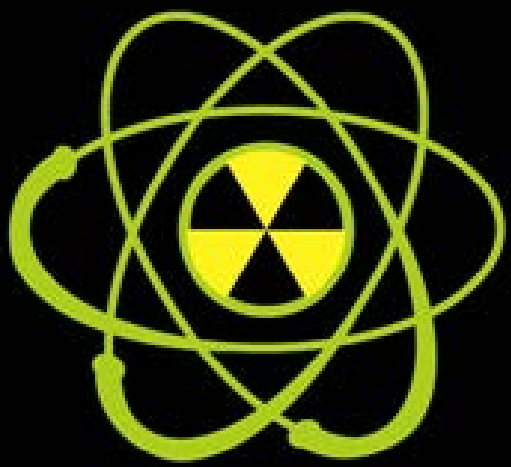
2017

Kansas City Regional RITN Tabletop Exercise After-Action Report/Improvement Plan

Report Date: June 29, 2017



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EXERCISE OVERVIEW

Exercise Name	2017 Kansas City Regional RITN Tabletop Exercise (TTX)
Exercise Date	June 9, 2017 (9:00 AM – 12:00 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 Kansas City region. **Objective 2:** Identify the process for casualty reception and distribution within the National Disaster Medical System (NDMS) 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 Kansas City 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 Robin Carroll Director, Clinical Emergency Preparedness rcalloll@cmh.edu (816) 983-6462

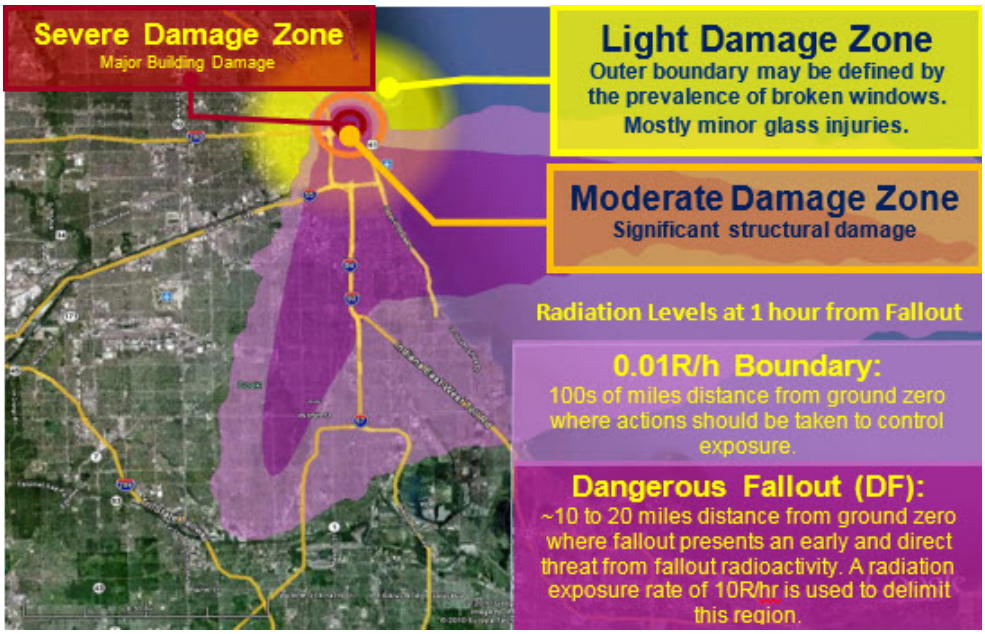
EXERCISE SUMMARY

On June 9, 2017, Children's Mercy Hospital (CMH), University of Kansas Hospital, Kansas City Emergency Management (KCMO-EM), KCMO Public Health, Community Blood Center, the American Red Cross, Platte County Sheriff's Office, Northland Disaster Animal Response Team (DART), Kansas City Veterans Affairs (VA) National Disaster Medical System (NDMS) Federal Coordinating Center (FCC), the U.S. Department of Health and Human Services (HHS) Assistant Secretary for Preparedness and Response (ASPR) Region 7, and the RITN Control Cell participated in a tabletop exercise 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 Kansas City area.

Exercise Scenario

Initial Event

- On June 1, 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.

