Wake Forest™
Baptist Medical Center

RITN Full Scale 2015

After Action Report and Corrective Action Plan

July 26 - 29, 2015

Assistant Secretary for Preparedness and Response

RADIATION INJURY TREATMENT NETWORK

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Exercise Name	RITN Full Scale 2015
Exercise Dates	July 26 thru July 29, 2015
Scope	This event is a Full Scale Exercise (FSE), planned for three days at Wake Forest Baptist Medical Center (WFBMC). Exercise play will include WFBMC staff plus representatives of multiple community and federal partners.
Mission Area(s)	Response
Healthcare Preparedness Capabilities	Healthcare System Preparedness Emergency Operations Coordination Information Sharing Medical Surge
Objectives	Demonstrate the ability to quickly identify the given situation, initiate HICS 2014, and make all notifications necessary for RITN & Internal Emergency Operations Plan activations. Demonstrate the ability to assess current resources, unfilled needs, and manage requests for and allocation of those resources. Assess the ability to identify, establish, and manage necessary communications logistics throughout the Triad Healthcare Coalition Region, (NCMCN, VIPER, and WebEOC) and identify critical issues and potential solutions, during an RITN activation. Test the ability to track patients from the incident epicenter through the Patient Reception Area and to the final destination facility, while identifying critical issues and potential solutions, and validate hospital casualty reception/patient tracking data during an RITN activation using Joint Patient Assessment and Tracking System (JPATS). Demonstrate the Triad Healthcare Preparedness Coalition's (HPC) ability to provide a Regional Healthcare Coordinating Center (RHCC) which coordinates a multidisciplinary local response to an event prompting the activation of the National Radiation Injury Treatment Network. Demonstrate a working understanding of regional, state, and federal ESF-8 plans and the responsibilities Wake Forest Baptist Medical Center and the Triad Healthcare Coalition have toward the successful activation of those plans.

Threat or Hazard	Radiological Release
Executive Summary &Scenario	Wake Forest Baptist Medical Center (WFBMC) is a member of the Radiation Injury Treatment Network (RITN) which is an affiliate of the National Marrow Donor Program (NMDP).In July of 2014 RITN invited WFBMC to develop and execute a Functional Exercise that would test our capability to receive and treat victims of a radiological release who were exhibiting symptoms consistent with marrow toxicity. WFBMC accepted the invitation and with approval from RITN opted to elevate the exercise to a Full Scale Exercise. The scenario that was developed represented an incident that had been determined to be a realistic threat through valid and reliable intelligence that could result in injuries that would necessitate the activation the National Disaster Medical System and the Radiation Injury Treatment Network of the National Marrow Donor Program.
Sponsor	Radiation Injury Treatment Network Wake Forest Baptist Medical Center
Participating Organizations	Wake Forest Baptist Medical Center Davidson Community College Surry Community College Forsyth County EMS Triad Healthcare Coalition American Red Cross W.G. (Bill) Hefner VA Medical Center, Salisbury, NC - Federal Coordinating Center (FCC) for Western North Carolina National Disaster Medical System (NDMS) VHA Office of Emergency Management Winston-Salem, Forsyth County Emergency Management Radiation Injury Treatment Network
Exercise Planning Team	Ken Bishop, WFBMC Emergency Manager and Planning Team Chair David M. Holder, WFBMC Assistant Emergency Manager David C. Howell, WFBMC Radiation Safety Officer Cherie C. Avants, RN,WFBMC Nursing Resources Manager Michelle Collins, RN, Nursing Unit Manager, WFBMC Emergency Department Paula Correa, RN, Nursing Unit Manager, WFBMC Pediatric Emergency Department Samantha C. Ogle, RN, WFBMC Bone Marrow Program Manager Wendy Cox, Senior Business Analyst, WFBMC Oncology Service Line

	Carolyn Scott, RN, Administrative Director Clinical Operations & Nursing, Cancer & Blood Disorders Service Line Fran Charlton, RN, Director of Nursing& Clinical Operations Susan Bachmeier, RN, Director of Nursing, WFBMC Emergency Services & Chief Nursing Officer, Davie Medical Center Melton Sadler, Coordinator, Winston-Salem/Forsyth County Emergency Management Patricia L. Beaver, Area Emergency Manager, VHA Office of Emergency Management, Department of Veterans Affairs Janell Miller, RN, Program Director, BLS/ACLS Coordinator, VAMC Lieutenant M. A. Barker, Logistics Officer, Forsyth County Emergency Services Jennifer Venero, RITN Program Coordinator, Quality Systems, National Marrow Donor Program Curt Mueller, Exercise Coordinator, National Marrow Donor Program Corey D. Roberts, Regional Healthcare Preparedness Planner, Triad Healthcare Preparedness Coalition Ken Hall, Director, Risk Management, Lexington Medical Center Randy Everhart, Director, Security, Lexington Medical Center Robin Hamm, Supervisor, Security & Hospitality, Davie Medical Center Thomas Dunn, Regional Response Manager, Emergency Services, American Red Cross Susan B. Smith, Regional Disaster and Program Officer, Emergency Services, American Red Cross Stephen Brown, Government Operations Liaison, American Red Cross
Evaluators	Lead Evaluator: Roger Glick, Senior Emergency Management Consultant, Carilion Clinic Patient Reception Area: Michelle Brock, Emergency Management Coordinator, Winston-Salem/Forsyth County Emergency Management WFBMC Hospital Incident Command Center; Floating: August Vernon, Emergency Services Manager, Wake Forest University. WFBMC ED/Decon; Float to Hem/Oncology PRN: Mark Stepp, RN, SMAT Team Commander, MATRAC Healthcare Coalition WFBMC ED/Decon; Float to PEDS ED PRN: Pokey Harris, CapRAC Regional Disaster Preparedness Coordinator, Emergency Services Institute, WakeMed Health & Hospitals WFBMC PEDS ED/Decon; Float to PEDS Hem/Oncology PRN: James Starlin, Assistant Regional Healthcare Preparedness Coordinator, NC 400 SMAT Commander, Duke Regional Advisory Committee SMAT II / MRC Coordinator Regional Healthcare Coordinating Center: Corey D. Roberts, Regional Healthcare Preparedness Planner, Triad Healthcare Preparedness Coalition

