Connected Care Accelerator Equity Collaborative Final Evaluation Report

Center for Community Health and Evaluation

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EXECUTIVE SUMMARY

Background

The Connected Care Accelerator Equity Collaborative (CCA EC) was a 13-month learning collaborative that ran from April 2022 through May 2023. CCA EC was created with the goal of assisting safety net health centers in California in their efforts to enhance virtual health care. The learning collaborative had three areas of focus: improving the use of video telehealth; improving access to telehealth for patients with preferred languages other than English; and supporting patients with digital barriers (including access to technology and connectivity, and the technology literacy skills needed to access telehealth visits). It offered support to participating organizations, enabling them to quickly develop, test, expand, and share innovative strategies aimed at increasing equitable access to telehealth services. The learning collaborative was led by the Center for Care Innovations (CCI) and was funded by the California Health Care Foundation and Cedars-Sinai.

In September 2022, about six months into the learning collaborative, the state of California enacted policy changes to Medi-Cal that preserved broad expansions in telehealth coverage and payment, including reimbursement parity for all visit modalities (including telephone/audio-only and video visits) for patients with Medicaid. Preservation of payment parity for audio-only visits reduced the urgency for health centers to implement operational changes to support increased access to video visits, which was an area of focus for the learning collaborative (see above).

Methods

The goals of the CCA EC evaluation were to:

1. Assess changes in organizations' practices and capacity related to delivering telehealth to populations of focus.

2. Identify barriers, facilitators, and promising practices in the areas of improving the use of video telehealth, supporting patients with digital barriers, and expanding access to telehealth for patients with preferred languages other than English.

3. Evaluate how the learning collaborative supported changes to health centers' capacity to deliver telehealth equitably.

To achieve these goals, the evaluation employed a mixed methods approach, including the collection and analysis of clinical utilization data, a capacity assessment, feedback surveys from program participants, interviews with health center teams, observation of learning collaborative events, and review of relevant program documents.

Findings

The evaluation found that participating health centers made progress toward equity goals focused on reaching patients who experienced digital barriers, typically patients who preferred languages other than English and/or older adult patients. Improvements made by health centers focused on telehealth workflows, technology, and staff training. Changes in these areas were noted on capacity assessments completed by health center teams at baseline and endpoint, as well as described qualitatively in health center teams' project materials

and in interviews. While changes were made to infrastructure at the health center level, health centers' overall telehealth utilization remained stable during the learning collaborative. The learning collaborative contributed to participating organizations' virtual care efforts by providing resources, facilitating peer learning, and supporting the adoption of new virtual care practices.

1. Health centers' project efforts focused on reaching patients who experienced digital barriers, typically focusing on patients who preferred languages other than English and/or older adult patients.

- Health centers learned in the learning collaborative's discovery phase that to support patients, they needed to: provide clear information, instructions, and guidance to patients in multiple languages; incorporate patient preference for visit modality into scheduling processes; and assist patients in navigating technology.

- As part of the learning collaborative's design, each health center selected a sub-population of focus for their project. Fourteen teams concentrated on patients with preferred languages other than English, six focused on patients within a specific age range, four selected a clinical sub-population (e.g., patients receiving prenatal care), and three aimed to increase access for their overall patient population.

- The most common strategies health centers used to support patients included:

    ◊ Increasing education and digital navigation to support patients' ability to access telehealth appointments.
    ◊ Ensuring that patient education materials were linguistically and culturally appropriate.
    ◊ Screening for digital barriers and assessing patients' preferences for visit modality.
    ◊ Improving seamless integration of language interpreters into video visits.

- While progress was made in advancing patients' comfort with telehealth technology, health centers still encountered challenges in providing support to patients, due to external factors (e.g., patients' access to technology and connectivity) and limited staff capacity to provide one-on-one support.

2. To improve equitable access to video visits, health centers improved their telehealth infrastructure, including workflows, technology, and staff training.

- During the learning collaborative, health centers improved internal systems and processes that supported the use of video visits. The Equitable Telehealth Capacity Assessment showed improvements from baseline to end point in all areas related to workflows, team-based care, and technology support. The median health center showed positive change on five of the 12 capacity assessment items, with the number of items on which health centers showed positive change ranging from zero to eight.

- Changes on the capacity assessment aligned with the areas that health centers focused on during the learning collaborative, including:

    ◊ Developing and strengthening workflows for (1) screening patients for technology access and digital barriers and understanding patient preference for appointment modalities; (2) scheduling telehealth visits and converting phone visits to video visits; and (3) conducting telehealth visits, including pre-visit and post-visit workflows and technical support during the visit.

- ◊ Improving utilization of technology by training staff and providers on existing technology and making adaptations to ensure technology was as user-friendly as possible for staff and patients.
- ◊ Conducting staff training around new workflows, scripts, and technology.

- Health centers identified facilitators that enabled them to improve equitable access to telehealth, including:

  - ◊ Building leadership and provider buy-in to ensure that organizations' telehealth efforts align with strategic direction, and staff have the time and resources needed to advance goals.
  - ◊ Starting with small pilots to understand what works and the implications for spread.
  - ◊ Integrating feedback from patients and frontline staff into improvement efforts.
  - ◊ Regularly monitoring and reviewing data to understand implementation progress.

- While there was substantial progress made on strengthening infrastructure, there were also ongoing challenges that impeded health centers' progress toward telehealth goals. These challenges included addressing health centers' technology needs, establishing support from leaders and care teams, and effectively managing change across the organization.

3. Telehealth utilization remained stable over the course of the learning collaborative. Utilization varied across health centers and across age and language sub-groups.

- The proportion of telehealth visits remained stable over the course of the collaborative with about one-third of primary care visits and two-thirds of behavioral health visits conducted by telehealth.

- The percentage of visits health centers delivered via telehealth and via video varied widely across health centers.

  - ◊ For primary care, the percentage of visits conducted by telehealth ranged from 2-49%, and video visits (as a proportion of total visits) ranged from 0-23%.
  - ◊ For behavioral health, the percentage of visits conducted by telehealth ranged from 21-100%, and video visits (as a proportion of total visits) ranged from 1-68%.

- There were differences in the proportion of video visits by patient age and preferred language.

  - ◊ Video utilization as a proportion of telehealth visits was higher among children relative to adults of all ages.
  - ◊ Patients who preferred English had a higher ratio of video visit utilization compared to patients with preferred languages other than English, but the differences were statistically significant only for behavioral health.
  - ◊ The evaluation did not detect meaningful differences in telehealth or video visit utilization by race/ethnicity.

4. The learning collaborative contributed to participating organizations' virtual care efforts.

- Eight health center teams reported improvements on their outcome measure, all of which were related to increasing utilization of video visits for specific sub-populations or for small pilots (e.g., with one provider or department). Additionally, six health center teams showed sustained improvement or met articulated goals on process measures they established to measure progress on specific actions taken to achieve their aims. Process measures that showed improvement included successful outreach calls/texts, converting phone visits to video, and engaging providers or patients in training activities.

- The remaining nine health center teams did not see significant changes in the project-specific metrics they identified for their projects. They reported that the project had contributed to their overall telehealth efforts and informed next steps, but that measurable impact would take more time to achieve than the four to six month period of the learning collaborative that was focused on implementation.

- Participants reported that the learning collaborative had a positive impact on health centers by providing helpful resources, facilitating peer learning, and supporting the adoption of new virtual care practices.

    ◊ More than 80% of surveyed participants agreed that the learning collaborative supported work to increase their organization's use of video telehealth, was a valuable use of their time, and helped advance virtual care for patients facing digital or language barriers.
    ◊ Over 70% of surveyed participants agreed that their organization considered new virtual care practices because of the learning collaborative.
    ◊ Participants identified all aspects of the learning collaborative as useful:

        * Peer learning was the most valuable aspect of the learning collaborative for most participants.
        * Coaching was a crucial support for helping teams stay on track with project goals and learning collaborative deliverables.
        * Learning collaborative assignments helped teams refine their project focus and deepen their understanding of user experience – both patients and staff.
        * Resources shared during the learning collaborative, such as workflows, scheduling scripts, and process improvement tools, were frequently adopted or adapted into health center practices by the end of the learning collaborative.

Considerations

Based on the evaluation findings, we offer the following considerations to support equitable access to telehealth broadly, and video visits specifically across the state:

1. **To continue to increase access to video visits, support health center teams in developing a value proposition to build internal buy-in.** The Medi-Cal policy changes that ensure payment parity across all visit modalities was a positive advancement for access to telehealth overall, but it also removed the financial urgency for health centers to prioritize improving their infrastructure for video visits. With the financial incentives for conducting more telehealth visits by video removed, some participating health centers discussed challenges engaging leaders and getting buy-in for ongoing investments for video visits. To continue to increase video visit access, consider ways to invest in sharing best practices from organizations with high video utilization and supporting health centers to develop a value proposition for investing in video visit infrastructure.

2. **Support health centers to develop the necessary infrastructure and technology for video visits.** To make large scale improvements in processes, health centers need dedicated time and resources to step back, reflect, and refine their systems. This learning collaborative provided health centers with the resources, time, and space to invest in improvements to telehealth infrastructure. Given that telehealth utilization has stabilized and there seems to be less imperative for organizations to heavily invest in ongoing improvements, consider what support health centers will need to continue to sustain and improve equitable access to telehealth.

3. **Continue to assess the extent to which telehealth is delivered equitably and address disparities in access.** Most health centers in CCA EC addressed equitable access to video visits by focusing on patients with preferred languages other than English. Consider how to continue to assess and address disparities in access to telehealth, and video visits more specifically, through research and patient engagement efforts. Once disparities are better understood, health centers may need support testing solutions to address these disparities. In CCA EC, health centers learned that in order to effectively assess and address equitable access, they may need to first focus on telehealth infrastructure overall (i.e., technology, staffing, training, and operational changes) and data segmentation to understand their patient population (i.e., coding visit modality, segmenting data by race/ethnicity).

