A·A·R·I·P

After Action Report / Improvement Plan

University of Colorado Hospital

UNIVERSITY OF COLORADO HEALTH

UC Health System - August 2015 RITN Exercise

Full Scale Exercise (FSE)
University of Colorado Hospital
August 7, 2015

INDEX

1.1 - EXECUTIVE SUMMARY

This exercise was a challenging one as it encompassed multiple days across multiple sites. It was also the largest influx of patients that UCHealth has ever managed. The partnership with the National Disaster Medical System and the presence of high-level observers from the National Marrow Donor Program was also a first. In particular it should be noted that this is one of three national level exercises that NMDP funded for 2015.

The Hospital Command Center role began on T – 6 days when messages started to be received. As the Exercise Director would have a significant real-world role for this incident he was allowed to facilitate briefings and other support activities in a limited fashion.

This exercise also contemplated some level of System Coordination Center to maintain situational awareness across all regions. This objective did not fully play out so additional work will be required..

A full Plan-D activation of the Hospital Command Center also took place via overhead announcement and Everbridge Alerts. These alerts were preformatted and developed to limit inadvertent messaging.

This was by far the most ambitious exercise ever conducted by UCH or UCHealth. The staff involvement was exceptional and the enthusiasm that they showed for participating in the exercise extraordinary. Since the grant process allowed us to staff the exercise at a reasonable level of realism the resulting lessons learned will be much more applicable to future events.

Probably the most important thing to keep in mind with respect to future planning is to look beyond the particulars of this exercise and apply the lessons learned more generically. It would be easy to develop an action item that is narrowly focused on this scenario. What is more difficult though is to look at opportunities to develop systems and processes that would be effective in most any type of scenario. This typically requires more up front planning however it pays off in the long run.

2.1 GENERAL INFORMATION

Exercise Location:	**University of Colorado Hospital**
Exercise Type / Classification:	**Full Scale Exercise (FSE)**
Exercise Start Date:	**August 7, 2015**
Exercise Start Time:	**0700**
Exercise End Date:	**August 12, 2015**
Exercise End Time:	**1300**
Duration of Exercise:	**5 Days**
EOC / CC Activation:	**Full**

2.2 EXERCISE POSITIONS AND PARTICIPANTS LIST

SENIOR CONTROLLER: Patrick Conroy

Inject Controllers

Name	Simulated Organization / Position	Phone
Tim Klippert	UCHealth - North	(970) 988-5324
Cindy Corsaro	UCHealth - South	(719) 244-7088
Patty Bolling	UCH - ED	
Christine Koch	UCH - BMT (Ambulatory)	
Lindsey McMenimen	UCH - BMT (Ambulatory)	
Jamie Nordhagen	UCH - BMT (Inpatient)	
Denise Bowers	UCH - Hospital Command Center	
Paige Patterson	UCH - Hospital Command Center	
Eric Freed	UCH - ED	
Charles Little	UCH - General	

Safety Officers

Name	Email	Phone
Connie OFlynn	connie.oflynn@uchealth.org	(719) 440-3130
Steve Eberle	steve.eberle@uchealth.org	(970) 689-6936
Jack Oliver	john.oliver@uchealth.org	(720) 848-1297

Evaluators

Name	Location	Phone
Hospital Command Center	HCC	
IS Epic Team	General	
Inpatient BMT Team	General	
Outpatient BMT Team	General	

Volunteers / Mock Patients / Simulators

Organization	POC	Phone
NDMS	Roger Rewerts	(303) 919-4139

Players

Organization	POC	Phone
UCH ED	Patty Bolling	
UCH Cancer Center	Jamie Bachman	
UCH Hospital Manager	Nicole Taracena	
UCH Security	Bryan Green	
UCH BMT Program	Christine Koch	
Bonfils Blood Center	TBD	
Tri-County Health	Sara Garrington	
Aurora OEM	TBD	
Adams County OEM	TBD	
CDPHE	Aubrey Kukral	
UCH Public Relations	Dan Weaver	

Observers

Area Observing	POC	Phone
All	RITN Control Cell (2 Staff)	
All	HHS Region 8 Staff	
All	HHS ASPR (2 staff)	

3.1 OBJECTIVES

The objectives listed below have been approved by the planning team. These objectives provide the foundation from which the exercise scenario is developed.

Phase 1: RITN Control Cell Alert Briefing:

Evaluate the ability of UCH to conduct and initial briefing in response to an RITN Control Cell alert regarding a catastrophic incident.

Target Capability:Planning: All	**Critical Element:Resources & Assets**

Phase 1: RITN Control Cell Alert Partner Integration:

Evaluate the ability of UCH to incorporate other UC Health sites and external partners in the initial briefing process. Note: Common objective for all UC Health sites.

Target Capability:Planning: All	**Critical Element:Communication**

Phase 1: RITN Control Cell Alert Objectives Development:

Evaluate the ability of UCH to establish initial incident objectives in response to information being received from the RITN Control Cell.

Target Capability:Planning: All	**Critical Element:Communication**

Phase 2: FCC Denver Alert HCC Structure:

Evaluate the ability of UCH to establish a Hospital Command Center structure in response to an activation request received by FCC Denver. Note: Common objective for all UC Health sites.

Target Capability:Planning: All	**Critical Element:Staff Roles & Responsibilities**

Phase 2: FCC Alert HCC IAP Development:

Evaluate the ability of UCH to prepare an Incident Action Plan in response to an activation request received by FCC Denver. Note: Common objective for all UC Health sites.

