PM	Start: 10:00AM End: 11:30AM	Start: 8:00AM End: 9:30AM
	August 17, 2022	Start: 2:00PM End: 3:30PM	Start: 1:00PM End: 2:30PM	Start: 11:00AM End: 12:30PM
	August 25, 2022	Start: 3:00PM End: 4:30PM	Start: 2:00PM End: 3:30PM	Start: 12:00PM End: 1:30PM
<b>HPP Capabilities</b>	Medical Surge			
<b>Threat or Hazard</b>	Radiological			
<b>Scenario</b>	Medical surge from a distant radiological incident			
<b>Sponsors</b>	Radiation Injury Treatment Network (RITN) National Marrow Donor Program (NMDP) Office of Naval Research (ONR)			
<b>Point of Contact</b>	RITN Control Cell <a href="mailto:RITN@nmdp.org">RITN@nmdp.org</a> (612)884-8276			

## GENERAL INFORMATION

### Exercise Objectives and Core Capabilities

The following exercise learning objectives in Table 1 describe the expected outcomes for the exercise. The objectives are linked to Healthcare Preparedness Program (HPP) capabilities, which are distinct critical elements necessary to achieve the specific mission area(s). The objectives and aligned HPP capabilities were selected by the Exercise Planning Team.

**Table 1. Exercise Objectives and Associated HPP Capabilities**

Exercise Objective	HPP Capability
<b>Objective 1:</b> RITN hospital staff can assess the ability of their laboratories to handle a surge in demand for complete blood counts with differential, comprehensive metabolic panels, and coagulation parameters.	Medical Surge
<b>Objective 2:</b> RITN hospital staff can identify staff, equipment, and other resource needs to include supply chain disruptions.	Medical Surge
<b>Objective 3:</b> RITN hospital staff can identify medical toxicology resources available and discuss coordination between the hospital and local poison center.	Healthcare and Medical Response Coordination
<b>Objective 4:</b> Assess the ability of the blood bank to meet the increase in demand for blood products.	Medical Surge

### Participant Roles and Responsibilities

The term *participant* encompasses many groups of people, not just those playing in the exercise. Groups of participants involved in the exercise, and their respective roles and responsibilities, are as follows:

**Players.** Players are personnel who have an active role in discussing or performing their regular roles and responsibilities during the exercise. Players discuss or initiate actions in response to the simulated emergency.

**Observers.** Observers do not directly participate in the exercise. However, they may support the development of player responses to the situation during the discussion by asking relevant questions or providing subject matter expertise.

**Facilitators.** Facilitators provide situation updates and moderate discussions. They also provide additional information or resolve questions as required. Key Exercise Planning Team members also serve as subject matter experts (SMEs) during the exercise.

**Evaluators.** Evaluators are assigned to observe and document certain objectives during the exercise. Their primary role is to document player discussions, including how and if those discussions conform to plans, policies, and procedures.

### Exercise Structure

This exercise will be a facilitated exercise. Players will participate in the following modules:

- Module 1: Activating, preparing, and resourcing the laboratories for surge.
- Module 2: Receiving samples, throughput, result reporting, outpatient testing, and blood product availability.

**Exercise Guidelines**

This exercise will be held in an open, low-stress, no-fault environment. Varying viewpoints, even disagreements, are expected.

Respond to the scenario using your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from your training.

Decisions are not precedent setting and may not reflect your organization's final position on a given issue. This exercise is an opportunity to discuss and present multiple options and possible solutions.

Issue identification is not as valuable as suggestions and recommended actions that could improve response efforts. Problem-solving efforts should be the focus.

**Exercise Assumptions and Artificialities**

In any exercise, assumptions and artificialities may be necessary to complete play in the time allotted and/or account for logistical limitations. Exercise participants should accept that assumptions and artificialities are inherent in any exercise, and should not allow these considerations to negatively impact their participation. During this exercise, the following apply:

The exercise scenario is plausible and events occur as they are presented.

The scenario may not have all the information that you feel is necessary to provide a fully informed response. Please attempt to formulate your responses based on the information provided.

**Exercise Evaluation**

Players will be asked to complete participant feedback forms. These documents, coupled with facilitator observations and notes, will be used to evaluate the exercise and compile the After-Action Report (AAR).

