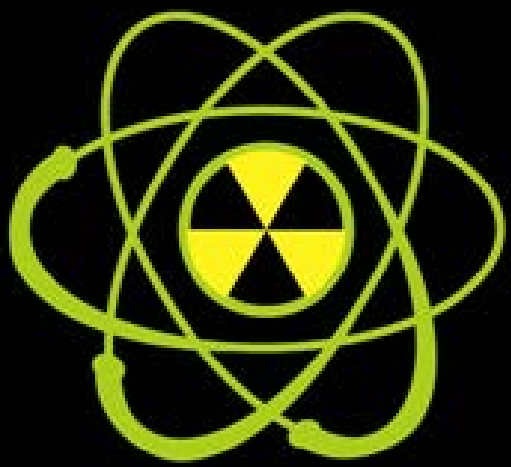
2017

NC Piedmont Regional RITN Tabletop Exercise After-Action Report/Improvement Plan

Report Date: October 9, 2017



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EXERCISE OVERVIEW

Exercise Name	2017 North Carolina Piedmont Regional RITN Tabletop Exercise (TTX)
Exercise Date	September 27, 2017 (10:00 AM – 2:00 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 NC Piedmont 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 NC Piedmont 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)
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EXERCISE SUMMARY

On September 27, 2017, participants representing 19 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:

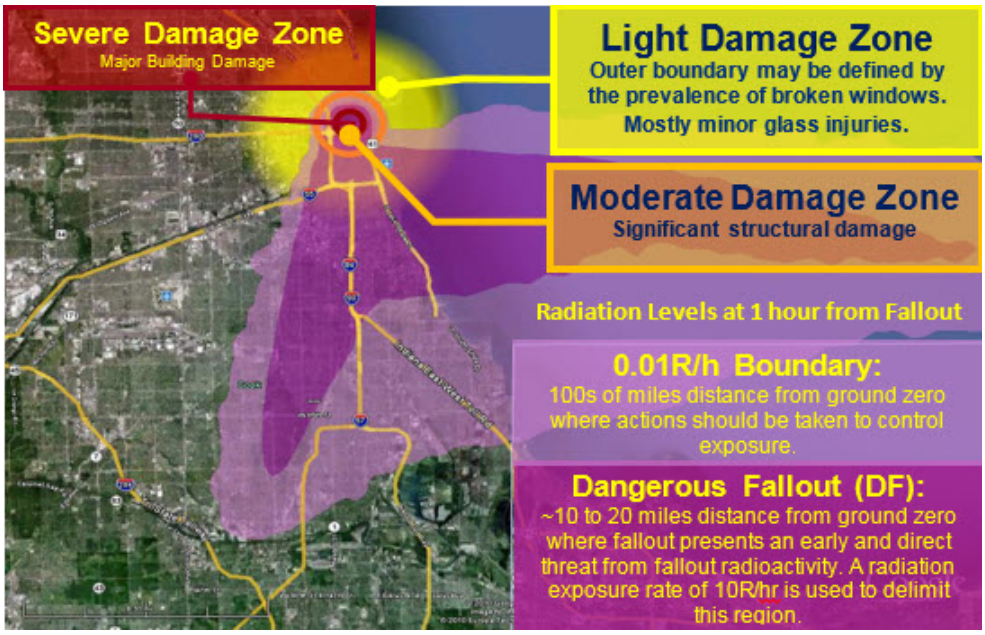
- Wake Forest Baptist Medical Center
- Triad Healthcare Preparedness Coalition
- Mountain Area Healthcare Preparedness Coalition
- Wake Forest Baptist Health – Davie Medical Center
- Wake Forest Baptist Health – Lexington Medical Center
- Wake Forest Baptist Health – Wilkes Medical Center
- Winston-Salem/Forsyth County Emergency Management
- Forsyth County Public Health Department
- Forsyth County Emergency Medical Services
- Guilford County Emergency Medical Services
- Iredell County Emergency Medical Services
- Iredell Health System
- Stokes County Emergency Management
- Stokes County Emergency Medical Services
- Davidson County Emergency Medical Services
- Davidson County Emergency Management
- Davis Regional Medical Center
- Northern Hospital of Surry
- UNC Health System
- U.S Department of Veterans Affairs
- 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 NC Piedmont area.

