Singapore; Jancy Mathews, Singapore National University Health System, Singapore; Doris Young, Singapore National University Health System, Singapore

Objectives: COVID-19 booster uptake has remained poor among healthcare workers (HCWs) despite evidence of improved immunity against the SARS-COV-2 δ (delta) and ο (omicron) variants. Although most studies have used a questionnaire to assess hesitancy, we aimed to identify factors affecting booster hesitancy by examining actual vaccine uptake across time. **Methods:** COVID-19 vaccination database records were extracted for HCWs working at 7 Singaporean public primary-care clinics between January and December 2021. Data included sex, profession, place of practice, vaccination type, and dates. Time to booster was calculated from the date of vaccination minus the date of eligibility. The $\chi 2$ test was used to compare the relationship between first dose and booster hesitancy. The Kaplan-Meier method and the log-rank test were used to evaluate differences in cumulative booster uptake. Multivariate Cox regression was used to investigate predictors of timely booster vaccination. The vaccination rate was charted across time and was corroborated with media releases pertaining to legislative changes. **Results:** Of 891 primary-care HCWs, 877 (98.9%) were fully vaccinated and 73.8% of eligible HCWs had taken the booster. HCWs were less booster hesitant (median, 16 days; range, 5–31.3) compared to the first dose (median, 39 days; range, 13–119.3). First-dose–hesitant HCWs were more likely to be booster hesitant (OR, 3.66; 95% CI, 2.61–5.14). Adjusting for sex, workplace, and time to first dose, ancillary HCWs (HR, 1.53; 95% CI, 1.03–2.28), medical HCWs (HR, 1.8; 95% CI, 1.18–2.74), and nursing HCWs (HR, 1.8; 95% CI, 1.18–2.37) received boosters earlier than administrative staff. No temporal relationship was observed for booster uptake, legislative changes, or COVID-19 case numbers. **Conclusions:** Vaccine hesitancy among HCWs had improved from first dose to booster, with timely booster vaccination among medical and nursing staff. Tailored education, risk messaging, and strategic legislation might help reduce delayed booster vaccination. This study was approved by the National Healthcare Group (NHG) Domain Specific Review Board (DSRB), Singapore on December 28, 2021 (Reg No. 2021/01120).

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s3–s4
doi:10.1017/ash.2023.12

Subject Category: COVID-19
Abstract Number: SG-APSIC1054
Sputnik-V postvaccination immunologic responses in nasal mucosa: A prospective cohort study in Kazakhstan

Irina Kadyrova, Karaganda Medical University, Karaganda, Kazakhstan; Svetlana Kolesnichenko, Karaganda Medical University, Karaganda, Kazakhstan; Ilya Korshukov, Karaganda Medical University, Karaganda, Kazakhstan; Yevgeniya Kolesnikova, Karaganda Medical University, Karaganda, Kazakhstan; Baurzhan Negmetzhanov, Nazarbayev University, Nur-Sultan, Kazakhstan; Yeldar Baiken, Nazarbayev University, Nur-Sultan, Kazakhstan; Aidana Sultanbekova, Karaganda Medical University, Karaganda, Kazakhstan; Sergey Yegorov, McMaster University, Hamilton, Ontario, Canada; Dmitriy Babenko, Karaganda Medical University, Hemer, Germany; Bakhyt Matkarimov, Nazarbayev University, Nur-Sultan, Kazakhstan; Gonzalo Hortelano, Nazarbayev University, Nur-Sultan, Kazakhstan; Matthew S. Miller, McMaster University, Hamilton, Ontario, Canada

