**Table 1**. Characteristics associated with atypical COVID-19 presentation on admission to the hospital (univariate analysis)

| Characteristic | Cases (N = 39) N (%) | Controls (N = 124) N (%) | OR | 95% CI | P value |
|---|---|---|---|---|---|
| **Demographics** | | | | | |
| Age (mean, years) | 72.2 (17.6) | 57.1(18.2) | 1.05 | 1.03 – 1.08 | < 0.001 |
| Gender (female) | 23 (59) | 56 (45) | 1.7 | 0.8 – 3.6 | 0.13 |
| BMI (mean) | 30.1 | 32.7 | 1.0 | 0.9 – 1.0 | 0.12 |
| Current smoker | 4 (10) | 13 (10) | 1.0 | 0.3 – 3.2 | 0.97 |
| LTCF resident | 22 (56) | 20 (16) | 6.7 | 3.0 – 14.9 | <0.001 |
| **Clinical manifestations** | | | | | |
| No myalgias | 33 (87) | 66 (53) | 5.8 | 2.1 – 15.8 | < 0.001 |
| No dyspnea | 25 (64) | 19 (15) | 9.9 | 4.4 – 22.3 | < 0.001 |
| Hypoxia | 23 (59) | 86 (69) | 0.6 | 0.3 – 1.3 | 0.23 |
| Abnormal chest X-ray | 31 (82) | 99 (90) | 0.5 | 0.17 – 1.38 | 0.18 |
| GI symptoms | 17 (44) | 50 (41) | 1.1 | 0.5 – 2.3 | 0.75 |
| Chest pain | 3 (8) | 28 (23) | 0.3 | 0.08 – 1.0 | 0.05 |
| Abnormal troponin* | 9 (34) | 28 (32) | 1.1 | 0.4 – 2.8 | 0.82 |
| Serum WBC (mean) | 7.0 (5.6) | 7.9 (8.9) | 0.98 | 0.92 – 1.0 | 0.56 |
| Platelet count (mean) | 189.3 (88.8) | 207.7 (87.8) | 1.0 | 0.99 – 1.0 | 0.25 |
| Serum creatinine at admission (mean) | 1.49 (1.16) | 1.17 (0.85) | 1.36 | 0.95 – 1.95 | 0.09 |
| ALT (mean) | 36.1 (36.6) | 51.9 (67.3) | 0.99 | 1.0 – 1.0 | 0.19 |
| Beta-natriuretic peptide (mean) | 1,805.5 | 381.9 | 1.0 | 1.0 – 1.0 | 0.02 |
| CRP at admission (mean) | 5.6 | 9.3 | 0.91 | 0.84 – 0.98 | 0.02 |
| Highest CRP (mean) | 8.8 | 15.6 | 0.92 | 0.87 – 0.97 | 0.002 |
| Highest ferritin (mean) | 1,158.9 (1914) | 1,570.8 (2981) | 0.99 | 1.0 – 1.0 | 0.47 |
| Highest D-Dimer (mean) | 6.2 (9.1) | 6.8 (9.0) | 0.99 | 0.94 – 1.0 | 0.78 |
| LDH | 380.9 (343) | 423.9 (259.2) | 0.99 | 1.0 – 1.0 | 0.45 |
| **Comorbid illnesses** | | | | | |
| Hypertension | 28 (72) | 72 (58) | 1.8 | 0.8 – 4.0 | 0.13 |
| Diabetes mellitus | 17 (44) | 32 (26) | 2.2 | 1.05 – 4.7 | 0.04 |
| Previous stroke | 8 (20) | 7 (6) | 4.3 | 1.4 – 12.8 | 0.009 |
| Cardiac disease | 19 (49) | 27 (22) | 3.4 | 1.6 – 7.3 | 0.002 |
| Respiratory disease | 12 (31) | 38 (31) | 1.0 | 0.46 – 2.2 | 0.99 |
| Renal disease | 12 (31) | 21 (17) | 2.2 | 0.95 – 5.0 | 0.06 |
| **Treatment** | | | | | |
| Hydroxychloroquine | 8 (21) | 49 (40) | 0.4 | 0.17 – 0.9 | 0.03 |
| Azithromycin | 18 (46) | 78 (63) | 0.5 | 0.2 – 1.0 | 0.07 |
| Other systemic antibiotics | 31 (75) | 102 (82) | 0.8 | 0.34 – 2.1 | 0.70 |
| Steroids | 5 (13) | 37 (30) | 0.3 | 0.12 – 0.95 | 0.04 |
| Remdesivir | 4 (11) | 3 (2) | 4.6 | 0.98 – 21.6 | 0.05 |
| Convalescent plasma | 5 (12) | 15 (12) | 1.1 | 0.36 – 3.1 | 0.90 |
| **Outcomes** | | | | | |
| ICU admission | 3 (8) | 44 (35) | 0.15 | 0.04 – 0.5 | 0.003 |
| Received pressor support | 3 (8) | 27 (22) | 0.3 | 0.1 – 1.0 | 0.06 |
| Received ventilator support | 2 (5) | 38 (31) | 0.1 | 0.03 – 0.5 | 0.005 |
| Length of hospital stay (mean, days) | 7.8 | 10.4 | 0.95 | 0.90 – 1.0 | 0.09 |
| 30-day mortality** | 12 (31) | 16 (13) | 3 | 1.3 – 7.1 | 0.01 |