Exercise Scenario

Initial Event

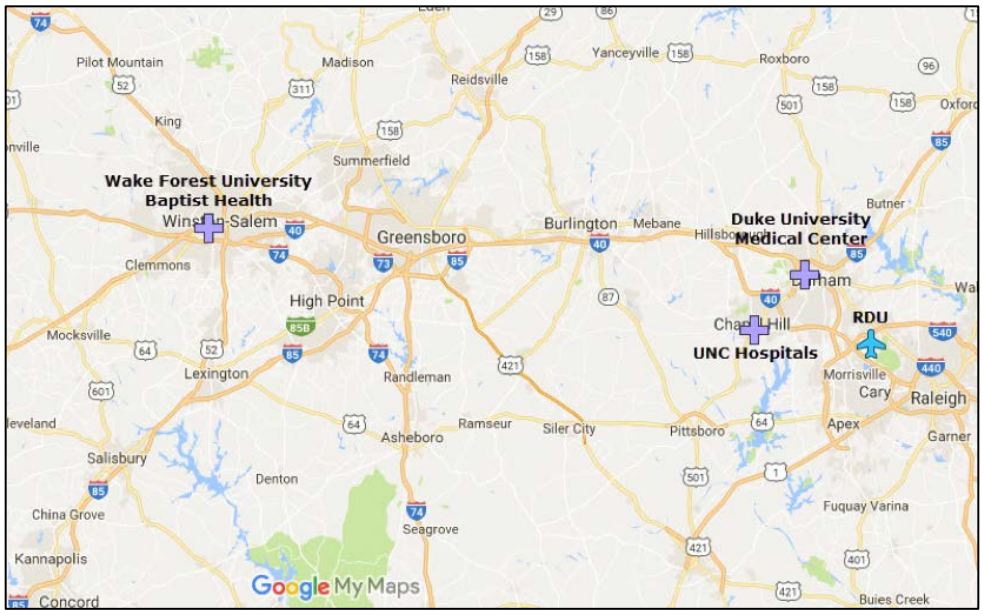
- On September 19, 2017 a ten-kiloton Improvised Nuclear Device (IND) was detonated in Chicago.



- 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 the Durham 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 Raleigh-Durham International Airport, where NDMS patients will be received.



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 NC Piedmont 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	Medical Countermeasures Dispensing	Responder Safety & Health

Exercise Objective	Core Capability	Healthcare Preparedness Capability
is triaging, treatment and tracking/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 NC Piedmont 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:

County Emergency Management and Emergency Medical Services (EMS)	Public Health/ Healthcare Coalition	RITN Hospitals (Wake Forest Medical Center, UNC Health)	Non-RITN Hospitals	Raleigh-Durham (RDU) FCC
• Coordinate with the State EOC and the FCC for resources and transport. • Coordinate transport assets for movement of incoming RITN patients to the hospitals. • Activate ambulance strike teams through mutual aid. • Access to ambulance buses in Forsyth and Guilford Counties.	• Outreach to other hospitals to decompress in anticipation of the patient surge. • Send alert to hospitals instructing them to update beds more than once daily.	• Decompress the hospital and determine what patients can be discharged. • Update RITN bed availability to RITN network. • Establish a dedicated Incident Management Team (IMT). • Outreach to the Red Cross and EMA to start looking at housing for incoming patients and families. • Many of these actions would start in the first 24 hours.	• Prepare to accept non-RITN patients (either from the incident or as decompressed by the RITN hospitals). • Respond to polling for beds and resources. • Maintain the patients that they have rather than sending to the RITN hospital as much as possible.	• Establish the patient reception area at RDU airport. • Notify hospitals that are going to receive patients. • Determine staffing for the PRA between federal assets and local EMS and partners from the healthcare coalition. • Concerns about staff fatigue particularly because of receiving trauma patients first before the RITN patients).