4. **Amplify technology solutions that are working, particularly for language interpretation.** During the learning collaborative, technology solutions were starting to emerge for more seamless video access to interpreter services. These and other new technologies should continue to be monitored and evaluated to understand effectiveness and potential for spread.

5. **Consider ways to continue to support patients who face digital barriers.** Through this learning collaborative, health centers worked to provide support to patients who were facing digital barriers but were challenged with allocating sufficient staff time to provide needed support. Continued investments will be needed to identify and spread sustainable models for supporting patients.

BACKGROUND

The Connected Care Accelerator Equity Collaborative (CCA EC) was a 13-month learning collaborative that ran from April 2022 through May 2023. CCA EC was designed to help safety net health centers in California advance virtual care by providing support to rapidly design, test, scale, and share new strategies to improve equity in access to telehealth.[1] The learning collaborative was led by the Center for Care Innovations (CCI) and was funded by the California Health Care Foundation (CHCF) and Cedars-Sinai.

CCA EC built on the successes of the first iteration of the Connected Care Accelerator (CCA 1.0), a 12-month learning collaborative that ran from August 2020 to July 2021. CCA 1.0 was launched to respond to the needs of safety net health centers during the COVID-19 pandemic, when safety net health centers rapidly pivoted to providing a large portion of primary care and behavioral health via telehealth (audio-only and video visits). Findings from the evaluation of CCA 1.0 showed that the vast majority of telehealth visits at participating health centers were conducted using audio-only visits, with video visits comprising less than 10% of primary care telehealth visits and less than 20% of behavioral health telehealth visits.[2] Utilization of video visits was even lower among patients with limited English proficiency.[3] At the time, uncertainties about future payment parity for audio-only video visits created an imperative for health centers to develop the infrastructure (i.e., technology, staffing, and operational changes) to make video visits more broadly available. The evaluation found that several practices supported higher utilization of video visits, including providing one-on-one technology support to patients and dedicating operational resources to develop workflows, staffing models, and technology for video visit implementation.

External research similarly found that telehealth expansion during the pandemic benefitted many people, but also replicated existing inequities in healthcare access. For example, a review of utilization data from federally qualified health centers (FQHCs) found that patients who identified as African American, Asian, American Indian, Alaska Native, Pacific Islander, or Hispanic were less likely to have a telehealth visit during the beginning of the pandemic than White patients.[4] A study of tele-mental health services offered by two children's hospitals also found that Black, Indigenous, and other People of Color (BIPOC) were less likely to access telehealth services than white patients.[5] Policy research by RAND found that, even though payment parity for telehealth has increased services, mental health facilities that accept patients covered by Medicaid or serve communities with a higher proportion of Black/African American residents were less likely to offer telehealth services.[6] Access to telehealth can also be hampered by patients' access to technology (e.g., smartphone, tablet, or laptop access) and broadband internet, which are correlated with socio-economic status and geography (e.g., rural communities).[7]

[1] Throughout this report, the terms "telehealth" and "virtual care" are used interchangeably to refer to synchronous visits conducted via telephone (audio-only) or video. "Visits" are used to refer to synchronous visits conducted via telephone or video, and specific modalities (phone/video) are named when relevant.
[2] Center for Community Health and Evaluation. (2021). Connected Care Accelerator Innovation Learning Collaborative Final Evaluation Report. Internal CHCF Report: unpublished.
[3] The evaluation of CCA 1.0 also looked at telehealth utilization differences by race and ethnicity but could not draw conclusions about differences or disparities in use.
[4] Adepoju OE, Chae M, Ojinnaka CO, Shetty S, Angelocci T. Utilization Gaps During the COVID-19 Pandemic: Racial and Ethnic Disparities in Telemedicine Uptake in Federally Qualified Health Center Clinics. J Gen Intern Med. 2022 Apr;37(5):1191-1197. doi: 10.1007/s11606-021-07304-4. Epub 2022 Feb 2. PMID: 35112280; PMCID: PMC8809627.
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[6] McBain RK, Schuler MS, Qureshi N, Matthews S, Kofner A, Breslau J, Cantor JH. Expansion of Telehealth Availability for Mental Health Care After State-Level Policy Changes From 2019 to 2022. JAMA Netw Open. 2023 Jun 1;6(6):e2318045. doi: 10.1001/jamanetworkopen.2023.18045. PMID: 37310741.
[7] Broffman L, Harrison S, Zhao M, Goldman A, Patnaik I, Zhou M. The Relationship Between Broadband Speeds, Device Type, Demographic Characteristics, and Care-Seeking Via Telehealth. Telemed J E Health. 2023 Mar;29(3):425-431. doi: 10.1089/tmj.2022.0058. Epub 2022 Jul 22. PMID: 35867048.
Zahnd WE, Bell N, Larson AE. Geographic, racial/ethnic, and socioeconomic inequities in broadband access. J Rural Health. 2022 Jun;38(3):519-526. doi: 10.1111/jrh.12635. Epub 2021 Nov 18. PMID: 34792815.
Zhang D, Shi L, Han X, Li Y, Jalajel NA, Patel S, Chen Z, Chen L, Wen M, Li H, Chen B, Li J, Su D. Disparities in telehealth utilization during the COVID-19 pandemic: Findings from a nationally representative survey in the United States. J Telemed Telecare. 2021 Oct 11:1357633X211051677. doi: 10.1177/1357633X211051677. Epub ahead of print. PMID: 34633882.

In response to inequities in telehealth access, and particularly differences in access to video visits, identified during the pandemic, CCA EC included three areas of focus: improving the use of video telehealth; improving access to telehealth for patients with preferred languages other than English; and supporting patients with digital barriers (including access to technology, connectivity, and the technology literacy skills needed to access telehealth visits). Drawing on learnings from CCA 1.0 and principles of human-centered design, the learning collaborative provided support to health centers to address patient barriers and implement practices that promote equitable access to care (see Box 1 for phases of the learning collaborative). Support included monthly coaching sessions, virtual convenings, access to subject matter experts, and access to human-centered design tools.

Twenty-two safety net organizations across California were selected to participate in CCA EC. These organizations included Federally Qualified Health Centers (FQHCs), FQHC Look-Alikes, and county health systems that collectively served over 1.6 million patients across California (see Appendix A for a detailed list of organizations). Each participating organization developed a telehealth improvement project focused on addressing disparities in telehealth access (see example aim statements from improvement projects in Box 2). Most health centers' improvement projects focused on increasing video visits (18/22); three health centers were focused on increasing telehealth more generally; and one focused on training staff on telehealth workflows.

Box 1: Phases of the learning collaborative

- **Reflect & Define** – Solidify project team, understand the current state of telehealth practice, identify strengths and opportunities, and define the problem and aim.
- **Discover, Prioritize, & Design** – Learn from patient and staff experience and develop a plan to test changes to improve access to telehealth.
- **Test & Refine** – Use Plan-Do-Study-Act (PDSA) cycles to test and implement core changes and measure impact.
- **Implement & Spread** – Standardize and embed workflows and protocols into organizational systems and document, communicate, and spread practices and lessons learned.

Throughout the first half of the learning collaborative, the telehealth policy environment in the state of California continued to evolve. In September 2022, about six months into the learning collaborative, the state of California enacted policy changes to Medi-Cal that preserved broad expansions in telehealth coverage and payment, including reimbursement parity for all visit modalities (including telephone/audio-only and video visits) for Medicaid patients. Preservation of payment parity for audio-only visits reduced the urgency for health centers to implement operational changes to support increased access to video visits, which was an area of focus for the learning collaborative (see above).

CCA EC was one of two telehealth-related learning collaboratives funded by CHCF during this time period. The Telehealth Improvement Community Fund (TICF) was a 7-month program that ran from December 2022 through June 2023. Like CCA EC, TICF was led by CCI. TICF supported the spread of practices known to support video visit implementation. Support included access to tools, resources, subject matter experts, and opportunities for peer networking. TICF was a less intensive model for supporting participating organizations advance their telehealth practice.

Box 2: Example Aim Statements

Standardized workflows will be developed to convert 5% of telephone visits to video visits at one primary care clinic by April 2023.

By May 2023, we will increase video visits by 3% for older, non-English speaking patients, by focusing on diabetes care and training three additional family practice providers on how to do video visits.

We would like to increase our video telehealth appointments to 65% of total telehealth appointments by the end of the project period. We will focus on our older behavioral health patients initially.

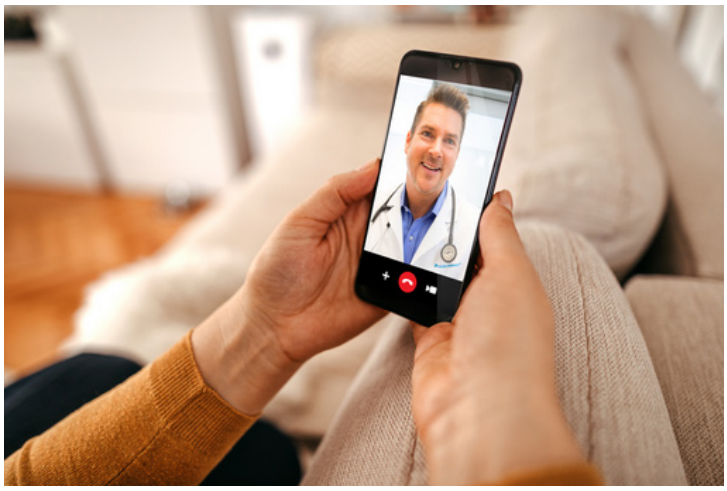
METHODS

The goals of the CCA EC evaluation were to:

1. Assess changes in organizations' practices and capacity related to delivering telehealth to populations of focus.

2. Identify barriers, facilitators, and promising practices in the areas of improving the use of video telehealth, supporting patients with digital barriers, and expanding access to telehealth for patients with preferred languages other than English.

