Title

Evaluation of a statewide integrated medical and social service case management policy innovation: A multi-level assessment of equitable implementation for frontline staff and high-risk, high-need Medicaid patients

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Evaluation of a statewide integrated medical and social service case management policy innovation: A multi-level assessment of equitable implementation for frontline staff and high-risk, high-need Medicaid patients

By

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in

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of the

University of California, Berkeley

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Professor Emmeline Chuang, Chair
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Professor Mark Fleming

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Abstract

Evaluation of a statewide integrated medical and social service case management policy innovation: A multi-level assessment of equitable implementation for frontline staff and high-risk, high-need Medicaid patients

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Implementation science provides frameworks, theories, models, strategies, and mechanisms to support researchers and practitioners in translating evidence-based interventions into practice and improving the effectiveness of these interventions. However, until recently most implementation science studies did not attend to factors related to health equity. Arguably, the fields of implementation science and health equity research and practice often seek to meet similar outcomes including widespread access to services and resources, improved quality of services delivered, and generalizable benefits from evidence-based intervention implementation.

This dissertation evaluates equitable implementation and sustainment of California's Whole Person Care initiative, which tested whether provision of care coordination, housing assistance, and other social services could improve cost and outcomes of care for high-risk, high-need Medicaid enrollees. Health systems increasingly use case management programs to integrate social and medical services to support health equity for high-risk, high-need patients. Limited evidence exists about key components of integrated case management program implementation and sustainability, especially from a health equity perspective.

Chapter 1 is a thematic analysis exploring how a single WPC pilot integrating medical and social services for high-risk, high-need patients addressed health equity through pilot design and implementation. Chapter 2 applies a mixed methods approach to identify key individual, interpersonal, and organizational factors associated with case manager job satisfaction and intention to leave their role among a sample of Whole Person Care frontline case management staff. Chapter 3 applies a thematic analysis approach to identify multi-level factors hindering or supporting equitable sustainability of Whole Person Care pilot components beyond the pilot phase. Combined, these analyses provide a blueprint for assessing equity research and practice leveraging the strengths of implementation science, while also offering pragmatic findings to inform future efforts to design, implement, and evaluate integrated case management models broadly.

Dedication

To my father, who left his country and family to pursue an education so that he could uncover the secrets of our universe. Of every constellation in the night sky, you are my favorite.

&

To my mother, who embraced my willfulness and taught me how to channel that spirit and strength into creating a life and career I am deeply proud of.

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Em – Your mentorship blends brilliance, patience, and unwavering encouragement effortlessly. Thank you for recognizing the limits in my mind and gently pushing me past them. There is no one else I would have rather gone on this journey with.

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Mom, Roya, Diane, Dan, & Weston – I am crossing this finish line fueled by the phone calls, texts, long walks, visits, and meals you each shared throughout this process. Thank you for listening to every update, celebrating every achievement, and encouraging me through every moment of doubt. Your love is undeniably what brought me to this point and what will carry me forward through all life brings in the years to come.

Aaron – When we made the decision to apply for the same PhD program, in the same track, at the same school, I had no idea that going through this experience together would be so *fun*. We've spent much of the last three years back-to-back in a teeny-tiny room in our apartment learning, laughing, and brainstorming together. We've adopted a cat, planned a wedding, traveled the world, and tried every single coffee shop in Berkeley and Albany. Through it all I have been so grateful for your unmatched ability to listen, calm, nourish, and inspire. Thank you for being my perfect research and life partner. I love you.

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Introduction

Implementation science provides frameworks, theories, models, strategies, and mechanisms to support researchers and practitioners in translating evidence-based interventions into practice and improving the effectiveness of these interventions. Developed to bridge the gap between evidence generation and practice-based uptake of the scientific literature, implementation science has grown rapidly over the last decade and offers tools to assess implementation outcomes such as feasibility, fidelity, acceptability, adoption, and sustainability; services outcomes including effectiveness, equity, and efficiency; and client health and satisfaction outcomes.[1] However, until recently most implementation science studies did not attend to factors related to health equity.[2] Health equity is defined as all people having a "fair and just opportunity to be as healthy as possible" by "removing obstacles to health such as poverty, discrimination, powerlessness, and their consequences".[3]

Arguably, the fields of implementation science and health equity research and practice often seek to meet similar outcomes including widespread access to services and resources, improved quality of services delivered, and generalizable benefits from evidence-based intervention implementation.[4,5] Numerous implementation scientists have made a specific call for greater attention to health equity in the selection of evidence-based interventions, how interventions are implemented and for whom, and why certain communities benefit from intervention implementation but not others.[2,4,6–9] New implementation science frameworks, such as the Health Equity Implementation Framework, and updated versions of established frameworks, such as the Extension of RE-AIM to Enhance Sustainability, provide concrete recommendations, constructs, and key domains to consider when assessing health equity within implementation.[6,10,11] Equitable implementation, though in its early days, is now an outcome to be measured alongside the established implementation, services, and client outcomes.

This dissertation evaluates equitable implementation and sustainment of California's Whole Person Care (WPC) Pilot program, which tested whether provision of care coordination, housing assistance, and other social services could improve cost and outcomes of care for high-risk, high-need Medicaid enrollees. WPC was implemented between 2016-2021 as part of California's Section 1115 Medicaid waiver. The total budget was $3 billion, which included $1.5 billion investment from participating Pilots and $1.5 billion in matching funds from the Centers for Medicare and Medicaid Services (CMS). Twenty-five Pilots representing the majority of counties and one city in California implemented WPC. Pilots were required to provide care coordination and demonstrate increased access to social services, but otherwise had flexibility to tailor their programs to reflect local needs and available resources. Pilots were also required to serve at least one of the following populations of focus: individuals with high care utilization, chronic conditions, interaction with the justice system, serious mental illness and/or substance use disorder, and those experiencing or at risk of homelessness. Across Pilots, there was a tremendous amount of heterogeneity in which services pilots provided, how services were provided, and which populations of interest they served.[12–14]

In 2022, California began implementing California Advancing and Innovating Medi-Cal (CalAIM). CalAIM is a multiyear initiative aimed at transforming California's Medicaid program by reducing administrative complexity and introducing payment reforms to incentivize better identification and management of patients' medical, behavioral health, and health-related social needs, improved access and quality of care, and reduced health disparities.[15] WPC services were expected to be sustained via new Enhanced Care Management and Community Supports benefits within CalAIM.

In the following chapters, I apply various implementation science frameworks and key concepts from organizational behavior and theory to understand the factors influencing equitable implementation of California's Whole Person Care pilots.

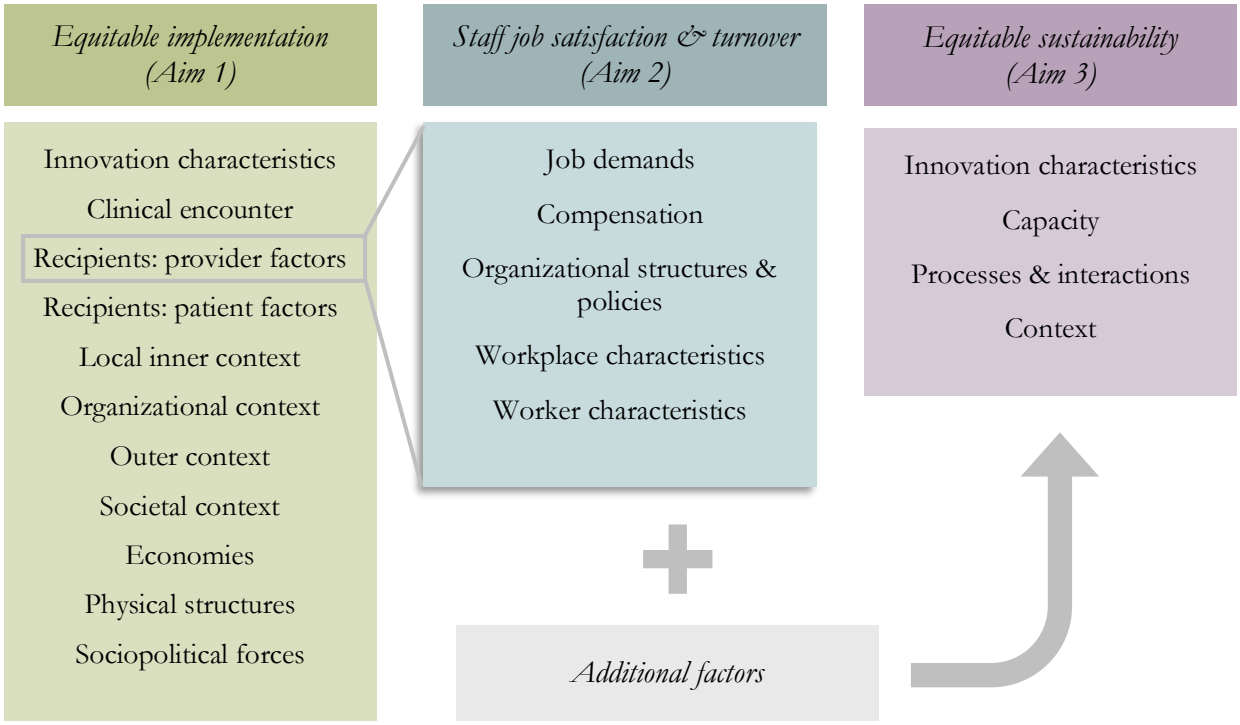
Conceptual model & aims

Conceptual model

This dissertation explores the factors and mechanisms contributing to equitable implementation and sustainment of California's Whole Person Care pilots, with special consideration for impacts on health equity for frontline staff (deliverers) and patients (recipients).

Chapter 1 (Aim 1) is a case study of factors influencing equitable implementation of WPC in a single Pilot. Given the importance of frontline staff to effective implementation and documented challenges to engagement and retention of staff[14], Chapter 2 (Aim 2) draws on mixed methods data from the statewide evaluation of WPC to examine implementation policies and practices associated with staff job satisfaction and intent to leave. Finally, Chapter 3 (Aim 3) uses thematic analysis to understand factors influencing sustainability of WPC and discusses implications for health equity as programs like WPC are scaled. Based on my review of the literature, the conceptual model in Figure 1 below outlines the relationships between each aim of this analysis, where each aim corresponds to one paper to be discussed in depth in the following chapters.

Figure 1. Conceptual model of dissertation aims



Dissertation aims

The following three aims provide a high-level overview of the questions addressed and the methods used through this work:

Aim 1: A thematic analysis to explore how a single WPC Pilot integrated medical and social services for high-risk, high-need patients addressed health equity through pilot design and implementation.

Aim 2: A mixed methods analysis to identify key individual, interpersonal, and organizational factors associated with case manager job satisfaction and intention to leave their role among a sample of Whole Person Care frontline case management staff.

Aim 3: A thematic analysis to identify multi-level factors influencing equitable sustainability of Whole Person Care pilot components beyond the pilot phase.

This analysis assesses equitable implementation across multiple levels, with specific focus on the individuals receiving the Whole Person Care innovation, frontline staff delivering the Whole Person Care innovation, and/or county-level contextual factors influencing outcomes of interest for each aim (Figure 2). Figure 3 presents a timeline of when the data for each aim were collected throughout the Whole Person Care statewide evaluation.

Figure 2. Levels of implementation addressed by each aim

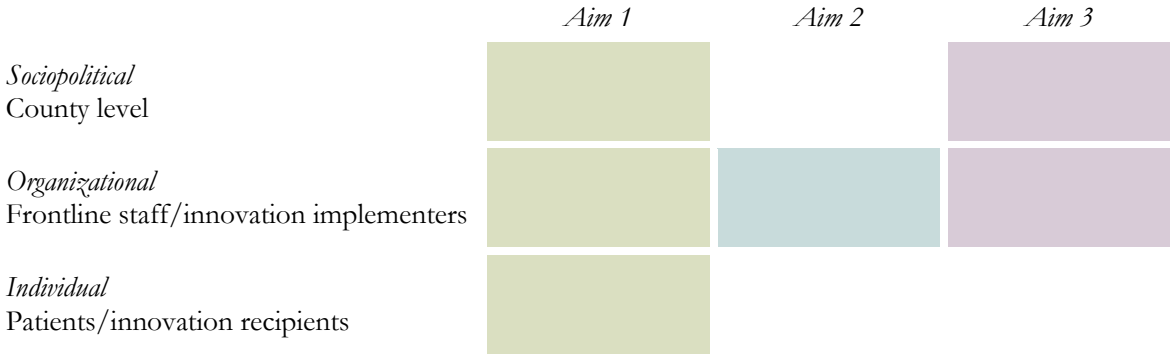
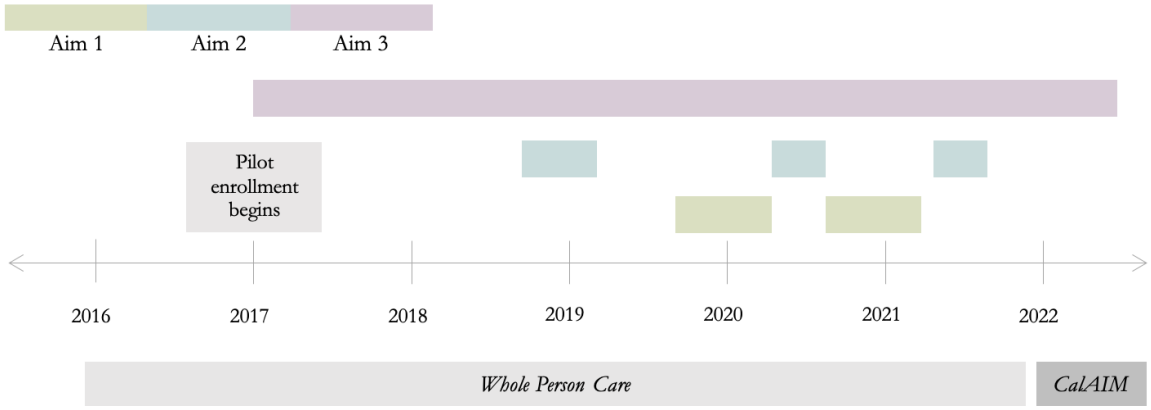


Figure 3. Timeline of Whole Person Care implementation and data collection for each aim



Evaluation of an integrated case management pilot for high-risk, high-need patients using the Health Equity Implementation Framework

Introduction

Health care delivery in the United States is deeply siloed, both within and across health and social sectors, leading to care fragmentation for patients. Care fragmentation describes medical care for a single patient that is distributed across multiple clinicians, clinics, and/or heath systems.[16,17] To receive quality care, patients are expected to coordinate medical, social, and behavioral health services independently across clinical teams and organizations. However, the challenge of managing services across several sources of medical care can lead to poorer communication among care team members and with patients resulting in increased costs, poorer health outcomes, and lower quality care. Patients who belong to historically disadvantaged groups are disproportionately impacted by care fragmentation, especially those with multiple complex conditions, as they face structural and social barriers to care.[12,16–24] Inequitable implementation of healthcare and social service delivery can exacerbate existing health inequities perpetuated over centuries of racism, systematic exclusion, and classism.[25–33]

In response to the issue of care fragmentation, The Centers for Medicare and Medicaid Services (CMS) granted the state of California with a five-year, $1.5 billion Section 1115 Medicaid waiver entitled "Whole Person Care" to implement demonstration pilots exploring whether case management integrating social and medical services would reduce care fragmentation and high care utilization among patients receiving Medicaid. Whole Person Care pilots focused on service utilization, both in increasing access to needed services and also a reduction of avoidable utilization of emergency departments, as a primary outcome of interest.[12–14] Studying the integrated case management model implemented by these pilots is of particular relevance as health systems nationwide increasingly adopt similar models to integrate medical and social services through assisted navigation of historically siloed services.[34–36]

While initiatives like Whole Person Care are implemented to improve care fragmentation, empirical focus on whether integrated case management models ameliorate or exacerbate health inequity for the marginalized patients they serve is lacking. We define health inequities as disparities in access, quality, or outcomes of care based on social position as a result of structural discrimination and racism.[37] In this qualitative study, we aimed to explore how a Whole Person Care case management pilot in Contra Costa County, California, CommunityConnect, addressed health equity during pilot design, implementation, and evaluation. The pilot had a cumulative reach of over 12,000 enrollees over five years and utilized multidisciplinary case managers to link patients to medical and social services and identified eligible patients at risk of or currently experiencing high utilization using a predictive risk modeling approach.[38]

Conceptual framework

Our analysis is informed by the Health Equity Implementation framework (HEIF), an implementation science framework outlining key domains to consider when assessing equitable implementation of interventions in health care settings for the patients receiving and the providers and staff delivering these interventions.[10,11] These domains include: Characteristics of the innovation, clinical encounter: patient-provider interaction, recipients, recipients: providers and staff, recipients: patients, inner context: local, inner context: organizational, outer context: healthcare system, societal context, economies, physical structures, and sociopolitical forces. Definitions of each domain are

provided in Table 1. We adapted the HEIF by electing not to analyze factors from the *recipients* and *societal context* domains, instead distributing findings pertinent to these domains within related domains (*recipients: providers and staff* and *recipients: patients; and economies, physical structures,* and *sociopolitical forces, respectively)* to reduce repetition of results.