**Laboratory Response**

It is expected that significant demand will be placed on laboratories near the blast site, if they are operational, as well as in other major metropolitan areas that are a 2-6 hour drive from the impacted area. This may include samples from shelters near the blast site that are transported for analysis and/or from patients with ARS that evacuate to other cities for medical care and sheltering. Patients with radiation exposure will require serial labs (e.g., CBC) to determine the potential damage to blood cells/bone marrow and triage for care. These tests will occur daily for approximately 2-3 weeks as well as the expectation of one test per patient for coagulation parameters.

Laboratories must consider how to increase testing capacity to include staffing, supplies, and reporting mechanisms to share results with distributed outpatient populations. An IND detonation would be an unprecedented event in the United States and could be expected to severely disruption normal transportation pathways and supply chains. In addition, there will be a large demand on the blood banks, initially to respond to trauma injuries from the blast and followed by potential needs to treat those with bone marrow injuries requiring transplant.

## EXERCISE VENUE QUESTIONS

1. Contact information of person submitting answers to RITN exercise questions.
2. Select your RITN center.
3. What TTX session did you take participate in?
4. How many people participated in your exercise?
5. Identify the disciplines that participated in your exercise (select all that apply)

## EXERCISE SCENARIO

- Blast occurred yesterday during peak daytime population in an urban area approximately 250 miles away from your facility. There is no threat of fallout around your facility and no interruptions to major utilities.
- It is expected that those with mild to moderate trauma and those seeking evaluation for radiation exposure will self-evacuate to other metro areas given the damage and with your facility only 250 miles away it's expected a large number will be arriving.
- Other patients experiencing radiation exposure will be evacuated in the coming days through the National Disaster Medical System (NDMS).
- Poison Control Centers (PCCs) throughout the country begin receiving large volumes of calls from people that were in the fallout zone.
- Estimated casualties from the blast are listed below:

Estimated Casualties <sup>1</sup>			
Trauma (ISS)			
Mild (1-9)	Moderate (10-14)	Severe (>15)	
79,000	121,000	143,000	
Radiation Only			
Mild (.75 – 1.5 Gy)	Moderate (1.5 – 5.3 Gy)	Severe (5.3 – 8.3 Gy)	Expectant (>8.3 Gy)
91,000	51,000	12,000	47,000
RITN patients			

### Scenario Assumptions

- Resources will be quickly depleted near the detonation site; medical, assembly, and evacuation shelters will be established over the next 48 hours. Patient blood draws will begin within the next 24-48 hours and continue to increase over the coming days.
- Laboratory testing is critical to triaging and prioritizing patient care needs, particularly patients in the 2-8 Gy range.
- Self-evacuated people with radiation exposure and no other injuries begin to self-report to the region around your facility as early as 6 hours post detonation.
- It is necessary to set up a receiving area for the outpatients and perform daily blood counts (i.e., CBCs collected and analyzed once per 24 hours).

<sup>1</sup> Table adapted from: Knebel AR, Coleman CN, Cliffer KD; et al. Allocation of scarce resources after a nuclear detonation: setting the context. Disaster Med Public Health Prep. 2011;5 (Suppl 1):S20-S31

## MODULE 1: PREPARING FOR A SURGE

### Discussion Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 1. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.

6. How is laboratory and outpatient surge response at your facility coordinated?
  - a. Who is communicating with federal, state, and local response partners?
  - b. Is the hospital command activated? How are subject matter experts (hematology, oncology, and laboratories) added to the existing structure?
7. Does your hospital have on staff at least one medical toxicologist?
  - a. If yes, are they formally integrated into your RITN center's planning efforts?
  - b. If no, does your facility have a pre-identified process to fill this need?
8. Has your RITN center formally included your local or state poison center in its planning efforts?
9. What information is provided to laboratory staff?
  - a. Do they have training about radiation (contact with patients/samples)?
  - b. What other laboratory safety concerns must be addressed? Who is responsible and how is it conducted?
10. How is the laboratory staffing plan modified in anticipation of the surge?
11. In preparation for the surge, consider equipment and supplies:
  - a. What is available internally/locally (could be used tomorrow)? And what is not?
  - b. Where can additional equipment and supplies be rapidly obtained?
  - c. What are the biggest supply chain risks?
12. Has your RITN center shared with your local or state poison center the RITN referral guidelines?
13. Select from the following list, roles that you believe a Medical Toxicologist could play in your RITN center's response or plans (Select all that apply)?
  - a. Training and education of hospital staff on radiation emergency management
  - b. Planning and operations for triage, PPE use and decontamination
  - c. Assessment of internal contamination with radioactive materials
  - d. Management of internal contamination with radioactive materials with medical countermeasures or antidotes (e.g., Prussian blue or DTPA)
  - e. Pharmacovigilance for adverse drug events from novel medical countermeasures used to treat patients
  - f. Risk communication to the RITN center staff regarding occupational safety
  - g. Long-term outpatient follow-up of survivors of a radiation emergency
14. Would you consider providing telephonic consultation to physicians at other hospitals on the management of acute radiation syndrome during an emergency?
15. If yes, would you be willing to use your local or state poison center as a call center to facilitate these consultations?