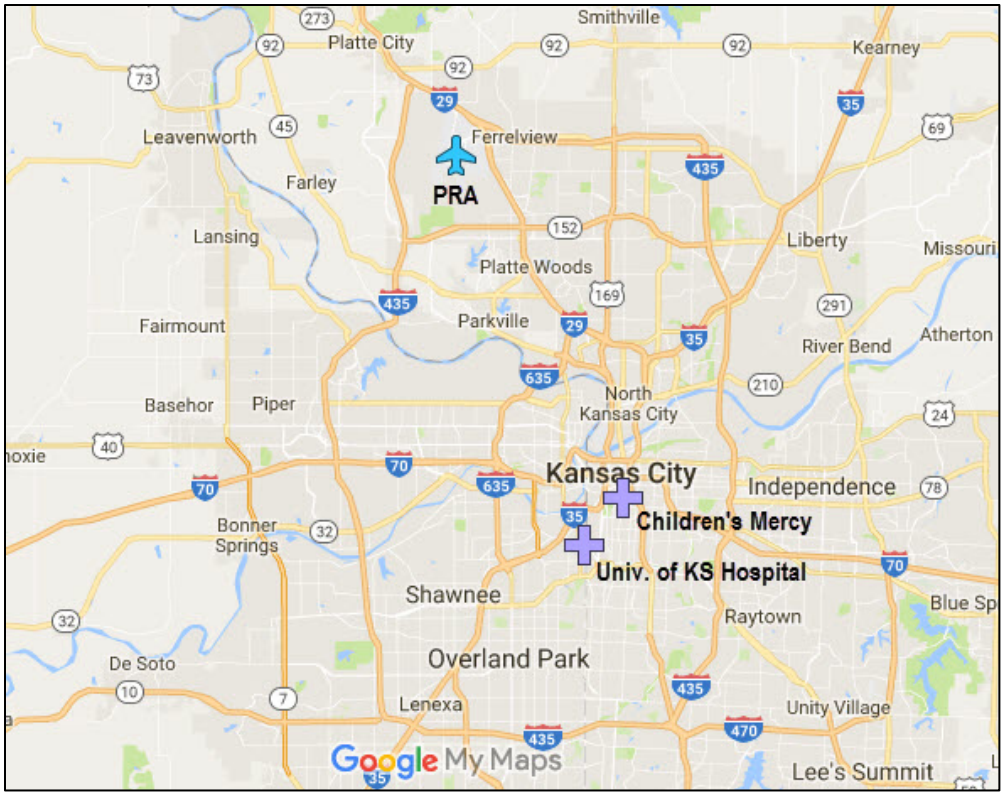
Initial Event +7 Days

- National Disaster Medical System (NDMS) issues activation protocol for Kansas City, 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) FCC at Charles B. Wheeler Downtown Airport, where NDMS patients will be received.

Initial Event +8 Days

Approximately eight days after the detonation patients start to arrive at the FCC established at the Charles B. Wheeler Downtown Airport. Upon arrival patients will be screened and triaged for transportation to the local RITN hospitals for treatment. Kansas City 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 Kansas City region**.**	Public Health & Medical Services	Emergency Operations Coordination
Objective 2: Identify the process for casualty reception and distribution within the National Disaster Medical System (NDMS) framework**.**	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 Kansas City RITN treatment centers.	Mass Care Services	Emergency Operations Coordination

ANALYSIS OF CAPABILITIES

Question Block 1: Pre-Arrival of Patients

Activation: The RITN Control Cell will send out an email to inform all RITN Centers all they know and that they stand up their decision team. RITN will request that Centers enter bed and resource status information into their HCS Capabilities Matrix. CMH will being to focus on considerations related to medical care for inpatient and outpatient. They will develop definitions for those patients to be admitted and will strategize how to manage those patients within the institution. They will look ahead over the next few days to project which patients can be rapidly discharged. For outpatients, they can begin preparations for use of their own ambulatory clinics. CMH would also activate the Psychosocial Team. This would include variations of what is done for mass casualty incidents (i.e., each family will be assigned to a psychosocial team). They will work with Medical Team to further understand the mental and behavioral health issues for each patient. For patients admitted to the pediatric intensive care unit (PICU), they would manage similar to any other pediatric trauma patient – this would include pre-planning with the Midwest Transplant Network.

