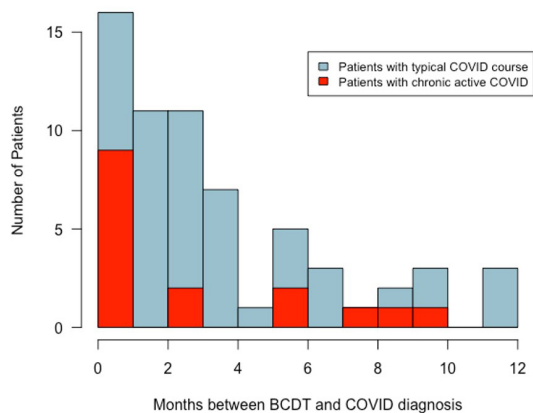


Figure 1. Proportion of patients who survived initial COVID course who developed chronic active COVID, by months between BCDT to COVID diagnosis



Conclusion. We clinically observed COVID-19 infection lasting longer than the typical course and propose a definition for CAC. Incidence of CAC was highest among patients who received BCDT within 30 days before or 2 weeks after COVID-19 diagnosis. High suspicion for CAC is warranted among patients receiving these therapies. Additional study is needed to better define risk for CAC among varying immunosuppressed populations and determine whether COVID-specific treatments early in disease may benefit these patients.

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494. Characteristics and Outcomes of COVID-19 in Hospitalized Native American Patients: A Single-Site Retrospective Analysis

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Session: P-23. COVID-19 Special populations (e.g. pregnant women, children, immunocompromised, etc)

Background. COVID-19 continues to threaten public health, particularly in Native American (NA) communities, which experienced some of the highest rates of COVID-19 infection and mortality in the US. Although the risk factors and clinical characteristics of COVID-19 are well documented in the general population, there has been little research on NA patients.

Methods. We present descriptive data based on chart reviews of COVID-19 patients hospitalized between April 1 and July 31, 2020 at the Whiteriver Service Unit (WRSU), an Indian Health Service site on the Fort Apache Reservation.

Results. Of the 2,262 COVID-19 cases during the observation period, 490 (22%) were hospitalized and 35 (1.6%) died within 28 days. Compared to previous reports, hospitalized patients at WRSU were younger (median age 54), more likely to be female (55% female), and more likely to have comorbidities (92% at least 1, median 2). Patients under 50 (n=200) often had a history of alcohol abuse (51%) or polysubstance abuse (20%). One third of hospitalized patients (34%) were monitored at home and referred for treatment through a high-risk outreach program. Patients were admitted much earlier at WRSU than in other locations, with a median interval of 4 days from symptom onset to hospitalization compared to 7 days reported elsewhere, but over half were still transferred to higher care. Although WRSU patients had higher rates of comorbidities, the 28-day hospital mortality rate from COVID-19 was nearly half of what has been previously reported (35/490, 7% vs 15-20% reported elsewhere, p < 0.001). This trend persisted after controlling

for age. Multivariate logistic regression showed that increasing age, male sex, and high BMI were significantly associated with higher risk of death from COVID-19 (overall model p < 0.001).

Characteristics and outcomes of hospitalized COVID-19 patients at WRSU

Characteristic	All Hospitalized Patients (n = 490)
Demographics/Comorbidities	
Age – median (IQR)	54 (41-64)
Female – no. (%)	269 (55)
≥ 1 preexisting condition – no. (%)	451 (92)
BMI – median (IQR), n=486	31.5 (26.6-37.7)
Hypertension – no. (%)	260 (53)
Diabetes – no. (%)	229 (47)
Asthma – no. (%)	63 (13)
Liver disease – no. (%)	57 (12)
Chronic kidney disease – no. (%)	54 (11)
Congestive heart failure – no. (%)	30 (6)
COPD – no. (%)	25 (5)
Alcohol abuse – no. (%)	158 (32)
Drug abuse – no. (%)	47 (10)
Current tobacco use – no. (%)	40 (8)
Outcomes	
Transfer to higher care – no. (%)	257 (52)
Oxygen requirement – no./n (%)	387/465 (83)
Intubation – no./n (%)	51/465 (11)
ICU – no./n (%)	95/463 (21)
COVID-19 death in 28 days – no./n (%)	35 (7)
Age under 50 – no./n (%)	8/192 (4)
Age 50-59 – no./n (%)	3/121 (2)
Age 60-69 – no./n (%)	7/79 (8)
Age 70-79 – no./n (%)	8/49 (14)
Age 80-89 – no./n (%)	8/14 (36)
Age over 90 – no./n (%)	1/1 (100)

Conclusion. Hospitalized patients at WRSU tended to be younger but with more comorbidities than previous studies. This may reflect the fact that NAs tend to acquire comorbidities at younger ages than the general population. This may also reflect the high rates of substance abuse in younger patients, which could be an additional risk factor for severe COVID-19. We believe that the low mortality rates at WRSU are a result of our outreach program, which likely decreased the interval between symptom onset and medical treatment.

