

COVID-19 Infection Among Youth in Foster Care

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Abstract

Background: Foster youth may have increased exposure to Coronavirus Disease 2019 (COVID-19) due to transient living arrangements and crowding in congregate care settings.

Objective: To evaluate rates of acute COVID-19 infection and resolved COVID-19 infection by testing youth presenting for healthcare at a foster care clinic.

Participants and Setting: 390 youth in foster care presenting for healthcare at a foster care clinic.

Results: There were 16/648 (2%) positive tests for acute COVID-19 infection, administered to 369 youth. Six of 16 positive tests (38%) were obtained in asymptomatic youth. 207 of 390 youth enrolled received serology testing for COVID-19 and 42 (20%) were identified to have positive serology tests. There were no demographic or child welfare characteristics associated with having a positive test.

Conclusions: Screening for active COVID-19 infection in asymptomatic foster youth was very low yield.

Keywords: COVID-19, Foster Care, Child Welfare, Testing

Abbreviations: Coronavirus Disease 2019 (COVID-19); Electronic Health Record (EHR); Hamilton County Jobs and Family Services (HCJFS); Cincinnati Children's Hospital Medical Center (CCHMC); Comprehensive Health Evaluations for Cincinnati's Kids (CHECK)

Introduction

There are over 400,000 children in child welfare protective custody (e.g. foster care) in the United States (Administration on Children, 2020). These youth have been uniquely impacted by their exposure to maltreatment, neglect, homelessness, domestic violence, and parental substance abuse (American Academy of Pediatrics Council on Foster Care, 2015). Youth in foster care are more likely to have acute and chronic health conditions compared with the general population (Chernoff et al., 1994; Greiner et al., 2017; Leslie et al., 2005; Stein et al., 2013). The foster care system can further exacerbate this health gap by creating barriers to access to healthcare (American Academy of Pediatrics Council on Foster Care, 2015; Greiner et al., 2015; US General Accounting Office, 1995).

Beginning in 2020, the United States faced a new threat to health and wellbeing in the Coronavirus Disease 2019 (COVID-19) pandemic (CDC, 2020a). The COVID-19 pandemic created a public health crisis for all Americans and had the potential to disproportionately impact the foster care system through increased contact with infected individuals due to transient living arrangements and overcrowding, particularly for the 10% of youth in foster care living in congregate care settings (Administration on Children, 2020).

COVID-19 infection monitoring for youth in foster care has been challenging. While the American Academy of Pediatrics published *Guidance for Children and Families involved with the Child Welfare System during the COVID-19 Pandemic* (2021), specific advice for COVID-19 screening for this population was not included. Similarly, the Children's Bureau urged vigilance and compliance with Centers for Disease Control and Prevention (CDC) guidelines, as well as instruction to child welfare agencies to develop processes to stay informed and make fact-based decisions; specific advice for testing youth in foster care was not provided (Children's Bureau, 2021).

The result was a variable response within and across jurisdictions (Ohio Department of Job and Family Services, n.d.). Some child welfare agencies chose to monitor for symptoms and test when symptoms were present, others chose to require COVID-19 laboratory screening prior to placement changes. A lack of clear and consistent policy resulted in variation in practice leading to burdens on some youth (i.e. waiting for a negative COVID-19 test) which may disproportionately have impacted youth with greater placement changes (i.e. older youth).

Despite potential risks and variable testing, infection rates in this population have not been described. This study sought to evaluate rates of acute COVID-19 infection and resolved COVID-19 infection by testing youth presenting for healthcare at a foster care clinic.

Methods

In 2020, 2,600 children were placed in protective custody and out-of-home care in Hamilton County, with an average of 1,892 children in care on any given day (Hamilton County Job and Family Services [HCJFS], 2021). Children in custody in Hamilton County range in age from 0-21 (42% < 7, 33% 13+; HCJFS, 2021). Fifty percent are placed in non-relative foster homes, 26% in kinship homes, 11% in congregate care, and 8% in independent living placements (HCJFS, 2021).