	Lexington Medical Center: Robbie Plunkett, WFBMC EH&S Senior Specialist Lexington Medical Center: Robert Reece, Operations Officer, Emergency Management Coordinator, Winston-Salem/Forsyth County Emergency Management Davie Medical Center: Elaina Skarote, Operations Coordinator, Triad Healthcare Preparedness Coalition
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ANALYSIS OF HEALTHCARE PREPAREDNESS CAPABILITIES

Aligning exercise objectives and healthcare preparedness capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned healthcare preparedness capabilities, and performance ratings for each healthcare preparedness capability as observed during the exercise and determined by the evaluation team.

Objective	Healthcare Preparedness Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate the ability to quickly identify the given situation, initiate HICS 2014, and make all notifications necessary for RITN & Internal Emergency Operations Plan activations.	Health System Preparedness Information Sharing				
Demonstrate the ability to assess current resources, unfilled needs, and manage requests for and allocation of those resources.	Health System Preparedness				
Assess the ability to identify, establish, and manage necessary communications logistics throughout the Triad Healthcare Coalition Region, (NCMCN, VIPER, and WebEOC) and identify critical issues and potential solutions, during an RITN activation.	Emergency Operations Coordination				
Test the ability to track patients from the incident epicenter through the Patient Reception Area and to the final destination facility, while identifying	Medical Surge				

Objective	Healthcare Preparedness Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
critical issues and potential solutions, and validate hospital casualty reception/patient tracking data during an RITN activation using Joint Patient Assessment and Tracking System (JPATS).					
Demonstrate the Triad Healthcare Preparedness Coalition's (HPC) ability to provide a Regional Healthcare Coordinating Center (RHCC) which coordinates a multidisciplinary local response to an event prompting the activation of the National Radiation Injury Treatment Network.	Emergency Operations Coordination Medical Surge				
Demonstrate a working understanding of regional, state, and federal ESF-8 plans and the responsibilities Wake Forest Baptist Medical Center and the Triad Healthcare Coalition have toward the successful activation of those plans.	Emergency Operations Coordination				

Ratings Definitions:

- Performed without Challenges (P): The targets and critical tasks associated with the healthcare preparedness capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.
- Performed with Some Challenges (S): The targets and critical tasks associated with the healthcare preparedness capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with

Objective	Healthcare Preparedness Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. • Performed with Major Challenges (M): The targets and critical tasks associated with the healthcare Preparedness capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. • Unable to be Performed (U): The targets and critical tasks associated with the Healthcare Preparedness capability were not performed in a manner that achieved the objective(s).					

Table 1.Summary of Healthcare Preparedness Capability Performance

The following sections provide an overview of the performance related to each exercise objective and associated healthcare preparedness capability, highlighting strengths and areas for improvement.

Objective #1: Demonstrate the ability to quickly identify the given situation, initiate HICS 2014, and make all notifications necessary for RITN & Internal Emergency Operations Plan activations.

Healthcare Preparedness Capability: Health System Preparedness	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	The initial notification was received from RITN on Sunday, July 26, in the form of a "Request for Capabilities Report." WFBMC leadership quickly recognized the request as a notification that they could be asked to accept patients from the radiological event and activated Incident Command using HICS 2014 on the morning of July 27th.
Strength 2:	Operational Objectives were identified early in the process and communicated to the entire response team at regularly scheduled briefings.
Strength 3:	All notifications for an event of this magnitude were made in a timely and efficient manner.
LMC	
Strength 1:	Not being an RITN Treatment Center, LMC initially had no reason to believe they would receive patients; however, on the morning of July 29th they began having the occasional "walk in" patient that was complaining of symptoms (whether real or perceived) of radiation sickness. LMC quickly realized that a lot of their patient base had been in Florida at the time of the radiological release and quickly activated their Incident Command System to begin dealing with the arriving patients.
Strength 2:	The Command Structure was well organized and roles were clearly identified with both vests and a posted Incident Command Chart. The use of ICS was very clear and apparent to evaluators.
Strength 3:	Executive leadership was notified as soon as the first patient arrived and the information was then forwarded to the main campus.
Strength 4:	The customer service provided to exercise patients and real world patients alike was exceptional. Staff went out of their way to keep everyone well informed as to what was going on.
DMC	
Strength 1:	Like LMC, DMC is not an RITN Treatment Center and initially had no reason to believe they would receive patients; however, based on early communications from the main campus they made core ICS position assignments on Tuesday, July 28th.
Strength 2:	Objectives and priorities were clearly established well before the first walk-in patient arrived.
Strength 3:	DMC took advantage of the lead time offered by this type of event and actually established Incident Command 24 hours in advance of the first patient arriving.
Strength 4:	DMC very effectively utilized an internal program for family reunification to help a patient locate a missing family member.
RHCC	
Strength 1:	No comments received on this objective.

