

Supplemental Material A: Weather/Emergent Hospital Evacuation

Domain 1: Preparedness and Planning

Observations

- The need to extend drills & exercises to nurses at the unit level, involve physical practice, and discuss contingencies in the absence of guidance (NE1, NE2)
- The need to simulate vertical evacuations in addition to horizontal (NE2)

Domain 2: Communication

Observations

- Personal cell phones served as primary source of communication (NE1, NE2)
- Tornado took out all infrastructure, including communication (NE1)
- Paging/overhead announcement destroyed (NE1)
- All forms of documentation destroyed or blown away (NE1)
- Hospital phone system failed because of community phone system failure (NE2)
- Satellite phones failed because of city satellite system failure (NE2)
- Satellite phones stored in dark ICS (due to power failure) could not be located (NE2)
- Emergency phones stored on another campus could not be accessed (NE2)
- Walkie talkies lost power (NE2)
- Personal cell phone chargers were exhausted (NE2)
- Messages between ICS and nurses delivered by foot after all communication systems failed (NE2)

Domain 3: Incident Command

Actions

- Directed evacuation out one side of the building and facilitated transfer and transport of nurses as they exited the hospital with patients, to parking lot safe zone for transportation to receiving hospitals and alternate care sites (NE1)
- Led triage/transportation of patients to receiving hospitals/alternate care sites (NE1)
- Assessed all units and made decision to evacuate, gave the order sequence of unit evacuation and supervised logistics of patient/nurse disposition to neighboring hospitals (NE2)
- Assessed infrastructure damage and arranged for the evacuation of impacted patients to neighboring hospitals (NE2)
- Assessed nursing units, made decision to evacuate hospital/determined order (NE2)
- Collaborated with fire and police to relay messages to staff throughout hospital (NE2)
- Activated agreements with neighboring hospitals to receive patients and nurses (NE2)
- Collaborated with community coalition and emergency management partners to establish contractual arrangements with receiving hospitals that would include credentialling, financial reimbursement and access to computerized medical record systems (NE2)
- Collaborated with community coalition and emergency management partners to establish a framework for categorizing patient disposition to match clinical needs (NE2)
- Assessed all units and gave nurses the order of unit evacuation (Pediatric ICU first) (NE2)
- Gave PICU nurses authority to decide how to safely transport neonates (NE2)

Domain 4: Safety and Security

Actions

- Instituted disaster grab bags positioned throughout hospital containing vital supplies (NE1)

Observations

- Critical pathways for generator powered emergency outlets varied throughout the hospital (NE2)

- Extension cords were needed to extend generator power (NE2)
- High acuity patients awaiting evacuation were moved to areas of the hospital where there was a greater number of generator powered emergency outlets (NE2)

Domain 6: Intervention

Actions

- Reassigned nurses to care for their patients at receiving hospitals until discharge (NE2)

Domain 7: Recovery

Actions

- Held up remote Incident command center for one month following event to help staff (e.g., clothing, food, diapers, housing, transportation, financial assistance, access to rental cars) (NE1)
- Approved nurse managers gathering with nurses at local diners to foster support while they were deployed to receiving hospitals (NE2)

Domain 8: Law and Ethics

Observations

- Decisions about order of focus for critical care patients - was a group process and included input from family who were present (NE1)

Supplemental Material B: Violence-Critical & Surgical Surge

Domain 1: Preparedness and Planning

Observations

- The need to extend drills & exercises to nurses at the unit level, involve physical practice, and discuss contingencies in the absence of guidance (NE3, NE4)

Domain 2: Communication

Observations

- Personal cell phones served as primary source of communication (NE3, NE4)
- Hospital phone system failed because of community phone system failure (NE3, NE4)
- iMobile texting function served as alternate mode of communication (NE3)
- Computer system crashed because of phone system failure (NE4)
- Downtime form supply exhausted as paper supply exhausted and power to print ceased (NE4)
- Phone tree rosters were difficult to find and contained outdated phone numbers (NE4)
- Victims were unnamed (NE3, NE4)
- Strategy for naming unidentified victims (AA, BB, CC, etc.) was quickly exhausted (NE3)
- Exceptional communication skills needed to talk with family/friends of deceased victims (NE4)

Domain 3: Incident Command

Actions

- Called in needed clinical staff (e.g., OR and PACU nurses, nursing assistants) (NE4)
- Assigned nurses to operating rooms as they arrived (NE4)
- Briefed and debriefed with each OR responder (NE4)
- Called in support staff (e.g., Administrative Assistants, Nursing Assistants, and runners for blood products and supplies) (NE4)
- Called in support departments (e.g., Sterile Processing, Central Supply, Pharmacy, Environmental Services) (NE4)
- Called neighboring hospitals for needed supplies and equipment (NE4)
- Collaborated with Anesthesia to triage flow of surgical cases (NE4)
- Triage surge of phone calls from citizens wanting to donate blood (NE4)
- Coordinated volunteers to help family members needing shelter/showers/personal items (NE4)