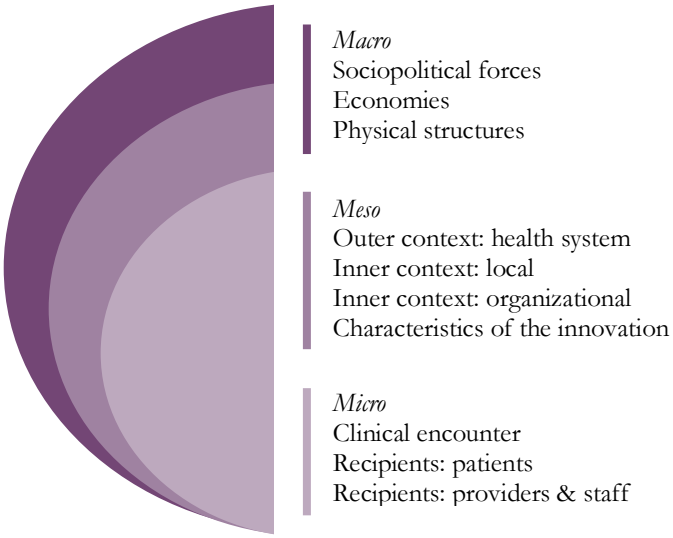
Table 1. Health Equity Implementation framework domains and definitions

Domain	**Definition**
Characteristics of the innovation	The *characteristics of the innovation* domain includes constructs describing the underlying knowledge sources about the innovation, clarity of the innovation to key stakeholders, and the degree of fit with existing practices and values within an organization, among others.
Clinical encounters	The *clinical encounters* domain describes the interaction between patients and providers, including how the patient and provider identify, tailor, and coordinate their interaction to achieve health goals.
Recipients	The *recipients* domain describes the knowledge, attitudes, values, beliefs, skills, power, and processes of collaboration among individuals with influence over how an intervention is implemented.
Recipients: providers: & staff	The *recipients: provider and staff factors* domain describes characteristics of the individuals who influence implementation processes, both at individual and team levels.
Recipients: patients	The *recipients: patient factors* domain describes the individuals who will receive the intervention, and calls out the role of health literacy, medical mistrust, socioeconomic status, cultural norms, and beliefs and preferences in equitable implementation.
Inner context: local	The *inner context: local* domain describes factors related to implementation within the immediate setting where an intervention takes place. These factors can include previous experiences implementing innovations or other changes, formal and informal leadership support, team culture, and established processes for internal evaluation and feedback.
Inner context: organizational	The *inner context: organizational* domain includes constructs pertaining to the organizational atmosphere in which the unit or team is embedded, such as organizational priorities, organizational culture, the organization's history of innovation or change, learning networks, absorptive capacity, and senior leadership and management support for the intervention.
Outer context: healthcare system	The *outer context: healthcare system* domain describes the broader context surrounding the implementing organization including factors such as national policy priorities, incentives and mandates, regulatory frameworks, external accreditation systems, and inter-organizational networks related to implementation.
Societal context	The *societal context* domain describes influences beyond the healthcare system that could impact each of the other domains. These influences might include local, state, and national economies, physical structures in the geographic region where an innovation is implemented, and local and national sociopolitical forces.
Economies	The *economies* domain describes characteristics of traditional, command, market, and mixed economies pertaining to human and non-human resources needed to access healthcare and health insurance.

Physical structures	The *physical structures* domain describes the built environment where recipients of the intervention live, as well as the physical structures surrounding the organizations providing services. This pertains to the historical and ongoing segregation of communities of color, differential access to parks, transportation, grocery stores, hospitals, and other structural resources.
Sociopolitical forces	The *sociopolitical forces* domain describes informal and formal policies and procedures enforced by local and national governments that systemically impact equitable health outcomes. These laws, cultures, or policy climates can also perpetuate or combat racism, classism, heterosexism, and transphobia, among other forms of discrimination.

In the conceptual framework outlined in Figure 4, we adapt the HEIF by organizing domains into three key levels of analysis drawn from organizational theory.[39] For this study, the micro level refers to individual characteristics, team dynamics, and interpersonal interactions; the meso level refers to characteristics of the organization, such as culture and climate; and the macro level refers to structural and system factors beyond the organization. We anticipated that these levels of analysis could elucidate inter-level factors influencing equity and complement the comprehensive nature of the HEIF to make findings more actionable within health services and community settings.

Figure 4. Conceptual framework integrating relevant Health Equity Implementation framework domains with key levels of organizational analysis



We applied this conceptual framework to a longitudinal set of qualitative data to identify factors related to equitable implementation of CommunityConnect to inform future integrated case management efforts seeking to impact equity. In the context of this study, equitable implementation was defined as: 1) equitable access to services for patients; and 2) equitable distribution of implementation demands on staff.

Methods

Setting

Between 2016 and 2021, Contra Costa County in Northern California received a $200 million grant through California's Whole Person Care Medicaid waiver (1115) to develop and pilot an integrated system of medical care, public health, and social services for its highest risk, highest need Medicaid clients. The county's pilot, CommunityConnect, aligned efforts across these service bundles through a novel case management program leveraging multidisciplinary teams of case managers. Contra Costa Health System, a safety-net health care system run by Contra Costa County, served as the primary organizational context for CommunityConnect. Contra Costa Health System is an umbrella organization over a care delivery network of multiple clinics and a single hospital, the county's public health department, and a Medicaid Managed Care Plan that provides insurance coverage to a majority of the county's Medicaid beneficiaries.[38] Clients enrolled in CommunityConnect were eligible to receive case management support for up to one year and the program reached approximately 12,000 clients at a time.

Data collection

In collaboration with the Contra Costa Health System evaluation team, a team of researchers trained in qualitative research methods (NS, AB, EH) conducted 86 semi-structured phone interviews of approximately 30-60 minutes in length with patients (n=31), case managers (n=41), and county administrators (n=14) across two time points (Fall 2019-Spring 2020; Fall 2020-Spring 2021). Interview participants were selected using purposive sampling to identify a representative sample of key stakeholders. Interviews were audio recorded and transcribed verbatim using Rev.com (Rev.com Inc., San Francisco, CA). Transcripts were reviewed and edited, where necessary, for quality.

Analysis

Interview transcripts were coded in NVivo (QSR International Pty Ltd. 2022, Version 12) using an iterative inductive-deductive framework analysis approach. The analytic team collaboratively constructed a codebook of a priori codes structured around the HEIF with codes for each HEIF domain. Inductive codes were defined and added to the codebook if consensus was reached among the analytic team. Refined themes identified through analysis were validated using a consensus approach.[40] Differences in data interpretation were also resolved using a consensus approach.[41] Finally, we integrated an organizational theory-informed framing organizing findings into three levels at which interventions generate impact within and beyond organizations to support pragmatic application of our findings in other settings.[39]

The Contra Costa Regional Medical Center and Health Centers Institutional Review Committee determined this project did not qualify as human subjects research (Protocol # 09172018). As such, informed consent for participation was not required. However, each participant received a verbal description of the evaluation and was informed their participation was voluntary and confidential.

Results

We organized our findings by micro-, meso-, and macro-organizational levels influencing equitable implementation, and present findings related to interactions between these levels. Specifically, we draw attention to the multi-level impacts of macro-level factors on equitable implementation. Demonstrative quotes for each finding are provided in Table 2.

Table 2. Demonstrative quotes of qualitative results by organizational level

Organizational level	**Finding**	**Quote**
Macro	Historic and ongoing institutionalized discrimination and racism in United States' medical and social systems led to the erosion of patient trust in county services and outreach for some	"I thought county help was that old picture of the '70s in the projects, you know? With the big building and even though you're in there, you're still poor and that's what county help was to me, you know and now I'm seeing that it's not, it's actual real help." Patient 09
	Local physical structures including the affordable housing crisis in the Bay Area and inefficient public transit options posed significant challenges for patients, especially those who are most marginalized	"CommunityConnect was able to support them with…the first month's rent and the deposit and they were able to move in. I was able to work with a landlord who I still have a relationship with…and CommunityConnect was also able to support with some furniture as well, so this client left from being in a shelter to being placed in her own apartment [with her family]." Case manager 25 "Transportation, I don't know if that was a super big thing we thought through - and that continues to be an ongoing issue. One of the major concerns that people have is that they can't get to places because they don't have transportation and it's not easy for them to get it. And so, [patients say] 'It's easier to call 911 and have the ambulance transport me because I don't have any other way to get there'." Administrator 02
	Federal funding was viewed as imperative for pilot implementation and sustainability long-term	"I think, for a lot of the partners, this was a whole new, and I guess it is true, that was the whole point of the project, from the fed level and the state level, is that they were funding things that had never before been funded within the context of public health services. It was an opportunity for a lot of that to finally be able to address what we knew to be the core issues contributing to people's welfare." Administrator 12
	Administrative barriers for Medicaid and social service access and eligibility posed challenges for most patients and	"I'm not that good at computers, not my thing – I know. But [my case manager] is just able to start mapping out letters [to apply to social services], and she know who to go to. Who to write to. Who to say what to. When she showed up to my appointment with me to Doctor XX. Your badge does speak a lot of words and it does. You wouldn't believe how

	case managers seeking to support them	much it does…To have someone have my back… It just, it takes a lot of stress off you." Patient 30 "The thing that's really concerning… is that this cuts out this whole group of people who are, that we've always recognized as the most marginalized and the most unstable are the people that are sort of cycling in and off of MediCal…If we end up serving only the people that manage to be stable enough that they manage to maintain their benefit and a managed care plan, or our concern is that we're going to miss addressing the group that we're trying to stabilize and get to that place." Administrator 12 "[Cell phones] were not things that were originally in the [CommunityConnect] package…we figured out that in order to take good case management our clients needed to have a phone…We started working with Sprint, we started working, you know, kind of refiguring all of that out. How do we get them phones that are essentially smart phones so they can start to learn how to use them, and then how do we, you know, transition them into a way that they can sustain having a phone?" Administrator 03
Meso	Prevention-focused public health nursing leadership championed equitable pilot design and implementation	"The challenge was saying to people like, 'You've got to trust that this model works,' because there was a lot of people that didn't believe it. They've never done the work. They don't understand a public health model, and they're just, like, going, 'Oh, no, that's not going to work,' or, 'You've got to do this,' and then they would kind of climb down on us, but there was enough of us in public health to just keep pushing that saying, 'No, just it's a process. Let's get everyone trained. It'll start happening, and it'll start coming together.'" Administrator 08 "…within healthcare delivery systems, there is very much a pack-oriented lane approach. The physician does one thing, the nurse does another thing. The mental health clinician does that. They have their toolbox and they stick to their toolbox, and there is a very, in some ways, a very linear idea of what your role is at any given time with any given patient, client who you're working with…I think it was, when we were first formulating the core group of services that we were delivering, and we were trying to construct this model that was, no matter what your discipline

		and training is, everyone is a CommunityConnect case manager, and what does that mean? That means that you have to address this core group of services, even if that's not something that you see as your usual in your lane." Administrator 12
	System-wide investments in a universal data infrastructure, dedicated analytics staff, and internal evaluation team allowed for nimble adaptations to support equitable implementation	"We own the entire data life cycle, right from, you know, data aggregation to data analysis to data visualizations…our health department somewhat unique because we have one organization which includes hospital and clinics or a public health department, behavioral health, EMS, and all that…So, all the data resides in a data warehouse and we have this unique vantage point because, you know, we see all the data. We work with every division." Administrator 04
	Strong collaborative relationships with internal and external partners supported equitable implementation by filling gaps in organizational expertise and resources	"Well, one important set of relationships is with the community clinics…Most of the Medi-Cal population in our county is actually served by the county. We've built more than we've subcontracted or bought as opposed to a place where the county has almost no infrastructure, and everyone is a nonprofit or subcontractor. In our county, we've mostly built, but we do have a couple of big [partnerships with] a couple of clinic systems… [and] the relationships with them have been key because some of the most affected communities trust them the most… because those organizations are super community oriented and are trusted by some of the people that we most need to reach." Administrator 01
Micro	Shift in power dynamics within teams due to multidisciplinary team composition supported equitable implementation for staff	"Another big aspect to our program is that we are so multi-disciplinary under one roof…I have never had such immediate access to other specialties before. That we are all working here together. It's amazing because when I do have someone medically fragile, I can turn around to a co-worker who is trained in that field and ask, 'What is this diagnosis? What does this medication treat?' when I'm reading someone's chart. Then they can ask me for resources also. That immediate access is designed as a system that needs to stay in place. Without it our jobs would be a lot harder." Case manager 03
	Importance of upfront trust building with patients and centering of patient	"It was one of the first things. I was talking to her in passing and I was like, 'Oh I need to get my glasses'. I go, 'I can't pay for the frame and lenses, they're expensive…She's like I can help you with that… so

	needs and goals, facilitated by multidisciplinary expertise and lived experience	that was one of the first things that she helped me with, and I guess that kind of built confidence you know, with her and trust. And she was just always open, understanding, and that's why you know, I stuck with the program." Patient 09 "She lets me know. 'You want to do this? You want me to sign you up?' I say either yes or no. She doesn't ever say, 'Well you should', or 'You shouldn't', never. Whatever I want to do to. That's what I love about her, her honesty and she lets me know what my options are. And if I don't want any of her options, she doesn't contrary with me, she doesn't you know, like look down at me. She says, 'Okay we are trying to do what we can for you"' Patient 12
	Multidisciplinary expertise supported a tailored, holistic approach to addressing patients' interconnected social and medical needs	"I think that was where, that kind of project that we had done had really informed how we constructed the care teams and the case management model, which was more of a model of having multiple types of disciplines so that people could pull on the different skillsets that could address the drivers for different people, whether it be a mental health clinician, whether it be a substance use disorder, whether it be chronic debilitating illness, physical illness, we sort of had, whether it be access to needs and social services. That was the idea behind having an interdisciplinary group of case managers who could all support the people that we were serving with their specific needs." Administrator 12
	The emotional demands of case management work were inequitably shouldered by frontline case managers, with minimal organizational supports	"The type of work we do… at times it's really, very difficult because it's very emotional and very you know it's very time consuming…I think sometimes maybe upper management isn't really understanding exactly what entails on these home visits and what we're walking into and what we're seeing and what's really going on and so I think that's a missing component of really understanding and supporting us as employees because we don't want to feel like we're not being heard and we're burnt out and our work is not really you know really valued in a sense." Case manager 15

Macro level factors

HEIF domains relevant at the macro level included *sociopolitical forces*, *economies*, and *physical structures*. Findings at this level describe the impact of (1) systemic discrimination and racism, (2) insufficient supportive physical structures in the form of affordable housing and efficient public transit, (3) federal funding to support holistic approaches to integrated care, and (4) pervasive administrative

barriers in accessing health and social services on equitable implementation. These findings differ from findings at meso and micro levels in that they describe structural characteristics of local and national social institutions and the built environment that are not modifiable in the context of designing, implementing, and evaluating CommunityConnect. However, the factors described in this domain significantly impact the development and implementation of CommunityConnect and are imperative to consider in assessing equitable implementation.

