

Does a Video Chat Referral Process Help Families With Children Who Have Medicaid to Initiate Mental Health Care?

Tumaini R. Coker, MD, MBA
Seattle Children's Research Institute
2001 8th Avenue, Room 650
Seattle, WA 98121

Lorena Porrás-Javier, MPH
UCLA Children's Discovery & Innovation Institute, Geffen School of Medicine at UCLA
Box 951752
10833 Le Conte Avenue, Room 12-476
Los Angeles, CA 90095

Institution receiving the PCORI award: Seattle Children's Research Institute

Original Project Title: Improved Access to Mental Health Care Using a Telehealth-enhanced Referral Process in Pediatric Primary Care: A Cluster Randomized Trial

PCORI ID: IH-12-11-4168-IC

HSRProj ID: HSRP20143009

ClinicalTrials.gov ID: NCT02396576

To cite this document, please use: Coker TR, Porrás-Javier, L. (2019). *Does a Video Chat Referral Process Help Families With Children Who Have Medicaid to Initiate Mental Health Care?* Washington, DC: Patient-Centered Outcomes Research Institute (PCORI). <https://doi.org/10.25302/8.2019.IH.12114168IC>

Table of Contents

ABSTRACT.....	4
BACKGROUND.....	6
STAKEHOLDER AND PATIENT ENGAGEMENT	7
Project Working Group (PWG).....	7
PWG Meetings	8
Figure 1. Identified critical transition points in current referral process	10
Formative Work for PWG.....	10
PARTICIPATION OF PATIENTS AND OTHER STAKEHOLDERS IN THE DESIGN AND CONDUCT OF RESEARCH AND DISSEMINATION OF FINDINGS.....	13
Perceived or Measured Impact of Engagement	13
METHODS.....	15
Study Setting.....	15
Intervention Development	16
Intervention (Usual Process).....	16
Intervention Process (Telehealth Process)	17
Figure 2. Telehealth CMHC eligibility screening visit.....	18
Study Design and Procedures	19
Study Variables	20
Figure 3. Participant flow diagram.....	21
Analysis	22
RESULTS.....	24
Child and Parent Characteristics.....	24
Table 1. Sample Characteristics—Child Demographics	25
Table 2. Sample Characteristics—Parent Demographics	26
Table 3. Access to Mental Health Clinic After Referral.....	27
Table 4. Access to Mental Health Clinic After Referral (Adjusted Analysis) ^a	27
Table 5. Family-centered Care, Parent Satisfaction, and Health-related Quality of Life at 6-month Follow-up.....	28
DISCUSSION.....	29
Context of Study Results.....	29
Generalizability of the Findings	30
Subgroup Analyses.....	30

Implementation of Study Findings.....	30
Study Limitations	31
Future Research	32
CONCLUSIONS.....	32
REFERENCES.....	34
RELATED PUBLICATIONS.....	40
APPENDIX A.....	41

ABSTRACT

Background: Medicaid-insured children who require specialty mental health care can be referred to community mental health clinics (CMHCs), but nearly 80% of children who need mental health services do not receive them.

Objective: To improve the mental health referral process for children referred by primary care providers to CMHCs using a community-partnered approach

Methods:

Design. Cluster randomized trial (April 2015-May 2017) with a 6-month follow-up

Setting. A multisite federally qualified health center (FQHC) and 2 CMHCs in Los Angeles County, California

Participants. Parents of children aged 5-12 years who received a recent (≤ 30 days) referral to 1 of the 2 CMHCs. Of 542 parent-child dyads receiving a referral, 483 were assessed for study eligibility; 342 were enrolled.

Intervention. The intervention focused on improving the initial step in the referral process from the FQHC to the CMHC. This first step is the CMHC screening visit, which usually takes place via phone or in person at the CMHC. As part of the intervention, the CMHC screening visit was conducted via a live videoconference with the parent and an FQHC care coordinator connecting from the FQHC to a case manager at the CMHC.

Main outcome and measures. CMHC screening visit completion, the initial access point for referral to specialty mental health care. We used adjusted multivariate logistic and linear regression to examine intervention impact. To accommodate the cluster design, we used mixed-effect regression models.

Results: Of 342 children, 86.5% were Latino, 61.7% male, and mean age at enrollment was 8.6 years. Children using the telehealth-coordinated referral process had 3 times the odds of completing the initial CMHC screening visit compared with children referred using usual care procedures (80.49% vs 64.04%; adjusted odds ratio 3.17; 95% confidence interval, 1.46-6.91).

Among children who completed the CMHC screening visit, intervention children took longer (23.69 vs 17.10 days; $p = 0.012$) to reach the screening visit. At 6-month follow-up, intervention and control participants did not significantly differ on reported family-centered care (86.3% vs 75.3%; $p = 0.08$) or child health–related quality of life, but intervention group participants did report greater satisfaction with the referral process (mean of 8.8 [SD 1.7] vs 7.9 [SD 2.7]; $p = 0.003$) compared with control.

Conclusions and Relevance: We developed a novel telehealth-coordinated referral process in partnership with key stakeholders from the FQHC and CMHCs. The intervention improved initial access to CMHCs for children referred from primary care. Future work on how this increased access affects behavioral health outcomes is needed.

Limitations: Our main study limitations include a potential lack of generalizability of the intervention elements to other settings and locations that may have a different referral system.

BACKGROUND

An estimated 15% to 20% of US children suffer from a mental health (MH) disorder, but nearly 80% of those who need MH services do not receive them.¹⁻⁴ MH needs that go unaddressed adversely affect child health and well-being, family functioning, and eventual adult health and productivity.^{5,6} Although MH disorders affect a significant proportion of the pediatric population, black and Latino children living in poverty are often affected at higher rates, and they are consistently less likely to receive specialty MH services.^{2,7-13}

Explanations for poor access to specialty MH are multifactorial, particularly for children in low-income and minority populations. Parents may be unaware of insurance coverage and benefits for MH services and how or where to find appropriate clinicians to provide these services.^{14,15} They may not recognize their child's behavioral problems as a concern for which to seek medical care, and when they do, they may face barriers related to the stigma of MH disorders and specialty care clinics and clinicians.^{7-9,15-19} Publicly insured children face additional access barriers because they may require specialty MH care referrals to community mental health clinics (CMHCs) for diagnostic and therapeutic MH services. These CMHCs may be difficult to access because of various factors, including unfamiliarity with the clinic's screening and enrollment process,²⁰ stigma associated with attending a CMHC,²¹⁻²³ and clinic location.²⁴

Providing MH services using primary care or specialty clinicians in fragmented systems of care often results in suboptimal care for children receiving care in either setting.²⁵ Collaborative care models linking primary care with specialty MH care can improve utilization of MH services and outcomes for children and adolescents.²⁶⁻³³

Multiple barriers exist to implementing these types of models for collaborative care, colocation, and integrated care to improve MH access for families. Telehealth³⁴ provides a promising solution that allows primary care and specialty care providers to engage in systems for care coordination, communication, and collaboration, particularly when in-person integration of separate systems is not possible.³⁵⁻⁵⁰

Under the current referral structure and process, parents must navigate a complex, multistep referral and care process once the referral to a CMHC has been initiated by primary care.

To improve access to specialty MH care, we partnered with a multisite federally qualified health center (FQHC) and 2 CMHCs to design and test an innovative telehealth-based structure and process for the MH referral process. The main goal was to enhance access to subspecialty MH care. Using the Donabedian model as a conceptual framework^{51,52} to guide intervention development, we examined whether and how the structural and process elements of the current primary care to CMHC referral system could be improved to increase the likelihood of a completed referral, leading to improved access to specialty MH care services for children in low-income communities.

The study objectives were to develop and test an intervention to improve initial access to CMHCs. Our primary outcome was the completion of the initial access to the CMHC—namely, an eligibility screening visit. Other measures were parent satisfaction with the referral process and with care overall, family-centeredness of care, and child health–related quality of life.

STAKEHOLDER AND PATIENT ENGAGEMENT

Project Working Group (PWG)

The PWG was the core element of the community-partnered approach we utilized to create this intervention. This community-partnered design process has been used in previous studies to partner with clinic stakeholders in clinical delivery design projects aimed to improve care for Medicaid-insured children.³⁴ Through the PWG, we systematically engaged the major stakeholders in a process to develop a new referral system that would enhance FQHC patients' access to successful enrollment in these CMHCs.

The PWG included primary care providers (PCPs) from each of the 6 participating FQHC sites, the FQHC pediatric medical director, the FQHC clinic managers, and parents who had successfully gone through the FQHC–CMHC referral process to either of the 2 CMHCs. The PWG also included CMHC providers and staff, including the medical directors, psychiatrists, therapists, and managers for each CMHC. The PWG met monthly over an 8-month period in

2014 to develop the telehealth intervention, using live videoconferences to facilitate the meetings between PWG members at various sites across the San Fernando Valley and Santa Clarita Valley in Los Angeles County, California.