Cincinnati Children's Hospital Medical Center (CCHMC) has contracted with HCJFS to provide state mandated healthcare for all foster youth through the Comprehensive Health Evaluations for Cincinnati Kids (CHECK) Foster Care Center (Greiner & Beal, 2018). The CHECK Center serves approximately 2,000 children ages 0 to 21 annually at 2 locations: Base Campus, in downtown Cincinnati, and Liberty Campus, in the suburban metro area. These youth live in multiple placement settings, including non-relative foster homes, kinship homes, group homes, and independent living. The CHECK Center provides comprehensive multidisciplinary healthcare, including preventive healthcare and chronic disease management when children enter foster care and with placement transitions. The CHECK Center's interdisciplinary approach to care delivery includes a dedicated social worker to support youth and caregivers in accessing services and interfacing with caseworkers, psychologists to provide brief integrated care and ongoing therapy via stand-alone appointments to children and families, and collaboration with psychiatrists and other specialists to address children's health concerns. Youth are seen within 5 business days of placement, return to the CHECK Center for follow-up in 30-60 days, and then are discharged to primary care until they experience another placement change or custody episode.

Per an existing arrangement with our child welfare organization, CCHMC's Institutional Review Board (IRB) provided a provisional approval for this study, which was finalized after a letter of support was obtained from HCJFS that included language indicating consent for youth in their custody to participate in the study. The CCHMC IRB then granted a waiver of written informed consent and assent. Youth 11-18 provided verbal assent prior to enrollment. Youth 18 and older provided their own verbal consent to participate.

At CHECK Center visits from December 2020-July 2021, a COVID-19 symptom checklist was collected, completed by caregivers for youth < 11 years of age and by the youth if 11 years or older. An anterior nasal swab was collected on all youth for molecular testing for direct identification of SARS-CoV-2 with the CDC 2019-novel Coronavirus (2019-nCoV) Real-Time RT PCR assay. Clinical staff obtained swabs for youth < 11 years of age; 11 and older could self-swab. For youth receiving blood draws for a clinical indication, an additional 1 ml of blood was collected for SARS-CoV-2 serological assay. The presence of IgG antibodies specific to the SARS-CoV-2 Spike protein was used as presumptive evidence of a previous infection (CDC, 2020b).

Demographics and clinical data were collected via review of the Electronic Health Record (EHR) and child welfare-EHR data portal IDENTITY (Greiner et al., 2019), including any previous COVID-19 PCR results from CCHMC, maltreatment type, placement count, placement types (current and historical; non-relative foster care, kinship care, group home, residential care, and independent living), legal status (i.e. temporary vs. permanent custody), gender, and age. Due to the nature of this study, only descriptive univariate and bivariate statistics were examined.

Results

Participants (65% identified as Black, Indigenous, or people of color) ranged from 0.02 to 20.20 years of age; 53% identified as cisgender female, 46% identified as cisgender male, and 1% identified as transgender/non-binary (see Table 1).

There were 16/648 (2%) positive acute COVID-19 tests, administered to 369 youth (range of 1-6 tests per youth). Six of 16 positive tests (38%) were obtained in asymptomatic youth during CHECK Center screening; the remaining were obtained outside of the CHECK Center in response to a clinical indication, i.e. symptoms and/or close contact. Among asymptomatic screening tests at the CHECK Center, 6/403 (1.5%) tests were positive. Among clinically indicated COVID-19 tests, 10/229 (4.4%) were positive. There were no demographic or child welfare characteristics associated with having a positive test (see Table 2).

Two hundred and eleven of 390 youth enrolled received serology testing at least once for COVID-19 (range 1-2 tests). For youth with multiple tests, ever positive indicated positive serology. Four youth with only equivocal serology results were excluded. Of 207 remaining youth, 42 (20%) were identified to have positive serology tests. Increased age and history of placement in a group home was associated with positive serology testing. Demographic and other child welfare characteristics were not associated with positive serology tests (see Table 3).