PRA	
Strength 1:	A “team leader” oversaw the triage and initial evaluation of patients at the PRA and reported to the Incident Commander at WFBMC.

Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	The Incident Command Center is grossly undersized for a response requiring a large Incident Management Team.
Reference (if available):	Floor Plan of the WFBMC Hospital Incident Command Center
Analysis:	Everyone involved in the Incident Management portion of the exercise commented that the WFBMC Incident Command Center is far too small for its intended role. It consists of one "large" room that is 615.45 square feet and a smaller breakout room of 142.88 square feet. The main room is intended to seat 26 people at "workstations"; however, that becomes extremely cramped when laptop computers, monitors, phones, evaluators/observers, and feeding accommodations are added in. To compound the problem, Command Center Security was literally non-existent and there were several instances when more than 26 people were crowding into the room.
Recommendation:	Explore the possibility of: a) relocating the Command Center into a larger facility; b) expanding the existing Command Center; and c) adding a nearby back-up Command Center.
Area for Improvement 2:	The HICS 2014 "Chain of Command" was not clearly followed.
Reference (if available):	HICS 2014
Analysis:	Several evaluators and observers (as well as players) commented that in days leading up to the reception of patients (July 26, 27, and 28) the Incident Management Team seemed to be well organized and adhering to the roles and responsibilities set forth in HICS 2014 for given positions. On July 29 (the day patients actually began arriving) the chaos increased the roles and responsibilities became much more "blurred" and that the Incident Commander, Deputy Incident Commander, and Planning Section Chief seemed to be somewhat "randomly interchangeable".
Recommendation:	Explore the possibility of creating a smaller, more highly trained, and more specialized dedicated incident management team.
Area for Improvement 3:	The Incident Management Team was not familiar with the technology available within the Incident Command Center.
Reference (if available):	None
Analysis:	Several evaluators plus several player feedback forms noted that the Incident Management Team was painfully unfamiliar with the technology available within the Command Center itself, primarily, WebEOC, the State Medical Assistance Resource Tracking Tool (SMARTT) and the AMX Control Panel for the widescreen monitors. This was compounded by the fact that the exercise was being presented by the Medical Center Emergency Manager and Assistant Emergency Manager. Others familiar with the technology (the EH&S Training Specialist and the Regional Healthcare Planner) had to occasionally be pulled away from other assignments to assist the Incident Management Team with these issues.
Recommendation:	Again, explore the possibility of creating a smaller, more highly trained, and more specialized dedicated incident management team.

Area for Improvement 4:	ED and Decon personnel were not at all comfortable with the radiation detection and monitoring process, and there were an insufficient number of trained staff available to survey the arriving patients in a timely manner.
Reference (if available):	WFBMC Radiation Injury Treatment Protocol, WFBMC Patient Decon Protocol.
Analysis:	With the radiological event that became the center of this "activation" occurring on Sunday, July 26th and the first patients not arriving at WFBMC until Wednesday, July 29th, there was ample opportunity for just in time training for ED and Decon personnel on radiation detection and monitoring. The time was well used for training; however, an insufficient number of staff were trained for the management of a large group of arriving patients. Also, based on questions asked and concerns raised (primarily about staff safety) during that training, it was very evident that most staff had little to no experience with detection and monitoring. Several of the staff who did participate in the just in time training did not show up on the day of the exercise. At one point the exercise controller for that area actually stepped in and assisted with surveying arriving patients.
Recommendation:	Radiation detection and monitoring should become a regular part of repetitive patient decontamination training.
Area for Improvement 5:	There was no evidence of a coordinated protocol for triage of both adult and pediatric patients arriving simultaneously from the same event.
Reference (if available):	Evaluator observations
Analysis:	With distinctly separate adult and pediatric Emergency Departments evaluators could not see that there was a systematic and coordinated protocol for triage of both adult and pediatric patients arriving simultaneously from the same mass casualty incident. One evaluator noted that at one time there were pediatric patients waiting for up to an hour to be triaged on the adult ED dock while pediatrics ED staff appeared to be sitting in the pediatric ED waiting to receive patients.
Recommendation:	A protocol for coordinated triage may very well exist and just was not being adhered to because of the artificialities of the exercise. This does however warrant investigation and if such a protocol does not exist one needs to be developed and trained on. In a mass casualty incident pediatric staff should be assigned to monitor the adult triage area.
Area for Improvement 6:	Several evaluators felt that communications with "patients" at the ED reception site were insufficient and spotty.
Reference (if available):	Evaluator Observations and Player Feedback.
Analysis:	It appeared that no one was assigned the specific role of patient liaison. No one as specifically assigned to provide information to waiting patients about the radiation scanning process, potential to be deconned, triage process, patient flow, or family reunification. It also appeared that no one was monitoring the general health and welfare of the patients as "players" (bathroom needs, hydration needs, heat concerns, long periods of standing, etc.)
Recommendation:	There were two oversights here. From a response perspective, a patient relations representative should have been assigned to serve as a patient liaison. From an exercise design perspective a victim coordinator should

