Session: P-16. COVID-19 Epidemiology and Screening

Background. The COVID-19 pandemic has disproportionately affected nursing home (NH) patients, accounting for 5% of all cases and 32% of all COVID-19 deaths nationwide. Little is known about the frequency and persistence of SARS-CoV-2 environmental contamination in NHs. We characterize SARS-CoV-2 contamination in the rooms of COVID-19 patients and common areas in and around COVID-19 units.

Methods. A prospective cohort study was conducted at four NHs in Michigan between October 2020 and January 2021. Clinical research personnel obtained swab specimens from high-touch room surfaces of COVID-19 infected patients, up to three times per patient. Weekly swab specimens from six high-touch surfaces in common areas were also obtained. Demographic and clinical data were collected from patient clinical records. Our primary outcome of interest was the probability of SARS-CoV-2 detection from specific environmental surfaces in COVID-19 patient rooms.

Results. One hundred four patients with COVID-19 were enrolled and followed for 241 visits. Patient characteristics included: 61.5% over the age of 80; 67.3% female; 89.4% non-Hispanic white; 50.1% short-stay. The study population had significant disabilities in activities of daily living (ADL; 81.7% dependent in four or more ADLs) and comorbidities including dementia (55.8%), diabetes (40.4%) and heart failure (32.7) (Table 1). Over the 3-month study period, 2087 swab specimens were collected (1896 COVID-19 patient room surfaces, 191 common area swabs). Figure 1 shows contamination rates at sites proximate and distant to the patient bed. SARS-CoV-2 positivity was 28.4% (538/1896 swabs) on patient room surfaces and 3.7% (7/191 swabs) on common area surfaces. Over the course of follow-up, 89.4% (93/104) of patients had SARS-CoV-2 contamination in their room at least once (Figure 2). Environmental contamination detected on enrollment correlated with contamination of the same site during follow-up. Functional independence increased the odds of proximate contamination.

Table 1. Clinical and Demographic Characteristics of the Study Population Including Short- and Long-stay Patients

Characteristic	Total Population (N=104)	Short-stay patients (N=53)	Long-stay patients (N=51)	p-value
Age				
45-69	12 (11.5)	9 (17.0)	3 (5.9)	0.116[a]
70-79	28 (26.9)	17 (32.1)	11 (21.6)	
80-89	36 (34.6)	16 (30.2)	20 (39.2)	
Age >89	28 (26.9)	11 (20.8)	17 (33.3)	
Male sex	34 (32.7)	21 (39.6)	13 (25.5)	0.147[a]
Race				
Non-Hispanic white	93 (89.4)	50 (94.3)	43 (84.3)	0.125[a]
Non-white or Unknown	11 (10.6)	3 (5.7)	8 (15.7)	0.119[a]
BIMS score, mean (SD)[b]	10.6 (4.8)	10.2 (4.8)	11.2 (4.8)	0.280[c]
Activities of Daily Living[d]				
0 disabilities (Independent in all)	5 (4.8)	2 (3.8)	3 (5.9)	0.611[a]
1-3 disabilities	14 (13.5)	9 (17.0)	5 (9.8)	
4-6 disabilities	85 (81.7)	42 (79.3)	43 (84.3)	
Charlson Comorbidity Index score, median (IQR)	2 (1 – 3.5)	2 (1 – 4)	2 (1- 3)	0.756[c]
Comorbidities				
Dementia	58 (55.8)	21 (39.6)	37 (72.6)	**0.001**[a]
Diabetes	42 (40.4)	24 (45.3)	18 (35.3)	0.324[a]
CHF	34 (32.7)	19 (35.9)	15 (29.4)	0.535[a]
COPD	18 (17.3)	8 (15.7)	10 (18.9)	0.797[a]
In 30D prior to study period:				
Hospitalization *N=103; 1 patient missing data*	25 (24.3)	23/52 (44.2)	2/51 (3.9)	**<0.001**[a]
Antibiotic Use	31 (29.8)	25 (47.2)	6 (11.8)	**<0.001**[a]
Antiviral Use	5 (4.8)	5 (9.4)	0 (-)	0.057[a]
Indwelling Device *N=93; 11 patients missing data*	14 (15.1)	11/42 (26.2)	3/51 (5.9)	**0.008**[a]
Open Wound *N=94; 10 patients missing data*	12 (12.8)	7/44 (15.9)	5/50 (10.0)	0.538[a]
Days from first positive test to enrollment, mean (SD)	6.3 (4.3)	4.2 (3.9)	8.5 (3.7)	**<0.001**[c]
Discharge status:				
Still resides at facility	36 (34.6)	3 (5.7)	33 (64.7)	**<0.001**[a]
Community	32 (30.8)	32 (60.4)	0 (-)	
Acute-care hospital	21 (20.2)	12 (22.6)	9 (17.7)	
Deceased	14 (13.5)	5 (9.4)	9 (17.7)	
Another NH	1 (1.0)	1 (1.9)	0 (-)	
Room contamination on enrollment				
SARS-CoV-2 detected ≤3 feet from patient bed	58 (55.8)	34 (64.2)	24 (47.1)	0.114[a]
SARS-CoV-2 detected > 3 feet from patient bed	65 (62.5)	32 (60.4)	33 (64.7)	0.689[a]