Activation: Following the federal disaster declaration, the Raleigh-Durham 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 was recognized that the NDMS system would be activated for casualties beyond the radiation injury patients, for example those with more stable trauma arriving from the blast location, so the system would be operating well in advance of the time frame expected to receive RITN patients. Bed availability specifically for radiation injury patients would need to be de-conflicted within the bed reporting system.

RITN and NDMS/HHS Coordination: The role of RITN is to provide the specialty RITN bed data/reports to HHS. The RITN hospitals would update their 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 the NC Piedmont 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. Locally, it is anticipated that NC SMART (bed tracking system) or WebEOC would be used to collect bed (and other real time) information across the healthcare coalition. The WebEOC platform may be particularly beneficial because then specific poll questions can be asked of the hospital Incident Management Teams (IMTs) such as Bone Marrow Transplant (BMT) bed availability which is not captured in the routine bed reporting tool.

RITN will also produce and distribute a daily Situation Report (SITREP) to partners nationwide. Based on the information provided from the RITN hospital's during the initial data poll, the RITN Control Cell will provide an estimate of patient numbers to expect. The revised form now requests information on both inpatient and outpatient capability. Wake Forest Medical Center noted that they do not perform bone marrow transplants on pediatric patients and therefore, they will not report capability for pediatric BMT beds. However, it was recognized that patients will arrive as family units so it may be necessary to initially accept the pediatric patients even if they will be sent to UNC (or other facility) for treatment.

The Healthcare Coalition would work with county EOCs and the Red Cross to start coordinating shelter. During the exercise, it was identified that planning can be done in advance particularly to support outpatient care and sheltering operations to enable the RITN hospitals to focus on the higher acuity radiation patients. Through the planning process, the region will be able to obtain a more accurate number of outpatients that they can take based on the resources needed.

Operation of the FCC: The FCC/PRA would augment federal staffing with EMS and others from the local healthcare preparedness coalition. A triage team for the PRA would be established consisting of 1-2 physicians, several nurses and a paramedic. The patients would be triaged and then sent on a vehicle to receive care; there would not be a treatment area set up at the airport/PRA. The FCC would operate 24/7 (first for the arriving trauma victims and then the radiation injury patients evacuated by NDMS) which would require three area emergency managers. If the FCC coordinator was positioned at the state EOC to manage the incident then it is possible that a fourth area emergency manager would be necessary to continue FCC operations. It is anticipated that there would be a Service Access Team (SAT) at the FCC to support patient tracking using the Joint Patient Assessment and Tracking System (JPATS). Finally, in the past the FCC would alert all

hospitals and other partners directly, but the revised plan states that the FCC will contact the State EMS/Emergency Management and they will follow standard (chain-of-command) notification protocols to push the information out to the appropriate responding agencies.

The FCC has access to WebEOC, which makes this an ideal location to share bed and resource information. If this system was not functioning, the FCC would be emailed the bed report information (collected by the state EOC ESF-8 desk and sent to the FCC). It was noted that the process for sharing bed information with the FCC is not currently in the FCC plan.

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, for example buses and AmbuBuses (38 stretcher patients could fit on 2 buses). Other transport mechanisms discussed included using public motor coaches/tour buses for longer transport and municipal buses for local transport; this information is included in the FCC plan and the request for the assets would be made through State EMS/Emergency Management who have contacts for these bus companies available. The patients are ambulatory so would not require vehicles with paramedics to be transported. Transport of non-medical attendees would be handled the same way and family units would be kept together.

Strengths

Strength 1: Using WebEOC to collect data from the hospitals by administering specific poll questions through the platform would be beneficial in gathering data that is not currently contained in the SMART tracking system such as BMT beds or other resources specific to RITN patient care.

Strength 2: The RITN hospitals would anticipate the radiation injury patients arriving 7 days post-incident and factor this in to the bed availability to receive trauma patients (i.e., keeping some beds open).

Strength 3: A significant number of transport resources are available and this information is documented in the FCC plan. Also, State EMS/Emergency Management have contacts and plans in place to access these resources.

Areas for Improvement

Area for Improvement 1: Identify non-RITN hospitals that have hematology/oncology capability and conduct outreach to include them in the NDMS/RITN response plans. Understanding the capabilities and staff available will inform the number of outpatients that the area could receive.