The first major decision from the PWG meetings was that the stakeholders wanted to focus on the referral process as a way to improve access to specialty MH care services for families. The stakeholders, through discussion, as well as the interview data collected prior to the meetings, determined that the referral process needed to be restructured, and that the modality of telehealth (live videoconference) could be a tool to help more families successfully complete the referral process. Another decision that came out of the PWG meetings was to change the study design from using individual randomization to using clinic-level randomization. We discussed this topic extensively with our PWG members, due to concern about decreasing the parent/patient level of comfort by asking them to participate in the study when they were already facing challenges during the referral process for MH services.

PWG Meetings

At the first PWG meeting, the PWG defined a governance plan and reviewed the goals and objectives of the project. The next 3 meetings focused on creating a telehealth-based referral and care system to meet stakeholders' needs. The PWG received information on the qualitative data collected from parent, provider, and staff interviews about the current process for behavioral health referrals for the FQHC's pediatric patients, as well as perspectives on how to improve it.

During subsequent meetings (meetings Nos. 5 and 6), the PWG first outlined each step of the current referral–treatment process from initial identification of a need for an MH referral by the PCPs; to referral and enrollment at the CMHC; to treatment, stabilization, and transfer back to primary care. The PWG then identified key transition points in the process at which stakeholders reported that access was most likely to be compromised. The PWG also created solutions to address the problems at each identified critical transition point in the referral system, with the goal of enhancing access for families. The PWG designed solutions to directly address these problems, and when appropriate, incorporated telehealth or videoconferencing

technology as a tool to enhance communication and coordination among PCPs, CMHC, and parents.

The 3 critical transition points and system solutions were as follows (see Figure 1):

Transition Point No. 1

Parents refuse the initial referral to the CMHC due to stigma associated with MH services.

System Solution:

Parents watch a video introducing them to the CMHC at the time of initial referral.

Transition Point No. 2

Parents do not complete the CMHC's eligibility screening process after referral.

System Solution:

A live videoconference session connecting parents at the FQHC with CMHC staff ensures completion of the eligibility screening process.

Transition Point No. 3

PCPs reject transfer of stable but medicated patients back to primary care for ongoing psychotropic medication management.

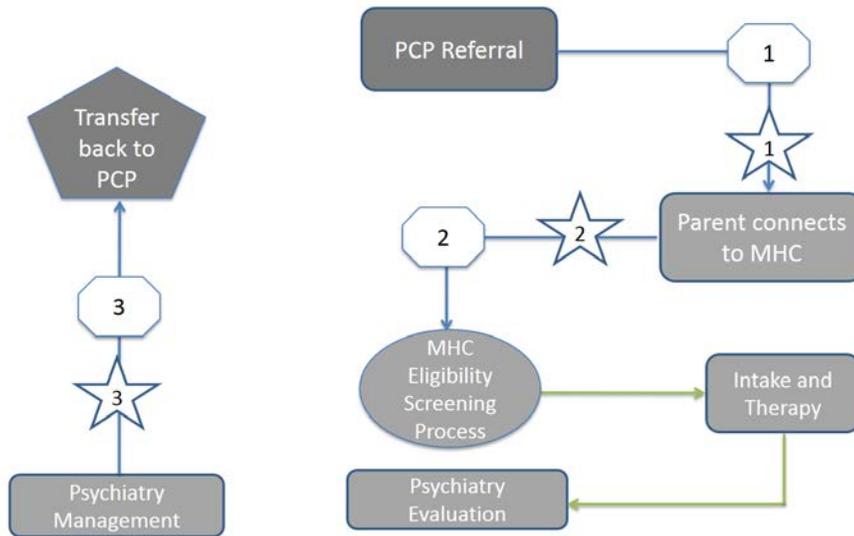
System Solution:

Regularly scheduled live videoconferences connect PCPs and CMHC providers for PCP educational sessions, transfer cases sessions, and co-management rounds.

The randomized cluster trial of the intervention focused on the first 2 transition points. The PWG recognized that, during the trial, we would have the opportunity to follow families for a 6-month time period. Based on this, the PWG elected to focus on the transition points of connecting the families to the CMHC after referral.

After the telehealth intervention was implemented, the PWG met 3 more times in 2015 and 2016 to monitor and adjust the intervention, and we shared our data collection efforts at that time.

Figure 1. Identified critical transition points in current referral process



Note: Octagon = Transition Point; Star shape = System Solution

Formative Work for PWG

Stakeholder interviews. We conducted individual semistructured interviews with key stakeholders (clinicians, staff, and parents) in English with 6 PCPs, 3 MH providers, 3 FQHC administrators, 3 MH program manager/directors from the CMHC (identified by the medical and/or executive director of each organization), and 7 parents (identified by the PCP and/or medical director). We invited the stakeholders to participate in a 45- to 60-minute interview.

Provider and staff interviews. Potential staff participants (6 PCPs, 3 MH providers, 3 FQHC administrators, and 3 MH program manager/directors) were identified by the medical and/or executive director of each organization and were invited to participate in a 45- to 60-minute interview. The 7 parent participants were identified with the help of PCPs; parents who had a child who had been referred to MH services were recruited. We aimed to interview a variety of providers, parents, and staff at each clinical site until reaching saturation, or the point at which no new themes emerged from interviews.^{53,54} Potential participants received information about the study objective, time commitment, and eligibility criteria. The study principal investigator

(PI), a primary care clinician with extensive experience in conducting qualitative studies, conducted all interviews.^{55,56} The study team, including a primary care pediatrician, and a psychiatrist and anthropologist developed the interview guide. We pilot tested the interview guide with 3 primary care clinicians and 2 parents; we made adjustments to the protocol based on these practice interviews with individuals not associated with the study clinical sites. The study team met weekly during interviewing to review and reflect on interview content.

We conducted individual semistructured interviews in English with 10 PCPs and staff at 6 clinic sites of the FQHC; participants included 5 pediatricians, 1 physician assistant, 1 referral coordinator, the pediatric medical director (also a PCP), the chief operating officer, and the director of nursing. Each of the 6 participating clinic sites of the FQHC employs 3 to 6 providers who work from 40% to 100% of a full-time position. We interviewed 1 full-time provider from each clinic site. This represents 16% to 33% of the potential full-time providers, depending on clinic site. Most of the providers interviewed were women who had been working at the FQHC for more than 5 years and are representative of the larger population of providers. We conducted 3 additional individual and small-group interviews at the 2 local MH clinics. To represent a range of providers and staff at the MH clinics, we interviewed 2 psychiatrists (a staff psychiatrist and a medical director/psychiatrist) and a program manager together (1 interview) and a therapist in an individual interview at 1 MH clinic. At the second MH clinic, we interviewed the clinic manager and director together in one interview, and a therapist in an individual interview. We interviewed 7 parents as well; a study team member conducted the interviews in English or Spanish according to parent preference. We conducted all interviews between November 2013 and February 2014.

The interview protocol included the following topics: (1) current structure and processes for MH specialty referrals; (2) communication and coordination between parents, primary care clinics, and MH referral sources; and (3) challenges within the current referral and care process for children referred to specialty MH providers. These topics were discussed from the perspective of parents, PCPs, and specialty MH providers and staff.

All sessions were digitally recorded, transcribed, and imported into qualitative data management software ([Atlas.ti 7](#)). All transcriptions were independently verified for accuracy of translation and transcription.

We created and revised the codebook in an iterative process. First, members of the research team read a subset of interviews and discussed text examples relevant to the study objectives. Then, 2 experienced qualitative coders independently coded 3 randomly selected transcripts across stakeholder groups to develop a set of codes. Coding continued in an iterative fashion using a constant comparative approach to discuss codes for each phase of the treatment and referral process and for each participant group (MH, primary care). Based on these discussions, 2 coders worked together to group codes within each phase into themes that described common communication challenges.⁵⁷⁻⁶⁰ The coders refined emerging themes by comparing one interview with another and comparing MH with primary care to search for confirming and disconfirming cases. The coders then compared themes across phases to finalize analyses, which the full research team then reviewed for comprehensiveness.

Through our analysis, we found that the most salient challenges and barriers to care were in the referral process itself.

Current referral system:

1. Patients face various barriers between initial referral and the first visit.
2. Communication channels between PCPs and MH specialty services are not always sufficient for optimal care coordination.
3. Diagnosis-specific challenges to referral exist.
4. Challenges of transferring patients back to primary care exist.

Utilization of a telehealth system:

1. Address patient barriers to completing referral and receiving specialty care (improved convenience, reduced travel time, more familiarity with primary care site).
2. Enhance FQHC–CMHC collaboration for care coordination.

3. Provide FQHC's PCPs with education and support to improve capacity to collaborate with CMHC in patient care.
4. Provide parents education and training related to MH conditions.

We shared the findings of these interviews with our community partners during our PWG meetings.

PARTICIPATION OF PATIENTS AND OTHER STAKEHOLDERS IN THE DESIGN AND CONDUCT OF RESEARCH AND DISSEMINATION OF FINDINGS

Our partners were a multisite FQHC and 2 CMHCs that serve a large population of Medicaid-insured children in the San Fernando Valley and Santa Clarita Valley in Los Angeles County (see Appendix A). The 2 CMHCs are contracted by the Los Angeles County Department of Mental Health to provide MH services to Medicaid-insured children near the geographical area served by 6 sites of the FQHC.