*percentages calculated out of total patients with troponin labs checked (26 cases and 87 controls) **Includes patients who died in the hospital or within 30 days of admission to hospice

**Table 2.** Independent risk factors/characteristics associated with atypical COVID-19 presentations in hospitalized patients, multivariate analysis

| Characteristic | Adjusted Odds Ratio | 95% Confidence Interval | P value |
|---|---|---|---|
| Age (mean, years) | 1.03 | 0.99 – 1.06 | 0.09 |
| **LTCF resident** | **3.4** | **1.3 – 8.7** | **0.01** |
| CRP ≥ 15 | 0.73 | 0.30 – 1.8 | 0.50 |
| Diabetes mellitus | 1.9 | 0.82 – 4.5 | 0.13 |
| Cardiac disease | 2.0 | 0.80 – 4.9 | 0.14 |
| 30-day mortality | 1.1 | 0.34 – 3.3 | 0.90 |

***Conclusion:*** LTCF residents are more likely to experience COVID-19 respiratory illness (hypoxia, pneumonia) without classic symptoms (fever, cough, myalgias, dyspnea). Given the excessive pandemic burden in the LTCF setting, timely recognition and diagnosis of these atypical, more subtle presentations is critical.

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

## 78. Acute Respiratory Illnesses in Children During the sars-cov-2 Pandemic: A Prospective Multicenter Surveillance Study

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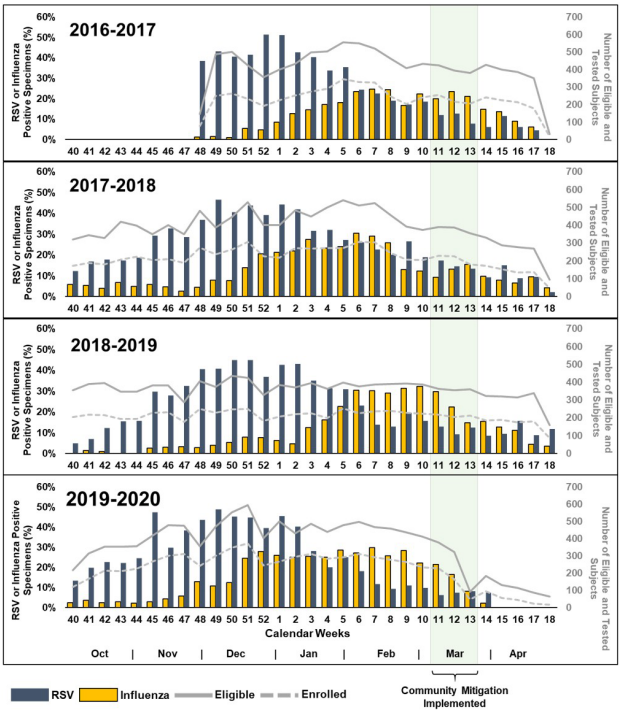
**Session:** O-15. COVID-19 What to be Aware of: Special and Vulnerable Populations

***Background:*** A state of emergency was declared in the United States (US) on March 13, 2020 in response to the SARS-CoV-2 pandemic. Healthcare providers had to alter practice patterns and research priorities. We assessed the frequency of acute respiratory illnesses (ARI) in children, notably those due to respiratory syncytial virus (RSV) and influenza, before and during the pandemic.

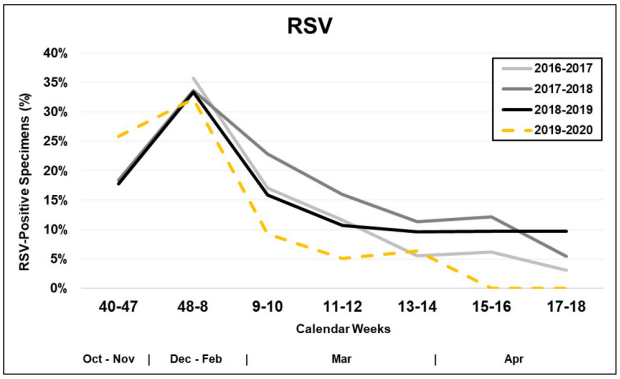
***Methods:*** We conducted multi-center active prospective ARI surveillance in children as part of the New Vaccine Surveillance Network. Children < 18 years with fever and/or respiratory symptoms were enrolled in emergency department and in-patient settings at seven US medical centers over four respiratory seasons during 2016–2020 **(Fig 1).** Pandemic-related restrictions to patient access limited enrollment in some sites beginning March 2020. Respiratory specimens were collected and tested at each site for RSV and influenza by qRT-PCR. Data were analyzed by calendar weeks. We compared the cumulative proportions of RSV and influenza detection after week 13 in 2020 to the previous seasons using Fisher's exact test.

