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WHY A SUSTAINABLE PUBLIC HEALTH SYSTEM NEEDS COMMUNITY-BASED INTEGRATED HEALTH TEAMS

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I. INTRODUCTION

At the outset of the COVID-19 pandemic, expressions of solidarity by politicians, celebrities, and Facebook posters were seemingly everywhere, encapsulated in the catchphrase "We're all in this together." But while all of us have been affected by COVID-19, its impact has been anything but equal. In particular, existing inequities in income, employment, safe housing, transportation, and, most crucially, in health care have contributed to socioeconomically disadvantaged groups experiencing higher rates of COVID-19 infections, hospitalizations, and death.
[1] Given the link between these pre-existing inequities and COVID-19 health disparities, the pandemic has revealed the necessity of building a more sustainable public health system that better meets the needs of economically and socially marginalized populations. This Article describes one approach for doing so ─ leveraging the skills and resources of community-based integrated health teams (CIHTs) to support public health emergency responses that coordinate medical, behavioral health, and social services.

CIHTs are multi-disciplinary teams that help provide or coordinate medical, behavioral health, and social services for socioeconomically disadvantaged individuals with complex healthcare needs.[2] In recognition that these patients often have

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[1] *See Health Equity Considerations and Racial and Ethnic Minority Groups*, CTRS. FOR DISEASE CONTROL & PREVENTION ("CDC") (Feb. 12, 2021), https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html (summarizing the evidence that some racial and ethnic minority groups are being disproportionately affected by COVID-19 and listing contributing factors); Vida Abedi *et al.*, *Racial, Economic, and Health Inequality and COVID-19 Infection in the United States*, J. RACIAL & ETHNIC HEALTH DISPARITIES (epub ahead of print) (epub at 1), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7462354/ (finding counties with higher poverty experiencing higher COVID-19 death rates); Rebekah L. Rollston & Sandro Galea, *The Coronavirus Does Discriminate: How Social Conditions are Shaping the COVID-19 Pandemic*, CTR. FOR PRIMARY CARE: HARV. MED. SCH. (May 5, 2020), http://info.primarycare.hms.harvard.edu/blog/social-conditions-shapecovid (discussing socioeconomic conditions that influence the risk of contracting COVID19). *See generally* ORG. FOR ECON. CO-OPERATION & DEV., OECD POLICY RESPONSES TO CORONAVIRUS (COVID-19), COVID-19: PROTECTING PEOPLE AND SOCIETIES 1–34 (2020), https://read.oecd-ilibrary.org/view/?ref=126_126985-nv145m3l96&title=COVID-19- Protecting-people-and-societies (describing generally the challenges facing vulnerable populations living in OECD nations).

[2] Jessica Mantel, *Leveraging Community-Based Integrated Health Teams to Meet the Needs of Vulnerable Populations in Times of Crisis*, 30 ANNALS OF HEALTH L. & LIFE SCI. 133, 134 (2021). *See also* Mary Takach & Jason Buxbaum, CARE MANAGEMENT FOR MEDICAID ENROLLEES THROUGH COMMUNITY HEALTH TEAMS 7, 11 (The Commonwealth Fund, 2013), https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publicati

chronic health conditions that are further complicated by social, financial, and behavioral health needs, CIHTs take a holistic view of an individuals' health and address the full continuum of patient's health-related needs. Specifically, they offer these patients intensive case management services and coordinate care across the health care, public health, and social services sectors.[3] While the composition of each CIHT's team varies, they may include physicians, nurses, nurse practitioners, behavioral health specialists, community health workers (CHWs),[4] and social workers.[5]

One of us (Prof. Mantel) previously conducted a literature review of published articles and blog postings discussing how CIHTs can repurpose their resources to help communities meet the health needs of economically and socially marginalized populations during a public health emergency. This research found that CIHTs are well-positioned to quickly and effectively respond to the challenges that disadvantaged groups face during a public health crisis, both on an individual level and community level. As summarized in a previously published article reporting the findings of this research, during a public health crisis, CIHTs can conduct outreach to high-risk individuals and educate them about their health risks, provide individuals with material resources and emotional support, and connect them to health care providers and available community resources.[6] CIHTs also can support system-level interventions designed to meet a community's needs during a public

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ons_fund_report_2013_may_1690_takach_care_mgmt_medicaid_enrollees_co mmunity_hlt _teams_520.pdf (describing the activities of community health teams); CTR. FOR HEALTH CARE STRATEGIES & ST. HEALTH ACCESS DATA ASSISTANCE CTR., COMMUNITY CARE TEAMS: AN OVERVIEW OF STATE APPROACHES 2 (2016), https://www.chcs.org/ resource/community-care-teams-overview-state-approaches/.

[3] Takach & Buxbaum, *supra* note 2, at 11 (describing the activities of community health teams); CTR. FOR HEALTH CARE STRATEGIES & ST. HEALTH ACCESS DATA ASSISTANCE CTR., *supra* note 2, at 2.

[4] The literature has not yet settled on a consistent definition of the term "community health worker," but this Article uses the terms as follows: "[a] community health worker is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery." *Community Health Workers*, AM. PUB. HEALTH ASS'N, https://www.apha.org/apha-communities/member-sections/community-health-workers (last visited Apr. 24, 2021).

[5] Takach & Buxbaum, *supra* note 2, at 7; CTR. FOR HEALTH CARE STRATEGIES & ST. HEALTH ACCESS DATA ASSISTANCE CTR., *supra* note 2, at 2; Glenn Landers *et al.*, *Finding Innovation and Resilience During the COVID-19 Pandemic: Cross-Sector Alignment and the Response to COVID-19*, GA. ST. UNIV.: GA. HEALTH POL'Y CTR. (Aug. 7, 2020), https://ghpc.gsu.edu/2020/08/07/cross sector-alignment-and-the-response-to-covid-19/.

[6] Mantel, *supra* note 2 , at 136-44.

health emergency, such as public health education campaigns and coordinated, cross-sector initiatives.[7]

This Article builds upon this prior research by describing specific examples of how CIHTs have supported their community's COVID-19 public health response that were shared with the authors during qualitative interviews with CIHTs. To determine whether and how CIHTs support local public health emergency response efforts, we interviewed team members from different CIHTs about their COVID-related efforts. Although the responses during the interviews did not confirm every type of COVID-related activity by CIHTs described in the literature, the CIHTs participating in our study have supported COVID-19 response efforts in a variety of ways. Specifically, the CIHTs we interviewed provided assistance to high-risk individuals and supported system-level interventions.

This Article proceeds in three parts. Part I describes the research study we conducted, including who we interviewed, descriptions of the types of CIHTs we included, and the topics about which we inquired. Part II describes how CIHTs can provide assistance to individual patients during a public health crisis. Part III is the system-level counterpart of Part II and describes how CIHTs can leverage their capabilities to support public health interventions targeting specific populations. Part IV concludes by confirming that CIHTs can quickly and effectively respond to the complex challenges facing disadvantaged populations during a public health crisis, and that allocating public health funds in support of CIHTs would support a more sustainable and effective U.S. public health system.

II. THE RESEARCH STUDY

Between the spring and fall of 2021, we conducted virtual interviews with twenty-nine professionals who were members of CIHTs.[8] These professionals included physicians, registered nurses, nurse practitioners, a pharmacist, behavioral health specialists, social workers, CHWs, housing coordinators, and program administrators. Interviewees represented a diverse group of CIHTs from multiple regions of the United States. The CIHTs operated in large cities as well as in rural communities, and primarily served populations that are economically and socially marginalized. Some CIHTs focused on seniors, others focused primarily on the homeless, and some others focused on low-income or uninsured individuals. Some CIHTs had flexibility in choosing their target populations while others were limited to specific populations. Most,

[7] *Id.* at 144-50.

[8] This research was done with approval from the University of Houston Institutional Review Board.

however, targeted patients who frequent emergency departments or inpatient facilities and/or suffer from multiple chronic conditions.