Perceived or Measured Impact of Engagement

Community engagement in this project affected several factors, described below.

1) *Relevance of the research question*

The PWG narrowed the research question to focus on the MH referral process.

2) *Study design, processes, and outcomes*

The PWG was highly influential in the study design, processes, and outcomes. We changed the design from individual randomized controlled trial (RCT) to cluster RCT based on the PWG input. We did this because the parent partners and providers were concerned that parents would be required to make a decision about an individual-randomized trial at the same time they were going through the process of learning that their child needed a referral for a potential MH condition. The PWG members did not want to place this additional level of stress on the parent at such an important time. By randomizing at the

cluster level, and not the individual participant level, this decision would not be part of the consent process. In a cluster RCT, participants receive care as typical for the clinic site (intervention or control) and consent only for data collection. The PWG thought that this would be a less stressful decision point for families.

The study processes, including the partnership with the CMHCs, were because of a request from the FQHC at the start of the study to include the CMHCs as partners. Finally, the outcome (access to the CMHC) was unchanged but was more specifically focused on the initial access point to the CMHC (eligibility screening visit), based on input from the PWG.

3) Study rigor and quality

The study rigor and quality was not directly affected by the PWG, although at PWG meetings throughout the trial, we continued to keep our partners updated and involved in progress on enrollment, data collection, and analysis of the telehealth intervention.

4) Transparency of the research process

The members of the PWG were involved in all aspects of the research process, from the research question to dissemination of data.

5) Adoption of research evidence into practice

The FQHC and the CMHCs remain critical partners in adoption of research evidence into practice. The FQHC has decided to disseminate the findings via an e-newsletter that circulates internally to all employees. The e-newsletter, called *Wellness & Health Education*, is produced monthly by the wellness committee and the Quality and Health Education Department. In addition, the project manager and a manager representative of the FQHC, who has been engaged in the project since its inception, will participate in a presentation of the study findings and Q&A at one of the all-staff meetings that each clinic has once a month. Parents at the FQHC will receive a 1-page flyer from their clinical site that contains the main study findings, study conclusions, and the clinic's next steps.

One of the CMHCs is using its telehealth system to connect remotely with other PCPs to enhance coordination and communication for patient care. The FQHC has decided to continue the intervention. It also plans to expand this opportunity to the adult population in its clinic setting. Finally, the parent video orientation to the CMHC is widely used and provided to families via the clinic websites and text messaging links.

METHODS

Study Setting

Our partners were a multisite FQHC with 6 clinics and 2 CMHCs that serve a large population of publicly insured children. The 2 CMHCs are contracted by the County of Los Angeles Department of Mental Health to provide MH services to publicly insured children near the geographical area served by 6 clinical sites of the FQHC. The CMHCs and FQHCs are not co-located.

FQHCs are community-based health care providers that receive funds from the Health Center Program of the US Health Resources and Services Administration (HRSA) to provide primary care services in underserved areas. They must meet a stringent set of requirements, including providing care on a sliding fee scale based on ability to pay and operating under a governing board that includes patients.⁵³ FQHCs may be community health centers, migrant health centers, health care centers for the homeless, and health centers for residents of public housing. Northeast Valley Health Corporation (NEVHC) is a nonprofit FQHC, accredited by the Joint Commission, whose mission is to provide quality, safe, and comprehensive primary health care to medically underserved residents of Los Angeles County, particularly in the San Fernando and Santa Clarita Valleys, in a manner that is sensitive to the economic, cultural, and linguistic needs of the community.

NEVHC's first clinic, the San Fernando Health Center, opened in 1973. Since then, the organization has opened 12 additional licensed community clinics, including 6 primary care sites in Pacoima, Canoga Park, Valencia, Sun Valley, Santa Clarita, and Van Nuys; 3 school-based

health centers; an HIV early intervention clinic in Van Nuys; a homeless health care center in North Hollywood; and a homeless mobile clinic.

Annually, NEVHC clinics provide 112 101 primary health care visits for 37 367 children aged 0-18 years; of these, the vast majority (98%) have incomes below 200% of the federal poverty level and 86% are Latino. The FQHC does have behavioral health services for adults, but it does not have on-site behavioral health services for children.

Intervention Development

We used a community-partnered approach for intervention development that has been used in previous studies to partner with clinic stakeholders in clinical delivery design projects aimed to improve care for publicly insured children.³⁴ We systematically engaged the major stakeholders in a process that developed a new referral system to enhance FQHC patients' access to and successful enrollment into these CMHCs.

The PWG comprised 26 individuals (14 FQHC clinic providers/staff, 8 MHC providers/staff, and 4 parents); they reviewed qualitative data from key stakeholders (interviews of 7 parents and 13 providers/staff) and identified key transition points where access to and coordination of care were likely compromised, in order to develop solutions.^{20,61} Parent participants were individuals who had a child recently referred to the CMHC, some successfully and some not.

The PWG outlined a workflow to support the newly developed referral system (called Telehealth-coordinated Referral). The research team worked with the PWG to implement, refine, and pilot the new referral structure and process (henceforth *referral system*) among 19 families. We made additional adjustments to the intervention based on the pilot data.

Intervention (Usual Process)

The usual primary care to CMHC referral process (control clinics) is as follows:

Parents receive an MHC referral from their primary care clinician at the FQHC. The referral is faxed from the primary care clinic to the CMHC. The screening department at the CMHC initiates the first contact with the family for a phone or in-person eligibility screening, which can occur on any weekday. A case manager from the CMHC screening department asks the parent a

series of questions regarding insurance coverage, his or her child's mental health concerns, and other issues to determine eligibility for services at the CMHC.

If a patient is not deemed eligible for service at the CMHC, community-based referrals for other services (eg, developmental services, parenting support) to the parent are provided at that eligibility screening phone call/visit. If the patient is deemed eligible, patient information is given to a CMHC therapist and the patient is then scheduled for a 2-hour in-person intake visit with a therapist. The purpose of the intake visit is to gather detailed information to help the therapist decide which evidence-based behavioral health intervention will work best for the family.

We designed the intervention process described below to enhance patient access to the CMHC eligibility screening visit, the first step in initiation of specialty mental health care at the CMHC.

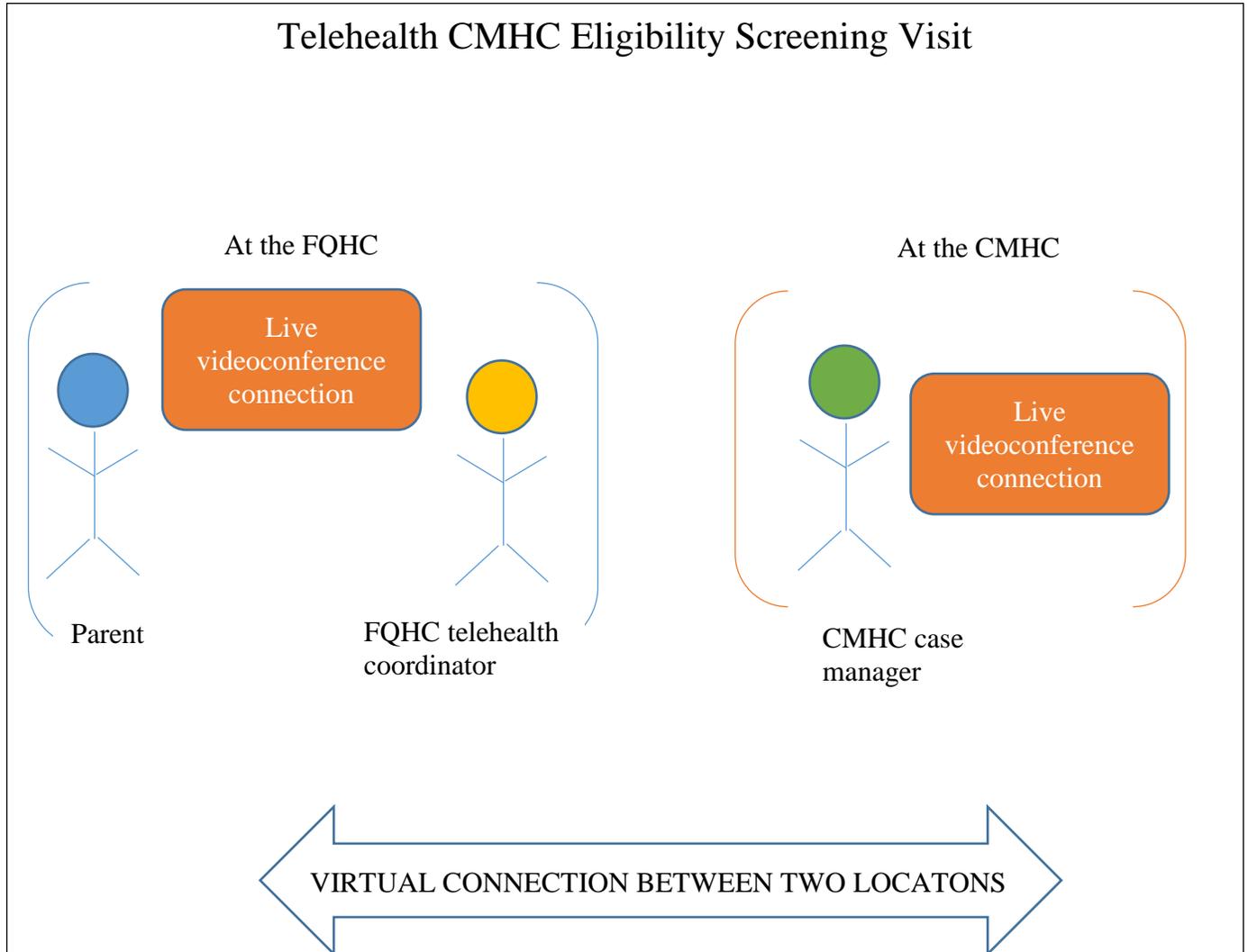
Intervention Process (Telehealth Process)

