Modifications and Applications to the HEICS Program

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Objectives

The key learning objectives for this session will include a:

- A review of the history and development of the incident command system (ICS) and hospital emergency incident command system (HEICS)
- A discussion on the adoption of ICS/HEICS as the conceptual framework for organizing all phases of hospital emergency management
- A review of a biological and natural real-life event and the impact on the ICS /HEICS process
- Discussion on a list of modifications for ICS/HEICS positions to support mass contagious disease management
- Discussion on the tactical application of ICS/HEICS not only to healthcare facilities, but also the strategic application to multi-hospital healthcare systems

History and Development ICS and HEICS

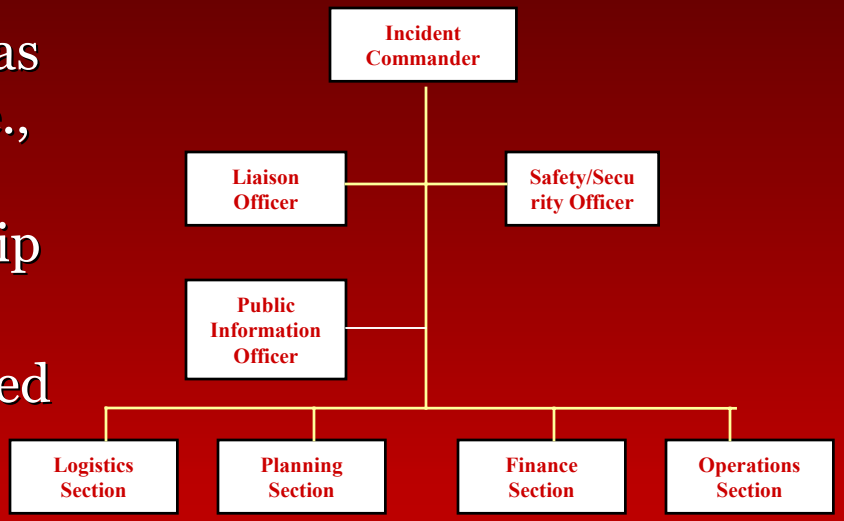
- **1980's - Modeled after the FIRESCOPE management system for wildfires**
- **1987 - Hospital Council of Northern California adapts ICS to hospitals**
- **1991 - HEICS was developed by Orange County EMS and tested at six hospitals in Orange County, California**
- **1992-1993 HEICS 2nd edition released**
- **1998 – 3rd edition revisions completed**
- **2006 - HEICS 4th edition slated for release in the Spring that incorporates changes and insures NIMS compliance**

Scope of HEICS IV Project

- **Review and modify HEICS III core material to include updates in emergency management practices, new threats and changes in federal emergency incident management. Includes scalable model ranging from large urban hospital to small rural healthcare facility**

Conceptual Framework for Organizing All Phases of Hospital Emergency Management

- HEICS is an organizational model for command and control in hospital emergency management, which is based on four major functional areas of hospital emergency response (i.e., operations, logistics, planning, and finance) under the overall leadership of an Incident Commander.
- These sections are in turn subdivided into approximately 50 leadership positions, each of which has a job action sheet that lists the prioritized actions that each leader is expected to perform during hospital emergency response

