2019

Denver Regional RITN Tabletop Exercise After-Action Report/Improvement Plan

Report Date: June 13, 2019

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EXERCISE OVERVIEW

Exercise Name	2019 Denver Regional RITN Tabletop Exercise (TTX)
Exercise Date	May 29, 2019 (11:00 AM – 3:00 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 Denver 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 Denver 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 Clinton Andersen UC Health Clinton.andersen@uchealth.org

EXERCISE SUMMARY

On May 29, 2019, participants representing 4 local organizations as well as the U.S. Department of Veterans Affairs and the Radiation Injury Treatment Network (RITN) took part in a tabletop exercise (TTX) to discuss radiation injury patient reception using the National Disaster Medical System (NDMS) framework. The organizations included:

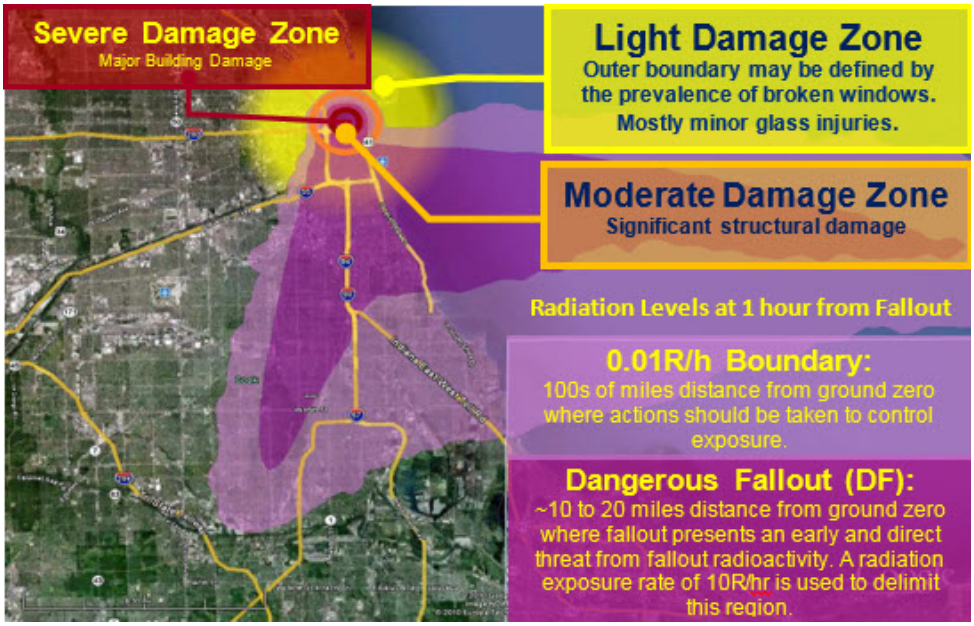
- University of Colorado (Denver) Health (hospital)
- North Central Region Healthcare Coalition
- Tri-County Health Department
- Adams County Office of Emergency Management (OEM)
- U.S Department of Veterans Affairs (Emergency Management)
- Radiation Injury Treatment Network

Exercise participants addressed five objectives (see Table 1 below) in a scenario-driven, facilitated discussion based on a surge of casualties with radiological injuries arriving to the Denver area.

Exercise Scenario

Initial Event

- On May 8, 2019 a ten-kiloton Improvised Nuclear Device (IND) was detonated in Chicago.