Parents receive a CMHC referral from their primary care clinician at the FQHC. During the primary care visit at the FQHC, the primary care clinician determines that an MH referral is indicated and discusses with the parent that the child will be referred to 1 of the 2 CMHCs for services. After the clinician completes the primary care visit, the medical assistant plays a 5-minute video introduction to the referred CMHC in the examination room on a computer screen. If the parent does not have time to watch the video at the end of the primary care visit, the parent will receive a text message link to watch the video. It is a direct link that does not require a password or app. Before the parent leaves the FQHC, the FQHC staff schedules a return visit (in-person) to the FQHC for a telehealth eligibility screening visit with the FQHC's telehealth care coordinator.

On the day of the scheduled telehealth eligibility screening visit, the parent meets the telehealth coordinator at the FQHC and connects virtually (via videoconference) with the screening department at the CMHC (Figure 2). These visits are available to be scheduled on 1 selected day per week at each clinical site. A case manager from the CMHC screening department conducts the eligibility screening process (the primary study outcome) via this live videoconference visit. The parent answers a series of questions regarding insurance coverage,

the child's mental health concerns, and other issues. The CMHC case manager makes an initial determination of eligibility for the family and provides this information to a CMHC therapist. If the child is eligible, the parent is then scheduled for an in-person 2-hour intake visit with the therapist.

Figure 2. Telehealth CMHC eligibility screening visit



We did not assess 3 additional elements of the intervention in the cluster RCT, but we did pilot test them with the FQHC and CMHCs. These elements were new processes for the FQHC and CMHC providers to interact via live videoconference. These elements included the following:

1. Educational sessions for PCPs to enhance their skills on common MH conditions
2. Mini-rounds for PCPs and CMHC providers to discuss shared patients
3. Transfer sessions to allow CMHC providers to help PCPs accept patients who have completed treatment at the CMHC and can be transferred back to primary care for ongoing management of psychotropic medications

The follow-up time after referral that would have been needed to evaluate these additional intervention elements was beyond the scope of the trial and the scope defined in the PCORI contract.

We monitored fidelity to the intervention protocol by a checklist form in which the coordinator marked off any departures from the protocol during the telehealth visit. We also monitored whether each participant received the various elements of the intervention and the timing of those services. During weekly team meetings, we discussed any variation in protocol adherence among the clinical sites.

Study Design and Procedures

Design of the cluster RCT. The 6 clinics were randomized in blocks, by their location and size; 3 were intervention sites and 3 were control sites. We elected to include location in the randomization plan because the 6 clinics are located across a large area of Los Angeles County. The 3 clinics randomized to the intervention implemented the new referral process for all MH referrals, and the 3 clinics randomized to the control used the usual referral process.

Adult parents or legal guardians of a child aged 5-12 at the FQHC who had received a referral to 1 of the 2 participating CMHCs in the past 30 days (index child) were invited to enroll in the study from April 2015 to December 2016. All parents who received a new MH referral for their child were asked at the time of referral if they could be contacted by the University of California, Los Angeles (UCLA) research team to learn about a study. Parent permission to be

contacted was indicated by the primary care clinician via a check box on a referral form that was then securely faxed to the UCLA research team. Only one parent could be enrolled per child, and a parent participant could have only 1 child designated as the “index child.” A trained bilingual/bicultural (English/Spanish) research associate (RA) called the parent within 30 days of the referral to invite them to enroll, and if the parent agreed, the RA consented the parent and collected baseline data at that time. Parents were asked to participate in 2 additional phone surveys at 3 and 6 months after enrollment. Demographic data were collected on all participants at enrollment.

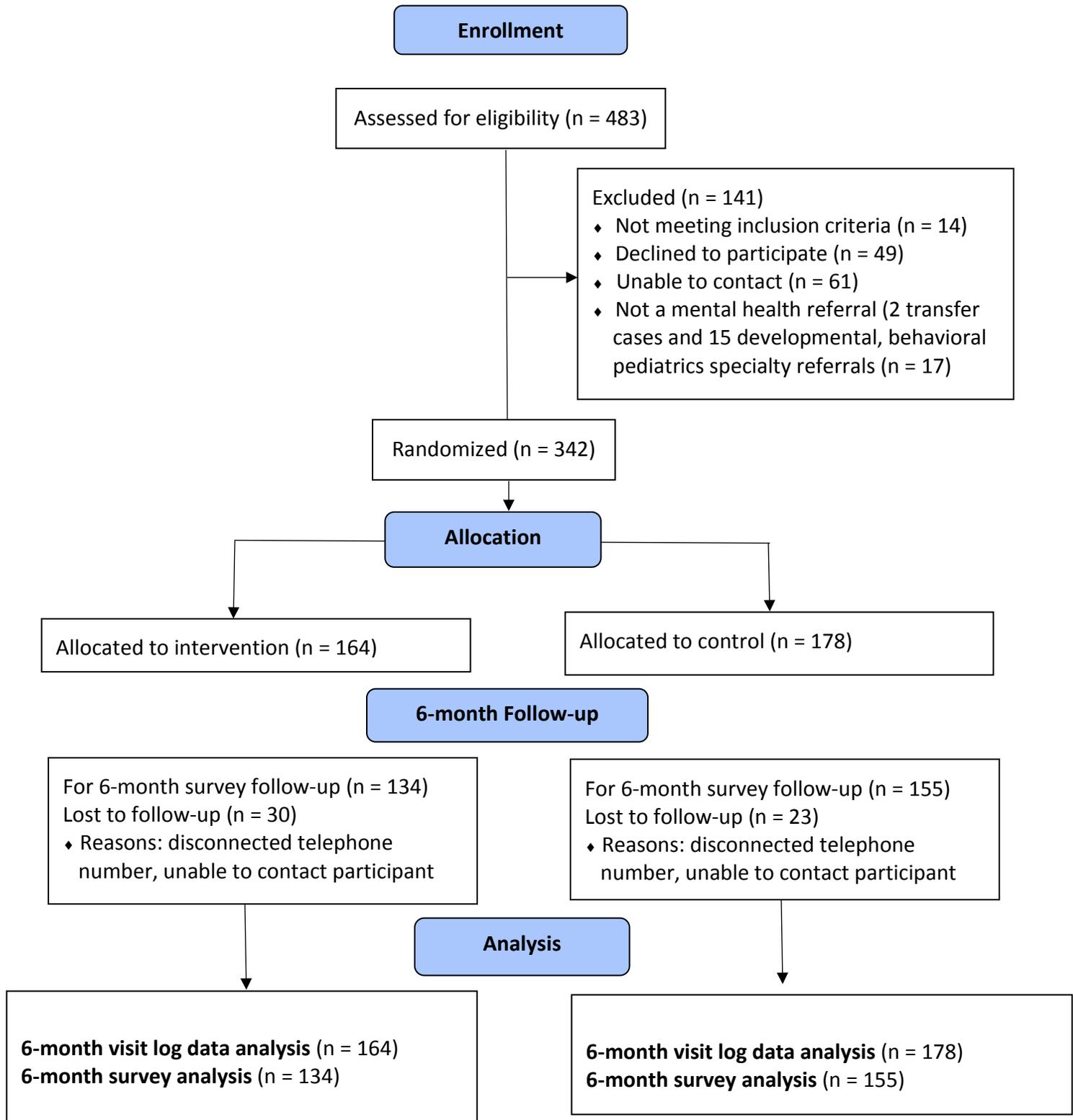
The study was approved by the UCLA Institutional Review Board.

Sample. Of 542 parent–child dyads receiving an MH referral during the time of study enrollment, 483 were assessed for study eligibility; 342 were enrolled (Figure 3).

Study Variables

Our primary outcome was completion of the CMHC eligibility screening visit. We used data from CMHC visit logs (a record of all visits) to determine completion of the initial screening visit within 6 months of referral. We also collected data from these visit logs on 2 additional outcomes closely related to this primary outcome; these included the number of days that elapsed from referral to the day of the CMHC eligibility screening visit and, for those who were deemed eligible, completion of the subsequent in-person intake visit.