Eleven youth (3%) reported they had received at least one COVID-19 vaccination.

Discussion

Population based seroprevalence studies on children in the general population have had conflicting results depending on timing during the pandemic, geographic location, and sampling practices (Siebach et al., 2021). Screening for active COVID-19 infection in asymptomatic youth in foster care was low yield (15 positives per 1000). Even with clinically-indicated testing, positivity rates (44 per 1000) remained low. However, antibody testing demonstrated that 20% of youth have experienced a COVID-19 infection. This disparity indicates that youth may not be seeking healthcare at the time of infection, due to low symptom burden or challenges obtaining testing when symptomatic. This study is the first to report rates of COVID-19 infection among asymptomatic foster youth and findings may be relevant to other at-risk populations.

Low positivity rates suggest that screening asymptomatic youth in foster care for placement changes may not be beneficial and could contribute to unnecessary delays when a change in placement has been deemed necessary. These delays may increase length of time to get children placed in appropriate placements thus prolonging placements that cannot meet a child's needs or delaying a more therapeutic placement. This may disproportionately impact older youth in foster care, who have more frequent placement changes, creating another challenge for the highest-risk group. In contrast, testing when clinically indicated is clearly justified.

While children have reduced COVID-19 susceptibility and infectivity compared to adults, it is clear that children can face morbidity and mortality (Lee & Raszka, 2021). Furthermore, COVID-19 infections, particularly those requiring hospitalization, are more common among children with underlying health conditions, such as chronic lung disease (including asthma; CDC, 2020). As youth in foster care are more likely to have these conditions (American Academy of Pediatrics Council on Foster Care, 2015), they may be at increased risk for morbidity and mortality. COVID-19 has had profound impacts on children outside of direct health impacts, including significant impacts on education (Masonbrink & Hurley, 2020) and mental illness (Shah et al., 2020). As foster youth already faced challenges in education and increased rates of mental illness, it is concerning

that the COVID-19 impact could be even greater for them. Finally COVID-19 had impacts on social services (American Academy of Pediatrics, 2021), which led to unique additional problems for this population including limitations on in-person visitation and delayed court dates with the potential for increased time to reunification and permanency.

Vaccination rates were low in this study. This may reflect attitudes towards vaccination in this population of youth and their families but could also reflect challenges related to obtaining consent for administration. This highlights the need for further research on vaccine policy and practice to protect children and youth in foster care.

Limitations in the study include 1) Limited sample to youth who assented to participate, although there is no reason to believe that youth who chose to participate were different than those who did not; 2) Known limits of laboratory sampling (CDC, 2020b) offering the possibilities of false positives and false negatives; and 3) generalizability, as this study was done in one county of one state. Further, this study was descriptive in nature and additional research is needed. As new variants of COVID-19 spread in the United States, positivity rates of COVID-19 testing may vary; however, this study demonstrates that it will be important to use data to guide policy around testing, particularly when it may delay placement.

Conclusion

This study suggests that screening asymptomatic youth for active COVID-19 as part of foster placement may not be beneficial. Understanding how a pandemic impacts youth in foster care is critical to identifying areas of opportunity for additional resources and support. Describing the transmission of COVID-19 infection in this population is the first step toward understanding the impact of COVID-19 on children in foster care and is critical for better preparation for another pandemic in the future. Scientific data must be utilized to drive policy-making with respect to health and placement decisions for youth in foster care.