3. Evaluate how the learning collaborative supported changes to health centers' capacity to deliver telehealth equitably.



To achieve these goals and measure progress, the evaluation used a mixed methods approach to collecting and analyzing data. More information about specific data collection methods can be found in Appendix B. The data informing this report include:

- Clinical utilization data from November 2021 through May 2023,[8] including monthly visits in each care modality (in-person, telephone/audio-only, and video) segmented by patient race/ethnicity, ag range, language preference.

- Completion of the Equitable Telehealth Capacity Assessment, which asked teams to rate the extent to which their current practices support equitable access to telehealth at two timepoints (n=22 at baseline and n=21 at endpoint).

- Participant feedback survey at two timepoints in October 2022 (n=45 participants) and in May 2023 (n=51 participants).

- Health center team interviews conducted at two timepoints in November 2022 (n=20) and in May 2023 (n=22).

- Observations of learning collaborative webinars, peer learning events (i.e., "Share and Learns"), and group coaching sessions.

- Document review of teams' project materials, including data on process and outcome measures identified by each team to measure progress on their project.

[8] 21 of 22 health centers submitted complete clinical data in this collection period. One health center was unable to submit race/ethnicity data due to transition to a new EHR; three health centers were unable to segment telehealth data by phone and video due to limitations in their EHRs. Their data is excluded from all analyses and figures that refer to specific modalities in this report.

EVALUATION FINDINGS

The evaluation found that participating health centers made progress toward equity goals focused on reaching patients who experienced digital barriers, typically patients who preferred languages other than English and/or older adult patients. Health centers focused on making improvements in the areas of telehealth workflows, technology, and staff training. Changes in these areas were noted on capacity assessments completed by health center teams at baseline and endpoint, and described qualitatively in health center teams' project materials and in interviews. While changes were made to infrastructure at the health center level, health centers' overall telehealth utilization remained stable during the learning collaborative. The learning collaborative contributed to participating organizations' virtual care efforts by providing resources, facilitating peer learning, and supporting the adoption of new virtual care practices.

Detailed results are described below, organized around four key findings related to populations of focus, improvements made by health centers, overall telehealth utilization, and contributions of the learning collaborative. These results were obtained from qualitative and quantitative analyses of each data source, and triangulation across data sources.

1. Health centers' project efforts focused on reaching patients who experienced digital barriers, typically focusing on patients who preferred languages other than English and/or older adult patients.

As an equity-focused telehealth initiative, CCA EC was designed to support improved video visit access for patient sub-populations who underutilized video visits relative to other patients. Health centers began their projects to address equity in telehealth access with a discovery phase, during which they interviewed patients and staff about their experiences with telehealth, completed a baseline Equitable Telehealth Capacity Assessment, examined segmented data on telehealth utilization, and developed journey maps of patient and staff telehealth experiences.

Interviews with patients generated insights on challenges accessing telehealth visits and ways the health center could better support patients. Health center teams learned that patients' interest in telehealth was varied, and sometimes health center teams were surprised to learn patients were more interested in telehealth than the health center staff had assumed. However, patients also experienced challenges accessing video visits due to connectivity issues or device-related challenges. Some patients were hesitant to try video visits due to a lack of familiarity with the technology, and barriers were more significant for patients who preferred a language other than English and older adults. During the discovery phase, health centers reported that they learned that to support patients they needed to:

- Provide clear information, instructions, and guidance to patients, ideally in multiple languages.
- Incorporate patient preference for visit modality into scheduling processes.
- Assist patients with navigating technology.

Based on what they learned from their discovery phase, most organizations selected a focus population for their efforts to increase equitable access to video visits. Populations of focus included:

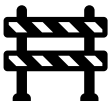
- **Language**: 14 teams focused on patients with preferred languages other than English, and three focused specifically on Spanish-speaking populations. When describing the specific barriers patients with preferred languages other than English faced, health center teams indicated their patients often had difficulty accessing smartphones and needed support with technology. They faced additional barriers accessing telehealth platforms due to the frequent use of written English in most user interfaces and instructions. Furthermore, health centers needed to be able to include interpreters or internal staff members who could interpret during a visit, which was often a barrier due to technology challenges integrating the interpreter into video visits.
- **Age**: Six teams focused on patients in specific age groups, including older adults (i.e., age 65+) and middle-aged adults (age 40-55 or age 45-64). Health center teams that chose to focus on older adults cited their relatively lower rates of telehealth utilization and challenges accessing or becoming proficient with technology. Those focusing on middle-aged adults indicated that this age group represented a promising population for which to expand technology access, given they had less resistance to technology than older patients but often had chronic conditions that could be managed with the support of telehealth.
- **Clinical subpopulations:** Two health center teams focused on patients served by their chronic care teams, one team focused on a women's health department, and one team focused on behavioral health patients.

While patients living in rural areas were not selected as a specific population of focus by any of the health centers, several health centers cited the challenges of transportation and access to broadband as important motivators for expanding telehealth access to their patients living in rural areas.

Three health center teams did not select a specific population and instead chose to focus their efforts on overall telehealth improvements to support access for their whole patient population. They often noted video visit utilization was so low across their patient population that they were unable to assess potential disparities in access and needed to increase overall volume first.

The most common strategies that health centers used to support patients included:

patient education and digital navigation for telehealth,



screening for digital barriers,

assessing patients' preferences for visit type, and

improving integration of interpreters into video visits.

Each strategy is discussed further in depth below, and examples of health centers' successful efforts are described in text boxes throughout this section.

Increasing patient education and digital navigation for telehealth and ensuring that patient education materials were linguistically and culturally appropriate. Health centers working in this area recognized the critical role of informing patients about the availability of video telehealth and educating them on how to access telehealth visits. Effective education required that support and resources were culturally and linguistically appropriate. Patient education and digital navigation support took many different forms across the health centers, for example:

- **Garfield Health Center** developed visual guides (flyers and posters for their waiting rooms) in four different languages (English, Chinese, Spanish, Vietnamese) to promote and provide instructions for using their video visit platform.

- **TrueCare** identified a team member to educate patients prior to their telehealth appointment and were able to see upward trends in the number of completed monthly video visits, beginning with fewer than 20 monthly visits and increasing to 50 visits. Successes in their pilot work educating patients helped them make the case to leadership for increasing support to patients.

- **Neighborhood Healthcare** highlighted how telehealth has reshaped their approach to patient education and the delivery of reproductive healthcare by offering prenatal education sessions through telehealth, including, nutrition, gestational diabetes education, family planning consultations, and guidance on post-pregnancy birth control options.

- **Salud Para La Gente** used their call center nurses to guide new and existing patients through the telehealth process during intake.

While pilot efforts focusing on patient education and digital navigation demonstrated some success for increasing patient access to telehealth, patients continued to face digital barriers related to accessing video visits. Patients' limited or unreliable internet connections affected the feasibility of telehealth appointments, potentially leading to dropped calls or poor video quality. For some patients, the absence of private places to engage in telehealth visits impacted the effectiveness of the visit (i.e., patients' comfort with being candid if there are other people around). Even with education, many patients still required assistance accessing and utilizing the technology needed to have a video visit. Health centers who tested strategies to provide one-on-one technology support found that it was time intensive, which made it possible to support only a relatively small number of patients due to staff capacity.

Screening for digital barriers and assessing patients' preferences for visit type. During CCA 1.0, screening for digital barriers (i.e., challenges accessing technology or developing the skills needed to use virtual visit platforms) was identified as an important practice to help patients identify visit modalities that would work for them and support their use of technology. The number of health centers screening for digital barriers increased during CCA EC. At baseline, half of health centers (11) were routinely screening patients for digital barriers, but this number increased at endpoint (19), reflecting improvements in workflows and processes for telehealth. At endpoint, about one-third of health centers screened patients who expressed interest in video consultation. About one-half screened patients interested in any telehealth modality (audio-only and/or video). Only one health center screened all patients for digital barriers at both baseline and endpoint (see Table 1).

Informing patients of video visit options: Asian Health Services

By interviewing patients, **Asian Health Services** pinpointed a key issue: patients did not know about the option to have a video visit or how to use the video technology. When considering the use of video telehealth, patients described barriers such as not understanding how to use their smartphone or feeling pressured to appear presentable on video. Despite these challenges, most patients expressed openness to trying a video visit, especially when it was recommended by their care team and with the assurance that they would receive support for navigating the visit.

To support patients' navigation of the video visit, the health center team provided education on how to use their video visit platform (Doximity) during in-person appointments with patients receiving remote blood pressure monitoring devices. They encouraged video visits for their follow up health coach calls, which were a part of the health center's remote patient monitoring (RPM) protocol. Notably, 40% of patients who received this training completed a Doximity video visit, highlighting the success of their targeted outreach and education. Health center staff recognized the benefits of video visits for patients residing further from the clinic, who may face transportation barriers getting to in-person visits.

Looking ahead, Asian Health Services planned to scale their pilot efforts by collaborating with the community service team, interns, and volunteers to include more patients in their video visit outreach and education efforts. They also planned to continue advocating for smoother integration of interpreters into their video visits, given the high proportion of their patients who require language support to access health care.