Given the wide range of CIHTs included in the study, there were several differences among them. Some CIHTs were embedded in primary care practices, hospitals, health care systems, or local public health departments. Meanwhile, others were unaffiliated with a health care provider or public health department and were operated by independent community-based organizations. CIHTs also varied in how they financed their operations. Many CIHTs relied in whole or in part on grant funding, and some CIHTs received funding from the state. Provider-based CIHTs often were financed in whole or in part by their organization's general operating budget, while some CIHTs operated by community-based organizations had contracts with local hospitals or health care systems. Some CIHTs also had contracts with managed care organizations.

Regardless of these differences, all CIHTs conducted some type of social determinant of health screening and helped enroll patients in public assistance programs, connected patients with community resources, or assisted patients with their unmet social needs in other ways. All CIHTs also provided care coordination, helped patients navigate the health care system, and coached patients on healthy behaviors. Most importantly, all of the CIHTs in the study assisted with local COVID-19 responses in some capacity.

Our interviews explored multiple aspects of CIHTs' COVID-related activities. During the interviews, we asked interviewees how COVID-19 affected the populations served by their CIHT. We also asked interviewees how their respective CIHTs modified their operations in response to COVID-19. In addition, we asked interviewees what services their CIHTs provided to their individual patients to help combat the effects of COVID-19, and whether their CIHT participated in system-level interventions to address the pandemic's effects.

Because CIHTs were, and still are, occupied with COVID-19 response efforts, our sample size was small. Thus, the CIHTs we interviewed may not be representative of the full range of CIHTs currently operating in the United States. Despite this limitation, our study offers useful insights into how CIHTs can repurpose their expertise and resources to support public health efforts to meet the needs of economically and socially marginalized populations during a public health emergency.

III. ASSISTING VULNERABLE INDIVIDUALS

Prior to the pandemic, financial, social, and environmental inequities put disadvantaged groups at greater risk of poor health.[9] COVID-19 has compounded these health disparities.[10]

During the pandemic, many members of economically and socially disadvantaged populations could not effectively self-isolate given their lack of resources, their living in crowded households, or their working in settings with greater risk of exposure.[11] In addition, these populations experienced higher rates of job loss and decreased income, which put them at greater risk for food insecurity, loss of employer-sponsored health insurance, unfulfilled prescriptions, and delays in seeking medical care.[12] The pandemic's mental health burden also has been greater for economically and socially marginalized groups relative to the general population.[13] Moreover,

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[9] *See generally* Sravani Singu *et al*., *Impact of Social Determinants of Health on the Emerging COVID-19 Pandemic in the United States*, 8 FRONTIERS PUB. HEALTH 1, 2–3 (2020) (explaining how the social determinants of health adversely impact the health of disadvantaged populations).

[10] *See id.* at 6–7; Leo Lopez III *et al*., *Racial and Ethnic Health Disparities Related to COVID-19*, 325 JAMA 719, 719 (2021) ("Disparities in socioeconomic conditions across racial lines have been exacerbated during the COVID-19 pandemic.").

[11] *See* sources cited *supra* note 1. Vulnerable populations may have difficulty self-isolating or self-quarantining because they often lack basic resources such as food, household products, and health supplies, or may require support services such as childcare and food delivery. *See COVID-19: Support Services*, CDC (June 1, 2020), https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/support-services.html.

[12] *See* Sameed Ahmed M. Khatana & Peter W. Groeneveld, *Health Disparities and the Coronavirus Disease (COVID-19) Pandemic in the USA*, 35 J. GEN. INTERNAL MED. 2431, 2431–32 (2020) (stating that COVID-19-related job losses will increase the number of uninsured due to the loss of employer-sponsored health insurance); Singu *et al*., *supra* note 9 (discussing how the adverse economic impact of COVID-19 has disproportionately affected minorities and lower-income groups and led to the loss of employer-sponsored health insurance, and how the loss of health insurance can lead to lower use of health care resources); FEEDING AM., THE IMPACT OF THE CORONAVIRUS ON FOOD INSECURITY IN 2020 2 (2020), https://www.feedingamerica.org/sites/default/files/2020-10/Brief_Local%20Impact_10.2020_0.pdf (discussing increases in food insecurity as a result of COVID-19); *see* Amy Kennedy, *COVID-19 Pandemic and Adherence to Therapy: What Can Pharmacists Do?*, PHARMACY TIMES (July 14, 2020), https://www.pharmacytimes.com/news/covid-19-pandemic-and-adherence-to-therapy-what-can-pharmacists-do (commenting that higher rates of unemployment and the loss of health insurance will reduce medication adherence).

[13] One possible explanation for the pandemic's disproportionate impact on mental health is that social distancing measures were more likely to reduce access to mental health services and informal mental support mechanisms for socioeconomically disadvantaged individuals relative to other individuals. In addition, pre-existing mental health conditions, which can increase COVID-19's mental health consequences, are more prevalent among socioeconomically

given the link between poor mental health and physical health,[14] this increased mental health burden among disadvantaged individuals may have contributed to greater declines in their physical health.

Because CIHTs understand the interplay between these social, financial, and health-related factors, they are well-positioned to mitigate their impact on disadvantaged populations during a public health crisis. Our interviews with CIHT professionals confirmed this assumption. Below we describe the ways the CIHTs in our study supported their patients during the COVID-19 pandemic.

A. CIHT's Data-Related Capabilities

Many CIHTs maintain databases with extensive information on the populations they serve. These databases incorporate data from multiple sources, including the patient's clinical records, demographic information, and social determinants of health data.[15] CIHTs also are skilled at analyzing this data to identify high-risk individuals or those most likely to benefit from a CIHT's services.[16]

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disadvantaged groups. Mental health providers' switch to telepsychotherapy and telepsychiatry also raised access barriers for disadvantaged individuals who lack the requisite technology, stable internet connections, or digital literacy. *See* F. Marijn Stok, *et al*., *Social Inequality and Solidarity in Times of COVID-19*, 18 INT'L J. OF ENVTL. RES. & PUB. HEALTH 6339, 6343 (2021),https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8296166/pdf/ijerph-18-06339.pdf.

[14] *See* Joseph Firth, *et al*., *The Lancet Psychiatry Commission: a blueprint for protecting physician health in people with mental illness*, 6 LANCET PSYCHIATRY 674, 675-681 (2019) (summarizing evidence showing physical health disparities for people with mental illness).

[15] *See* Rajiv Leventhal, *Medical Home Network Uses AI to Identify High-Risk COVID-19 Patients*, HEALTHCARE INNOVATION (Mar. 18, 2020), https://www.hcinnovationgroup.com/ covid-19/news/21130199/medical-home-network-uses-ai-to-identify-highrisk-covid19- patients (describing the data collected by Medical Home Network for its Medicaid patients); *see* Amanda L. Brewster *et al*., *Community Resilience for COVID-19 and Beyond: Leveraging A System for Health Care and Social Services Integration*, HEALTH AFFS. BLOG (Aug. 12, 2020), https://www.healthaffairs.org/do/10.1377/hblog20200807.222833/full/ (stating that Contra Costa Health Services maintains a countywide data warehouse integrating Medicaid claims, electronic health records, homeless services data, and other records).