- Estimated casualties:

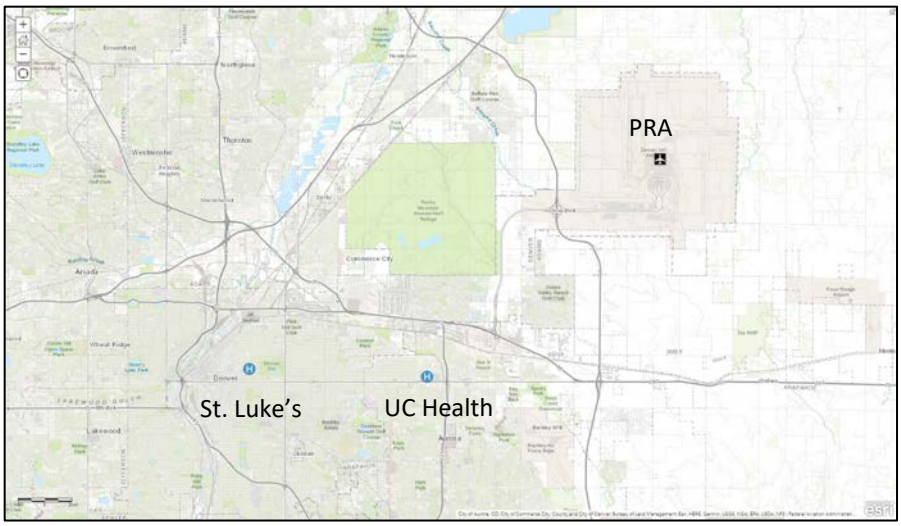
Estimated Casualties[1]			
Trauma (ISS)			
Mild (1-9)	**Moderate** (10-14)	**Severe** (>15)	
79,000	121,000	143,000	
Radiation Only			
Mild (.75 – 1.5 Gy)	**Moderate** (1.5 – 5.3 Gy)	**Severe** (5.3 – 8.3	**Expectant** (>8.3 Gy)
91,000	51,000	12,000	47,000
	RITN patients		

- 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 the Denver Federal Coordinating Center (FCC), 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 the Denver International Airport, where NDMS patients will be received.

[1] 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



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 Denver 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 centers during a surge of radiation-injured patients and discuss resource gaps.	Public Health & Medical Services	Medical Surge
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 triaging, treatment and tracking/surveillance of self-referral cases from the area of radiation	Medical Countermeasures Dispensing	Responder Safety & Health

Exercise Objective	Core Capability	Healthcare Preparedness Capability
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 Denver RITN treatment centers.	Mass Care Services	Emergency Operations Coordination

ANALYSIS OF CAPABILITIES

Question Block 1: Pre-Arrival of Patients

The following are the primary concerns at this point in the scenario for:

Emergency Management	Public Health/ Healthcare Coalition	RITN Hospitals	Denver FCC
• Denver OEM performs statewide notification (28-72 hours before patient movement) to all NDMS hospitals • Denver OEM to assist with FCC set up of PRA • Adams County OEM maintains situational awareness and coordinates with hospitals to anticipate resource needs and shortages • Activate EOP and EOC	• County Public Health maintains situational awareness and coordination role • Healthcare Coalition monitors information, operationalizes to support public health and hospital partners • Healthcare Coalition able to elevate resource requests to the regional level (10 county) • Healthcare Coalition can implement the regional hospital coordination plan • Evaluate alternate care sites	• Open command center to prepare for the surge, involve emergency management staff and BMT to anticipate needs • Develop staffing plan • Request support for behavioral health needs (especially considering the large outpatient population)	• Establish the patient reception area at airport. • Contact Division of Homeland Security and OEM regarding resources, supplies and personnel • Identify dual use vehicles that can provide patient transport from PRA to RITN hospital

Activation: Following the federal disaster declaration, the Denver Federal Coordinating Center (FCC) would receive an alert for activation from the U.S. Department of Health and Human Services (HHS), which would initiate activities for opening the FCC and the Patient Reception Area (PRA). The HHS Secretary Operations Center (SOC) determines the patient distribution strategy across all NDMS hospitals to include the RITN hospitals for radiation injury patients. It is critical to get accurate bed counts and understand where patients can be sent from the PRA for acute radiation sickness (ARS) care determinations. UCH as a RITN hospital provides bed information to the FCC using both EMResource™ and direct phone calls (as needed). In past drills 800MHz radios have also been tested for this purpose. The communications between hospitals and the FCC has been a challenge previously.

