

MEETING ABSTRACTS

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IA1

Virtual patient: new and optimized decision tree in virtual simulation process

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Introduction: Clinical case simulators have high data processing, which results in extremely heavy, slow and expensive computational programs, but which can be solved with the implementation of a decision tree with sufficient branches to demonstrate the consequences of a clinical case action. for medical skill and competency training.

Objectives: Demonstrate the development of a web tool, based on SaaS (software as a service) and decision tree, for simulating highly complex clinical cases, editable for medical and academic users, capable of implementing multiple scenarios.

Methods: It was developed a simulators of clinical cases that was lighter and faster to process. Based on retrospective bibliographical reviews, the decision tree was chosen as an efficient technology for simulating medical cases, since it is a graphic way of representing decisions and their possible consequences, enabling change of course without concrete repercussions.

Results: The simulator managed to be developed according to questions and answers that faithfully simulate a medical care and implementation of a decision tree in a web platform and available as SaaS. In this way, the generated simulator is capable of executing clinical cases with correct and optimized processing capacity, with a degree of uncertainty and customized for use. The developed prototype can be adapted, edited and updated at any time, according to the protocol of each country or according to the clinical case desired by the users, being a great differential for medical simulation. The software has graphic resources for adding nodes to the decision tree, with the capacity for multiple outcomes, including multiple reactions in cases of infection, such as COVID-19 and Hepatitis C (HCV).

Conclusion: Simulation in the medical scenario is a teaching strategy that is increasingly valued in undergraduate and graduate medical courses, and the use of fast processing simulators that can be edited and updated will have a great impact on medical education, allowing

training clinical reasoning and decision-making based on the latest updates.

Disclosure of Interest
None declared.

IA2

Gamification approach for hospital infection prevention and control training: a randomized controlled trial using treasure hunt game on Whatsapp

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Introduction: Innovative teaching learning techniques are crucial in the training of infection prevention and control (IPC). Gamification is one such strategy incorporating game elements into non-game contexts, creating engaging, immersive, and interactive learning experiences.

Objectives: The study aimed to evaluate the effectiveness of an innovative interprofessional gamification approach in improving knowledge and understanding of IPC amongst healthcare workers.

Methods: We conducted a randomized controlled trial in which the intervention group received training through the WhatsApp treasure hunt game while the control group received traditional classroom-based training on validated topics. The effectiveness of the training was evaluated through pre- and post-training assessments of knowledge and understanding of infection control practices.

Results: The study involved 160 participants, with 80 participants in the intervention group who received training through the WhatsApp treasure hunt game, and 80 participants in the control group who received traditional classroom-based training. 100% of the participants in the intervention group agreed that they learnt something and found it useful compared to 95% in the control group. Significantly,



Results: We included 51,571 patients with 73.0% (n = 37,664) aged over 64 years. Overall, 18.5% (n = 9,545), 2.3% (n = 1,187) and 3.0% (n = 1,539) of the patients had bacterial pneumonia, sepsis, and both pneumonia and sepsis, respectively, with most infections occurred early within 3 days of admission. The crude 60-day mortality ranged from 20.5% in patients with early bacterial pneumonia to 56.6% in patients with both bacterial pneumonia and sepsis occurred late compared to patients without the infections (10.9%). Higher adjusted odds ratios (aOR) were estimated for sepsis (late: aOR 7.9, 95% CI 6.2–10.2; early: 5.7, 4.8–6.7) or both infections (late: 8.6, 6.9–10.9; early: 7.0, 6.1–8.1) than for bacterial pneumonia (late: 2.4, 2.2–2.6; early: 1.9, 1.7–2.0). In addition, admission during epidemic peak increased mortality while COVID-19 vaccination may lower the risk of death.

Conclusion: Bacterial pneumonia and sepsis especially late occurred infections were strongly associated with increased mortality in hospitalized COVID-19 patients during Omicron waves in Hong Kong. The findings highlighted the importance of early identification of bacterial infections particularly sepsis in improving mortality for COVID-19 patients.

Disclosure of Interest

None declared.