Table 1. Equitable Telehealth Capacity Assessment item related to health centers' screening patients for digital barriers

Patients screened for digital barriers	No. of Health Centers (Baseline) (n=22)	No. of Health Centers (Endpoint) (n=21)
All patients interested in telehealth (audio and/or video) are screened for barriers	7	10
All patients interested in video consultation are screened for digital barriers	4	8
All patients are screened for digital barriers	1	1

Examples of health centers' efforts in this area included:

- **Northeast Valley Health Corporation** enlisted UC Berkeley student volunteers to reach out to patients about their telehealth preferences and to transition telephone/audio-only visits to video when patients were interested.

While many patients demonstrated an interest in trying video visits and health centers' outreach efforts supported identification of these patients, others remained hesitant to try video visits for a variety of reasons discussed above (e.g., privacy, technology concerns).

Improving systems for seamless integration of interpreters into video visits. The evaluation of CCA 1.0 identified integration of interpreters into video visits as an ongoing challenge for providing care via video visits to patients with preferred languages other than English. Challenges included use of video visit platforms that did not allow adding a third-party interpreter, interpretation vendors whose workflows only allowed for audio interpretation, and cumbersome workflows to add interpreters that disincentivized use of video among staff. The number of health centers who were able to provide seamless interpretation during video visits increased during the learning collaborative (see Table 2). At the start of the learning collaborative, only two health centers provided seamless audio-visual language interpretation during video visits using external vendors or internal resources, but at endpoint this number increased to five health centers. The number of health centers who were able to provide seamless audio-only interpretation also increased, from six health centers at baseline to eight at endpoint.

Flipping scheduled audio-only visits to video visits: Saban Community Clinic

During the discovery phase of the learning collaborative, **Saban Community Clinic** learned that their staff needed to better understand the benefits of video visits to be able to clearly communicate the option to patients.

To increase utilization of video visits, the health center team piloted the use of scripts for staff to reach out to patients who were already scheduled for audio-only telehealth visits, asking them to "flip" their scheduled visit to a video visit. Their script screened patients for access to and familiarity with technology to ensure they were equipped for a successful video visit. The team successfully piloted video visits with several patients each month and attributed their success working with these patients to having staff dedicated to walking patients through the video visit process and screening for technology needs.

Saban Community Clinic was considering how to expand their efforts to dedicate more staff resources to telehealth-related outreach and education. After the learning collaborative, they planned to train appointment schedulers and call center staff on scripting to promote video visits and screen for digital barriers. Additionally, they planned to use educational resources developed by CCI to promote the potential benefits of telehealth with patients and staff and to employ a summer intern to share information with patients on site about the availability of telehealth.

Table 2. Equitable Telehealth Capacity Assessment item related to health centers' language interpretation practices.

How Language interpretation is provided for video telehealth	No. of Health Centers (Baseline) (n=22)	No. of Health Centers (Endpoint) (n=21)
Language interpretation is provided seamlessly using our existing vendors and/or internal resources. Interpreters can connect to the video platform via audio-only.	6	8
Language interpretation is provided seamlessly using our existing vendors and/or internal resources. Interpreters can connect to the video platform via audio and video.	2	5

A few health centers noted that adoption of new video visit platforms or integration of interpreter services within their video platforms helped to reduce delays during the visit and made workflows easier and more efficient for care teams and providers. For example:

- **Asian Pacific Healthcare Venture** reported, *"Once we started implementing Doxy.me, it was a challenge because it would take 7-10 minutes to get an interpreter connected to the visit, which delayed our workflow. In the learning collaborative, we learned that Doxy.me had a vendor called VOYCE that provides interpreter services directly integrated with the platform. We just implemented that, so that has really helped our telehealth visits."*

Efforts piloted by health centers related to language interpretation demonstrated that promising solutions, in terms of both technology and operational infrastructure, exist for patients with preferred languages other than English. However, the relatively small number of health centers in the cohort with seamless integration of interpreters into video visits indicates that widespread adoption of solutions remains an opportunity.

Increasing equitable behavioral health access through telehealth: Vista Community Clinic

Vista Community Clinic's team learned during the discovery phase that their Spanish-speaking patients utilized behavioral health services at a lower rate relative to primary care. At their health center, all behavioral health care was provided using telehealth, so the team decided to focus on patient education on tele-behavioral health services for their Spanish-speaking patients, with a focus on informing patients about the benefits and importance of accessing behavioral health services when indicated.

To address this need, the Vista Community Clinic team created flyers in English and Spanish to inform patients about the benefits of behavioral health services and how to prepare for telehealth visits. They also worked with primary care providers to connect their patients to behavioral health services when needed. The health center saw the monthly percentage of patients who preferred a language other than English (as a proportion of all behavioral health patients) increase from 8% to 10%, and expected to see this trend continue to increase as they continue to focus on patient education related to behavioral health services.

2. To improve equitable access to video visits, health centers improved their telehealth infrastructure, including workflows, technology, and staff training.

During the discovery phase of the initiative, health centers identified internal capacity and infrastructure challenges. Themes from interviews of patients and staff related to improving health center processes included:

- Provider and staff buy-in and confidence with using the telehealth platform were essential to increase utilization of video visits.
- Providers and staff experienced technical challenges during video visits, which resulted in less buy-in and lower confidence.
- Providers and staff required training on video platforms and internal workflows to overcome challenges.
- Standardizing workflows for video visits helped to support provider and staff members' use of telehealth.

Health centers improved internal systems and processes that supported the use of video visits.

To support access for the sub-populations that teams were focused on, most teams had to make overall improvements to the internal systems and processes that supported the use of video visits. During the learning collaborative, health centers focused on improving infrastructure for video visits, including:

- Developing and strengthening workflows for screening patients for technology access and digital barriers and understanding patient preference for appointment modalities; scheduling telehealth visits and converting phone visits to video visits; and conducting telehealth visits, including pre-visit and post visit workflows and technical support during the visit.
- Adopting new technology or piloting efforts to equip providers and staff with stronger technology support.
- Conducting staff training around new workflows, scheduling scripts, and technology.

The Equitable Telehealth Capacity Assessment showed improvements from baseline to endpoint in all areas related to workflows, team-based care, and technology support (see Table 3).[9] The median health center showed positive change on five of the 12 capacity assessment items, with the number of items on which health centers showed positive change ranging from zero to eight. These increased ratings reflect improvements made by health centers as they established or refined workflows related to their specific aims *(see Appendix C and D for the full assessment results).*

[9] This capacity assessment was not a validated tool,so it can be difficult to interpret the extent to which changes are meaningful. However, other developmental capacity assessments have found that, for an assessment using a 12-point scale, a 1-pt change in a response is a meaningful predictor of changes in outcomes: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8575517/.

Table 3. Equitable Telehealth Capacity Assessment ratings for items in workflows, team-based care, and technology support

	Mean (on a scale of 1-5)		
Workflows and team-based care	**Baseline (n=22)**	**Endpoint (n=21)**	**Change**
Operational and clinical standards for telehealth	2.9	3.7	+0.8
Patients informed of options for accessing care	2.6	3.8	+1.2
Team-based care for telehealth	2.7	3.2	+0.5
Telehealth integration into standard care operations across care sites	2.8	3.5	+0.7
	Mean (on a scale of 1-5)		
Workflows for video visits	**Baseline (n=22)**	**Endpoint (n=21)**	**Change**
Multiple participants can move in/out of the connection seamlessly	2.0	2.8	+0.8
Patient check-in occurs smoothly	2.6	3.5	+0.9
Pre-visit screenings & other intake processes are completed seamlessly before or during the visit	2.7	3.3	+0.6
Patient education materials and other tools are shared during the visit	2.2	2.9	+0.7
Post-visit follow-up tasks are completed smoothly	3.3	3.9	+0.6
	Mean (on a scale of 1-5)		
Technology support	**Baseline (n=22)**	**Endpoint (n=21)**	**Change**
Just-in-time support for provider/staff to solve technology challenges for telehealth	2.7	3.2	+0.5
Staff roles to support patients with telehealth (can include IT staff)	2.4	3.3	+0.9
Staff training on how to use the systems for telehealth	2.5	3.5	+1.0

Workflows

During interviews, about half of the health centers reported that the adoption of new or more comprehensive workflows had a positive impact on their capacity. They noted that these workflows provided clear instructions for staff and providers, which increased confidence and consistency of practice throughout the health center.

Health centers focused on creating and testing new workflows and scripts, including for the efforts related to patient education, screening for digital barriers, and understanding patient preferences for visit modality, which were discussed in the previous section. In addition to these patient-focused workflows, some health centers were also modifying internal processes, such as:

- Modifying how telehealth visits fit into scheduling templates. For example, **TrueCare** changed their scheduling template by adding 5:00 to 8:00 am telehealth-only visit slots and assigning providers to this blocked time.

- Clarifying the workflow for facilitating a telehealth visit, including pre-visit and post-visit workflows and how to access technical support during the visit.

Changes to workflows and practices take time to institute, particularly in larger organizations, and potentially even longer to see sustained changes in utilization patterns as a result. Most of the workflow changes occurred within the last six months of the learning collaborative, so were often still in early stages of testing, with some health centers beginning to spread changes beyond their initial pilot. In interviews at the end of the learning collaborative, most health centers reported that they would continue to advance the workflows they developed as part of the learning collaborative.