RITN and NDMS/HHS Coordination: The role of RITN is to provide the specialty RITN bed data/reports to HHS. The RITN Control Cell is activated and requests an update of RITN beds in HealthCareStandard® (HCS) with current availability and that for 24 hours later. Hospitals also update information on Granulocyte-Colony Stimulating Factor (G-CSF) availability and outpatient capabilities. RITN consolidates the information for all RITN hospitals and send it to HHS/Assistant Secretary for Preparedness and Response (ASPR) who reviews and utilizes the bed information

from across the country to make determinations about where to send patients. RITN requests updates every day following the incident by 2:00 PM so that they can provide a report to HHS/ASPR by 4:00 PM. Communications are also tested with the RITN hospital using the Government Emergency Telecommunication Service (GETS) card.

RITN will also produce and distribute a daily Situation Report (SITREP) to partners nationwide. Based on the information provided from the RITN hospitals during the initial data poll, the RITN Control Cell will provide an estimate of patient numbers to expect at each RITN location. The revised form now requests information on both inpatient and outpatient capability.

There was a discussion of how to deconflict trauma HAvBED data requests from the RITN beds; the FCC Coordinator has a role in understanding the bed types available regionally. It was also recommended that the hospital reserve certain beds for ARS patients and not report them in HAvBED (which goes to the federal level/NDMS and will be utilized for trauma patients first), but rather to report them in the HCS data that goes to the RITN Control Cell first. The FCC Coordinator must be kept informed of the bed designations (and that there may be additional RITN beds beyond what is reported in the standard HAvBED data). The participants determined that RITN beds should be captured in the comment field of HAvBED/EMResource™.

Operation of the FCC: The FCC Coordinator was not able to attend this exercise so limited information on the operation of the FCC was provided by the VA emergency management representative; however challenges with communication and patient triaging at the site experienced in past exercises was discussed. With regards to patient triage, all participants discussed the utility of having clinical expertise (e.g., BMT physicians) from UCH at the PRA to assess acuity and determine those that should be sent to a RITN center (as opposed to another area hospital). These are not acute/emergency department patients so expertise on ARS would benefit the triage process; this model has been discussed but not fully tested in any previous functional drills.

There were several questions regarding how many patients would be sent to the Denver area in this scenario; this is determined based on the bed availability reported by Denver RITN hospitals. It is difficult to predict in advance the number of outpatient versus inpatient but general estimates are that 30% of the total affected patients would require inpatient care with 1% requiring transplant. Most would not have complete clinical data when evacuating from the blast area and require assessment once the care destination is reached. Due to the transport bottlenecks of the NDMS system/aircraft, it is also expected that Denver would receive on the order of hundreds of patients rather than thousands.

To transport patients from the PRA to the hospitals, the VA has several resources that can be utilized to avoid depleting the local ambulance pool. This includes 4 dual use vehicles/buses capable of transporting up to 20 people at a time. UCH stated that receiving this number of patients has been tested in previous drills and it worked well using the ED as the receiving location but it is expected that an alternate location such as the cancer center may be used in this scenario.

Strengths

Strength 1: EMResource™ is the preferred tool for gathering bed data (HAvBED) across the region; also alerts sent via EMResource™ can reach non-hospital partners as well.

Strength 2: The healthcare coalition and emergency management partners provide a strong network to support initial and ongoing communications as well as resource identification and procurement (medical and non-medical).

Strength 3: UCH had a good understanding of the expertise that would need to augment the command center for this type of response (e.g., BMT specialists) and a priority objective would be to establish staffing plans to accommodate the ARS patient surge.

Strength 4: The availability of dual purpose buses as transport resources is a strength and UCH confirmed that receipt of ambulatory patients via these vehicles has worked well in past drills.

