2017

Tucson, AZ Regional RITN Tabletop Exercise After-Action Report/Improvement Plan

Exercise Date: October 26, 2017
Report Date: November 16, 2017

Table of Contents

EXERCISE OVERVIEW

Exercise Name	2017 Tucson Regional RITN Tabletop Exercise (TTX)
Exercise Date	October 26, 2017 (9:30 AM – 1:00 PM)
Capabilities	Public Health & Medical Services Operational Coordination, Medical Surge, Responder Safety & Health, Mass Care
Objectives	**Objective 1:** Clarify the organizational roles and responsibilities of participating agencies in responding to a surge of casualties with radiological injuries to the Tucson region. **Objective 2:** Identify the process for casualty reception and distribution within the Federal Coordinating Center (FCC) framework. **Objective 3:** Identify the critical resources available to assist hospitals and treatment centers during a surge of radiation-injured patients and discuss resource gaps. **Objective 4:** Anticipate guidance that non-Radiation Injury Treatment Network (RITN) hospitals will need with regard to receiving radiation-injured patients; of particular concern is triage, treatment, tracking and surveillance of self-referral cases from the area of radiation impact and distribution of medical countermeasures. **Objective 5:** Identify the responsibilities and resources necessary for mass care capabilities to support RITN patients and their families during ongoing treatment at Tucson RITN treatment centers.
Threat or Hazard	Radiological
Scenario	Medical surge due to a distant detonation of an Improvised Nuclear Device (IND)
Sponsor	Radiation Injury Treatment Network® (RITN)
Point of Contact	Curt Mueller Exercise Coordinator, Radiation Injury Treatment Network Curt.Mueller@nmdp.org (612) 294-4539 Don Brazie, CEM, MSL Emergency Management Program Manager Banner Health Don.Brazie@bannerhealth.com (520) 694-4495

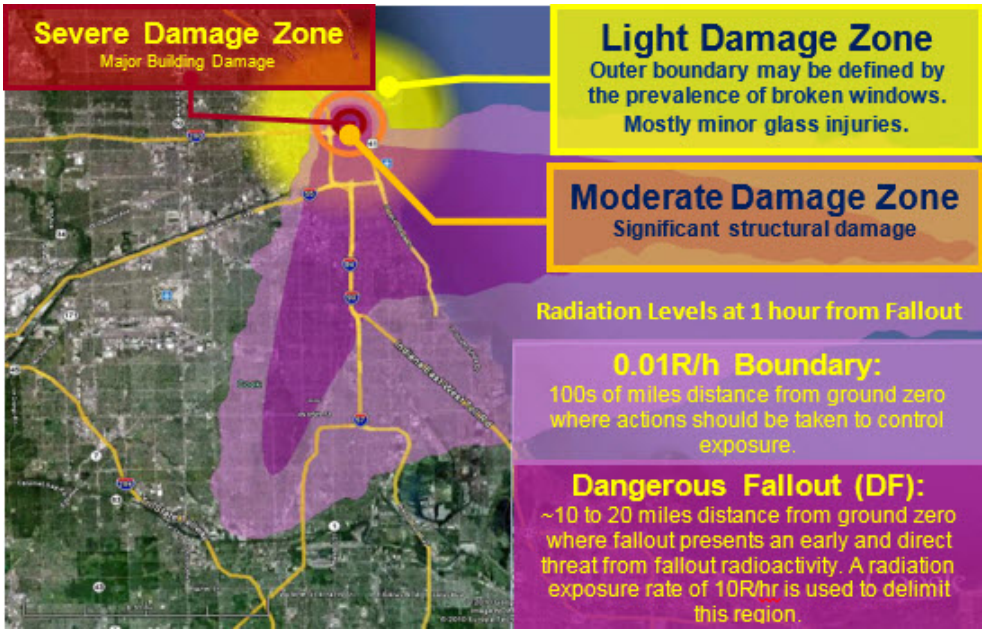
EXERCISE SUMMARY

On October 26, 2017, The University of Arizona Cancer Center hosted a tabletop exercise with representatives from Pima County Emergency Management Agency (PC-EMA), City of Tucson EMA, The Southern Arizona Veterans Affairs Healthcare Center, the Arizona Federal Coordinating Center (FCC), Pima County Health Department, the Arizona Department of Military Affairs Emergency Management (DEMA-EM), and the RITN Control Cell to discuss the organizational roles and responsibilities of key agencies, identify resources required to provide treatment for a surge of radiation injury patients, describe medical management of patients (to include inpatient, outpatient and self-referral), discuss casualty reception and receipt within the FCC model, and identify resource needs for mass care/shelter operations. Exercise participants addressed these objectives in a scenario-driven, facilitated discussion based on a surge of casualties with radiological injuries arriving to the Tucson area.