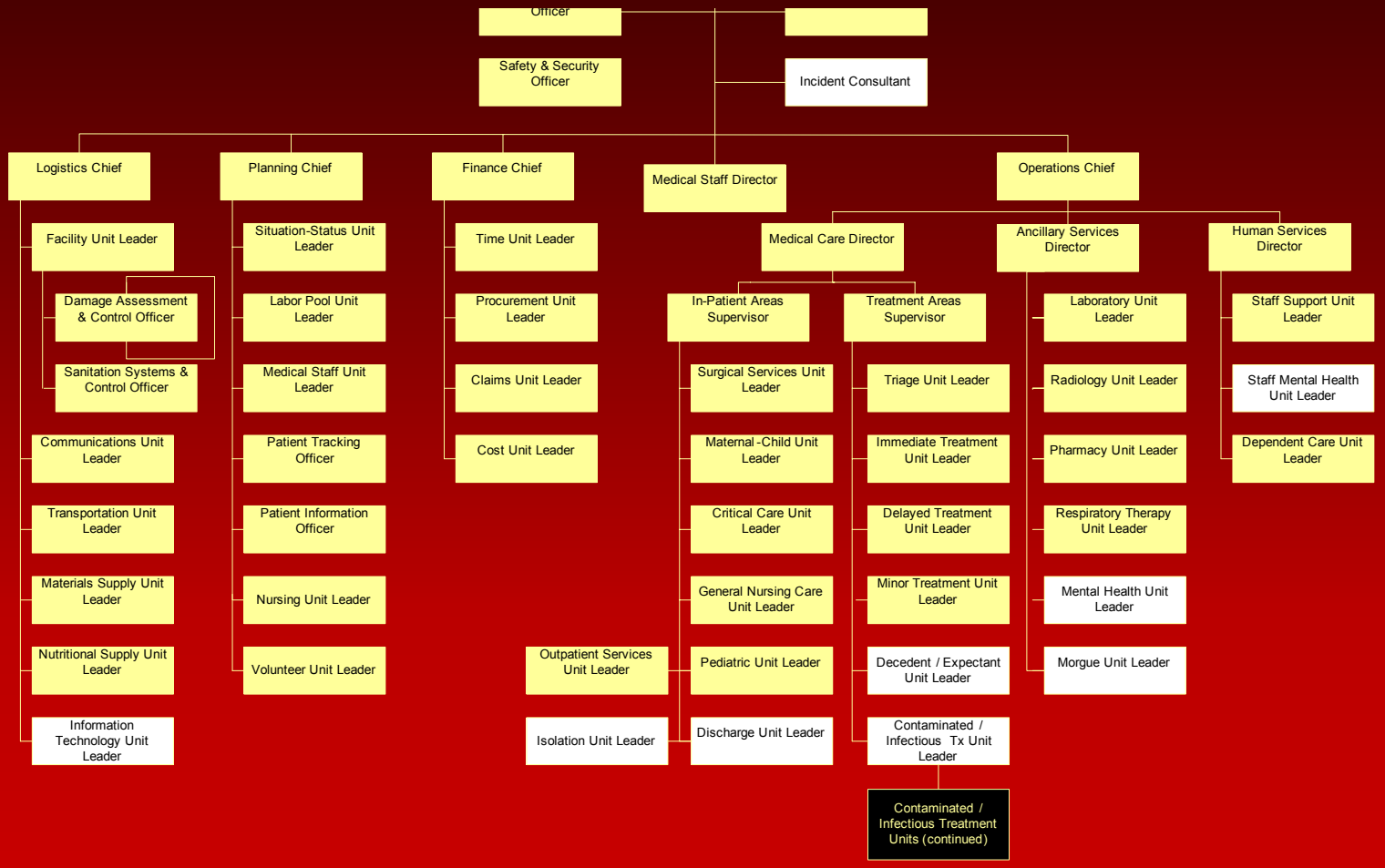


Characteristics and Advantages of HEICS

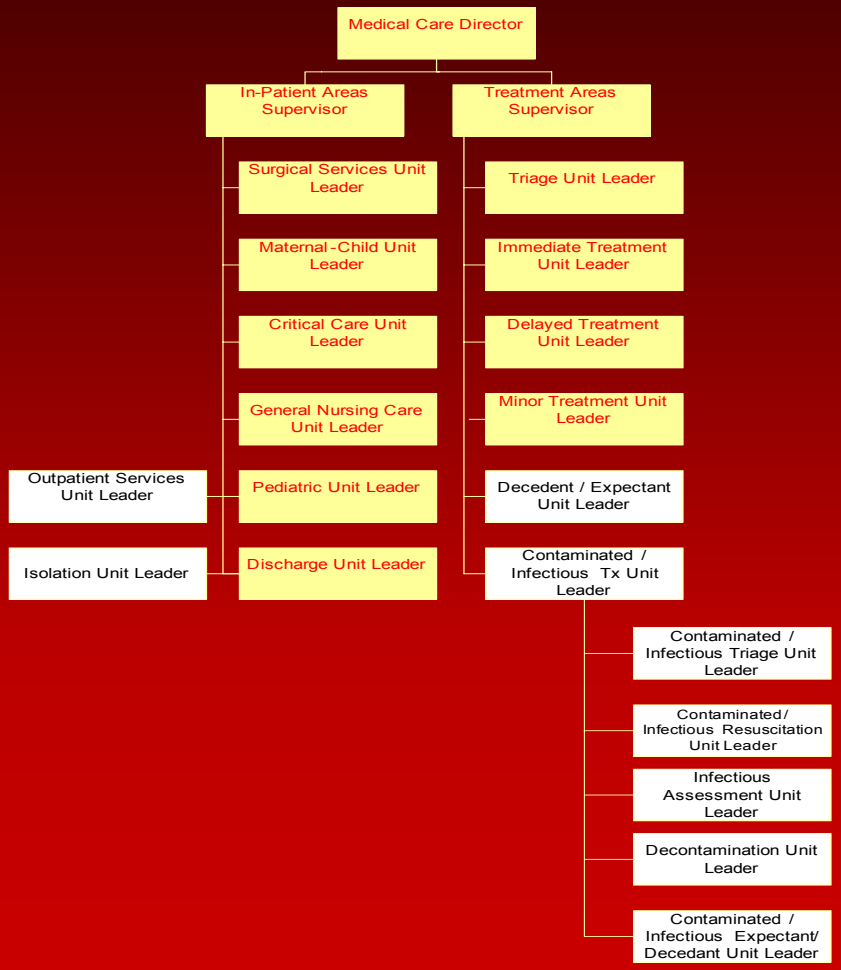
Characteristic	Advantages
Modular organization based on functions required in emergency response	Logical management structure Applicability to variety of healthcare organizations*
Fixed organizational hierarchy	Predictable chain of command
Communication occurs up and down the chains of command	Clear reporting channels
Each position supervises ≤ 7 other positions	Realistic span of control
Job action sheets define responsibilities of each position	Defined responsibilities Accountability of position function
Job action sheets prioritize actions of each position	Prioritized response
Job action sheets show prioritized actions as checklists	Improved documentation Improved cost recovery
Responsibilities, actions in emergencies parallel routine duties	Minimal disruption of existing hospital departments
Standardized terminology	Improved internal and external communication Facilitation of external assistance
Flexible activation of individual sections or branches of organization	Customized emergency response (minimal to full) to different types and magnitudes of emergencies Cost-effective emergency response