[16] *See, e.g*., C. Annette DuBard & Carlos T. Jackson, *Active Redesign of a Medicaid Care Management Strategy for Greater Return on Investment: Predicting Impracticability*, 2 POPULATION HEALTH MGMT. 102, 102–06 (2018) (describing how Community Care of North Carolina uses data analytics to develop an impracticability score predicting which Medicaid beneficiaries are more likely to benefit from participating in their program and generate savings for the Medicare program); CTR. FOR HEALTH CARE STRATEGIES & ST. HEALTH ACCESS DATA ASSISTANCE CTR., *supra* note 2, at 11 (describing how the Montana

During a public health emergency, CIHTs can repurpose their data and data analytics skills to identify those individuals at highest-risk for pandemic-related complications, patients at-risk for receiving inadequate clinical care, and patients likely to benefit from CIHTs' other public health emergency response activities.[17]

The CIHTs participating in our study confirmed that they collect and maintain data about their patient populations, and that pre-COVID-19, they used this data to identify high-risk individuals and those likely to benefit from a CIHT's services. For example, one interviewee stated that her CIHT has created a data-sharing platform that aggregates information from multiple organizations in the community, including local hospitals, and that her organization analyzes this data to identify vulnerable individuals:

> [Our platform] gets daily admit data transfer feeds from local hospitals…. We [analyze] the records and find folks who are in the local hospitals who…have this medical complexity and recent utilization and social vulnerability…It's hospitals, as well as primary care providers, also the local jail feeds into that [database]…. We use it to, as you said, identify people. [18]

Another interviewee explained that her CIHT obtains data from approximately 300 local agencies which the organization then "aggregate[s] it down to a patient level, to see what resources are being used, either by a particular patient or by a particular service agency."[19] The interviewee further stated that her CIHT uses this data to assess the community's needs and then address those needs as required by their contracting organization.[20] In addition to collecting data from providers and other organizations, CIHTs gather data from the patients themselves by inquiring into their physical and mental health needs and their financial and social

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Health Improvement Program uses predictive modeling software to identify the most at-risk Medicaid beneficiaries).

[17] *See generally* Mantel, *supra* note 2.

[18] Interview with program administrator (on file with authors).

[19] Interview with program administrator (on file with authors).

[20] Interview with program administrator ("Then we have different contracts. We have a contract right now with [county health organization]. They're working with substance use disorder, and we're helping them…identify what areas of [county] have the largest substance use disorder population within a geographical code.") (on file with authors).

circumstances.[21] Some CIHTs regularly conduct repeat patient assessments in order to track patients' progress over time.[22]

With the pandemic's onset, many CIHTs used their data to support their communities' public health response. As seen during the COVID-19 pandemic, some individuals are at greater risk of hospitalization or death given their prior health conditions and social and material circumstances.[23] An effective public health response must quickly identify these high-risk individuals and provide them with health education and preventive services.[24] CIHTs can aid these efforts by using their data to identify individuals who, during a pandemic, face an elevated risk of complications should they contract the disease.[25] For example, one CIHT in our study used its database to identify individuals at high-risk for COVID-19 complications and worked with those individuals to support their getting vaccinated.[26] More generally, some interviewees commented that *all* of the patients served by their CIHT are high-

[21] Multiple CIHTs we interviewed commented that they gave their patients a questionnaire to assess their social determinants of health. Some used a questionnaire they created themselves, while others used standard assessments from Centers for Medicare and Medicaid Services (CMS). Other CIHTs use less formal methods such as an unstructured conversations about self-sufficiency. Though CIHTs employed different methods for assessing patients' individual circumstances, the vast majority inquired into patients' access to transportation, their nutrition, their insurance status, and their mental health.

[22] Interview with licensed social worker (noting that her CIHT conducts an initial screening to create an initial care plan with the patient and then repeats the screening "mostly every couple of months" to update the care plan) (on file with authors); interview with program administrator (when asked about how often her CIHT conducted a repeat assessment of social determinants of health, stating stated "[w]e really formalize it every six months…but informally, I think it happens every single [visit with patient]") (on file with authors).

[23] *See* sources cited *supra* note 1. *See also* Donald J. Alcendor, *Racial Disparities-Associated COVID-19 Mortality Among Minority Populations in the U.S.*, 9 J. CLINICAL MED. 2442, 2445 (2020) (discussing the factors contributing to higher rates of COVID-19 mortality among racial minorities, including higher rates of clinical risk factors such as diabetes, hypertension, cardiovascular disease, smoking, and chronic obstructive pulmonary disease).

[24] Mantel, *supra* note 2, at 137; Madeleine Ballard *et al*., *Prioritizing the Role of Community Health Workers In the COVID-19 Response*, 5 BMJ GLOBAL HEALTH 1, 6 (2020) (explaining that community health workers can support effective outbreak control by identifying and educating at-risk populations in order to reduce their exposure to COVID-19).

[25] *See generally* Mantel, *supra* note 2, at 137-38.

[26] Interview with program physician ("Understand we had a high-risk group and, when it came time for vaccination, we definitely made an effort to identify our folks who were most at need and help facilitate vaccination for them. That's still an ongoing effort but I think we probably have…50% of our population vaccinated now.") (on file with authors).

risk, but that their CIHTs analyze data in order to identify the high-risk patients most in need of their services.[27]

CIHTs that maintain shared databases with local hospitals and other providers can identify patients who, during a pandemic, contract the virus and are in need of follow-up care or support. For example, one of the CIHTs in our study maintained a shared data system with other local organizations that collected data on the local homeless population. During the COVID-19 pandemic, the CIHT used its shared data system to identify homeless individuals who tested positive for COVID-19 and then moved those individuals out of crowded homeless encampments into isolation hotels or hospitals.[28] Another CIHT in our study similarly flagged their patients who were hospitalized with COVID-19 and followed-up with these individuals to assess their health status and needs.[29]

Finally, CIHTs can use their data to identify individuals who are at-risk of their health care needs going unmet during a public health crisis. For example, during the COVID-19 pandemic one of the CIHTs in our study flagged its patients who use oxygen and worked closely with these patients and their durable medical equipment suppliers to ensure that the patients continued to receive their oxygen supplies.[30]

B. Addressing Individuals' Unmet Health Needs During a Public Health Emergency

As discussed above, CIHTs screen their patients for unmet medical and behavioral health needs and for social determinants that

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[27] *See generally supra* notes 18-20 and accompanying text (describing CIHTs' use of data to identify high-risk patients). *See also* interview with program physician (noting that "over 80% of the patients in our clinic are African American or patients of color...they are at a high risk...they [have] multiple comorbidities.") (on file with authors); interview with program administrator ("[A]ll of our patients are medically complex, so all of them are at a high risk for contracting COVID, for having COVID-19 exacerbate their other underlying health issues."; interview with program nurse practitioner ("All of our patients are high risk, and that's why we did the weekly phone calls.") (on file with authors).

[28] Interview with program administrator (commenting that her CIHT was "well-positioned to help support [program which housed COVID-19 positive individuals a space to safely self-isolate] because [it] had a shared data system to find these individuals," and that the CIHT "knew where [those individuals] were staying in encampments [and it] could quickly triage and get them either to the hospital if they were exposed or to [isolation space]") (on file with authors).

[29] Interview with program administrator (on file with authors) ("We had the case managers and the team members following-up closely with the patients who had been reported to have COVID-19 when they were in the hospital.").

[30] Interview with program physician ("So I think with those patients that I help that are now on oxygen, definitely just working really closely with them and their medical equipment companies to make sure we're getting them the oxygen that they need.") (on file with authors).

adversely impact their health.[31] They then seek to address these health-related needs by helping their patients navigate the health care and social services systems and by connecting patients to available resources, such as food or transportation assistance.[32] During a public health crisis, CIHTs can use these capabilities to timely address the heightened medical, behavioral health, and social needs often experienced by disadvantaged individuals.[33]

In ordinary times, CIHTs address patients' unmet medical needs by connecting patients with primary care physicians and specialists, including helping patients schedule needed appointments.[34] CIHTs also serve as a bridge between patients and their health care providers by updating a physician on changes in a patient's health status or attending doctor appointments with a patient in order to facilitate better communication between the patient and their physician.[35] With the onset of COVID-19, the

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[31] *See supra* note 15 and accompanying text; *see also* Kate LaForge *et al*., *How 6 Organizations Developed Tools and Processes for Social Determinants of Health Screening in Primary Care*, 41 J. AMBULATORY CARE MGMT. 2, 8 (2018) (profiling the screening process at multiple community-based organizations).