Exercise Scenario

Initial Event

- On October 18, 2017 a ten-kiloton Improvised Nuclear Device (IND) was detonated in Chicago.



- Estimated casualties:
  - 300,000 fatalities in the Severe Damage Zone; 150,000 in Moderate Damage Zone.

- 60,000 urgent casualties in Moderate Damage Zone; 90,000 in Light Damage Zone.
- 40,000 non-urgent casualties in Moderate Damage Zone; 60,000 in Light Damage Zone.
- 300,000 worried well across geographical area.
- **16,400 radiation casualties** across geographical area.

- Secretary of Health and Human Services (HHS) declares a Public Health Emergency and activates the HHS Emergency Management Group.
- The National Marrow Donor Program (NMDP) activates the RITN Control Cell. Control Cell staff begin to monitor the situation and send out Situation Reports (SITREPs) to the RITN facilities as well as notification to fill out and submit the HCS capacity survey.

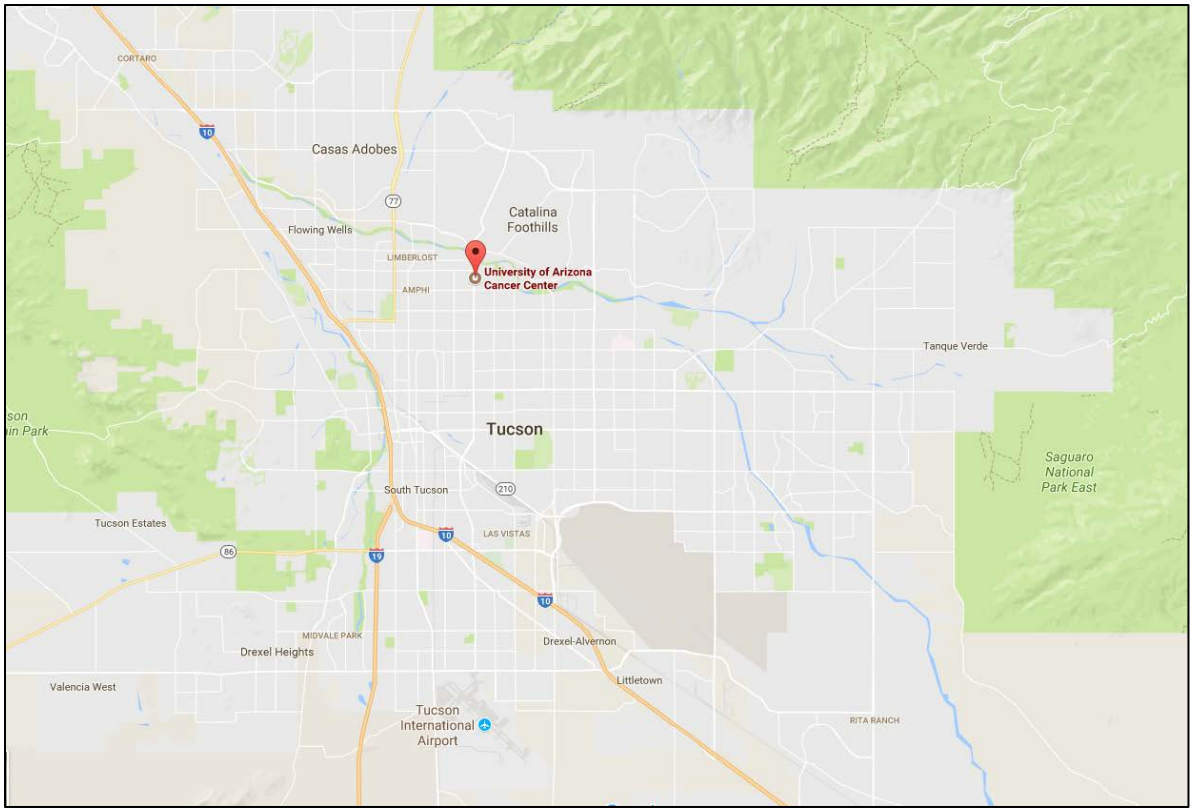
Initial Event +6 Days

- National Disaster Medical System (NDMS) issues activation protocol for Tucson, indicating the city will be receiving casualties from the disaster zone via NDMS.
- The Department of Veterans Affairs initiates actions to establish a Patient Reception Area (PRA) at Tucson International Airport, where NDMS patients will be received.

Initial Event +8 Days

Approximately eight days after the detonation patients start to arrive at the Tucson FCC. Upon arrival, patients will be screened and triaged for transportation to the local RITN hospitals for treatment. Tucson hospitals are expected to receive both pediatric and adult patients with marrow toxic injuries. These patients typically will arrive in waves of 30-45 patients and may be spread out over multiple days.

Some RITN patients are anticipated to be treated on an outpatient basis. Mass care services for patients and family members are also anticipated.



Exercise Objectives and Core Capabilities

The following exercise objectives in Table 1 describe the expected outcomes for the exercise. The objectives are linked to core capabilities, which are distinct critical elements necessary to achieve the specific mission area(s). These objectives and aligned core capabilities are guided by elected and appointed officials and were selected by the Exercise Planning Team.

Table 1. Exercise Objectives and Associated Core Capabilities

Exercise Objective	Core Capability	Healthcare Preparedness Capability
Objective 1: Clarify the organizational roles and responsibilities of participating agencies in responding to a surge of casualties with radiological injuries to the Tucson region**.**	Public Health & Medical Services	Emergency Operations Coordination