(1) Institutionalized discrimination and racism in United States' medical and social systems led to the erosion of patient trust in county services and outreach

Case managers acknowledged systemic racism and discrimination against historically marginalized groups by both health care and county systems as decreasing patient trust in systems and negatively impacting patient enrollment and engagement with CommunityConnect. Patients echoed the influence of these systemic factors on their participation and engagement in CommunityConnect by expressing concerns about being judged by staff for their substance use, experiences of homelessness, and literacy level. Several patients also shared stories of negative past experiences with the healthcare or county systems which impacted their trust in and engagement with the pilot initially. Given these historic and ongoing issues, case managers highlighted the importance of upfront relationship and rapport building with patients, especially those identifying as historically marginalized.

(2) Local physical structures including the Bay Area's affordable housing crisis and inefficient public transit options posed significant challenges for patients

Lack of affordable housing was a primary structural inequity referenced in interviews across participant types. Case managers and patients noted the lack of physical space for affordable housing in Contra Costa County creating a "housing crisis" accompanied by high rent costs and up-front expenses of securing housing including security deposits and basic necessities. Administrators highlighted the importance of partnerships with internal county partners, like the housing department, in providing needed expertise and connections to local landlords with available housing. Unrestricted Medicaid waiver funds also supported a housing fund to bridge the gap in affordability for patients.

Transportation was another physical barrier for CommunityConnect's patients, with patients lacking personal cars and existing public transit taking up to five times longer than expected to get to appointments. Older patients, patients with accessibility needs, and patients with small children reported the most challenges. CommunityConnect administrators and case managers highlighted the importance of patient and case manager feedback in surfacing the need for transportation services, which led administrators to link with community organizations and rideshare companies (e.g., Lyft, Uber) to provide transportation to medical and other appointments.

(3) Federal funding was viewed as imperative for pilot implementation and sustainability long-term

Administrators viewed CMS approval of the Medicaid Section 1115 waiver that funded CommunityConnect as critical to the county's ability to innovate, expand, and deepen the infrastructure, staff, and services offered to integrate at-risk patients' social and medical services. Administrators also attributed much of the engagement and sustainability of internal and external partnerships to the financial incentives they were able to provide. Administrators and case managers both stated that the depth and breadth of services they were able to provide to address patients' social determinants of health was facilitated heavily by waiver funds.

(4) Administrative barriers for Medicaid and social service access posed challenges for most patients and case managers supporting them

Administrative barriers to accessing Medicaid and social services, as well as complex eligibility requirements, posed challenges for most patients and case managers supporting them. This was especially true for clients who were unhoused and/or experiencing serious mental illness. Long wait times, complex application and reapplication processes, and highly specialized knowledge needed to enroll in public insurance or benefit options were reported as keeping patients from having equitable access to available resources. Case managers reporting spending a large portion of their work hours completing, submitting, and following up on social service applications on behalf of their patients, skills many attributed to their training and social capital as county employees.

Both case managers and administrators highlighted onerous Medicaid coverage requirements as exacerbating inequity by posing additional bureaucratic barriers to service access for individuals with limited resources. Since Medicaid coverage was a prerequisite for patient participation in CommunityConnect, instability of Medicaid coverage was perceived as preventing community members with the greatest need from participating in and accessing the resources shared through CommunityConnect.

Case managers and patients also referenced a shift away from paper applications and in-person appointments toward digital pathways for medical and social service access as negatively impacting patients without access to internet and phone services. To address this observed inequity, CommunityConnect began providing free, county-sponsored cell phones. Patients also used case managers as links to online information.

Meso level factors

HEIF domains relevant at the meso level included *characteristics of the innovation, inner context: local, inner context: organizational,* and *outer context: healthcare system.* Factors relevant to equitable implementation at this level included organizational readiness for implementation in the form of (1) an experienced public health leadership, (2) system-wide investments in a universal data infrastructure and data insights team prior to implementation, and (3) development of strong intra- and inter-organizational partnerships.

(1) Prevention-focused public health nursing leadership championed equitable pilot design and implementation

The characteristics and expertise of the public health nurse leaders at the helm of CommunityConnect's design and implementation prepared leaders for and supported staff with the demands of "flying a plane while building it" during the early stages of the pilot. Public health nurse leaders were reported to have a demonstrated commitment to equity and unwavering focus on holistic efforts to promote health over decades of work both within and outside of the county, in addition to extensive experience designing, implementing, and scaling large prevention-based interventions like CommunityConnect.

Drawing on past successes in public health intervention design and implementation, leaders prioritized a team culture that emphasized the assets of multidisciplinary, cross-trained individuals despite tensions and initial misalignment between the traditional, siloed model of healthcare and social service delivery teams with the collaborative, blended CommunityConnect team. Pilot leaders communicated that breaking down barriers to unite team members from the county's health system

(e.g., public health nurses) and various public health departments (e.g., employment and human services specialists, behavioral health) would best support a holistic approach to meeting patients' social and medical needs.

(2) System-wide investments in a universal data infrastructure, dedicated analytics staff, and internal evaluation team allowed for nimble adaptations to support equity

A strong business insights team established years prior to implementation integrated multiple data streams across county departments into a close-to-universal database, customized the operability of their instance of Epic's electronic health record to include features supportive of case management, and strengthened analytic capabilities across departments through stakeholder-engaged workflows informed by human-centered design strategies. Nearly every administrator referenced the importance of the business insights team in CommunityConnect's implementation. This team introduced nimble workflows to assess the pilot's operational needs and conduct rapid cycle testing with frontline supervisors and staff to adapt the pilot to support equitable implementation. Broad data access facilitated development of an equity-focused risk algorithm integrating measures of patient social determinants of health that supported targeted and expedited eligibility processes that auto-enrolled patients in CommunityConnect. The algorithm included data about patient demographic, utilization, clinical diagnosis, behavioral, and social risk factors.[38]

Evaluation of the pilot supported equity by including patient and staff voices in providing periodic input during pilot implementation. Feedback was most often captured informally during patient-case manager interactions, team meetings, or one-on-one check-ins with supervisors, though pilot evaluators did conduct formal collection of these stakeholders' feedback at several time points over the five-year pilot.

(3) Strong collaborative relationships with internal and external partners supported equitable implementation by filling gaps in organizational expertise and resources

Strong relationships with local federally qualified health centers, internal departments within the county, community-based organizations, and others were reported as integral to equitable social and medical service delivery. Pilot leaders shared that while they opted to strengthen internal capacity as much as possible to meet pilot needs through hiring staff and building out organizational infrastructure, the community assets leveraged through partnerships with local social service organizations and health centers could not be generated internally. Administrators and case managers found community partners filled gaps in staff expertise, especially around legal services for patients, while also providing patients with essential resources for daily living such as food, short-term housing, and more. CommunityConnect staff and administrators also emphasized the established trust between community partners and the community members the pilot sought to reach. Whereas some patients found outreach from county-branded staff intimidating or confusing, initial outreach from trusted community-based organizations, especially those with culturally- and language-concordant staff, was more effective.

Financial incentives funded through the Whole Person Care waiver were reported to be essential for establishing and sustaining community partnerships with resource-constrained community-based organizations, as these incentives allowed for some remuneration of partner engagement.

Micro level factors

HEIF domains relevant at the micro level included *recipients: patients, recipients: providers/staff,* and *clinical encounter.* Micro level factors influencing equitable implementation included hiring of

multidisciplinary case management staff which (1) reduced power imbalances within teams, (2) earned patient trust during pilot outreach and engagement, and (3) offered multidisciplinary expertise to support a tailored, holistic approach to addressing patients' social and medical needs, but (4) did not account for the inequitable emotional demands of case management work on frontline case managers.

(1) Shift in power dynamics within teams due to multidisciplinary team composition supported equitable implementation for staff

Leaders intentionally hired multidisciplinary case management staff from diverse backgrounds and with relevant lived experiences to carry out pilot activities. Case managers came from varied training backgrounds such as housing, behavioral health, public health nursing, community health work, and substance use coaching and were cross-trained such that each case manager had some expertise in their teammates' fields. Case managers reported that this helped shape a more hierarchically-flat team that ultimately fostered psychological safety within the team when questions or challenges arose.[42]

(2) Importance of upfront trust building with patients and centering of patient needs and goals, facilitated by multidisciplinary expertise and lived experience

Administrators and case managers reported that shared lived experience or racial or ethnic backgrounds between case managers and patients enhanced connection and empathy in case management sessions. In CommunityConnect, patient and case manager encounters took place in person and/or telephonically making patient trust in CommunityConnect and in their case manager key. To earn patient trust, case managers reported focusing on first supporting patients in accessing basic needs (e.g., food, a federally funded cell phone, transportation) before beginning to address other long-term goals to demonstrate positive intent. When patients expressed readiness for goal setting, many case managers reported prioritizing patient goals before encouraging patients to work toward goals relevant to pilot metrics. Patients shared that a case manager's persistent, nonjudgmental outreach or a successful connection with medical or social services facilitated by their case manager supported trust-building and encouraged sustained engagement with the case manager and CommunityConnect.

(3) Multidisciplinary expertise supported a tailored, holistic approach to addressing patients' interconnected social and medical needs

Analysis of patient experiences in the CommunityConnect pilot highlighted the complex and interdependent nature of patients' social and medical needs, from access to primary care and emotional support to stable housing and federal benefit application guidance. Patients shared that their case manager provided needed support in navigating medical care access including establishing relationships with and scheduling primary care and preventative care (e.g., cataract surgery, dental) visits after years without care. Some patients also reported that their case manager attended medical visits with them to advocate for patient needs with clinicians. For patients whose primary language is not English, those with reduced vision, or those with limited literacy, case managers were key in breaking down complex administrative tasks related to service acquisition.

(4) The emotional demands of case management work were inequitably shouldered by frontline case managers, with minimal organizational supports

Understanding how the work of case management impacts frontline staff's emotional and physical wellbeing is key to assessing equitable implementation because of the racial, gender, and socioeconomic intersectionality of the individuals hired as frontline case managers.[43,44]

CommunityConnect's case managers reported feeling deeply invested in their work, some electing to work additional hours without pay to support their clients in accessing services. Case managers met patients "where they were at", both geographically and psychologically, as a key characteristic of their interactions. For some, this meant meeting and developing relationships with patients in the freeway underpasses, shelters, and shared homes where they lived. For many case managers, these interactions involved providing patients with emotional support beyond the responsibilities of medical and social service coordination expected of them. In the exact words of multiple case managers interviewed independently of one another, "patients just want to be heard" and providing a listening ear might signify a successful interaction for a patient even if no other services were provided.

Case managers shared experiences of daily interactions with patients, both in person and telephonically, in which they observed or listened to stories of suffering and trauma. Case managers reported that the emotional impacts of this work stayed with them physically and mentally inside and outside of work, but few cited organizational supports or resources to manage the impacts of their work on their mental and physical health.

Inter-level interactions

Macro level factors directly influenced equitable implementation at meso and micro levels of CommunityConnect. Systemic racism and discrimination fostered mistrust of public bureaucracies, like the county, emphasizing the importance of time spent building rapport during clinical encounters and through strategic partnerships with trusted community organizations. Physical barriers to equity initially unaccounted for in CommunityConnect's design (e.g., transportation) highlighted patient and case manager feedback as a critical facilitator of equitable implementation through motivation of novel partnerships and services. Administrative burden prompted development of targeted and expedited eligibility processes using a risk algorithm for patient enrollment to ensure individuals most at risk were identified and offered pilot services.

Discussion

This study integrated implementation science and organizational theory to identify key factors influencing equitable implementation of CommunityConnect, a case management pilot integrating medical and social services for patients receiving Medicaid in Contra Costa County, California. Actionable findings were identified at macro-, meso-, and micro-organizational levels to inform future implementation efforts of case management initiatives, like the one described, that aim to impact equity.

This analysis was informed by the HEIF, a novel framework in the field of implementation science. The HEIF is salient to this work because it is the first implementation science framework to identify health equity-specific constructs relevant in health care settings, with specific emphasis on the interaction between patients and providers, intervention recipients, and societal influences. The comprehensive list of HEIF domains supported a thorough assessment of equitable implementation, with attention paid to key stakeholders across hierarchical levels. It also drew attention to historical influences on health and equity that can be less prominent in other frameworks. While the full set of domains remain important for academics and practitioners to be aware of, our team found that the framework could be repetitive across domains and adapted our application to include two fewer domains to minimize duplication of analysis. Additionally, we built

upon the original version of the HEIF by organizing its domains into three organizational levels widely applied in health services research to highlight interactions between factors across levels and make findings more pragmatic for practice-based leaders by providing clear targets for intervention.

Systemic, macro level factors impacting equitable implementation included institutionalized and interpersonal racism and discrimination, an under resourced built environment, lack of federal funding for holistic solutions to address care fragmentation, and administrative barriers to accessing needed medical and social services. CommunityConnect was unique in that a short-term influx of federal funds allowed Contra Costa County to address systemic barriers around funding for integrated case management initiatives that directly improved equitable distribution of services for patients receiving Medicaid. However, the time-bounded nature of these funds presents an equity concern as the infrastructure, services, and staff they enabled may not be able to be sustained beyond the five-year funding period. Poor sustainability of funding for prevention-focused interventions is a well-documented challenge and evidence shows that insufficient attention to the sustainability of these programs can undermine financial and time investments, as well as associated impacts on health outcomes, over time.[45–47] Assessing macro-level factors influencing equitable implementation as described here is only an interim step while we – researchers, practitioners, and citizens – also seek to change systems and structures perpetuating inequities. Systemic changes beyond the scope of case management initiatives like Whole Person Care are needed to combat the exacerbation of health inequities by administrative barriers to service access, racism and discrimination against historically-marginalized communities, and insufficient supply of affordable housing and efficient public transportation.[48–51]

Meso level factors contributing to equitable implementation included assets in the form of intellectual, human, and social capital that facilitated organizational readiness for CommunityConnect. Our findings corroborate evidence in the practice-based and implementation science literature that strong leadership facilitates organizational readiness for change, especially when individuals in these roles champion innovation implementation through positive messaging and information sharing, and contribute expertise and experience leading previous change efforts.[52,53] Additionally, CommunityConnect's investment in developing a robust data infrastructure and analytic team prior to the pilot's implementation supported a more equitable approach to identification of eligible patients through the accessibility of social factors data that was integrated into their risk algorithm. This infrastructure also facilitated more equitable case management workflows as the universal data entry system minimized the need for double or triple entry of program data into multiple databases, an administrative challenge that has been documented in several other integrated case management initiatives.[53–56]

Micro level factors centered around the development of multidisciplinary case management teams that facilitated equitable implementation of CommunityConnect services to patients through trust building and sharing of diverse lived and professional experience. Within case management teams, multidisciplinary expertise facilitated shared learning and collaborative cross-training while flattening hierarchical power imbalances between disciplines. However, the design and implementation of CommunityConnect did not sufficiently account for the inequitable emotional demands of case management work on frontline case managers. Emotional demands in the form of exposure to trauma and compassion fatigue, among others, in case management and other patient-facing professions are well documented in the literature and proven to negatively impact case manager mental health.[57–60] Future implementation efforts involving individuals in these highly skilled and demanding roles should incorporate structural, supervisory, and financial supports to address the

disproportionate weight of case management work on these frontline staff. Further research is needed to better understand the experiences of case managers in integrated case management initiatives as limited evidence exists regarding this sector-spanning role.

Limitations

Limitations of this work include the retrospective nature of the analysis. Patients, case managers, and administrators were not consistently asked about equitable implementation in a structured or semi-structured way. These results also reflect a single county's experience and may not be generalizable to Whole Person Care pilots or beyond. Finally, we are not yet able to assess the impact of CommunityConnect's implementation on equity specific to patient health care access and outcomes, but a future mixed methods study combining the evaluation's quantitative outcomes around service distribution and access with the qualitative results might provide early signals.

Conclusion

An adapted HEIF incorporating key levels of organizational analysis supported identification of multi-level factors influencing equitable implementation. Future case management programs aiming to equitably align social and medical services should consider and actively plan for intervention upon systemic factors hindering equitable engagement of historically marginalized groups, organizational readiness for equitable implementation, and investment in multidisciplinary staff wellness through structural, interpersonal, and financial supports.