Target Capability:Planning: All	**Critical Element:Communication**

Phase 2: FCC Alert Reception Site Support:

Evaluate the ability of UCH to respond to a request from FCC Denver for specialized clinical support at the patient reception site.

Target Capability:Planning: All	**Critical Element:Patient Clinical & Support Activities**

Phase 2: FCC Alert System Coordinator Center Plan:

Evaluate the ability of UCH to establish a plan for activation of a UC Health System Coordination Center (SCC) in response to anticipated patient arrival.

Target Capability:Planning: All	**Critical Element:Communication**

Phase 2: FCC Alert Outpatient Logistics Planning:

Evaluate the ability of UCH to develop a plan for the receipt of and housing of large numbers of outpatients as a result of the incident. Note: Common objectve for all UC Health sites.

Target Capability:Planning: All	**Critical Element:Resources & Assets**

Phase 2: FCC Alert Communications Planning:

Evaluate the ability of UCH to identify and implement virtual or other communications links with relevant internal and external partners. Note: Common objective for all UC Health sites.

Target Capability:Planning: All	**Critical Element:Communication**

Phase 2: FCC Alert Patient Tracking Plan:

Evaluate the ability of the UCH SCC to develop a plan for centralized tracking of patients and families in response to the incident.

Target Capability:Planning: All **Critical Element:Communication**

Phase 2: FCC Alert External Resource Planning:

Evaluate the ability of UCH to identify external public/private resources that may need to be integrated into the UCH HCC structure. Note: Common objective for all UC Health sites.

Target Capability:Planning: All **Critical Element:Resources & Assets**

Phase 3: Patient Reception Site Support:

Evaluate the ability of UCH staff to integrate specialized clinical staff into patient reception site activities.

Target Capability:Ops. Coord./All **Critical Element:Patient Clinical & Support Activities**

Phase 3: Patient Tracking:

Evaluate the ability of UCH to utilize data being received from the reception site from EMTrack or other sources to manage patient flow. Note: Common objective for all UC Health sites

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

Phase 3: Patient Receipt and Triage:

Evaluate the ability of all UC Health sites to receive and process patients. Note: Commn objective for all UC Health sites

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

Phase 3: Patient Registration:

Evaluate the ability of all UC Health sites to effectively register and track patients within their facilities. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Communication**

Phase 3: Logistical Coordination:

Evaluate the ability of UC Health sites to identify critical and essential supply and other logistical issues. Note: Common objective at all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Resources & Assets**

Phase 3: Behavioral Health:

Evaluate the ability of all UC Health sites to provide behavioral health support to patients and their families. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

Phase 3: Medical Supplies:

Evaluate the ability of all UC Health sites to provide adequate medical supplies and staff resources in response to patient flow. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Resources & Assets**

Phase 3: SCC Situational Assessment:

Evaluate the ability of the SCC to maintain a single common operating picture of all patient flow activities across the system.

Target Capability:Situational Assessment: Resp.	**Critical Element:Communication**

Phase 3: External Partner Communications:

Evaluate the ability of the UCH HCC to disseminate situational status information and resource needs to external emergency management partners. Note: Common objective for all UC Health sites.

Target Capability:Operational Comm.: Resp.	**Critical Element:Communication**

Phase 3: Public Information:

Evaluate the ability of UC Health to integrate public information needs and messaging with external emergency management partners in a JIC environment. Note: Common objective for all UC Health Sites

Target Capability:Public Info. & Warning: All	**Critical Element:Communication**

Phase 3: 211 Integration:

Evaluate the ability of UC Health to participate in establishing a family reunification process in conjunction with 211. Note: Common objective for all UC Health sites.

Target Capability:Public & Private Services & Resources: Resp.	**Critical Element:Communication**

4.1 SCENARIO

Last week the world was shocked to hear that uncontained radioactive material was found on four public transit trains of the Big City Transit Authority. Authorities believe that the radioactive sources are from construction diagnostic tools stolen 18 months ago. There are no confirmed suspects at this time, but a radical group calling themselves the Big City Liberation Party has claimed responsibility.

Authorities are uncertain exactly how long the radioactive sources were on the trains. However they do know it is no more than three weeks since all trains were swept with Geiger counters during a Big City law enforcement exercise three weeks ago. The exercise identified the need for radiation detection devices, the radioactive sources were discovered during the installation of these fixed radiation detection devices. The radioactive sources were disguised as seat support components, and had some shielding surrounding the devices to reduce the visibility to radiation monitors.

The Big City Transit Authority is a metropolitan transportation system that has an average daily (business day) ridership of 1 million passengers. Many of these passengers travel from suburban locations resulting in 30-45 minute train rides.

In light of the thousands of travelers of the transit system that are concerned about their potential exposure, Big City immediately launched a massive radiation education campaign. Despite this education campaign, hospitals in the greater Big City region are overwhelmed with walk in patients that are concerned that sniffles, bumps and bruises are radiation related.

Several thousand victims have been identified as having some level of Acute Radiation Sickness (ARS). As a result of the release a federal disaster is declared and RITN and NDMS are activated. FCC Denver is notified that approximately 200 patients will be transported to Denver. The initial estimate is that approximately 20 of these patients will require inpatient care of some level and 180 will be ambulatory outpatient candidates.

Upon receipt of the RITN alert UCH convenes a planning meeting to evaluate current and future capabilities (Exercise Phase 1). This session includes activation of system level coordination function as it is anticipated that ambulatory patients will be transported to Fort Collins and Colorado Springs for admission, assessment, and care planning. All initially identified inpatients are expected to be transported to UC Health (North, Central and South) and Presbyterian/St. Lukes. Additional lower acuity patients will be transported to other Metro Area NDMS participating hospitals. FCC Denver is included in this initial discussion to determine if subject matter expertise is anticipated at the patient reception site.