One individual may assume ≥ one position	Emergency response possible with minimum number of responders

HEICS Organizational Chart

Modifications of HEICS Organizational Chart

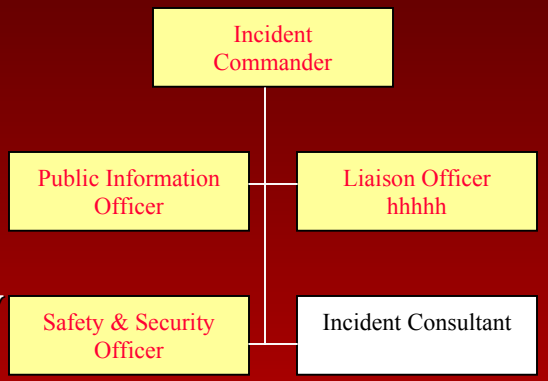


New CBRN Treatment Areas



Incident Consultant

- **Included in the Administration Section to provide expert clinical and technical advice to the Incident Commander as needed.**
- **The major rationale includes:**
  - **(1) the Incident Commander often requires immediate clinical and/or technical expertise in emergencies;**
  - **(2) existing members of the Administration Section are usually unable to provide this expertise, since they are rarely content experts in CBRN emergencies, disaster medicine, or even emergency management (e.g., the Incident Commander is typically a hospital administrator in the US).**
- **The Incident Consultant should be viewed as:**
  - **(1) an optional position, which is activated by the Incident Commander as needed (or by pre-determined criteria);**
  - **(2) a flexible position, which is filled by the type of expert according to the type of event.**
- **Incident Consultants should have not only vertical knowledge in their area of expertise, but also core competency in hospital emergency management.**