[a] Significance evaluated using Fisher's exact test
[b] BIMS score evaluates cognitive impairment on a scale of 0-15: 0-7 indicates severe cognitive impairment; 8-12 indicates moderate impairment; 13-15 indicates intact cognitive response. The BIMS score was not collected for 27 (26.2%) study participants (5 short-stay, 22 long-stay) due to non-verbal or severe impairment.
[c] Significance evaluated using Wilcoxon rank-sum test
[d] Activities considered to assess independence include toileting, feeding, dressing, transferring, continence, and bathing

Figure 1. Contamination of Environmental Surfaces Relative to Distance from Patient Bed

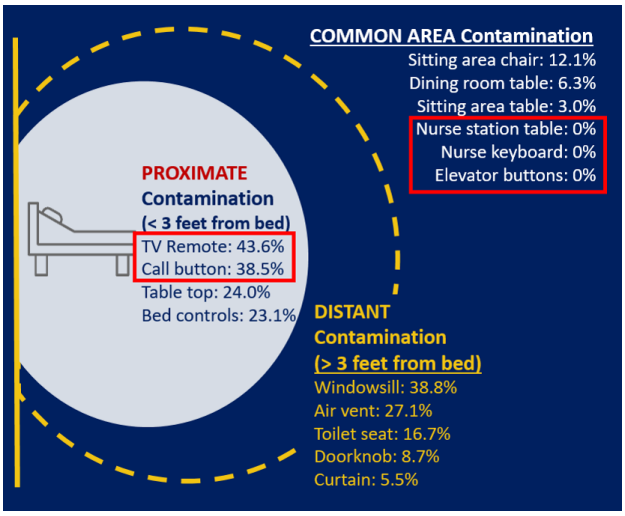
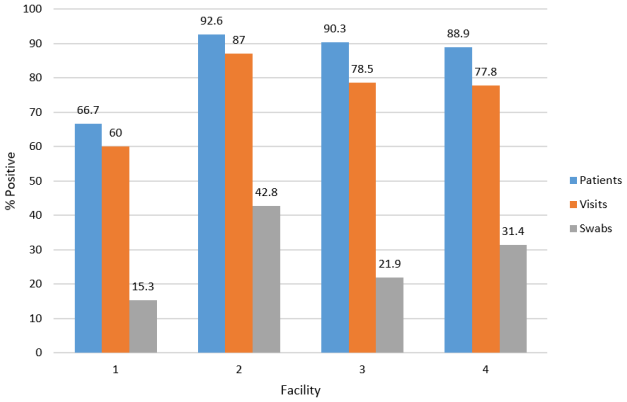


Figure 2. SARS-CoV-2 on Swab Specimens Collected – Patient-level, Visit-level, and Swab-level



Conclusion. We conclude that environmental contamination of surfaces in the rooms of COVID-19 patients is nearly universal and persistent. Patients with greater independence are more likely than fully dependent patients to contaminate their immediate environment.

