

Supplemental Material A: Emergent Hospital Evacuation - Actions and Observations of Nurses

Domain 1: Preparation and Planning

Actions of All Nurses

- Nurses were innovative in the moment as they faced unusual problems (NE1, NE2)
- Nurses used key concepts learned during drills that included real practice getting patients out of their room and using equipment contingencies (NE1)
- Remembered where to find emergency equipment because of previous disaster drills (NE2)
- Remembered all adjacent stairwells because of baby abduction drills (NE2)
- Passenger elevators were not functioning because of uncontrolled water (NE1, NE2)

Observations for Organizational Support

- NEs endorsed drills extending to all units with physical practice and discussion (NE1, NE2)
- NEs endorsed practice and/or discussion regarding vertical evacuation (NE1, NE2)
- Stairway sled video did not prepare nurses to know how to use in real-life situation (NE5)
- Endorsed benefit of having nurses put the evacuation sled together, drag a person on it down the hallway, tether the cord to the handrail (NE1, NE2)

Domain 2: Communication

Actions of All Nurses

- Used personal cell phones as primary source of communication within & beyond hospital to coordinate steps of evacuation with peers (NE1, NE2)
- Messages delivered by foot/word of mouth after all communication systems failed (NE2)

Observations for Organizational Support

- Weather event damaged community & hospital infrastructure, including communication (NE1)
- No paging/overhead announcement functions (NE1)
- Physical forms of documentation destroyed (NE1)
- Weather event damaged city satellite system (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 just after generator failure because they were in use all day (NE2)
- Personal cell phones could not be recharged after generator failure (NE2)

Domain 3: Incident Command

Actions of Charge Nurses

- Made and acted on immediate personal and team decisions to evacuate destroyed hospital in absence of ICS (NE1)
- Led order of evacuation by groups: ambulatory patients, via stairwells, escorted by technicians followed by bed bound-escorted by groups of nurses & respiratory therapists (NE1)

Observations for Organizational Support

- Incident command center was destroyed, non-functional (NE1, NE2)

Domain 4: Safety and Security

Actions of Unit Charge Nurses

- Made immediate decision and acted to evacuate all alive patients from destroyed hospital (NE1)
- Determined order of evacuation for immobile patients (NE1)
- Led evacuation order- Groups of ambulatory, via stairwells, escorted by technicians (NE1)
- Prioritized evacuation of bed bound-escorted by groups nurses & respiratory therapists (NE1)

Actions of PACU nurses

- Sought safety for recovering PACU patients in the ED until they could be evacuated (NE1)

Actions of NICU nurses

- Used light from flashlights and personal cell phones to illuminate each neonate (NE2)
- Used emergency power cords to access closest power source (NE2)

Actions of Pediatric nurses:

- Moved stable patients to structurally safer areas with ample emergency power outlets (NE2)
- Utilized extension cords to extend generator power (NE2)
- Moved high acuity patients to areas with ample generator powered emergency outlets (NE2)

Actions of All Nurses

- Safely evacuated patients on med sleds down flights of stairs in the dark (NE2)
- Stayed with patients during transfer to neighboring hospitals (NE2)

Observations for Organizational Support

- Witnessed death of patients from collapsing hospital (NE1)
- Continued to complete evacuation despite knowing they lost their homes (NE1)
- Made immediate shift from care as usual to crisis care (NE1, NE2)

Domain 6: Intervention

Actions of Nurses

- Called friends/colleagues at specialty hospitals to pre-plan transfers for specialty patients (e.g., congenital cardiac, cancer, solid organ transplant) in anticipation of possible evacuation (NE2)

Actions of Nurses

- Triageed patients by acuity in parking lot for transfer to receiving hospitals or alternate care sites (NE1)
- Remained with patients despite knowing their own homes were destroyed (NE1)
- Deployed to receiving hospital or alternative care sites (NE1, NE2)

Actions of NICU nurses

- Made and acted on equipment substitutions for neonates in complete darkness assisted by the light of cell phones (NE2)
- Maintained care throughout evacuation process (NE2)
- Gave transport teams specific role assignments (e.g., ventilation via ambu) (NE2)
- Taught transport teams (e.g., MDs, medical students, respiratory therapists, transporters, etc.) step by step instructions & announcement commands to vertically evacuate critically ill neonates down 15 flights of stairs in the dark (NE2)

Domain 7: Recovery

Observations for Organizational Support

- Many received assistance for daily living (e.g., housing, cash advances, car rental, childcare, diapers, food, clothing) offered by hospital (NE1)
- Nurses who were deployed to receiving hospitals for several months gathered at a public diner to give and receive support-initiated by a nurse manager (NE2)

Domain 8: Law and Ethics

Actions of ICU Nurses

- Consulted with each other and physicians to make decisions about how to respond to patients crushed by debris (NE1)
- Made decisions during evacuation to take IVs off the pump and cap, take Ambu bags, clamp chest tubes in the absence of suction, transport with oxygen tanks (NE1)

Actions of NICU nurses

- Shifted attention to most critical babies as vital equipment lost power (NE2)