> *"Previously, we had a more generic workflow. We spent a number of weeks creating a more detailed workflow with all of the key steps. It listed all of the steps in text format and with a workflow diagram in order to present to the end user exactly what keystrokes they need to do in order to get the patient checked in and moved onto the next stage in the virtual visit journey. Those workflows were key and they're going to be key as we scale and expand the implementation to our remaining clinics."*

Technology

Provider and staff comfort with the video visit platform was a key factor in telehealth utilization. When providers and staff were more comfortable with video visit platforms, they were more likely to encourage patients to try video visits. Two health centers recognized they would not be able to increase video utilization with their current platforms and worked on updating their technology to better support telehealth visits. For example, **San Joaquin County Clinics** implemented a new telehealth platform that defaulted to use of video. When they transitioned to the new platform, they did live walkthroughs with staff to show them how to use it and how to troubleshoot common challenges. They started at about 5% of telehealth visits done by video, and by the end of their project, showed a rate of 11-16% of telehealth visits done by video, which also included a new tele-urgent care service line. *See Appendix E for list of telehealth platforms used by CCA EC health centers.*

Other health centers were comfortable with their technology but recognized that solving patients' technical problems often fell upon overburdened providers or care teams during the visit. There was inadequate technical support for providers and care teams to support telehealth, especially video visits, in real time.

Several health centers piloted solutions to provide more robust support to troubleshoot technology issues. For example, **Northeast Valley Health Corporation** and **San Francisco Health Network** utilized at-the-elbow support to increase comfort level for providers and staff with telehealth technology, as well as volunteers to support patients to successfully connect to video visits. After these efforts, both health centers saw increases in the number of telehealth visits converted to video.

Training

Staff and provider training helped to reinforce the new telehealth workflows and technology changes. About half of the health centers established or refined telehealth training materials, resources, and support for their care teams. Training was needed to ensure staff had consistent information about processes, roles, and responsibilities. For some health centers, training included efforts to increase skills and confidence across all staff, while others provided more focused training for dedicated staff to provide technical support (e.g., front office staff on scheduling). For example:

- **Chinatown Service Center** developed a script for scheduling staff to identify appropriate visit types for telehealth. They implemented monthly provider and staff trainings to reinforce telehealth workflow, policies, and expectations, with a focus on supporting patients who preferred a language other than English.

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- **TCC Family Health** conducted live walkthroughs of their telehealth platform with behavioral health staff to facilitate their understanding of technology and troubleshoot common challenges, in part so they would encourage patients' use of video. They built telehealth-related training into onboarding for new hires. During their project, they saw an upward trend in both scheduled and completed video visits between October 2022 and April 2023.

Facilitators that supported successful improvements in telehealth systems and processes included leadership and provider buy-in, pilot efforts, data collection and review, and solicitation of patient input.

Health centers identified the following facilitators as critical to advancing their telehealth improvement efforts:

- **Building leadership and provider buy-in to ensure that organizations' telehealth efforts were strategically aligned and resourced.** Leadership support was important in driving the adoption of video visits, conveying the value of telehealth to the organization, aligning efforts with organizational strategy, and supporting the sustainbility of telehealth efforts. In interviews, health center teams described varying levels of leadership support for building infrastructure and workflows for telehealth. Most health center teams indicated leaders demonstrated support for equity in telehealth by supporting their participation in the learning collaborative and/or participating in the project team. Some teams engaged executive leaders and/or providers directly in their telehealth project, while others kept their leaders informed and engaged throughout the project using data dashboards or other program materials. In some cases, health center teams indicated leaders were particularly invested in advancing telehealth practice due to its potential to support patients with limited access to transportation, increase patient satisfaction, and allow for cost-effective delivery of care. In other cases, health center leaders did not see the value in sustained investment in video telehealth, particularly given the expectation that payment parity across all visit modalities, including audio-only visits, would continue.

  In addition to executive leader support, teams noted that having provider champions was important to influence and sustain adoption of telehealth. These champions helped to garner buy-in and provide support to other providers who may have been more reluctant to engage with telehealth.

- **Starting with small pilots to understand what works and the implications for spread.** Many health center teams reported that starting with small-scale efforts facilitated smoother adoption and agility for larger organizational change. They recommended health centers initiate efforts on a small scale, preferably in a smaller clinic with a few providers where immediate value can be demonstrated. This approach allows for gradual scaling. Several of the health centers found success by beginning with specific care teams and specialties (e.g., behavioral health or women's health), where clear use cases and successes could be established and then promoted more widely.

- **Integrating feedback from patients and frontline staff into improvement efforts.** Health center teams recognized the value of ongoing patient and staff feedback to establish telehealth goals and make continual improvements to telehealth processes. This is discussed more in the section on the learning collaborative's contribution to the health center's telehealth efforts.

- **Regularly monitoring and reviewing data to understand implementation.** By the end of the learning collaborative, most health centers had established specific metrics to track and monitor telehealth practices and were able to distinguish between telephone/audio-only and video visits in their utilization data. About half of the cohort collected and analyzed segmented data to understand disparities in telehealth utilization across patient sub-populations. Most health centers reported collecting patient satisfaction data from a single timepoint survey or on a regular basis, with only two teams not collecting or collecting limited feedback on patient satisfaction with telehealth. Additionally, more than half of the health centers indicated that they were engaged in continuous improvement efforts to address equity of access and quality of telehealth for patient subpopulations (see Table 4).

  Health centers reported gaining valuable insights by examining their data, which led to better understanding their operations or their support of patients to increase the number of video visits. These insights included recognizing the potential for a single super-user to skew their utilization data, understanding the higher acceptance of telehealth visits among their patients living in rural areas, and realizing that their project increased overall telehealth visits but didn't lead to an increase in video visits, which was the goal.

> *"We learned that to actually have meaningful data, we need to make sure our workflows are right so that the information that we actually get is accurate. And we need regular review of that data to follow up on the information we get."*

> *"Besides involving leadership, it's also important to share the data with everyone in the clinic, whether that may be a nurse, an MA, registration staff. Because they all play key roles in this."*

Table 4. Health centers increased their ratings on the Equitable Telehealth Capacity Assessment for items related to data and quality improvement from baseline to endpoint.

	Mean (on a scale of 1-5)		
Data and Quality Improvement	**Baseline (n=22)**	**Endpoint (n=21)**	**Change**
Continuous improvement cycles to address equity of access to and quality of telehealth for patient subpopulations	2.0	3.1	+1.0
Patient feedback and satisfaction with telehealth	2.6	3.4	+0.8
Telehealth process and outcome metrics	2.8	3.4	+0.6

While there was substantial progress made on strengthening infrastructure, there were also ongoing challenges that impeded health centers' progress toward their telehealth goals.

The primary challenges that health centers continued to face at the end of the learning collaborative included challenges related to establishing buy-in, managing technology and data, and managing organizational change.

Establishing buy-in. As mentioned above, some health centers reported challenges with establishing and maintaining buy-in at different levels of their organization.

- *Leaders:* Some leadership teams were not fully engaged with the telehealth project or grant objectives and/or needed to be convinced of the value of telehealth and the specific project strategies. Teams recognized that support from leaders was vital for promoting telehealth adoption across the organization as well as sustaining investments in telehealth improvement.

- *Providers:* Provider resistance to video visits was a significant challenge for some teams. Factors contributing to resistance included concerns about the time required to set up and conduct video visits, technical issues during the visit, the how the care team members were integrated into and leveraged for video visits, and comfort being on camera for the visit. To increase provider buy-in, some teams tried to accommodate specific provider preferences for video visits (e.g., some providers preferred using tablets, some preferred desktop computers, others required specific equipment like one-sided earphones) to increase utilization.

- *Clinical support staff:* The extent to which clinical support staff supported video visits varied. While some care teams fully endorsed video visits, others preferred audio-only visits and reverted to recommending audio-only visits as the default for telehealth visits. Concerns were similar to those of providers (e.g., comfort, concerns about time and technical issues, clarity of team roles). Some health center teams emphasized the need to remind providers and staff of the importance of patient preferences and video visit's continued relevance for their organization and their patients.

Managing technology and data. Some teams recognized that their current technology was not meeting their needs. Challenges included outdated hardware, platforms that were not user-friendly because they required patients to download an application, or poor integration with the health center's electronic health record (EHR). Teams recognized that making changes to their technology would require significant investment of staff time and financial resources, as a result, they needed to work within the limitations of the available technology. Some health centers were also still navigating how to best manage data collection associated with telehealth visits, including gathering consent forms and integrating data from telehealth platforms into the electronic health record. These health centers recognized a need to continue to invest in building out their data infrastructure.

Managing change. Implementing telehealth, particularly video visits, required significant changes to how people were used to working, and these changes were often challenging to introduce, implement, and monitor, especially when dealing with multiple departments and schedules. One health center illustrated some of the challenges of change management when describing their experience with their learning collaborative project. Their operations team made significant efforts to train scheduling staff to use a script to offer video visits as an option to patients, and to encourage the use of video for telehealth visits. However, they found that use of video visits remained stagnant because some care teams were requesting that their scheduled video visits were flipped back to audio-only – reflecting the need for greater training and buy-in among the clinical team if changes were to be made to scheduling.