	have been assigned to the ED to monitor player's personal needs.
Area for Improvement 7:	The decon team was not dressed and ready when the first patients arrived.
Reference (if available):	Evaluator Observations and Player Feedback
Analysis:	Aside from the bottleneck that occurred because of the length of time it took to correctly scan patients the first patient to arrive had to be decontaminated and the decon team was not ready. There was added delay waiting for the team to dress out.
Recommendation:	Forsyth County EMS encoded to the ED that they were leaving the airport enroute to the hospital. At that time the decon team should have dressed out.
LMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	Multiple patient decon
Reference (if available):	First Receiver Decon Training
Analysis:	DMC decon staff did not appear to be well prepared in the event of having to decon more than one patient from the event, and the person performing radiation detection/monitoring was not wearing any form of PPE.
Recommendation:	Additional First Receiver's Decon Training.
Area for Improvement 2:	Incident Command Center not staffed for the duration of the event.
Reference (if available):	HICS 2014
Analysis:	There were times that there was no one in the Incident Command Center.
Recommendation:	Although this is a small facility and staffing is a serious concern, effort should have been made to keep at least one person in the Command Center for the duration of the activation. All other staff are being trained to call the Command Center for resource and asset needs, so there needs to be someone there to answer the phone.
RHCC	
Area for Improvement 1:	No evaluator feedback was received regarding this objective.
Reference (if available):	
Analysis:	
PRA	No evaluator feedback was received regarding this objective.
Area for Improvement 1:	
Reference (if available):	
Analysis:	

LMC: Lexington Medical Center; DMC: Davie Medical Center; RHCC: Regional Healthcare Coordinating Center. PRA: Patient Reception Area

Healthcare Preparedness Capability: Information Sharing	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	The Command Center at the Main Campus is well connected to the two subsidiary campuses and the RHCC via a Polycom video connection which maintained a three way connection (WFBMC, LMC and DMC) for the duration of the exercise.
Strength 2:	A schedule for situation updates was created early in the activation and was adhered to.
Strength 3:	Situation updates were very thorough and always included all three campuses.
Strength 4:	The Liaison Officer did an excellent job of keeping senior leadership and community partners informed of developments at the main campus.
LMC	
Strength 1:	The ED and Command Center are a substantial distance apart at the LMC Campus, but the ED staff did an excellent job of keeping the Incident Management Team up to date on the status of the ED.
Strength 2:	The Incident Management Team did a good job of keeping the main campus informed of the status and capabilities of LMC.
Strength 3:	
DMC	
Strength 1:	
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	Collaboration and teamwork between the various agencies, teams, and departments was noted repeatedly. Many processes and efforts would have been stopped dead in their tracks without face to face discussions and the sharing of ideas and information.
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	

Area for Improvement 1:	After the initial notification was received from RITN, the main campus did not make any effort at all to keep RITN apprised of local developments.
Reference (if available):	RITN Concept of Operations
Analysis:	Basically, after the initial capabilities report was filed with RITN on Sunday evening July 26th, the main campus made no further effort at all to communicate with RITN. This might be attributable to an unintended artificiality created by RITN observers being present in the Incident Command Center.
Recommendation:	This may very well become a self-correcting problem if RITN requests more frequent capabilities reports during a real activation. Otherwise, this needs to be added to the Liaison Officer's Job Action Sheet for an RITN activation.
Area for Improvement 2:	Communications between the Patient Reception Area (PRA) and WFBMC were, for all practical purposes, non-existent.
Reference (if available):	WFBMC Emergency Communications Plan; NCEM Tactical Interoperability Communications Field Operations Guide (NC TIC-FOG).
Analysis:	Communication between the PRA and WFBMC were intended to occur on the State VIPER (Voice Interoperability Plan for Emergency Responders) System. As per NCOEMS VIPER Protocol two talk groups were reserved twenty four hours in advance; however, within 30 minutes of the arrival of the first patients at the PRA, the VIPER system failed. This pointed out a key failure in the planning process also; namely, the lack of a back-up communications plan for the PRA. Cell phones were used with very limited effectiveness. Other back-up communications systems were available but were not written into the communications plan for this event (email, text, county 800 MHz, etc.).
Recommendation:	ALWAYS include back-up communications capabilities in written communications plans and provide copies of those plans to all players.
LMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	

Area for Improvement 1:	See Area For Improvement #2 under “Main Campus” abov**e.**
Reference (if available):	
Analysis:	

LMC: Lexington Medical Center; DMC: Davie Medical Center; RHCC: Regional Healthcare Coordinating Center. PRA: Patient Reception Area

Objective #2: Demonstrate the ability to assess current resources, unfilled needs, and manage requests for and allocation of those resources.