Individual, interpersonal, and organizational factors of cross-sector case manager intent to leave their role and job satisfaction

Introduction

Health systems increasingly implement programs to support cross-sector integration of medical and social services for high-risk, high-need patients.[34–36] Case management programs offer one model for coordinating services in which case managers play an integral role in enrolling, engaging, and managing care for patients.[35] However, recruitment and retention of case managers in these types of roles can be challenging.[14,61,62]

Characteristics of the case management role, especially those bridging medical and social sectors of care, can hinder recruitment and retention of skilled case management staff. Heavy caseloads, low pay, experiences of burnout and emotional exhaustion, and the specialized training often required of this role contribute to these challenges and lower job satisfaction among case managers.[63–67] These findings are exacerbated among case managers working with clients with complex medical and social needs.[65] Case managers working in bridging roles and dyadic relationships with clients over time also often work in resource-constrained settings where the services and resources their clients need are limited or difficult to access. These community and organizational resource constraints can indicate less supportive work environments that have been documented to reduce case manager job satisfaction and increase burnout.[65,68]

Staff turnover

Retention, also measured through staff turnover, is a well-studied phenomenon in organizational behavior and, in healthcare, costs care delivery systems tens of millions of dollars each year to manage the loss, rehiring, and training of staff.[69] Turnover among staff members also reduces productivity, morale, expertise within a team, and performance quality.[70] Documented correlates of staff turnover include work-related correlates such as employee job satisfaction, perceptions of their work, salary, job performance, satisfaction with their supervisor, and organizational commitment, among others. Personal correlates of turnover can include age, length of time in a role, gender, and number of dependents.[71,72]

Job satisfaction

Job satisfaction has been identified as a direct predictor of intent to leave a case management role and is defined by the interplay of job stressors and supports. Multi-level factors influencing job satisfaction can include control over work, salary, relationships with supervisors, teammates, and clients, organizational commitment and climate, emotional demands of work, and job insecurity.[67,73–76] Low levels of job satisfaction, or job dissatisfaction, are correlated with higher turnover rates among staff which subsequently impacts key care and quality outcomes including client or patient engagement in the direct care relationship.[67,74]

Staff turnover and job satisfaction are important to consider in the context of equitable implementation of care coordination programs because of the racial, gender, and socioeconomic intersectionality of individuals hired as frontline workers providing case management. When considering the direct care workforce broadly, women of color comprise 45% of all employees.[44] Women of color in the direct care workforce are also more likely to live in poverty compared to White women or men in the same positions, and their positions also often lack pathways to be promoted up a career ladder.[44] Half of all direct care workers of color earn less than minimum wage

and only a tenth have employer-provided health insurance.[77] While the breakdown of these statistics differs greatly between registered nurses and individuals working in other direct care roles, the disparity in compensation for direct patient care affects health care workers' financial stability and ability to afford basic needs for themselves and their families.[77]

While there is robust literature describing staff turnover and the related impact of job satisfaction on retention broadly, and more targeted literature focusing on case manager turnover and job satisfaction in home health care roles,[74,78] limited evidence exists exploring staff turnover and satisfaction among individuals in integrated, cross-sector case management roles where case managers coordinate medical and social services. Using a concurrent mixed-methods analysis, we explore the relationship between theoretically grounded individual, interpersonal, and organizational factors and case manager intent to leave their role and job satisfaction in a sample of case managers coordinating medical and social services for Medicaid beneficiaries in California.

Conceptual model

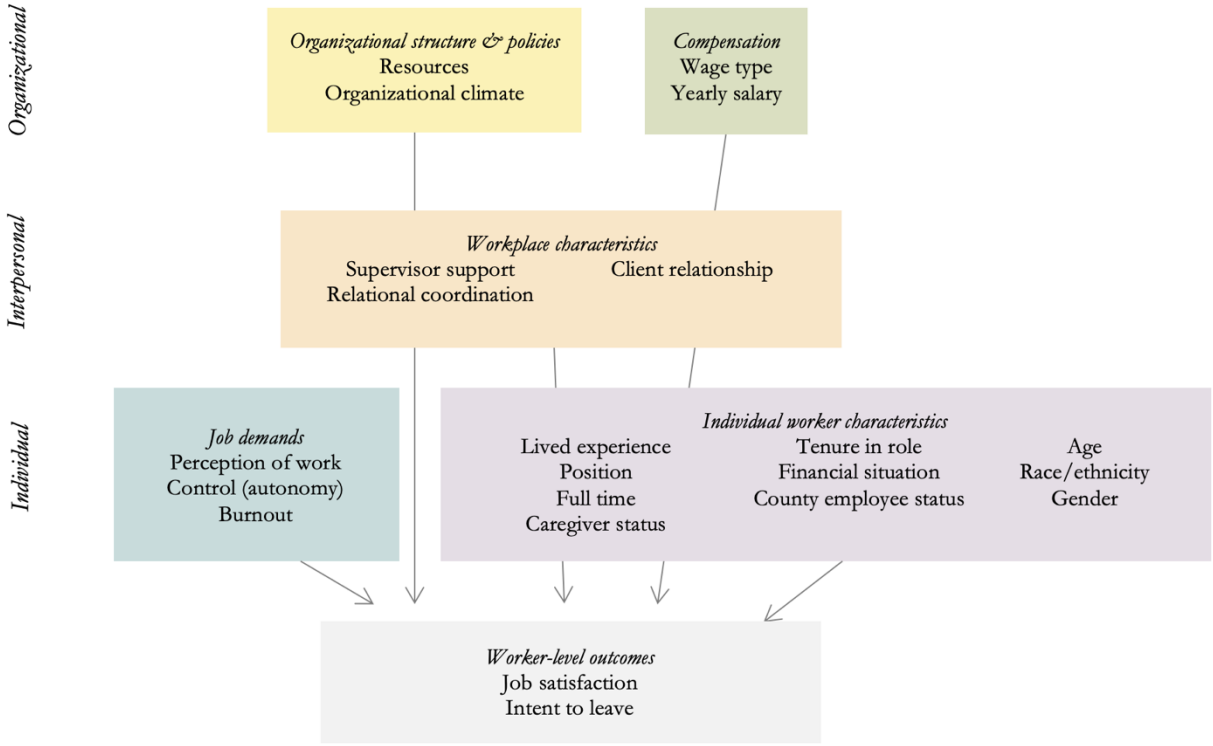
This study is informed by a conceptual framework first introduced in a 2015 internal report from the US Department of Health and Human Services[74,78] that integrates the Job Demands-Resources Model[79] and Delp et al.'s social, economic, and geopolitical framework[67]. The combination of these two frameworks is well-suited for this analysis as, collectively, they identify multilevel factors influencing job satisfaction and intent to leave in direct care work settings.

The Job Demands-Resources Model by Bakker & Demerouti[79,80] describes job demands as characteristics of work (e.g., physical, psychological, social, organizational) that demand "sustained physical and/or psychological (cognitive and emotional) effort or skills" leading to related physiological and/or psychological costs. These demands are not always negative in valence but can evolve to be detractors from a work experience when managing the demand becomes stressful. Conversely, job resources are characteristics of work (e.g., physical, psychological, social, organizational) that support employees in meeting their professional goals, reduce the demands and, subsequently, the costs of the work, and promote an employee's growth, learning, and development within their role. An imbalance of these demands and resources can be detrimental to employee job satisfaction and wellness, ultimately resulting in burnout. In this study, the Job Demands-Resources Model helped surface organizational factors that could influence case manager experiences of case management with high-risk, high-need patients.

The Social, Economic, and Geopolitical framework adapts the Job Demands & Resources model by addressing additional multi-level contextual and interpersonal factors that affect staff working in dyadic care relationships.[67] This model was developed to better understand the experiences of home care workers in consumer-directed roles and takes into consideration how both job characteristics and dyadic interactions between staff and clients in case management work can influence employee job satisfaction and intent to leave their role which is well suited to the current analysis.

Blending the Jobs Demands-Resources Model and the Social, Economic, and Geopolitical framework yields the following conceptual framework (Figure 5), which outlines key constructs hypothesized to influence worker job satisfaction and intent to leave (e.g., Organizational structure and type, Compensation, Workplace characteristics) as well as specific independent and dependent variables that will be used for this analysis.

Figure 5. Multi-level conceptual model for the mixed methods analysis of case manager job satisfaction and intent to leave their role



Methods

Study design and data source

This study uses a concurrent mixed methods design[81], in which quantitative and qualitative data were simultaneously collected and analyzed to inform the research question. Data from this study are drawn from the evaluation of California's Medi-Cal Whole Person Care (WPC) Pilot Program which was led by researchers at the Universities of California Los Angeles and Berkeley.[13]

WPC was implemented as part of California's Section 1115 Medicaid waiver and explored whether provision of case management, housing, and other social services would reduce care fragmentation and improve care outcomes for high-risk, high-utilizing Medicaid beneficiaries. Specific populations of interest included individuals with multiple chronic conditions, experiencing homelessness or at-risk of homelessness, with serious mental illness or substance use disorder, or recently incarcerated. WPC was implemented by 25 pilots representing 26 counties across California. There was tremendous amount of heterogeneity across Pilots in services pilots provided, staffing models, and populations of interest they served.[12–14] Organizations responsible for leading WPC pilots were called "lead entities" and could be county public health, health, or human service agencies or health systems. Participating counties varied by size, urbanity, available resources, existing infrastructure, and services offered. However, all pilots reported difficulty identifying and engaging eligible beneficiaries in care,[13] and over half of the pilots reported challenges recruiting and retaining skilled case managers.[14]

In this study, quantitative data were used to examine individual, interpersonal, and organizational factors associated with case manager job satisfaction and intent to leave. Qualitative interview data collected with pilot case managers provided further insight into case manager perspectives of job satisfaction and intent to leave through rich examples of the mechanisms behind the results found in the quantitative models.[82] Seeing as both the quantitative and qualitative analyses were structured around the same conceptual model and domains, in some domains the qualitative results surfaced findings beyond the limitations of the quantitative models.

Quantitative data

A web-based survey was administered to all case managers responsible for providing care coordination or case management services in WPC in summer 2020. Participants were not provided with incentives for completing the survey. Lead entities of each pilot were contacted by the Whole Person Care evaluation team and provided a Qualtrics survey link to distribute to case management supervisors and their staff. Survey questions focused on assessing case managers' perceptions of their work, e.g., relational coordination,[83–85] work engagement,[86] burnout and role overload,[86–88] task discretion,[89] relational climate,[90,91] voice,[92] and supervisor support[93].

Data were collected between June-July 2020 (N=268 respondents; response rate: 56%). At least one staff member from each county replied (range: 1 – 55 unique responses per county). Individuals who did not complete at least half of the survey, did not respond to questions associated with the outcome variables of interest, or were significant outliers (e.g., physician respondents likely serving in more consultative than direct service roles) were excluded from the dataset, yielding a final analytic sample of 230 individuals. The survey was administered via Qualtrics survey software, and data were analyzed using Stata, version 17.0.[94]

Quantitative variables and measures

Case manager intent to leave their role (dependent variable)

We measured case manager *intent to leave their role* in the next year using a 5-point Likert scale in response to the question "Do you think you will choose to leave your current employer in the coming year?" (1=Definitely; 5=Definitely not). For this variable, the number of responses in the "Definitely" and "Likely" categories were very low, so we dichotomized and reversed response categories from the 5-point Likert scale into binary categories such that responses of "Definitely", "Likely", or "Neutral" were categorized as "Likely to leave" (1) and responses of "Unlikely" and "Definitely not" were categorized as "Unlikely to leave" (0). We categorize neutral as "Likely to leave" due to concerns that individuals may have underreported their true intention to leave in this survey. Sensitivity analyses used to test the validity of this dichotomization are explained further below.

Case manager job satisfaction (dependent variable)

We measured case manager *job satisfaction* using a summary score of two items scored on 5-point Likert scales: "I am satisfied with my job" and "If a good friend of mine told me that he/she was interested in a job like mine, I would recommend he/she take the job" (1=Strongly disagree; 5=Strongly agree). Response values were dichotomized such that responses of "Strongly disagree" and "Disagree" were categorized as "Dissatisfied" and responses of "Agree", "Strongly agree", or "Neutral" were categorized as "Satisfied". We categorize neutral as "Likely to leave" due to concerns that individuals may have underreported their true job satisfaction in this survey. Sensitivity analyses used to test the validity of this dichotomization are explained further below.

Individual, interpersonal, and organizational factors associated with case manager intent to leave and job satisfaction

Independent variables for this analysis were selected based on theoretical and pragmatic relevance to the research question and are organized according to the conceptual model outlined above. Variables included in the conceptual model above that demonstrated extreme multicollinearity (*wage type*, *full time*, *caregiver status*, *financial situation*) were excluded from the model.

Perceived job demands

Perceived job demands included variables describing case managers' positive perception of work, burnout, and perception of control and autonomy over their work. Burnout is the experience of emotional exhaustion and negative perceptions of work that is often experienced among individuals in "people-work" roles and is an established correlate of intent to leave and job satisfaction.[65,80,95–97] Similarly, autonomy and control over work relate to role stress which is associated with job satisfaction.[65] *Positive perception of work* was a composite variable assessed using a summary score of two items: "I feel I am making an important contribution through my work" and "I have opportunities for promotion in the field given my education, skills, and experience". *Burnout* was assessed using a summary score of items describing feeling emotionally drained from work. *Control (autonomy)* was assessed using a summary score of two items: "I have a lot of control over how my work gets done" and "I have control over my work schedule". These items were scored on 5-point Likert scales (1=Strongly disagree; 5=Strongly agree) where higher scores are associated with higher levels of control over work.[86–88]

Compensation

Case manager compensation addresses the actual wage case managers receive. Salary or wage has been linked to job satisfaction and intent to leave as it relates to an individual's ease of paying for necessary bills and health care services, among other necessities for daily living.[67,96] Compensation was assessed using a continuous variable for individual *yearly salary* calculated in dollars per year that was then categorized into three categories: "$52,000 or less", "$52,001-$80,000", and "Greater than $80,000".

Organizational structures & policies

Organizational structures and policies were described by two variables: *resources*, a summary score of questions describing characteristics of perceptions of good pay, good job security, and good benefits provided by the hiring organization, and *supportive organizational climate*, a summary score of items scored on 5-point Likert scales (1=Strongly disagree; 5=Strongly agree) describing opportunities to provide feedback, supervisor support, opportunities for creativity, cooperation, conflict resolution, opportunities to express opinions, and perceptions of safety for staff to speak up about important topics.[90,91]

Perceived workplace characteristics

Perceived workplace characteristics were described by supervisor support, relational coordination, and client relationship variables. *Supervisor support* included perceptions of quality of emotional support and general satisfaction with case manager supervisors[93] and was initially included independently in the model due to its known influence in improving job satisfaction and reducing intent to leave a role.[64,98,99] However, due to multicollinearity with the *supportive organizational climate* variable (defined above) we created a summative composite measure (Range 2-10). *Relational coordination*, or the communication and relationships required to coordinate work within a team, summarized scores from questions about communication frequency, timeliness, and accuracy, in

addition to a climate of problem solving, shared goals between providers, awareness of workforce responsibilities, and respect of workforce responsibilities.[83–85] Relational coordination is a known correlate of frontline worker burnout and job satisfaction, where improved relational coordination is associated with improved job satisfaction. *Client relationship* summarized scores from questions about workforce pro-social motivation in serving clients and perceived respect from clients.[100] These items are essential to include in the model given the level of connection and intimacy with clients required of effective frontline case management work.

Individual worker characteristics

Variables describing workforce characteristics served as control variables in the model. Age (21-30 years, 31-40 years, 41-50 years, 51-60 years, 60 years or more), race/ethnicity (White Non-Latino, Black Non-Latino, Latino/Hispanic, Asian/Pacific Islander Non-Latino, Other), gender (Female, Male), position type (community health worker, clinical, non-clinical, other), tenure in role (number of years), county employee status (Yes or No), and lived experience relevant to their current role (Yes or No) were all included as controls in each model.[64,67,74,76,101] Earlier models included additional variables such as "financial situation" and "caregiver status", but these variables were removed due to high collinearity with other individual worker characteristics.