Areas for Improvement

Area for Improvement 1: The patient triage model discussed at this tabletop (where BMT specialty physicians/nurses are at the PRA) will be tested in a future FCC exercise. The structure of these teams and coordination between them and the receiving hospital should be further discussed and documented in plans. Lessons learned from the future exercise should be incorporated into both hospital and FCC plans.

Area for Improvement 2: Reserving ARS beds so they are not used for trauma patients and ensuring that this information is accurately communicated both to the federal level and the local FCC was an area that requires more planning and testing. ARS beds should be reported in the comments field of EMResource™ (HAvBED) and not included in the totals to avoid them being used for trauma patients. The beds intended for RITN patients should be reported via HCS to RITN to assist with federal decision-making of where in the country to send the patients and how many. Throughout the bed availability reporting, the FCC needs to be aware of what is available in the different categories.

Area for Improvement 3: Internally, the RITN hospitals should ensure that procedures are in place so that ED staff responsible for generating the bed availability data do not double count beds and staff (i.e., hematology/oncology beds and oncologists) in this type of response.

Area for Improvement 4: Continue to leverage exercises with the FCC to test communications (both initial and ongoing) with the hospitals and healthcare coalition. EMResource™ is the primary platform used but challenges have been experienced in the past requiring the FCC to make follow up phone calls to hospitals to get accurate bed numbers.

Question Block 2: Arrival of Patients

Approximately 8 days after the IND detonation, RITN patients would arrive to the FCC in waves of approximately 30 people per aircraft. The aircraft arriving to the FCC/PRA will contain a passenger manifest and some limited medical information, at most the estimated radiation dose based on proximity to the blast site.

Inpatient/Outpatient Triage

UCH discussed setting up patient receipt/triage at the hospital in the cancer center, PACU, or a conference center/auditorium rather than the ED. It is necessary to develop/refine a screening tool that can be utilized by available staff at the time of the response to make determinations as to inpatient or outpatient care. Staffing is sufficient but having a standardized tool and training in advance will ensure this. Both internal and external resources (e.g. Radiation Emergency Medical Management [REMM] guidelines) can be leveraged to create the basis of this tool which can then be customized with any specifics of the event (e.g., radiation exposure zones).

Other notes regarding the receipt of RITN patients to the hospital included:

- Mobile work stations for registration can be set up in any location with wireless coverage
- An integrated hospital medicine group would support the admitting process
- Hospital entrance (ED) has a radiation portal monitor for self-reporting patients; RITN patients arriving from the FCC would be screened using dosimeters
- Decontamination (if needed) would be performed in the ambulance bay as a default but it is on a trailer so can be moved to any location (e.g., front of hospital conference room)
- Counseling and behavioral health screening operations would be co-located with the registration/triaging location; care management and social work staff would be dispatched to that location.

The outpatient (i.e., 1-2 Gy dose) treatment considerations discussed during this exercise focused on bed availability and resources needed for treatment such as G-CSF. Outpatients would be monitored through serial labs taken daily and evaluating symptoms. There are approximately 10 BMT apartments available on campus but these are often at maximum capacity so other options for housing the outpatients were briefly discussed (e.g., hotel agreements). There are private rooms in the BMT and Hem/Onc units as well as some beds with isolation for immunosuppressed (low count) patients.

For inpatients, the assumption was that 20 of those could be accommodated on the BMT floor of the hospital. Patients further be prioritized based on the Hem/Onc care needs and if a lower level of

care was needed med/surge beds would be utilized and augmented with staff from the specialty units.

For unaccompanied minors arriving to the Denver PRA, HHS would have assigned a guardian during the transport process and upon arrival the FCC would have a designated area for pediatrics. Triage and care for pediatric patients would be coordinated with Children's Hospital Colorado (ideally having staff on site at the PRA) as no pediatric BMT is performed at UCH. UCH representatives mentioned that parents and children arriving to the area together could be separated for care since both hospitals are located on the same campus; if the situation was dire for either parent or child it would be possible to cohort them but disaster credentialing is required to provide care across the two sites.