## MODULE 2: LABORATORY TESTING, RESULT REPORTING AND ASSESSMENT OF BLOOD PRODUCTS

### Scenario Update

Approximately 1,800 radiation victims have arrived in the local area. They have either been exposed to radiation or are worried well, mostly self-evacuating to your region. More will be expected over the next week. They require initial evaluation and blood tests; daily testing will need to occur for at least 2 weeks for many of them.

In addition to the outpatients, approximately 500 samples are arriving daily to your laboratory for analysis from overwhelmed shelter locations closer to the blast site. This results in a total daily sample load that is nearly double the routine daily average.

Due to the unprecedented detonation of an IND, transport of goods has been significantly slowed as inspections are increased at airports and along roadways within the U.S.

There is a significant demand for blood products both in the immediate area and throughout the region where acute radiation injury patients are being housed. Trauma patients are also impacting the total blood supplies. People are volunteering to donate in significant numbers.

### Discussion Questions

Based on the information provided, participate in the discussion concerning the issues raised in Module 2. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.

16. How will the blood collections for patients receiving outpatient level care be performed (i.e., who collects the samples, who transports them to your facility)?
17. What data systems are used to receive, track, and report specimen results?
  - a. What are the expected challenges with this volume?
  - b. How are results communicated to the outpatient shelter?
  - c. How will results be shared with the patients being assessed at shelters in the region (e.g., result accessibility to disperse physicians)?
18. Describe the ability of the hematology, clinical chemistry, and coagulation laboratories to respond to increased testing demand. What are the biggest challenges based on this scenario?
  - a. What is the maximum number of samples your lab is able to process per day?
  - b. What is the manual capacity if automation (flow cytometry) is not possible for some samples?
  - c. How are samples prioritized if demand is greater than the current capability? Who determines this priority?
19. What are the biggest concerns and possible solutions with the supply chain disruption given the current scenario?
20. What steps are taken to increase available blood products due to the demand?

- a. What are the expected gaps in obtaining additional resources?
  - b. Where would people be directed to make a blood donation? How is this coordinated?
21. How would the use of irradiated and leukoreduced blood products be managed?
22. What criteria will be used to determine what patients will be HLA typed?. Are there processes in place to archive early patient samples in the event HLA typing is needed several weeks later?
- a. How will distant relatives of the patient be HLA typed?

## APPENDIX A: ACRONYMS

Acronym	Term
AAR	After Action Report
ARS	Acute Radiation Syndrome
CBC	Complete Blood Count
DTPA	Diethylenetriamine Pentaacetate
Gy	Gray
HLA	Human Leukocyte Antigen
HPP	Hospital Preparedness Program
IND	Improvised Nuclear Device
NMDP	National Marrow Donor Program
NDMS	National Disaster Medical System
ONR	Office of Naval Research
PCC	Poison Control Centers
PPE	Personal Protective Equipment
RITN	Radiation Injury Treatment Network
SitMan	Situation Manual
SME	Subject Matter Expert
TTX	Tabletop Exercise

## APPENDIX B: REFERENCES

Encourage exercise participants to review the following before the exercise:

RITN Training Materials:

<http://ritn.net/Training/>

RITN ARS Treatment Guidelines:

<http://ritn.net/WorkArea/DownloadAsset.aspx?id=2147483696>