Area for Improvement 2: Conduct planning in advance to assess the ability to house outpatients and non-medical attendees; i.e., what areas can be expanded or converted for patient reception,

staffing to work the reception centers, housing and transport options. These activities and the roles and responsibilities for each agency should be documented in local RITN plans.

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.

Area for Improvement 4: Review the current NDMS plan to see if there are any caveats for this type of response as it pertains to transport of patients and non-medical attendees from the PRA.

Area for Improvement 5: Processes to share bed information with the FCC were articulated during the exercise; however, these pathways are not documented in the current FCC plan. Review the FCC plan and update to include the preferred mechanism(s) for sharing information with the FCC (e.g., WebEOC and/or synthesized and emailed by the State EOC ESF-8 desk to the FCC).

Area for Improvement 6: Internally, the RITN hospitals (UNC, Wake Forest) 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. Also ensure procedures are documented to share the information in a streamlined manner.

Area for Improvement 7: Continue discussion and include in plans the capability and process to provide resources or telemedicine/consults to non-RITN hospitals so they can care for less acute radiation patients and keep beds available at the larger (RITN) hospitals. Consider staffing and resource needs to ensure that patients do not transfer to the bigger hospitals; the larger hospitals should determine how they can support these needs (this is not limited to RITN/NDMS scenarios).

Area for Improvement 8: Obtain the specific definitions for the beds included in polling by RITN (bed types needed for RITN patients) so the numbers are accurate in the initial polling. RITN has these definitions and can provide for inclusion in local plans and polling platforms.

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

Wake Forest Medical Center would set up triage outside the ER. Given the lead time of approximately a week since the incident, there would be time to coordinate with the laboratory and other departments to get supplies. Arriving patients would be triaged as inpatient or outpatient; the primary outpatient challenge is monitoring and housing. The hospital has a list of hotels that are used for transplant patients and would also reach out to emergency management to see if they could identify hotel space. The outpatients require their own room rather than a mass shelter environment. The primary inpatient challenges would be the length of stay (average stay for transplant patient is 17-27 days so this may exceed the 30 day federal reimbursement treatment window), the identification and testing of potential marrow donors, and mental health support for the arriving patients and non-medical attendees (due to separation from their home and families).

UNC would determine the triage location depending on how many patients would be received from the NDMS evacuation; for example, if they were going to receive 40 at once they would move the perimeter out further from the ED to avoid crowding that area. This way patients could be triaged directly as outpatient or to the BMT unit rather than being processed through the ED.

For unaccompanied pediatric patients, UNC has a robust volunteer program where members have received both Health Insurance Portability and Accountability Act (HIPAA) and hospital specific training; 50 of these volunteers have been trained in handling pediatric patients. Every unaccompanied minor that arrives to the hospital is assigned a volunteer buddy at the time of admission. The Wake Forest Brenner Children's Hospital has a social services department that could be leveraged to assist with caring for the specific needs of pediatric patients.

Behavioral/Mental Health Considerations

For mental health concerns, Wake Forest utilizes pastoral care (many resources in the affiliated medical school) to support staff, patients, and non-medical attendees in this type of scenario. UNC has the volunteer pool to provide peer support. The Coalition has access to a large Critical Incident Stress Management [CISM]) operation and can reach to the state level to dispatch CISM teams from around the state.

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. Local public health stated that they would not need to be informed of these patients arriving; existing mechanisms to track the patients (day to day reportable disease tracking by the hospital) could be used should the data be requested at the national level. The hospitals would reach out to RITN to determine if, what and where any data should be reported. The FCC would also be informed of the spontaneous patients. Wake Forest has an internal public health surveillance officer who would coordinate these activities and as needed any coordination with the county. The Healthcare Coalition would be responsible for messaging to stakeholders letting them know of the situation, advising what to do should they get a spontaneous arrival from the IND blast site, and how to proceed. It was noted that Wake Forest does have some radiation screening equipment that could be utilized to detect radiation on the spontaneous arrivals; however, it was not clear how many staff are familiar with using this equipment.

