

hospital activities, reduced the efficiency of patient care, and used medical resources. To address this problem, CH1 implemented a system of grouping inpatients to color-coded areas from June to December 2021. **Methods:** In this retrospective study, we describe the system of grouping inpatients to color-coded areas based on SARS-CoV-2 test result at a 1,600-bed, national pediatric hospital in Ho Chi Minh City. **Results:** Inpatients were first separated into those with or without respiratory symptoms, and secondly to different color-coded areas based on SARS-CoV-2 test result and hospitalization length: red zone (days 1–3), orange zone (days 3–7), and green zone (day 7 onward). Prior to admission, all patients were tested with a SARS-CoV-2 rapid diagnostic test. If negative, the patient was admitted to the red zone. On days 3 and 7 of hospitalization, the patient was tested using a pooled RT-PCR method. Patients negative on day 3 were relocated to the orange zone; patients negative on day 7 were relocated to the green zone. A patient with a positive test result at any time point was transferred to a COVID-19 zone. One caregiver was allowed to stay with 1 patient with similar testing regimen. A mobile transportation team was set up to deliver food and other necessities; thus, movement was restricted and interaction was prevented among zones. After this system was implemented, COVID-19 cases were detected early, with most positive cases in the red zone (19.6%) and the orange zone (2.8%), with only 1 case in the green zone (0.7%). **Conclusions:** The system of grouping patients to color-coded areas helped prevent SARS-CoV-2 transmission within the hospital, allowing uninterrupted operation.

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**Challenges in building and running a 4,000-bed COVID-19 intensive care unit in an exhibition center**

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**Objectives:** To describe the design process for a hospital in an exhibition center. We discuss challenges during the building process and areas in which risk assessments had to be made and practices modified to mitigate suboptimal conditions. **Methods:** UK National Health Service designers and military planners worked in conjunction with the infection prevention and control team (IPCT) to work with the existing infrastructure. The clinical area was deemed to be an aerosol-generating procedure (AGP) zone because it was entirely an intensive care unit. The challenges included no oxygen line, a lack of hot water, minimal access to cold water, almost no drainage, and a lack of physical space in which to carry out many necessary procedures. These challenges were overcome either by design or by changes to usual practices through mitigation measures. The IPCT had key roles in ensuring staff and patient safety and personal protective equipment (PPE) inventory management as well as donning and doffing procedures. **Results:** The Nightingale Hospital became a fully functioning ICU within 10 days of the build commencing, and the first patients were admitted within a few days. The hospital was used only sparingly because the national pandemic lockdown was in effect. In total, 72 patients were admitted, with a survival rate of 63%, comparable to established ICUs. Transmission rates of COVID-19 in staff were very low among those working clinically. The unit closed in June 2020 but reopened in January 2021 for rehabilitation with a smaller number of beds but better facilities as a result of our experience in the first iteration. **Conclusions:** A temporary hospital was built in an exhibition center to successfully manage a number of patients. Even in a temporary hospital facility that was limited in services, successful outcomes were achieved.

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**Impact of the COVID-19 pandemic on influenza vaccination uptake among healthcare workers**

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**Objectives:** Influenza vaccination is encouraged for all healthcare workers (HCWs) to reduce the risk of acquiring the infection and onward transmission to colleagues and patients during the influenza season. Thus, vaccination was introduced at Singapore General Hospital (SGH) in 2007 and has been offered to all HCWs at no cost. The HCW influenza vaccination program is conducted annually in October and biannually during years with vaccine mismatch. However, influenza vaccine uptake remained low among HCWs. We sought to determine the impact of the coronavirus disease 2019 (COVID-19) pandemic on influenza vaccine uptake among HCWs. **Methods:** At SGH, 2 methods of vaccine delivery are offered: centralized (1-month drop-in system during office hours) and decentralized (administered by vaccination teams in offices or ward staff in inpatient locations). In the 4-year study period between 2018 and 2021, 6 influenza vaccination exercise campaigns were conducted during 8 influenza seasons. During each exercise, ~9,000 HCWs were eligible for vaccination. **Results:** Prior to the COVID-19 pandemic, vaccine uptake in the Southern Hemisphere was 77.6% (6,964 of 8,977) in 2018 and 84.2% (7,296 of 8,670) in 2019. During the COVID-19 pandemic in 2020, vaccine uptake in the Southern Hemisphere increased by 10% to 94.1% (8,361 of 8,889). In the Northern Hemisphere, vaccine uptake was 79.2% (7,114 of 8,977) in 2018, and this increased by 17.9% to 97.1% (8,926 of 9,194) during the COVID-19 pandemic in 2020. During the 2021 Southern Hemisphere influenza season, no vaccination program was conducted because the risk of influenza was considered low due to the closure of international borders and the implementation of public health measures. In addition, priority was given to COVID-19 vaccination efforts. **Conclusions:** Increased uptake of the influenza vaccination was observed during the COVID-19 pandemic. Anxiety created by the respiratory disease pandemic and debate surrounding vaccines likely contributed to increased awareness and uptake in influenza vaccine among HCWs.