Behavioral/Mental Health Considerations

Behavioral/mental health was discussed with regards to patients, non-medical attendees and hospital staff responding to the incident. Internal hospital resources included: care coordinators, chaplains, and social work who could provide support for staff, in addition to the Employee Assistance Program (EAP). The hospital command center would need to initially and ongoing basis ensure that behavioral/mental health is being addressed at the unit level (e.g., briefings, leadership team presence). If there is also a large volume of patients, it would be necessary to reach to external resources (do not have inpatient psychiatric unit), for example: community mental health centers, churches or counseling centers. The state could also activate Co-CERN (Crisis Education and Response Network) which provides a mechanism to pay supporting behavioral health centers, The behavioral/mental health needs initially and for a prolonged duration in this type of incident were identified as a challenge that requires more consideration and planning.

Spontaneous Patient Arrivals

Spontaneous arrivals (from the incident that self-report and are not part of the NDMS evacuation) would be received as any other patient walking in to the ED. The discussion focused on ensuring patients were tracked differently for reimbursement. NDMS patients would have a Joint Patient Assessment and Tracking System (JPATS) number associated with the internal electronic medical record (EMR) system. The current EMR used by UCH has the ability to scan JPATS numbers directly into the system rather than associating a general disaster number to the patient.

Patient Tracking and Reimbursement

As above, NDMS patients would be flagged in the electronic record system so that billing could be processed through federal reimbursements; the spontaneous patients would be tracked and billed

following processes/insurance for all other patients arriving to the ED. Financial reimbursement will come from NDMS at the federal per diem rate. Routine internal procedures would be used for inpatient tracking (e.g., EMTrack); however there is a not a system in place to track outpatients, likely would rely on the American Red Cross Safe and Well Program for family members to find people being treated in the area.

Outpatient and Mass Care Considerations

As with other RITN hospitals, the mass care and social services considerations remain a key challenge to accepting both inpatients and outpatients requiring care after radiation injury. The logistics of monitoring and housing were not discussed in great detail during this exercise but warrants further discussion and planning to pre-identify locations and transportation assets that can support outpatient care. Care management has recently implemented contracts with nearby hotels so that the hospital can be billed for rooms reserved/used but there is a limit to the number possible. The group determined that OEM would be contacted first to support mass sheltering needs and reserve the hotel rooms for those more severely ill outpatients.

Long term lodging and feeding of outpatients and family members was identified as an issue as to how this would be logistically supported and reimbursed. Sheltering operations through Emergency Management or the American Red Cross are not intended for more than a few days, also these shelters are not intended for people undergoing treatment and requiring more sterile environments.

As far as receiving outpatient care, this needs to be taken into consideration when planning for lodging (i.e., proximity and keeping groups together). It may be possible to send teams out to perform blood draws and provide medication to include leveraging other resources in the community such as home healthcare agencies with qualified staff. A method for these organizations to bill would need to be in place.

Public Messaging

It was recognized that getting in front of the incident both with hospital staff and the public is critical. The public information officer would collaborate with hospital experts and other response partners to craft the message that 1) describes the situation, 2) alleviates fears of radiation exposure, 3) provides guidance on exposure, and 4) provides information on how to get in touch with family members who may be receiving treatment at UCH.

Internal staff messaging would also provide details of the situation, expectations for receiving patients and the fact that they have been screened for radiation prior to arrival (to alleviate fear of exposure), emphasize staff self-care and available behavioral health resources, a fact sheet and a

script for staff that can consistently explain to patients/incoming phone calls the status and actions being taken at the hospital.

There is a corporate level UCH Joint Information Center (JIC) for all hospitals that are part of NDMS which would ensure consistent message development and delivery across the sites. Specific details for ARS patients/RITN hospitals would be incorporated into this messaging.