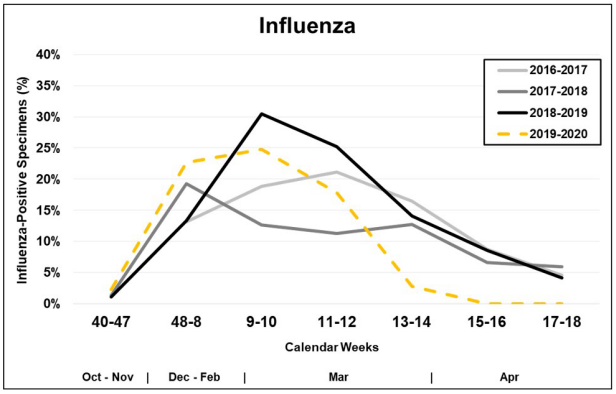
Figure 1. Numbers of Eligible and Enrolled Acute Respiratory Illness Cases, and Proportions of RSV and Influenza Detection by Week, Stratified by Study Season




***Results:*** Of 44,247 eligible children, 25,375 (57%) were enrolled and tested for RSV and/or influenza. A total of 6351/25375 (25%) and 3446/25372 (14%) children were RSV and influenza-positive over the four seasons, respectively. In 2020, we noted a rapid drop in eligible and enrolled ARI subjects after weeks 11–13 **(Fig 1).** During weeks 13–18 in 2016–2019, the three-year average of eligible and enrolled subjects was 1802 and 978, respectively. However, over the same period in 2020, there were 675 eligible and 278 enrolled subjects, representing declines of 62.5% and 71.6% respectively **(Fig 1).** In 2020, there were no RSV or influenza cases detected in weeks 15–18, and the cumulative proportions of RSV and influenza detection after week 13 were lower compared to previous seasons (p< 0.001) **(Figs 1 and 2).**

Figure 2. Cumulative Proportions of Weekly RSV and Influenza Detection by Study Season




***Conclusion:*** There was a considerable decline in ARI visits and the proportion of RSV and influenza detection across seven distinct geographic sites during the pandemic compared with previous seasons. These findings might be attributable to social distancing measures to lessen the spread of SARS-CoV-2, changes in healthcare-seeking behaviors, and limited access to medical care.

***Disclosures:*** **Zaid Haddadin, MD**, **CDC** (Grant/Research Support, Research Grant or Support)**Quidel Corporation** (Grant/Research Support, Research Grant or Support)**sanofi pasteur** (Grant/Research Support, Research Grant or Support) **John V. Williams, MD**, **GlaxoSmithKline** (Advisor or Review Panel member)**IDConnect** (Advisor or Review Panel member)**Quidel** (Advisor or Review Panel member) **Christopher J. Harrison, MD**, **GSK** (Grant/Research Support, Infant menigicoccal B conjugate vaccine trial)**Merck** (Research Grant or Support, Infant pneumococcal conjugate vaccine trial) **Janet A. Englund, MD**, **AstraZeneca** (Scientific Research Study Investigator)**GSK group of companies** (Scientific Research Study Investigator)**Meissa vaccines** (Consultant)**Merck** (Scientific Research Study Investigator)**Sanofi Pasteur** (Consultant) **Natasha B. Halasa, MD, MPH**, **Genentech** (Other Financial or Material Support, I receive an honorarium for lectures - it's a education grant, supported by genetech)**Karius** (Consultant)**Moderna** (Consultant)**Quidel** (Grant/Research Support, Research Grant or Support)**Sanofi** (Grant/Research Support, Research Grant or Support)

