DOES TELEHEALTH REDUCE GEOGRAPHIC BARRIERS TO BEHAVIORAL HEALTHCARE FOR CONNECTICUT’S MEDICAID BENEFICIARIES OF COLOR?
The onset of COVID-19 resulted in unprecedented changes in the preferred modality of health services delivery. Safety concerns regarding in-person visits and risk of COVID-19 transmission led policymakers to fully embrace telehealth for clinical care delivery. The Centers for Medicare & Medicaid Services implemented a number of COVID-19 flexibilities and waivers to make telehealth visits more accessible for patients and providers. Many states also implemented additional polices to further improve the availability of telehealth.

In Connecticut (CT), a series of executive orders were passed to expand telehealth access for CT’s residents. These executive orders relaxed laws regulating telehealth, which resulted in expansions in delivery methods (including audio-only) and the types of providers authorized to deliver telehealth services, temporary suspensions in requirements for provider licensure and certifications, and expanded Medicaid coverage for telehealth. On July 31, 2020, the CT State Senate passed H.B. No. 6001 “An Act Concerning Telehealth,” which codified Governor Ned Lamont’s executive orders and extended modifications to telehealth coverage laws through March 15, 2021. To further extend legislative action to expand access to telehealth services, Governor Lamont passed Executive Order 10C and Executive Order 11E, the latter extending current modifications to telehealth coverage laws through May 20, 2021.

During this time, several bills were raised by the CT General Assembly to expand the provision of telehealth services in the State. One of which is H.B. No. 6472, which proposes extending access to telehealth services for Medicaid recipients through June 30, 2023. The passing of H.B. No. 6472 would also require the Commissioner of Social Services to submit a report including:
whether the expansion of telehealth services pursuant has increased access to health care among Medicaid beneficiaries; regions of the state that have experienced an increase in access due to the expansion of telehealth services; any cost savings realized by the state for nonemergency transportation or other services related to the expansion of telehealth services; and recommendations concerning whether Medicaid beneficiaries would benefit from a permanent expansion of telehealth services.8

Public hearing testimonies submitted in support of H.B. No. 6472 describe increased access to care among health disparity communities that is largely attributable to expanded telehealth services.9 Many testimonies were submitted by behavioral health professionals applauding telehealth as an effective modality for delivering remote behavioral healthcare (also known as telebehavioral health), as COVID-19 significantly increased rates of depression and symptoms of anxiety. For example, a 2021 meta-analysis published by Bueno-Notivol et al., found rates of depression to be seven times higher in 2020 compared to pre-pandemic depression rates in 2017.10 The impact on communities of color has also been documented, as recent findings demonstrate the impact of COVID-19 on increasing symptoms of anxiety and/or depressive disorder among non-Hispanic Black and Hispanic adults.11 Additional reports reveal disproportionally negative impacts of COVID-19 on non-Hispanic Black adults’ familial relationships and capacity to care for their children.12

According to findings published by Beacon Health Options, the administrative service organization for HUSKY Health CT (CT’s Medicaid program), HUSKY Health beneficiaries of color have demonstrated disparities in access to, and quality of care for behavioral health services.13 This fact, when combined with the potential of trauma-related symptomatology among non-Hispanic Black Americans resulting from direct and vicarious exposure to police-related killings, further stresses the importance of permanent legislation focused on removing barriers to healthcare access for CT’s communities of color. While support for H.B. No. 6472 has focused on the impact of telehealth on observed reductions in

![FIGURE 1. Procedure for identifying unique facilities in CT providing behavioral services to Medicaid patients](image.png)

Notes: Mental health and Drug and alcohol treatment facilities, which were combined in one dataset with unique behavioral health treatment facilities (i.e. same Mental health and Drug and alcohol treatment facilities providing services at the same address were not double-counted).
socio-structural barriers to care such as transportation, reimbursement, and care continuity, to our knowledge, no studies have used geospatial visualization to demonstrate the impact of telehealth on geographic barriers HUSKY Health beneficiaries of color may experience when accessing behavioral healthcare services.

This report presents initial findings regarding potential racial/ethnic differences in the geographic distribution of and access to Medicaid-eligible behavioral health services and facilities in Connecticut.

METHOIDS

We used spatial data to evaluate the geographic distribution of CT’s Medicaid-eligible telebehavioral health services, in relation to the population density of residents of color (% Hispanic and % non-Hispanic Black). Spatial data is available in two formats: (1) point data—a literal point on a map, with either an address or latitude & longitude exact location of behavioral health facility; and (2) regional aggregate data—aggregated at a common level like ZIP code or census tract. We combined both formats of spatial data into one dataset aggregated at the ZIP code level. To identify the number of facilities in CT providing behavioral health services to Medicaid beneficiaries, we downloaded two sets of data from PolicyMap (Mental health and Drug and alcohol treatment facilities), which were combined with data documenting unique behavioral health treatment facilities (i.e., Mental health and Drug and alcohol treatment facilities providing services at the same address were not double-counted).