The University of Kansas would be concerned about staffing and bed space (i.e., they are constantly at maximum census). They can begin to launch some just in time training for staff safety. The Emergency Management team and Hospital Command Center would be activated (a total of 13 people would be activated). They would assess resources, assets, determine triage and emergency department (ED) needs. Of prime concern is staff education. They can decompress pretty quickly. They have 150 emergency supply items and keep a cache at an offsite location. The Regional Hospital Coordinating Center (RHCC) will help to support decompression needs.

Notification: Partner hospitals will be notified to standup across the State. In addition, they will be requested to provide bed counts. The Kansas City (KC) Veteran's Administration (VA) will start the process of activating the Patient Reception Area (PRA) by notifying the airport. The VA will be in touch with the local Emergency Operations Center (EOC) and hospital committees. They would make notifications for transport and PRA activation and work with the ESF-8 strike force. The RHCC will be activated and will reach out to emergency managers to determine the need to activate a Multi-Agency Coordination Center (MAC). They will rely on ESF-6 for mass care and shelter. Once the patient manifest comes in from the VA, they will use that information for further planning. The 7-8 day advance notice will give all organizations additional time to plan for resources and bed expansion.

Coordination between KC RITN Centers, Agencies, RITN, and the FCC: Once the PRA is established at Wheeler Airport, there will be several actions taken by KCMO-EM (Emergency Management), to include, but not be limited to:

- Activation of the EOC
- Supporting transport from the FCC to hospitals
- Involve law enforcement where necessary
- Coordinate with Public Works to ensure transport routes are accessible/open
- Request representation from Public Health in the EOC
- Coordinate with the Coroner's Office
- Start to work with RITN Centers to determine basic sustenance (food, water, shelter) needs for outpatients and families of patients
- Coordinate public messaging with hospitals and the City to ensure timing and consistency of messaging

The Healthcare Coalition within Kansas City would coordinate (via the RHCC) conference calls with hospitals to determine support needs. In this scenario, the number of patients and their families expected is very manageable (i.e., if there is a need to transport discharged patients from RITN centers to other hospitals).

The RITN Control Cell would roll up HCStandard report data and send to NDMS who would subsequently send to the FCCs. They would request that RITN Centers have a point of contact (POC) to receive information as well. There was some concern by the RHCC that bed numbers may be double or triple counted due to the use of other bed polling systems (e.g. HAvBED).

Operation of the FCC/PRA: The maximum throughput for the PRA is 35 (reality is 28) at one time. Therefore, KC RITN Centers won't receive a large surge at once. It will be spread out over time. Triage will be done at the PRA to determine transport and placement needs at each center, which will reduce the need for triage at the RITN ED's.

Transport of patients from the PRA to the hospitals will include the use of dual-used vehicles that can transport 10-15 stable patients, local EMS and private transport. If necessary, the FEMA national ambulance contract could be activated and/or MTA buses could be used. The RHCC could deploy EMS specialists to the FCC that can help prioritize transport needs.

It is expected that the Strategic National Stockpile (SNS) will be available. The VA has all hazards emergency caches that may also be accessed. There is concern that the SNS may not be available to jurisdictions to where patients are being evacuated (i.e., they may focus SNS resources in the impacted area). There are limited amounts of cytokines and G-CSF in the SNS as well. RITN is

discussion with the Biomedical Advanced Research and Development Authority (BARDA) and U.S. Health and Human Services (HHS) to determine allocation resource strategies given these considerations. The PRA capability is being additionally supported through the incorporation of Medical Reserve Corps (MRC) volunteers. There is not a need for high-level practitioners (e.g., trauma surgeons) at the PRA, the training is relatively simple.

Strengths

Strength 1: CMH and University of Kansas have the ability to rapidly decompress upon the pending surge of radiation injuries. This is supported through the RHCC, which can find other hospitals to receive transferred patients.

Strength 2: KCMO-EM would begin early management through EOC activation, public information messaging, and coordination with other agencies.

Strength 3: The working relationship between KCMO-EM, CMH, University of Kansas Hospital, Wheeler Airport, and the FCC demonstrate a streamlined ability to establish the FCC and arrange transportation to the RITN hospitals.

Strength 4: The Healthcare Coalition and the coordination capabilities of the RHCC has enough depth to effectively support decompression of RITN Centers if necessary.

Strength 5: KC has access to ample resources to transport patients form the PRA to the hospitals.

