

infection rates of HCWs with close contact and non-close contact of infected HCWs and the effect of COVID-19 vaccination on transmission among HCWs in a tertiary-care hospital in South Korea. **Methods:** This study was performed in a tertiary-care hospital in Korea. We analyzed the COVID-19 cases and contacts among HCWs from January to December 2021. We reviewed the vaccination status of confirmed and exposed HCWs, the type of vaccination, and the infection rate according to the contact. We performed subgroup analyses in individuals who had been diagnosed since July 2021 when the  $\delta$  (delta) variant became the dominant strain in South Korea. Transmission was defined based on their spatiotemporal epidemiologic association. **Results:** During the study period, 173 HCWs had COVID-19, and 2,693 HCWs were exposed to them. Among them, 18 (1.52%) of 1,186 close contacts and 13 (0.86%) of 1,507 non-close contacts had a positive SARS-CoV-2 test ( $P = .11$ ). When the index cases had been fully vaccinated, the infection rate of close contacts was 0.85% (7 of 820), whereas the infection rate of close contacts was 3.01% (11 of 366) when the index had not been fully vaccinated ( $P = .005$ ). However, the infection rate of non-close contacts was not different according to the vaccination status of index (0.83% vs 0.89%;  $P = .90$ ). During the period of  $\delta$  (delta) variant being dominant, the infection rate of close contacts was significantly lower when the index case had been fully vaccinated index than in cases with a non-fully vaccinated index case (0.85% vs 5.88%;  $P < .001$ ). **Conclusions:** Transmission to colleagues was significantly lower from vaccinated HCWs than from nonvaccinated HCWs, and this finding was more significant in the era of the  $\delta$  (delta) variant. Our findings support the importance of vaccination in HCWs.

**Funding:** None  
**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s75–s76  
 doi:10.1017/ash.2022.200

**Presentation Type:**

Poster Presentation - Oral Presentation

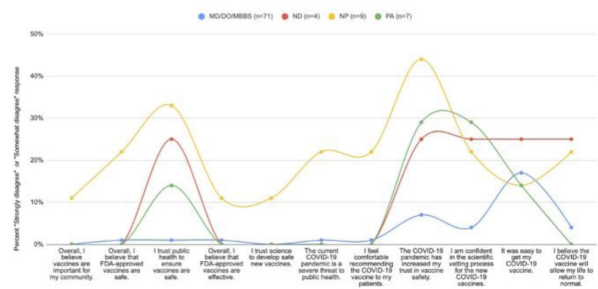
**Subject Category:** COVID-19

**COVID-19 vaccine knowledge, beliefs and attitudes among Oregon healthcare provider types**

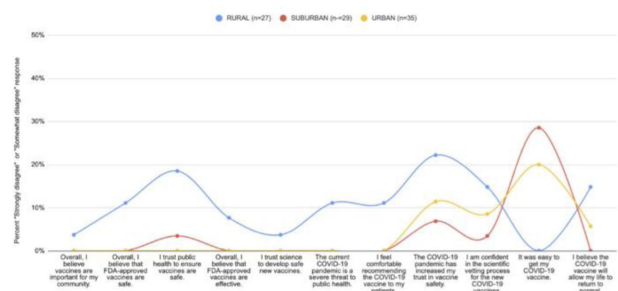
Lisa Corley Stampke; Jessica Osborn and Judith Guzman-Cottrill

**Background:** During this pandemic, the public has struggled to navigate the abundance of COVID-19 vaccine misinformation, and it is unclear how this misinformation has affected medical providers and their recommendations for patients. We sought to understand differences in COVID-19 vaccine knowledge, beliefs, and attitudes among Oregon healthcare provider types and regions of practice (rural, suburban, urban). **Methods:** A 36-question survey was constructed using Qualtrics with consultation from a survey methodologist. The survey was reviewed and approved by OHSU IRB and distributed via listserv or social media posting to provider societies in Oregon, including nurse practitioners (NPs), naturopathic doctors (NDs), physician assistants (PAs), doctors of medicine (MDs), doctors of osteopathic medicine (DOs), or practitioners with a bachelor of medicine-bachelor of surgery (MBBS), and via the Oregon Health Authority (OHA) immunization practice listserv. The survey accepted responses from July 9 to August 12, 2021. Participants were volunteers and responses were anonymous. **Results:** We collected 101 responses. Among them, 87 participants completed 100% of survey questions. Survey respondents were predominantly White females aged 41–50 years with an MD, DO, or MBBS. The overall COVID-19 vaccination rate of respondents was 94.6%. The vaccination rate was highest among the 4 NDs and 7 PAs at 100%, followed by 78 MDs, DOs, and MBBSs at 96.2%, and 12 NPs at 75%. Of NP respondents, 67% practiced rurally; 25.6% of MDs, DOs, and MBBSs practiced rurally; and 25% of NDs and 28.6% of PAs practiced rurally. In total, 22% of NPs did not feel comfortable recommending the COVID-19 vaccine to patients, compared to 1% of MDs, DOs, and MBBSs and 0% of NDs or PAs. All provider types had high rates of disagreement with the statement that the COVID-19 pandemic had increased their trust in vaccine safety: 44% of NPs; 29% of PAs; 25% of NDs; and 7% of MDs, DOs, and MBBSs. Among 19 rural providers, 19% indicated mistrust in