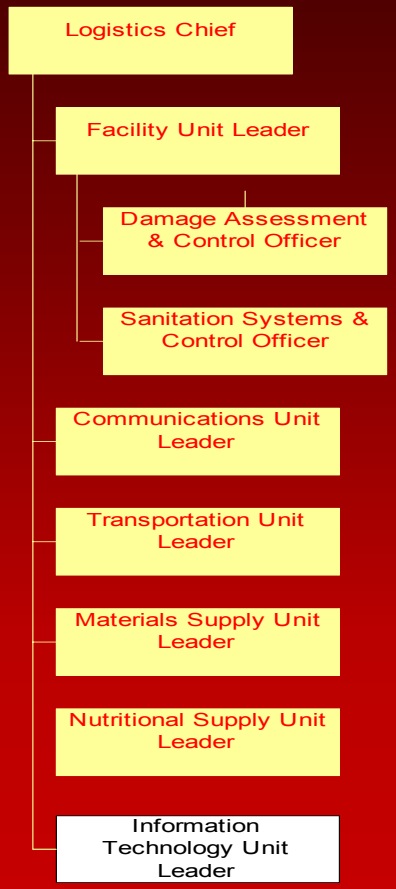


Examples of Types of Incident Consultants in Emergencies

Type of hospital emergency	Type of Incident Consultant
Chemical emergency	Toxicologist, occupational health physician, emergency physician
Biological emergency	Infectious disease specialist, hospital epidemiologist, infection control officer
Radiation or nuclear emergency	Radiation safety officer, nuclear medicine physician, radiation therapy physician
Trauma/burn emergency	Trauma surgeon, burn surgeon, emergency physician
Emergencies with significant mental health needs	Psychiatrist, psychologist
Emergencies with significant numbers of pediatric patients	Pediatric emergency physician, pediatric intensive care specialist
Emergency with special emergency management considerations	Emergency physician
Emergency with significant facility legal exposure*	Attorney

Leadership Position for Information Technology Management

- **HEICS also requires a new Information Technology Unit Leader in the Logistics Section**
- **Coordinates the management of information technology and information systems, including hardware and software, in emergencies.**
- **Hospitals have become increasingly dependent on information technology and information systems in emergencies to support:**
  - **(1) the provision of static information to hospital emergency responders (e.g., clinical protocols, contact information, maps)**
  - **(2) the collection, processing, and dissemination of dynamic information (e.g., situation status reports, hospital capacity assessments, and hospital needs assessments)**
  - **(3) internal and external communication via email.**