Areas for Improvement

Area for Improvement 1: The RHCC should further examine potential for inaccurate bed reporting (i.e. double counting) if there are multiple bed polling systems reporting data in this type of activation. Efforts should be made to de-conflict this process within local NDMS plans and policies.

Area for Improvement 2: 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 3: 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: At the PRA, there is not an in depth triage process. They mainly assess that they are stable in transport and whether or not they need to go to a RITN center. CMH currently has capacity for 15 inpatients and at least 50 outpatients. It was important to note that some NDMS hospitals will receive low acuity patients (i.e., the ones that can't be accepted due to capacity issues at RITN Centers). The guidelines from RITN can be referenced if patient's condition escalates to necessitate a transfer to a RITN facility from another KC hospital. CMH and University of Kansas will also rely on the expertise of physicians along with the guidelines. Recommendation might be to have the RITN facilities liaison with non-RITN centers to lend this expertise. Immune compromised patients especially are at very high risk of infection. The education to providers of those patients is critical. The RHCC can have a role in pushing out specific information to providers. This should include specific contact information on who to call. Some of the considerations and challenges for inpatients include: coordination between medical staff and pharmacy; education for all staff; and balancing RITN inpatients with other trauma patients in the hospital.

If RITN Centers' patient surge creates a resource strain, they will need to request additional resources through the RHCC. They will ask vendors, sister hospitals, and activate mutual aid compacts in Kansas and Missouri. Blood product requests will go through Community Blood Center (part of RHCC).

University of Kansas and CMH can send teams to the outpatients for blood draws. CMH can use ambulatory care locations as well. If necessary, there is also the ability to send out Home Health to draw blood.

CMH would access Behavioral Health Teams that include social workers, chaplains, psychiatrists, psychologists and therapists for inpatients. They would use community health for outpatient needs. Equally as important will be to utilize internal Mental and Behavioral health teams to address staff support needs as it relates to treating radiation injury casualties.

Unaccompanied Minors: Policies are in place for emergent care decisions, however, over time the medical decisions may become more complicated for unaccompanied minors. CMH would work with the Local Children's Division (a partnership exists) to have them on site to navigate the more complicated custody issues. If it was determined that an unaccompanied minor needed to be treated on an outpatient basis, they would need to have some type of onsite care for that child such as a nurse, care assistant, child life or social worker. Other options may to keep the minor at Ronald

McDonald House or a foster family. If there are large numbers of unaccompanied minors, there would need to be a centralized care facility established.

Patient Tracking: There is no electronic system in place in KC for patient tracking. They would use the HICS 254 (Disaster Victim Patient Tracking Form). The VA indicated that the Joint Patient Assessment Tracking System (JPATS) would be available. The challenge of the FCC is to match tracking systems to ensure accuracy. For NDMS patients showing up at hospitals, there is a hidden note in the patient record for identification. There is no requirement (but there is an expectation) that hospitals will log receipt of patients into JPATS. The problem with JPATS is that training may not be effective because it is not routinely utilized. Therefore, they would rely on just in time training for JPATS if it is used.

Strengths

Strength 1: RITN hospital clinicians have expertise to rapidly and effectively triage patients to inpatient or outpatient status given basic lab/cell count information.

Strength 2: The resource request process through the RHCC for medications, blood, and other supplies is well established. Of particular note is the partnership between the RHCC and Community Blood Center.

Strength 3: CMH and University of Kansas have teams that can be sent to outpatients to draw blood. This will help to ease the demand on other healthcare delivery in Kansas City.

Strength 4: There are significant behavioral/mental health resources at the RITN hospitals and in the KC area that can be leveraged for response.

Areas for Improvement

Area for Improvement 1: 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 2: As an element of existing contact lists at each of the hospitals, the RHCC should ensure that they have contact information listed and update for RITN Coordinator and RITN Medical Director for CMH and University of Kansas.

Area for Improvement 3: CMH and University of Kansas, should ensure as a part of their RITN plans, that they include pre-incident education templates for Ronald McDonald House as well as local hotels to ease any fears of radiation exposure potential.

Area for Improvement 4: CMH and University of Kansas should continue to address outpatient care considerations for unaccompanied minors. While the likelihood of high numbers of unaccompanied minors is low, the considerations even with a single patient can be complex.