Figure 3. Participant flow diagram



Secondary measures, at 6-month follow-up, included the following:

- Parent-reported measures of child health–related quality of life using the previously validated Pediatric Quality of Life Inventory (PedsQL) 4.0⁶²
- Family-centeredness of care (using the 6-item family-centered care scale developed by the Maternal and Child Health Bureau in collaboration with the National Center for Health Statistics⁶³ and used in the National Survey of Children with Special Health Care Needs and the National Survey of Children’s Health)
- Overall satisfaction with the referral process and with the care received (using 2 adapted items from Consumer Assessment of Healthcare Providers and Systems Health Plan Survey)

Family-centeredness of care items were asked only of parents who had completed at least 1 CMHC therapy visit by the 6-month follow-up, to ensure at least 1 visit was available to assess.

We also collected data on parental factors that might affect whether parents could successfully complete a referral for their child. These factors included family demographics; child’s MH illness severity, as defined by an *impairment* score on the Pediatric Symptom Checklist (PSC)^{64,65}; family function using the Family Perception Scale to assess the parent’s view of his or her family functioning across 5 domains (nurture, problem solving, expressed emotion, behavioral boundaries, and responsibilities)⁶⁶; and parental MH using the Patient Health Questionnaire.⁶⁷

Analysis

We performed all analyses using an intention-to-treat analysis. We examined differences between the intervention and control groups on baseline characteristics and on outcome measures.

We examined main outcome measures in regression models. Intervention status was the main independent variable; we used linear regression for the continuous outcome variable (number of days from referral date to screening date), and logistic regression for binary variables (completion of screening visit and intake visit). We adjusted for child’s age, child’s sex,

household annual income, parent's highest educational attainment, parental employment, PSC total score, parent and child health, and parental depression.

To accommodate the cluster design, we used a mixed-effect regression model (with random effects for clinic) by using SAS PROC MIXED for a continuously scaled outcome and GLIMMIX for a binary outcome. The cluster was defined as the clinic of enrollment. We used imputed data for adjusted analyses (we conducted the imputations using PROC MI, N = 20).

Results of regression models are presented as between-group differences for linear regression and odds ratios (ORs) for logistic regression with 95% confidence intervals (CIs). We used 2-sided tests with $p < 0.05$ for statistical significance. We performed all analyses using [SAS version 9.4](#).

We based our a priori power analysis on the primary outcome of initial access to a screening visit. We used (1) 2-sided t tests with significance level 0.05; (2) target power 80%; (3) intraclass correlation = 0.01.^{68,69} We used degrees of freedom equal to 4 without covariates, which is conservative for assessing significance. In addition to looking at differences on the probability scale, we summarize differences using Cohen's effect size index h , defined for dichotomous outcomes as the difference between 2 arcsine-transformed proportions,⁷⁰ and we refer to the familiar labeling of effect sizes, where $h = 0.20$ is small, $h = 0.50$ is medium, and $h = 0.80$ is large. We expected to detect 25% between-group differences. We estimate that with the probability of an event in the control group (p_1) = 0.5, a sample size of 320 subjects will be sufficient to detect medium effect size $h = 0.52$ (25% between-group differences).

RESULTS

Overall, 342 parents of children who were referred to the CMHCs were enrolled and completed a baseline survey (164 intervention and 178 control); CMHC screening visit completion data were available for all participants. For secondary outcomes, 289 parents (85%) completed the 6-month survey (Figure 3).

Child and Parent Characteristics

Baseline characteristics, given in Tables 1 and 2, were similar across intervention and control group participants, with the exception of parent's current employment status and annual household income. More control parents (61.8%) than intervention parents (42.7%) were not employed, and more intervention parents (19.2%) than control parents (10.7%) reported an annual income of \geq \$35 000. The mean child age at enrollment was 8.6 years (2.3 SD). Of children, 87% were Latino, 7% were non-Latino white, and 2% were African American; 40.4% lived in households in which English was the primary language; 37.1% reported highest household education level as high school or less. Approximately 27% of children showed psychological impairment by parent report on the PSC (Table 1).

A greater proportion of intervention children (80.49%) completed the CMHC eligibility screening than did the control children (64.04%; see Table 3). The number of days between referral and the initial access screening visit was greater for intervention families (mean 23.69 days) than for control families (17.10 days). When examined by number of weeks, results were similar.

Among those families that were scheduled for an intake visit after the initial screening visit ($n = 213$), more than 80% completed the in-person intake visit. This figure did not differ by intervention status (80.17 % vs 83.51 %; see Table 3).

Table 1. Sample Characteristics—Child Demographics

Variables	Analytic		Control	Intervention	P Value
	N	Overall	(N = 178)	(N = 164)	
Child race/ethnicity	342				0.627
Latino		296 (86.5%)	153 (86.0%)	143 (87.2%)	
White, non-Latino		24 (7.0%)	11 (6.2%)	13 (7.9%)	
Black, non-Latino		7 (2.0%)	4 (2.2%)	3 (1.8%)	
Other, non-Latino		15 (4.4%)	10 (5.6%)	5 (3.0%)	
Gender, male	342	211 (61.7%)	110 (61.8%)	101 (61.6%)	0.968
Child age (in years) at enrollment, mean	342	8.6 ± 2.3	8.5 ± 2.3	8.7 ± 2.3	0.46
Health insurance	342				0.652
Medicaid		336 (98.2%)	176 (98.9%)	160 (97.6%)	
Private insurance		3 (0.9%)	1 (0.6%)	2 (1.2%)	
Uninsured		3 (0.9%)	1 (0.6%)	2 (1.2%)	
Child overall health rating	342				
Excellent		79 (23.1%)	41 (23.0%)	38 (23.2%)	0.446
Very good		107 (31.3%)	52 (29.2%)	55 (33.5%)	
Good		108 (31.6%)	55 (30.9%)	53 (32.3%)	
Fair/poor		48 (14.0%)	30 (16.9%)	18 (11.0%)	
PedsQL rating					
Total scale score	342	74.7 ± 16.8	74.4 ± 16.6	74.9 ± 17.1	0.774
Physical health summary score	342	85.2 ± 18.7	85.8 ± 17.4	84.6 ± 20.0	0.539
Psychosocial health summary score	342	69.0 ± 18.6	68.3 ± 18.7	69.8 ± 18.4	0.474
PSC rating					
Any positive psychological impairment	342	91 (26.6%)	46 (25.8%)	45 (27.4%)	0.739

Table 2. Sample Characteristics—Parent Demographics

Variables	Analytic N	Overall	Control (N = 178)	Intervention (N = 164)	P Value
Parent Demographics					
Parent race/ethnicity	338				0.466
Latino		291 (86.1%)	150 (85.7%)	141 (86.5%)	
White, non-Latino		33 (9.8%)	16 (9.1%)	17 (10.4%)	
Black, non-Latino		8 (2.4%)	4 (2.3%)	4 (2.5%)	
Other, non-Latino		6 (1.8%)	5 (2.9%)	1 (0.6%)	
Gender, female	342	328 (95.9%)	173 (97.2%)	155 (94.5%)	0.212
English language proficiency	337				0.740
Very well/well		179 (53.1%)	95 (54.0%)	84 (52.2%)	
Not well/not at all		158 (46.9%)	81 (46.0%)	77 (47.8%)	
Marital status	342				0.991
Married/living with partner		198 (57.9%)	103 (57.9%)	95 (57.9%)	
Single/separated/divorced		144 (42.1%)	75 (42.1%)	69 (42.1%)	
Current employment	342				0.001
Working full-time or part-time		162 (47.4%)	68 (38.2%)	94 (57.3%)	
Not working		180 (52.6%)	110 (61.8%)	70 (42.7%)	
Highest household educational attainment	342				0.895
Less than high school		127 (37.1%)	64 (36.0%)	63 (38.4%)	
High school/GED		94 (27.5%)	52 (29.2%)	42 (25.6%)	
Some college/2-year degree		83 (24.3%)	43 (24.2%)	40 (24.4%)	
4-year college degree or greater		38 (11.1%)	19 (10.7%)	19 (11.6%)	
Annual household income	325				0.041
Less than \$10 000		65 (20.0%)	42 (24.9%)	23 (14.7%)	
\$10 001 to \$19 999		113 (34.8%)	59 (34.9%)	54 (34.6%)	
\$20 000 to \$34 999		99 (30.5%)	50 (29.6%)	49 (31.4%)	
\$35 000 or more		48 (14.8%)	18 (10.7%)	30 (19.2%)	
Household primary language English	342	138 (40.4%)	72 (40.4%)	66 (40.2%)	0.969

Table 3. Access to Mental Health Clinic After Referral

Access Variables	Unadjusted			Adjusted Analysis ^a	
	Control	Intervention		Intervention vs Control	
	Mean ± SD	Mean ± SD	<i>p</i>	Difference 95% CI	<i>p</i>
Days to CMHC eligibility screening completion (N = 246)	17.10 ± 20.36	23.69 ± 20.51	0.012	4.55 (– 10.83-19.94)	0.558
Weeks to CMHC eligibility screening completion (N = 246)	2.93 ± 2.95	3.84 ± 2.90	0.016	0.61 (– 1.55-2.76)	0.560
	N (%)	N (%)		OR 95% CI	
CMHC eligibility screening visit completed (N = 342)	114 (64.04%)	132 (80.49%)	<.001	3.02 (1.47-6.22)	0.003
Completed an intake visit (N = 213)	81 (83.51%)	93 (80.17%)	0.531	0.81 (0.43-1.52)	0.511

^aAdjusted for employment status (working vs not) and income (\geq \$20k vs $<$ \$20k), which were selected because they were unbalanced between the 2 arms at baseline (Table 2).