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Table 1 - Demographics of Study Participants (N = 390)

Variable	M(SD)/N(%)
Age M (SD)	9.0 (6.0) Range: 0.02-20.20 years
Gender	
Male N (%)	180 (46%)
Female N (%)	206 (53%)
Transgender N (%)	2 (0.5%)
Non-binary N (%)	2 (0.5%)
Race and Ethnicity	
White, Non-Hispanic N (%)	138 (35%)
BIPOC N (%)	252 (65%)
Episodes M(SD)	1.24 (0.60) Range: 1-6
Placements M(SD)	2.44 (2.25) Range: 1-14
Placement type at enrollment	
Licensed foster home N (%)	193 (50%)
Kinship N (%)	128 (33%)
Group home N (%)	32 (8%)
Independent living N (%)	37 (9%)
Placement history N (%)	
Ever in licensed foster home N (%)	260 (67%)
Ever in kinship N (%)	180 (46%)
Ever in group home N (%)	59 (15%)
Ever in independent living N (%)	36 (9%)
Maltreatment history	
Physical abuse/Exposure to DV N (%)	260 (67%)
Sexual Abuse N (%)	38 (10%)
Emotional abuse N (%)	19 (5%)
Dependency N (%)	255 (65%)
Child behavior problems N (%)	42 (11%)
Unknown maltreatment history N (%)	3 (0.8%)
Legal status	
Permanent N (%)	66 (17%)
Temporary N (%)	311 (80%)
Unknown N (%)	13 (3%)

Table 2 – COVID-19 PCR Results

	All	Negative PCR		Positive PCR		
		All	Asymptomatic Tests	Symptomatic Tests	All	Asymptomatic Tests
Tests (N)	632	397	219	16	6	10
Age M (SD)	9.49 (6.16) Range: 0.02-20.20	9.30 (5.96) Range: 0.02-19.71	9.83 (6.51) Range: 0.08-20.20	11.40 (6.07) Range: 0.47-18.93	10.11 (6.58) Range: 0.47-15.27	12.18 (5.97) Range: 1.89-18.93
Gender						
Male N(%)	283 (46%)	183 (46%)	100 (45%)	7 (44%)	4 (67%)	3 (30%)
Female N(%)	329 (53%)	211 (53%)	118 (54%)	9 (56%)	2 (33%)	7 (70%)
Transgender N(%)	3 (0.5%)	2 (0.5%)	1 (<1%)	0 (0%)	0 (0%)	0 (0%)
Non-binary N(%)	1 (0.2%)	1 (0.25%)	0 (%)	0 (0%)	0 (0%)	0 (0%)
Race and Ethnicity						
White, Non-Hispanic N (%)	215 (35%)	141 (36%)	74 (34%)	6 (38%)	3 (50%)	3 (30%)
BIPOC N (%)	401 (65%)	256 (64%)	145 (66%)	10 (63%)	3 (50%)	7 (70%)
Episodes of Custody M (SD)	1.26 (0.63) Range: 1-6	1.27 (0.65) Range: 1-6	1.24 (0.59) Range: 1-6	1.38 (0.62) Range: 1-3	1.5 (0.84) Range: 1-3	1.30 (0.48) Range: 1-2
Placements M (SD)	2.72 (4.46) Range: 1-14	2.59 (2.35) Range: 1-14	2.94 (2.64) Range: 1-11	2.94 (2.38) Range: 1-8	3.17 (2.88) Range: 1-8	2.80 (2.20) Range: 1-8
Visit Type						
Initial Placement Exam N (%)	174 (28%)	157 (39%)	17 (8%)	2 (%)	2 (33%)	0 (0%)
Change of Placement Exam N (%)	188 (31%)	174 (44%)	14 (6%)	2 (%)	2 (33%)	0 (0%)
Comprehensive Follow-up N (%)	77 (12%)	66 (17%)	11 (5%)	2 (%)	2 (33%)	0 (0%)
Community Test N (%)	177 (29%)	--	177 (81%)	10 (63%)	0 (0%)	10 (100%)