Upon receipt of the FCC Denver alert notice and anticipated patient counts UCH fully activates their Hospital Command Center in coordination with UC Health North (Poudre) and UC Health South (Memorial). Local OEM, in particular Tri-County Health Department and the Colorado Department of Health Operations Center, are incorporated into the planning discussion. (Exercise Phase 2)

Upon receipt of the patients those that are non-ambulatory or inpatient candidates are transported to UCH. Busloads of ambulatory outpatient status level victims are sent to UCH, Poudre and Memorial. (Exercise Phase 3)

Exercise Timeline

Phase 1:

T minus 6 days: RITN Control Cell notifies RITN Transplant Centers of possible event. HC Standard Capability Assessment submitted.

UCH conducts initial briefing on capabilities assessment and readiness objectives. Briefing includes UC Health North and UC Health South representatives, FCC Denver, Tri-County Health Department, City of

Aurora, Adams County, Colorado Department of Health and Colorado Division of Emergency Management.

Phase 2:

T minus 48 hours: FCC Denver issues alert order for activation of NDMS and confirmation of inbound patients within 48-hours..

T minus 24 hours: FCC Denver issues activation order and confirms that patients will be received at the DIA Reception Site on the morning of Wednesday, August 12th. It is also confirmed that FCC Denver is requesting clinical assistance at the reception site - at least one physician or PA and one specialty RN

UCH conducts additional briefing on incident objectives, HCC structure, IAP preparation, etc. Briefing participants are same as above.

Phase 3:

Event Date

- **Phase 3A:**
- **Patients received and processed at Reception Site per standard FCC Denver process.**
- **Phase 3B:**
- **Inpatients and outpatients transported to UCH.**
- **Phase 3C:**
- **Bus load of outpatients assigned to UC North.**
- **Phase 3D:**
- **Bus load of outpatients assigned to UC South.**

Note: Exercise scope will include RITN patients being transported to Presbyterian/St. Lukes and Rocky Mountain Hospital for Children along with other Metro Area NDMS Centers. These aspects of the exercise will be managed between FCC Denver and those facilities and will not be within the scope of the UC Health participation.

4.2 MET OBJECTIVES

The items listed below are the objectives that were met during the course of the exercise. Included are observations made by evaluators.

Phase 1: RITN Control Cell Alert Objectives Development:

Evaluate the ability of UCH to establish initial incident objectives in response to information being received from the RITN Control Cell.

Target Capability:Planning: All **Critical Element:Communication**

Within the UCH Emergency Operations Plan each functional or incident specific annex contains pre-defined Incident Objectives. As part of this exercise those objectives were reviewed to insure they were still applicable to this type of event.

Phase 1: RITN Control Cell Alert Partner Integration:

Evaluate the ability of UCH to incorporate other UC Health sites and external partners in the initial briefing process. Note: Common objective for all UC Health sites.

Target Capability:Planning: All **Critical Element:Communication**

Local OEM partners were included in all pre-exercise communications. Productive e-mail exchanges took place regarding the potential OEM role based on this scenario type. This included local public health who is our designated ESF Lead agency, local OEM, and State OEM.

Phase 1: RITN Control Cell Alert Briefing:

Evaluate the ability of UCH to conduct and initial briefing in response to an RITN Control Cell alert regarding a catastrophic incident.

Target Capability:Planning: All **Critical Element:Resources & Assets**

Standard UCH pre-alert and briefing process utilized. Only consideration would be what additional subject matter experts need to be added to the initial call/meeting. In this case ambulatory and nursing leadership were included but some of the operational staff that would have had a large role in a real-world incident are not in this group. For the drill these additional personnel were added to the alert so it worked well but for another type incident we need to remember to add these other staff at the time.

Phase 2: FCC Denver Alert HCC Structure:

Evaluate the ability of UCH to establish a Hospital Command Center structure in response to an activation request received by FCC Denver. Note: Common objective for all UC Health sites.

Target Capability:Planning: All **Critical Element:Staff Roles & Responsibilities**

This objective ended up being folded into the RITN Control Cell objective as the FCC Alert was received prior to that planning discussion thus only the one call actually occurred. Limited ability for a truly objective evaluation on this as a number of these positions were pre-designated through the planning process. A discussion did take place as part of the briefing as to what essential HICS positions would need to be filled.

Phase 2: FCC Alert Patient Tracking Plan:

Evaluate the ability of the UCH SCC to develop a plan for centralized tracking of patients and families in response to the incident.

Target Capability:Planning: All **Critical Element:Communication**

The normal tracking plan utilizing Epic and Tele-Tracking was to be utilized for this exercise across the system. From a Hospital Command Center perspective this plan was appropriate. From an actual implementation perspective there were issues encountered that will be discussed in the IS evaluation section of the AAR.

Phase 3: 211 Integration:

Evaluate the ability of UC Health to participate in establishing a family reunification process in conjunction with 211. Note: Common objective for all UC Health sites.

Target Capability:Public & Private Services & Resources: Resp. **Critical Element:Communication**

All patients were entered into EMTrack at the reception site and EMResource alerts were received by multiple methods. The status on all patients was also updated in EMTrack without difficulty.