In adjusted analysis (Table 4), intervention children remained more likely to complete the initial access-screening visit than control children (OR 3.17; 95% CI, 1.46-6.91). The difference in time between referral and initial access visit was not statistically significant after adjustment for covariates.

Table 4. Access to Mental Health Clinic After Referral (Adjusted Analysis)^a

Access to MH Clinic (Analytic N)	Odds Ratio (95% CI) or Difference (95% CI)	P Value
CMHC eligibility screening completed (N = 342)	OR: 3.17 (1.46-6.91)	0.004
Time (days) to CMHC eligibility screening completion (N = 246)	Difference: 4.04 (–12.06-20.13)	0.619
Time (weeks) to CMHC eligibility screening completion (N = 246)	Difference: 0.52 (–1.75-2.79)	0.649
Completed an intake visit (N = 213)	OR: 0.82 (0.41-1.63)	0.565

^aAdjusted for employment status, income, child age and gender, household income, employment status, highest parental educational attainment, PSC score, child overall health, parental depression, and parent overall health.

Among parents who had completed at least 1 CMHC therapy visit by the 6-month follow-up, 86.3% of intervention parents and 75.3% control parents reported receiving family-centered care, but this difference was not statistically significant ($p = 0.08$). Intervention group parents reported higher satisfaction with the referral system and with care overall (Table 5). We did not find any statistically significant differences between intervention and control in quality of life by parent report at 6 months after enrollment.

Table 5. Family-centered Care, Parent Satisfaction, and Health-related Quality of Life at 6-month Follow-up

Variables	Analytic N	Overall	Control (N = 155)	Intervention (N = 134)	P Value
Family-centered care	157 ^a				0.082
Yes		127 (80.9%)	58 (75.3%)	69 (86.3%)	
No		30 (19.1%)	19 (24.7%)	11 (13.8%)	
Parent satisfaction					
Satisfaction with referral system	286	8.3 ± 2.3	7.9 ± 2.7	8.8 ± 1.7	0.003
Satisfaction with care	277	8.9 ± 1.6	8.6 ± 1.8	9.1 ± 1.4	0.012
PedsQL rating					
Total scale score	289	80.8 ± 15.3	80.6 ± 15.2	81.0 ± 15.6	0.815
Physical health summary score	288	88.3 ± 16.7	87.7 ± 17.0	89.0 ± 16.3	0.503
Psychosocial health summary Score	289	76.7 ± 17.7	76.8 ± 17.3	76.7 ± 18.1	0.973

^aFamily-centered care items were asked only of participants who had started CMHC therapy visits by the time of the 6-month follow-up.

DISCUSSION

Context of Study Results

Using a community-partnered approach, our academic research team worked with a multisite FQHC, its 2 local CMHCs, and its families to develop a new referral system for children referred from primary care to the CMHC. Intervention families were more likely to complete the initial access point for enrollment in the CMHCs. Those families that completed this initial access point—the CMHC eligibility screening visit—took approximately 6 more days to achieve this access than did the control families.

We anticipated the increased time to the initial access point (the CMHC eligibility screening) for the intervention clinics; this is because the telehealth care coordinator and CMHC staff held all the videoconference screening visits on a single preselected day each week. This limited the availability of slots for the screening visits, but it allowed parents to have a coordinator at the FQHC provide personalized assistance in connecting with the CMHCs.

The PWG selected completion of the screening visit as the indicator of access, as some families could be determined ineligible for MH services after the screening visit for several different reasons (eg, income, mental health condition, zip code). Because our intervention focused on this initial access point, it is not surprising that we did not see any significant differences in health (ie, psychological impairment, quality of life), among those who successfully accessed care, regardless of the study group assignment. However, with a longer study follow-up period, variation in health outcomes could be studied among a sample of all who were initially referred, particularly if the higher rates of access for intervention children translate into a greater proportion receiving services.

As the intervention referral system had multiple elements, including the videoconference visit, the FQHC telehealth care coordinator, and the CMHC orientation video, it is not clear which elements were responsible for the findings. The control families did not have access to any elements of the intervention but did have the opportunity to connect with the CMHC for the initial eligibility screening visit via phone, which could have been more convenient than

returning to the FQHC for the videoconference eligibility screening visit with the telehealth care coordinator. Despite this, the intervention families were more likely to have completed an eligibility screening visit; we can hypothesize that the assistance from the telehealth care coordinator may have played an important role in access for families.

Generalizability of the Findings

Many counties and states utilize a similar “carved-out” system for MH referral for Medicaid-insured children; this carve-out occurs when MH care benefits are not included as part of the health insurance plan benefits but are instead provided through a contract with a separate entity (ie, the Department of Mental Health). Additionally, many CMHCs utilize a similar multistep process for enrollment for specialty care. Our findings are potentially generalizable to primary care/CMHC partners that also employ a multistep process for referral.

Subgroup Analyses

We did not analyze data by subgroups.

Implementation of Study Findings

Our findings highlight the importance of this initial access point for a successful referral to the CMHC. Just 64% of control families successfully completed the CMHC screening visit compared with 80% of intervention families; however, once this step was completed, at least 80% of families from both the control and the intervention were able to continue on to the intake visit with a therapist and CMHC services.

Other interventions that have aimed to improve access to MH services among low-income school-aged children have focused on co-location of behavioral health within primary care,^{31,71} collaborative care models of care that may include MH midlevel providers working with the PCPs,^{72,73} and immediate access to psychiatry consultation for PCPs.⁷⁴ Each of these models has been studied, with varying levels of evidence of effectiveness in increasing MH care access.^{31,33,72-74} These models, however, may require a restructuring of services, staff, or financing.

In the new referral system implemented by the FQHCs and CMHCs, we made no changes to the actual services that parents and children received, the organizational structure and staffing (except for the telehealth care coordinator), or the billing arrangements. Thus, without drastic organizational-level changes, a new referral structure and process can still lead to significant improvements in patients' access to care.

The PWG focused on how to improve access to MH referral within the current system used by the CMHC. The CMHC used a multistep process that includes eligibility screening and an intake visit, prior to the start of therapy services. The CMHC found that this was necessary to ensure that its services fit within the scope of what is covered under the Department of Mental Health-contracted services, and to ensure accurate screening and triage of referred patients on a lengthy waitlist for services. This process, of course, can greatly delay the time it takes for a family to access therapy services, and may increase the burden on parents for multiple contacts. The PWG, however, needed to work within the restraints of the current system to improve the ability of parents to connect with the CMHC after PCP referral.

Study Limitations

Our findings reflect some key limitations of the study. First, the referral system was created to address the specific needs of the community partners. Thus, it may need adaptation to be generalizable to other locations or settings with a different patient population. Second, our primary outcome was improved access to care after initial referral; our findings did not address the quality of services that patients received once they gained access to care at the CMHC. Therefore, we do not know whether the telehealth intervention for improved referral is associated with improved clinical outcomes. Finally, the CMHCs did not involve the payers of MH care for this population; this limited our capacity to identify barriers and system solutions that may improve the intervention's sustainability.

This study demonstrates that this telehealth-coordinated referral system developed using a community-partnered approach to intervention design improved initial access to CMHCs for children referred from primary care.

Future Research

Future studies for our partner clinics should examine more distal outcomes, such as completion of MH services and transfer back to primary care. This will require a future project with a much longer study period than we had available for this project. Such a project would allow us to evaluate the additional aspects of provider communication and primary care educational sessions.

Other researchers may consider using a similar methodology to improve successful referral completion in other systems that may be different from the one within which we worked. Other research should examine costs of the intervention and whether lower costs and less disruption to the organization are relevant as additional outcomes. Finally, patient-related experiences from the intervention should be studied.

CONCLUSIONS

The aim of this study was to improve access to specialty mental health care for publicly insured children at an FQHC. Using a community-partnered approach, our academic research team worked with a multisite FQHC, its 2 local CMHCs, and its families to create improvements in the current referral process for children referred from primary care to the CMHC. The intervention we designed added a video orientation to the CMHC at the time of initial referral and changed the initial access point in the CMHC referral process from the usual CMHC eligibility screening visit (which could have been a phone or in-person visit) to a telehealth-enabled CMHC eligibility screening visit. We changed this key access point to a telehealth-mediated encounter because, previously, parents were not successfully connecting to the CMHC for this initial encounter when it occurred more directly, either with a phone call or visit to the CMHC. The stakeholders reported that this was due to (1) parents' unfamiliarity with the CMHC and (2) the CMHC's difficulty in reaching parents via phone. The telehealth-mediated encounter allowed the parents to schedule the CMHC eligibility screening visit before they left the FQHC on the day of the primary care visit and allowed them to return to the FQHC for their eligibility screening visit with the CMHC.