Area for Improvement 5: A functional exercise is recommended to assess the patient tracking functions across the systems – JPATS, KC, TRAC2ES. A functional drill would provide the opportunity to test the specific utility of each system, interplay or information needs across them, identify gaps, and define the roles/responsibilities as far as initial entry and patient updates.

Area for Improvement 6: SAT teams are few in number and may not be deployed to every jurisdiction receiving patients in a NDMS evacuation. Therefore, it is recommended that KCMO-EM, the RITN Centers, the RHCC and others as appropriate develop a playbook for outpatient housing, food, and other sustenance needs.

Area for Improvement 7: Determine how to integrate faith-based organizations, non-government organization (NGOs) and the American Red Cross into outpatient and non-medical attendee sheltering operations. There was not consensus on the level and type of support that would be available from the Red Cross and they were not in attendance. Invite the Red Cross (and other organizations, as appropriate, to future exercises and planning meetings on this type of response).

Area for Improvement 9: Ensure that other external Behavioral and Mental Health resources are identified (e.g. private agencies and community health) that can address the needs of outpatient populations.

Area for Improvement 10: Offer 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 11: Evaluate in advance the options for surge and backfill of the stem cell laboratory expertise. This specialized work and staff capability is not easily augmented but will be in demand for a scenario such as this.

HOTWASH

- Midwest transplant network being involved to discuss HLA typing
- Understanding the process of regional supplies/medications and the allocation rationale from available distributors.
- Consistent messaging for staff; have templates available for RITN and non-RITN facilities.
- Need to identify real surge capabilities and expectations in this scenario
- Should include burn-related issues for this type of scenario. 4-5 patients would overwhelm Children's Mercy.
- Need a fuller discussion on those patients who enter end of life issues or hospice
- Reunification process
- ARC can help families with Children. They also have the "Safe and Well" site that can be used; ARC can also help with blood supply needs
- Patient tracking is an issue.
- Need to ensure coordination capabilities at RHCC level and a framework for who has the final decision on prioritization of resources.

APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2017 RITN Regional Exercises. Kansas City RITN Centers 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
Pabo Aguayo	CMH
Ibrahim Ahmed	CMH
Daniel Anderson	Shawnee Mission Medical Center
Dehlia Arnold	CMH
Lisa Augustine	CMH
Theodore Barnett	CMH
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Angie Cunningham	CMH
Shaun DeJarnette	Univ. of Kansas Hospital
Dan Houlahan	HHS Region 7
Kristen Jarvis	CMH
Steven Lammers	KCMO Public Health
Terri Layton	Red Cross
Bruce McFarland	CMH
Gabe Metzler	CMH
Laura Murkin	CMH
Mike O'Neal	Platte Co. Sheriff's Office
Sarah Pearson	CMH
Matthew Soule	CMH
Doug Stroud	VA
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Carla Lewis	KC Metro Animal Team
Kelli Barker	Community Blood Center
Jennifer Venero	RITN

Name	Agency/Organization
Curt Mueller	RITN
Steve Mier	MCG

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
DART	Disaster Animal Response Team
DoD	U.S. Department of Defense
ED	Emergency Department
FCC	Federal Coordinating Center
FEMA	Federal Emergency Management Agency
G-CSF	Granulocyte-Colony Stimulating Factor
HAvBED	Hospital Available Beds for Emergencies and Disasters
HHS	Health and Human Services
HICS	Hospital Incident Command System
ICS	Incident Command System
IND	Improvised Nuclear Device
JPATS	Joint Patient Assessment and Tracking System
KC	Kansas City
KCMO-EM	Kansas City Missouri Emergency Management
MRC	Medical Reserve Corps
MTA	Metropolitan Transit Authority
NDMS	National Disaster Medical System
NGO	Non-Governmental Organization
NMDP	National Marrow Donor Program
OEM	Office of Emergency Management
PICU	Pediatric Intensive Care Unit
PRA	Patient Reception Area
REAC/TS	Radiation Emergency Assistance Center/Training Site
REMM	Radiation Emergency Medical Management
RHCC	Regional Hospital Coordinating Center
RITN	Radiation Injury Treatment Network
SAT	Service Action Team
SITREP	Situation Report
SNS	Strategic National Stockpile
TRAC2ES	TRANSCOM Regulating and Command and Control Evacuation System
TTX	Tabletop Exercise
VA	Veterans Affairs (Medical Center)