Phase 3: Behavioral Health:

Evaluate the ability of all UC Health sites to provide behavioral health support to patients and their families. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

It was identified that the behavioral health component would be significant for this type of event and it functioned well. The scope was fairly narrow for this event but was challenge due to the briefing and realistic actions being taken by the "patients". It was noted that Security was able to help with some of these patients due to their training in patient de-escalation techniques. Beyond the scope of the exercise it was noted that Behavioral Health would be one facet of the much larger Patient/Family Support Branch which realistically should include UCH staff as well under a single umbrella. For the purposes of this exercise thought his objective will be considered as "met" as the larger development efforts for this Branch are already underway.

Phase 3: Behavioral Health:

Evaluate the ability of all UC Health sites to provide behavioral health support to patients and their families. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

Same basic comments as inpatient objective. In general though it is anticipated that this area will require more resources given the larger number of patients and the increased logistical issues involved in managing them on a longer term basis.

Phase 3: External Partner Communications:

Evaluate the ability of the UCH HCC to disseminate situational status information and resource needs to external emergency management partners. Note: Common objective for all UC Health sites.

Target Capability:Operational Comm.: Resp. **Critical Element:Communication**

This was also not fully exercised beyond the utilization of EMTrack. This is judged as an exercise artificiality though. Practical experience has demonstrated that WEBEOC and EMSystem is a viable communications tool and has been used effectively in the past. Nothing in this exercise was seen that should require any new initiatives on the part of UCH.

Phase 3: Medical Supplies:

Evaluate the ability of all UC Health sites to provide adequate medical supplies and staff resources in response to patient flow. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Resources & Assets**

No issues were identified. It was noted that the existing ED Disaster carts could be moved directly to a surge area if needed.

Phase 3: Logistical Coordination:

Evaluate the ability of UC Health sites to identify critical and essential supply and other logistical issues. Note: Common objective at all UC Health sites.

Target Capability:Public Health & Med Services: Critical Element:Resources & Assets Resp.

The Clinical Lab was prepared to coordinate with Bonfils Blood Center and ClinImmune as needed and had engaged in those conversations prior to the exercise. A need was identified related to the availability of additional inpatient beds or gurneys in response to patient surge. An example would have been doubling or tripling beds in the PACU is response to the surge. While there is a plentiful supply of cots available for some patients this is not an optimal solution for inpatients, especially since we still would have had an inpatient environment that we could have surge them to. This was discussed during the drill with Logistics and a count received.

Phase 3: Logistical Coordination:

Evaluate the ability of UC Health sites to identify critical and essential supply and other logistical issues. Note: Common objective at all UC Health sites.

Target Capability:Public Health & Med Services: Critical Element:Resources & Assets Resp.

There were no essential or critical medical supply issues identified. One minor issue related to the number of available hospital beds was discussed. This was somewhat artificial due to the much higher number of "inpatient" admissions that occurred and the speed that they were processed and moved to the floors. It is highly unlikely that this would occur this rapidly in a real-world situation thus the planning time would be extended. The extra transporters did prove invaluable in being able to move this volume of patients as quickly as we did. There were only one specific observations related to issues for the patients that were in the PACU. Additional support was needed in order to rpovide Pyxis access for nurses working in that area. The only other logistical issues were related to the crowding of the room and the need to be able to move patients to other area s- for example a Patient/Family Support room where the outpatient housing/transportation planning would be done.

Phase 3: Patient Receipt and Triage:

Evaluate the ability of all UC Health sites to receive and process patients. Note: Commn objective for all UC Health sites

Target Capability:Public Health & Med Services: Critical Element:Patient Clinical & Support Activities Resp.

For the outpatients that were received in the Conference Rooms the process worked pretty well. Registration was occurring quickly however the disconnect between the patient cards that were supplied to the FCC Denver staff and the triage tags/moulage that the patients came in with created significant confusion for some time. The vital sign stations also worked well. The space management issues and care team staff have previously been identified and apply to the outpatient team as well.

Phase 3: Patient Registration:

Evaluate the ability of all UC Health sites to effectively register and track patients within their facilities. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Critical Element:Communication Resp.

The ED disaster registration process worked well and multiple patients were registered very quickly. The use of the disaster attribute button does need to be more consistent however it can be added after registration if needed.

Phase 3: Patient Registration:

Evaluate the ability of all UC Health sites to effectively register and track patients within their facilities. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Communication**

The basic patient registration process worked well and patients were quickly brought through for assessment. Consideration does need to be made regarding use of the pre-made disaster packets. The pro is that the first west of labels are already printed, the con is that it is going in under a generic disaster name instead of the patients real name. This will be addressed by the IS Team.

Phase 3: Public Information:

Evaluate the ability of UC Health to integrate public information needs and messaging with external emergency management partners in a JIC environment. Note: Common objective for all UC Health Sites

Target Capability:Public Info. & Warning: All **Critical Element:Communication**

The PIO function for this drill was very robust with multiple PIO's present. Internal and external messaging was discussed and implemented. There were also multiple injects related to public information that were responded to appropriately.

4.3 UNMET OBJECTIVES

The items listed below are the objectives that were not met during the course of the exercise, or that need improvement. Included are observations made by evaluators.

Phase 2: FCC Alert HCC IAP Development:

Evaluate the ability of UCH to prepare an Incident Action Plan in response to an activation request received by FCC Denver. Note: Common objective for all UC Health sites.

Target Capability:Planning: All **Critical Element:Communication**

This objective was not fully met. For an event that is essentially pre-planned, which would be true in an NDMS or RITN scenario it should be relatively easy to develop a full IAP in advance. The use of HICS forms has never been implemented consistently at UCH. Historically this has not been a significant issue however as incidents grow in complexity and size this will become more important.