Objectives: Sputnik-V (Gam-COVID-Vac) is a recombinant adenoviral (rAdv) vector-based, COVID-19 vaccine now used in >70 countries. Mucosal immunity is thought to be important for protection against COVID-19. We did a prospective cohort study to assess Sputnik-V–elicited mucosal SARS-CoV-2 antibody responses. **Methods:** We divided 82 COVID-19–free participants into prior COVID-19 and no prior COVID-19 groups and followed them at day 21 after Sputnik-V dose 1′ (rAd5) and dose 2′ (rAd26). Nasopharyngeal swabs and blood were collected to perform SARS-CoV-2 diagnostic and immunologic assays. SARS-CoV-2 spike-specific IgG and IgA ELISAs were performed on both nasal swabs and blood. SARS-CoV-2 real-time RT-PCR testing was performed to exclude infectious influencing. **Results:** Nasal S-IgG levels increased 25-fold after dose 1′ ($P < .001$) and remained high after dose 2 in all participants. Prior COVID-19 exposure was associated with both elevated baseline mucosal IgG and IgA and higher postvaccination IgG, but not IgA, boost. Nasal IgA levels increased 16.5-fold after dose 1′ ($P < .001$) and remained high after dose 2' in all participants. Compared to dose 1′, Sputnik-V dose 2′ did not further increase either mucosal IgG levels ($P = .626$) or IgA levels ($P = .609$). **Conclusions:** A single dose of Sputnik-V boosted mucosal SARS-CoV-2 immunity. The effects of Sputnik-V dose 2′ on mucosal immunity were minimal. These findings indicate (1) that intramuscularly administered adenoviral vaccines enhance SARS-CoV-2 immunity via both systemic and mucosal routes and (2) that cost-effectiveness and the efficacy of Sputnik-V vaccination could be improved by adjusting the current prime-booster regimen and extending the 21-day interval between the doses. Trial registration: Registered on ClinicalTrials.gov (no. NCT04871841).

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s4
doi:10.1017/ash.2023.13

Subject Category: COVID-19
Abstract Number: SG-APSIC1119
N95 mask concordance amongst female Muslim healthcare workers undergoing mask fitting with and without tudung

Huiru Kui, Tan Tock Seng Hospital, Singapore; Darius Beh, Tan Tock Seng Hospital, Singapore; Xin Yi Lim, Tan Tock Seng Hospital, Singapore; Brenda Ang, Tan Tock Seng Hospital, Singapore; Bee Fong Poh, Tan Tock Seng Hospital, Singapore

Objectives: In August 2021, the Ministry of Health, Singapore revised the uniform policy in public hospitals to allow female Muslim staff, including nurses, to wear the tudung as an add-on to their uniforms. Institutions were advised that incorporation of the tudung should still align with current infection prevention guidelines. On May 2, 2021, in response to evolving evidence of SARS-CoV-2 transmission, our institution adopted the use of N95 masks for all HCWs in clinical settings. Prior to this revision in uniform policy, most female Muslim staff were mask fitted without tudungs. No existing international guidance recommends whether mask refitting of should be conducted with tudungs. As such, we looked at the N95 mask concordance for these staff undergoing mask fitting. **Methods:** Between November 1, 2021, and January 14, 2022, we mask fit-tested all new staff and refitted existing staff both with and without the tudung. We conducted qualitative fit-testing using their personal tudung, and we tested 2 models of N95 mask: 3MTM 1870+ and AIR+. When an HCW only passed the fitting of 1 or none of the models, additional N95 mask fit-testing was conducted with other available mask models according to our department's existing workflow. **Results:** In total, 334 staff underwent N95 mask fitting. Overall, 326 (97.6%) passed with the same N95 mask models both with and without the tudung. The remaining 8 staff (2.4%) had passed 2 N95 mask models without the tudung but required a different N95 mask model while wearing the tudung. No staff required quantitative fit testing. **Conclusions:** N95 mask concordance for female Muslim staff undergoing fit-testing both with and without the tudung was high at 97.6%. Further evaluation of the 8 staff who did not show concordance could be retested using a quantitative fit-testing method.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s4
doi:10.1017/ash.2023.14

Subject Category: COVID-19
Abstract Number: SG-APSIC1049
Immunogenicity of Gam-COVID-Vac and Sinopharm BBIBP-CorV vaccines in seropositive and seronegative adults

Igor Stoma, Gomel State Medical University, Gomel, Belarus; Katsiaryna Korsak, Gomel State Medical University, Belarus; Evgenii Voropaev, Gomel state Medical University, Gomel, Belarus; Olga Osipkina, Gomel,