Strengths

Strength 1: UCH has plans in place to establish a registration and triage area away from the ED that includes on-site counseling/behavioral health staff and family information center.

Strength 2: Protocols for managing the receipt of unaccompanied minors at the FCC are well understood both at the FCC and receiving hospitals.

Strength 3: The EMR system in place at UCH has the functionality to input JPATS numbers so that patients can be tracked as part of the NDMS event and to pull information for JPATS patient disposition reporting purposes.

Areas for Improvement

Area for Improvement 1: Reimbursement for outpatient care is a recognized gap nationwide; federal level procedures are in development. Once final, ensure that this is incorporated into current FCC plans. In the meantime, it is expected that ASPR will have to distribute just in time guidance.

Area for Improvement 2: The local ASPR representative should help define in local plans how the waiver process works (to exceed the 30 days of care for federal reimbursement). It is not clear or documented now how to request that waiver and what exactly would be covered in this type of disaster. This was not discussed in detail but recognized as an issue given the length of stay for ARS patients.

Area for Improvement 3: Continue discussions on the outpatient and inpatient family housing options for extended periods of time, it was recognized that this is a significant gap that requires a great deal more thought and planning. Determine the agency(s) that should lead and be involved in these planning discussions.

Area for Improvement 4: Identify lodging options for outpatients and families in advance and work with those entities to establish MOU/MOAs (hotels, university dorms, hospice/long term care organizations, etc.). Details from the federal NDMS plans as far as reimbursement and duration of coverage need to be incorporated into the plans.

Area for Improvement 5: It is necessary to develop/refine a screening tool that can be utilized by staff receiving/triaging RITN patients to make determinations as to inpatient or outpatient care. Both internal and external resources (e.g. Radiation Emergency Medical Management [REMM] guidelines) can be leveraged to create the basis of this tool which can then be customized with any specifics of the event (e.g., radiation exposure zones). The screening tool would also help with assessment of self-reporting patients from the blast site.

Area for Improvement 6: Receiving a large influx of patients and family members for a prolonged duration would require significant mental/behavioral health resources. Several options were identified for how to support this need locally but those should be further defined and included in response plans. In addition, resources for staff such as EAP may not be as available as assumed since this is an outside vendor that likely has many contracts throughout the country. Ensuring that staff mental health is revisited often by incident command so that internal resources are available.

Area for Improvement 7: It was not clear which entity would do the daily JPATS update, if this is at the hospital level (since they have access to the information through EMR) the process for updating records and sharing information has not been tested. In other jurisdictions, this is done by the FCC or healthcare coalition. Determine and functionally test the process for JPATS updates.

Area for Improvement 8: Further discussion and planning may be warranted as to how to track outpatients arriving to the region for care; the American Red Cross Safe and Well Program was noted as a mechanism for how this would be done as well as clear media messages to let families know how to locate their loved ones. Codifying the outpatient tracking in plans is recommended.

Area for Improvement 9: 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 10: Public messaging strategies and templates 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. These FAQ documents and other

references can be tailored to the specifics of an event from the template. 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

HOTWASH

Strengths

Exercise was an effective way to refresh the clinical aspects of accepting a surge of radiation injury patients including the resources and staffing available; the scenario being in a remote location but impacting the local area was useful.

- Public health had an improved understanding of the large support role they would play in this type of incident.
- Existing healthcare coalition plans/processes align well with the expectations for the RITN response; the emergency management and public health networks are strong to support hospitals as needed.
- Emergency Management agencies are flexible and can respond to all situations; having opportunities such as this tabletop exercise gives a better idea of the expectations and who to collaborate with.