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**Healthcare-associated infections among the obstetrics and gynecology patients with confirmed COVID-19 in Hung Vuong Hospital, Vietnam**

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**Objectives:** During the COVID-19 surge, our hospital was overloaded due to the increasingly high volume of patients and lack of resources, which resulted in difficulties in complying with infection control and prevention (IPC) practices. In this study, we estimated healthcare-associated infection (HAI) incidence and relevant factors among COVID-19 patients in Hung Vuong hospital. **Methods:** This study included all SARS-CoV-2-positive adult patients hospitalized between September 1 and October 31, 2021. The Centers for Disease Control and Prevention definition of HAI in the acute-care setting was used. **Results:** Among 773 patients, 21 (2.72%) developed 26 separate HAIs. The cumulative days of hospitalization were 5,607. The incidence of HAI among COVID-19 patients was 4.64 per 1,000 days of hospitalization. The most frequent HAI was clinically defined pneumonia (46.2%), for which the ventilator-associated pneumonia (VAP) rate was 41.9 per 1,000 ventilator days. Among 21 positive cultures, the most frequently isolated microorganisms were *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, and *Escherichia coli*. HAIs were significantly associated with the number of central-line days (OR, 1.74; 95% CI, 1.33–2.78), the number of indwelling urinary catheter days (OR, 1.46; 95% CI, 1.05–2.03), the length of administration days (OR, 1.25; 95% CI, 1.07–1.45), antibiotics use prior to HAIs (OR, 0.01; 95% CI, 0.01–0.21), and the number of nasal cannula days (OR, 0.62; 95% CI, 0.44–0.85). **Conclusions:** COVID-19 makes patients more vulnerable and may require more invasive procedures, increasing the infection risk by opportunistic pathogens like gram-negative Enterobacteriaceae. Hence, fundamental IPC recommendations should be strongly implemented.

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**Abstract Number:** SG-APUSIC1201

**Knowledge and awareness of healthcare workers in a residential care home regarding the use of personal protective equipment (PPE) during the COVID-19 pandemic: A pilot study**

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**Background:** According to the World Health Organization (WHO), as of April 9, 2022, there had been 494,587,638 confirmed COVID-19 cases and 6,170,283 deaths reported worldwide. In Hong Kong, in recent outbreak, ~55% of confirmed cases were residential care home (RCH) residents and >800 staff were infected. In 2016, ~15% of people aged ≥80 years were living in residential care homes. **Objectives:** To assess healthcare worker (HCW) knowledge level and attitudes about PPE use in residential care homes. **Methods:** This cross-sectional study, included participants who worked in the residential care homes, registered as healthcare workers (HCWs). HCWs who were part-time staff or worked <3 months in the residential care home were excluded. Ethical review approval from the faculty research committee of the university was obtained in January 2022. The Knowledge, Attitude, Practical (KAP) questionnaire was adapted. The questionnaire has 33 items pertaining to knowledge, attitude, and

practice regarding PPE. **Results:** In total, 50 questionnaires were received; 32 respondents (64%) were female and 18 (36%) were male. Nearly half of the participants had completed a high diploma course, and 32% had graduated from secondary school. Using ANOVA, there were no significant differences of education level of participants or participant knowledge level of PPE [ $F(2,47) = .181$ ;  $P = .835$ ], attitudes [ $F(2,47) = 1.995$ ;  $P = .147$ ] and practice [ $F(2,47) = .459$ ;  $P = .635$ ]. The Pearson correlation was used to measure the relationship between knowledge level and PPE practices. Our results indicated a significant difference and moderate correlation between knowledge level and PPE practice among HCWs. **Conclusions:** Knowledge level does not directly affect HCW practice regarding PPE. PPE practice skills have been influenced by various factors during the pandemic situation, such as availability of PPE, manpower, workload, and communication.

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**Abstract Number:** SG-APUSIC1062

**The role of active surveillance in the primary-care setting during a pandemic in Singapore**

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**Objectives:** In response to the COVID-19 pandemic, primary care swiftly transformed and re-established patient flow in clinics to red, orange, and green zones based on a set of screening criteria. To further manage the influx of suspected COVID-19 patients and their needs safely, a list of surveillance audit criteria was developed to ensure good infection control standards. **Methods:** The infection control team prepared the surveillance audit criteria based on recommended CDC/WHO guidelines for pandemic preparedness. These criteria were contextualized to the primary-care polyclinic setting. The surveillance audit criteria were grouped according to their category: screening, triage, early recognition and source control, inventory management of personal protective equipment (PPE), infection control measures in the red zone, precautionary measures during collection of nasopharyngeal swabs and environmental cleaning and disinfection for premises in the red, orange, and green zones, respectively. The infection control liaison nurses in each polyclinic were trained to use the checklist to ensure consistency in interpretation of the criteria. **Results:** Surveillance audits were conducted biweekly in the first 3 months then monthly once the compliance rate was steady at 90%–100% for all categories. The overall average compliance rate since commencing in March 2020 for all polyclinics was sustained at 90%–100%. Common findings included inappropriate use of PPE (eg, self-contamination during removal of gown or wrong sequence of doffing), inadequate ventilation, and inadequate cleaning processes. All findings were corrected immediately, and staff education was provided. **Conclusions:** Primary care plays an important role during a pandemic. It is essential that both patients and healthcare workers in the primary care setting are protected from infection risk during a pandemic. Having a good surveillance audit process helps ensure that primary care services can continue for the general population. Surveillance is an essential component of the health system's response to a pandemic.

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**Environmental screening of SARS CoV-2 to support an outbreak investigation in Sardjito Hospital, Yogyakarta, Indonesia**

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**Objectives:** Many healthcare workers and patients in intensive care units of Sardjito Hospital, a referral and academic hospital in Yogyakarta,