Patient Tracking and Reimbursement

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 for all other patients arriving to the ED. Financial reimbursement will come from NDMS at the federal per diem rate. U.S. Public Health Service Access Team (SAT) teams (if deployed) or the FCC will be responsible for processing all medical and lodging expenses for NDMS patients. The concept of operations for SAT teams is that they will be deployed to the area until all patients are discharged to home and support the patient tracking component but it was recognized that there are very few SAT teams and they may not be available for each responding area. Hospitals should be sure to track patients and relay all tracking information to the FCC (e.g., hospital transfer, discharge, different lines of care). The Intermedix™ Health Care WebEOC module would be utilized to track this information and that way it could be provided seamlessly to the Coalition, State EMS, and to the FCC.

Resource requests for all patients arriving to the area would follow standard processes. Non-medical requests would go to the county emergency management and then elevate to the state level if it could not be fulfilled locally. Hospital/medical resource requests are sent to the Healthcare Coalition who then works with county emergency management. It was noted that blood products could be a challenge in this scenario, particularly having enough to supply both hospitals. One blood bank provider is expected to be able to arrive within 1-2 hours, the other in a day (routine operations).

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. Some of the concerns expressed by participants at this exercise included: agency(s) responsible for coordinating lodging and transport for outpatients, where the outpatients and their families stay, how to transport them to/from the hospital, and the entity responsible for covering outpatient costs.

In the event of a declared disaster, it was stated that food/lodging/transport should be coordinated through the State Emergency Management Agency which has MOUs in place with hotels that can accept the federal reimbursement. The Red Cross would be able to obtain a few hotel rooms but lodging for larger numbers or longer duration stays would not be possible; at that point the Red Cross would only able to support general population sheltering (i.e., those not undergoing treatment and needing more sterile environments). Participants discussed utilizing closed spaces of hospitals or hospice care facilities, particularly for those patients who can provide self-care (i.e., don't need additional staffing to open those spaces). The recommendations were that the process for hospitals to get waivers to open closed areas and to have agreements in place with the hospice (long term care) facilities. It was noted that if this is not declared a disaster in the region/state, it would be necessary to make sure that emergency management processes exist for disaster declaration to occur in order to relax regulations and initiate disaster funding streams.

Transportation options to take outpatients from lodging locations to the RITN hospital for care included bus transportation (both Wake Forest and UNC).

Public Messaging

The public messaging aspects were not discussed in detail during this exercise; however, a Joint Information Center (JIC) would be established and public health would take the lead in coordinating messages about safety and providing guidance about radiation affects. The VA stated that their Public Affairs Officer would be a part of the JIC. Specifics of what would be communicated to inpatients, staff, and the general public was not discussed.

Strengths

Strength 1: The RITN hospitals have plans in place to rapidly and effectively triage patients to inpatient or outpatient status.

Strength 2: The Intermedix™ Health Care WebEOC module would be utilized to track all patient information (e.g., care details, costs) and provide that data seamlessly to the Coalition, State EMS, and to the FCC.

Strength 3: Hospital and Emergency Management partners were familiar with the ICS resource request process and will implement this to fulfill both medical and logistical (e.g., lodging) needs following the chain from local to state to federal.

Strength 4: The National Marrow Donor Program (NMDP) would be contacted for assistance with typing and identifying donors. NMDP has 13000 donors in the United States (more internationally) and utilize robust automated systems to coordinate transplants for approximately 6500 patients per year. NMDP can facilitate typing in a 24-48 hour turn around time.

Strength 5: The RITN hospitals (UNC, Wake Forest) have transportation assets that can move outpatients from the lodging location to the hospital for care.

Areas for Improvement

Area for Improvement 1: 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. Schedule a future meeting to start talking about this aspect of the response and reimbursement.

Area for Improvement 2: 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 3: 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 4: Assess staff training needs to use the radiation detection equipment for spontaneous arrivals from the IND blast site; that is, how many need more in depth and annual training and how many could be trained just-in-time to accomplish the screening goal (either spontaneous arrivals or to re-screen those arriving from NDMS).