Quantitative data analyses

Descriptive analyses were conducted to assess response distribution in each variable and Cronbach alphas were calculated to assess consistency of items within the model even though survey measures were drawn from previously validated measures.[94] We also assessed missingness in the data to identify the present of bias due to survey non response or item non response. T-test comparisons of the means of all variables used in the analyses indicated that case managers in the final analytic sample did not differ from those excluded due to listwise deletion. Single level logistic regression models were used to examine individual, interpersonal, and organizational factors associated with case manager intent to leave their role (Model 1) and job satisfaction (Model 2), adjusting for covariates and clustered by WPC pilot.

Sensitivity analyses

Given potential correlation in responses from staff in the same Pilot (intraclass correlation coefficient 47% for intent to leave and 37% for job satisfaction), models were rerun using generalized estimating equations (GEE) as a sensitivity analysis. GEE estimates are also robust in the presence of missing data from survey non-response, and in this study, were preferable to a random effects model because its weaker assumptions were more appropriate given small numbers of responses within certain Pilots. In the GEE model, the logit link was used given the binary nature of the dependent variable. We then used a stepwise approach ($p<0.2$) to identify variables most relevant for inclusion in the model due to convergence issues in the GEE models. Results (not shown but available upon request) were consistent with logistic regression results, therefore only logistic regression models are reported here.

To test the stability of model results to alternative model specifications, we also re-ran analyses with the dependent variables recoded with neutral values coded as 0 rather than 1. The distribution of responses for the model examining intent to leave was significantly more skewed, raising concerns about power and model stability. Fewer variables were significant in the model assessing intent to leave; however, *organizational climate* remained significant, emphasizing its critical role in informing case managers' intent to leave their role.[96,99,102] Results from the model examining job satisfaction indicated that the same variables were significant, though *resources* and identifying as *Latino/Hispanic*

were newly significant in the model. Existing literature supports the association of resources with on job satisfaction.[67,96] All analyses were conducted using Stata, version 17.0.[94]

Qualitative study sample and data collection

Using purposive sampling methods, we interviewed at least one case manager in each pilot regarding factors affecting program implementation and sustainment, and their perspective on their work. Case managers were identified by pilots as the individuals best equipped to speak to case management or care coordination practices being used with enrollees. Semi-structured interviews were conducted at two time points between Winter 2018-2019 and Summer 2021 and were facilitated by a trained qualitative researcher and supported by a note-taker, either in person (2018-2019 only), telephone, or Zoom, based on participant preference. A total of 66 individual or group interviews were conducted with 123 individuals in the first round of interviews and 99 participants in the second round of interviews (range: 1-9 participants). Participants were able to participate in both rounds and participant counts do not account for unique individuals.

This analysis draws on interview domains covered factors salient to understanding case manager job satisfaction and retention, including job characteristics (e.g., nature of work, opportunities for advancement or professional development, relationships and communication with supervisors and other team members, team dynamics, control over work), available resources, and perceived strengths and challenges of the case management role. Interviews were audio-recorded with participant consent, and transcribed verbatim. Participants were not offered incentives.

Qualitative data analyses

Interview data captured in 66 transcripts at two time points were analyzed deductively using Nvivo 12.0 (QSR International Party Ltd., 2022). A pre-determined codebook, aligned with the conceptual model informing the quantitative analyses, was developed and agreed upon by three qualitative researchers (NS, EC, KR). Two qualitative researchers (NS, KR) double-coded 30% of the transcripts, meeting regularly to discuss questions, ambiguity, and any discrepancies in coding to support intercoder reliability. Definitions in the deductive codebook were further refined by the research team after an initial round of coding to incorporate inductive concepts relevant to the analysis. One qualitative researcher (NS) coded the remaining transcripts. Coded data were analyzed from a critical perspective using a framework analysis to identify primary themes.[103,104]

Results

We start by presenting the quantitative models identifying individual, interpersonal, and organizational factors associated with case manager intent to leave their role in the next 12 months (Model 1) and case manager job satisfaction (Model 2). Qualitative results corroborate and expand on quantitative model results by providing additional insight into "*how*" and "*why*" these factors influence case manager intent to leave their role and job satisfaction.

Preliminary quantitative results

Descriptive statistics

As shown in Table 3, only 25% of respondents intended to leave their role in the following 12 months and 82% reported being satisfied with their job. With regard to perceived job demands, on average respondents had a positive perception of their work (Mean[M]=4.17, standard deviation [SD] = 0.77), felt control over their work (M=3.98, SD=0.91), and experienced burnout in their role (M=3.33, SD=1.02). With regard to perceived workplace characteristics, on average case managers

reported good relational coordination among team members (M=3.72, SD=0.68) and strong respect for and motivation to serve their clients (M=4.80, SD=0.50). With regard to organizational structure and policies, on average respondents felt they had sufficient resources to do their work (M=3.59, SD=1.00) and that the organizational climate they worked within was supportive of their work (M=8.18, SD=1.79).

Respondents primarily identified as female (84%) and were evenly distributed between the age ranges of 21-60 years old, with fewer respondents in the 61 years or more category. Most respondents identified as White (37%) or Latino/Hispanic (32%) and over half (60%) had relevant lived experience to the clients they serve in their role. On average, respondents had been in their role for a little over two years at the time of the survey (range: 0-33 years) and 65% were local county employees. Case managers came from primarily non-clinical backgrounds such as unlicensed social work, alcohol and drug counseling, or housing navigation (31%), and 30% were community health workers. Of 25 pilots represented in the dataset, data from 22 pilots were included in the final models.

Table 3. Characteristics of case managers in our analytic sample (N=230)

	Mean (SD) / %
Perceived job demands	
Perception of work	4.17 (0.77)
Control	3.98 (0.91)
Burnout	3.33 (1.02)
Perceived workplace characteristics	
Relational coordination	3.72 (0.68)
Client relationship	4.80 (0.50)
Organizational structure & policies	
Resources	3.59 (1.00)
Supportive organizational climate	8.18 (1.79)
Tenure in role (years)	2.07 (2.72)
Compensation	
Yearly salary	
$52,000 or less	44%
$52,001-80,000	25%
$80,001 or more	31%
Worker level outcomes	
Likely to leave their role in next 12 months	25%
Satisfied with their job	82%
Workforce characteristics	
Age	
21-30 years	22%
31-40 years	28%
41-50 years	25%
51-60 years	20%
61 years or more	5%
Gender	
Female	84%

Male	16%
Race/ethnicity	
White, non-Latinx	37%
Black, non-Latinx	11%
Latinx or Hispanic, non-White	32%
Asian/Pacific Islander	8%
Other	12%
Position type	
Community health worker	30%
Clinical	22%
Non-clinical	31%
Other	17%
County employee status	
Yes, county employee	65%
Lived experience	
Yes, lived experience	60%

Multivariate results

As shown in Tables 4-5, burnout was significantly associated with case manager intent to leave (odds ratio [OR]=1.41; $p<0.05$) and with job satisfaction (OR=0.61; $p<0.01$). Higher extrinsic rewards such as pay, job security, and job benefits were significantly associated with intent to leave (OR=0.63; $p<0.01$), but not with job satisfaction. A supportive organizational climate characterized by high supervisor support, psychological safety, opportunities for innovation and creativity, and opportunities for acquiring or improving skills was significantly associated with both intent to leave (OR=0.86; $p<0.05$) and job satisfaction (OR=1.58; $p<0.01$). Strong client relationships were significantly associated with job satisfaction (OR=6.64; $p<0.01$) but not with intent to leave. In terms of individual worker characteristics, older workers, particularly those aged 61 years or older were significantly less likely to intend to leave their jobs than those aged 21-30 years.

Table 4. Logistic regression analysis of the association between case managers' intent to leave their job and independent variables, adjusting for covariates and clustered by WPC pilot

Variable	**OR**	**SE**	**95% CI Lower**	**95% CI Upper**
Organizational structure & policies				
Resources	**0.63****	0.11	0.44	0.88
Supportive organizational climate	**0.86***	0.096	0.74	1.00
Perceived workplace characteristics				
Relational coordination	1.23	0.26	0.82	1.84
Client relationship	0.54	0.25	0.22	1.36
Perceived job demands				
Perception of work	0.87	0.16	0.61	1.25
Burnout	**1.41***	0.24	1.01	1.98
Control	0.88	0.19	0.58	1.34
Compensation				

Yearly salary (Ref = $52,000 or less)				
$52,001-80,000	0.49	0.27	0.17	1.45
$80,001 or more	0.48	0.074	0.12	1.97
Workforce characteristics				
Age (Ref=21-30 years)				
31-40 years	**0.52***	0.17	0.28	0.99
41-50 years	**0.27****	0.11	0.12	0.62
51-60 years	**0.31***	0.16	0.11	0.84
61 years or more	**0.013*****	0.012	0.0021	0.079
Gender (Ref=Female)				
Male	**2.84****	0.99	1.44	5.61
Race/Ethnicity (Ref=White, non-Latinx)				
Black, non-Latinx	0.65	0.45	0.17	2.53
Latinx or Hispanic	1.58	0.72	0.65	3.85
Asian/Pacific Islander	0.49	0.43	0.085	2.79
Other	1.14	0.85	0.26	4.89
Position (Ref=Community health worker)				
Clinical	3.14	2.52	0.65	15.19
Non-clinical	**3.72***	2.01	1.29	10.72
Other	1.57	0.83	0.55	4.44
County employee status (Ref=Not a county employee)				
Yes, county employee	**1.87***	0.58	1.02	3.43
Lived experience (Ref=No lived experience)				
Yes, lived experience	0.97	0.27	0.56	1.69
Tenure in role	**1.19****	0.074	1.05	1.34

*p<0.05, **p<0.01, ***p<0.001, +marginally significant (p=0.05)
▲Regression results control for the individual worker's yearly salary, lived experience, position, tenure in role, county employee status, age, race/ethnicity, and gender. All regression models were estimated using robust standard errors.

Table 5. Logistic regression analysis of the association between case managers' job satisfaction and independent variables, adjusting for covariates and clustered by WPC pilot

Variable	**OR**	**SE**	**95% CI Lower**	**95% CI Upper**
Organizational structure & policies				
Resources	1.19	0.28	0.75	1.88
Supportive organizational climate	**1.58****	0.26	1.14	2.19
Perceived workplace characteristics				
Relational coordination	1.43	0.71	0.54	3.76
Client relationship	**6.64****	4.57	1.72	25.57

Perceived job demands				
Perception of work	2.26	0.98	0.97	5.27
Burnout	**0.61****	0.10	0.44	0.84
Control	1.55	0.37	0.98	2.46
Compensation				
Yearly salary (Ref = $52,000 or less)				
$52,001-80,000	1.05	0.78	0.24	4.53
$80,001 or more	1.49	0.97	0.42	5.30
Workforce characteristics				
Age (Ref=21-30 years)				
31-40 years	0.49	0.38	0.11	2.22
41-50 years	0.80	0.68	0.15	4.28
51-60 years	0.88	0.76	0.16	4.81
61 years or more	0.49	0.53	0.060	4.05
Gender (Ref=Female)				
Male	0.68	0.37	0.23	2.00
Race/Ethnicity (Ref=White, non-Latinx)				
Black, non-Latinx	2.69	2.43	0.46	15.78
Latinx or Hispanic	1.16	0.62	0.41	3.30
Asian/Pacific Islander	0.43	0.33	0.096	1.94
Other	4.97	5.57	0.55	44.76
Position (Ref=Community health worker)				
Clinical	0.64	0.63	0.092	4.41
Non-clinical	0.93	0.65	0.24	3.68
Other	0.82	0.57	0.21	3.17
County employee status (Ref=Not a county employee)				
Yes, county employee	1.08	0.73	0.28	4.09
Lived experience (Ref=No lived experience)				
Yes, lived experience	0.59	0.25	0.26	1.34
Tenure in role	1.42^{+}	0.26	1.00	2.02

*p<0.05, **p<0.01, $^{+}$marginally significant (p=0.05)
▲Regression results control for the individual worker's yearly salary, lived experience, position, tenure in role, county employee status, age, race/ethnicity, and gender. All regression models were estimated using robust standard errors.

Qualitative results

Qualitative results describe factors relevant to case manager job satisfaction and intent to leave their role, also referred to as staff turnover, and are organized by the domains outlined in the conceptual model. At the organizational level, available community and organizational resources, as well as a strong technological infrastructure supported case manager satisfaction in their role. Workplace

characteristics perceived to support job satisfaction and reduce turnover included quality of relational coordination among team members, support from supervisors, and strong relationships with clients. With regard to perceived job demands, case managers reported high levels of flexibility in how, where, and when they carried out responsibilities as supportive of their job satisfaction, while poor role definition within teams and across organizational partners was a challenge. Compensation was perceived to be a primary factor for case manager intent to leave, with pilots offering higher wages, often through braided funding, perceived to experience less staff turnover. Finally, with regard to workforce characteristics, participants emphasized the importance of hiring case management staff with positive, empathetic attitudes and lived experiences concordant with those of WPC clients rather than hiring for specific skills or education levels.

Organizational structure and policies

At the organizational level, factors impacting case manager job satisfaction and turnover primarily included available resources within and around the organization, and technological infrastructure within and across organizations to support case management work. In particular, inadequate pay was identified as contributing to staff turnover, which in turn inhibited pilots' ability to implement programs as intended. On a broader level, case managers in Pilots where community resources and social services were scarce or unavailable reported frustration and burnout due to feelings of helplessness when working with their clients. These challenges were particularly acute in smaller counties, who often had smaller networks of available resources.

> "Arm those case managers with the resources so that they're not making empty promises… If I'm going out there and saying, 'I can help you' [to clients], but I don't have anything to offer them, I can't get them into detox or it's going to be barriers to get them into mental health services, or there's really no housing available and I just want you to meet with me, clients see right through that." *Case manager*

Pilots with resources to provide ongoing staff trainings to build additional skills like motivational interviewing or trauma-informed care were viewed as supportive of staff retention and job satisfaction, with some Pilots also investing in trainings to support case manager mental health as they navigated the emotional demands of their work.

> "We're doing a lot of trainings in our self-care, which is really big… This job, field of work, can be very draining and overwhelming, and all of us feel that at times. There's weeks that are just, ugh. It's so hard. But I think we all try to do a really good job on doing what we need to do for self-care, and we are reminded to do that in trainings provided." *Case manager*

Documentation and data sharing systems implemented universally across case management teams and partnering organizations were reported as highly supportive of case manager work. The ability for all team members to track client services needed and already provided reduced duplication of work within teams and across service providers. Conversely, in Pilots where well-developed data infrastructure was lacking, case managers could be expected to double- or triple-enter client data into multiple repositories creating significant administrative burden on case managers.

> "We use a lot of different computer systems, and that's really frustrating. I mean, if you talk to anybody that works with people, that's going to be their least favorite part, obviously, is documenting. But we use a lot of different systems… it's just all these different systems that

we're using to get information and record stuff about clients. And that can be exhausting. It's five or six systems every single day." *Case manager*

Perceived workplace characteristics

Qualitatively, case managers cited many varying components of workplace characteristics including quality of relational coordination among team members, support from supervisors, and – corroborating the quantitative results – relationships with clients as influential on case manager job satisfaction and turnover. Multidisciplinary teams and frequent and collaborative communication among team members were reported to support case manager job satisfaction in every Pilot.

> "I would say the interdisciplinary team meetings are amazing resources. Definitely, like problem solving, or brainstorming together with other specialties has been really, really productive for us all. It's kind of like an opportunity to consult with the whole team. You know what I mean? I mean, that's literally what you're doing." *Case manager*

Many Pilots created regular team huddles, some daily by phone as case managers were out in the field and others weekly in person to check in on case manager well-being and address questions or concerns for the day's work that case managers reported to be essential.