Healthcare Preparedness Capability: Health System Preparedness	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	Even though this Incident Management Team was relatively inexperienced the comments from evaluators concerning their ability to match internally available resources to the given situation were very positive. One evaluator actually commented that this was the team's strongest point.
Strength 2:	Although the Command Center was very overcrowded, the team adapted well and made excellent use of wide screen monitors, dry erase boards, and flip charts to assess needs and appropriately allocate resources.
Strength 3:	Lists of contracts and vendors were reviewed and discussed in the Command Center. The Command Team seemed to be well aware of City, County, Regional, and State resources.
LMC	
Strength 1:	LMC obviously made good use of the lead time between Sunday and Wednesday. When the first patients arrived the decon tent was set up and a person was at the ready with the Ludlum meter to begin radiation detection and monitoring.
Strength 2:	
Strength 3:	
DMC	
Strength 1:	Very clear communication between command team and staff.
Strength 2:	All staff were well informed on the plan and it was executed quickly and efficiently.
Strength 3:	The patient reception area, triage area, and decon area were very well thought out and organized
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:

Main Campus	
Area for Improvement 1:	Most evaluators felt Incident Management Team Situational Awareness Briefings were stretched a little too far apart and consequently had to contain a lot of information and detail in a short time period.
Reference (if available):	HICS 2014; ICS 100, & 200
Analysis:	Most Situational Awareness Briefings were scheduled twice a day (midmorning and late afternoon) on Monday and Tuesday, and every 4 hours on Wednesday. Evaluators felt that this caused too much information to be packed into a 45 minute to an hour briefing. Evaluators were very complimentary of the quality of the briefings, citing attention to detail, power point presentations, opportunities for questions, etc.
Recommendation:	All evaluators recommended staying with the prescribed schedule of briefings, but adding a 10 minute mini-briefing, or “pull up” briefing at two hour intervals.
Area for Improvement 2:	The State Medical Assistance Resource Tracking Tool was never utilized. There was also no noticeable discussion of resource sharing provisions included in the North Carolina Hospital Association Mutual Aid Agreement.
Reference (if available):	State Medical Assistance Resource Tracking Tool (SMARTT)
Analysis:	No evaluator saw, or heard discussion about activating the State Medical Assistance Resource Tracking Tool (SMARTT). Likewise, no evaluator saw or heard discussion of resource sharing provisions included in the North Carolina Hospital Association (NCHA) Mutual Aid Agreement.
Recommendation:	When a smaller, more specialized Incident Management Team is created, include SMARTT NCHA training in the curriculum.
Area for Improvement 3:	Did WFBMC really stress their resources?
Reference (if available):	Evaluator observations.
Analysis:	Evaluators question whether or not WFBMC internal resources were ever truly stressed. As large of a disruption as this incident would have created, evaluators felt that the sheer size of this institution made resource allocation somewhat easy to manage. Basically, we have a lot of the most commonly needed resources and assets readily on hand and the exercise did not seem to truly stress those areas. This could in-fact prove to be a dangerous vulnerability.
Recommendation:	Do not get too comfortable. Understand that sooner or later there will be an incident requiring this institution to ask for outside help. It may be prudent to practice those request procedures in future exercises whether they are needed or not.
Area for Improvement 4:	There were insufficient staff present in the patient reception area at the hospital who had sufficient radiation monitoring experience.
Reference (if available):	Evaluator observations and participant feedback.
Analysis:	The number of staff on hand at the Emergency Department patient reception area who were trained to a comfort level with radiation detection/monitoring equipment was grossly insufficient to the point that there were several times that the controller for that area stepped in to assist. It is significant to note that that controller is the Chief Radiation Safety Officer and would be available to help fill that role in a real word activation. Two additional

	Radiation Safety Officers were serving as controllers at outlying campuses. Patients were also being scanned out of order according to triage levels; ie: green patients were being scanned prior to yellows and reds.
Recommendation:	Exercise artificiality is clearly an influencing factor here. In a real world response there is a very good likelihood that up to four Radiation Safety Officers will be available to lead the radiation detection/monitoring effort; however, this does not negate the need for additional and continued training for Emergency Department staff on the process in order to get them to a high comfort level. Staff should get in the habit of scanning patients in the order of the triage tag that is presented when patents arrive; reds first, then yellows, then greens.
LMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	SMAT personnel were not familiar with the resources and support that NDMS brings to the table.
Reference (if available):	Evaluator observations
Analysis:	There were several patient tracking and caregiver management issues that arose that SMAT tried to address themselves when NDMS personnel were present hand had the experience and expertise to manage those issues for them. It was also evident that SMAT team members did not really understand that management of the PRA is the responsibility of NDMS. SMAT is there for triage and patient care until the patient is transported out of the site.
Recommendations:	This is purely a training issue.

LMC: Lexington Medical Center; DMC: Davie Medical Center; RHCC: Regional Healthcare Coordinating Center. PRA: Patient Reception Area

Objective #3: Assess the ability to identify, establish, and manage necessary communications logistics throughout the Triad Healthcare Coalition Region, (NCMCN, VIPER, and WebEOC) and identify critical issues and potential solutions, during an RITN activation.