Phase 2: FCC Alert Outpatient Logistics Planning:

Evaluate the ability of UCH to develop a plan for the receipt of and housing of large numbers of outpatients as a result of the incident. Note: Common objectve for all UC Health sites.

Target Capability:Planning: All **Critical Element:Resources & Assets**

This was discussed briefly and conceptually however no definitive plan was developed. From an all-hazards perspective this needs to be fully developed as a function of the Patient/Family Support Branch Director position. Additional planning with CDPHE on how EMTrack would be utilized to support this activity also needs to occur.

Phase 2: FCC Alert Patient Tracking Plan:

Evaluate the ability of the UCH SCC to develop a plan for centralized tracking of patients and families in response to the incident.

Target Capability:Planning: All **Critical Element:Communication**

With the use of EMTrack validated it will serve as the initial tool for patient tracking as it has visibility across the UCHealth System. It was also validated that Epic and teletracking is capable of tracking patients across the system once we receive them. Regarding tracking of families this is capable of being done with EMTrack. This will take further development and practice which will need to be coordinated with CDPHE.

Phase 3: Medical Supplies:

Evaluate the ability of all UC Health sites to provide adequate medical supplies and staff resources in response to patient flow. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Resp. **Critical Element:Resources & Assets**

This will be more challenging then the inpatient side given the lack of existing infrastructure. The ED Disaster carts are an option that would be easily moved to this type of care area. The pre-ordered Owens and Minor disaster pods are also available although we may want to look at the inventory to make sure that it will work for more of an all-hazards scenario than a typical MCI.

Phase 3: SCC Situational Assessment:

Evaluate the ability of the SCC to maintain a single common operating picture of all patient flow activities across the system.

Target Capability:Situational Assessment: Resp. **Critical Element:Communication**

This objective was not adequately exercised as part of the drill thus is being classified as unmet. This is primarily a resource issue at this point relative to staffing an additional coordination center.

Phase 3: SCC Situational Assessment:

Evaluate the ability of the SCC to maintain a single common operating picture of all patient flow activities across the system.

Target Capability:Situational Assessment: Resp. **Critical Element:Communication**

This objective was discussed however no formal implementation occurred during the exercise. This was due to a combination of exercise logistics, issues related to registration and the disaster attribute, and issues related to rooming patients virtually. The after action component related to this will be identified in another objective. While the majority of the Common Operating Picture will be driven by information flowing from Epic there will likely be other components that will become important. This would be critically important if we are talking about an event that is impacting UCHealth facilities where we have staff, logistical or infrastructure impacts. It will become even more important in a COOP incident. The AAR items for these areas will revolve around SITREP formats, etc.

Phase 3: Patient Receipt and Triage:

Evaluate the ability of all UC Health sites to receive and process patients. Note: Commn objective for all UC Health sites

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

This objective is primarily concerned with the ability to manage patients once they are registered into the Epic system. There were three major issues identified: Patient rooming: A more defined and consistent process needs to be developed regarding patient assignments to "virtual" rooms. These may be extra beds in the PACU or ED or "beds" in a conference room. This will be essential in being able to follow patients throughout the hospital. Patient admissions: there needs to be a more efficient process for rapidly admitting patients to the hospital. This is critical when patients are being rapidly moved out of the ED registration environment to an area where in-patient care teams could be managing the patient. A burn-surge scenario is an example of where this would be important. Work Flows: the admission issue is essential to inpatient teams benign able to access their inpatient work flows. The same would hold true for ED work flows and potentially outpatient work flows. Additional discussion also needs to take place regarding potential additional disaster order sets.

Phase 3: Patient Receipt and Triage:

Evaluate the ability of all UC Health sites to receive and process patients. Note: Commn objective for all UC Health sites

Target Capability:Public Health & Med Services: Resp. **Critical Element:Patient Clinical & Support Activities**

There needed to be a better reception process for the patients arriving by bus. Suggestion is a provider going to the bus and pulling the patients out a small group at a time. This would prevent them stacking up at Security and would reduce the overall confusion. Room utilization needs to be looked at also. For specialized patients such as the RITN scenario sending potential outpatients to the 2nd floor made some sense, however from an all-risk perspective designating a consistent location for any and all event types is probably a better option. The Conference Center is the best option given proximity to the ED plus the availability of the two smaller rooms for break-out purposes. Patient care teams need to be better organized as well, especially the medical staff. This could be as simple as ICS type vests to delineate positions and roles.

Phase 3: Patient Registration:

Evaluate the ability of all UC Health sites to effectively register and track patients within their facilities. Note: Common objective for all UC Health sites.

Target Capability:Public Health & Med Services: Critical Element:Communication Resp.

Covered in prior objective. Need to expand for outpatient populations though given the high probability that they will be discharged with clinic referrals. This will require assessment of the outpatient registration process and whether it can be coordinated with the inpatient and ED processes for disaster management.

Phase 3: Patient Tracking:

Evaluate the ability of UCH to utilize data being received from the reception site from EMTrack or other sources to manage patient flow. Note: Common objective for all UC Health sites

Target Capability:Public Health & Med Services: Critical Element:Patient Clinical & Support Activities Resp.

This objective was met in theory from a system perspective. There was a plan in place to allow for tracking of patient across the system however there were a few IS issues that were encountered that will be discussed in the IS section. In an NDMS scenario also we would have the NDMS Patient Assistance Teams on the ground with us to provide this capability. From an all-hazards point of view though EMTrack could have been used to track patients and their families after discharge as an outpatient or outright release. As UCH does not have in depth in terms of EMTrack utilization and as we have never used it to the extent that this objective was contemplating the overall objective is classified as unmet until further development work can be completed.

