

COVID-19 vaccination is strongly recommended for HCWs to reduce the spread of COVID-19 and to limit the number of cases with severe disease.

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Subject Category: COVID-19

Abstract Number: SG-APUSIC1200

Infection prevention control along the fast track: Supporting the construction, operation, and closure of a COVID-19 community treatment facility in an F1 Pit

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Objectives: The infection prevention team (IPT) was tasked with providing technical guidance for the construction and setup of a community treatment facility in 3 weeks at a Formula 1 (F1) racing pit to house elderly SARS-CoV-2-positive cases. **Methods:** The facility was setup with 737 beds including an isolation unit and a resuscitation bay. The multidisciplinary team decided on zone segregation (ie, green and hot zones) and discussed the clean-dirty workflow. IPC measures were revisited, especially regarding the layout of the donning and doffing station, as the facility expanded to accommodate patients with more comorbidities and those who needed dialysis. IPC training for nominated infection control liaison officers (ICLOs) was conducted using a “train the trainer” approach for mask fitting, hand hygiene, donning and doffing of personal protective equipment (PPE). Enhanced IPC measures, including weekly audit and staff surveillance, were mandatory, and monitoring was performed according to MOH guidelines. Linen and waste management and the cleaning and disinfection process were established at the beginning of the project. **Results:** Construction was completed within 3 weeks. The setup was completed in November 2021 for 737 beds. There were 758 admissions during the 4-month operation. In total, 12 trained ICLOs oversaw the training of 200 healthcare workers. They conducted 12 IPC audits and provided feedback to all staff. Compliance with PPE practices was inconsistent, and findings were shared during daily after-action reviews for improvement. The greatest challenges were converting the F1 facility to a healthcare facility, training staff with no IPC knowledge, and monitoring IPC on the ground. The trained ICLOs were successful in implementing, practicing, and monitoring IPC measures with minimal assistance from the infection prevention team. **Conclusions:** Operation began on November 5, 2021, and ceased on March 9, 2022. The community treatment facility construction, setup, and operations were completed within a short timeframe due to the efforts of various stakeholders. We faced many challenges, but we managed to implement and uphold IPC standards from beginning to end.

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Mitigating the problems that arose in a ward with COVID-19 cases: Development of a “hot ward” tool kit for a potential COVID-19 outbreak

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Objectives: COVID-19 cases continue to climb in the community from the SARS-CoV-2 δ (delta) variant wave. To prepare for cases that may be nosocomial or detected late, the infection prevention team constructed a ‘hot ward’ tool kit to guide implementation of infection control measures. **Methods:** We engaged the NUH Facilities Management ventilation engineers to understand every ward’s mechanical ventilation setup. With this information, we created of “green” and “hot” zones within ward. After conducting assessments on individual wards, we created the “hot ward” tool kit: (1) 38 ward floor plans indicating ventilation setup, “green” zones, and

“hot” zones; (2) a risk matrix to guide ward actions based on cycle threshold (Ct) value and duration of exposure; and (3) “hot ward” checklists. The tool kit was presented to infectious disease clinicians on the infection prevention team and senior nursing leaders for input and guidance. To ensure that these plans were practical, we conducted numerous site walks with HOD and ward nurse managers (ie, for the ICUs and psychiatric units). Finally, the tool kit was shared in a meeting with key stakeholders and senior leaders. It was also uploaded to the NUH COVID-19 quick-reference intranet page for easy staff access. **Results:** The tool kit was used by 2 general wards when cases of confirmed COVID-19 were detected among patients. Overall, the tool kit helped HOD and nurse managers with the immediate actions required and it provides useful guidance for the infection prevention team to assess and guide decisions regarding whether a ward lockdown is necessary. **Conclusions:** Although the guidance was useful, from the site walk we learned that the mechanical ventilation system of some wards is shared, making it challenging to prevent cross contamination between wards because any shared ventilation between unmasked areas can be pose a risk for both patients and staff. Additional measures were instituted to mitigate this risk.

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Subject Category: Device-associated infections

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Two-stage primary total knee arthroplasty for evolutive infected arthritis with coexistent joint destruction

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Objectives: The treatment of infected knee arthritis in patients with coexisting joint destruction, including superimposed advanced arthritis or chronic osteomyelitis, is challenging. We investigated the outcomes of 2-stage primary total knee arthroplasty (TKA) for evolutive infected arthritis with coexistent joint destruction. **Methods:** We retrospectively reviewed the cases of 50 patients from 5 hospitals who presented with infected arthritis of the knee and were treated with 2-stage TKA: debridement and antibiotic-loaded articulating cement spacer (ALCS) insertion as the first stage and TKA as the second stage. We recorded demographics, laboratory results, and radiographic findings including Kellgren-Lawrence classification (KL) for knee arthritis. Outcomes including infection eradication, knee range of motion (ROM), and patient-reported outcome measures were evaluated. **Results:** The patient cohort had a mean age of 71.8 years (range, 40–86); they were followed for an average of 4.1 years (range, 2.2–13.3). Also, 40 patients showed KL grade 4, whereas 10 patients showed grade 3. A pathogen was identified in 38 cases (73.1%); methicillin-resistant staphylococci infections (N = 16) and *Candida* spp infections (N = 7) were the 2 most common types. Constrained prostheses were used in 10 cases (20%). Stem augmentations were used in 15 cases (36.0%) and block augmentations were used in 8 cases (19.0%). One patient had recurrent infection after TKA, so the eradication rate was 98%. After 2-stage TKA, the mean knee ROM was 119.4° (range, 80°–140°) and the mean Knee Society (KS) knee score was 90.4, the average KS function score was 84.7, the average Hospital for Special Surgery (HSS) score was 87.2, and the average Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score was 16.7. The KS function scores (P = .029) and the WOMAC scores (P = .022) were significantly better

in 17 patients who underwent ALCS insertion within 30 days of infection diagnosis compared to the other 33 patients. **Conclusions:** The 2-stage primary TKA for patients with infected knee arthritis with coexisting joint destruction showed satisfactory outcomes with a low infection recurrence. However, constrained prostheses or augmentation use may be necessary. Notably, some functional scores were better in the group that underwent ALCS insertion relatively early after the infection diagnosis.