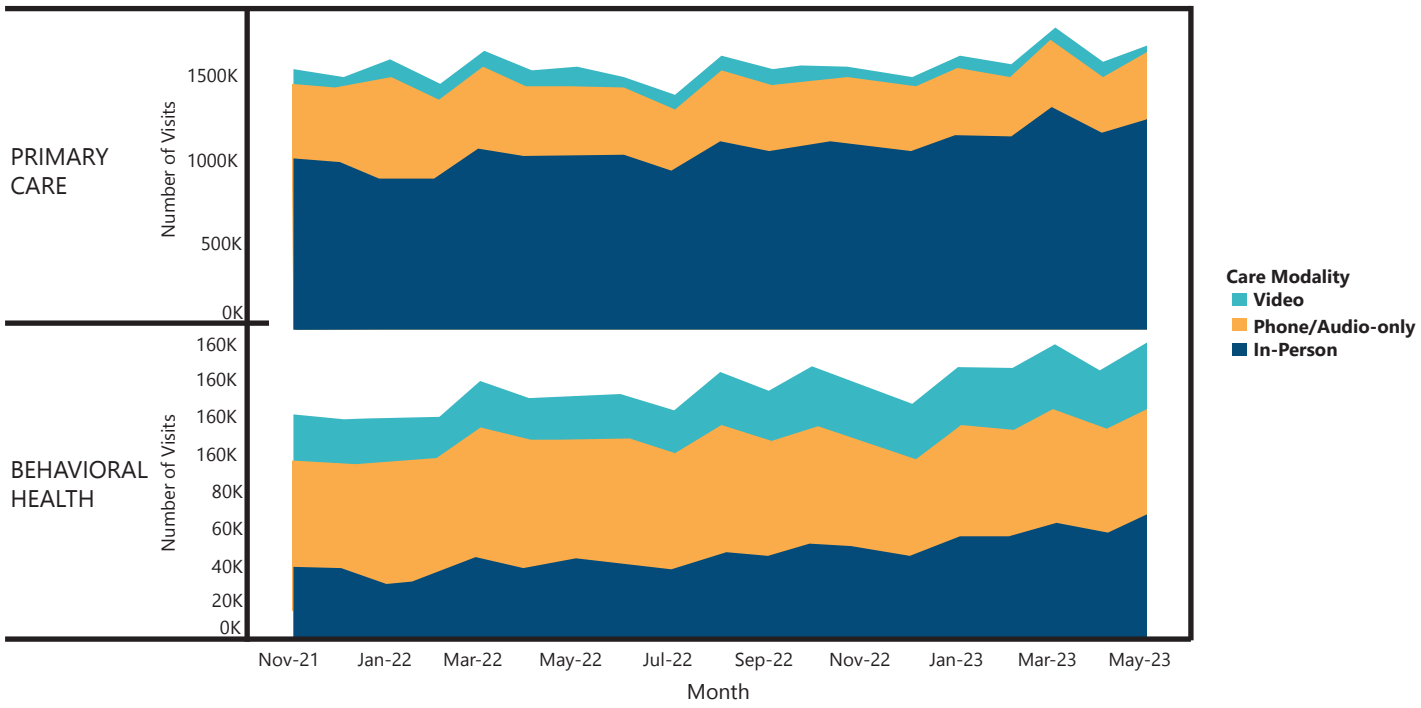
3. Telehealth utilization remained stable over the course of the learning collaborative. Utilization varied across health centers and across age and language sub-groups.

While health centers continued to develop video telehealth infrastructure and focus pilot efforts on specific patient sub-populations, aggregate (organizational level) patterns in telehealth utilization and video visit utilization remained stable over the course of the learning collaborative. Data on overall telehealth utilization were collected by the evaluation team to understand patterns in telehealth utilization in the safety net during the learning collaborative, and to examine differences in utilization across health centers and patient sub-populations. However, the relatively small pilot projects that health centers implemented during the learning collaborative were not expected to influence utilization patterns throughout the health center organization during the relatively short project implementation period. Furthermore, the preservation of payment parity in new Medi-Cal policies enacted by the California state legislature reduced the urgency for health centers to convert audio-only visits to video visits at a larger scale.

About one-third of primary care visits and two-thirds of behavioral health visits were conducted by telehealth, with these proportions remaining stable during the learning collaborative.

Participating health centers reported on visit modality for a nineteen-month period (November 2021 – May 2023). During this time, the overall visit volume for each care modality (in-person, telephone/audio-only, video) remained stable both at the aggregate level and for individual health centers, with small fluctuations that could be in part due to seasonal variations (see Figure 1). Consistently, about one-third of primary care visits (30%) and two-thirds of behavioral health visits (68%) were conducted by telehealth (including both telephone/audio-only and video). Most telehealth visits were telephone/audio-only; video visits made up 4% of all visits in primary care and 20% in behavioral health.

Figure 1. Volume of visits by care modality over time for primary care and behavioral health

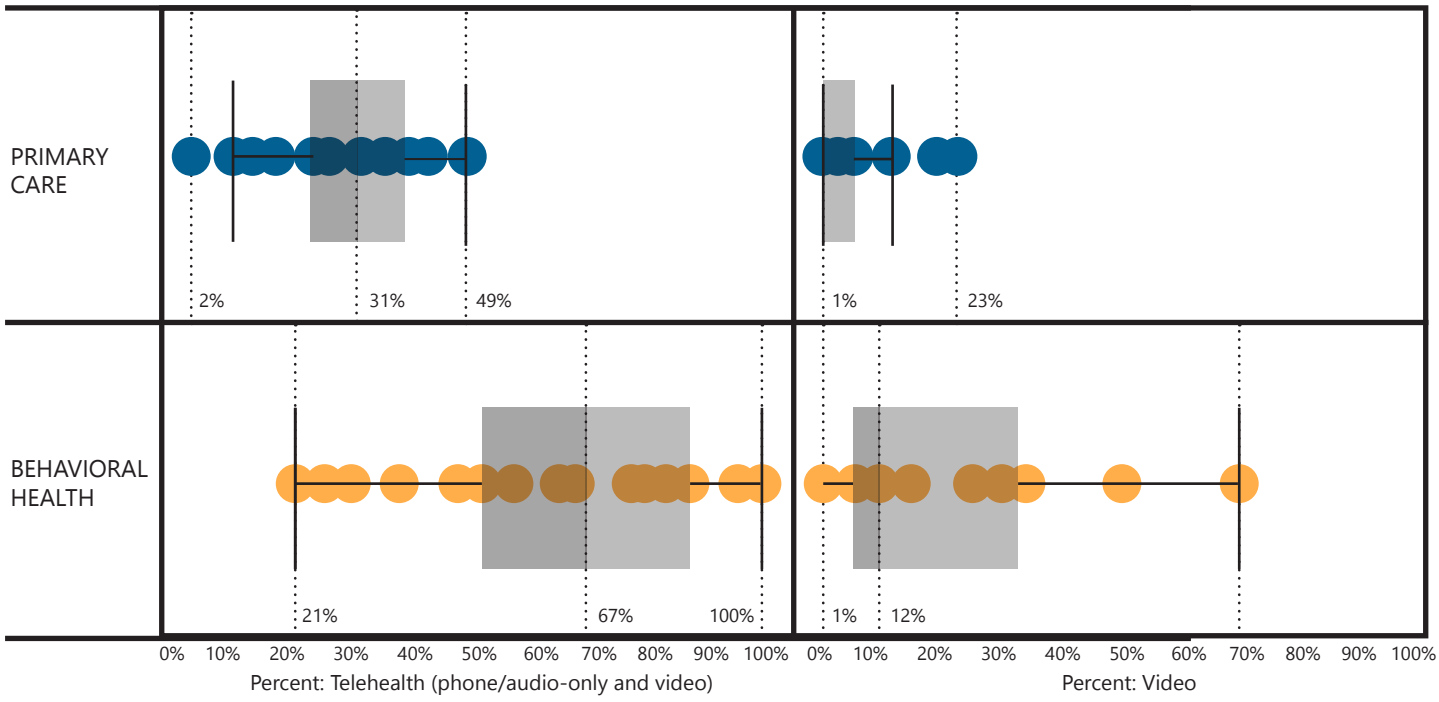


The percentage of visits health centers delivered via telehealth and via video varied widely across health centers.

The percentage of visits conducted by telehealth at individual health centers ranged from 2% to 49% in primary care, and from 21% to 100% for behavioral health (see Figure 2). Health centers also showed wide variations in the amount of video telehealth they provided. The percentage of video visits (as a share of all visits) at individual health centers ranged from 0% to 23% for primary care and 1% to 68% for behavioral health.[10] For primary care, the median health center provides 1% of all visits by video; for behavioral health, the median health center provides 10% of all visits by video.

Higher utilization of video in behavioral health departments may be attributed to the differences in the service model between primary care and behavioral health. Behavioral health departments can exercise more discretion for when they use telehealth (i.e., they have few appointments that require a patient's in-person presence), allowing for wider adoption of telehealth tools by clinicians. Furthermore, the operational processes associated with implementing video telehealth were less challenging for behavioral health departments that see patients more frequently and for longer appointments, and that did not have the same care team models as primary care departments.[11]

Figure 2. Range in percent telehealth and video for primary care and behavioral health



There were differences in the proportion of video visits by patient age and preferred language.

Given the initiative's aim to improve video utilization, the evaluation also looked at potential variations in video visit utilization among different patient sub-populations, including age groups, preferred languages, and racial/ethnic backgrounds. The findings from this evaluation were consistent with previous findings from the Connected Care Accelerator (CCA 1.0) evaluation and other research on telehealth disparities.[12]

[10] Two health centers in the CCA EC cohort currently do not provide any video telehealth for primary care.
[11] Uscher-Pines L, Arora N, Jones M, Lee A, Sousa J, McCullough C, Lee S, Martineau M, Predmore Z, Whaley M, Ober A. Experiences of Health Centers in Implementing Telehealth Visits for Underserved Patients During the COVID-19 Pandemic: Results from the Connected Care Accelerator Initiative. Santa Monica, CA: RAND Corporation, 2022. https://www.rand.org/pubs/research_reports/RRA1840-1.html.
[12] Uscher-Pines L, Sousa J, Jones M, et al. Telehealth Use Among Safety-Net Organizations in California During the COVID-19 Pandemic. JAMA. 2021;325(11):1106–1107. doi:10.1001/jama.2021.0282

Age: Video utilization as a proportion of telehealth visits was higher among children relative to adults of all ages. Older adults (65+) were less likely to have a video visit when they had a telehealth visit than adults 18-65, but the difference was statistically significant only for behavioral health. Health center teams, during interviews, noted younger adult patients often had better access to the technology used for video visits. Additionally, evaluation results from CCA 1.0[13] indicated that younger families had greater familiarity with and access to technology, and that health care providers found video visits to be beneficial for engaging with pediatric patients (see Tables 5 and 6).