> "Being a team and coordinating and communicating [is important]. You can't communicate enough. Our clients can be one way one minute, and the exact different way... You never know what you're going to get in our field, for sure… Because we got a lot of people who can't get into this housing, can't get into that housing, who are homeless, who have drug addiction. And so… We can't do that on our own… It's good to talk to [other case managers] and see what other resources and stuff they know." *Case manager*

Where teams were able to be geographically co-located at some point during their workday, case managers emphasized the supportive nature of informal conversations with team members and supervisors as questions or issues arose that were made possible by close proximity.

> "We're talking about a program that's supposed to be touching so many different things. So, we all come at it with slightly different expertise so that we can all help each other. And then one of the things that I think our pilot is different from most others, is that we do have all of our – everyone that directly works with clients, works out of the same office. So, our Care coordinators are also right next to our [supplemental security income] advocates, which is also right next to our nurse…they all work right next to each other. If a care coordinator has questions… they're literally sitting next to the person who's an expert in all of that and can actually immediately link their client." *Case manager*

Some Pilots also created case conferences that brought together multidisciplinary team members to discuss challenging client cases and leverage the team's diverse expertise in identifying resources or mapping out strategies for client support. Similarly, case managers highlighted the importance of building and maintaining personal relationships with hospital/emergency room and community-based service organization staff through regular communication to circumvent administrative barriers and place clients with needed services.

Case manager relationships with their supervisors were reported as key for case manager job satisfaction as supervisors could support staff by removing bureaucratic barriers in linking clients

with services; adjusting caseloads depending on case manager bandwidth and, in some cases, client acuity; and serving as a space to debrief a day's work or surface suggestions for improved workflows.

> "I talk to [my supervisor] every day. Technically it's once a week for supervision, so she'll look at me and she'll be like, 'You were here yesterday'… I really feel comfortable going to her and I tell her everything, all my barriers or anything that's going on, I'll be like, 'Okay, what do I do?' Every client is different and I just want to make sure that I do everything that I can do." *Case manager*

In Pilots with supervisor turnover, case managers reported frustration and significant challenges in carrying out responsibilities without support from individuals familiar with Whole Person Care. Case managers also emphasized that supervisors with training and experience different from case management work were less effective in supporting and guiding case managers through their complex responsibilities.

> "We've had so much turnover rate with our leadership. Like we've already had maybe two behavioral health directors… I didn't feel like I had any support... So, I didn't even know who to contact…Like, 'What are we? What is this? Who are we partnered with and why are we trying to help the patients?' But I didn't really get the educational part of this whole program, which really affected us and having that really sense and structure." *Case manager*

Between case managers and clients, trusting relationships were reported to be key for client engagement and connection to services. Case managers found that historic and ongoing mistreatment of clients interacting with medical and county services fostered mistrust in case manager outreach, a challenge that often required creative and persistent efforts to overcome.

> "A lot of times, like I think somebody was saying, there's so much trauma [clients have] already experienced. There's also a stereotype [about] service providers, too. 'You're coming in my business. You're trying to either take something away from me, or you're gonna get me in more trouble than I'm already in.'" *Case manager*

Additionally, since many clients identified as experiencing homelessness, severe mental illness, substance use, and other complex conditions, client stability and acuity could make case management work challenging. Turnover among case management staff was reported to be especially difficult for clients as they might open up and begin to trust a case manager just before being transferred to a new one, unexpectedly.

> "But we've definitely had a lot more staff [attrition] the past couple of years. I know it's been hard on the clients too. I've gotten clients who had gone through four case managers before they had me, and so that can be detrimental for the clients as well because they're just warming up to the idea that somebody else is there for them. And then two weeks later, or two months later, it's someone new, and they feel like they have to start over with that new person." *Case manager*

<u>Perceived job demands</u>

Related to case managers' perception of the work, the level of control or autonomy associated with that work, and experiences of burnout, most case managers reported high levels of flexibility in how, where, and when they met the responsibilities for their role as supportive of job satisfaction. Case

managers reported requirements around client caseloads and frequency of communication with clients each month, but could meet clients in their homes, encampments, or public spaces most convenient to them and could take a patient-centered approach to structuring case management plans to meet client goals. Day-to-day work was reported to be unpredictable as one client's unexpected crisis could consume an entire day's work.

> "On a typical day after we've gotten to know the clients, it varies. Obviously, paperwork, background checks, credit issues, criminal issues, these all tend to be barriers. A lot of it is hurry up and wait. When it comes to housing clients with various huge barriers, clients go missing a lot. So, then you're waiting for them to show up or to respond to somebody on the team so that we can connect with them again. It's a lot of running around, running after, and running in place, because that's what it feels like sometimes…A typical day for everyone is you've got this beautiful plan for this client and it all goes out the window by hour one." *Case manager*

Poor role definition within Pilot teams and low comprehension of case manager role among collaborating community-based organizations, especially in the earlier stages of Whole Person Care pilot implementation, was a significant challenge for case managers. Confusion around case manager responsibilities, accountability for particular clients, and workflows was frustrating for case managers as they navigated work. In Pilots where case managers were contracted from other organizations into case manager roles, a lack of clarity around time allocation between their existing role and responsibilities and a new Whole Person Care role was reported to be overwhelming and contributed to burnout for some. References to high levels of burnout were pervasive across all Pilots as case managers cited the intensity of the case manager role, compassion fatigue, and the combination of these factors exacerbating turnover among staff.

> "I think this is a very intense job, and you've got to be a special type of person to do it. We've all got into it because we want to take care and help others, but sometimes it's too intense, and [case managers] can't do it themselves. They'll find out something better, not as... I mean it's intense. This is not an easy job, and there's a lot of burnout…there's so many new faces all the time and there's a lot of turnover." *Case manager*

<u>Compensation</u>

Interview participants perceived compensation as a primary determinant of staff turnover in a Pilot. Pilots that paid case managers low wages were reported to have higher rates of turnover, while counties that braided external funding with Pilot resources to offer case managers higher salaries were perceived to have lower turnover.

> "…the reimbursement rate isn't adequate to necessarily retain case managers with the cost of living around here and that there is a risk of turnover that we've seen a little bit of already. The other thing…is burnout and step back. I didn't mention the ratios…but just recognizing that this work is extremely draining and just retention, just wanting to make sure that we're building in systems for retention." *Case manager*

<u>Workforce characteristics</u>

Many participants emphasized the importance of hiring case management staff for lived experiences concordant with those of WPC clients and general attitude toward the work, rather than hiring for specific skills or education levels.

> "That's something that, in terms of bonding with our [clients], I would definitely say is part of the job, too. Not only the listening and showing that compassion, but sharing pieces of ourselves sometimes is what it takes. Like I have been on food stamps. Then once I say that, and tell a little of my story, then they're like, 'Okay. She has been there herself. Even though she might not be there right now, now I don't need to be embarrassed. She can actually walk me through.'" *Case manager*

Citing the exposure to trauma, verbal abuse, and unsafe environments characteristic of their role, case managers shared that individuals who lacked a personal connection to the work or a passion for "making a difference in someone's life" were more likely to leave their role. Case managers earlier on in their careers were also perceived to have higher rates of turnover as these individuals sought out other opportunities for career advancement or additional schooling.

> "I would definitely say patience is key. Being able just to bear the environment that we are going into, it's not always the safest. It's definitely not always the cleanest… so we have to definitely think outside of the box and put ourselves in [our clients'] shoes so we can make them feel comfortable sometimes." *Case manager*

While previous work experience relevant to the role was perceived to mitigate some of the stressors associated with case management work, the holistic nature of the case manager role also created frustration for some. For case managers with clinical training, it could be difficult to operate in more of a multidisciplinary role without the ability to work to the top of their clinical license with clients. Individuals in community health worker or other non-clinical roles reported wishing they had the clinical training needed to help some clients during acute medical or mental health crises. Overall, case managers agreed that characteristics supportive of job satisfaction for individuals of all training backgrounds in the role included an ability to problem solve creatively and clear boundary setting with clients.

> "When I first started, I will admit, I'm extremely guilty, I answered the phone all the time. Seven o'clock at night. 10 o'clock at night. On the weekends and finally my kids were like, 'Mom. You're not at work. Get off the phone. Pay attention to me.' I had to realize like no, that's true. I need to start to set these boundaries and let these clients know that we're not a crisis response team." *Case manager*

Additional supportive characteristics included strong communication skills with clients, teammates, and organizational partners; confidence with time management and multitasking due to the operational complexity of the role; and a non-judgmental, authentic, and empathetic approach with clients of all backgrounds.

> "…being able to let people yell at you, and be a little angry when you set boundaries… It's hard for me sometimes, when your clients hurt your feelings… a lot of the stuff can't really be taught, necessarily. It's the ability to stay calm, if the client gets very, gets worked up or really anxious. You staying calm can help them be able to maybe reduce the anxiety levels. And maybe get them to focus on what the real goal is. Not always easy if they are yelling at you." *Case manager*

Discussion

We explored individual, interpersonal, and organizational factors associated with case manager intent to leave their role and job satisfaction across 26 case management pilots integrating medical and social services in California.

Our quantitative findings indicate that greater availability of resources and a supportive organizational climate was associated with lower case manager intent to leave their role. Conversely, burnout was positively associated with case manager intent to leave their role. Qualitative results support this finding and provide nuance by highlighting the importance of available resources to hire sufficient staff, provide needed skills-based and wellness trainings, and develop an effective data infrastructure to support case manager workflows and reduce administrative burden. For Pilots in smaller or more rural counties, the relationship between resources and case manager turnover could also relate to fewer available staff to hire into case management roles and fewer local community resources available to case managers when linking their clients with needed medical and social services. A supportive organizational climate, specifically with regard to supervisory support of case managers, was also validated through our qualitative findings indicating that supervisors played an integral role in removing administrative barriers for case managers, identifying and adjusting when caseloads became unmanageably high or complex, and problem solving through informal daily conversations. These findings are corroborated by existing literature describing supervisor impact on implementation climate, turnover, and job satisfaction.[64,96,98,105–107]

Higher age – specifically survey respondents 61 years or older – was highly correlated with a lower likelihood of leaving the case management role in the next 12 months which is consistent with the literature finding that older age and longer tenure in a role were associated with lower likelihood to intend to leave a role.[108] While the qualitative results do not speak to this finding, we hypothesize that individuals in lower wage roles, like case manager roles, may be motivated to stay in their role to prepare financially in advance of retirement. Case managers identifying as male, who were county employees, and did not have clinical training were significantly more likely to intend to leave their role. For non-clinical case managers, the qualitative results indicate that some individuals of this type of training background experienced frustration in their role due to feeling unable to support the medical acuity and complexity of many of their clients without clinical training. Other non-clinical case managers were described as leaving for new opportunities such as an advancement on the career ladder or pursuing further education. Finally, tenure in the case management role over time also increased intent to leave, perhaps due to the intense and demanding nature of the role.

Quantitative findings related to case manager job satisfaction similarly indicate an inverse relationship between burnout and job satisfaction. Qualitative results corroborate this finding as many case managers shared experiences of significant compassion fatigue, burnout, and a need for boundary setting with clients because of the intense and sometimes traumatic and unsafe nature of their work. Case managers reported struggling with the balance between a deep commitment to their clients and maintaining clear boundaries between work and non-work hours. Related to this finding, we observed a strong positive correlation between the quality of client-case manager relationships and case manager satisfaction in their role. The pro-social motivation expressed by many case managers, qualitatively, detailed a strong internal motivation to serve, support, and better the lives of their clients. Case managers described working on weekends, leveraging personal connections with community resources to link clients to services, and persistently showing up for clients to create non-judgmental, trusting relationships. The effects of emotional labor performed by case managers and their relationship with job satisfaction and burnout are well documented and motivate a need

for multi-level interventions to mitigate the harmful impacts of this type of work on individuals' wellbeing.[67,68,86,109]

Finally, a supportive organizational climate was highly correlated with job satisfaction among case managers. Quantitatively, organizational climate referred to case managers' opportunities to provide feedback on work processes, supervisor support, opportunities for creativity, cooperation, conflict resolution, opportunities to express opinions, and perceptions of safety for staff to speak up about important topics. Qualitatively, case managers spoke to the importance of visible, knowledgeable supervisors, a shared language and mutual respect among team members, and a culture of out-of-the-box problem solving to ensure clients with complex needs received necessary services. Case managers spoke positively of the ability to voice suggestions to supervisors or seek help from team members as the psychological safety associated with these behaviors helped some case managers feel less alone in facing the intense challenges of their daily work. Interventions seeking to improve case manager job satisfaction should focus on changes at the organizational level to promote wellbeing.

Considering equity

This study highlights the individual and interpersonal characteristics of cross-sector case management roles that contribute to case manager intent to leave their role and job satisfaction, as well as the structural organizational factors that influence these outcomes. The inherent pressures and emotional demands of case management relationships with clients experiencing complex medical and social needs because of histories of marginalization and discrimination, especially within resource constrained organizations and community settings, are important to highlight considering the intersectionality of individuals working in frontline case management roles. Case managers who themselves often bring lived experiences concordant with the clients they serve, identify as individuals of marginalized racial and ethnic backgrounds, and fall in low to middle class socioeconomic statuses carry the inequitable and disproportionate weight of these challenging characteristics of the case management role. In our study, job satisfaction and intent to leave were not associated with individual characteristics, but were instead associated with modifiable factors at the system, organizational, and interpersonal level.[68,78,96,99,110,111]

Limitations

Several limitations should be taken into consideration in interpreting results of this study. First, the cross-sectional nature of the quantitative study meant we could not assess causal relationships. Small sample size and relatively low intent to leave or job dissatisfaction among survey respondents also limited statistical power of these analyses. However, thematic analysis of qualitative data collected at two different points in time confirmed that case manager discussion of factors affecting job satisfaction and intent to leave did not change over time and were consistent with quantitative results. The only observed variance was higher role ambiguity for case managers in later years due to both the COVID-19 pandemic and the impending end of the pilot.

Second, most interviews with case managers were conducted in a group format, which may have limited candor in responding to sensitive questions around intent to leave their role and job satisfaction. In addition, in pilots with large numbers of case managers, we did not have insight into factors that may have influenced respondent selection for interviews. While it is possible that case managers who were exceptional in some way may have been invited to participate in interviews, we found that the range of responses observed in the data were well-balanced as they reflected a wide spectrum of perspectives and experiences. Finally, though lead entities were asked to invite fewer than five attendees to the group interviews as is standard protocol for this type of data collection,

some Pilots invited up to nine participants. For these larger interviews, a focus group approach may have been more methodologically appropriate.

Conclusion

A deeper understanding of the multi-level factors influencing case manager intent to leave their role and job satisfaction can support organizations implementing case management programs and have positive secondary effects on case management program cost, quality, and outcomes. Our findings indicate that interventions aiming to address these challenges should focus efforts on changes at the organizational and interpersonal levels for greatest impact.