[32] *See* Nancy Carter *et al.*, *Navigation Delivery Models and Roles of Navigators: A Scoping Literature Review*, 18 BMC HEALTH SERV. RES. 96, 96–97 (2018) (discussing teams of health professionals that provided patient navigation services in the primary care setting); *Community Health Workers Toolkit: Member of Care Delivery Team Model*, RURAL HEALTH INFO. HUB, https://www.ruralhealthinfo.org/toolkits/community-health-workers/2/team (describing how community health workers can work on a care team and provide patient navigation services that increase access to healthcare); Brewster *et al*., *supra* note 15 (describing how during the COVID-19 crisis an accountable care organization's care coordination programs and outreach is providing linkages to services such as food and housing); CTR. FOR HEALTH CARE STRATEGIES & ST. HEALTH ACCESS DATA ASSISTANCE CTR., *supra* note 2, at 2 (noting that "core features" of community teams include team members who routinely connect patients with relevant community-based resources); ACL BUSINESS ACUMEN ROUNDTABLE WORK GROUP, COMMUNITY INTEGRATED HEALTH NETWORKS: AN ORGANIZING MODEL CONNECTING HEALTH CARE & SOCIAL SERVICES 6, https://acl.gov/sites/default/files/common/BA_roundtable_workgroup_paper_2020-03-01-v3.pdf (noting that community integrated health networks may offer nutritional assistance, delivery, and transportation assistance).

[33] Mantel, *supra* note 2, at 141-44.

[34] Interview with licensed social worker ("Well, our initial goal usually is to do care coordination with the patients for their medical stabilization. So working to find out if people are connected to primary care, and then also specialty care, coordinating all of that.") (on file with authors); interview with registered nurse (commenting that the CIHT connects patients to primary care doctors and, if needed, available specialists) (on file with authors); interview with nurse practitioner ("So we work on medical issues, patients that just need some follow-up, they haven't been able to make it to the cardiologist to their CHF. So patient care navigators help them schedule their appointments.") (on file with authors).

[35] One interviewee noted:

> [A]nother key core component of the coach model is we do what's called accompaniment. So, when we get people connected to their primary care provider, our staff member accompanies them to that

CIHTs in our study expanded these efforts to address the new obstacles facing their patients, including physicians converting from in-person visits to telemedicine visits, government-imposed restrictions on nonessential medical services, and patients foregoing care in an effort to limit their COVID-19 exposure.[36]

Not surprisingly, the CIHT professionals we interviewed reported that the health care system's shift to telemedicine created access barriers for their patient populations. One interviewee noted that many disadvantaged patients lack access to the technology needed for telemedicine appointments: "Where we might be able to have a Zoom meeting, the patient is only telephonic,…[o]r they might not even have a phone, or their phone might not have minutes on it."[37] A program administrator whose CIHT serves the homeless population similarly commented on increased patient "fall off" because of "practical barriers" to telemedicine, including that many homeless patients lack a place where they can charge their phones.[38]

Several of the CIHTs in our study helped patients stay connected with their providers by addressing some of these barriers to telemedicine. One CIHT provided patients with tablets that they could use for telemedicine visits,[39] as well as taught patients how to access and navigate the virtual health care system.[40] A program administrator for a different CIHT similarly stated that her CIHT "did a lot of things around virtual visits," including providing patients with phone card minutes to prevent patients from losing contact with their providers and the CIHT when the patient's cell phone runs out of minutes.[41]

The COVID-19 pandemic also limited patients' access to their health care providers due to restrictions on non-essential medical services and patients delaying in-person care in an effort to

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> appointment to ensure that we're both advocating with them, for them. That the doctor is aware of what the patient told us were their goals, and how the doctor can help us and the patient achieve them together.

Interview with program administrator (on file with authors).

[36] *See* Ateev Mehrotra, *et al*., *The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges* (May 19, 2020), available at https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits.

[37] Interview with licensed social worker (on file with authors).

[38] Interview with program administrator (on file with authors).

[39] Interview with program physician ("Even now, now that our patients and our navigators are doing visits, they take the iPad out. They drive out to the house. They send them the iPad, we have a telemedicine visit for some patients who can't get in and that's worked well.") (on file with authors).

[40] Interview with program administrator (describing the steps her CIHT took to support patients' access to telemedicine, noting that these supporting efforts were "a huge benefit not only for [the patients'] care, but then of course, whenever [the patients] had to see anybody else…for special appointments") (on file with authors).

[41] Interview with program administrator (on file with authors).

limit their COVID-19 exposure. This delay or avoidance of care created missed opportunities for managing patients' chronic conditions, providing preventive services such as routine vaccinations, and early detection of worsening or new conditions.[42] CIHTs, however, can serve as a bridge between patients and their health care providers when a public health emergency restricts access to routine care. For example, one interviewee reported that her CIHT played this role during the COVID-19 pandemic:

> I personally did a ton of outreach when it came to just connecting with individuals and asking, 'Hey, how're you doing?' As well as my social worker and even our collaborative care nurses, just really checking in with patients on a weekly, monthly or bimonthly basis, to see how they're doing and to see if they had any concerns that needed to be brought to the attention of any of us or to their primary care physician. And we have sort of that... built that rapport, maybe they're not seeing their primary care physician for another three or six months. And they feel comfortable and safe to sort of say, "Hey, this is what's going on. Do you mind sending this along to my primary care physician or whomever?[43]

In acting as a liaison between patients and their providers, CIHTs helped providers stay abreast of any changes in their patients' health care status and to intervene as appropriate.

The populations served by CIHTs also commonly face a range of mental health challenges,[44] which one of our interviewees described as "a fairly significant burden" in ordinary times.[45] Published reports suggest that COVID-19 exacerbated these mental

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[42] *See* Mark E. Csiesler, *et al.*, *Delay of Avoidance of Medicare Care Because of COVID-19-Related Concerns—United States, June 2020*, 69 WEEKLY I 1250 (2020), available at https://www.cdc.gov/mmwr/volumes/69/wr/mm6936a4.htm. As explained by an interviewee:

> One thing we saw, they were choosing not to navigate the healthcare system and such as health maintenance things went undone. They weren't caring for themselves. So they weren't keeping up with their healthcare. We weren't getting immunizations as they were supposed to be and whatnot, and follow up just wasn't as good. So, the concern was once we started back, a lot of people came in and ended up coming to the ER because they were behind in their healthcare, and now we had to catch up. And unfortunately, we had an exacerbation occur during that time.

Interview with nurse practitioner (on file with authors).

[43] Interview with community health worker (on file with authors).

[44] *See* Anna Macintyre, *et al.*, *What has economics got to do with it? The impact of socioeconomic factors on mental health and the case for collective action*, 4:10 PALGRAVE COMM. (2018) (summarizing evidence on the link between socioeconomic factors and mental health).

[45] Interview with program manager (on file with authors).

health challenges,[46] and our interviewees similarly observed an increase in anxiety and depression among their patient populations during the pandemic.[47] Most of the CIHTs participating in our study took steps to address their patients' heightened mental health issues caused by the pandemic.

Many CIHTs reported that they increased their outreach to patients to help combat the mental effects of isolation and loneliness, particularly through more frequent telephonic engagement.[48] One interviewee stated that his CIHT "increased [its] visit volume just by doing a lot of phone visits and just check-ins."[49] Another interviewee stated that she stayed connected with patients by driving around their apartment complexes, "and if [she] saw somebody, [she] would just yell out" and ask "how things are going?"[50] Importantly, regular outreach by the CIHT members reminded patients that they were not alone and that the CIHT was there to help them. As explained by one interviewee, "[p]eople saw that, that [sic] we were fully engaged and they knew that we were able to connect with, you know, they could get us by phone, but they could still see us out in the community."[51] CIHTs also utilized their behavioral health referral networks to connect patients with mental health services, including virtual therapy programs,[52] and some

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[46] *See* Stok *et al*., *supra* note 13.