5.1 EVALUATOR NOTES - OTHER OBSERVATIONS

The items listed below are observations notes made by evaluators.

Target Capability:Ops. Coord./All **Critical Element:Staff Roles & Responsibilities**

The space in the Hospital Command Center was inadequate for this level of operation. Consideration needs to be given with regards to breakout work areas, additional technology, and operational effectiveness. The issue is however that the most appropriate current space options are likely to be the best options for a surge treatment are as well. This overall space planning issue will be combined with the clinical space planning AAR item.

5.1 EVALUATOR NOTES - ADDITIONAL NOTES

The items listed below are and notes made by evaluators.

The development of a System Coordination Center needs to be combined with the concept of a System Senior Policy Group and delineation of roles and responsibilities taken into consideration.

5.2 DEBRIEF NOTES

All hotwash notes were captured in the individual functional evaluation comments.

5.3 EXERCISE PARTICIPANT / DEPARTMENT EVALUATION NOTES

Notes made by scribe in Command Center during the exercise.

8/12/15 Radiation Event Exercise

8:30am Drill Called

ICU Bed availability & confirmed d/c

8:49: Social media –tweets from wife regarding a fundraising event for husband, a patient's arrival at UCH, media got word, wife meeting husband at hospital (drove separately)

- **Kelly will find the wife, put her in a room to speak with her and find out what she needs**
- **PR meet with media**
- **Media cannot shoot in hospital, PR check releases & get consent, Media shoot outside**
- **Call security and specific units where pts will go –have them on lookout for media**
- **System wide email from internal communications**
    - **Privacy reminder**
        - **Dear Staff,**

Please be advised that there are reports of media reports of UCHealth receiving a large number of patients who have been exposed to radiation. UCHealth is prepared and fully equipped to safely care for these patients without causing harm to our staff, patients and visitors. As a reminder, please observe HIPAA privacy practices by:

- Not discussing ANY patient information among staff

- Not discussing ANY patient information with members of the public

- Directing all media or general inquiries to the Media Relations line or our Media Relations spokesman at INSERT PHONE LINE and INSERT EMAIL ADDRESS.

- If you see a member of the media in a patient care area, alert security immediately at INSERT PHONE LINE.

Please be on the lookout for further email communications and refer to The Source for more information.

Thank you for your assistance in ensuring our patients receive quality care during this emergency situation,

UCHealth Executive Team

- **Utilize radiation safety specialist**
    - **Staff safety**
- **Everbridge**
- **Outside line for general public –NEED: IT at table to help with this (9:30am, called IT to come to command center)**

8:55 Met with hosp manager to determine d/c and bed availability, by 2pm 44 dcs in med surg, 26 icu –would work with charge nurses regarding pt placement and bed availability

- **Looked at pts, where they are, what is available**

- 2 units with 2nd charge nurses, both go to ED
- Call to manager for professional resources to pull educators to help, cancel classes
- 5 pts transferred to hospital- appropriate to reroute and not come in?

9:05 Co state police, groups around country organizing protests in major cities- anti radiation

- Expert on staff –hospital and community is safe

9:12 Bus arrives, process pts in ED

- ED volume: holding 5 inpatients, 49 total pts
- Green (11) to conference room, yellow (19) to triage in ED
- Transport in ED to take pts up to conference room
- ED disaster cart to PACU

9:24 24 patients going to ambulatory

9:35 Onc manager updated on disaster/emergency

9:35 french speaking pt coming in by ambulance

- Translator phone or call agency for translator –contact through ED
- Need: list of staff members who speak French

9:38 Media pagers ringing off hook, donations coming in, VIP wanting to visit pts

- Deploy security, pull service excellence people for crowd control, public info people
- Script for staff to know what to say

9:47 conference room crowded, cannot take more pts

- 20 pts waiting, 5 people in triage
- Where else would we be able to triage?
    - Ambulatory, ED, Conference Center
        - A&B open for triage
        - C&D registration
- Do we need to simulate a waiting area for obs pts
    - Move pts to another area, conference room
    - Staff with physicians, nurses, case mgmt, social work, chaplains

9:58 Public is worried, call Aurora Safety

- Radiation Safety Expert
- Key talking points for staff
    - Reassure pts to make them feel safe
- Staff is safe, no current radiation risk –communicate to staff & reassure safety

10:13 No beds or pixis in THRU, SSU/PACU holding has 16 rooms & have pixis

- 11 beds if OR not operating
- 7 stretchers

10:18 Pt in holding would like to go back to Red Cross to be with family

- Call social work to help coordinate transportation

10:20 Gov called, would like a tour and press conference

- **Would have press conference, will contact gov and loop him in**
- **Tour: commander or chief clinical officer –Carolyn or Tom**
    - **Talk to pts/family members prior to gather releases & authorization**
    - **Take Gov to only those pts/families**

10:30 Family posted on social media, would like to interview pt, pt agreed

- **Multiple news outlets want to do interview**
- **Condition of pt? talk to nurse to make sure pt is okay to do interview**
- **HIPAA form to pt**
- **Move pt to conference room –away from pts**
- **Pool camera situation**
    - **2 stories set up per day**
    - **Send email to reporters with expectations**

