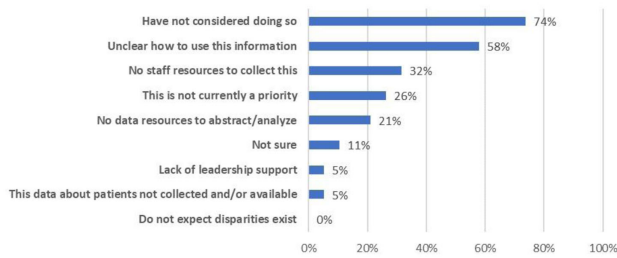


Figure 3. Reasons Why Facilities Do Not Collect SDOH Data for HAIs



information and translating early findings to identify and subsequently improve disparities within HAIs.

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**Disclosures:** None

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**Presentation Type:**

Poster Presentation - Oral Presentation

**Subject Category:** Outbreaks

**A SARS-CoV-2 outbreak due to vaccine breakthrough in an acute-care hospital**

Se Yoon Park; Tae Hyong Kim; Eunjung Lee; Mark Loeb; Yeon Su Jeong; Jin Hwa Kim; Sun Mi Oh; Sojin Cheong; Hyein Park and SoYea Jo

**Background:** The  $\delta$  (delta) variant has spread rapidly worldwide and has become the predominant strain of SARS-CoV-2. We analyzed an outbreak caused by a vaccine breakthrough infection in a hospital with an active infection control program where 91.9% of healthcare workers were vaccinated. **Methods:** We investigated a SARS-CoV-2 outbreak between September 9 and October 2, 2021, in a referral teaching hospital in Korea. We retrospectively collected data on demographics, vaccination history, transmission, and clinical features of confirmed COVID-19 in patients, healthcare workers, and caregivers. **Results:** During the outbreak, 94 individuals tested positive for SARS-CoV-2 using reverse transcription-polymerase chain reaction (rtPCR) testing. Testing identified infections in 61 health care workers, 18 patients, and 15 caregivers, and 70 (74.5%) of 94 cases were vaccine breakthrough infections. We detected 3 superspreading events: in the hospital staff cafeteria and offices (n = 47 cases, 50%), the 8th floor of the main building (n = 22 cases, 23.4%), and the 7th floor in the maternal and child healthcare center (n = 12 cases, 12.8%). These superspreading events accounted for 81 (86.2%) of 94 transmissions (Fig. 1, 2). The median interval between completion of vaccination and COVID-19 infection was 117 days (range, 18–187). There was no significant difference in the mean Ct value of the RdRp/ORF1ab gene between fully vaccinated individuals (mean 20.87, SD±6.28) and unvaccinated individuals (mean 19.94, SD±5.37, P = .52) at the time of diagnosis. Among healthcare

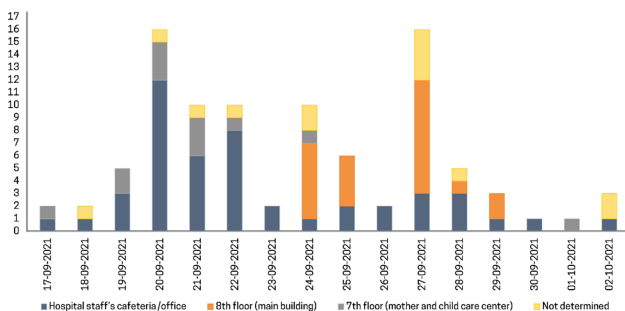


Fig. 1.

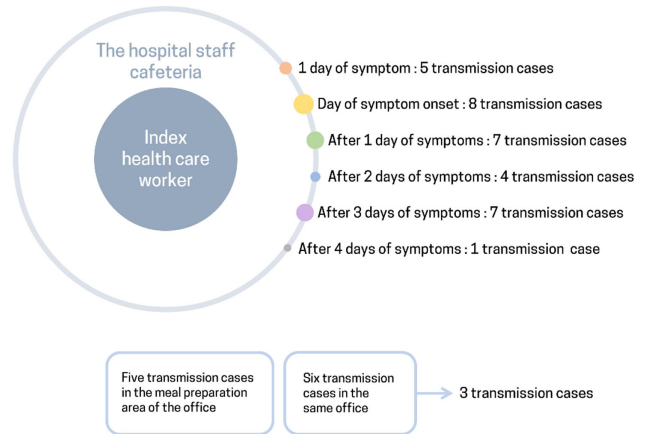


Fig. 2.

Table 1. Clinical course and outcome of the study participants

	Health care workers (n=61)	Patients (n=18)	Caregivers (n=15)	P value
Place of isolation				<0.001
Community treatment center	52 (85.2)	0	9 (60.0)	
Hospital	6 (9.8)	18 (100.0)	6 (40.0)	
Home	3 (4.9)	0	0	
Duration of hospitalization/isolation, days	9 (8-10)	13 (9-19)	9 (6-11)	0.01
Clinical course				<0.001
Not hospitalized, no limitations of activities	53 (86.9)	0	9 (60.0)	
Not hospitalized, limitation of activities	1 (1.6)	0	0	
Hospitalized, not requiring supplemental oxygen	6 (9.8)	7 (36.8)	6 (40.0)	
Hospitalized, requiring any supplemental oxygen	1 (1.6)	6 (33.3)	0	
Hospitalized, requiring noninvasive ventilation or HFNC	0	1 (5.6)	0	
Hospitalized, receiving invasive MV or ECMO	0	0	0	
In hospital mortality	0	4 (22.2)	0	0.001

<sup>a</sup>HFNC: high-flow nasal cannula; MV: mechanical ventilation; ECMO: extracorporeal membrane oxygenation.

workers and caregivers, only 1 required oxygen supplementation. In contrast, among 18 patients, there were 4 fatal cases (22.2%), 3 of whom were unvaccinated (Table 1). **Conclusions:** Superspreading infection among fully vaccinated individuals occurred in an acute-care hospital while the  $\delta$  (delta) variant was dominant. Given the potential for severe complications, as this outbreak demonstrated, preventive measures including adequate ventilation should be emphasized to minimize transmission in hospitals.

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**Presentation Type:**

Poster Presentation - Oral Presentation

**Subject Category:** Outbreaks

**Nosocomial outbreak of  $\delta$  (delta) variant SARS-CoV-2 on a liver transplant unit: A complex epidemiologic and genomic investigation**

Jonathan Ryder; Trevor Van Schooneveld; Baha Abdalhamid; Macy Wood; Richard Starlin; Gayle Gillett; Teresa Balfour; Libby Pflueger and Mark Rupp

**Background:** In late September 2021, a cluster of patients with nosocomial COVID-19 was identified on a liver transplant unit at University of Nebraska Medical Center. **Methods:** The outbreak investigation included contact tracing via patient chart and employee health record reviews and serial prevalence testing for SARS-CoV-2 among potentially exposed patients and healthcare workers (HCWs). Routine admission and preprocedural screening for SARS-CoV-2 was performed, and involved patients had negative admission screening results with positive SARS-CoV-2 tests >5 days from admission. Mitigation strategies involved reinforcement of patient care and visitation procedures. Whole-genome sequencing of positive SARS-CoV-2 specimens was conducted. **Results:** The potential outbreak cluster included 6 patients in the same quadrant of the liver transplant unit, 1 visitor, and 11 healthcare workers (Fig. 1). Moreover,