Families referred using the intervention referral process were more likely to complete this initial access point for the CMHC—64% of control vs 80% of intervention families completed this first access point in referral. This was the key access point for successful referral; once families completed this step in referral, more than 80% of families in both groups went on to complete a therapist intake visit and, thus, enrollment in the CMHC for ongoing MH services.

A referral system developed using a community-partnered approach to intervention design improved initial access to CMHCs for children referred from primary care. Higher rates of access for intervention children may translate into a greater proportion receiving services.

Even without major organizational level changes, a new referral structure and process can lead to significant improvements in patients' access to care.

These data may be useful for community primary care clinics and CMHCs with similar processes for referral. We identified the key access point at which patients got lost during referral from the FQHC to CMHC, and by implementing 2 simple changes at this key access point for the referral process, we were able to significantly increase the success of a completed referral. Other primary clinic–CMHC partnerships may be established to identify similar bottlenecks in the referral system that can benefit from a community-partnered intervention design.

REFERENCES

1. Briggs-Gowan MJ, Horwitz SM, Schwab-Stone ME, Leventhal JM, Leaf PJ. Mental health in pediatric settings: distribution of disorders and factors related to service use. *J Am Acad Child Adolesc Psychiatry*. 2000;39(7):841-849.
2. Kataoka SH, Zhang L, Wells KB. Unmet need for mental health care among U.S. children: variation by ethnicity and insurance status. *Am J Psychiatry*. 2002;159(9):1548-1555.
3. US Public Health Service. *Mental Health: A Report of the Surgeon General*. Rockville, MD: US Department of Health and Human Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 1999.
4. Leaf PJ, Alegria M, Cohen P, et al. Mental health service use in the community and schools: results from the four-community MECA Study. *J Am Acad Child Adolesc Psychiatry*. 1996;35(7):889-897.
5. Fergusson DM, Woodward LJ. Mental health, educational, and social role outcomes of adolescents with depression. *Arch Gen Psychiatry*. 2002;59(3):225-231.
6. Shaw M, Hodgkins P, Caci H, et al. A systematic review and analysis of long-term outcomes in attention deficit hyperactivity disorder: effects of treatment and non-treatment. *BMC Med*. 2012;10:99. doi:10.1186/1741-7015-10-99
7. Coker TR, Elliott MN, Kataoka S, et al. Racial/ethnic disparities in the mental health care utilization of fifth grade children. *Acad Pediatr*. 2009;9(2):89-96.
8. Zimmerman FJ. Social and economic determinants of disparities in professional help-seeking for child mental health problems: evidence from a national sample. *Health Serv Res*. 2005;40(5, pt 1):1514-1533.
9. McMiller WP, Weisz JR. Help-seeking preceding mental health clinic intake among African-American, Latino, and Caucasian youths. *J Am Acad Child Adolesc Psychiatry*. 1996;35(8):1086-1094.
10. Sturm R, Ringel JS, Andreyeva T. Geographic disparities in children's mental health care. *Pediatrics*. 2003;112(4):e308. doi: 10.1542/peds.112.4.e308
11. Hough RL, Hazen AL, Soriano FI, Wood P, McCabe K, Yeh M. Mental health care for Latinos: mental health services for Latino adolescents with psychiatric disorders. *Psychiatr Serv*. 2002;53(12):1556-1562.
12. Cunningham PJ, Freiman MP. Determinants of ambulatory mental health services use for school-age children and adolescents. *Health Serv Res*. 1996;31(4):409-427.
13. Howell E. *Access to Children's Mental Health Services Under Medicaid and SCHIP*. Washington, DC: Urban Institute; 2004.

14. Huang L, Stroul B, Friedman R, et al. Transforming mental health care for children and their families. *Am Psychol*. 2005;60(6):615-627.
15. The barriers: Why is it so difficult for children to get mental health screens and assessments? Children's Defense Fund website. <http://www.childrensdefense.org/child-research-data-publications/data/barriers-children-mental-health-screens-assesments.html>. [Link no longer active] Published 2009. Accessed December 7, 2012.
16. Cuffe SP, Waller JL, Cuccaro ML, Pumariega AJ, Garrison CZ. Race and gender differences in the treatment of psychiatric disorders in young adolescents. *J Am Acad Child Adolesc Psychiatry*. 1995;34(11):1536-1543.
17. Lambert MC, Knight F, Weisz JR. Over- and under-controlled clinic referral problems of Jamaican and American children and adolescents: the culture general and the culture specific. *J Consult Clin Psychol*. 1989;57(4):467-472.
18. Weisz JR, Suwanlert S, Chaiyasit W, Walter BR. Over- and undercontrolled clinic-referral problems among Thai and American children and adolescents: the wat and wai of cultural differences. *J Consult Clin Psychol*. 1987;55:719-726.
19. Gonzalez M. Access to mental health services: the struggle of poverty affected urban children of color. *Child Adolesc Social Work J*. 2005;22(3-4):245-256.
20. Porras-Javier L, Bromley E, Lopez M, Coker TR. Challenges to effective primary care-specialty communication and coordination in the mental health referral and care process [published online]. *J Behav Health Serv Res*. 2018;45(4):668-677.
21. Golberstein E, Eisenberg D, Gollust SE. Perceived stigma and mental health care seeking. *Psychiatr Serv*. 2008;59(4):392-399.
22. Owens PL, Hoagwood K, Horwitz SM, et al. Barriers to children's mental health services. *J Am Acad Child Adolesc Psychiatry*. 2002;41(6):731-738.
23. Nadeem E, Lange JM, Edge D, Fongwa M, Belin T, Miranda J. Does stigma keep poor young immigrant and US-born black and Latina women from seeking mental health care? *Psychiatr Serv*. 2007;58(12):1547-1554.
24. Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health*. 2013;38(5):976-993.
25. Zima BT, Bussing R, Tang L, et al. Quality of care for childhood attention-deficit/hyperactivity disorder in a managed care Medicaid program. *J Am Acad Child Adolesc Psychiatry*. 2010;49(12):1225-1237.
26. Kolko DJ, Perrin E. The integration of behavioral health interventions in children's health care: services, science, and suggestions. *J Clin Child Adolesc Psychol*. 2014;43(2):216-228.

27. Asarnow JR, Rozenman M, Wiblin J, Zeltzer L. Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: a meta-analysis. *JAMA Pediatr.* 2015;169(10):929-937.
28. Olfson M. Evaluating the quality of community care for attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry.* 2010;49(12):1183-1185.
29. Sarvet B, Gold J, Bostic JQ, et al. Improving access to mental health care for children: the Massachusetts Child Psychiatry Access Project. *Pediatrics.* 2010;126(6):1191-1200.
30. Gruttadaro D, Markey D. *Integrating Mental Health and Pediatric Primary Care.* Arlington, VA: National Alliance on Mental Illness; 2011.
31. Williams J, Shore SE, Foy JM. Co-location of mental health professionals in primary care settings: three North Carolina models. *Clin Pediatr (Phila).* 2006;45(6):537-543.
32. Ford J, Steinberg K, Pidano A, Honigfeld L, Meyers J. *Behavioral Health Services in Pediatric Primary Care: Meeting the Needs in Connecticut.* Farmington, CT: Child Health and Development Institute of Connecticut, Inc; 2006.
<https://www.chdi.org/index.php/publications/reports/other/behavioral-health-services-pediatric-primary-care-meeting-needs-connecticut-exec-summary>. Accessed July 25, 2019.
33. Briggs R RA. Preventive pediatric mental health care: a co-location model. *Infant Ment Health J.* 2007;28(5):15.
34. Telehealth. US Department of Health and Human Services Health Resources and Services Administration (HRSA) website. <http://www.hrsa.gov/telehealth>. [Link no longer active] Published 2012. Accessed December 9, 2012.
35. Hjelm NM. Benefits and drawbacks of telemedicine. *J Telemed Telecare.* 2005;11(2):60-70.
36. Goldstein F, Myers K. Telemental health: a new collaboration for pediatricians and child psychiatrists. *Pediatr Ann.* 2014;43(2):79-84.
37. Hilt RJ, Barclay RP, Bush J, Stout B, Anderson N, Wignall JR. A statewide child telepsychiatry consult system yields desired health system changes and savings. *Telemed J E Health.* 2015;21(7):533-537.
38. Nelson E, Barnard M, Cain S. Treating childhood depression over videoconferencing. *Telemed J E Health.* 2003;9(1):49-55.
39. Soares NS, Langkamp DL. Telehealth in developmental-behavioral pediatrics. *J Dev Behav Pediatr.* 2012;33:656-665.
40. Yellowlees PM, Hilty DM, Marks SL, Neufeld J, Bourgeois JA. A retrospective analysis of a child and adolescent eMental Health program. *J Am Acad Child Adolesc Psychiatry.* 2008;47(1):103-107.