Gomel State Medical University, Gomel, Belarus; Aleksey Kovalev, Gomel State Medical University, Gomel, Belarus

Objectives: Data comparing the immunogenicity of Sputnik-V and Sinopharm vaccines in seropositive and seronegative groups are lacking. We compared the immunogenicity of Sputnik-V (Gam-COVID-Vac) and Sinopharm (BBIBP-CorV) vaccines in seronegative and seropositive groups. **Methods:** In total, 60 adults participated the study. The immune response after vaccination was assessed using enzyme immunoassay. IgG levels were measured in all participants at 3 time points: before vaccination, 42 days after the first vaccine dose, and 6 months after the first vaccine dose. The results of the SARS-CoV-2 antibody test were quantified according to the WHO First International Standard and expressed in international units (BAU per mL). **Results:** The study participants were divided into 2 groups: 30 people (50%) were vaccinated with Sputnik-V (Gam-COVID-Vac) and 30 people (50%) were vaccinated with Sinopharm (BBIBP-CorV). The groups had no difference in sex composition. The highest antibody levels were observed 42 days after vaccination in both the seronegative group ($P = .006$) and the seropositive group ($P < .001$). At 6 months after vaccination, the IgG value declined much farther among the seronegative group ($P = .003$) compared to those who had recovered from COVID-19 before vaccination. However, the "hybrid immunity" generated by the Sputnik-V vaccine had greater strength and duration ($P < .001$). **Conclusions:** This study showed that IgG levels in vaccinated individuals who previously recovered from SARS-CoV-2 infection ("hybrid immunity") were higher than in SARS-CoV-2–naïve individuals. In a comparative part of the study, the Sputnik-V vaccine had greater strength and duration of immune response across the 6-month observation period ($P < .001$).

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s4–s5
doi:10.1017/ash.2023.15

Subject Category: COVID-19
Abstract Number: SG-APSIC1176

Laboratory-acquired COVID-19 during the SARS-CoV-2 o (omicron) pandemic wave at a tertiary-care hospital in Korea

Mi-Na Kim, Asan Medical Center, Seoul, Republic of Korea; Joonsang Yu, Asan Medical Center University of Ulsan College of Medicine, Seoul, Republic of Korea; Hun Hong, Asan Medical Center University of Ulsan College of Medicine, Seoul, Republic of Korea

Objectives: Laboratory-acquired infection (LAI) of SARS-CoV is well known, but MERS-CoV or SARS-CoV-2 LAI has not yet been reported. Beginning last November, COVID-19 cases increased among laboratory staff at our 2,700-bed tertiary-care hospital. A 7-day home-quarantine policy for healthcare workers when household members were confirmed with SARS-COV-2 was lifted February 28. We investigated LAI and its risk factors. **Methods:** From March 21 to 25, all confirmed cases of COVID-19 among 176 laboratory staff were surveyed with questionnaire to collect the following data: symptom onset and period, SARS-CoV-2 PCR–positive sample date, age, sex, infection in household members, close contact with COVID-19 confirmed staff, work type, work unit, possibility of LAI and LAI risk factors. **Results:** In total, 54 laboratory staff (30.1%) were confirmed with SARS-CoV-2 infection; first 1 person on November 28 and 1 person on November 30, 2021, then 13 in February 2022 and 39 later in 2022. Overall, 22 cases had previously infected household members, and 9 cases suspected that they had had hospital contact with an infected patients through phlebotomy or bedside tests. In total, 25 cases of possible LAI mainly occurred in clusters of 3, 6, or 7 people through person-to-person transmission of a coworker who had an infected family member. The remaining 9 cases, including 1 sample receptionist, 2 urine analysis technicians, and 6 SARS-CoV-2 PCR test staff, may have been infected through an infected sample. However, person-to-person transmission was still possible because most shared a changing room and lounge in the same work unit. **Conclusions:** The most important cause of LAI is person-to-person transmission between coworkers; therefore, home quarantine is an effective measure to prevent LAI when a household member is infected wish SARS-CoV-2. Handling of infected specimens may be the second most common cause of LAI.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s5
doi:10.1017/ash.2023.16