Objective 2: Identify the process for casualty reception and distribution within the Federal Coordinating Center (FCC) model**.**	Public Health & Medical Services	Emergency Operations Coordination
Objective 3: Identify the critical resources available to assist hospitals and treatment	Public Health & Medical Services	Medical Surge

Exercise Objective	Core Capability	Healthcare Preparedness Capability
centers during a surge of radiation-injured patients and discuss resource gaps.		
Objective 4: Anticipate guidance that non-Radiation Injury Treatment Network (RITN) hospitals will need with regard to receiving radiation-injured patients; of particular concern is triage, treatment, tracking and surveillance of self-referral cases from the area of radiation impact and distribution of medical countermeasures.	Medical Countermeasures Dispensing	Responder Safety & Health
Objective 5: Identify the responsibilities and resources necessary for mass care capabilities to support RITN patients and their families during ongoing treatment at Tucson RITN treatment centers.	Mass Care Services	Emergency Operations Coordination

ANALYSIS OF CAPABILITIES

Question Block 1: Pre-Arrival of Patients

Notification and Activation: Once Banner Health learns of the event, they will start to prepare for activation. The FCC would also communicate with NDMS hospitals "to prepare to standup". Once they receive alert notification, they will inform the hospitals, fire, EMS, and EMAs. Once the FCC receives the activation notifications they should expect to receive patients within 24 hours. Banner would send 1st tier notification for key people once event happens. Need to have as much time as possible to plan for staffing assignments (they will need to work with staff to come in off-shift). Staffing is the biggest issue at the hospital. There is adequate time for the standup. There is a need to ensure the call tree/algorithm is fully inclusive to those at the operational level to include the house supervisors. There is a 2-tiered system (1 C-suites and house supervisors they will call into a number for call or go to command center; plan of action will be developed – if they have a few hours they will activate the next tier level which includes next tier of leadership to get their call trees going; bed polling will occur).

The City would want to activate a local/county EOC to coordinate with the JOC. They would want to pre-stage the Metropolitan Medical Response System (MMRS), the logistics truck, the tents, and Hazardous Materials (HAZMAT) teams at the PRA. This would all be coordinated at the EOC (in partnership with the county to work at their EOC). It would operate under Multi-Agency Coordination (MAC).