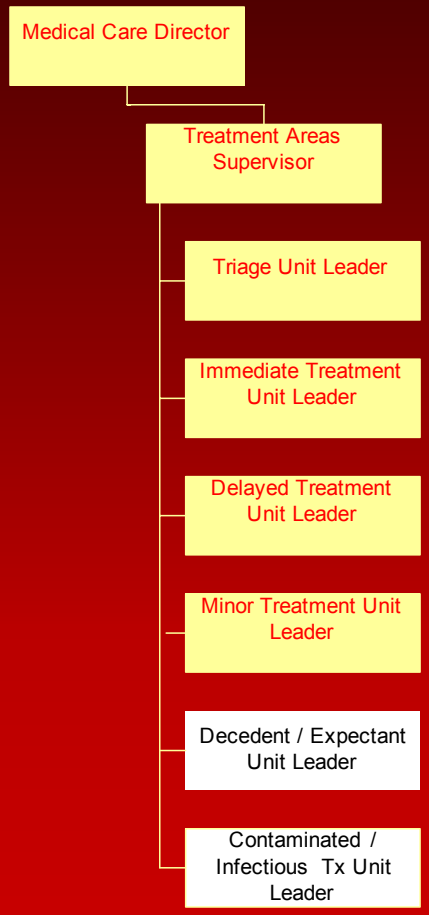


Isolation Unit Leader

- The rationale is that potentially infectious patients who require hospitalization require medical care in a unique in-patient isolation setting.
- Coordinates the medical management of hospitalized infectious patients in biological emergencies with the potential for secondary transmission (e.g., smallpox, SARS, viral hemorrhagic fever, pneumonic plague).
- Supervises the use of infection control measures in this unit, including protective distancing and barriers, isolation precautions, cohorting (patients and healthcare workers), and PPE.
- In large-scale infectious disease emergencies, it may be necessary to subdivide the Isolation Unit into medical and critical care subunits for the care of stable and unstable in-patients respectively.
- During the 2003 SARS outbreak in Taiwan, some hospitals found it necessary to add an additional subunit for the quarantine of potentially infectious healthcare workers.

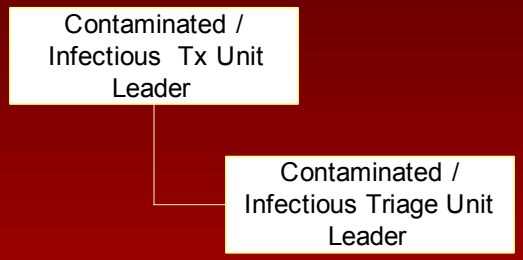
Contaminated/Infectious Treatment Area Leader

- Coordinate the overall management of contaminated/infectious patients who arrive at hospitals in CBRN emergencies.
- Key supervisory responsibilities include:
  - (1) the triage of potentially contaminated/infectious patients
  - (2) the resuscitation of contaminated/infectious patients
  - (3) the assessment of infectious patients
  - (4) the decontamination of contaminated patients
  - (5) the management of contaminated/infectious decedent/expectant patients
  - (6) the use of protective measures, which vary with the type of event, in order to ensure the safety of healthcare workers, other patients, guests and the hospital.
- Not all of these functions are required in all CBRN emergencies.
- In small-scale emergencies, the Contaminated / Infectious Treatment Area Leader is responsible for directly supervising any functions that are needed.



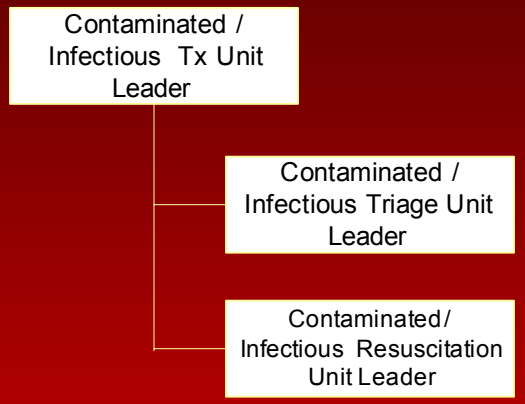
Contaminated/Infectious Triage Unit Leader

- **The rationale is that the triage of potentially contaminated or infectious patients in CBRN emergencies is fundamentally different than triage in other emergencies, because of the need to prevent secondary contamination or secondary transmission of infectious agents.**
- **Coordinates the initial triage of potentially contaminated/infectious patients in large-scale CBRN emergencies.**
- **Supervises the use of protective measures during triage, including protective distancing and barriers, isolation precautions, and PPE.**
- **In the 2003 SARS outbreaks in Taiwan and Toronto, potentially infectious patients were identified in fever screening units through the detection of fever or the presence of cough or diarrhea.**



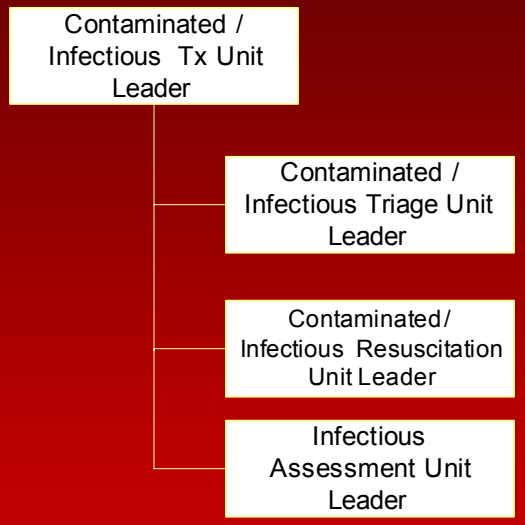
Contaminated/Infectious Resuscitation Unit Leader