Subject Category: COVID-19
Abstract Number: SG-APSIC1204

Time-based deisolation of generally asymptomatic immunocompetent COVID-19 patients on day 8 of infection to clean wards is safe

Nazira Binte Muhammad Fauzi, National University Hospital, Singapore; Revathi Sridhar, Singapore National University Hospital, Singapore; Chan Hwang Ching, Singapore National University Hospital, Singapore; Annie Poh, Singapore National University Hospital, Singapore; Isaac Low, Singapore National University Hospital, Singapore; Dale Fisher, Singapore National University Hospital, Singapore; Jyoti Somani, Singapore National University Hospital, Singapore

Objectives: The National University Hospital (NUH) is a tertiary-care teaching hospital in Singapore with 60% of patients in 6–8-bed cubicles. NUH recently changed to a time-based deisolation criterion for immunocompetent COVID-19 patients in cohort wards who are afebrile and improved but did not meet the antigen rapid test negative criteria at day 5–6 and who required continued hospital care. The MOH guidelines and studies of viral load trajectory from the SARS-CoV-2 δ (delta) variant suggest that by day 8 of infection, viral loads drop and the risk of transmission is low. We defined a cycle threshold (Ct) value ≥25 as the point at which virus cultures are negative. We assessed whether a time-based deisolation at day 8 correlated with Ct ≥25 during the SARS-CoV-2 o (omicron) variant pandemic surge. **Methods:** Data for patients and staff with confirmed positive COVID-19 PCR between January to March 2022 were collected. These data comprised a convenience sample collected retrospectively by the epidemiology team and the obstetrics and gynecology team and were used to deisolate patients. Nasopharyngeal (NP) swabs were sent for PCR for all admissions, to confirm diagnosis, for deisolation and/or transfer, and for staff suspected to have COVID-19 as part of hospital staff policy. **Results:** Overall, 403 observations were obtained. For 145 NP swabs tested by SARS-CoV-2 PCR on day 1, the median Ct value was 19.55 (IQR, 9.01). The median Ct for 87 observations on day 2 was 15.95 (IQR, 3.45). The median Ct value for 14 observations on day 8 was 24.22 (IQR, 5.19). From day 9 to day 37, with 47 observations, the Ct was generally >25. **Conclusions:** During the SARS-CoV-2 o (omicron) surge, NP swabs sent on day 8 had a median Ct value of 24.22. After day 8, the median Ct was >25. The discontinuation of isolation precautions on day 8 balances the use of dedicated COVID-19 beds with risk mitigation of transmission for recovered patients who require ongoing hospitalization. Small sample size and heterogeneous reasons for testing NP swabs after day 5 likely skewed our results and limits the generalizability of our results.

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S1):s5
doi:10.1017/ash.2023.17

Subject Category: COVID-19
Abstract Number: SG-APSIC1126

Controlling SARS-CoV-2 infection in inpatients through a grouping system at Ho Chi Minh Children's Hospital 1 in Vietnam

Chau Nguyen Ngoc Minh, Children's Hospital 1, Ho Chi Minh City, Vietnam; Thi Thanh Thuy Le, Ho Chi Minh Children's Hospital 1, Ho Chi Minh City, Vietnam; Thanh Hung Nguye, Ho Chi Minh Children's Hospital 1, Ho Chi Minh City, Vietnam; Ngoc Quang Minh Ngo, Ho Chi Minh Children's Hospital 1, Ho Chi Minh City, Vietnam; Van Niem Do, Ho Chi Minh Children's Hospital 1, Ho Chi Minh City, Vietnam; Thi Thanh Huong Nguyen, Ho Chi Minh Children's Hospital 1, Ho Chi Minh City, Vietnam

Objectives: At the onset of COVID-19, whenever SARS-CoV-2 was detected at Children's Hospital 1 (CH1), the related department or building was closed for extensive tracing, testing, and medical isolation. This process disrupted