When the Patient Reception Area (PRA) is stood up notification from the FCC/VA (personal notification to each facility). DEMA will reach out to two air wings to let them know they are standing up. ESF-8 at the State will be notified to stand up as well as Arizona State Public Health. Pima County EMA may coordinate a planning session with hospitals and RITN subject matter experts (SMEs). There would be another meeting at the alert notification and would then transition to a Joint Operations Center (JOC) with Federal and Local representatives.

Coordination between Banner Health RITN Center and External Partners: There are 5 full-time transplant/leukemia doctors. The South Campus Med-Surg floor has several negative pressure and single patient rooms. There will be several other hospitals in Tucson that would need to absorb the surge of patients. There are others on faculty that could be sent to Tucson Medical Center, St. Mary's and others with their existing staff. Banner has the cancer center in Phoenix (MD Anderson) that they can pull from.

Operation of the FCC/PRA: The PRA is at Tucson airport. Patients will be triaged at PRA; The FCC communicated that they will need resources there for triage for IND. After explanation of RITN triage, it was decided that they would identify a local subject matter expert (SME) to help with patient distribution decisions. There may be a need to address some type of care at the PRA (fire departments and public health would likely support at the FCC with the National Guard partners [they have a medical team that is trained on these types of issues] – these capabilities will be discussed in their upcoming FCC Full-Scale Exercise. The throughput for Tucson to accept NDMS patient is 50. Not all would be RITN patients. ASPR will do the coordination calls for patient distribution based on the bed polls. The VA has a tent system and ability to isolate several patients; but they may not have the staff to fill those needs. The FCC could contact Ken Hopper at HHS to let him know if the number of patients being sent exceeds local capability.

Strengths

Strength 1: The FCC has direct lines of communication to HHS to identify numbers of patients to be received.

Strength 2: A SME will be identified to assist with patient distribution decisions at the PRA.

Strength 3: Local resources such as MMRS and Fire/HAZMAT are will integrated into FCC operations.

Areas for Improvement

Area for Improvement 1: There is a need to work with other Tucson hospitals to identify staff. Work with the Coalition to determine the capacity. The Coalition representative(s) need to be involved in RITN planning and exercises.

Area for Improvement 2: The Coalition needs to be further involved in RITN planning. There was a specific need in this exercise to educate other hospitals on possible receipt of patients.

Area for Improvement 3: Public messaging strategies for this type of incident (i.e., radiological/nuclear detonation that results in radiation injuries) should be developed in advance and incorporated into existing emergency response plans. References to assist with messaging strategies and templates include, but are not limited to:

- U.S. HHS Radiation Emergency Medical Management (REMM) website - Information Resources for Public Information Officers. http://www.remm.nlm.gov/remm_pio.htm
- FEMA. “Improvised Nuclear Device Response and Recovery: Communicating in the Immediate Aftermath” – June 2013. http://www.fema.gov/media-library-data/20130726-

1919-25045-0618/communicating_in_the_immediate_aftermath__final_june_2013_508_ok.pdf

Area for Improvement 4: Banner is in process of becoming a High-Consequence Infectious Disease (HCID) hospital. Several people are being cross trained to support this process. It is recommended that Banner Health/University of Arizona conduct ongoing training similarly to this process and identify or develop RITN training materials.

Area for Improvement 5: Banner/University of Arizona will need to ensure the call tree/algorithm is fully inclusive to those at the operational level to include the house supervisors.

Area for Improvement 6: Need to do some collaborative work with NDMS hospitals to work through bed polling procedures. The VA does bed reporting drills every other month. There are some difficulties getting hospitals to participate. The State was using HAvBED on a daily basis and every state was reporting. The VA was using EMTrack for every other month. When HAvBED went away the compliance severely dropped for bed reporting drills. May consider using EMTrack as primary reporting tool. Banner has mandatory bed reporting twice daily that goes to their corporate system. It may be better to go to corporate systems for bed reporting data. The issue is that BMT and oncology beds are not included in bed reporting. One thing they can do is include those categories in EMTrack.

Area for Improvement 8: There are still a lot of unanswered questions about the SAT teams both at the local and federal level, for example how and when they are deployed, priority of receiving a SAT team when multiple jurisdictions are responding, and how they integrate with the local response. Future exercises should continue to explore the role of the SAT teams as their concept of operations (CONOPS) is finalized. Questions or information requests related to SAT teams should be directed to the federal NDMS program partners.