**Figure 1a:** Percent "strongly disagree" or "somewhat disagree" response to below statements about attitudes toward vaccination by provider type



**Figure 1b:** Percent "strongly disagree" and "somewhat disagree" responses to the below statements about attitudes toward vaccination by region of practice



public health to ensure that vaccines are safe versus 3% in suburban areas and 0% in urban areas. **Conclusions:** COVID-19 vaccine hesitancy is prevalent among healthcare providers and may be higher in NPs and those practicing rurally. Unfortunately, the response rate of NPs was low. Future research should focus on these providers to better understand their knowledge, beliefs, and attitudes about COVID-19 vaccines. These results can also inform future targeted vaccine education to healthcare providers during public health crises.

**Funding:** None  
**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s76  
 doi:10.1017/ash.2022.201

**Presentation Type:**

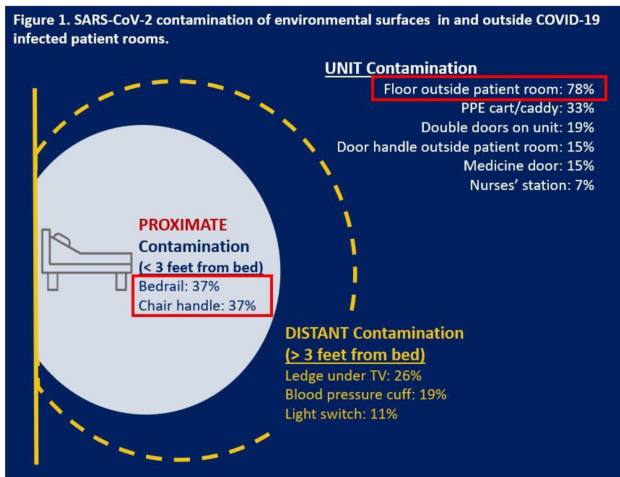
Poster Presentation - Oral Presentation

**Subject Category:** COVID-19

**SARS-CoV-2 environmental contamination in COVID-19 patient rooms in a VA medical center**

Kristen Gibson; Jennifer Ridenour; Kyle Carver; Julia Mantey; Jane Deng and Lona Mody

**Background:** SARS-CoV-2, the virus causing COVID-19 infection, can significantly contaminate environmental surfaces and can remain viable on surfaces for up to 9 days. Although respiratory route remains the most significant mode of transmission, fomites and environmental sources of infection remain a concern for healthcare personnel who are working in dedicated COVID-19 units. We investigated the extent of detectable SARS-CoV-2 contamination in the environment of COVID-19 patients at a single VA hospital, with the intent of identifying potential high-touch surfaces at risk for viral contamination, which could be used to inform the development of simple COVID-19 prevention strategies. **Methods:** We conducted a cohort study at 1 VA hospital in a unit housing adult veterans admitted with COVID-19 between October and December 2020. In total, 11 swab specimens were collected for PCR analysis (SARS-CoV-2 *env* gene) from environmental surfaces inside and just outside the rooms of COVID-19 patients one time. Retrospective chart reviews were conducted to provide the SARS-CoV-2 epidemiologic context for environmental



detection. **Results:** In total, 297 swabs were collected from the unit and environmental areas surrounding 27 hospitalized patients: average age, 72.5 years (range, 34–94); 100% male; 92% non-Hispanic white; average comorbidities, 1.8 (SD, 1.1). Of 297 swabs, 80 (27%) were positive for SARS-CoV-2 and 19 (70%) of 27 patients had at least 1 positive site. The most contaminated site was the floor just outside the patient room (78% positive samples), followed by the patient's bedrail (37%) and chair handle (37%) (Fig. 1). Traditionally high-touch surfaces, such as the door handle (outside patient room) and the light switch, did not have high positivity rates (<15%). Interestingly, both the personal protective equipment (PPE) cart outside patient's room (33%) and the double doors leading out of the unit (19%) were positive, which are surfaces often touched with bare hands after handwashing. Analyses of clinical data are underway to examine whether specific care needs, based on activities of daily living disability, comorbidities, and clinical presentation of COVID-19, predict SARS-CoV-2 environmental contamination. **Conclusions:** The presence of environmental contamination by SARS-CoV-2 highlights the importance of transmission via direct or indirect contact. Studies targeting high-risk populations are needed to better understand the transmission of SARS-CoV-2 between infected patients and their environment. Our findings also suggest that handwashing and attention to using disinfecting wipes may mitigate the risk of transmission of virus from surfaces that one might consider safe to touch.