10:31 People from outside would like to donate resources/time

- **Call Center resources, Service Excellence staff**

10:48 Second bus arrived

- **8 pts all yellow**

10:50 & 11:05 Two helicopters coming in -1 pt to burn, 1 to I&d

- **Bed availability**
- **Security**

10:53 Memorial called asking to transfer a pt

- **Yes if physicians accept & we have a room**

10:58 Tim Travis, UCH board requesting update/report regarding pt numbers across system

- **PR sending updates to exec leadership/board members throughout day**
- **View in teletracking that would show all pts by region**
    - **Can we produce report/view on fly?**

11:10 End of Exercise

Staff located in each area:

PACU: Chaplains, security, volunteers, pharm

Conference Center: security sent, pharm, social work, chaplains

Problems/Notes:

- **Volunteer sent to ed to pick up equipment, ed refused to give to volunteer to take back**
    - **Call nurse manager of ED to get them to respond**

- **One 10 beds in warehouse**
- **No stretchers, Jack would find them from wherever available –off floors**
    - **Not enough beds for pts**

- Would need to get more beds
- ED Registration not able see pts in teletracking, using sticker label for pts given to hosp managers
- Lab getting calls, can't do work

- Send one phone number to nurses so they have one person to contact

- Pt in PACU, not registered –send pt back to ED or register in PACU
- Trouble rooming and admitting pts from PACU in EPIC

- EPIC ppl are helping

- Pull a couple of people to answer phones in command center
- Finance was not here to record resources
- Cisco phones to be deployed, need phone numbers to all phones in conference room-conference bridge from IT and contact person in room—CANNOT come up with Cisco phones
- Need to notify code staff we have pts in "weird" areas so they know where to respond
- Can use walkie talkies from engineering but not working properly
- Change access temporarily so people involved have access to PACU
- MISSING: PPE to be delivered
- We need a direct line to anytime, anywhere so we don't need to sit on line and wait
- List of who to call for beds, etc.
- Translators
- Barrier: command center room size
- Need: Sticky notes in command center to take notes
- Cannot find transporters to bring pts to rooms from PACU
- We need pt names, ED called family came in and could not locate pt
- Tracking mechanism for pts in specific areas –EPIC, templates
- Need more ability to add staff and pts to PIXIS
- Call for APP earlier
- ED registering pts on paper- not showing up in EPIC or teletracking correctly

PACU Issues:

- Tracking ability of pts coming in and leaving –not good, can't get a good handle, difficult to figure out who is coming & going
- EPIC access in PACU difficult

2nd Floor Issues:

- Space issues
- Need additional providers

Actions/Decisions:

- Put platelets and blood on hold
- How many physical beds are in the warehouse, if needed? Stretchers
- If we needed staff, would have sent everbridge to see availability to come in
- Calling Phil, DC Lounge to round in areas
- Notify EVS to round & make sure areas have necessities
- Food Services would be notified to feed
- Monitoring the staff caring for pts- no radiation risk
- Will set up a call center, pull in exec assist to staff, write talking points to answer basic questions, and resources set up to follow up after event –to help alleviate flood of calls to operators
- Med Director put elective surgeries on hold
- Supply chain triaging pts have supplies they need
- Ambulatory knew about incident, outpatient registration process in use, assessing clinic

availability, clinic space, staff –cancel follow up, elective procedures, can we transfer pts to outpatient unit vs. caring for in conference room. Do this for next 5 days (weekend days) will identify one place to see pts. In ambulatory setting

- **Can use general dermatology/adjacent room to melanoma clinic**
  - **20 exam rooms, 12 procedure rooms, waiting areas**
  - **Close current clinic, can use for emergency pts**
  - **Social media post 1 DRAFT … Approved by IC at UCH, MCR, PVH. Posted at 10:30 a.m.**
    - **Facebook, Google+**
    - **We are receiving a large number of patients at UCHealth hospitals who have been exposed to radiation. We are prepared and fully equipped to safely care for these patients. There is no risk of exposure to the public, other patients or our staff. If you have questions about radiation exposure, please see our fact sheet at uchealth.org/radiationsickness. Out of respect for patient privacy, we will not reveal any information about our patients without their consent.**

- **Twitter version**
  - **If you have questions about radiation exposure, please see our fact sheet atuchealth.org/radiationsickness**

APPENDIX A - IMPROVEMENT PLAN

Target Cap.	Critical Element	Observation	Recommendation	Responsible Dept.	POC	Target Completion
Planning: All	Communication	This objective was not fully met. For an event that is essentially pre-planned, which would be true in an NDMS or RITN scenario it should be relatively easy to develop a full IAP in advance. The use of HICS forms has never been implemented consistently at UCH. Historically this has not been a significant issue however as incidents grow in complexity and size this will become more important.	Need to develop additional Planning Unit training for select staff to focus on IAP development. Standardization of internal forms within the system would also be part of this process.	Emergency Preparedness	Patrick Conroy	01/01/16
Public Health & Med Services: Resp.	Patient Clinical & Support Activities	This objective was met in theory from a system perspective. There was a plan in place to allow for tracking of patient across the system however there were a few IS issues that were encountered that will be discussed in the IS section. In an NDMS scenario also we would have the NDMS Patient Assistance Teams on the ground with us to provide this capability. From an all-hazards point of view though EMTrack could have been used to track patients and their families after discharge as an outpatient or outright release. As UCH does not have in depth in terms of EMTrack utilization and as we have never used it to the extent that this objective was contemplating the overall objective is classified as unmet until further development work can be completed.	Work with CDPHE on additional EMTrack processes then follow-up with internal training.	Emergency Preparedness	Patrick Conroy	01/01/16
Situational Assessment: Resp.	Communication	This objective was not adequately exercised as part of the drill thus is being classified as unmet. This is primarily a resource issue at this point relative to staffing an additional coordination center.	This will be a long term goal that will require significant effort.	Emergency Preparedness	All Staff	07/01/16
Situational Assessment: Resp.	Communication	This objective was discussed however no formal implementation occurred during the exercise. This was due to a combination of exercise logistics, issues related to registration and the disaster attribute, and issues related to rooming patients virtually. The after action component related to this will be identified in another objective. While the majority of the Common Operating Picture will be driven by information flowing from Epic there will likely be other components that will become important. This would be critically important if we are talking about an event that is impacting UCHealth facilities where we have staff, logistical or infrastructure impacts. It will become even more important in a COOP	This will involve the IS team related to Epic reporting capability as well as work with CDPHE and CDEM on possible enhancements to WEBEOC. The IS involvement and target dates will be identified in another AAR item. This AAR item will be limited to working with CDPHE and CDEM.	Emergency Preparedness	System EM Staff	03/01/16