Improvement Planning

- Communications between the FCC and hospitals requires more planning and exercise opportunities; type of information to share and ensure ongoing communication throughout the response (not just an initial communication).
- Further discussions on the resources that would be needed for this type of response to better prepare County Emergency Management.
- More planning on how triage teams for this type of patient receipt are structured and ability to functionally test that process at the FCC.
- There were a number of elements discussed that are understood but may not be written into plans; plans require review and further development.
- Functionally testing how acute versus ARS bed information is gathered and shared is necessary to ensure bed resources are not double counted and are clearly communicated to the FCC.
- Reimbursement for outpatient activities (to include lodging and feeding) is not clear at the federal level and there was not representation at the exercise to assist these discussions.
- More discussion and planning is needed on the mass care/sheltering operations and role of County Emergency Management.
- The post-acute care network (e.g., home health agencies) can be leveraged for outpatient care of radiation injury patients but this requires further planning/discussion to include identification of a payer source.
- Longer term strategy to support staff for this type of response that may continue for months.
- Additional RITN funding to conduct full scale exercises in the future.

APPENDIX A: IMPROVEMENT PLAN

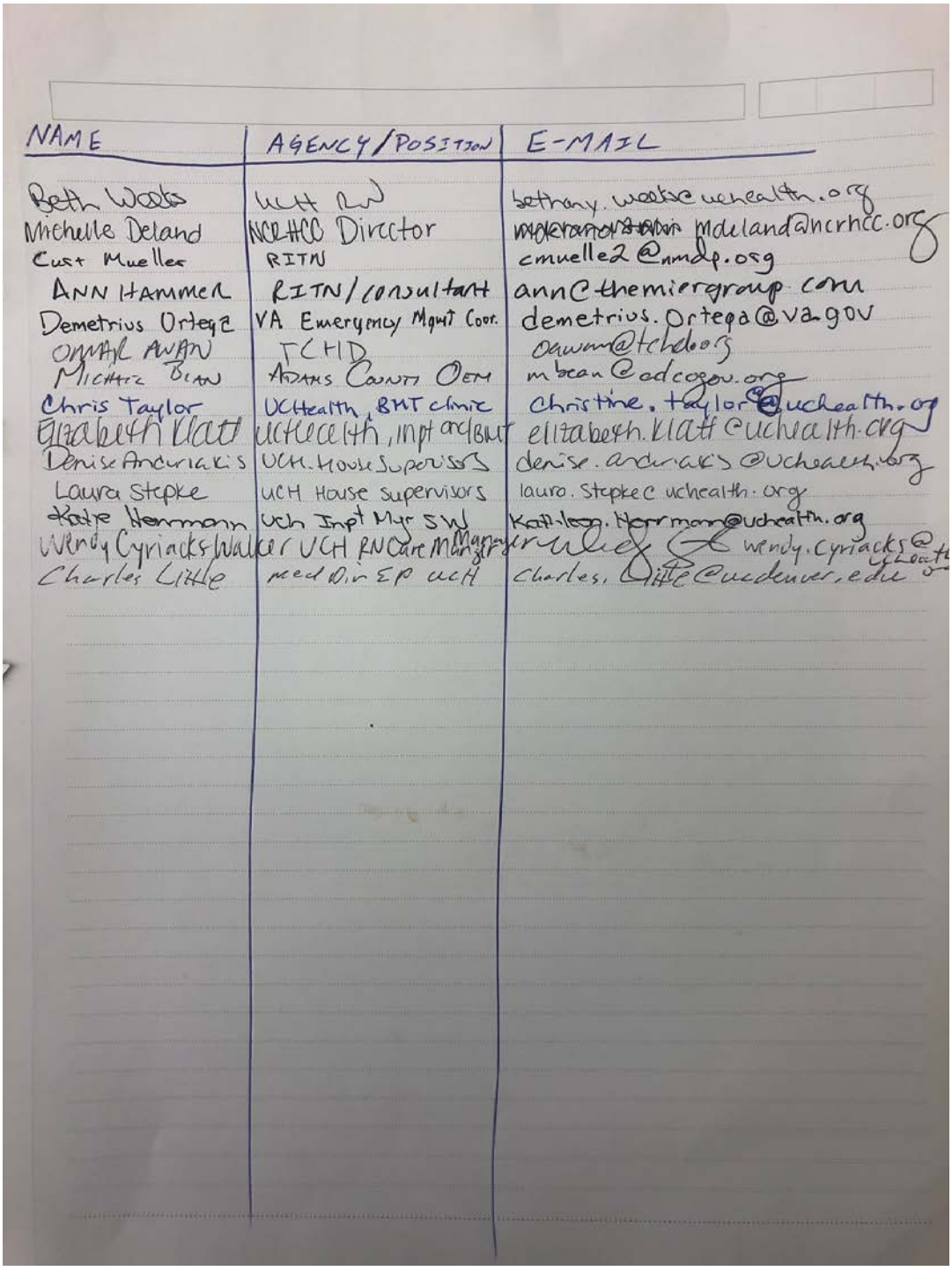
This improvement plan template has been developed specifically for the RITN centers participating in the 2019 RITN Regional Exercises. Denver RITN Centers and partner organizations can utilize this table to organize the opportunities for improvement to augment and develop their own corrective actions.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element[2]	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]					