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Mind the hap: a multidisciplinary project to reduce the incidence of hospital acquired pneumonia on the elderly care wards at the Royal Berkshire Hospital, UK

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Introduction: Hospital acquired pneumonia (HAP) is the most common nosocomial infection in the UK. It is associated with prolonged length of stay and significant mortality. In 2019 HAP incidence on the Royal Berkshire Hospital Elderly care wards represented 5% of hospital admissions, exceeding the national average. This led to the launch of a multidisciplinary project to improve HAP diagnosis, management and prevention.

Objectives: To improve the diagnosis and management of HAP and reduce HAP incidence through the implementation of preventative interventions.

Methods: A steering group was formed by relevant clinical and non-clinical staff. At the ward level HAP champions were nominated from the nursing and health care assistant (HCA) staff.

The project was launched with a HAP awareness day and poster campaign alongside dissemination of a patient leaflet to those diagnosed with HAP. A structured multidisciplinary teaching programme was delivered in addition to basic swallow assessment training for nursing staff. Patients at high risk of HAP were also identified daily through the nursing safety huddle.

To monitor the effectiveness of the interventions 3 audit cycles were performed between 2019 and 2023 to evaluate the diagnosis and management of HAP cases. The frequency with which prevention measures were performed was captured daily and displayed on an electronic HAP dashboard. Findings were reviewed monthly and fed back to all wards.

Results: Between 2019 and 2023 HAP incidence is now maintained significantly below 5%, diagnostic accuracy has increased from 35 to 81%, antimicrobial guideline usage has increased from 29 to 78%, sputum collection has increased from 9 to 24%, and HAP preventative approaches have been embedded across all wards.

Conclusion: By taking a multidisciplinary approach to problem solving, communication, analysis and interventions, significant improvements have been achieved in the diagnosis, management and

prevention of HAP on the elderly care wards. This has ultimately led to a substantial reduction in HAP incidence.

Disclosure of Interest

None declared.

P35

Prevention of ventilator-associated pneumonia- guideline adherence and outcomes

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Introduction: Ventilator-Associated Pneumonia (VAP) is one of the leading causes of morbidity and mortality in Intensive Care Units (ICU). VAP has a high incidence rate that can be reduced through the use of bundles, thus ensuring better outcomes. However, its effectiveness is closely related to implementation and dissemination strategies.

Objectives: To assess adherence to a VAP prevention bundle; to assess the impact of adherence on outcomes (VAP, mortality rate, hospital length of stay (LOS), and duration of invasive ventilation (IV)).

Methods: A quasi-experimental study was conducted, pre-and post-intervention, with historical control in three ICU over 6 months. The bundle was implemented and disseminated based on a multimodal approach, targeting physicians and nurses. The sample comprised patients hospitalized in the ICU aged ≥ 18 years and submitted to endotracheal intubation for more than 48 h. Adherence to the bundle was assessed through auditing by observation. Outcome data were collected daily and entered into an intern database. Results were processed by the Statistical Package for the Social Sciences. The study was approved by the Ethics Committee and the hospital's Board of Directors following the ethical principles for health research.

Results: The sample comprised 828 patients aged between 18 and 95 years (M = 61.85; SD = 15.8 years). Increasing adherence to most of the recommendations over the course of the study was found, with two being statistically significant ($p = 0.014$), ($p = 0.002$). Also, adherence to all interventions simultaneously increased from 83.4% to 88.2% ($p = 0.015$). These results showed the effectiveness of a multimodal strategy approach. In addition, the statistical analysis confirmed that greater adherence to maintaining endotracheal tube cuff pressure was associated with shorter IV ($p < 0.001$), ICU LOS ($p < 0.001$) and lower mortality rate ($p = 0.002$). On the other hand, results showed that greater adherence to all interventions simultaneously was directly related to fewer in ICU LOS ($p = 0.004$) and fewer IV ($p = 0.016$, $p = 0.005$).

Conclusion: From the data obtained on the association between adherence to each recommendation and health outcomes, this study provided a valuable contribution to better understanding the effectiveness of each intervention individually concerning VAP prevention.

Disclosure of Interest

None declared.

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The role of respiratory viruses along with COVID-19 in pediatric lower respiratory tract infections

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