Language: Patients who preferred English had a higher ratio of video visit utilization compared to patients who preferred receiving care in languages other than English, but the differences were statistically significant only for behavioral health. During interviews, health center teams suggested the lower utilization rates among patients with limited English proficiency might be associated with broader challenges related to technology access or difficulties in providing interpretation services during video visits. At the start of the learning collaborative, only two health centers within the cohort were able to offer seamless audiovisual language interpretation during video visits, either through external vendors or internal resources. This number increased to five health centers by the end of the learning collaborative, indicating progress in addressing language-related barriers (see Tables 5 and 6).

Table 5. Primary Care

	% of total visits conducted by telehealth *	% of total visits conducted by video *	% of telehealth visits conducted by video
LANGUAGE			
Prefers English	33.4%+	4.8%	14.7%
Prefers another language	27.9%+	4.2%	12.8%
AGE			
17 and under	22.5%+	4.2%	17.7%++
18 to 64	33.1%+	4.5%	12.9%++
65 and older	30.6%+	3.0%	9.5%++

+ significant (p<.05)
++ significant (p<.05) except for 18-64 vs >65
* Rates of telehealth use were computed from monthly counts of patients with in-person, telephone/audio-only, and video visits. Three health centers unable to distinguish between telehealth visits conducted by video or audio-only were excluded from this analysis

[13] Uscher-Pines L, Arora N, Jones M, Lee A, Sousa J, McCullough C, Lee S, Martineau M, Predmore Z, Whaley M, Ober A. Experiences of Health Centers in Implementing Telehealth Visits for Underserved Patients During the COVID-19 Pandemic: Results from the Connected Care Accelerator Initiative. Santa Monica, CA: RAND Corporation, 2022. https://www.rand.org/pubs/research_reports/RRA1840-1.html.

Table 6. Behavioral health

	% of total visits conducted by telehealth *	% of total visits conducted by video *	% of telehealth visits conducted by video
LANGUAGE			
Prefers English	64.8%+	16.65%+	28.7%+
Prefers another language	60.9%+	11.3%+	23.0%+
AGE			
17 and under	56.7%+++	17.1%++	34.1%+
18 to 64	65.4%+++	14.7%++	26.1%+
65 and older	59.6%+++	9.0%++	19.4%+

+ significant (p<.05)
++ >65 sig different from both other categories
+++ All sig, except <18 vs. >65
* Rates of telehealth use were computed from monthly counts of patients with in-person, telephone/audio-only, and video visits. Three health centers unable to distinguish between telehealth visits conducted by video or audio-only were excluded from this analysis."

The evaluation was unable to find meaningful differences in utilization of telehealth or video visits by race or ethnicity. This could be partially because of the characteristics of the 21 clinics in the sample and the homogeneity of the patient population. Fourteen of the clinics have majority Hispanic populations, and another four have majority Asian populations. The other five race/ethnic groups combined comprise less than a third of the total patient population. Additionally, for many health centers there is a relatively high rate of missing or unreported race/ethnicity data, and the data were reported in aggregate, so the evaluation is unable to look at how race/ethnicity connects with the other demographic variables discussed above (e.g., language). Given these limitations, it is challenging to draw strong conclusions about the impact of race/ethnicity alone on telehealth use.

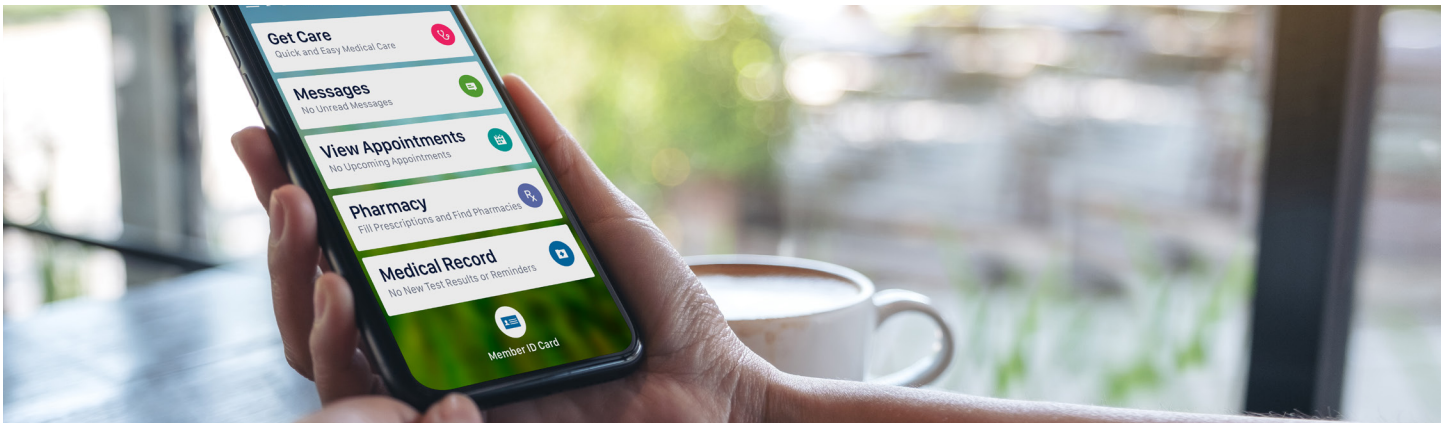
4. The learning collaborative contributed to participating organizations' virtual care efforts

Eight participating health centers achieved the specific goals they set in their aim statements. While most health centers did not meet the specific goals they set in their aim statements, their project work informed next steps and approaches to move their telehealth efforts forward.

As mentioned earlier in this report, each participating health center developed an aim statement that articulated the outcomes they were working to achieve through their projects. Most health centers' aims focused on increasing the use of video visits for a specific population of focus. Over the course of the learning collaborative, 13 of the 22 participating health centers were able to make improvements on at least one of their project measures (process or outcome). Eight health center teams reported improvements on their outcome measure, all of which were related to increasing utilization of video visits for specific sub-populations or for small pilots (e.g., with one provider or department). Additionally, six health center teams showed sustained improvement or met articulated goals on process measures they established to measure progress on specific actions taken to achieve their aims. Process measures that showed improvement included successful outreach calls/texts, converting phone visits to video, and engaging providers or patients in training activities.

The remaining nine health center teams did not see significant changes in the project-specific metrics they identified for their projects. They reported that the project had contributed to their overall telehealth efforts and informed next steps, but that measurable impact would take more time to achieve than the four-to-six-month period of the learning collaborative that was focused on implementation. As a result, some participants recommended extending the project timeline to allow time to learn from their tests of change, gather more data, and implement innovative solutions. As one participant noted, *"[we would benefit from more time] to absorb and implement the tests of change. The timeline was too short to do this effectively."* Additionally, health center teams described challenges with time constraints and staff turnover. In interviews, teams that undertook major infrastructure improvements (e.g., workflow changes or technology upgrades) noted that more time was needed to make impactful change within their organizations. Additionally, coaches noted that some teams needed further support developing measurement frameworks to assess their project's progress. Coaches described the importance of maintaining a consistent focus on unified aims and quality metrics throughout the project cycle, which could enable earlier performance tracking and run chart development. They noted that the transition to group coaching later in the program posed challenges to providing the one-on-one support needed for teams to construct their measurement frameworks.

While the project measures did not consistently show improvements, many teams noted they identified insights from reviewing data that informed their approaches to operations or to work with patients to increase utilization of video visits.



The learning collaborative had a positive impact on health centers by providing helpful resources, facilitating peer learning, and supporting the adoption of new virtual care practices.

Overall, health center participants felt supported by the learning collaborative as they worked towards increasing utilization of video telehealth. In feedback surveys, more than 80% of participants agreed that the learning collaborative supported advancement of their organization's use of video telehealth, was a valuable use of their time, and helped advance virtual care for patients facing digital or language barriers (see Table 7). At the end of the learning collaborative, over 70% of respondents agreed that their organization considered new virtual care practices because of participation in CCA EC. This number represented a slight decrease from the 80% of respondents for the midpoint survey and may be due to teams encountering challenges adopting new practices before the end of the program.

Participants reported high satisfaction with the learning collaborative, with over 90% of respondents being satisfied or very satisfied with the content and expectations communicated to them throughout the program, as well as their overall experience (see Table 8). Most participants found the learning collaborative's activities and resources to be useful, with over 70% of survey respondents rating each component of the learning collaborative 'useful' or 'very useful'. The highest usefulness ratings were for individual coaching, peer learning webinars, and assignments/storyboards (see Table 9).