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495. Evaluation of Antigen Testing for Detection of COVID-19 Vaccine Breakthrough Cases in Long-Term Care

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Session: P-23. COVID-19 Special populations (e.g. pregnant women, children, immunocompromised, etc)

Background. Long-term care facilities (LTCFs) are at high risk for severe COVID-19 outbreaks due to their congregate nature and vulnerable population. Oregon Health Authority (OHA) deployed point-of-care antigen (Ag) tests to promptly identify COVID-19 cases in LTCFs. However, their performance in identifying vaccine breakthrough cases has not been evaluated.

Methods. During 2/25/21–5/25/21, OHA supported testing of residents and staff for two outbreaks at a single LTCF. Paired nasal swabs were collected and tested for SARS-CoV-2 by CDC Influenza SARS-CoV-2 Multiplex PCR Assay (molecular test) and Abbott BinaxNOW COVID-19 Ag Card (Ag test) twice weekly during the

outbreaks. Participants were considered fully vaccinated if ≥ 14 days had passed since completion of a vaccine series; all others were deemed unvaccinated. A vaccine breakthrough case was defined as a positive Ag or molecular test from a fully vaccinated person's specimen. Performance characteristics of the Ag test were assessed, with molecular test as the reference standard. Cycle threshold (Ct) values were compared by one-sided independent t-tests.

Results. 94 unvaccinated residents and staff provided 563 paired samples; SARS-CoV-2 was detected in 21 (12 by Ag and molecular test, 6 by molecular test only, 3 by Ag test only), yielding Ag test sensitivity of 66.7% (95% CI: 43.8–83.7%) and specificity of 99.4% (95% CI: 98.4–99.8%). Mean Ct values were higher for specimens positive by PCR but negative by Ag than those positive by both (30.0 vs. 20.7, $P < .01$). 81 vaccinated persons provided 925 paired samples; SARS-CoV-2 was detected in 5 (1 by Ag and molecular test, 4 by molecular test only), yielding Ag test sensitivity of 20% (95% CI: 3.6–62.5%) and specificity of 100% (95% CI: 99.6–100%). Mean Ct values for specimens from vaccinated cases were higher than those from unvaccinated cases (30.2 vs. 23.8, $P < .05$). The lone Ag-positive breakthrough case had a Ct of 20; all others had Ct > 29 .

Conclusion. Ag test performance and reduced sensitivity on specimens with high Ct values found in this population are consistent with published data. Molecular testing maximizes identification of vaccine breakthrough cases. More studies are needed to estimate the proportion of breakthrough cases missed by Ag testing and their risk of transmitting the virus in LTCFs.

Disclosures. All Authors: No reported disclosures

496. Comparison of Severe COVID 19 and Influenza Infections in Pediatric Patients Requiring PICU in Bogota, Colombia

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Session: P-23. COVID-19 Special populations (e.g. pregnant women, children, immunocompromised, etc)

Background. COVID 19 infection represents a global threat and now a frequent cause of hospitalization in pediatrics. COVID 19, as well as Influenza virus could have a severe course. There are few studies, and no local or regional information comparing severe disease between COVID 19 and Influenza virus in children.

Methods. Confirmed COVID 19 between March 2020 to October 2021 and influenza infections from Jan-2017 to dec-2019 were included. Asymptomatic or ambulatory COVID 19 infections were excluded. The main objective was to compare clinical, laboratory and outcome characteristic of PICU admitted patients.

Results. 71 patients were included, 32(45,1%) with COVID 19 and 39 (54,9%) influenza virus. COVID 19 patients were older than influenza patients: 67 (20,5-143) vs. 10 (2- 46) $p=0.0002$. The majority of influenza patients were younger than two years, with different distributions in COVID 19 patients. Figure 1. Respiratory distress was more frequent in influenza (92,3% vs. 62,5%) $p=0.002$, but exanthema (28,1% vs 2,6%), shock (68,7% vs. 7,7%) and central nervous system manifestations (40,6% vs. 7,7%) were significantly more common in COVID19 than in Influenza respectively. COVID 19 had lower platelets and lymphocyte counts than influenza. There were no differences in treatment, nor deceased either, but Influenza patients had slightly longer hospital stays 12 (7 – 23) vs. 9.5 (6–15.5) $p=0.1592$ than COVID 19 (Table 1).

