



Fig. 1.

Conclusions: Breakthrough infections among hospitalized patients were uncommon, but incidence increased with time after vaccine receipt in all vaccines. Further study is needed to examine differences and severity in breakthrough infections by vaccine type and in individuals who completed booster vaccines.

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COVID-19 postvaccination adverse events and vaccine hesitancy among hospital employees: Is there a link?

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Background: Vaccination against COVID-19 has demonstrated high efficacy in preventing illness severe enough to result in hospitalization. Despite these data, universal vaccine adoption by different population groups, including hospital employees, has been a challenging public health task. Vaccine-associated adverse events, the novelty of the vaccines, and the absence of long-term follow-up data have been reported as major contributors to COVID-19 vaccines mistrust. We sought to quantify postvaccination adverse events, to assess their correlation with unvaccinated status, and to evaluate other factors contributing to COVID-19 vaccination hesitancy. **Methods:** In a 240-bed community hospital located in a metropolitan area in the United States, we conducted a voluntary and anonymous online survey among contracted employees between September and November 2021. The study protocol was approved by the institutional review board at our facility. **Results:** Of all 185 responders, 143 (77%) were female, 95 (51%) were aged <51 years, and 146 were White (79%). Most (n = 100, 54%) reported no past medical history. Most common comorbidities included heart disease (n = 45, 24%), diabetes (n = 20, 11%), and chronic lung disease (n = 17, 9%). Among those surveyed, 178 were vaccinated either fully (n = 172, 93%) or partially (n = 6, 3%), and 7 (4%) were unvaccinated. Moderna was the most common vaccine received (n = 152, 85%). Those who received a 2-dose series reported experiencing more adverse events after the second dose than after the first dose (710 vs 451) of either Moderna or Pfizer vaccine. Adverse events included pain at the injection site (n = 257, 22%), fatigue (n = 178, 15%), chills (n = 133, 11%), muscle pain (n = 120, 10%), and headache (n = 117, 10%). Also, 2 responders reported omitting the second dose due to the severity of symptoms after the first dose of both Moderna and Pfizer vaccines. Concern for safety (n = 5, 71%) was the leading reason for vaccine refusal among unvaccinated followed by concern for efficacy (n = 3, 43%), lack of trust in government promoting vaccination (n = 3, 43%), religious reasons (n = 2, 28%), and immunity due to prior COVID-19 (n = 2, 28%). In addition, 3 responders reported intent to be vaccinated in the future. **Conclusions:** Most of the responders reported at least 1 adverse event related to COVID-19 vaccination. No severe

adverse events were reported; however, a high prevalence of self-limited postvaccination adverse events might be misinterpreted as a concern for vaccine safety, as seen among surveyed unvaccinated individuals in our cohort. Targeted education is needed to limit knowledge gaps and address existing cognitive biases in COVID-19 vaccination among hospital employees.

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Postacute sequelae of SARS-CoV-2 (PASC) in nursing home residents: A case-control study

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Background: Postacute sequelae of SARS-CoV-2 (PASC) include fatigue, dyspnea, anxiety, and cognitive impairment. Few studies have explored the prevalence or presentation of PASC among nursing home (NH) residents.

Method: A case-control study was conducted at 1 NH in Michigan in December 2021. Cases were defined as residents with SARS-CoV-2 infection between November 2, 2020, and October 8, 2021. Controls lived at the same NH during this interval and never tested positive for SARS CoV-2. Patient characteristics were compared between cases and controls using the Fisher exact test and Wilcoxon rank-sum test. Primary outcomes were functional decline, cognition, and adverse health outcomes. Outcomes were assessed by comparing measures on last observation to observations before COVID-19 diagnosis (cases) or to earliest observation (controls). Multivariable logistic regression assessed correlation between COVID-19 diagnosis and outcomes. **Results:** In total, 152 residents were identified for inclusion (147 included in final analyses, 76 cases, 71 controls); 5 were excluded due to insufficient data. We collected the following resident characteristics: 66% were aged ≥80 years; 73% were female; 95% were non-Hispanic white; 82% were long-stay residents; median of 3 comorbidities (IQR, 2–4). The mean number of follow-up observations was 2.60 (SD, 1.25). No significant differences in population characteristics were detected between cases and controls. Moreover, 106 patients (46 cases and 60 controls) had at least 1 follow-up visit and were thus included in the analyses to evaluate long-term outcomes. Among them, cases experienced significant declines in completing transfers (OR 5.65, p < .05). **Conclusions:** Nursing home residents with COVID-19 are more likely to enter hospice and have a higher mortality rate in the year following infection. Survivors experience significant functional decline in basic activities of daily living,

Table 1. Patient Demographic Characteristics

Characteristic	Total Population (N=147)	Cases (N=76)	Controls (N=71)	p-value
Number of visits (median, IQR)	3 (2-6)	3 (2-5)	4 (2-6)	0.563*
Number of post-baseline visits (median, IQR)	2 (0-4)	2 (0-3)	2 (1-4)	0.251*
Age				
35-69	14 (9.5%)	4 (5.3%)	10 (14.1%)	0.072 ^b
70-79	36 (24.5%)	18 (23.7%)	18 (25.4%)	
80-89	53 (36.1%)	34 (44.7%)	19 (26.8%)	
Age >89	44 (29.9%)	20 (26.3%)	24 (33.8%)	
Sex				
Male	40 (27.2%)	22 (29.0%)	18 (25.4%)	0.712 ^b
Female	107 (72.8%)	54 (71.1%)	53 (74.7%)	
Race				
Non-Hispanic white	139 (94.6%)	70 (92.1%)	69 (97.2%)	0.278 ^b
Non-white or Unknown	8 (7.9%)	6 (7.9%)	2 (2.8%)	
Length of stay				
Short-stay	27 (18.4%)	14 (18.4%)	13 (18.3%)	1.00 ^b
Long-stay	120 (81.6%)	62 (81.6%)	58 (81.7%)	
Comorbidities				
Dementia	80 (54.4%)	46 (60.5%)	34 (47.9%)	0.138 ^b
Diabetes	44 (29.9%)	24 (31.6%)	20 (28.2%)	0.720 ^b
CHF	49 (33.3%)	28 (36.8%)	21 (29.6%)	0.385 ^b
COPD	38 (25.9%)	20 (26.3%)	18 (25.4%)	1.000 ^b
Number of comorbidities (median, IQR)	3 (2-4)	3 (2-4)	3 (1-4)	0.068*

* Significance evaluated using Wilcoxon rank-sum test

^b Significance evaluated using Fisher's exact test