Disclosures. **All Authors**: No reported disclosures

381. The Importance of Data Accuracy and Transparency for Policymaking During a Public Health Crisis: A Case Study in the State of Iowa

Megan L. Srinivas, MD MPH[1]; HyungSub Shim, MD[2]; Dana Jones, DNP[3]; Patrick R. Hansen, B.A., B.E., M.P.A.[4]; Sara A. Willette, B.A.[5]; Auriel Willette, PhD, MS[6]; E. Rosalie Li-Rodenborn, Graduate Scholar[7]; Eli N. Perencevich, MD MS[8]; Michihiko Goto, MD, MS[2]; [1]University of North Carolina, Ames, Iowa; [2]University of Iowa Carver College of Medicine, Iowa City, Iowa; [3]University of Iowa Hospitals and Clinics, Iowa City, Iowa; [4]novéInsights, Grinnell, Iowa; [5]Iowa COVID-[19] Tracker, Ames, Iowa; [6]Iowa State University, Ames, Iowa; [7]Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; [8]University of Iowa, Iowa City, Iowa

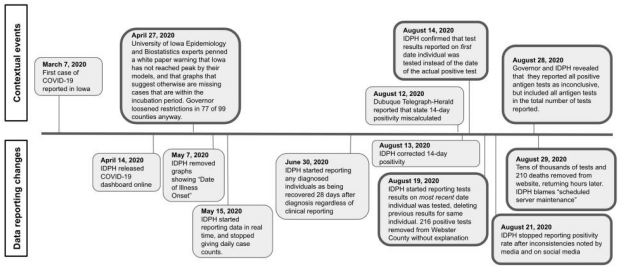
Session: P-16. COVID-19 Epidemiology and Screening

Background. High-quality data are necessary for decision-making during the SARS-CoV-2 pandemic. Lack of transparency and accuracy in data reporting can erode public confidence, mislead policymakers, and endanger safety. Two major data errors in Iowa impacted critical state- and county-level decision-making.

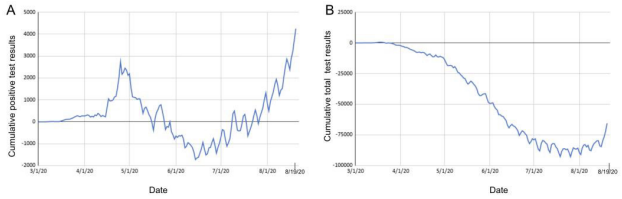
Methods. The Iowa Department of Public Health (IDPH) publishes daily COVID-19 data. Authors independently tracked daily data from IDPH and other publicly available sources (i.e., county health departments, news media, and social

networks). Data include: number and type of tests, results, hospitalizations, intensive care unit admissions, and deaths at state/county levels.

Results. Discrepancies were identified between IDPH and non-IDPH data, with at least two confirmed by IDPH: (1) The backdating of test results identified on May 28, 2020. IDPH labeled results as occurring up to four months before the actual test date. IDPH confirmed that if a person previously tested for SARS-CoV-2, a new test result was attributed to the initial test's date. Corrections on August 19, 2020 increased positivity rates in 31 counties, but decreased the state's overall rate (9.1% to 7.5%). (2) The selective exclusion of antigen test results noted on August 20, 2020. Antigen testing was included in the total number of tests reported in metric denominators, but their results were being excluded from their respective numerators. Thus, positive antigen results were interpreted as de facto negative tests, artificially lowering positivity rates. Corrections increased Iowa's positivity rate (5.0% to 14.2%). In July 2020, the Iowa Department of Education mandated in-person K-12 learning for counties with < 15% positivity. These data changes occurred during critical decision-making, altering return-to-learn plans in seven counties. The Center for Medicare and Medicaid Services' requirements also caused nursing homes to urgently revise testing strategies.