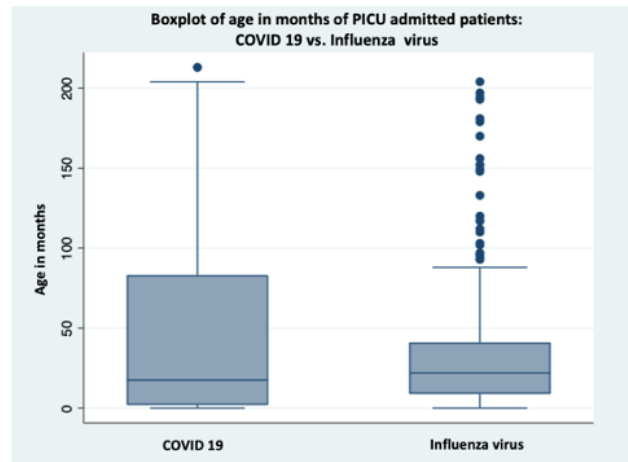


Table 1. Comparison of demographic and clinical characteristics of COVID 19 vs. Influenza patients.

Characteristics	PICU admission		P value
	COVID 19 (n=32)	Influenza (n=39)	
Age in months (Median, IQR)	67 (20.5- 143)	10 (2- 46)	0.0002 ¹
Male	14 (43,7)	26 (66,7)	0.053 ²
Age categories			< 0.001
0 – ≤ 2 years	8 (25,0)	26 (66,7)	
> 2 – ≤ 5 years	6 (18,7)	8 (20,5)	
> 5 – ≤ 12 years	11 (34,4)	5 (12,8)	
> 12 years	7 (21,9)	0	
Comorbidities	15 (46,9)	21 (53,8)	0.559 ³
Signs and symptoms			
Fever	26 (81,2)	24 (61,5)	0.070 ²
Respiratory distress	20 (62,5)	36 (92,3)	0.002 ²
Altered consciousness	5 (15,6)	3 (7,7)	0.293 ²
Exanthema	9 (28,1)	1 (2,6)	< 0.001 ¹
Shock	22 (68,7)	3 (7,7)	< 0.001 ¹
Central nervous systems manifestations	13 (40,6)	3 (7,7)	0.001 ¹
Gastrointestinal manifestations	13 (40,6)	8 (21,0)	0.075 ²
Laboratories			
Leucocytes	10470 (6610 - 12710)	11330 (8585 - 17660)	0.0940 ¹
Lymphocytes	1595 (1020 - 4700)	3390 (1810 - 6160)	0.0021 ¹
Platelets	252000 (212000 - 372000)	385500 (296000 - 474000)	0.0019 ¹
CRP mg/dl	7,7 (0,69 – 30,7)	17,7 (2,9 – 75,2)	0.1511 ¹
X rays			
Complicate pneumonia	1 (3,1)	2 (5,1)	0.676 ²
Interstitial opacities	17 (53,1)	18 (46,1)	0.559 ³
Alveolar / Lobar consolidation	10 (31,2)	18 (46,1)	0.201 ²
Treatment			
Mechanical ventilation	11 (34,4)	13 (33,3)	0.926 ²
Vasoactive support	18 (56,2)	12 (30,7)	0.031 ²
Antibiotics	26 (46,4)	30 (53,6)	0.657 ²
Bacterial infection	5 (17,8)	7 (35)	0.176 ²
Length of hospitalization	9.5 (6 – 15.5)	12 (7 – 23)	0.1592 ¹
Deceased	4 (12,5)	1 (2,6)	0.103

¹ Wilcoxon test ² Chi-square ³ Fisher

Conclusion. COVID 19 and influenza severe infections can have some differences including age of presentation. Influenza main manifestation requiring UCIP is respiratory distress, while COVID19 can have other presentations including shock and central nervous manifestation. Lower lymphocyte counts as well as lower platelets were significantly more common in COVID 19 patients. Although there are no unique characteristics of each infection, some particularities could guide clinician to the etiology of the infection.

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