**Funding:** None

**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s76–s77

doi:10.1017/ash.2022.202

#### Presentation Type:

Poster Presentation - Oral Presentation

**Subject Category:** COVID-19

#### RNA and viable SARS-CoV-2 contamination of emergency department surfaces and association with patient COVID-19 status and aerosol procedures

Windy Tanner; Scott Roberts; Douglas Barber; Elliana Barbell; Robert Heimer; Karen Jubanyik; Vivek Parwani; Jason Tanner; Andrew Ulrich; Martina Wade; Anne Wiley; Devyn Yolda-Carr and Richard Martinello

**Background:** Aerosol-generating procedures (AGPs) performed on COVID-19–positive patients raise concerns about the dissemination of SARS-CoV-2 via aerosols and droplets. Infectious aerosols and droplets generated by SARS-CoV-2–positive patient AGPs or through direct COVID-19 patient coughing or exhalation could potentially contaminate surfaces, leading to the indirect spread of SARS-CoV-2 via fomites within the emergency department (ED). We sampled surfaces of ED patient

**Table 1. Percentage of rooms and surface swabs testing positive for SARS-CoV-2 RNA by RT-qPCR or culture**

Patient COVID status	AGP	Number of rooms sampled	Percentage of rooms positive for SARS-CoV-2 RNA	Number of swabs collected	Percentage of swabs positive for SARS-CoV-2 RNA	Number of swabs positive by culture
COVID-positive	Yes	43	14%	215	5%	0
COVID-positive	No	44	30%	220	7%	1
COVID-negative	Yes	116	9%	580	2%	0

rooms occupied by known SARS-CoV-2–positive patients or patients under investigation for COVID-19 and undergoing an AGP to determine the frequency of room contamination with SARS-CoV-2 RNA. **Methods:** Swabs were collected from 5 room surfaces in the ED following AGPs performed on patients under investigation for COVID-19 or positive for SARS-CoV-2. High- and low-touch surfaces 6 feet (2 m) from the patient (door handle and return vent, respectively) and reusable medical equipment were swabbed. Swabs were tested for SARS-CoV-2 RNA by RT-qPCR; positive samples were cultured in Vero E6 cells. Patient COVID-19 results were confirmed through the electronic medical record. **Results:** In total, 203 rooms were sampled: 43 SARS-CoV-2–positive patients with an AGP, 44 SARS-CoV-2–positive patients who did not have an AGP, and 116 SARS-CoV-2–negative patients with an AGP, for a total of 1,015 swabs. Overall, SARS-CoV-2 RNA was detected on 36 (3.5%) surfaces from 29 rooms (14.3%) (Table 1). RNA contamination was detected more frequently in rooms occupied by SARS-CoV-2–positive patients who did not have an AGP than rooms occupied by COVID-19 patients (30% vs 14%). SARS-CoV-2 RNA was also detected in rooms occupied by SARS-CoV-2–negative patients undergoing an AGP (9%). SARS-CoV-2 RNA was most frequently detected on air vents (n = 15), bedrails (n = 10), equipment and vital signs monitors (n = 4 each), and door handles (n = 3). One bedrail was positive by culture and confirmed by an RT-qPCR cycle threshold reduction from >40 to 13. **Conclusions:** We detected SARS-CoV-2 RNA contamination on room surfaces in the ED, regardless of patient AGP or COVID-19 status; however, RNA contamination of room surfaces was most common in rooms occupied by SARS-CoV-2–positive patients who did not have an AGP, which may be attributable to stage of disease and viral shedding. SARS-CoV-2 RNA contamination was also present in rooms where APGs were performed on SARS-CoV-2–negative patients, suggesting carryover from previous patients. SARS-CoV-2 RNA was found most often on room air-return vents, further emphasizing the importance of aerosols in the spread of SARS-CoV-2.

**Funding:** None

**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s77

doi:10.1017/ash.2022.203

#### Presentation Type:

Poster Presentation - Oral Presentation

**Subject Category:** COVID-19

#### Candidemia before and after the COVID-19 pandemic: An analysis of risk factors and outcomes in patients with candidemia

Nora Colburn; Courtney Nichols; Mark Lustberg; Shandra Day; Michael Haden and Christina Liscynsky

**Background:** An increase in candidemia has been observed throughout the world since the start of the COVID-19 pandemic. Patients with COVID-19 may have different risk factors, clinical presentations, and outcomes compared to patients without COVID-19. **Methods:** We conducted a retrospective chart review of all inpatients with candidemia at a large, academic medical center from April 30, 2019, to February 19, 2021. The first case of COVID-19 was detected at our institution March 2020 and patients were sorted into pre- versus post-COVID-19 pandemic groups. Data regarding clinical characteristics, risk factors, and outcomes were collected. The rate of candidemia per 10,000 patient days was calculated from January 2013 through February 2021. **Results:** In total, 202 patients were identified with candidemia; 92 cases were identified before the pandemic