We marked facilities providing services to Medicaid recipients (identified using ‘payment’ codes present in PolicyMap facilities data), and then confirmed their delivery of telebehavioral health services by contacting each facility directly. The details of these data processing and verification methods are provided in Figure 1.

MAP 1. Map of the original Policymap behavioral health facilities: Mental Health Treatment Facilities & Drug and Alcohol Treatment Facilities, against percent non-Hispanic White residents
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These data were used to test whether the number of behavioral health facilities providing telehealth for Medicaid beneficiaries per ZIP code, is related to the number of both non-White and non-Hispanic Black Medicaid beneficiaries residing in them. We used maps to both visualize the geographic distribution and to provide spatial lagged versions of outcomes. We then expanded the zero-inflated Poisson model to analyze spatial data, by including the spatial lag version of the outcome generated in GeoDa using the queen contiguity weight matrix. Spatial zero-inflated Poisson models were tested to determine whether the percentage of non-Hispanic White residents predicted a higher non-zero count of facilities and/or beneficiaries. We repeated the test with %Hispanic and %non-Hispanic Black along with % on Medicaid as predictors (results shown in Figures 3.i–3.iii). PolicyMap and GeoDa were used to cross-check and visualize these data into maps.

RESULTS

There are 282 facilities offering behavioral health services in CT to Medicaid beneficiaries, of which 65% (184) provide telehealth services (see Figure 1). The distribution of behavioral health facilities offering telehealth for Medicaid beneficiaries in CT is shown in Maps 1-4 (see Appendices). According to these maps, 100
of CT’s 282 ZIP codes have Medicaid-eligible behavioral health treatment facilities, and only 40 of these ZIP codes have treatment facilities with telehealth health capabilities. The results from the zero-inflated Poisson Model are shown in Table 3. Statistical significance tests reveal that ZIP codes with more Medicaid beneficiaries, irrespective of their race or ethnicity, contain a higher percentage of Medicaid-eligible behavioral health treatment facilities with telehealth capabilities.

CONCLUSIONS & IMPLICATIONS FOR FUTURE RESEARCH & TELEHEALTH POLICY

The distribution of behavioral health facilities offering telehealth services to CT’s Medicaid beneficiaries does not appear to have a systematic (homogenous across the state ZIP codes) relation to the share of non-Hispanic Black or Hispanic residents present. However, preliminary findings from a sub-analysis of the study data suggest that ZIP codes with higher percentages of non-Hispanic White residents, may have more locations of Medicaid-eligible behavioral health facilities with telehealth capabilities (see Table 2 and Map 5). Figures 2–4 add nuance to these pure statistical findings for the range of predictors observed in these data. Broader models like spatial structural equation modeling (sSEM) analyses are needed to test more precise associations, like whether ZIP codes with more minority residents have more Medicaid residents, and as a consequence these ZIP codes have more (or fewer) facilities equipped with telebehavioral health capabilities for Medicaid beneficiaries. For a more precise view of the communities served by these facilities, future analyses would benefit from separating out federally qualified health centers (FHQC)s.
from other health facilities, as FQHCs are established and positioned to directly serve lower income and underserved communities.16

The results of this study suggest that limited geographic access to Medicaid-eligible behavioral health treatment facilities is not the primary driver of racial disparities in services uptake among CT’s beneficiaries of color. Such findings suggest that legislation solely focused on reducing geographic barriers to behavioral health treatment resources may have fairly limited impacts on advancing behavioral health equity in CT. The demonstrated disparities in access to in-person behavioral health services pre-pandemic suggests that minority populations face additional obstacles in healthcare utilization.13 It is important to note that geographic access does not always result in more services uptake. Processes of care delivery, competing patient demands, and unmet socioeconomic needs also play a role in decisions to seek behavioral health treatment. Moreover, we also need to consider that typical definitions of access to care (i.e., definitions other than ‘living in the same region with a healthcare facility’) are not sufficient or precise enough to capture multidimensional factors (i.e., time, trust, patient-provider relationships) shaping how or why individual’s command appropriate health resources. Thus, an important next step will be to determine which of these social determinants are driving decisions to use behavioral health treatment among CT’s Medicaid beneficiaries of color. Moreover, investigating potential access to geographically proximal facilities provides a cursory look at factors associated with telebehavioral services uptake. Despite these recommendations, telehealth is an essential tool in the toolkit for reducing socioeconomic (e.g., transportation) barriers to healthcare and dismantling an inequitable healthcare system. At the time of this publication and since the public hearing held on February 23, 2021, we were unable to locate any further legislative steps taken to advance H.B. No. 6472. However, on May 10, 2021, Governor Lamont signed a separate house bill—H.B. No. 5596—modifying current telehealth coverage laws until June 30, 2023.18 While these modifications will provide continued flexibility in healthcare delivery and access, they are still temporary. The permanent expansion of telehealth benefits for Medicaid beneficiaries, as proposed in H.B. No. 6472, should be a strong consideration for CT’s legislative body as they chart a way towards behavioral health equity for CT’s medically underserved.