[2] Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: EXERCISE PARTICIPANTS

See sign in sheet below. Additional participants not reflected include the Public Information Officer and Clinton Anderson, UCH.



NAME	AGENCY/POSITION	E-MAIL
Beth Woods	UCH RN	bethany.woods@uchealth.org
Michelle Deland	NCRHCC Director	mdeland@ncrhcc.org
Curt Mueller	RITN	cmueller2@nmdp.org
ANN HAMMER	RITN/Consultant	ann@themiergroup.com
Demetrius Ortega	VA Emergency Mgmt Coor.	demetrius.ortega@va.gov
[illegible]	TCHD	[illegible]@tchd.org
Michael Bean	Adams County OEM	mbean@adcogov.org
Chris Taylor	UCHealth, BMT clinic	christine.taylor@uchealth.org
Elizabeth Klatt	uchealth, Inpt ard BMT	elizabeth.klatt@uchealth.org
Denise Andriaks	UCH. House Supervisors	denise.andriaks@uchealth.org
Laura Stepke	UCH House supervisors	laura.stepke@uchealth.org
Katie Herrmann	UCH Inpt Mgr SW	Katie.Herrmann@uchealth.org
Wendy Cyriacks Walker	UCH RN Care Manager	wendy.cyriacks@uchealth.org
Charles Little	med Dir EP UCH	charles.little@ucdenver.edu

APPENDIX C: ACRONYMS

Acronym	Term
AAR	After Action Report
ARS	Acute Radiation Sickness
ASPR	Assistant Secretary for Preparedness and Response
BMT	Bone Marrow Transplant
Co-CERN	Colorado Crisis Education and Response Network
EAP	Employee Assistance Program
ED	Emergency Department
EMR	Electronic Medical Records
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FCC	Federal Coordinating Center
G-CSF	Granulocyte-Colony Stimulating Factor
GETS	Government Emergency Telecommunications Service
HCS	Healthcare Standard (RITN data collection matrix)
HHS	Health and Human Services
IND	Improvised Nuclear Device
JIC	Joint Information Center
JPATS	Joint Patient Assessment and Tracking System
MOU/MOA	Memorandum of Understanding/Memorandum of Agreement
NDMS	National Disaster Medical System
NMDP	National Marrow Donor Program
OEM	Office of Emergency Management
PRA	Patient Reception Area
REMM	Radiation Emergency Medical Management
RITN	Radiation Injury Treatment Network
SITREP	Situation Report
SOC	Secretary Operations Center (DHHS)
TTX	Tabletop Exercise
UCH	University of Colorado Health
VA	Veterans Affairs (Medical Center)