Area for Improvement 5: Ensure that a determination has been made as to whether patients arriving via NDMS will be re-screened upon arrival to the hospital and include in plans if it is not already noted (this was not specifically discussed during the exercise but relates to the number of staff that may need training on radiation detection equipment, Improvement Area #4).

Area for Improvement 6: Develop an improved understanding of the outpatient capacity (main and ancillary services) in advance of an event. Determine the agencies that should collaborate to brainstorm solutions for outpatient care operations and ensure communication or involvement of State EMS/Emergency Management so they understand the challenges and the unique needs of this patient population.

Area for Improvement 7: RITN is not addressed in the HHS FCC guide but it was recognized as a gap to be addressed at the federal level (i.e., have RITN specifically called out in the FCC plans around the country to include nuances and response actions related to this scenario).

Area for Improvement 8: Implement screening questions to assess spontaneous arrivals and verify that they were in the blast zone and experiencing ARS symptoms. Screening questions could be developed and distributed by RITN for use at RITN centers nationwide. Include the screening question process in the local/hospital RITN plan and any guidance/recommendations that would be issued by the coalition for this response.

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: It was recognized that there would be a very limited amount of medications and planning is necessary to determine options for expanding doses, prioritization of medications, use off label products or administering research-only drugs. Guidelines (such as exist for other diseases) on the allocation of scarce resources are not currently available for this scenario. Until there is federal guidance medication dispensing, it may be useful for the region to consider including in plans how this would be handled. The Association of State and Territorial Health Officials (ASTHO) is working on this issue at the federal level but it is not clear yet when those guidelines will be available.

Area for Improvement 11: Promote engagement with and education for local/community hospitals to be part of the PRA process (staffing support as patients are arriving). There was demonstrated interest from exercise participants in working at the PRA.

Area for Improvement 12: Public messaging for this type of incident (i.e., radiological/nuclear detonation that results in radiation injuries) was not discussed in detail during this exercise. Strategies 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

HOTWASH

Strengths

Exercise was an effective way to understand each other's roles and ideas to address planning gaps.

- This was a great educational opportunity for non RITN hospitals; increased the understanding that the impact to them would be greater than originally expected and ways that they can support the surge.
- Public health had an improved understanding of the large support role they would play in this type of incident.
- Transport options are available in the area and processes are in place to facilitate use of these vehicles.
- Local/community hospitals have a strong understanding of how to open their beds and space to support patient surge.

Improvement Planning

- Understand the outpatient capacity.
- Individual hospitals noted more collaboration is needed with Hem/Onc and BMT units and should include those representatives on their disaster committees.
- The multiple ways that bed information is gathered and shared could be problematic and result in double counting bed resources.
- Reimbursement for outpatient activities is not clear at the federal level.
- Communications between the FCC and hospitals/coalition requires further discussion and documentation.
- Outstanding questions at the federal level require that additional discussions or details be provided to the RITN jurisdictions such as: scarce resource (medication) allocation, SAT team operations/responsibilities, patient tracking, and financial reimbursement.