[47] Interview with licensed social worker ("There's been a lot of, I would say, well, as a mental health provider, there's been a lot of anxiety and uncertainty about the virus, about people that are already medically complex, where patients are telling me, 'I'm not letting anyone in the apartment.'") (on file with authors). Another interviewee noted:

> So in the behavioral health side, we noticed increased anxiety, increased depression, significant amount of losses, and or, fear in anticipation of loss because there had family members that were ill in isolation. They couldn't do their church activities and some of them that's their social time. So we noticed the decline in their emotional state as COVID progressed as we started being home longer.

Interview with licensed clinical social worker (on file with authors).

[48] Interview with program administrator ("One of the biggest things that our patients struggled with was really the social isolation, not having social programs, not being able to go to church, not being able to see family. We really increased our contact.") (on file with authors).

[49] Interview with physician (on file with authors).

[50] Interview with community care coordinator (on file with authors).

[51] Interview with community care coordinator (on file with authors).

[52] As an interviewee noted:

> And so, a lot of it was just communicating with our clients to let them know that we were there and that we would assist them with whatever they were needing to have some things done. If they needed a mental health session, we were giving them the tools they needed to have, to have that done by way of Zoom giving them the contact numbers.

Interview with registered nurse (on file with authors). Another interviewee stated:

> One of the benefits to this time though, was the new availability of some of the more intensive mental health programs, like intensive outpatient,

CIHTs taught patients coping mechanisms to better manage their anxiety over the COVID-19 pandemic.[53] As described by one interviewee:

> A lot of our patients were stuck at home, weren't seeing anyone; couldn't see their grandchildren, couldn't see other people just because they were so high-risk and that took a huge toll on their mental health. The [CIHT] behavioral health team helped out in a huge way with the patients that were willing in helping them find resources or other ways that they can help improve their moods and their outlook on everything.[54]

In addition to helping patients with their medical and mental health needs, CIHTs are experts in addressing the social and material challenges faced by socioeconomically disadvantaged populations. As noted above, for many individuals, the pandemic amplified these challenges.[55] CIHT professionals have extensive referrals networks, and during the pandemic many of the CIHTs participating in our study utilized these connections to link patients to community resources. For example, two CIHTs helped move COVID-positive homeless individuals to temporary housing where they could safely self-isolate from others.[56] Another interviewee stated that her CIHT provided patients with a list of every local food pantry and their operating hours so that patients would have access to food during the initial COVID-19 lockdown.[57] In addition, many

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> or partial hospitalization programs… . If you can sit at home and do a virtual therapy program six hours a day from home, it's much more manageable. That was actually an unexpected benefit that we were able to align a lot of our patients with.

Interview with program administrator (on file with authors).

[53] *See* interview with primary care physician ("Especially with COVID, we've seen a lot of rise in anxiety and depression throughout the country. And so, it's been a blessing to have their [CIHT's licensed clinical social workers'] support in helping patients get through this challenging and confusing time.") (on file with authors).

[54] Interview with pharmacist (on file with authors).

[55] *See supra* note 12.

[56] *See* interview with program physician (noting that her CIHT, which was part of a local health system, worked with the health system to provide hotel rooms for some of their COVID-positive patients who could not quarantine after hospitalization or an emergency department visit) (on file with authors). Another interviewee stated:

> We helped link people to the hotel too because we had [a local program] here. Our team had a role that was the COVID response. Anybody in the homeless population who tested positive for COVID, we would get a call so that we could help the transition from the hospital into the hotel, and make sure that they had everything that they needed.

Interview with housing coordinator (on file with authors).

[57] The interviewee stated:

> We created a spreadsheet of every food pantry, every doctor's office, every organization that could... DMV, City Hall, Social Security, every

CIHTs provided necessary resources directly to patients during lockdown periods or when self-isolating, including delivering food, diapers, and other necessities.[58] Some CIHTs also reported giving personal protective equipment (PPE) or hygiene kits to their high-risk patients,[59] while others distributed PPE to residents in poorer neighborhoods.[60]

C. **Effective Public Health Messaging**

Unfortunately, the COVID-19 pandemic has made evident many individuals' mistrust in the government, media, and health care system,[61] with large numbers rejecting public health recommendations regarding social distancing, mask wearing, and COVID-19 vaccination.[62] But where these institutions have been

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> adult day program, pharmacy, transportation, we generated a list where we update it in real time. If someone could have access to it, that particular organization if that particular organization was closed, if they were operating on limited hours, so our team just put that structure in place within I want to say 48 hours of the office shutting down. And that was something that people, it wasn't just limited to [organization], it was people throughout [county] were able to use it.

Interview with program nurse (on file with authors).

[58] One interviewee noted:

> I think with our clients that had issues with let's say they had issues with running out of food or... Because we have a gift-in-kind closet as well and some mothers who have young babies had issues buying diapers or whatever. So, we would meet them here at the office or what we would do is just give them the package. They weren't coming in the office, but we would package everything and make sure they had what they needed for their children.

Interview with registered nurse (on file with authors); interview with program administrator ("The other thing I would say is that there were a whole lot of food drops, so even if I can't hang out with you, there were a lot of supplies places or trying to bring things to you so you shelter in place.").

[59] Interview with program administrator ("And we gave everybody PPE. We're drowning in PPE. We have so much. We have 5,000 masks. We just got worried initially. We got an extra bid. It was like, "'Great, masks for everybody.'") (on file with authors).

[60] Interview with housing coordinator ("We went out…into the encampments. We brought people hand sanitizer, soap, gave them pamphlets on COVID and how to protect themselves. We gave out masks.") (on file with authors).

[61] *See* Mark John, *Public Trust Crumbles Amid COVID, Fake News-survey*, REUTERS, (Jan. 13, 2021), https://www.reuters.com/article/health-coronavirus-global-trust/public-trustcrumbles-amid-covid-fake-news-survey-idUSL8N2JM2V9 (reporting widespread mistrust in governments and media across the globe, including only fifty-three percent of survey participants saying they have confidence in the institution of government and fifty-three percent reporting trust in traditional media outlets, with only twenty-one percent of voters for Donald Trump reporting trust in journalists).

[62] *See* Alicia Best *et al*., *Institutional Distrust Among African Americans and Buildings Trustworthiness in the COVID-19 Response: Implication for Ethical Public Health Practice*, 32 J. HEALTH CARE POOR UNDERSERVED 90, 94 (2021)

unsuccessful public health messengers, CIHTs may succeed. Because CIHTs often form trusting relationships with patients, their patients generally view CIHTs as credible sources of information.[63] This may be especially true for members of a CIHT team who themselves come from the communities they serve, such as community health workers.[64] In addition, many CIHT professionals receive training on conveying health information in a culturally sensitive manner.[65]

Several interviewees in our study generally highlighted the value of their CIHTs building trust with their patients. One interviewee in particular noted that because community health workers typically are members of the community they serve, their relationship with patients has "a component of that kind of peer support" which is "of great value to the client."[66] Another interviewee identified CIHTs' ability to build trust with patients as one of the biggest strengths of the CIHT model because this trust

("Research indicates a strong association between institutional distrust and nonadherence to health-related recommendations.").

[63] Mantel, *supra* note 2, at 140. *See also* Leventhal, *supra* note 15 (stating that patients identified by CIHT as high-risk are contacted by care teams based in primary care practices that "have built trusted relationships with patients"); Rob Waters, *Community Workers Lend Human Connection to COVID-19 Response*, 39 HEALTH AFFS. 1112, 1116 (2020), https://www.healthaffairs.org/doi/pdf/10.1377/hlthaff.2020.00836 (commenting on how the rapport and trust between community health workers and patients is vital to the success of community health workers' efforts to support patients during the COVID-19 pandemic).