Timeline of changes to Iowa state COVID-19 testing through the end of August 2020.



Change in positive and overall test results due to IDPH data corrections. These graphs represent the difference in cumulative total reported test results when pulled from the IDPH website on September 29, 2020 compared to data for the same dates when pulled on August 19, 2020 before the announced adjustment. The adjustment and subsequent daily changes in reported data amount to a dramatic change in the number of reported positive cases (A) with an increase of nearly 3,000 cases by April 25, as well as the loss of tens of thousands of data points when tracking total resulted tests (B).

Conclusion. Data availability, quality, and transparency vary widely across the US, hindering science-based policymaking. Independent audit and curations of data can contribute to better public health policies. We urge all states to increase the availability and transparency of public health data.

Disclosures. **All Authors**: No reported disclosures

382. Vitamin D Supplementation and Covid 19: Results from the U.S. N3C Data Enclave

Kim Murray, MPP[1]; Kathleen M. Fairfield, MD, MPH, DrPH[2]; Clifford james Rosen, MD[1]; Sally L. Hodder, M.D.[3]; Jeremy Harper, MS[4]; [1]Maine Medical Center Research Institute, Portland, Maine; [2]Maine Medical Center, Portland, Maine; [3]West Virginia University School of Medicine, Morgantown, West Virginia; [4]Owl Health Works, Indianapolis, Indiana

Session: P-16. COVID-19 Epidemiology and Screening

Background. It is estimated that 18% of adults in the U.S. take Vitamin D supplements. Some observational studies suggest that vitamin D supplementation activates the innate immune system and reduces the incidence and severity of viral infections. During the SARS-CoV-2 pandemic, vitamin D supplements were touted as a potential therapy to prevent the disease and/or complications. However, supportive evidence is lacking.

Methods. The National COVID Cohort Collaborative (N3C) enclave is the largest COVID-19 data base with nearly 1.4 million positive patients at 56 sites in the U.S. We performed a retrospective analysis of vitamin D supplementation, either prescribed before or during hospitalization for SARS-CoV-2.

Results. 137,399 people took vitamin D supplements out of 1.4 million. Females prescribed vitamin D outnumbered males by almost 2:1, whereas in non-users there were no sex differences. Most supplement users were older than 50. African Americans constituted 13% of the non-users, but 23% of those prescribed vitamin D. Infected individuals with any vitamin D supplementation, pre-Covid, post-Covid or both, had a 6.66% mortality rate vs 2% mortality in non-users. Similarly, nearly a third of the supplement users were hospitalized compared to 11% in the non-users. The Charlson Co-Morbidity Index was 3.0±3 (SD) in users vs 1.0±2 (SD) in non-users.

Conclusion. 10% of SARS-CoV-2 infected patients were taking vitamin D. They tended to be older, more likely to be African American and have significant co-morbidities. Hospitalization and mortality were higher among those taking Vitamin D in this cohort. Vitamin D is widely used to prevent and treat SARS-CoV-2 but without evidence of efficacy.

Disclosures. **Sally L. Hodder, M.D., Gilead** (Advisor or Review Panel member)**Merck** (Grant/Research Support, Advisor or Review Panel member)**Viiv Healthcare** (Grant/Research Support, Advisor or Review Panel member)