Observations

- Administrator on call, non-clinical (NE3)
- Just in time supply chain was exhausted, required neighboring hospitals (NE4)
- Relationships with staff at local hospitals provided way to get equipment/supplies/staff (NE4)
- Surgeons and OR nurses/techs self-reported after hearing news reports (NE4)
- OR staff responded to calls for help (NE4)

Domain 7: Recovery

Actions

- Immediate unit-based debriefing, moderated by trained professionals (NE3, NE4)
- Collaborated with VA to provide mental health support (NE3)
- Arranged for 24/7 counselors for 30 days and appointment counseling for 45 days (NE3)
- Used informal internal buddy system to observe need/changes in mood (NE3)

Domain 8: Law & Ethics

Observations

- Notification of family depended on a coordinated effort between nurses collecting identifying features of unnamed victims, reconciliation with the Coroner, and grief counselors (NE3, NE4)

Supplemental Material C: Violence: Run-Hide-Fight/Shelter in Place

Domain 1: Preparedness and Planning

Observations

- The need to extend drills & exercises to nurses at the unit level, involve physical practice, and discuss contingencies in the absence of guidance (NE5, NE6)
- Run-Hide-Fight policy presented a conflict for nurses who did not want to abandon patients who were difficult to move, in ICU, under anesthesia, and in active labor (NE5)
- Discussions with all nurses are needed to prepare them for the reality of SWAT response (NE5)
- The hospital policy to shelter in place presented confusion for doctors and nurses who did not have any place to go with their patients in the OR (NE6)
- Discussions with nurses about securing units and options for sheltering in place are needed, especially for nurses caring for critically ill/difficult to move patients (NE6)

Domain 2: Communication

Actions

- Instructed everyone, "You need to communicate, words, okay? Everything is in words." (NE5)
- Initiated a change in policy to call a unique telephone number with an operator trained in responding to an active shooter scenario (NE6)
- Initiated the roll out of a phone app for staff to initiate a live conversation with a security guard anytime they sense danger (e.g., as they are walking to their car) (NE6)

Observations

- Personal cell phones served as primary source of communication (NE5) (NE6)
- Calls to 911 from multiple personal cell phones suggested multiple shooters-activated SWAT (NE5) (NE6)
- Advises NEs to be prepared to speak with media directly and immediately (NE5)
- Advises NEs to discuss and revise policies with nurses, before and after each event. (NE5)
- Calls to 911 from inside and outside the hospital activated multiple police municipalities (NE6)

Domain 3: Incident Command

Actions

- Many nurses ran from the hospital, as they were trained (NE5)
- After SWAT cleared building assessed nursing units where the shooting took place (NE5)
- Instructed an accounting of nurses and patients who remained/ran from the hospital (NE5)
- Instructed physician residents/nurses to stabilize, calm and resume medications/care (NE5)
- Assembled multidiscipline team to provide immediate mental health first aid (NE5)
- Initiated transfer arrangements for patients evacuated from destroyed units (NE5)
- OR staff have a unique skill set/environment and are difficult to replace if unable to function (NE6)

Domain 4: Safety and Security

Actions

- Instituted mandatory active shooter training for all hospital staff, every year (NE5) (NE6)
- Instituted discussion about active shooter response during orientation/annually/after each event (NE5) (NE6)
- Adapted employee badge to provide unique active shooter phone number (NE6)
- Instituted safety phone apps to contact Security directly if staff in or sense danger (NE6)
- Used feedback from staff to drive safety changes (e.g., added effective lighting in parking lots, increased lock down doors after hours, decreased number of doors opening without badge, added surveillance cameras, etc.) (NE6)

- Instituted lock-down safety features and protocols in ICUs (NE6)
- Instituted computer-based simulation training for ED staff on violence training (NE6)
- Expressed concern about OR security, high traffic area where everyone dresses the same (NE6)
- Advised virtual reality training for active shooter scenarios (NE6)
- Expressed concern for ICU/OR/Labor & Delivery nurses and high acuity patients who cannot easily move or hide; endorsed lock-down procedures, camera technology and virtual simulation training (NE6)
- Collaborated with VA to provide mental health support (NE6)
- Provided support group opportunities and pet therapy (NE6)
- Provided period of silence announced nightly at time of shooting (NE6)
- Designed and gifted memory bracelet to all campus staff (NE6)
- Arranged memorial services for all staff to attend (NE6)
- Acknowledges deceased staff, annually (NE6)
- Arranged visible wall recognition of lost staff in hospital lobby (NE6)
- Instituted 9-question Well-Being Survey with dashboard scores for suicidality, stress, burnout (NE6)

Domain 7: Recovery

Actions

- Arranged immediate unit-based debriefing, moderated by trained professionals (NE5) (NE6)
- Arranged for immediate mental health support from managers, social workers, administrators, physicians, psychiatrists, psychologists and continued for weeks (NE5)
- Required nurses to talk to mental health team, follow up provided as needed (NE5)
- Collaborated with VA to provide mental health support (NE6)
- Provided support group opportunities and pet therapy (NE6)
- Provided period of silence announced nightly at time of shooting (NE6)
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