[64] *See* Sarah R. Arvey & Maria E. Fernandez, *Identifying the Core Elements of Effective Community Health Worker Programs: A Research Agenda*, 102 AM. J. PUB. HEALTH 1633, 1633 (2012) ("[B]ecause most [community health workers] are members of the communities within which they work, they are assumed to delivery health messages in a culturally relevant manner."); Denise O. Smith & Ashley Wennerstrom, *To Strengthen the Public Health Response to COVID-19 We Need Community Health Workers*, HEALTH AFFS. BLOG (May 6, 2020), https://www.healthaffairs.org/do/10.1377/hblog20200504.336184/full/ (stating that community health workers can "serve as community messengers for critical public health and social service information"); Shreya Kangovi, *Want to Help Battle COVID-19? Bring in More Community Health Workers*, ASS'N AM. MED. COLLS. (June 9, 2020), https://www.aamc.org/news-insights/want-help-battle-covid-19-bring-more-communityhealth-workers (explaining that community health workers can prevent the spread of COVID-19 through efforts such as public health messaging).

[65] *See* Richard C. Boldt & Eleanor T. Chung, *Community Health Workers and Behavioral Health Care*, 23 J. HEALTH CARE L. & POL'Y 1, 1 (2020) ("Community health workers are community members trained to facilitate interactions between the health care system, individual patients, and the communities in which they are situated."); Jayshree S. Jani *et al*., *Cultural Competence and Social Work Education: Moving Toward Assessment of Practice Behaviors*, 52 J. SOC. WORK EDUC. 311, 311 (2016) (noting that social work education seeks to teach students to be culturally competent).

[66] Interview with patient care navigator (on file with authors).

allows the CIHT to guide patients toward behaviors which ultimately can improve their lives.[67]

As part of their outreach efforts during the pandemic, the CIHTs in our study sought to educate patients about the COVID-19 virus and coached them on preventive practices that reduced their risk of exposure.[68] Although our interviewees did not specifically highlight the role patient trust played in their COVID-19 outreach efforts, several interviewees reported success in persuading patients to get vaccinated. For example, a licensed social worker commented that many of her CIHT's patients were hesitant or resistant to getting vaccinated for COVID-19, but that by working with these patients the CIHT was successful in vaccinating some of its vaccine-hesitant population.[69] Another interviewee similarly noted that through persistent outreach and education about the COVID-19 vaccine, his CIHT overcame many patients' initial resistance to the vaccine.[70]

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[67] As one interviewee stated:

> Forming authentic healing relationships with people makes it easier for them to trust us and share things with us that they might not otherwise share. And then to be able to use that, to help them go from a place of strength, of being able to then work on things that they need to work on to live better lives…

Interview with program medical director (on file with authors).

[68] As explained by one interviewee:

> So, we take care of a vulnerable population anyway, and we have folks that have been vaccine-hesitant, and so requiring a whole lot of outreach and a whole lot of education to get them vaccinated, now that we're post-COVID. During the surge and during the outbreak and our resurges, our last surge, the mortality that impacted our clinic was pretty high, and so we were [inaudible] losing a patient a week. So, we, again, had to continue to educate people again and again about the virus was real, that the folks that were saying it wasn't real, "Yeah, it's real. You're at risk." Over 80% of the patients in our clinic are African American or patients of color, and that they are at a high-risk group, they had multiple comorbidities, and so trying to educate them about staying in, that we weren't trying not to see you in clinic, that we're calling you up because we want to keep you safe.

Interview with physician (on file with authors). *See also* interview with program nurse ("Because we have nurses, we're able to go out and provide some education, and it's just been a tremendous help to the city, because it's needed.") (on file with authors). Another interviewee stated:

> I definitely reached out, provided them with different resources that they may need or may not need when COVID came around. I didn't wait for them to ask me what they needed I provided them with a detailed list so they can have it. Then I definitely went over safety protocol and just making sure you was [sic]... When we was [sic] at the stay at home order, making sure quarantine was at the top of the list.

Interview with medical social worker (on file with authors); interview with program administrator (commenting that all of their patients are medically complex and therefore high-risk, and that her CIHT therefore provided their patients with a lot of information about COVID-19) (on file with authors).

[69] Interview with licensed social worker (on file with authors).

[70] Interview with program physician (on file with authors).

These success stories suggest that CIHTs can play an important role in support of more effective public health messaging to economically and socially disadvantaged populations during a public health crisis.

IV. SUPPORTING SYSTEM-LEVEL INTERVENTIONS

Although CIHTs provide invaluable assistance to individual patients, many of the challenges facing economically and socioeconomically disadvantaged populations require cross-sector collaborations and population-level programs.[71] With their deep understanding of their communities' health-related needs, multidisciplinary expertise, and working relationships across the health and social services sectors, CIHTs regularly engage in coordinated, system-level interventions.[72] During a public health crisis, CIHTs can leverage these existing capabilities in support of emergency response efforts broadly targeting disadvantaged populations.[73] Many of the CIHTs participating in our study described various ways in which they provided coordinated, population-level assistance during the COVID-19 pandemic, which we describe below.

A. Data-Sharing During a Public Health Emergency

The COVID-19 pandemic underlined the need for data-sharing infrastructure that can support rapid information sharing across different organizations.[74] During a public health emergency, a comprehensive data-sharing infrastructure allows various organizations to exchange and aggregate their health-related data in order to gain insight into the community's health needs, track and mitigate a virus's spread, and coordinate public health response efforts.[75] Building shared data-platforms and negotiating data-

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[71] Mantel, *supra* note 2, at 144-45.
[72] *Id*.
[73] *Id*.
[74] *See* Nadereh Pourat *et al*., *How California Counties' COVID-19 Response Benefited from the "Whole Person Care" Program*, HEALTH AFFS. BLOG (Apr. 28, 2020), https://www.healthaffairs.org/do/10.1377/hblog20200427.341123/full/ ("The challenges to such emergency responses are well documented elsewhere and include the need for . . . rapid and effective information sharing.").
[75] *See* Landers *et al*., *supra* note 5 ("Efforts to track and trace the virus can be supported with data-sharing infrastructure."); Pourat *et al*., *supra* note 74 (stating that rapid and effective information sharing "is necessary to raise awareness of priorities and implement a coordinated response across all sectors that provide essential health and human services."); ROBERT WOOD JOHNSON FOUND., SENTINEL COMMUNITIES INSIGHTS, COLLABORATION IN

sharing agreements are time-consuming and resource intensive activities, however, and cannot be accomplished belatedly during a public health emergency.[76] But as noted above in Part II.A, many CIHTs already participate in or maintain data-sharing platforms.

Some of the CIHTs participating in our study shared examples of how they and partner organizations utilized their data-sharing systems during the COVID-19 pandemic. As mentioned previously, some CIHTs used data-sharing systems to identify COVID-positive homeless individuals who were then moved to temporary housing where they could self-isolate,[77] while one CIHT used its data-sharing system to flag patients hospitalized with COVID-19 who were then contacted for follow-up care post-discharge.[78] Another CIHT relied on a partner organization's algorithm to identify patients at high-risk for COVID-related complications, with the CIHT then conducting outreach to these individuals and educating them about COVID-19 risks and preventive measures.[79] Finally, one interviewee commented that her CIHT shared its patient data with a partner community organization focused on providing care to immigrants who lacked adequate health care given their citizenship status.[80] Specifically, the CIHT provided the partner organization with information about immigrants who were not receiving adequate care during the pandemic as part of a coordinated effort to ensure that "whole communities survive COVID."[81]

B. Coordinated Public Health Responses

Many of the problems affecting socioeconomically disadvantaged populations are complex and multifaceted, and therefore are best addressed through multiple organizations pooling

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COMMUNITIES TO ADDRESS COVID-19 6 (2020) (reporting that "easy availability of useful data" has facilitated more effective responses to COVID-19); *Whole Person Care Lays Groundwork for Quick COVID-19 Response*, CAL. ASS'N PUB. HOSPS. & HEALTH SYS. (Aug. 31, 2020), https://caph.org/2020/08/31/whole-personcare-lays-groundwork-for-quick-covid-19-response/ (stating that every California Whole Person Pilot profiled by the authors "pointed to the importance of data sharing to rapidly disseminate information and reach those most in need during the public health emergency").