Current Placement Type														
Foster Home N (%)	228 (52%)	199 (50%)	29	4 (25%)	2 (33%)	2 (20%)								
Kinship N (%)	131 (30%)	123 (31%)	8	5 (31%)	2 (33%)	3 (30%)								
Group Home N (%)	39 (9%)	37 (9%)	2	4 (25%)	2 (33%)	2 (20%)								
Independent Living N (%)	41 (9%)	38 (10%)	3	0 (0%)	0 (0%)	0 (0%)								
Not yet in Custody N (%)	--	--	--	3 (19%)	0 (0%)	3 (30%)								
Placement history														
Ever in licensed foster home N (%)	414 (67%)	277 (70%)	137 (63%)	10 (63%)	3 (50%)	7 (70%)								
Ever in kinship N (%)	275 (45%)	178 (45%)	97 (44%)	8 (5%)	3 (50%)	5 (50%)								
Ever in group home N (%)	125 (20%)	62 (15%)	63 (29%)	6 (38%)	2 (33%)	4 (40%)								
Ever in independent living N (%)	60 (10%)	35 (9%)	25 (11%)	3 (19%)	0 (0%)	3 (30%)								
Maltreatment history														
Physical abuse/ Exposure to DV N (%)	410 (67%)	275 (70%)	135 (62%)	10 (63%)	3 (50%)	7 (70%)								
Sexual Abuse N (%)	65 (11%)	42 (10%)	23 (10%)	2 (13%)	0 (0%)	1 (10%)								
Emotional abuse N (%)	34 (6%)	19 (5%)	15 (7%)	0 (0%)	5 (83%)	0 (0%)								
Dependency N (%)	406 (66%)	261 (66%)	145 (66%)	9 (56%)	0 (0%)	4 (40%)								
Child behavior problems N (%)	93 (15%)	48 (12%)	45 (21%)	0 (0%)	0 (0%)	0 (0%)								
Unknown maltreatment history N (%)	4 (1%)	0 (0%)	4 (2%)	2 (13%)	0 (0%)	2 (20%)								

Table 3 – Youth with Negative and Positive COVID-19 Serology Tests

	Negative Serology	Positive Serology
Subjects	165 (80%)	42 (20%)
Age M (SD)	8.67 (5.69); Range: 0.29-20.20	10.89 (5.63); Range: 0.76-18.62
Gender		
Male N (%)	76 (46%)	20 (48%)
Female N (%)	87 (52%)	21 (50%)
Transgender N (%)	1 (<1%)	1 (2%)
Non-binary N (%)	1 (<1%)	0 (0%)
Race and Ethnicity		
White, Non-Hispanic N (%)	70 (42%)	13 (31%)
BIPOC N (%)	95 (58%)	29 (69%)
Episodes M(SD)	1.21 (0.52); Range: 1-4	1.31 (0.72); Range: 1-4
Placements M(SD)	1.86 (1.64); Range: 1-9	2.76 (2.42); Range: 1-11
Visit Type		
Initial Placement Exam N (%)	106 (64%)	27 (64%)
Change of Placement Exam N (%)	36 (22%)	10 (24%)
Comprehensive Follow-up N (%)	23 (14%)	5 (12%)
Current Placement Type		
Foster Home N (%)	75 (45%)	17 (40%)
Kinship N (%)	66 (40%)	14 (33%)
Group Home N (%)	8 (5%)	6 (14%)
Independent Living N (%)	16 (10%)	5 (12%)
Placement history		
Ever in licensed foster home N (%)	98 (59%)	21 (50%)
Ever in kinship N (%)	78 (47%)	16 (38%)
Ever in group home N (%)	16 (10%)	9 (21%)
Ever in independent living N (%)	16 (10%)	4 (10%)
Maltreatment history		
Physical abuse/Exposure to DV N (%)	116 (70%)	28 (67%)
Sexual Abuse N (%)	7 (4%)	8 (19%)
Emotional abuse N (%)	5 (3%)	2 (5%)
Dependency N (%)	98 (59%)	25 (60%)
Child behavior problems N (%)	11 (7%)	6 (14%)
Unknown maltreatment history N (%)	2 (1%)	1 (2%)