Question Block 2: Arrival of Patients

Inpatient and Outpatient Treatment: For inpatient beds, they would need to work with bed control people. In the past exercise, they could take 8 adult/8 pediatric. Most of the current BMT beds can't be moved out. For outpatient beds, they would be lucky to manage 4 today; in the past exercise, identified could take 10. For inpatient that requires a transplant from donor, the post-transplant stay is 3-4 weeks. There is frequent follow-up on ambulatory basis. The follow-up would be about 2.5-3.0 months post discharge.

Outpatient considerations (within 1-2 Gy range): Some of the care can be provided at the cancer center. Some can stay overnight at center or in apartments that are nearby. There is a Ronald McDonald House for unaccompanied minors. Banner also has agreements with hotel chains (Best Western). The City of County don't have agreements with hotels. Ronald McDonald House could only take unaccompanied minors for short period of time. After a while the Department of Family Safety would need to take over. Banner has agreements with transport providers that can be used for outpatients.

Waiver for NDMS patients past 30 days: The Service Access Team (SAT) will be case managers who will work with social workers and others. The primary is to determine insurance and will reach back to them to pay for care. Waivers can be pushed back through the SAT team to HHS if goes beyond 30 days. Could also look at sending back to the incident location (Chicago) for care.

Resource Coordination: The Coalition would ask for situational awareness on a routine basis. Hospital MOUs exist to share resources. Request would go to Tucson EM, if they can't fill would go to the State. Any federal asset requests (e.g. SNS) would need to go through the state.

Behavioral Health Resources: The South Campus has a behavioral health center. They have access to EAP for staff. They have a strong social work and chaplain them for patient support. The Regional Behavioral Health authority has teams that can be deployed to hospitals to support families and staff.

Patient Tracking: None of the hospitals in Tucson have access to TRAC2ES or JPATS. EMTrack is utilized for tracking patient. They will scan them into EMTrack. The JPATS number associated with that patient will be entered. As long as that patient is in the hospital, the SAT team will track that patient and EMTrack and enter updates into JPATS. There will likely be a bottleneck at the PRA because of entry into JPATS and TRAC2ES. It's unlikely that Banner would be able to develop and maintain expertise to enter into JPATS; best recommendation is that they give the VA or SAT team the information they need to enter.

Strengths

Strength 1: There is an established process to work directly through coordination calls with ASPR to determine patient distribution based on bed polling.

Strength 2: Banner does have a family reunification plan in place. This would be critically important in a surge of pediatric radiation injuries.

Strength 3: Banner has mental and behavioral health support staff available.

Strength 4: Banner has agreements in place with hotels for the housing of outpatients and families of inpatients.

Strength 5: Banner has agreements with transport providers that can be used for outpatients.

Areas for Improvement

Area for Improvement 1: The Cancer Center indicated that they could accept eight adult and eight pediatric patients (in patient) and manage 10 outpatients. There is a need to explore additional areas where Banner could surge to accommodate a much larger influx of radiation-injury casualties.

Area for Improvement 2: Banner/University of Arizona should ensure that Radiation Safety personnel are involved in future planning, training, and exercises for RITN.

Area for Improvement 3: There is a need to determine if any of the organizations identified that will be at the PRA (i.e. fire/HAZMAT, National Guard, others) can provide a survey capability prior to patients being transported. Will need to include in plan that decontamination be at the PRA on standby.

Area for Improvement 4: There is a need to ensure non-RITN facilities have access to patient treatment guidelines in the event the condition of a radiation-injury evacuee escalates. It is recommended that the RITN facilities actively liaison with other hospitals to interpret the treatment guidelines and determine if there is any need for transfer to a higher level of care facility.

Area for Improvement 5: Self-reported patients will not be reimbursed through NDMS. Tucson RITN facilities need to closely track costs associated with those patients in the event another federal reimbursement vehicle is identified (as assumed).

Area for Improvement 6: Offer REAC/TS education opportunities to both medical staff and support staff such as administrative and environmental services (as well as other relevant community members that may support mass care operations).