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Abstract Number: SG-APSC1035

Prospective safety surveillance study of ACAM2000 smallpox vaccine in deployed military personnel

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Objectives: We compared rates of myopericarditis adverse events and evaluated potential risk factors of development. We compared rates of dermatological–neurological adverse events (severe and serious) with other adverse events in a specific population of deployed US military personnel who received or did not receive ACAM2000 vaccine (ie, Vaccinia smallpox live vaccine). **Methods:** Up to 20,000 military personnel recipients were enrolled in a prospective observational cohort study: up to 15,000 ACAM2000 recipients in cohort 1 and up to 5,000 military personnel who were eligible for ACAM2000 vaccination but were not vaccinated due to recent vaccination or characteristics of their contacts in cohort 2. Enrollment was at a 3:1 ratio, respectively. Serum specimens and data were collected at the initial visit and 10 days later (cf, window of 6–17 days). Study participants with evidence, either clinical or laboratory, of possible myopericarditis were referred to a blinded independent review committee for further evaluation and adjudication. The primary analysis was logistic regression with adjudicated myopericarditis as the dependent variable and age, sex, race, and exercise regimen as the independent variables. **Results:** Initial data and serum specimens were obtained from 14,667 participants (cohort 1, N = 10,825; cohort 2, N = 3,842). According to protocol, 2 visits were completed by 12,110 participants (cohort 1, N = 8,945; cohort 2, N = 3,165), and 125 participants (cohort 1, N = 111; cohort 2, N = 14) were referred for myopericarditis adjudication, of whom 1 had confirmed myocarditis, 5 had suspected myocarditis, 1 had suspected pericarditis, and 54 (cohort 1, N = 44; cohort 2, N = 10) had subclinical myopericarditis. The unadjusted myopericarditis rates were 5.7 per 1,000 (95% CI, 4.3–7.5) for cohort 1 and 3.2 per 1,000 (95% CI, 1.7–5.8) for cohort 2. The unadjusted and adjusted odds ratios for myopericarditis for cohort 1 and cohort 2 were 1.8 (95% CI, 0.9–3.6) and 1.3 (95% CI, 0.6–2.6), respectively. At least 1 serious adverse event was experienced by 117 participants (1.1%) in cohort 1 and 13 (0.3%) in cohort 2. No serious and severe neurological or dermatological adverse events were reported. **Conclusions:** ACAM2000 vaccination was associated with a modest but nonsignificant increase in the risk of myopericarditis in this prudently screened, young and healthy service-member population. The adjusted OR was 1.3 and the unadjusted OR was 1.8. Overall, all but 7 cases were subclinical. Citation: Faix DJ, Gordon DM, Perry LN, et al. Prospective safety surveillance study of ACAM2000 smallpox vaccine in deploying military personnel. *Vaccine* 2020;38:7323–7330.

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Subject Category: Emerging and re-emerging infectious diseases in the healthcare setting

Abstract Number: SG-APSC1155

Drug susceptibility patterns of fulminant group G *Streptococcus* (GGS) infection as a re-emerging infectious disease in Japan

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Objectives: Severe streptococcal infections are invasive, re-emerging infections that rapidly worsen and lead to death. Not only group A *Streptococcus* (GAS) but also group G *Streptococcus* (GGS) are the causative agents of this infection. Moreover, GGS produces hemolytic toxins, proteolytic toxins, and other toxins like GAS. Furthermore, drug-resistant *Streptococcus* spp, like other pathogenic bacteria, are on the rise worldwide. However, drug resistance has not been studied extensively in invasive GGS. Therefore, we investigated the drug susceptibility of GGS clinical isolates that are closely related to fulminant streptococcal infections. **Methods:** We used GGS strains isolated from sterile sites of invasive infections at a hospital in Nagoya City, Japan, from 2017 to 2021. Bacterial identification and drug-susceptibility testing were performed using a VITEK-2 system. **Results:** Overall, 53 strains were included in the study. The GGS strains examined in this study were resistant to 3 different antibiotics (erythromycin, clindamycin, and minocycline). Also, 18 strains (34%) were resistant to erythromycin, 9 (17%) were resistant to clindamycin, and 18 (34%) were resistant to minocycline. Moreover, there were 5 strains (9.4%) of 2-drug-resistant bacteria and 8 strains (15.1%) of 3-drug-resistant bacteria. **Conclusions:** Acquired resistance not only to individual antibiotics but also to multiple antibiotics suggests that GGS tends to become multidrug resistant. Continued surveillance of the drug susceptibility of GGS as a potential cause of fulminant streptococcal infections will be necessary in the future.

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Factors associated with improved knowledge of COVID-19 prevention and control following a training of healthcare workers in Vietnam

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Objectives: SARS-CoV-2 is a novel and highly infectious virus. An effective response requires rapid training of healthcare workers (HCWs). We measured the change in knowledge related to COVID-19 and associated factors before and after training of HCWs in Vietnam. **Methods:** A quasi-experimental design was used to evaluate HCW knowledge related to prevention and control of SARS-CoV-2 before and after attending a