**79. Detroit's Response to COVID-19 in Homeless Shelters**

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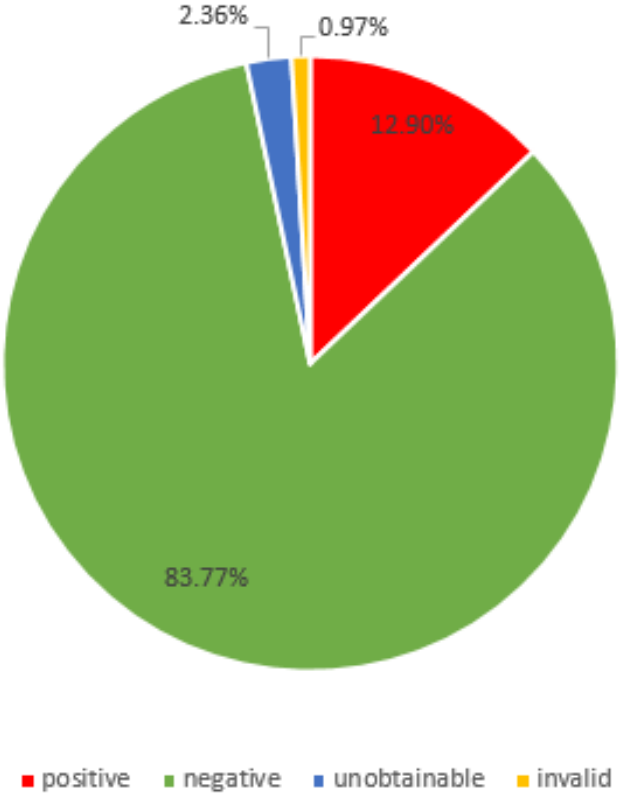
**Session:** O-15. COVID-19 What to be Aware of: Special and Vulnerable Populations

***Background:*** Detroit, Michigan has a poverty rate nearly three times the national average. Homeless shelters are at risk for infectious outbreaks due to reduced healthcare access for residents, compounded by overcrowding, hygienic challenges, lack of resources, and transient nature of residents. Prior to the first reported COVID-19 case in Michigan, the Detroit Health Department prioritized screening of both asymptomatic and symptomatic homeless residents residing in the city's shelters. Early identification of COVID-19 positive cases allowed for implementation of strategies to halt further spread.

***Methods:*** A surveillance strategy was implemented prior to the first confirmed COVID-19 case in Michigan. Surveillance involved temperature and symptom checks at each homeless shelter, three times weekly. 24 shelters were screened for symptoms, 13 shelters had universal testing performed. Two city-operated quarantine sites for COVID-positive and –suspected homeless individuals were organized. If a shelter resident tested positive, that shelter was placed in quarantine, and new referrals stopped for 14 days. Temperature and symptom check frequency increased to daily for 14 days. If a patient was positive for fever or symptoms, they were transferred to the quarantine center for testing and isolation.

***Results:*** Over 23,000 temperature and symptom checks occurred in 24 shelters across Detroit since February 22. This identified 15 patients who were referred to the quarantine site. From April 11 to May 31, 721 residents from 13 homeless shelters were screened with universal testing for COVID-19, and 93 (12.9%) tested positive (Figure 1). Of 95 homeless residents who were referred through shelter surveillance, from the local hospital system and via unsheltered street outreach, and tested on-site at the quarantine and isolation shelter, 29 (31%) tested positive for COVID-19, and 66 (69%) tested negative.

Figure 1. System-wide homeless shelter testing of COVID-19




***Conclusion:*** Homeless populations across the US are especially vulnerable to COVID-19, with high risk for rapid spread due to crowding and difficulty with physical distancing. The need for increased testing- and prevention-based strategies in this population is crucial. The process performed in Detroit's homeless shelters can be a model for other communities at risk for COVID-19 outbreaks.

***Disclosures:*** Marcus Zervos, MD, Melinta Therapeutics (Grant/Research Support)

**80. COVID-19 Testing, Characteristics, and Outcomes Among People Living with HIV in an Integrated Health System**

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**Session:** O-15. COVID-19 What to be Aware of: Special and Vulnerable Populations

***Background:*** Understanding attributes of COVID-19 clinical severity among people living with HIV/AIDS (PLWH) is critical for risk stratification and treatment strategies, but data among this population are limited.

***Methods:*** We conducted a retrospective study among health plan members at Kaiser Permanente Southern California. We identified PLWH aged ≥ 18 years with a positive SARS-CoV-2 molecular diagnostic test or COVID-19 diagnosis and compared COVID-19 outcomes to HIV-negative cases. Chart review was conducted to examine HIV viral suppression, most recent CD4+ counts, and antiretroviral regimens in the year prior to COVID-19 diagnosis, as well as COVID-19 clinical presentation and outcomes.

***Results:*** Between 3/1/20 and 5/31/20, 590 PLWH were tested for SARS-CoV-2, of which 47 (8.0%) were positive. An additional 14 patients had a clinical COVID-19 diagnosis, for a total of 61 cases identified among the population of 10,702 PLWH. Of these, 10 (16.4%) were hospitalized, 4 (6.6%) were admitted to ICU, 3 (6.4%) required invasive mechanical ventilation, and 1 (1.6%) died from COVID-19. In comparison,