Healthcare Preparedness Capability: Emergency Operations Coordination	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	The internal mass notification system (MIR-3) was utilized effectively and performed very well.
Strength 2:	As will be discussed below, there were repeated technology and communications failures; however, all evaluators commented about the overall calmness of the Incident Management Team and their ability to adapt and overcome. WFBMC was called into the Incident Command Center fairly early and responded quickly to address computer failures.
Strength 3:	Communications within the Incident Command Center was excellent and flowed well prior to patient arrival; however, confusion ensued once patients started to arrive.
LMC	
Strength 1:	ED staff used face to face communication to manage both real world and exercise patients; ie: every patient who presented at the ED, whether real or exercise, was screened for travel to Florida on Sunday July 26.
Strength 2:	
Strength 3:	
DMC	
Strength 1:	The Incident Command Center was able to quickly establish and maintain effective communications with all responding staff.
Strength 2:	The Incident Command Center was in constant communication with the main campus and with local EMS agencies.
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:

Main Campus	
Area for Improvement 1:	The Incident Management Team was not comfortable with WebEOC, plus it crashed.
Reference (if available):	WebEOC Training.
Analysis:	WFBMC (and every other hospital in North Carolina) is equipped with the incident management software WebEOC. Some of the involved Incident Management Team had a basic familiarity with the software while others had no idea at all what it is. To compound the problem the software "crashed". Several participant feedback forms pointed out that the two people who should be most knowledgeable about WebEOC, the Emergency Manager and Assistant, were presenting the exercise and were not available in the Command Center to assist.
Recommendation:	Investigate and remediate the cause of the "crash". Identify additional "specialists" who can assist when the Emergency Manager and Assistant are not available, intensify WebEOC training for the specialized incident Management Team.
Area for Improvement 2:	As mentioned under Objective #1, the state Voice Interoperability Plan for Emergency Responders failed early in the exercise and was never recovered.
Reference (if available):	WFBMC Emergency Communications Plan, NCOEMS VIPER Protocol
Analysis:	Communication between the PRA and WFBMC were intended to occur on the State VIPER (Voice Interoperability Plan for Emergency Responders) System. As per NCOEMS VIPER Protocol two talk groups were reserved twenty four hours in advance; however, within 30 minutes of the arrival of the first patients at the PRA, the VIPER system failed. This pointed out a key failure in the planning process also; namely, the lack of a back-up communications plan for the PRA. Cell phones were used with very limited effectiveness. Other back-up communications systems were available but were not written into the communications plan for this event (email, text, county 800 MHz, etc.).
Recommendation:	ALWAYS include back-up communications capabilities in written communications plans and provide copies of those plans to all players.
Area for Improvement 3:	Several evaluators noted frequent instances of confusing terminology.
Reference (if available):	HICS 2014; ICS 700, 100, and 200
Analysis:	Many times the response team that was receiving patients at the ED would refer to the person in charge of the receiving area as the "Incident Commander". The Incident Commander is in charge of the overall response and is located in the Incident Command Center. There was also confusion over the terms "ED Deck" and "ED Doc". This goes back to the premise that communications should be in plain text and use a common terminology.
Recommendation:	More training in HICS 2014; ICS 700, 100, and 200
Area for Improvement 4:	There was not an identified communications officer within the Incident Command Center.
Reference (if available):	Evaluator Observations
Analysis:	There was not an identified communications officer within the Incident Command Center. Whenever a phone rang, whoever was close to it

	answered it. Same with radio traffic.
Recommendation:	The recommendation was made that there should be a single person whose only responsibility is to answer the phones and radios. This could serve to substantially lower everyone's stress level.
LMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	
Reference (if available):	
Analysis:	

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Objective #4: Test the ability to track patients from the incident epicenter through the Patient Reception Area and to the final destination facility, while identifying critical issues and potential solutions, and validate hospital casualty reception/patient tracking data during an RITN activation using Joint Patient Assessment and Tracking System (JPATS).

Healthcare Preparedness Capability: Medical Surge	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	Incident Management Team asked for and received patient load manifest and used it for useful preplanning.
Strength 2:	Incident Management Team members did an excellent job of tracking patients inside of WFBMC on paper and dry erase boards when that need arose.
Strength 3:	The general layout and use of chalk to mark red, yellow, and green “zones” in the triage area was a great idea.
Strength 4:	The establishment of a 1-800 number to assist with patient reunification was also a great idea.
LMC	
Strength 1:	This objective did not apply to LMC
Strength 2:	
Strength 3:	
DMC	
Strength 1:	This objective did not apply to DMC
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	This was the first time that NDMS had set up a PRA at any location other than Charlotte/Douglas International Airport. It was also the first time they had set up in a tent. There were several stumbling blocks to overcome, but when all was said and done the NDMS team adapted and overcame very well.
Strength 2:	The American Red Cross was truly a collaborative player.
Strength 3:	State Medical Assistance Team members, NDMS personnel, and American Red

	Cross personnel worked well together to locate two “missing” persons; one was a family member the other a patient.
Strength 4:	NDMS Personnel recovered well from an early failure of the JPATS system.
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	As soon as the first group of patients arrived at Smith Reynolds Airport JPATS (the Joint Patient Assessment & Tracking System) failed.
Reference (if available):	The Joint Patient Assessment & Tracking System
Analysis:	As soon as the first group of patients arrived at Smith Reynolds Airport JPATS (the Joint Patient Assessment & Tracking System) failed. Although the NDMS staff were able to activate their contingency plan and enter patient information into JPATS, it never came back up in the WFBMC Incident Command Center and the Incident Management Team was not able to follow real time patient movement. Several members of the WFBMC team had received just in time training just a few days before the patient arrivals; however, none were familiar with the back-up process that was activated at the airport.
Recommendation:	Investigate the cause of the failure and add training on the contingency system for hospital personnel. Investigate the use of the WebEOC patient tracking board as an additional back-up to JPATS.
Area for Improvement 2:	Issues with the Electronic Medical Record
Reference (if available):	EPIC
Analysis:	Limitations on the use of the WFBMC Electronic Medical Record (EPIC) in a training/exercise environment had a direct negative impact on the ability of staff to communicate patient information between units. EPIC support staff explained that the issue is related to the software’s ability to process theatrical information in a test or training environment. The support team strongly agrees that the software would actually function better in a real world event.
Recommendation:	This is fine as long as it actually does work in a real world event; however, every effort should continue to be made to develop a way to realistically test the software’s ability to perform in a disaster response in order to provide reliable validation to the end users.
Area for Improvement 3:	As mentioned under Objective #1, the state Voice Interoperability Plan for Emergency Responders failed early in the exercise and was never recovered.
Reference (if available):	WFBMC Emergency Communications Plan, NCOEMS VIPER Protocol
Analysis:	Communication between the PRA and WFBMC were intended to occur on the State VIPER (Voice Interoperability Plan for Emergency Responders) System. As per NCOEMS VIPER Protocol two talk groups were reserved twenty four hours in advance; however, within 30 minutes of the arrival of the first patients at the PRA, the VIPER system failed. This pointed out a key failure in the planning process also; namely, the lack of a back-up communications plan for the PRA. Cell phones were used with very limited effectiveness. Other back-up communications systems were available but