- Explore RITN sponsored Radiation Emergency Assistance Center/Training Site (REAC/TS) training for medical personnel (https://orise.orau.gov/reacts/capabilities/continuing-medical-education/default.aspx)
- Conduct and promote RITN trainings (http://ritn.net/training/) and consider downloading to have access in the event that infrastructure goes down.

Area for Improvement 7: While Banner does already have agreements with local hotels, it is recommended that they provide the RITN overview to ease any concerns about housing radiation-injury outpatients and/or their families.

Area for Improvement 8: Examine the potential for utilizing EMTrack for patient tracking in the NDMS/RITN scenario.

HOTWASH

- Need pre-planning and preparation
- The logistics would be important
- Need to collaborate and coordinate with other hospitals
- Re-introduce a bed poll that is consistent and verifiable
- Family reunification need to be further addressed – need logistics and an algorithm
    - The State is looking at putting together a family reunification plan with FEMA
    - EMTRACK has a component built in for reunification
- It's helpful to hear from different disciplines. This helps us to be more coordinated.
- Opportunity to meet people and exchange information before a real event
- Responders that would be at the PRA (fire, EMS, etc.); they need to tag and scan patients. That little bit of time on the front end would save lots of time on the back end. May need to revisit "Triage-Tuesdays".
- Don't underestimate the need for surveying and decontamination. There are limited assets for this. Will need to find them in this incident.
- Education component is important. Additional seminars and workshops on RITN. Pima County EMA would host that. Later incorporate into exercises.
- Need to make sure there is a good contact list of those would be coordinating during an emergency.
- There is a need to assess and share capabilities between hospitals.
- Determine how to resume normal operations.

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2017 RITN Regional Exercises. Banner Health and partner organizations can utilize this table to organize the opportunities for improvement to augment and develop their own corrective actions.

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

Name	Agency/Organization
Don Brazie	Banner Health/EM
Lisa Porter	Banner Health/Lab
Kathleen Pickrel	Banner Health/Social Services
Elisabeth Baxter	Banner Health
Grace Weiss	Banner Health
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Coy Collins	CCO
Matt Hechard	DEMA-EM
Travis I. Card	DEMA-EM
Nicolas Siemsen	Tucson OEM
Sandra Espinoza	Pima County OEM
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Kerry Reeve	Office of EM/VHA
Louie Valenzuela	Pima County Health
Steven Mier	Evaluator/MCG
Jen Aldrich	RITN
Curt Mueller	RITN

APPENDIX C: ACRONYMS

Acronym	Term
AAR	After Action Report
ARC	American Red Cross
ASPR	Assistant Secretary for Preparedness and Response
BARDA	Biomedical Advanced Research and Development Authority
BMT	Bone Marrow Transplant
CONOPS	Concept of Operations
DEMA-EM	Department of Military Affairs – Emergency Management
DoD	U.S. Department of Defense
ED	Emergency Department
EMA	Emergency Management Agency
EMS	Emergency Medical Services
ESF	Emergency Support Function
FCC	Federal Coordinating Center
FEMA	Federal Emergency Management Agency
G-CSF	Granulocyte-Colony Stimulating Factor
HAvBED	Hospital Available Beds for Emergencies and Disasters
HAZMAT	Hazardous Materials
HCS	Healthcare Standard
HHS	Health and Human Services
HICS	Hospital Incident Command System
ICS	Incident Command System
IND	Improvised Nuclear Device
JOC	Joint Operations Center
JPATS	Joint Patient Assessment and Tracking System
MAC	Multi-Agency Coordination
MRC	Medical Reserve Corps
MMRS	Metropolitan Medical Response System
NDMS	National Disaster Medical System
NGO	Non-Governmental Organization
NMDP	National Marrow Donor Program
PC-EMA	Pima County Emergency Management Agency
PICU	Pediatric Intensive Care Unit
PRA	Patient Reception Area
REAC/TS	Radiation Emergency Assistance Center/Training Site
REMM	Radiation Emergency Medical Management
RITN	Radiation Injury Treatment Network
SAT	Service Action Team
SITREP	Situation Report

Acronym	Term
SME	Subject Matter Expert
SNS	Strategic National Stockpile
TRAC2ES	TRANSCOM Regulating and Command and Control Evacuation System
TTX	Tabletop Exercise
VA	Veterans Affairs (Medical Center)