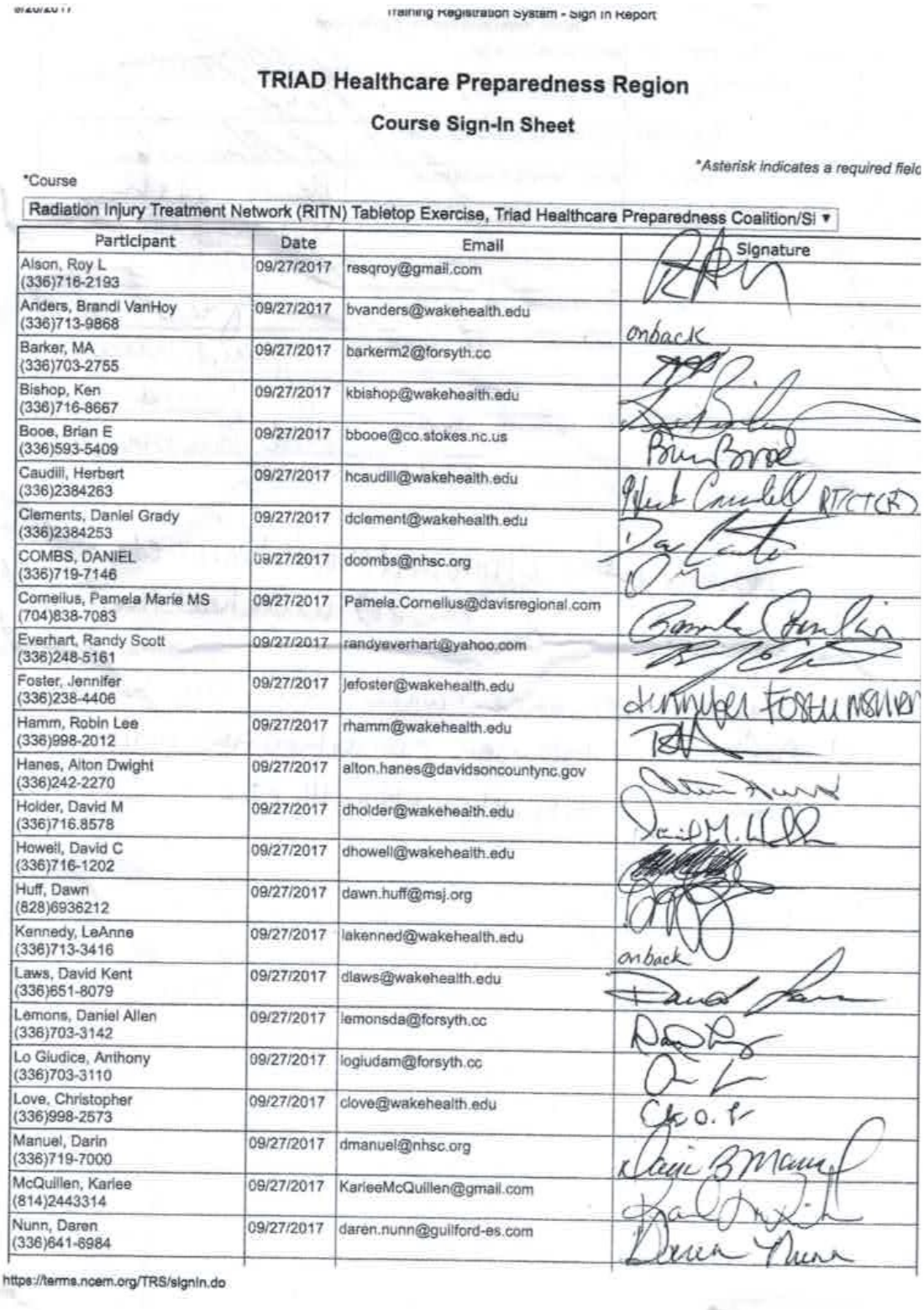
APPENDIX A: IMPROVEMENT PLAN

This improvement plan template has been developed specifically for the RITN centers participating in the 2017 RITN Regional Exercises. NC Piedmont 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



8/28/2017 Training Registration System - Sign In Report

TRIAD Healthcare Preparedness Region

Course Sign-In Sheet

*Asterisk indicates a required field

*Course

Radiation Injury Treatment Network (RITN) Tabletop Exercise, Triad Healthcare Preparedness Coalition/Si

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APPENDIX C: ACRONYMS

Acronym	Term
AAR	After Action Report
ARS	Acute Radiation Sickness
ASPR	Assistant Secretary for Preparedness and Response
ASTHO	Association of State and Territorial Health Officials
BMT	Bone Marrow Transplant
CISM	Critical Incident Stress Management
ED	Emergency Department
EMS	Emergency Medical Services
EOC	Emergency Operations Center
FCC	Federal Coordinating Center
G-CSF	Granulocyte-Colony Stimulating Factor
HCS	Healthcare Standard (RITN data collection matrix)
HHS	Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
IMT	Incident Management Team
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
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
SOC	Secretary Operations Center (DHHS)
TTX	Tabletop Exercise
VA	Veterans Affairs (Medical Center)