	were not written into the communications plan for this event (email, text, county 800 MHz, etc.).
Recommendation:	ALWAYS include back-up communications capabilities in written communications plans and provide copies of those plans to all players.
Area for Improvement 4:	
Reference (if available):	
Analysis:	
Recommendation:	
LMC	
Area for Improvement 1:	This objective did not apply to LMC.
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	This objective did not apply to DMC.
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	
Reference (if available):	
Analysis:	

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Objective #5: Demonstrate the Triad Healthcare Preparedness Coalition's (HPC) ability to provide a Regional Healthcare Coordinating Center (RHCC) which coordinates a multidisciplinary local response to an event prompting the activation of the National Radiation Injury Treatment Network.

Healthcare Preparedness Capability: Medical Surge	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	The Incident Management Team used the RHCC very effectively to determine bed availability and capacity at surrounding regional hospitals.
Strength 2:	
Strength 3:	
LMC	
Strength 1:	There was no feedback from the evaluator on this objective
Strength 2:	
Strength 3:	
DMC	
Strength 1:	There was no feedback from the evaluator on this objective.
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	The RHCC team took full advantage of the time line of the event (incident occurred on Sunday, patient movement did not start until Wednesday) to fully activate and stand up the RHCC, including appropriate just in time training.
Strength 2:	The RHCC was able to establish clear objectives based on information provided by WFBMC
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	The RHCC was severely underutilized.

Reference (if available):	N/A
Analysis:	The RHCC was severely underutilized. WFBMC did make an effort to keep them informed and did run occasional queries for resource availability through them. It is significant to note that this was the first ever attempt in North Carolina to test the RHCC concept.
Recommendation:	A substantial amount of additional training needs to occur for the RHCC team. Likewise, a substantial amount of both training and marketing needs to occur with the regional partner hospitals about the role of the RHCC and the value it can bring to the table.
LMC	
Area for Improvement 1:	There was no feedback from the evaluator on this objective.
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	There was no feedback from the evaluator on this objective.
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	Regional hospital contact information was not accurate/up to date.
Reference (if available):	RHCC Regional Hospital Contact Lists
Analysis:	Regional hospital contact information was not accurate/up to date.
Recommendation:	Contact information should be updated on a regular basis. Multi-hospital system contact information should be organized in such a way that facilitates a single point of contact for all hospitals within the system.
PRA	
Area for Improvement 1:	
Reference (if available):	
Analysis:	

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Objective #6: Demonstrate a working understanding of regional, state, and federal ESF-8 plans and the responsibilities Wake Forest Baptist Medical Center and the Triad Healthcare Coalition have toward the successful activation of those plans.

Healthcare Preparedness Capability: Emergency Operations Coordination	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	All of the involved hospital command centers were able to communicate with each other in real time using the Polycom videoconferencing system.
Strength 2:	
Strength 3:	
LMC	
Strength 1:	LMC had been provided with accurate advanced intelligence concerning the incident and had taken full advantage of the lead time to be very well prepared.
Strength 2:	LMC maintained very close contact with the main campus.
Strength 3:	
DMC	
Strength 1:	The DMC Incident Commander was familiar with regional assets and did request and receive additional decon hardware from the Coalition.
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	The three hospitals appeared to be operating more as independent hospitals than as members of a common hospital system.
Reference (if available):	Evaluator observations.

Analysis:	Information was shared between the three hospitals on a regular basis, but direction/coordination from the main campus to the two satellite campuses was not obvious. The information sharing format was more of the satellite campuses informing the main campus about what they were doing rather than the main campus giving direction and coordination. This may have been attributable to the fact that the two smaller campuses were intentionally not over burdened with patients. (They are not designated RITN reception sites).
Recommendation:	More exercises and training in activating all three campuses simultaneously.
Area for Improvement 2:	No one involved in the exercise seemed to be aware of the regional, state, and federal ESF-8 plans.
Reference (if available):	Evaluator observations and participant feedback forms.
Analysis:	There was never any mention of ESF-8, and evaluators did not w=see any evidence of review or reference to ESF-8 plans. When quizzed, Incident Management Team members did not have a good understanding of the ESF-8 function at all.
Recommendation:	This is clearly a training failure. A familiarity with the National Response Framework and the Emergency Support Function Annexes should be included in future Incident Management Team training.
LMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
DMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	
Reference (if available):	
Analysis:	