- **The rationale is that some contaminated/infectious patients will arrive at hospitals with life-threatening problems and require immediate life-saving interventions before they undergo further assessment or decontamination.**
- **Coordinates the immediate resuscitation of potentially contaminated/infectious patients with immediately life-threatening conditions in large-scale CBRN emergencies.**
- **Supervises the use of protective measures during resuscitation, such as protective distancing and barriers, exposure-time limits, isolation precautions, and PPE.**
- **The goal of resuscitation in the Contaminated/Infectious Resuscitation Unit is to temporarily stabilize potentially contaminated or infectious critically injured or ill patients prior to decontamination or assessment for the presence of infection as described below.**



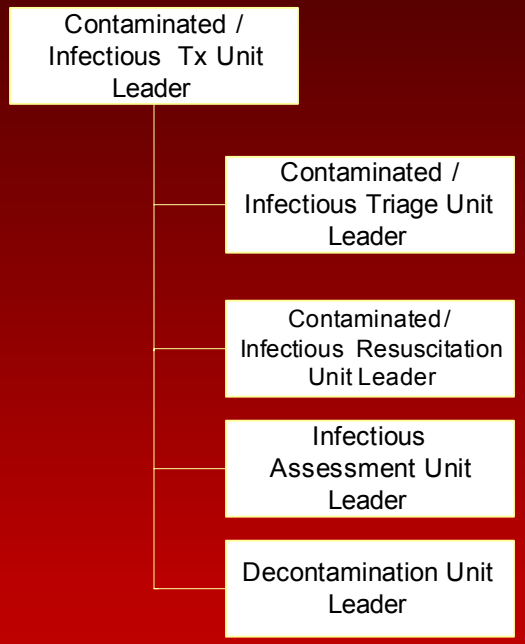
Infectious Assessment Unit Leader

- The rationale is that some patients require further medical assessment to determine whether they are infectious, because their clinical status cannot be determined at triage.
- Coordinates the medical assessment of potentially infectious patients in large-scale biological emergencies due to agents with secondary transmission (e.g., smallpox, SARS, viral hemorrhagic fever, and pneumonic plague).
- Charged with preventing secondary spread during this assessment through the supervised use of infection control measures
- The goal of medical assessment in the Infectious Assessment Unit is to identify infectious patients who pose a potential risk to others.
  - In the 2003 SARS outbreaks in Taiwan and Toronto, SARS assessment units were established outside EDs to assess patients identified as potentially infectious at triage.
  - Medical assessment included portable chest radiography and sputum PCR assay for the SARS virus.
  - Patients found to have suspected or probable SARS were then sent directly to the in a SARS isolation unit inside the hospital.
  - Patients, in whom SARS was ruled out, were sent to the "cold" ED or discharged home.