Sustainability of California's Whole Person Care case management pilots

Introduction

Health systems increasingly implement case management programs to support cross-sector integration of medical and social services for high-risk, high-need patients.[34–36] Effectiveness of these prevention-focused programs, like many public health programs, is often assessed up to the point at which external funding ends or after a brief post-period is evaluated.[45,46,112] Insufficient attention to the sustainability of these programs can undermine financial and time investments in implementation research as decreased fidelity to program implementation, diminished program benefits or outcomes, and poor fit within a given setting can be observed over time.[45–47] A systematic review assessing sustainability of healthcare improvement programs, like these case management programs, found that fewer than half of the 125 studies assessed sustained high levels of implementation fidelity in the first year post-implementation to two or more years afterward.[46] Yet, existing sustainability frameworks have not been applied to understand factors influencing sustainability of case management programs integrating medical and social services for high-risk, high-need Medicaid patients. Failure to understand why these programs succeed or fail in sustaining their core activities may also exacerbate inequitable distribution of services, resources, and benefits from these programs.[6,113]

We assessed factors influencing equitable sustainment of California's Whole Person Care (WPC) Pilot program, which tested whether provision of care coordination, housing assistance, and other social services could improve cost and outcomes of care for high-risk, high-need Medicaid enrollees. WPC was implemented between 2016-2021 as part of California's Section 1115 Medicaid waiver. The total budget was $3 billion, which included $1.5 billion investment from participating Pilots and $1.5 billion in matching funds from the Centers for Medicare and Medicaid Services (CMS). Twenty-five Pilots representing the majority of counties and one city in California implemented WPC. Pilots were required to provide care coordination and demonstrate increased access to social services, but otherwise had flexibility to tailor their programs to reflect local needs and available resources. The state also required pilots to be implemented by cross-sector partnerships and to serve at least one of the following populations of focus: individuals with high care utilization, chronic conditions, interaction with the justice system, serious mental illness and/or substance use disorder, and those experiencing or at risk of homelessness. Across Pilots, there was a tremendous amount of heterogeneity in which services pilots provided, how services were provided, and which populations of interest they served.[12–14] Statewide evaluation findings show that WPC was effective at reducing care utilization and cost of care for enrollees.[114]

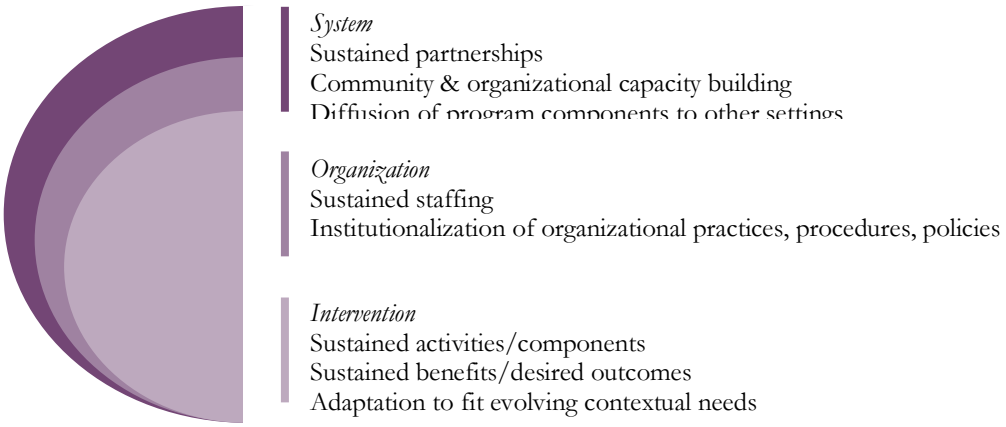
In 2022, California implemented California Advancing and Innovating Medi-Cal (CalAIM). CalAIM is a multiyear initiative aimed at transforming California's Medicaid program by reducing administrative complexity and introducing payment reforms to incentivize better identification and management of patients' medical, behavioral health, and health-related social needs, improved access and quality of care, and reduced health disparities.[15] New Enhanced Care Management (ECM) and Community Supports (CS) benefits within CalAIM were intended as a sustainability mechanism for WPC, but were designed before the final evaluation of WPC was complete.[15] ECM includes "intensive coordination of health and health-related services" and were required to be provided by managed care plans, while CS link patients with social services such as housing supports and were recommended, but optional to provide. Medicaid managed care plans in California are required to provide ECM to eligible beneficiaries but provision of CS is optional.

The decision to sustain WPC into CalAIM was made by multiple entities: 1) participating organizations, including Pilot lead entities and their partners, who needed to be willing to contract with managed care plans to provide ECM and/or CS; and 2) managed care plans who decided who to contract with, and how. Pilots were required to work with Medicaid managed care plans to transition eligible WPC enrollees to ECM and CS. The state also required Medicaid managed care plans to contract with WPC Pilot entities as ECM providers, except under exceptional circumstances.

Conceptual model

Sustainability refers to "the continued use of program components and activities for the continued achievement of desirable program and population outcomes," but can be defined and operationalized quite differently depending on whether the desired outcomes include continuation of program benefits, activities, partnerships, organizational practices, procedures, and policies, attention to the stated issue, or program diffusion or replication.[45] In defining sustainability for this study, we reviewed major sustainability frameworks from multiple disciplines to identify constructs most frequently used to measure sustainability.[6,45,47,115–118] These constructs are presented in Figure 6, organized by level of influence (e.g., intervention, organization, and system or societal context). At the intervention level, key constructs include sustained intervention activities, sustained benefits or outcomes, and adaptation to fit evolving contextual needs.[6,45,47,115–118] At the organization level, sustained staffing to support intervention activities and institutionalization of intervention activities as routine in organizational practices, procedures, and policies are most referenced.[6,45,47,116,118] Finally, at a system level, sustained partnerships, support for community & organizational capacity building, and diffusion of program components to other settings are most represented.[6,45,47,115,118] Figure 6, below, presents a conceptual model of these multi-level factors used to operationalize sustainability.

Figure 6. Defining sustainability: A conceptual model



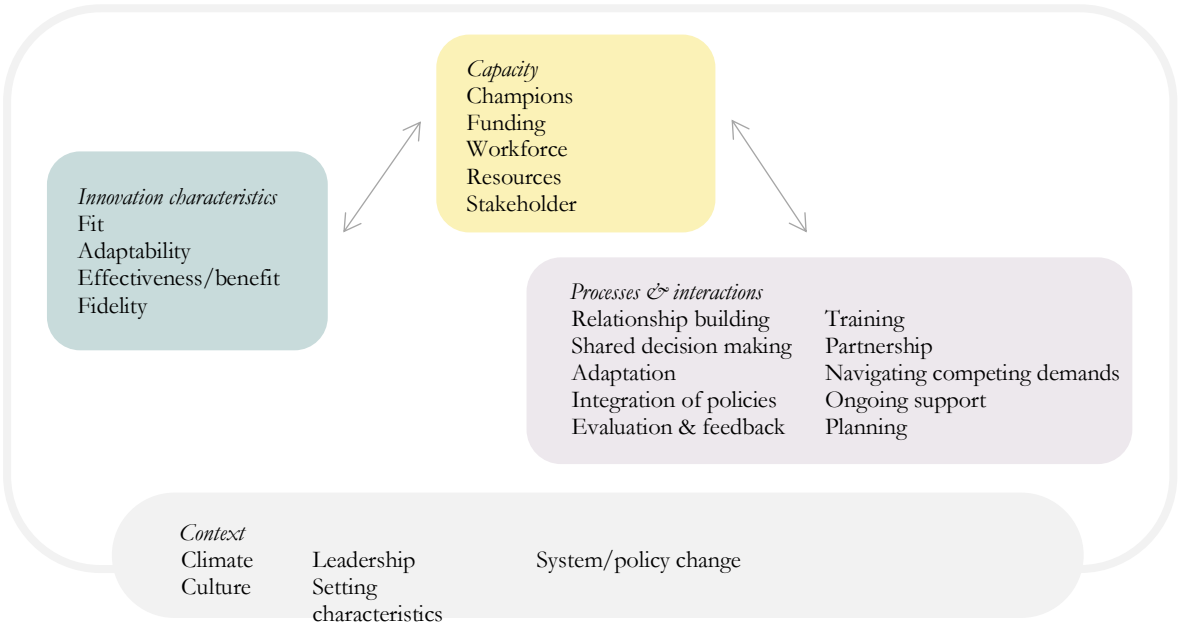
While this conceptual model defines sustainability broadly, we defined sustainability as the continuation of core program activities through CalAIM led by individuals actively engaged in the leadership and delivery of program services during the WPC pilot period.

Factors hypothesized to influence sustainability

Factors influencing sustainability that may inform this analysis include: Adaptability of the intervention; opportunities for capacity building, especially within low-maintenance sites; multi-stakeholder perspectives about barriers to intervention sustainability over time; multi-stakeholder perspectives about supportive strategies for maintaining the intervention over time; and opportunities for de-implementation.[6,119] Adding additional detail to these domains, Wiltsey-Stirman et al. provide a comprehensive summary of influences on sustainability[46] identified through a systematic review of 125 studies that we have outlined in the conceptual model below (Figure 7).

Although the authors do not indicate relationships between these domains, we view constructs within the *capacity* domain as the human, social, and economic capital that influences and is influenced by *innovation characteristics*. *Capacity* factors also influence and are influenced by factors within the *processes and interactions* domain, a domain we interpret to be the mechanisms by which capital is transformed to influence sustainability.

Figure 7. Factors influencing sustainability



Methods

Study design

We conducted a thematic analysis of sustainability across all Pilots to identify and analyze patterns, as well as outliers, in factors influencing sustainment of WPC pilot components.[40] Use of semi-structured interview data provided a rich understanding of the mechanisms that informed sustainability across pilots. We considered WPC services as sustained if any WPC lead entity or WPC partner was contracted by a Medicaid managed care plan as an ECM or CS provider in 2022. Where county participation in CalAIM was led by an entity or organization that had not participated in WPC activities or no ECM or CS components were sustained, we determined WPC had not been sustained.

Data sources

Data for this study are drawn from the statewide evaluation of California's Whole Person Care initiative, led by researchers at the University of California, Los Angeles and the University of California, Berkeley. The statewide evaluation collected extensive data on program implementation and outcomes. This analysis draws on in-depth, semi-structured interviews with pilot case managers, middle managers, and administrators collected during Summer 2021. Interviews were conducted via Zoom and were audio recorded and transcribed with participant consent.

Supplementary data sources for this analysis include descriptive data about individual Pilot characteristics drawn from bi-annual surveys of all pilots between 2018 to 2021 and data provided by the state of California indicating the ECM and CS providers contracted by Medicaid managed care plans in each WPC-participating county as a metric of participation in CalAIM.

Analysis

Using Nvivo 12.0 (QSR International Party Ltd., 2022), we coded 58 semi-structured interviews using a deductive approach structured around the conceptual model of influencing factors shared above (Figure 7) to explore factors influencing WPC pilot sustainability. The codebook consisted of deductive codes for each construct influencing sustainability from the conceptual model and was agreed upon by the research team. Deductive code definitions were refined as needed to better fit the data. Qualitative data were coded using a critical perspective by a trained qualitative researcher (NS) and code refinement, questions, and key findings were discussed with another researcher deeply familiar with the WPC evaluation (EC) to check validity.[104,120]

Results

Characteristics of Whole Person Care pilots

Of the 26 Whole Person Care pilots, 22 pilots were identified as having sustained Whole Person Care into CalAIM according to our criteria for sustainment. The remaining four counties chose not to sustain their pilots before the Whole Person Care pilot period ended (n=3) or decided not to sustain their pilot through CalAIM once completing the full pilot timeframe (n=1).

Of the 22 pilots that sustained WPC into CalAIM, there was some variation in whether pilots chose to sustain only ECM (n=1), only CS (n=10), or both ECM and CS (n=12). There were also a mix of urban (n=11), suburban (n=10), and rural (n=1) counties among those who sustained.[121] There was also heterogeneity in whether counties chose to contract out all (n=9), some (n=8), or none (n=6) of their pilot infrastructure to partner organizations.

Among the four pilots that did not sustain WPC, pilot activities were not sustained by any entity even outside of our criteria for sustainment (i.e., either the WPC LE or a WPC-engaged partner). Non-sustaining pilots were primarily rural (n=3), though one was categorized as suburban (n=1). Of these pilots, each chose differently whether to contract out all (n=1), some (n=1), or none (n=1) of their pilot infrastructure to partner organizations, and one pilot did not advance far enough into the implementation process to fall into any category.

Overview

Factors influencing sustainability of WPC into CalAIM for all pilots included: 1) program adaptability and flexibility (*innovation characteristics*); 2) funding structure and reimbursement requirements (*capacity*); 3) program leadership (*context*); and 4) whether pilots chose to build out

program infrastructure internally or contract these core components from partner organizations (*capacity*). Interview participants perceived system and policy changes associated with CalAIM as influencing these four broad factors in ways that threatened sustainability of WPC program service delivery and impact for many. In rural counties, compared to other medium- or larger-sized counties, these changes were particularly difficult to withstand and were reported to directly impact LE decisions not to sustain the program.

Adaptability & flexibility

The flexible nature of the WPC pilot period was perceived by many to support program effectiveness, impact, and sustainability. Pilot administrators shared that the opportunity to test workflows using human-centered design, add services depending on client needs, and incorporate s staff input through PDSA cycles strengthened implementation over time. However, in advance of the CalAIM transition, these same leaders expressed concern about the rigidity and narrow scope of approved activities and staffing types through CalAIM and the impact that might have on sustainability of the program.

> "One of the things we're a little bit concerned about under CalAIM is I think it's going to have to get a little bit more structured when it comes to documentation, productivity, all those things that make the nuts and bolts of the financing work, and we really luxuriated in the pilot mode of being able to be flexible and just deliver services in a way that our patients need them, and I'm worried that we're going to lose a little bit of that going forward." *Manager, urban county, sustained*

Given an expectation among some LEs that the first year of CalAIM implementation might be more pilot-like as the challenges of initial implementation were worked through, the lack of autonomy to tailor program services and workflows to meet the needs of staff and clients during that process was of concern. Pilot LEs and staff expressed pride in the time and effort they had invested in adapting their pilots to achieve effectiveness during the WPC pilot period and were hopeful that they might be able to apply best practices from their extensive implementation experience during the roll out of CalAIM.

> "We're looking forward to transitioning into [CalAIM], and using what we learned with Whole Person Care for this…I think the biggest good points about it is that we've learned what works, and we've learned how collaboration looks like and what coordination looks like. And I think with ECM…we have the advantage of recruiting those new candidates, so we absolutely know now how to interview and what to look for. I think that having, again, that great staff in place is just going to work out once again." *Manager, suburban county, sustained*

For rural counties, this anticipated lack of adaptability through CalAIM was particularly challenging as these smaller counties learned early on during the WPC pilot period that their assets and needs differed from their peers in larger counties. The equal, though perhaps not equitable, resource distribution and reporting expectations broadly mapped out in CalAIM did not take into consideration the unique needs of the clients, and human and social capital available, in rural counties and contributed to the decision to not sustain for most of these counties.

> "It's like steering a ship, right? Even though we're small, we weren't able to be as agile as needed to pivot into PY6 with the limited information that we had. If we had had that

information in August, we would definitely got up and we would have continued, but it didn't make sense when we already started to decommission the program." *Supervisor, rural county, did not sustain*

"So, we have to think of a program design [for CalAIM] that retains what's most important, but is not too administratively complicated, because we're not going to get the money [from CalAIM] to be able to manage anything administratively complicated. And honestly, [the Whole Person Care pilot is] going to look different because of the money, otherwise I think we would have carried forward this project almost the way it is exactly. We would have made some program design changes, but we felt like we had learned enough that we were pretty close to what works well for our population." *Program manager, rural county, sustained*

Funding structures & reimbursement rates

At the time interviews were conducted, about four months in advance of the start of CalAIM implementation, pilot LEs and staff had not received final information about the funding they would receive to continue providing care management and community support services through CalAIM.

"Even right now, we don't have rates for ECM services. So, it's really hard… and this thing is supposed to start in four months. How are we supposed to make a determination on how much we can bring in on services if we don't even have rates? So, it's stuff like that where there's kind of like a lack of that sustainability." *Program manager, urban county, sustained*

For some counties, while the uncertainty around funding was not ideal, LEs remained confident that WPC pilot services and staff would be sustained into CalAIM independent of CalAIM funding due to stable sources of external funding that could be either braided into funding available through CalAIM or used directly.

"I think our multi-disciplinary frontline worker driven approach will continue with CalAIM. And even if there aren't sufficient resources to cover it, I think our health system [is]…kind of doubling down on Whole Person Care, even if the resources to support that maybe aren't there, and so that's kind of exciting. That's not where I would have expected we would've ended up, but I think the impact of care management has really had an impact on our system." *Manager, urban county, sustained*

Other pilot LEs and staff shared that funding uncertainty impacted staff turnover as several counties experienced an exodus of frontline staff who were unsure of the sustainability of their roles through CalAIM. Staffing was also impacted as counties heard that the shift to an insurance-based model of service delivery and reimbursement through CalAIM might mean that the unlicensed wellness coach, community health worker, and peer case management teams they had invested in through WPC might not be able to bill for their services and would need to be let go.