[76] *See* Landers *et al.*, *supra* note 5 ("Building collaborative data infrastructure often takes time and can be highly resource intensive.").

[77] *See* Interviews with program physician and housing coordinator, *supra* note 56.

[78] *See* Interview with program administrator, *supra* note 29 ("We had the case managers and the team members following-up closely with the patients who had been reported to have COVID when they were in the hospital.").

[79] Interview with program administrator (on file with authors).

[80] Interview with licensed master social worker (on file with authors).

[81] Interview with licensed master social worker (on file with authors).

their collective expertise and resources.[82] Developing these collaborative initiatives is no simple task as it requires that the participating organizations identify potential stakeholders, foster familiarity and trust across their organizations, and create shared processes and infrastructure.[83] Building these partnerships during a public health crisis can be difficult,[84] and communities therefore often must rely on pre-existing collaborations.[85] CIHTs are well-positioned to support a coordinated public health emergency response, as they not only can contribute their expertise in meeting

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[82] *See* Arleen F. Brown *et al*., *Structural Interventions to Reduce and Eliminate Health Disparities*, 109 AM. J PUB. HEALTH S72, S72-S73 (2019) (calling for multisectoral collaborations to address health disparities because minority populations often face "multiple levels of mutually reinforcing structural disadvantage that contribute to poor health," interventions that focus primarily on behavior change at the individual and interpersonal levels have limited long-term impact). As the authors argue, "[t]ake, for example, the case of obesity disparities: interventions that improve nutrition and physical activity at the individual level are unlikely to succeed when the food and social environments (e.g., unsafe and limited recreational space, ready access to low-cost, calorie-dense food options) and high rates of poverty present severe barriers to maintaining healthy diets and active lifestyles." *See id*.

[83] *See generally* Lee M. Johnson & Diane T. Finegood, *Cross-Sector Partnerships and Public Health: Challenges and Opportunities for Addressing Obesity and Noncommunicable Diseases Through Engagement with the Private Sector*, 36 ANN. REV. PUB. HEALTH 255, 258–62 (2015) (discussing challenges to forming cross-sector partnerships, including lack of appreciation for each other's roles, goal alignment, and power struggles); RUBEN AMARASINGHAM ET AL., USING COMMUNITY PARTNERSHIPS TO INTEGRATE HEALTH AND SOCIAL SERVICES FOR HIGH-NEED, HIGH-COST PATIENTS 4 (2018) (identifying common challenges to cross-sector partnerships, including lack of expertise to support data integration); ASTHO, ASTHO- CDC-HUD CONVENING MEETING NOTES: CROSS-SECTOR PARTNERSHIP MODELS TO IMPROVE HEALTH AND HOUSING OUTCOMES NOVEMBER 29TH–30TH 9–10 (discussing barriers to cross-sector collaborations, including competing priorities, insufficient data infrastructure and data sharing challenges).

[84] *See* Brian C. Castrucci *et al*., *Misunderstood: How Public Health's Inability to Communicate Keeps Communities Unhealthy*, HEALTH AFFS. BLOG (Oct. 8, 2020), https://www.healthaffairs.org/do/10.1377/hblog20201006.514216/full/ (noting the difficulty of establishing deep collaborations belatedly in times of crisis); Matt Craven *et al*., *Not the Last Pandemic: Investing Now to Reimagine Public-Health Systems*, MCKINSEY & CO., 1, 3 (July 2020), https://www.mckinsey.com/~/media/McKinsey/Industries/Public%20and%20Social%20Sector/Our%20Insights/Not%20the%20last%20pandemic%20Investing%20now%20to%20reimagine%20public%20health%20systems/Not-the-last-pandemicInvesting-now-to-reimagine-public-health-systems-F.pdf (commenting that forming cross-sector partnerships "becomes much more challenging during a crisis").

[85] *See* Castrucci *et al*., *supra* note 84 ("The pandemic is showing us just how critically important these cross-sector relationships are. Times of crisis are when we need to rely on these relationships rather than try to establish them belatedly . . . "); Landers *et al.*, *supra* note 5 ("By having the core elements of cross-sector alignment in place, local and regional systems possess greater capacity to address the social and economic effects of COVID-19.").

the health-related needs of socioeconomically disadvantaged populations, but they also have existing partnerships across the health care and social services sectors.[86]

Interviewees shared several ways in which their CIHTs supported their community's public health response during the COVID-19 pandemic. As previously noted, two CIHTs in our study coordinated with other local organizations to transition COVID-positive homeless individuals to temporary housing.[87] Another interviewee discussed her participation on an inter-agency team that jointly conducted outreach in homeless encampments.[88] Some CIHTs partnered with other organizations to develop clinical programs to meet pandemic-related health needs. For example, one CIHT partnered with a local government agency to operate vaccine clinics,[89] while another CIHT helped a local hospital system to set-up a respiratory clinic for those affected by COVID-19.[90] Another CIHT utilized its extensive referral network to create a publicly available resource with information about local organizations' operations, such as which food banks were still in operation.[91]

C. Lending Expertise and Resources to Emergency Public Health Efforts

In addition to participating in data-sharing arrangements and other collaborative activities, CIHTs can support public health emergency responses by lending their expertise, personnel, and other resources to local relief efforts. In some communities, local

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[86] *See* Mantel, *supra* note 2, at 149. For example, one of the program administrators we interviewed commented that her CIHT devoted a specific team member to maintaining relationships with other organizations. She elaborated that this was necessary because "so much of [their] work is about relationships… so, having a specific go-to person at the board of social services or at the transportation center, for example, someone needs to hold those relationships and help be the linkage for everybody." Interview with program administrator (on file with authors).

[87] *See* Interviews with program physician and housing coordinator, *supra* note 56.

[88] Interview with housing coordinator ("We went out with law enforcement and went out into the encampments. We brought people hand sanitizer, soap, gave them pamphlets on COVID and how to protect themselves. We gave out masks. We also gave out the…phone number to anybody who wanted to seek shelter or any other services.") (on file with authors).

[89] Interview with program administrator ("our operational leadership had partnered with [city] and we did vaccination clinics, not only for our population) (on file with authors).

[90] Interview with program administrator (on file with authors); interview with caseworker ("[The CIHT team] actually did outreach through [the program] and did chart reviews to make sure that patients were being seen and they weren't being dropped. That was a lot, I think we called over 200 patients.") (on file with authors).

[91] Interview with program nurse, *supra* note 57.

public health agencies contracted with CIHTs to perform specific emergency response activities. For example, a local county contracted with one of the CIHTs in our study to identify and provide care coordination services to homeless individuals who tested positive for COVID-19.[92] The county selected the CIHT to perform this important function in recognition of the CIHT's sophisticated data-sharing infrastructure and its expertise in assisting the homeless population with their health-related needs.

CIHTs also can re-assign personnel on a full-time or part-time basis to local emergency response efforts. During the pandemic's onset, the CIHT in our study that helped establish an emergency respiratory clinic also assigned its nurses to clinic, where they performed health assessments of patients suspected of having contracted COVID-19.[93] Another CIHT's personnel participated in its local public health department's contact tracing efforts[94] and educational outreach to people who themselves or whose close contacts tested positive for COVID-19.[95]

V. CONCLUSION

Long before the COVID-19 pandemic hit America's shores, there was ample evidence that a person's socioeconomic status affects their health. Economically and socially disadvantaged populations face more barriers to affordable, high quality care than other populations, as well as live, work and play in conditions that often adversely impact their health. The COVID-19 virus has only heightened these health inequities, with disadvantaged groups disproportionately experiencing the pandemic's negative effects.[96] A public health system that neglects these economic and social differences across different populations risks repeating the failures of the COVID-19 pandemic, with the next public health crisis only further deepening existing health disparities. A sustainable public health system therefore must have the capacity to address the complex, multifaceted needs of disadvantaged populations during public health emergencies. With their proficiency in coordinating a broad range of health and social services at both the individual and population level, CIHTs can provide invaluable assistance to these efforts.