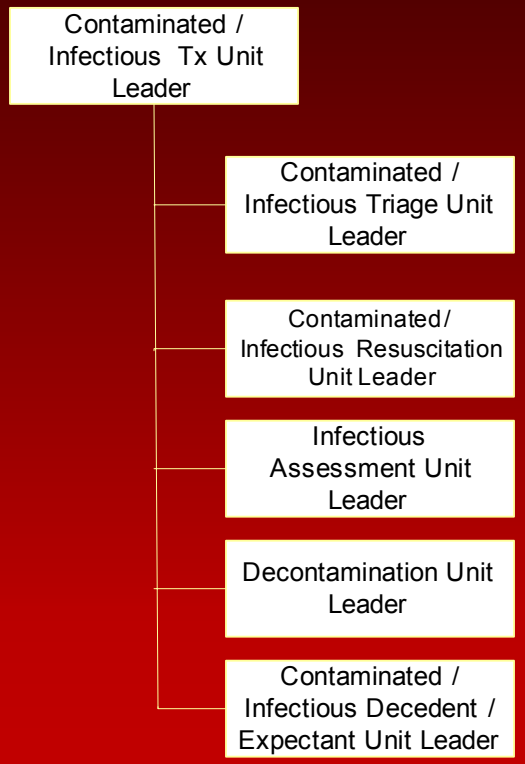
Decontamination Unit Leader

- The rationale is that many contaminated patients will arrive at the hospital in various CBRN emergencies and require decontamination before they can be safely allowed into the hospital.
- Coordinates the decontamination of contaminated patients in large-scale CBRN emergencies.
- Selects the type of decontamination (e.g., wet or dry) and supervises the use of protective measures during decontamination, including protective distancing and barriers, exposure time limits, and PPE.
  - Healthcare workers, equipment, and vehicles may also require decontamination.
  - The goal of decontamination is to rapidly decontaminate potentially contaminated patients in a prioritized manner.
  - In large-scale emergencies, it may be necessary to subdivide the Decontamination Unit into ambulatory and non-ambulatory subunits



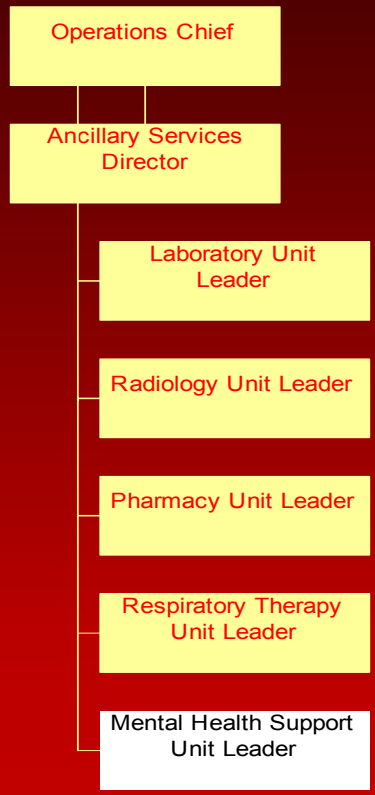
Contaminated/Infectious Expectant/Decedent Unit Leader

- **The rationale includes:**
  - **(1) the management of expectant and decedent patients has overlapping clinical, ethical, psychosocial, cultural, and legal considerations**
  - **(2) the management of expectant and decedent patients who are potentially contaminated or infectious mandates safety considerations, which warrant a distinct unit leader (e.g., patients in this unit continue to require protective distancing and barriers, isolation precautions, and PPE).**
- **Coordinates the management of contaminated/infectious patients who are dead-on-arrival, die in the Treatment Areas, or are deemed unsalvageable and expected to die in large-scale CBRN emergencies.**
- **In addition, contaminated decedents will also require decontamination in the Decontamination Unit after all live patients and healthcare workers are decontaminated.**



Mental Health Support Unit Leader

- **The HEICS requires a Mental Health Support Unit Leader to coordinate mental health support for patients and guests (i.e., family members, loved ones, and caretakers) in emergencies.**
- **The rationale for this position includes:**
  - **(1) the need to coordinate mental health support for patients with guests, since guests usually accompany patients**
  - **(2) mental health support for patients including medical (i.e., psychiatric services provided by physicians or mid-level practitioners) and non-medical supportive services (e.g., assistance with emergency housing or family reunification)**
  - **(3) mental health support for patients and guests, which may be required hospital-wide (i.e., Treatment Areas and In-Patient Areas**