41. Myers KM, Valentine JM, Melzer SM. Child and adolescent telepsychiatry: utilization and satisfaction. *Telemed J E Health*. 2008;14(2):131-137.
42. Diamond JM, Bloch RM. Telepsychiatry assessments of child or adolescent behavior disorders: a review of evidence and issues. *Telemed J E Health*. 2010;16(6):712-716.
43. Ekeland AG, Bowes A, Flottorp S. Effectiveness of telemedicine: a systematic review of reviews. *Int J Med Inf*. 2010;79(11):736-771.
44. Grady B, Myers KM, Nelson EL, et al. Evidence-based practice for telemental health. *Telemed J E Health*. 2011;12(2):131-148.
45. Thomas CR, Holzer CE III. National distribution of child and adolescent psychiatrists. *J Am Acad Child Adolesc Psychiatry*. 1999;38(1):9-15, discussion 15-16.
46. Thomas CR, Holzer CE III. The continuing shortage of child and adolescent psychiatrists. *J Am Acad Child Adolesc Psychiatry*. 2006;45(9):1023-1031.
47. Ell K, Katon W, Xie B, et al. Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: a randomized controlled trial. *Diabetes Care*. 2010;33(4):706-713.
48. Katon W. Collaborative depression care models: from development to dissemination. *Am J Prev Med*. 2012;42(5):550-552.
49. Raney L, Bergman D, Torous J, Hasselberg M. Digitally driven integrated primary care and behavioral health: how technology can expand access to effective treatment. *Curr Psychiatry Rep*. 2017;19(11):86.
50. Unutzer J, Katon WJ, Fan MY, et al. Long-term cost effects of collaborative care for late-life depression. *Am J Manag Care*. 2008;14(2):95-100.
51. Donabedian A. The quality of care. How can it be assessed? *JAMA*. 1988;260(12):1743-1748.
52. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q*. 1966;44(suppl 3): 166-206.
53. Francis JJ, Johnston M, Robertson C, et al. What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychol Health*. 2010;25(10):1229-1245.
54. Fassinger RE. Paradigms, praxis, problems, and promise: grounded theory in counseling psychology research. *J Couns Psychol*. 2005;52(2):156-166.
55. Mooney K, Moreno C, Chung PJ, Elijah J, Coker TR. Well-child care clinical practice redesign at a community health center: provider and staff perspectives. *J Prim Care Community Health*. 2014;5(1):19-23.

56. Coker TR, DuPlessis HM, Davoudpour R, Moreno C, Rodriguez MA, Chung PJ. Well-child care practice redesign for low-income children: the perspectives of health plans, medical groups, and state agencies. *Acad Pediatr*. 2012;12(1):43-52.
57. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol*. 2008;8:45.
58. Malterud K. Qualitative research: standards, challenges, and guidelines. *Lancet*. 2001;358(9280):483-488.
59. Maxwell JA. *Qualitative Research Design: An Interactive Approach*. 3rd ed. Thousand Oaks, CA: SAGE Publications; 2013.
60. Ryan G, Bernard H. Data management and analysis methods. In: Denzin N LY, ed. *Handbook of Qualitative Research*. 2nd ed. Thousand Oaks, CA: SAGE Publications; 2000:769-802.
61. Contreras S, Porras-Javier L, Zima BT, et al. Development of a telehealth-coordinated intervention to improve access to community-based mental health care. *Ethn Dis*. 2018. In press.
62. Varni JW SM, Kurtin PS. PedsQL (TM) 4.0: reliability and validity of the Pediatric Quality of Life Inventory (TM) version 4.0 generic core scales in healthy and patient populations. *Med Care*. 2001;39(8):800-812.
63. Child and Adolescent Health Measurement Initiative. 2005-2006 National Survey of Children with Special Health Care Needs Indicator Data Set, Data Resource Center for Child and Adolescent Health. https://www.childhealthdata.org/docs/cshcn/0506_cshcn-spss_final_508-pdf.pdf. Accessed May 12, 2009.
64. Little M, Murphy JM, Jellinek MS, Bishop SJ, Arnett HL. Screening 4-year-old and 5-year-old children for psychosocial dysfunction - a preliminary study with the Pediatric Symptom Checklist. *J Dev Behav Pediatr*. 1994;15(3):191-197.
65. Pagano M, Murphy JM, Pedersen M, et al. Screening for psychosocial problems in 4-5-year-olds during routine EPSDT examinations: validity and reliability in a Mexican-American sample. *Clin Pediatr (Phila)*. 1996;35(3):139-146.
66. Tiffin PA, Kaplan C, Place M. Brief report: development of the family perceptions scale; a novel instrument for evaluating subjective functioning in the families of adolescents. *J Adolesc*. 2011;34(3):593-597.
67. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9—validity of a brief depression severity measure. *J Gen Intern Med*. 2001;16(9):606-613.
68. Kish L. *Survey Sampling*. New York, NY: John Wiley; 1965.
69. Murray DM. *Design and Analysis of Group-randomized Trials*. Oxford, UK: Oxford University Press; 1998.

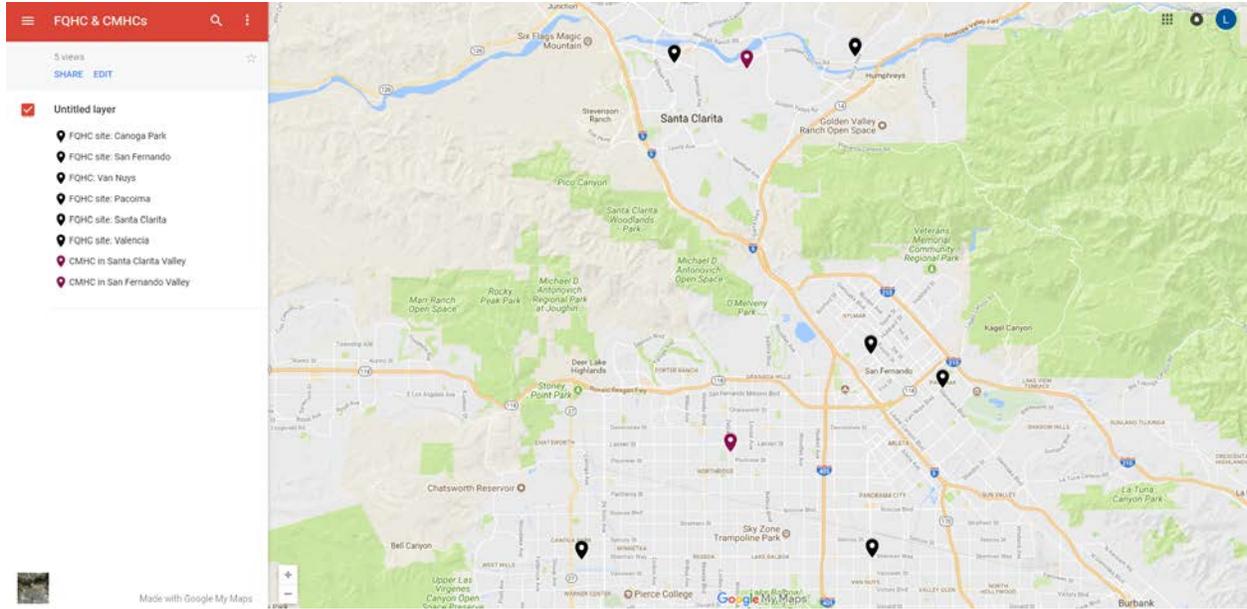
70. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
71. Briggs RD, Racine AD, Chinitz S. Preventive pediatric mental health care: a co-location model. *Infant Ment Health J*. 2007;28(5):481-495.
72. Curry SJ, Hollis J, Bush T, et al. A randomized trial of a family-based smoking prevention intervention in managed care. *Prev Med*. 2003;37(6, pt 1):617-626.
73. Pbert L, Flint AJ, Fletcher KE, Young MH, Druker S, DiFranza JR. Effect of a pediatric practice-based smoking prevention and cessation intervention for adolescents: a randomized, controlled trial. *Pediatrics*. 2008;121(4):e738-e747. doi: 10.1542/peds.2007-1029
74. Connor DF, McLaughlin TJ, Jeffers-Terry M, et al. Targeted child psychiatric services: a new model of pediatric primary clinician—child psychiatry collaborative care. *Clin Pediatr (Phila)*. 2006;45(5):423-434.

RELATED PUBLICATIONS

1. Porrás-Javier L, Bromley E, Lopez M, Coker TR. Challenges to effective primary care-specialty communication and coordination in the mental health referral and care process for publicly insured children. *J Behav Health Serv Res*. 2018;45(4):668-677.
2. Contreras S, Porrás-Javier L, Zima BT, et al. Development of a telehealth-coordinated intervention to improve access to community-based mental health care. *Ethn Dis*. 2018;28(suppl 2):457-466. doi:10.18865/ed.28.S2.457

APPENDIX A

Map of the 6 sites of the federally qualified health center (FQHC) and the 2 community mental health clinics (CMHCs)



Copyright© 2019. Seattle Children’s Research Institute. All Rights Reserved.

Disclaimer:

The [views, statements, opinions] presented in this report are solely the responsibility of the author(s) and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute® (PCORI®), its Board of Governors or Methodology Committee.

Acknowledgement:

*Research reported in this report was [partially] funded through a Patient-Centered Outcomes Research Institute® (PCORI®) Award (#IH-12-11-4168-1C) Further information available at:
<https://www.pcori.org/research-results/2013/does-video-chat-referral-process-help-families-children-who-have-medicaid>*