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Healthcare Preparedness Capability:

Healthcare Preparedness Capability: Medical Surge	
Strengths	The full (or partial) capability level can be attributed to the following strengths:
Main Campus	
Strength 1:	No additional findings.
Strength 2:	
Strength 3:	
LMC	
Strength 1:	
Strength 2:	
Strength 3:	
DMC	
Strength 1:	
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	No additional findings
Reference (if available):	
Analysis:	
LMC	
Area for Improvement 1:	
Reference (if available):	

Analysis:	
DMC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	
Reference (if available):	
Analysis:	

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Additional Findings/Observations/Comments

Main Campus	
Strength 1:	"The overall demeanor of the entire hospital staff was pleasant, professional, and prepared. Although exercises can be extremely stressful and often times an additional burden to all staff, there was a clear sense that everyone understands the importance and value of such exercises."
Strength 2:	"Consistent and overarching teamwork within and across all units was observed."
Strength 3:	"The ability to overcome technology failures was well noted. In today's world with everything being so dependent upon programs, systems, and applications, it is assuring to know this facility was able to revert to other methods when technology failed."
LMC	
Strength 1:	
Strength 2:	
Strength 3:	
DMC	
Strength 1:	
Strength 2:	
Strength 3:	
RHCC	
Strength 1:	
Strength 2:	
Strength 3:	
PRA	
Strength 1:	
Strength 2:	
Strength 3:	
Areas for Improvement	The following areas require improvement to achieve the full capability level:
Main Campus	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
LMC	
Area for Improvement 1:	Need for additional training.

Reference (if available):	Evaluator Observations
Analysis:	See Recommendation
Recommendation:	From the evaluator: "My recommendations are to provide this remote location more training. They had a very good idea of what to do, but the actual technique needs some practice. This would be a common occurrence at likely most facilities anywhere unless this is a common event. I suggest they work in quarterly training with the Ludlum in order to properly detect radiological emergencies. This training would not have to be extensive, but basically proper use such as how far to scan away from the body, the speed of the scan, and to make sure the bottoms of feet are scanned. I also suggest training more personnel on these operations as numbers have dropped due to personnel loss. It may also be beneficial to make sure there are enough operational people on duty during the night when working on a skeleton crew or have a viable plan for callbacks or resources."
DMC	
Area for Improvement 1:	Need for additional training
Reference (if available):	First Receiver Decon Training
Analysis:	See Recommendation
Recommendation:	From the Evaluator: "The people doing decon did not have on boots and they did not have replacements. Since this scenario involved patients arriving at will the situation would last much longer than the exercise allotted. Considering the heat and humidity those workers should have been on a better rotation. The man doing the radiation screening was not wearing PPE and allowed patients to lean on him. These patients had not been deconned so it is possible that he could have become contaminated. He also didn't screen the finger tips or the toes when using the Ludlum meter. I would have liked to see the hospital staff move away from the "exercise" mentality and physically do what they would have normally done instead of explaining to us what they would do."
RHCC	
Area for Improvement 1:	
Reference (if available):	
Analysis:	
PRA	
Area for Improvement 1:	Early in the exercise a decision was made at the PRA to send several "red" patients to the hospital on a passenger bus.
Reference (if available):	HSEEP
Analysis:	Early in the exercise a decision was made at the PRA to send several "red" patients to the hospital on a passenger bus. This created an overarching tone of confusion and lack of faith in the exercise design on the parts of both players and evaluators. This basically amounts to the creation of an ad-hoc inject and while HSEEP does allow for ad-hocs, there is a very specific process for doing so and that process was not adhered to.
Recommendation:	In future exercises make it very clear that the use of ad hoc injects must be

	in compliance with HSEEP. Each venues controller should also carry that message to the various venues.

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CONCLUSION

With over two hundred participants from ten organizations across central North Carolina and beyond, there was a genuine opportunity to learn, make mistakes, and establish important relationships between organizations. The universal perspective of participants was that there were lessons learned and a need for many to adjust organizational emergency operations plans to account for needed improvements.

There exercise was organized and facilitated in such a manner so as to promote comprehensive and in-depth discussions about actual response plans and capabilities.

The success of any training exercise is gauged by the lessons learned and the improvements implemented. Consequently, the exercise accomplished what it was designed to accomplish. Weaknesses were identified and areas for improvement were noted. The implementation of the prescribed improvement plan should further enhance our preparedness for a large scale event. We will continue to train, test procedures, conduct exercises and refine plans in an effort to offer the best response possible to a major catastrophic event.

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Wake Forest Baptist Medical Center as a result of the RITN Full Scale 2015 conducted on July 26 thru 29, 2015

Healthcare Preparedness Capability	Issue/Area for Improvement	Corrective Action	Capability Element[1]	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Healthcare Preparedness 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

Participating Organizations
Federal
Salisbury NC Federal Coordinating Center (NDMS)
Radiation Injury Treatment Network
State
Healthcare Organizations
Wake Forest Baptist Medical Center
Forsyth County EMS
Triad Healthcare Coalition
VHA Office of Emergency Management
Other Organizations
Davidson Community College
Surry Community College
American Red Cross
Winston-Salem, Forsyth County Emergency Management