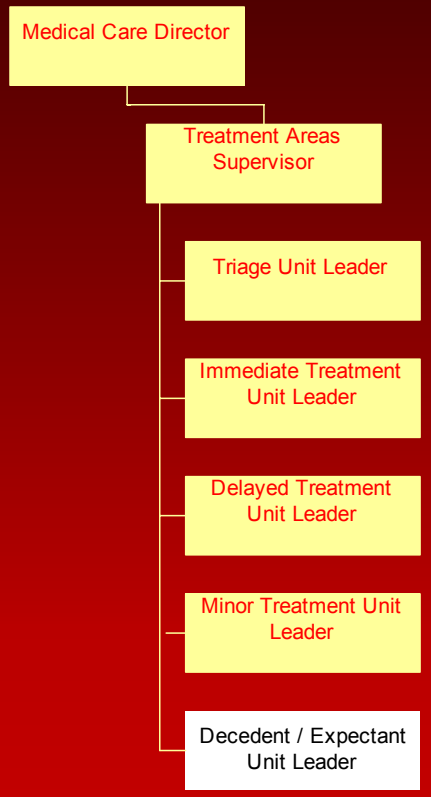


Staff Mental Health Support Unit Leader

- **The rationale includes:**
  - **(1) the need to coordinate mental health support for healthcare workers with dependents, since a lack of coordination may result in decreased availability of healthcare workers, while they attend to the needs of their dependents**
  - **(2) mental health support for healthcare workers and dependents includes logistical support (e.g., nutrition, clothing, beds).**
- **Coordinates mental health support for hospital healthcare workers and their dependents .**
- **This position replaces the Psychological Support Unit Leader in the third edition of HEICS**

Expectant / Decedent Unit Leader

- **The HEICS requires a new Expectant/Decedent Unit Leader in the Operations Section to coordinate the management of patients who are dead-on-arrival, die in the Treatment Areas, or are deemed unsalvageable and expected to die in emergencies (Figure 2).**
- **The major rationale for this position is that:**
  - **(1) in many types of emergencies, hospitals are faced with both types of patients (although expectant patients are relatively rare)**
  - **(2) the management of expectant and decedent patients has overlapping clinical, ethical, psychosocial, cultural, and legal considerations.**



New Locations in HEICS Organizational Chart

Updating the HEICS also will require the relocation of some unit leaders.

- The Morgue Unit Leader should be moved from the Treatment Areas to the Ancillary Services Area.
- The rationale for this includes:
  - (1) the Morgue Unit is a cross-cutting unit that receives
  - patients from throughout the hospital in emergencies (like other ancillary services)
  - (2) the Morgue Unit provides both medical and non-medical services (like other ancillary services)
  - (3) the burden of mortality on the Morgue Unit is far greater from in-patient areas than from the emergency department in most emergencies
  - (4) supervisory oversight of the Morgue Unit by the Treatment Areas

New Locations in HEICS Organizational Chart

- The Discharge Unit Leader should be moved from the Treatment Areas to the In-Patient Areas.
- The rationale for this includes:

  (1) the need to discharge or evacuate patients is far greater from the In-Patient Areas than the Treatment Areas

  (2) the need to discharge hospitalized patients may outlast the need to discharge emergency department patients

  (3) the process of discharging or evacuating patients from the In-Patient Areas is more complicated, since the patients usually have more complex medical problems and are more likely to require special transportation resources

  (4) supervisory oversight of the Discharge Unit by the Treatment Areas Supervisor also is challenging, since discharge units often are located in hospital cafeteria or public spaces located apart from the emergency department.

New Competencies in HEICS

- **At least three levels of competencies in HEICS should be established for healthcare workers in acute care hospitals.**
  - **First, all hospital healthcare workers should acquire a basic understanding of HEICS in order to optimize hospital emergency response.**
  - **Second, healthcare workers likely to assume HEICS leadership positions in hospital emergencies require an advanced understanding of HEICS and demonstrated proficiency in job action performance.**
  - **Third, physicians and nurses, who are likely to respond to emergencies in resource-deficient settings (e.g., small hospitals, rural hospitals, overnight shifts in large hospitals), require special competency in HEICS, which will enable them to generate and assume multiple leadership roles during the earliest period after an event.**

Conclusion

- **Several new challenges have emerged for hospital emergency management in recent years.**
- **Recommend several new leadership positions in HEICS, new applications of HEICS, and at least three levels of HEICS competencies for hospital healthcare workers.**
- **HEICS should be viewed as a work in progress (as identified in the HEICS IV Project) that will continue to mature as additional challenges arise and as hospitals gain further experience with its use.**