

## Use of Postmortem Computed Tomography in Disaster Victim Identification: Current Japanese Methods and Challenges

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**Introduction:** In Japan, victims of large-scale disasters are usually identified by non-objective means. In the case of the 2011 Great East Japan Earthquake, ~90% of the bodies were identified based on nonobjective means such as facial features or belongings, which resulted in misidentification. At present, the situation remains the same. However, according to global standards, a method referred to as “disaster victim identification” (DVI; individual identification of disaster victims) is recommended by the International Criminal Police Organization; in this method, a multidisciplinary investigation team integrates objective information such as dental charts and DNA. Furthermore, recently, there has been a movement to employ postmortem computed tomography (CT) for personal identification, and radiologists are expected to be included in the DVI team.

**Method:** In the Department of Legal Medicine of Chiba University in Japan, individual identification via CT or magnetic resonance imaging was conducted in forensic autopsy cases of unknown identities when there was an assumed person for the body and the antemortem image of the person could be acquired. Two certified radiologists interpreted and compared the antemortem CT with the postmortem CT taken prior to autopsy and assessed whether the two images were compatible to indicate the same person.

**Results:** A total of 20 cases were judged. In all cases, two images were compatible, indicating the same person. Image-based identification was particularly useful when dental findings or fingerprints were unavailable for comparison and there were no family members available for DNA testing.

**Conclusion:** In the future, this method will be applied to large-scale disasters.

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## Development and Implementation of Prioritized Care in a Tertiary Hospital Intensive Care Unit During the Sars-Cov-2 Pandemic

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**Introduction:** In the event of a major event or disaster, the intensive care unit (ICU) should be able to offer an adapted and proportional response, within a limited time frame, to the influx of patients who can benefit from the technical facilities of the University Hospitals of Geneva. We developed an innovative approach to ICU care aimed to guarantee continuity by protecting healthcare staff from excessive fatigue and by tailoring the care provided from individualized care to the best care for the most people.

**Method:** A modified organizational and systematic investigation method (MINOS, Paries - 2013) was used to elaborate an ICU security model; threats to activity shut down were identified and their prevention, recovery, and mitigation were planned. These actions were updated following the evolution of the crisis. Crew resources management (CRM) and bedside simulations were used in the implementation phase.

**Results:** The ICU security model pillars were staff protection and patient management; the identified threats to activity continuity were lack of human resources, activity overload, medical errors, pressure sores and healthcare acquired infections; they were evaluated at intermediate or high risk to patients' safety. The prioritized care plan was developed to control, recover, and mitigate these threats. It consisted in: adaptable level of ICU care, modular organization by cell, huddles, matrix for activities prioritization and controlled delegation method. Before implementation, 55 nurses and 46 doctors were trained by CRM courses and simulations. The pilot phase was deployed in one cell, from December 2021 to January 2022; 67 patients were admitted in the period; 13 adaptations to the original plan were introduced. No critical safety issues were reported.

**Conclusion:** The prioritized care could be an adapted and proportional ICU response to a major event allowing the continuity of the activity while protecting staff from overload. Further tests are needed.

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## Clinician Consensus on “Inappropriate” Presentations to the Emergency Department in the Better Data, Better Planning (BDBP) Census: A Cross-sectional Multi-center Study of Emergency Department Utilization in Ireland

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**Introduction:** Utilization of the Emergency Department (ED) for non-urgent care increases demand for services, therefore reducing avoidable attendance is an important area for intervention in the prevention of ED crowding. This study aims to develop a consensus among clinicians across care settings about the “appropriateness” of attendance at the ED in Ireland.

**Method:** The Better Data, Better Planning study was a multi-center, cross-sectional study investigating factors influencing ED utilization in Ireland. Following ethical approval, data was compiled in patient summary files which were assessed for measures of appropriateness by an academic General Practitioner (GP) and academic Emergency Medicine Consultant (EMC) National Panel. In cases where consensus was not reached charts were assessed by an Independent Review Panel (IRP). At each site all files were autonomously assessed by local GP-EMC panels.