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REFERENCES


## APPENDICES

### TABLE 1. Descriptive of the variables reported on

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (ZIPs)</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
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<tr>
<td>%Non-Hispanic White</td>
<td>278</td>
<td>15.55%</td>
<td>16.77</td>
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<tr>
<td>%Hispanic</td>
<td>282</td>
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<td>%Non-Hispanic Black</td>
<td>277</td>
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<td>Telemedicine Facilities</td>
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<td>0.56</td>
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<tr>
<td>Non-Medicaid Facilities</td>
<td>282</td>
<td>0.11</td>
<td>0.46</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total Facilities</td>
<td>282</td>
<td>0.97</td>
<td>2.11</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>%on Medicaid</td>
<td>277</td>
<td>18.22%</td>
<td>13.34%</td>
<td>0</td>
<td>72.34%</td>
</tr>
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### TABLE 2. Values across several descriptives for 2 CT neighboring zip codes: 06119 and 06120

<table>
<thead>
<tr>
<th>ZIP</th>
<th>%nH White</th>
<th>%nH Black</th>
<th>%Hispanic</th>
<th>% on Medicaid</th>
<th>Telemed. Facilities</th>
<th>Non Medicaid Facilities</th>
<th>Total Facilities</th>
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<td>06119</td>
<td>22.1</td>
<td>6.2</td>
<td>12.6</td>
<td>14.6</td>
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<td>51.7</td>
<td>43.0</td>
<td>66.1</td>
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<td>0</td>
<td>6</td>
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### TABLE 3. Effects from zero-inflated dual Poisson models with spatial autoregressive lagged co-predictors (see Figures 2-4)

<table>
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<th>Type</th>
<th>Estimate</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>%nH White -&gt; #Telemedicine Medicaid</td>
<td>Effect on count</td>
<td>-0.04</td>
<td>.650</td>
</tr>
<tr>
<td>%nH White -&gt; #Telemedicine Medicaid</td>
<td>Effect on non-zero</td>
<td>0.57</td>
<td>.020</td>
</tr>
<tr>
<td>%Medicaid -&gt; #Telemedicine Medicaid</td>
<td>Effect on count</td>
<td>0.37</td>
<td>.004</td>
</tr>
<tr>
<td>%Medicaid-&gt; #Telemedicine Medicaid</td>
<td>Effect on non-zero</td>
<td>-0.15</td>
<td>.581</td>
</tr>
<tr>
<td>%nH White -&gt; #nonMedicaid</td>
<td>Effect on count</td>
<td>0.16</td>
<td>.492</td>
</tr>
<tr>
<td>%nH White -&gt; #nonMedicaid</td>
<td>Effect on non-zero</td>
<td>0.43</td>
<td>.092</td>
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<tr>
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<td>Effect on count</td>
<td>-0.44</td>
<td>.129</td>
</tr>
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<td>%Medicaid-&gt; #nonMedicaid</td>
<td>Effect on non-zero</td>
<td>0.41</td>
<td>.324</td>
</tr>
<tr>
<td>%nH White -&gt; #Telemedicine Medicaid</td>
<td>Effect on count</td>
<td>-0.04</td>
<td>.650</td>
</tr>
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</table>
FIGURE 2.i. Predicted number of CT behavioral telemedicine facilities with 95% CIs by percent non-Hispanic White residents

FIGURE 2.ii. Predicted number of CT behavioral telemedicine facilities with 95% CIs by percent residents on Medicaid

FIGURE 3.i. Predicted number of CT behavioral telemedicine facilities with 95% CIs by percent non-Hispanic Black residents (model 2)

FIGURE 3.ii. Predicted number of CT Medicaid behavioral telemedicine facilities with 95% CIs by percent Hispanic residents (model 2)

FIGURE 3.iii. Predicted number of CT behavioral telemedicine facilities with 95% CIs by percent residents on Medicaid (model 2)
MAP 5. Extract of GeoDa map contrasting 2 CT neighboring ZIP codes 06119 and 06120 across several descriptives

**06119 (West Hartford)**
- Population: 16,126
- NH White: 22.1%
- Income: $81,100
- Uninsured: 3.3%
- Good Health: 61%
- Diabetes: 8.2%
- Life Expectancy: 83.5y

**06105 (Central Hartford)**
- Population: 19,955
- NH White: 63.1%
- Income: $32,100
- Uninsured: 10.8%
- Good Health: 51%
- Diabetes: 10.3%
- Life Expectancy: 77.7y

**06120 (North Hartford)**
- Population: 14,211
- NH White: 78.3%
- Income: $25,100
- Uninsured: 6.7%
- Good Health: 47%
- Diabetes: 11.3%
- Life Expectancy: 74.1y
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Producing evidence-for-action and implementing strategies designed to eliminate health disparities and advance health equity among Connecticut’s minority and medically underserved populations.