Target Cap.	Critical Element	Observation	Recommendation	Responsible Dept.	POC	Target Completion
		incident. The AAR items for these areas will revolve around SITREP formats, etc.				
Planning: All	Communication	With the use of EMTrack validated it will serve as the initial tool for patient tracking as it has visibility across the UCHealth System. It was also validated that Epic and teletracking is capable of tracking patients across the system once we receive them. Regarding tracking of families this is capable of being done with EMTrack. This will take further development and practice which will need to be coordinated with CDPHE.	This is combined with prior AAR items related to utilization of EMTrack.	Emergency Preparedness	System EM Staff	03/01/16
Public Health & Med Services: Resp.	Patient Clinical & Support Activities	This objective is primarily concerned with the ability to manage patients once they are registered into the Epic system. There were three major issues identified: Patient rooming: A more defined and consistent process needs to be developed regarding patient assignments to “virtual” rooms. These may be extra beds in the PACU or ED or “beds” in a conference room. This will be essential in being able to follow patients throughout the hospital. Patient admissions: there needs to be a more efficient process for rapidly admitting patients to the hospital. This is critical when patients are being rapidly moved out of the ED registration environment to an area where in-patient care teams could be managing the patient. A burn-surge scenario is an example of where this would be important. Work Flows: the admission issue is essential to inpatient teams benign able to access their inpatient work flows. The same would hold true for ED work flows and potentially outpatient work flows. Additional discussion also needs to take place regarding potential additional disaster order sets.	An IS working group will be established that will look globally at IS/Epic/Teletracking and other application interface issues across the UCHealth system. The goal will be a consistent streamlined process that will work across all locations and in an all-hazards environment.	IS	Paiger Patterson/Alice Pekarek	07/01/16
Public Health & Med Services: Resp.	Patient Clinical & Support Activities	There needed to be a better reception process for the patients arriving by bus. Suggestion is a provider going to the bus and pulling the patients out a small group at a time. This would prevent them stacking up at Security and would reduce the overall confusion. Room utilization needs to be looked at also. For specialized patients such as the RITN scenario sending potential outpatients to the 2nd floor made some sense, however from an all-risk perspective designating a consistent location for any and all event types is probably a better option. The Conference Center is the best option given proximity to the ED plus the availability of the two smaller rooms for break-out purposes. Patient care	Working group will be established to look at general space planning and space utilization options.	Emergency Preparedness	Patrick Conroy	01/01/16

Target Cap.	Critical Element	Observation	Recommendation	Responsible Dept.	POC	Target Completion
		teams need to be better organized as well, especially the medical staff. This could be as simple as ICS type vests to delineate positions and roles.				
Planning: All	Resources & Assets	This was discussed briefly and conceptually however no definitive plan was developed. From an all-hazards perspective this needs to be fully developed as a function of the Patient/Family Support Branch Director position. Additional planning with CDPHE on how EMTrack would be utilized to support this activity also needs to occur.	The EMTrack portion of this item has already been assigned under another action item. A preliminary meeting on restructuring various HICS role sunder a Family/Staff Support Branch Director Position has already occurred and Job Action sheet development started. Additional work on integrating Case Management/Social Work/Palliative Care/Employee Health into the existing Behavioral Health component will take more time though.	Emergency Preparedness	Patrick Conroy	03/01/16
Public Health & Med Services: Resp.	Communication	Covered in prior objective. Need to expand for outpatient populations though given the high probability that they will be discharged with clinic referrals. This will require assessment of the outpatient registration process and whether it can be coordinated with the inpatient and ED processes for disaster management.	Covered under the general IS Working Group action item.	IS	Paige Patterson/Alice Pekarek	07/01/16
Public Health & Med Services: Resp.	Resources & Assets	This will be more challenging then the inpatient side given the lack of existing infrastructure. The ED Disaster carts are an option that would be easily moved to this type of care area. The pre-ordered Owens and Minor disaster pods are also available although we may want to look at the inventory to make sure that it will work for more of an all-hazards scenario than a typical MCI.	Review the disaster cache inventories to identify potential changes for all-hazards incidents.	Emergency Preparedness	Patrick Conroy	11/01/15
Ops. Coord./All	Staff Roles & Responsibilities	The space in the Hospital Command Center was inadequate for this level of operation. Consideration needs to be given with regards to breakout work areas, additional technology, and operational effectiveness. The issue is however that the most appropriate current space options are likely to be the best options for a surge treatment are as well. This overall space planning issue will be combined with the clinical space planning AAR item.	Combine with clinical space planning issues working group.	Emergency Preparedness	Patrick Conroy	