The published literature highlights various ways in which CIHTs can leverage their expertise and resources to support the needs of economically and socially disadvantaged populations

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[92] Interview with program administrator (on file with authors).
[93] Interview with program administrator (on file with authors).
[94] Interview with program social worker (on file with authors).
[95] Interview with program administrator (on file with authors).
[96] *See supra* note 10 and accompanying text.

during a public health emergency. Specifically, during a public health crisis CIHTs can utilize their data collection and analytics capability to identify high-risk individuals, conduct outreach to and connect with available resources individuals adversely impacted by the public health crisis, ensure that individuals' medical and mental health needs are met, and support coordinated, cross-sector responses to the crisis.[97] The CIHTs that participated in our qualitative study confirmed that, during the COVID-19 pandemic, they supported their local public health efforts in these various ways.

In addition to the important role CIHTs can play during a public health crisis, research has shown that during ordinary times CIHTs can both improve the health of economically and socially disadvantaged individuals and lower health care spending.[98] All of the CIHTs participating in our study similarly reported success on either health outcome and efficiency metrics such as reducing emergency room visits, or offered anecdotes of how they were increasing patients' overall wellness or social circumstances.[99] Yet

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[97] *See* Mantel, *supra* note 2, at 136-44.

[98] *See, e.g.*, C. Annette DuBard, SAVINGS IMPACT OF COMMUNITY CARE OF NORTH CAROLINA: A REVIEW OF THE EVIDENCE, COMMUNITY CARE OF NORTH CAROLINA DATA BRIEF 11, at 1–2 (2017), https://www.communitycarenc.org/media/files/data-brief-11-savings-impact-ccnc.pdf (among patients participating in Community Care of North Carolina, finding substantial reductions in inpatient utilization and annualized per-beneficiary net savings for Medicare and Medicaid of approximately $3 for every $1 invested); Craig Jones *et al.*, *Vermont's Community-Oriented All-Payer Medical Home Model Reduces Expenditures and Utilization While Delivering High-Quality Care*, 19 POPULATION HEALTH MGMT 196, 196 (2016) (reporting a reduction in health care expenditures and utilization and improved outcomes for participants in Vermont's patient-centered medical home program); Nadereh Pourat *et al.*, INTERIM EVALUATION OF CALIFORNIA'S WHOLE PERSON CARE (WPC) PROGRAM 27–34 (2019), https://healthpolicy.ucla.edu/publications/Documents/PDF/2020/wholepersoncare-report-jan2020.pdf (finding that California's Whole Person Care program improved care coordination, care processes, and some health outcomes). *But see* Caroline Fichtenberg *et al.*, *Health and Human Services Integration: Generating Sustained Health and Equity Improvements*, 39 HEALTH AFFS. 567, 569 (2020) (summarizing the evidence on impacts of integrating health and human services and stating that although "[s]ome studies have documented improved health outcomes and cost reductions, but other studies did not find anticipated health or health care benefits").

[99] Some interviewees cited data demonstrating the effectiveness of their CIHTs' intervention. For example, one interviewee whose CIHT collected data stated the following:

> We did demonstrate that if people were engaged in the clinic within the first year, we're able to reduce their ED visits by about 58%, and be able to reduce their hospitalizations by 40%, which then translates into more cost-effective care, and then demonstrate that we had patients with improved control of their blood pressures and improved control to their diabetes.

Interview with program physician (on file with authors). Similarly, another interviewee whose CIHT was involved in a randomized control trial stated that

despite their promise for reducing health care inequities and spending, the CIHT model has not been widely adopted.[100] One obstacle to CIHTs is the substantial up-front costs required to start a CIHT, as well as uncertainty about securing sustainable financing remain.[101] Our interviewees similarly commented that funding remains an ongoing challenge for their CIHTs and hinders their success.[102]

"patients enrolled with [the CIHT] were way more likely to be connected to a community resource, access to food assistance programs. A lot of [the CIHT's] folks were connected to that." Interview with medical director (on file with authors).

Other interviewees provided anecdotes in support of their CIHTs' success in improving patient health and lowering health care costs. For example, one interviewee stated:

> [W]e have some patients that go into the emergency room because they are hungry, and they know they can get a meal. So then we'll help them get a SNAP application or a TANIF application. We have a relationship with the food bank so we'll help them get immediate needs met and then we help them try to figure out how we can get their needs met in the longer run.

Interview with program administrator (on file with authors). *See also* interview with program administrator ("I remember this one patient... Five ED admissions in six months prior to being with the [CIHT], and have no ED admissions after being with the [CIHT].") (on file with authors). Another interviewee stated:

> I'll give you, again, the pharmacists' viewpoint. There has been so many times where I have called a patient and notice that their blood sugars are dropping too low, and that can be very dangerous and that can be a trip to the hospital, put a patient in coma, that can be very expensive. So, with the closer monitoring that they get these kinds of clinics versus other clinics, by pharmacists, by care coaches, I want to say we do have a much fewer readmits or hospital admissions for those reasons.

Interview with pharmacist (on file with authors).

[100] *See* Brewster *et al.*, *supra* note 15 (stating that few communities have integrated public health, health care delivery, and social services functions).

[101] *See* Pourat *et al.*, *supra* note 74 (noting that a developing the infrastructure and partnerships to support system-wide integration "required considerable upfront investment" by the pilot sites participating in California's Whole Person Care program); Pourat *et al.*, *supra* note 98, at 267 (discussing concerns about the Whole Person Care pilots regarding the "uncertainty around future funding to support [Whole Person Care] infrastructure and activities"); Fichtenberg *et al.*, *supra* note 98, at 569–70 ("Another consistent challenge to integrated health and human services is financial sustainability."); Elise Miller *et al.*, PARTNERSHIP FOR HEALTHY OUTCOMES, WORKING TOGETHER TOWARD BETTER HEALTH OUTCOMES 9–14 (2017), https://www.chcs.org/media/Working-Together-Toward-BetterHealth-Outcomes.pdf (discussing the challenges cross-sector partnerships face in "covering their full, ongoing costs").

[102] For example, one interviewee explained her CIHT's ongoing funding challenge as follows:

> I think what hinders our work right now is that frankly, figuring out the balance of how do we make sure we're funded to do the work that we want to be doing, and straddling this line of being... When we're a nonprofit, we're a little more... Understandably, we need to be a little more nimble and receptive to funding opportunities. Whereas, bigger

The COVID-19 pandemic has highlighted that importance of investing in CIHTs as part of building a sustainable public health system that can quickly and effectively respond to the complex challenges facing disadvantaged populations during a public health crisis. Investing in CIHTs also provides the added benefit of strengthening ongoing efforts to reduce health inequities. As policymakers consider how to best spend future public health dollars, allocating a portion of this funding to the expansion of CIHTs across the country would support a more sustainable and effective U.S. public health system.

> health systems, and CEOs making their own complex care planning, they can probably just be straight up innovative, and they know they have the dollars to back it. We are super innovative, tons of ideas, but finding someone to pay for it becomes a little more challenging. And so, that hinders that, and that hinders staff, and that ultimately can hinder patients.

Interview with program administrator (on file with authors). Similarly, another interviewee whose CIHT is funded solely by contracts noted that a hindrance to her CIHT's success is that the CIHT is "at the mercy of whatever [the] contractor wants [it] to do." Interview with program administrator (on file with authors). A third interview stated that factors that hinder her CIHT's success and that she wishes she could change are "money and staff." Interview with patient care navigator (on file with authors).