"I don't see how we can continue the wellness coach model...because we will not be given enough money [through CalAIM] to do the kind of hands-on work that wellness coaches do… It's sort of being destroyed…you can't sit there and be like, 'We have an hour and then your time's up,' if you want to build a trusting relationship." *Program manager, rural county, sustained*

The repercussions of losing a non-clinical frontline workforce, especially those with lived experience concordant with the clients they serve, were expected by some to impact client engagement and successfulness in CalAIM ECM as concordance between staff and client lived experience and background was perceived to support sustainability.

> "If part of the goal of CalAIM is to provide more upstream services that people go to, instead of going to the ER, because it's cheaper, right? Well, if you want that to happen, you have to have services that they choose. People go to the emergency room, because it works. And if you want to do something different, you have to have something that they choose… So, you have a workforce that is able to provide that connection with them. That's what the purpose of a peer and a consumer community health worker is. It's a service that speaks to them and they feel comfortable in. You need to have that workforce and you need to have a program design that enables that." *Planning director, urban county, sustained*

Shifting from funding services for a range of populations of focus (e.g., individuals experiencing severe mental illness, substance use, homelessness, high service utilization, and more) in WPC to funding a narrower group of clients in CalAIM was also reported as impacting WPC sustainability.

> "I think that a lot of our core will be sustained [in CalAIM], but I think the main thing that won't is the number of patients we can see and the number of people receiving services…California really chose a minimalist approach to CalAIM in terms of the number of people that they are deciding to see and really focusing on the most acute patients… so I'd say limiting the scope of ECM to the very restrictive enrollment criteria that California has chosen to do, I think it really kind of minimized the impact and the reach on Medicaid beneficiaries across the board." *Quality improvement manager, urban county, sustained*

While concerns around sustainability of funding and the impact funding changes might have on services and staff were expressed by almost every pilot, non-sustaining pilots reported funding uncertainty as a primary reason they ultimately could not sustain WPC through CalAIM. Especially in the rural non-sustaining counties, a lack of external funding and unrestricted funds to sustain needed staff and partnerships without sufficient funding through CalAIM was ultimately a dealbreaker for WPC sustainability.

> "And so, we passed on that opportunity [to sustain WPC]. From my perspective, I was not going to deploy a team that did not have the adequate resources, funds, or personnel to be able to do the work that was necessary. I mean, I think we could make an argument that the WPC team that we did put out there for what it was really achieved excellent outcomes, excellent engagement. And I can sit here and tell you that it probably deserves three times as much funds that we got to really do the level of service that was adequate to the need in [our] county." *Director, suburban county, did not sustain*

Shifting program leadership to managed care plans

Governance structures in CalAIM required leadership over what was WPC service delivery to be shifted from county or community-based organizations to Medicaid managed care plans. Interview participants repeatedly emphasized the cultural differences between their organizations and leadership styles and those of the managed care plans. Specifically, managed care plans were perceived to be "medical models" operating from a business standpoint with financial priorities that

differed from the mission-driven work of the county or community-based LEs who described themselves as client-centered and operating from a public health perspective.

> "I think another challenge of this transition is like all of it sort of moving to the health plan directly and them sort of being this core administrator. I think we're anticipating to contract with health plans or so, but a health plan has a different outlook than the public health department or the county entity. And I think there are a lot of unknowns still in terms of the outlook and sort of how that will go, but I think that's a big transition I wouldn't underestimate, sort of what that will mean to patients or to services sort of continuing." *Project manager, urban county, sustained*

Further, LEs expressed that fidelity to a patient-centered model as designed and implemented through WPC would be challenging under managed care plan leadership. Beyond the need for reimbursement of services carried out by a workforce with concordant lived experience with clients, as mentioned previously, LEs shared that basic components of case management needed to enroll and engage high acuity clients (e.g., visiting encampments to identify and engage unhoused clients) would no longer be billable through the CalAIM managed care plan model.

> "We've gotten to know the [managed care plan] a lot better during CalAIM planning... and we've actually invited our managed care plan to come to [our county] on a field trip to understand more what we're doing around homelessness. But they haven't had time yet…while they are verbally supportive of the work we do, and some of them at least understand the importance of care coordination platform, the data sharing arrangements and everything that we have going on. We have found them a difficult partner… I think it comes down to a different philosophy." *Director, suburban county, sustained*

Several LEs reported positive relationships with their Medicaid managed care plans developed and sustained throughout the WPC pilot period. These relationships were emphasized as supportive of sustainability during the transition to CalAIM. Some managed care plans had participated in the design, implementation, and ongoing support of WPC in their county and were considered a collaborative partner during pilot implementation. However, LEs working collaboratively with their managed care plan partners shared some anticipation around how their relationships would shift from partner to manager through CalAIM and the impact that shift might have on sustainability of core components of WPC in their county.

> "I think that changing Whole Person [Care] and giving health plans the opportunity to decide what parts of WPC they want to implement is taking away from the success of the program. I think that [CalAIM] is a great initiative and obviously it's another pilot…and we're going to have to roll with it, roll out the kinks and hopefully develop. I think that through WPC we've developed a pretty good relationship with the health plans, but I know it's going to look differently because right now we're *partnered* with the health plans versus in CalAIM we will be *managed* by the health plan." *Program director, urban county, sustained*

Non-sustaining counties echoed similar experiences, with two counties reporting a strong relationship with their managed care plan that might have facilitated sustainability of WPC, and another county reporting that lack of communication with their managed care plan, despite LE efforts to connect, weakened sustainability for their pilot.

> "Even as [our WPC pilot] wound down, access to the managed care health plan case management staff helped with linking clients to additional services…the managed care plan nurse manager continued to attend all WPC meetings, including multi-disciplinary meetings. Throughout our time together, she has provided invaluable troubleshooting within the health plan, knowledge of programs and assisted with clinical insights for our largely social work and behavioral health staff." *Director, rural county, did not sustain*

Building out compared to contracting out

Finally, interview participants highlighted a distinction in ease of sustainability between WPC pilots that opted to build out pilot infrastructure "in house" by developing data infrastructure, hiring staff, and providing case management services needed to sustain WPC during the pilot period compared to those who opted to contract other organizations to provide and sustain these services on the LE's behalf. LEs with the resources and infrastructure available to invest in building pilot infrastructure within their organization or within the county reported greater confidence in their ability to sustain core components of their WPC pilot through CalAIM.

> "I think not to pat ourselves on the back too much, but I think we're really well situated to do this transition to ECM smoothly without a major disruption in services. And I think that's because of the way that we've developed a long-term infrastructure and developed a system of one large case management program, basically...And some of these other LEs that have broken apart these services into these tiny little bundles of specific priorities and criteria and licensure, they're struggling a lot more than we are to transition." *Administrator, urban county, sustained*

LEs that invested WPC funds in developing robust data infrastructures to facilitate data sharing and data management within and across organizations during the pilot period emphasized the impact of this decision on sustainability. Investing in building out a data infrastructure was reported to improve partner integration and sustained engagement due to the immediate benefits of seamless data sharing across entities. Additionally, LEs shared excitement about opportunities to scale their data infrastructure through CalAIM.

> "And I think definitely that the data infrastructure was good. I hesitate to overstate the impact just because there have been very simple things that have helped WPC. I think data agreements we moved the line on that, and also data sharing…It's sort of helping into the next program. CalAIM will probably have an easier sort of conversations around data infrastructure because of the work done in WPC." *Information technology product manager, urban county, sustained*

Conversely, LEs who contracted out service delivery and staff felt less sure of their ability to sustain partnerships with these contractors through CalAIM due to insecurity around funding and other changes associated with the policy change.

> "I think that that's been challenging to not have the actual staff [because we contracted them]…the thought process here was, 'Well, it's a pilot, and then we're going to hire these folks. And then if there's no continuation, we're going to have to let all these people go.'…[contracting out was] a great idea, [but] there's also a way in which it hasn't been a great model because, for example, now, as we try to transition into CalAIM, we don't have

> staff. And as we're starting to see, our partners are pulling their staff to do [other] work." *Program manager, urban county, sustained*

One community partner shared by multiple WPC pilot counties commented on the differences between a county that did sustain their pilot into CalAIM and one that did not, mentioning the decision to build out or contract out services as primary factor for sustainability. This experience was echoed by another county that opted not to sustain their WPC pilot through CalAIM.

> "[Urban] County did somewhat of the opposite of [Suburban] County in that they worked really hard to create systems versus putting all their eggs in one basket, on a particular service or service team or whatever to say, 'Hey, this team is going to be the thing that transgresses and collaborate and brings things in.' They spent a lot of energy on a system. And that system, I think, it will stand the test of time, versus an individual program or team that runs out of money and then has to look to sustain itself, which obviously didn't work in [Suburban] County." *Community-based organization director*

Discussion

Broadly, factors influencing sustainability characterized experiences shared across pilots rural and urban, small and large. What determined whether these factors led to sustainment or not of WPC through CalAIM is more complex. For most smaller, rural counties, uncertainty around CalAIM funding, inability to tailor CalAIM to local contexts, transfer of leadership to managed care plans, and built versus contracted out pilot infrastructure irreparably impacted their ability to sustain WPC. Our results suggest that limited access to financial, human, and social capital in small counties impacted their ability to withstand the tremendous uncertainty associated with sustaining WPC through CalAIM while honoring their commitments to their staff and clients. Medium- and larger-sized counties with greater access to unrestricted capital of all types could weather the lack of information informing sustainability and prepare to maintain services, partnerships, and staff through the CalAIM transition independent of the state's investment in WPC sustainability. These findings are supported by literature demonstrating inequities in resource allocation between rural and non-rural communities and calling for health policy initiatives to consider differences between rural areas and their suburban and urban peers to support equitable implementation and outcomes.[122–124]

Two counties present anomalies to these findings: the only rural county to sustain WPC, and the only suburban county to not sustain WPC. The rural county sustained WPC by transitioning case management services (i.e., ECM) to a WPC partner. In implementing WPC, this rural county had also contracted out all WPC services to a community-based partner, indicating this county also lacked resources needed to build out needed infrastructure "in-house." Further analysis of leader and staff perspectives on WPC sustainability from this county surfaced a sentiment that CalAIM "is not going to be a continuation of Whole Person Care, I don't even want to call it Whole Person Care" and that rather than characterizing CalAIM as sustainment of WPC, "Whole Person Care ended, and [CalAIM] is something else that's not as good". While the most recent evidence regarding sustainability shifts emphasis away from fidelity of implementation of an intervention as a primary indicator or measure of sustainability, maintenance of core components of interventions while tracking thoughtful adaptations in response to contextual needs is recommended.[6,47,119,125] A follow up study exploring CalAIM implementation and effectiveness is needed to better understand how adaptation or removal of WPC core components impacted sustainability.

Similarly, the only suburban county to not sustain WPC also chose to contract out all WPC services to community-based partners and did not enact any meaningful internal systems change. Key informants in the county felt that the lack of meaningful integration of care limited their Pilot's reach and impact (e.g., this county enrolled much fewer clients than other, similarly sized suburban counties). Ultimately, the lead entities from this county shared that the perceived lack of effectiveness during the WPC pilot period and the decision to contract out their workforce meant that the county did not have the resources needed to transition their pilot into CalAIM. These results are supported by organizational theory – specifically, transaction cost economics (TCE). TCE posits that organizations structure themselves such that both production (i.e., building out infrastructure within the organization) and transaction (i.e., purchasing assets from suppliers outside the organization) costs are minimized. While transaction costs include ex ante costs of developing relationships and ex post costs of monitoring and potentially losing contracted relationships, sometimes organizations find ongoing transaction costs more tolerable than the higher upfront costs of production.[126,127] While the decision to contract out services may have been logical for the county in implementing WPC, it ultimately weakened their ability to sustain services once leadership was transitioned to Medicaid managed care plans in CalAIM.

Considering equity

Assessments of sustainability are inextricably linked with the equitable implementation of these interventions.[6,113,119] In the context of WPC's sustainability through CalAIM, interview participants raised several concerns around equitable sustainability. The narrowing of client eligibility and continued ineligibility of individuals with undocumented citizenship status was reported to exclude several client populations with significant need in favor of a few groups of focus. Additionally, under the CalAIM reimbursement model, some non-clinical frontline staff with lived experience similar to that of the clients they serve such as wellness coaches, community health workers, and peer supports were no longer sustainable to include in the workforce as their services were no longer billable or measurable toward CalAIM metrics. This loss of staff with client-concordant backgrounds was believed to greatly reduce sustainability and equitability of WPC staff, client engagement, and program effectiveness through CalAIM. Finally, the broad shift away from a holistic view of patient health toward a medical model of integrated case management enrollment, engagement, and reimbursement was perceived to remove much of the person-centered characteristics of WPC that supported equitable inclusion of the most historically marginalized members of communities.

Limitations and future research

A primary limitation of this work was the small sample of counties that did not sustain services, making systematic comparison of sustainers and non-sustainers less feasible. An additional limitation of this study is the time frame in which data were collected; while data on sustainability were collected almost a year after initial CalAIM implementation, interviews regarding factors affecting sustainability were conducted during the transition to CalAIM rather than after. Additionally, we used a narrower definition of sustainability for the purposes of this study, which could be expanded upon in future research. Future research should also include a follow up evaluation with WPC administrators, middle managers, and staff, as well as managed care plans in each county, to better understand how core components of WPC were or were not sustained.

Conclusion

Program adaptability, a transparent funding structure, shifts in program leadership, and built versus contracted out program infrastructure influenced whether counties were or were not able to sustain WPC pilots into CalAIM. Integrated case management programs that work across sectors to address the social determinants of health, like Whole Person Care, should consider these factors to inform future implementation, evaluation, and sustainability of similar programs in other settings.

Conclusion

This dissertation assessed equitable implementation and sustainment of California's Whole Person Care (WPC) Pilot program, which tested whether provision of care coordination, housing assistance, and other social services could improve cost and outcomes of care for high-risk, high-need Medicaid enrollees. Developed to bridge the gap between evidence generation and practice-based uptake of the scientific literature, implementation science offered the most relevant tools to assess implementation and sustainability. However, until recently, implementation science models, theories, and frameworks did not attend to factors related to health equity. This dissertation advances the fields of implementation and health services research by integrating evidence and tools from both bodies of work with a novel focus on equity.

Chapter 1 describes application of a conceptual framework integrating the Health Equity Implementation Framework with key levels of organizational analysis to a longitudinal set of qualitative data to identify factors related to equitable implementation of CommunityConnect. This adaptation of the Health Equity Implementation Framework supported identification of multi-level factors influencing equitable implementation, including the importance of considering and actively planning for intervention upon systemic factors hindering equitable engagement of historically marginalized groups, organizational readiness for equitable implementation, and investment in multidisciplinary staff wellness through structural, interpersonal, and financial supports.

Chapter 2 explored staff turnover and job satisfaction among individuals in case management roles performing cross-sector coordination of medical and social services for patients receiving Medicaid using a concurrent mixed-methods analysis. Qualitative and quantitative analysis of the relationship between theoretically grounded individual, interpersonal, and organizational factors and case manager intent to leave their role and job satisfaction in a sample of frontline staff employed by Whole Person Care pilots across California highlighted the supportive role of organizational structures and policies in reducing staff turnover and promoting job satisfaction, while also identifying the role of higher staff burnout in negatively impacting both outcomes of interest. Relationships with clients and the related pro-social motivation among staff were shown to have a strong and significant impact on job satisfaction.

Chapter 3 assessed equitable sustainment of California's Whole Person Care (WPC) Pilot program to examine the extent to which WPC pilots were sustained, and factors that differentiated Pilots that were able to sustain WPC from those that did not. Factors influencing sustainability characterized experiences shared across pilots rural and urban, small and large, but county size, rurality, and available resources ultimately determined whether these factors led to sustainment or not of WPC through CalAIM. For most smaller, rural counties, uncertainty around CalAIM funding, inability to tailor CalAIM to local contexts, transfer of leadership to managed care plans, and built versus contracted out pilot infrastructure irreparably impacted their ability to sustain WPC.

This dissertation highlights the importance of organizational-level factors in influencing equitable implementation and sustainability of California's Whole Person Care initiative. The pragmatic findings outlined in each of its chapters can and should inform future implementation of similar integrated case management programs delivering social and medical services to address the holistic needs of historically marginalized individuals, equitably.

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