**Results:** The National Panel determined that 11% (GP) to 38% (EMC) of  $n=306$  lower acuity presentations could be treated by a GP within 24–48h ( $k=0.259$ ;  $p<0.001$ ) and that 18% (GP) to 35% (EMC) of attendances could be considered “inappropriate” ( $k=0.341$ ;  $p<0.001$ ). For attendances deemed “appropriate” the admission rate was 47% compared to 0% for “inappropriate” attendees. There was no consensus on 45% of charts ( $n=136$ ). Subset analysis by the IRP determined that consensus for appropriate attendances ranged from 0–59% and for inappropriate attendances ranged from 0–29%. For the Local Panel review ( $n=306$ ) consensus on appropriateness ranged from 40–76% across sites.

**Conclusion:** Multidisciplinary clinicians agree that “inappropriate” use of Irish EDs is an issue. However, obtaining consensus on appropriateness of attendance is challenging and there was a significant cohort of complex heterogeneous presentations where agreement could not be reached by clinicians in this study. This research again demonstrates the complexity of ED crowding, the introduction of evidence-based care pathways targeting avoidable presentations may serve to alleviate the problem in our EDs.

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### Deployed in Disaster: Exploratory Study of Personnel Deployed into Ontario Long-Term Care Homes during the COVID-19 Pandemic

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**Introduction:** The COVID-19 pandemic had a devastating impact on long-term care in Canada, exacerbating an existing crisis of staff shortages, inadequate infrastructure and funding, into a disaster. In response, the province of Ontario enacted emergency legislation and requested federal government support, resulting in the deployment of personnel from the

Canadian Armed Forces and acute care hospitals into long-term care homes across the province. This exploratory study aims to develop a rich description of the long-term care context during the pandemic, deployed personnel's perspectives on providing care in the context, and identification of lessons learned while working during the pandemic.

**Method:** Descriptive exploratory design with demographic questionnaire and semi-structured interviews will be used to understand the background and perspective of deployed personnel and managers on working in long-term care during the pandemic. Thematic analysis will be used to analyze the transcripts, organize codes, and identify and describe major themes. Findings will also be compared with disaster literature to understand how the perspectives of deployed personnel compare with existing disaster research.

**Results:** 21 interviews were initially conducted. Analysis of these interviews identified key challenges experienced by those deployed, including human resources, leadership and accountability, and policies and regulations. Perspectives and strategies for overcoming these challenges were also shared.

**Conclusion:** The scale, duration, and context of the redeployment of personnel into long-term is unprecedented and has seen little research. This exploratory study shares the experiences of personnel who deployed into long-term care and helps identify lessons learned from overcoming challenges in the disaster context. These findings will be able to inform future disaster research and how to better prepare responders in the future.

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### A Hole in the Safety Net: Failures of the Initial COVID-19 Pandemic in Kentucky

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**Introduction:** The COVID-19 pandemic hit Kentucky in March of 2020. While around the world the pandemic had already reared its head and strained international hospital systems at their core, Kentucky hospitals remained wholly underprepared. University of Kentucky Hospital is a relatively resource rich hospital. However, utilization of these resources was severely misplaced and inefficiently distributed. This led to unnecessarily large upfront costs in an attempt to prepare for large volumes of patients that never actually came, as well as risk stratifying patients in a costly and unproductive way.

**Method:** We reviewed the initial response to the COVID-19 pandemic from the University of Kentucky as well as specifically within the emergency department. This included all system-wide preparations as well as emergency medicine-specific COVID-19 protocols regarding risk stratification of patients, testing, and delivering results.

**Results:** Initially the number of patients that would need to be hospitalized with COVID-19 as well as how to risk stratify or treat them was completely unknown. This led to multiple large issues within University of Kentucky's response to the pandemic. A 400-bed field hospital was constructed out of