383. Feasibility of Specimen Self-collection in Young Children Undergoing SARS-CoV-2 Surveillance for In-person Learning

Jonathan Altamirano, M.S.[1]; Grace Tam, BS[2]; Marcela Lopez, BA[2]; India Robinson, BS[2]; Leanne Chun, BBiomed[2]; Nuzhat Shaikh, MBBS[2]; Sean Leary, B.S.[1]; Yuan J. Carrington, BA[2]; Shilpa Jani, MPH[2]; Uma Pulendran, MPH[2]; Jasmin Ma, BS[2]; Elizabeth Toomarian, PhD[2]; C. Jason Wang, MD, PhD[2]; Prasanthi Govindarajan, MBBS[2]; Andra Blomkalns, MD, MBS[2]; Makeda Robinson, MD, PhD[2]; Yvonne A. Maldonado, MD[2]; [1]Stanford University School of Medicine, Stanford, CA; [2]Stanford University, Stanford, CA

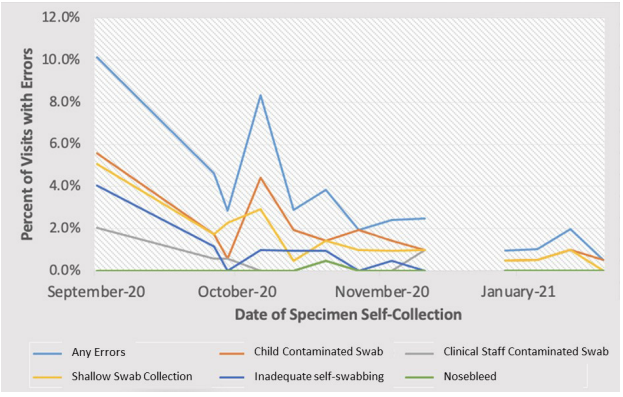
Session: P-16. COVID-19 Epidemiology and Screening

Background. While pediatric cases of COVID-19 are at low risk for adverse events, schoolchildren should be considered for surveillance as they can become infected at school and serve as sources of household or community transmission. Our team assessed the feasibility of young children self-collecting SARS-CoV-2 samples for surveillance testing in an educational setting.

Methods. Students at a K-8 school were tested weekly for SARS-CoV-2 from September 2020 - June 2021. Error rates were collected from September 2020 - January 2021. Clinical staff provided all students with instructions for anterior nares specimen self-collection and then observed them to ensure proper technique. Instructions included holding the sterile swab while making sure not to touch the tip, inserting the swab into their nostril until they start to feel resistance, and rubbing the swab in four circles before repeating the process in their other nostril. An independent observer timed random sample self-collections from April - June 2021.

Results. 2,590 samples were collected from 209 students during the study period when data on error rates were collected. Errors occurred in 3.3% of all student encounters (n=87). Error rates over time are shown in Figure 1, with the highest rate occurring on the first day of testing (n=20/197, 10.2%) and the lowest in January 2021 (n=1/202, 0.5%). 2,574 visits for sample self-collection occurred during the study period when independent timing data was collected (April - June 2021). Of those visits, 7.5% (n=193) were timed. The average duration of each visit was 70 seconds.

Figure 1. Swab Error Rates Over Time



Conclusion. Pediatric self-collected lower nasal swabs are a viable and easily tolerated specimen collection method for SARS-CoV-2 surveillance in school settings, as evidenced by the low error rate and short time window of sample self-collection during testing. School administrators should expect errors to drop quickly after implementing testing.

Disclosures. **All Authors**: No reported disclosures

384. SARS-CoV-2 Surveillance Testing Patterns among Hospitalized Pediatric Patients in a Single Academic Medical Center

Areej Bukhari, MD[1]; Jessica Seidelman, MD, MPH[1]; Becky A. Smith, MD[1]; Sarah S. Lewis, MD, MPH[1]; Michael J. Smith, MD, M.S.C.E[2]; Rebekah W. Moehring, MD, MPH[3]; Deverick J. Anderson, MD, MPH[3]; Ibukunoluwa Akinboyo, MD[1]; [1]Duke University, Durham, North Carolina; [2]Duke University Medical Center, Durham, North Carolina; [3]Duke Center for Antimicrobial Stewardship and Infection Prevention, Durham, NC