Table 7. Percentage of respondents in agreement (selected Agree or Strongly Agree) with statements from program feedback survey (n=51)

PROGRAM IMPACT	% Agreement (n=51)
CCA EC has provided support and/or resources that helped advance my organization's use of video telehealth.	86%
Participating in the learning collaborative activities (e.g., virtual learning sessions, coaching) has been a valuable use of my time.	92%
CCA EC has provided support and/or resources that helped advance my organization's ability to provide virtual care for patients who face language barriers to accessing quality health care.	82%
CCA EC provided support and/or resources that helped advance my organization's ability to provide virtual care for patients with digital barriers.	80%
As a result of the learning collaborative, my organization has considered adopting new virtual care practices.	73%

Table 8. Percentage of respondents satisfied or very satisfied with program components at endpoint (n=51)

PROGRAM COMPONENT SATISFACTION	% Satisfaction
Clarity in communication and program expectations from CCI	98%
Content related to technology for virtual care	92%
Content related to using innovation and improvement methods to understand the current state of telehealth access at your health center	92%
Your overall participation in CCA EC	92%

Table 9. Percentage of respondents rating program resources useful or very useful at endpoint (n=51)

PROGRAM RESOURCE USEFULNESS	% Usefulness
Individual coaching sessions	88%
Share and Learn (peer learning) webinars	84%
Assignments and storyboards (e.g., patient/staff interviews)	84%
Equitable Telehealth Practices Assessment	80%
CCI Academy and other virtual learning tools	71%

Peer learning was the most valuable aspect of the learning collaborative for most participants. Peer learning was identified as the most valuable aspect of the learning collaborative by many of the health center participants during their team interviews and was a highly rated program activity in the feedback survey. Participants shared that the "Share & Learn" format of the peer learning webinars facilitated opportunities for learning and networking. Hearing about peers' telehealth-related progress, challenges, and adaptations from other grantees during webinars also validated participants' shared experiences and encouraged them to consider new ideas. Peer learning also occurred during group coaching sessions, which were structured to facilitate sharing across organizations. Participants reported that:

- *"Peer sharing was to me, the most valuable, because they were moments where we could directly and tangibly ask what services, vendors, websites they were using and see what was most doable for us as a mid-sized FQHC. We have been able to obtain a script that was used in another organization as a best practice, and therefore have enhanced our telehealth workflow and patient education components."*

- *"I think other things that helped us in the cohort is when we presented to the other organizations and we heard what they've been doing and what's working well for them and what's not working well for them, we take that into account. One of the things that we heard in the last sharing [webinar] was text visits for patients that are hard of hearing. It was one of those 'a-ha' moments, things that we can incorporate into our business."*

Several participants suggested even more opportunities for peer learning, or more time in existing program activities dedicated to deeper conversation among peers, as well as an in-person convening to facilitate networking. Other suggestions included pairing health centers with other organizations in the cohort for peer support and disseminating a contact list of all health centers and their project focus to facilitate relationship building.

While many participants expressed a preference for opportunities to extend peer learning time, a few participants noted that the time commitment of Share & Learns was long (two hours). These participants suggested balancing the opportunity to learn from peers with concerns about meeting fatigue and scheduling challenges.

Coaching was a crucial support to help teams stay on track with project goals and learning collaborative deliverables. Coaching was delivered in two formats during the learning collaborative, first as individual sessions between one health center and an assigned coach, and later as group sessions among multiple health centers and a coach. Participants rated coaching sessions highly in the feedback survey (see Table 9); and described in interviews that coaches supported them to troubleshoot challenges, identify resources to advance their project work, and stay on track with project goals and learning collaborative deliverables. Some participants commented that group coaching was particularly helpful, combining peer learning and support with guidance from coaches. For example, one health center team said, *"we have found a lot of value in hearing the experience of others, what they're struggling with and how they have tackled it, as well as working with [our coach]. [Our coach] really pushes us to think outside the box. Every working session that we have with her, it's not just about completing the task, but really thinking about developing something realistic, that will support our health system."*

While some participants preferred individual coaching and others preferred group coaching, participants were highly satisfied with coaching overall and only had minor suggestions for improvement. One participant suggested a rotation between group coaching and individual coaching, stating: *"We would have loved to incorporate more individual coach and team coach meetings. It would also be great to alternate coach meetings for at least three sessions then return to the initial team coaching to share what we have learned from other teams other than ourselves. This allows for us to have a 360 of information during a team coach meeting."*

Assignments helped teams refine their project focus and deepen their understanding of user experience for both patients and staff. At the beginning of the learning collaborative, health center teams completed several assignments as part of their project discovery phase while developing aim statements for their projects (see page 7 for a description of project phases). Assignments included patient interviews, staff interviews, journey maps, and reviews of health center utilization data. Almost all teams found the assignments to be helpful when refining their aim statements or identifying strategies for their Plan Do Study Act (PDSA) tests. Participants reported the following:

- Patient interviews helped teams better understand the variety of patient perspectives on telehealth. Teams learned that many patients were interested in trying telehealth. Some patients described the barriers they faced in accessing telehealth, as well as reasons behind their preferences for audio-only visits, such as better control over their location and privacy during the visit.

- Staff interviews helped identify underlying causes of hesitancy to engage in more video visits and how these varied across roles within care teams. Reasons for hesitancy included lack of training with technology platforms and uncertainty about which visit types could be offered via telehealth.

- Journey maps helped teams synthesize their learnings from interviews to understand the telehealth user experience for patients, and supported teams to identify pain points that their projects could address.

- The Equitable Telehealth Capacity Assessment brought together perspectives from different departments and roles (e.g., clinical, operational, and IT roles) within health centers to identify organizations' strengths and areas of improvement related to telehealth.

Resources shared during the learning collaborative were frequently adopted or adapted into health center practices by the end of the learning collaborative. While many health center teams had not adopted or adapted resources when mid-point interviews were conducted, most of them had integrated learning collaborative resources into their telehealth practices by the end of the program, including:

- Many participants mentioned adapting resources that focused on **internal operations or processes** for delivering telehealth visits, such as workflows, scripts, staff competency assessments, interpreter vendor integration, and organizational policy and procedures for telehealth visits. One participant stated, *"There were different workflows that were posted from various health systems…I used those to revise our existing workflows. Those were extremely helpful."*

- Several health center teams adopted or learned from learning collaborative resources focused on **quality improvement practices**, such as journey maps, PDSA cycles, small tests of change, and prioritization matrices, as well as using the clinical utilization data tool and examples included in assignment templates. One participant stated, *"I think it's helpful that they shared resources on how to make your own journey map, that's something I would have never used but it is extremely useful, and I'll probably apply that in the future, if I have any more quality improvement projects to try to improve our workflow."*

- A few teams also reported adapting resources for **patient-facing interactions**, including marketing materials to promote telehealth visits, digital literacy screening, resources for addressing internet access barriers, and pre-visit educational information to send to patients.

In terms of improving resources for future learning collaboratives, a few participants recommended developing resources that provide examples of success stories from other health centers, examples of how grantees have leveraged funding effectively, or examples of when and how to apply certain skills/tools. One participant noted, *"If there is some sort of compendium at the end, that these are the different tools we were teaching throughout, this is when you use this, this is when you would use that. I would actually love something like that, to go back and think through for the future, if I run into a situation, how I might want to apply some of the skills we were taught."*

CONSIDERATIONS

Through CCA EC, participating health centers focused on improving equitable access to telehealth, with a specific focus on increasing video visits. Most health centers focused on specific sub-populations that had lower utilization of video visits. During the learning collaborative, health centers increased their capacity by establishing infrastructure and improving technology for their telehealth efforts. Teams also tested strategies to improve patient support by educating patients on technology use, screening for digital barriers, and improving systems for seamless integration of interpreters into video visits. Although overall utilization of video visits remained stable for participating health centers overall, about half of the health centers were able to make improvements on their specific project metrics. Most of those who did not see measurable improvements reported that the learning collaborative still helped to improve their telehealth infrastructure, understand challenges, and inform next steps.

Based on the evaluation findings, the following considerations are offered to support equitable access to telehealth broadly, and video visits specifically, across the state:

1. **To continue to increase access to video visits, support health center teams in developing a value proposition to build internal buy-in.** Telehealth utilization in the safety net stabilized during the period of the learning collaborative, with the majority of telehealth being provided via audio-only visits. The Medi-Cal policy changes to ensure payment parity across all visit modalities was a positive advancement for access to telehealth overall, but it also removed the financial urgency for health centers to prioritize improving their infrastructure for video visits to continue to be reimbursed for telehealth. With the financial incentives for conducting more telehealth visits by video removed, some participating health centers discussed challenges engaging leaders and getting buy-in for ongoing investments for video visits. To continue to increase video visit access, consider ways to invest in sharing best practices from organizations with high video utilization and supporting health centers to develop a value proposition for investing in video visit infrastructure, including increasing understanding of use cases, being able to discuss quality of video visits (compared to audio-only or in-person), and messaging that access to telehealth is important to ensure equity in access to care.

2. **Support health centers to develop the necessary infrastructure and technology for video visits.** To make large scale improvements in processes, health centers need dedicated time and resources to step back, reflect, and refine their systems. This learning collaborative provided health centers with the resources, time, and space to invest in improvements to telehealth infrastructure. Many health centers were able to make improvements, but video visit utilization remained relatively stable for participating organizations. At the end of the learning collaborative, many teams indicated that they had ongoing work to do to continue to improve and institutionalize the changes they had piloted. Given that telehealth utilization has stabilized and there seems to be less imperative for organizations to heavily invest in ongoing improvements, consider what support health centers will need to continue to sustain and improve equitable access to telehealth.

3. **Continue to assess the extent to which telehealth is delivered equitably and address disparities in access.** Most health centers in CCA EC addressed equitable access to video visits by focusing on patients with limited English proficiency. This focus was informed by previous evaluation and research data demonstrating disparities in video telehealth access for this patient population, but access patterns for other populations, especially by race and ethnicity are still not clear. Consider how to continue to assess and address disparities in access to telehealth, and video visits more specifically, through research and patient engagement efforts. For example, CCA EC provided opportunities for health centers to hear directly from their patients about their opinions of and experiences with

telehealth, and to design solutions using patient input. Similar approaches may help to surface the unique needs of other patient populations. Once disparities are better understood, health centers may need support testing solutions to address these disparities. In CCA EC, health centers learned that in order to effectively assess and address equitable access, they may need to first focus on telehealth infrastructure overall (i.e., technology, staffing, training, and operational changes) and data segmentation (i.e., coding visit modality, segmenting data by race/ethnicity) to understand their patient population.

4. **Amplify technology solutions that are working, particularly for language interpretation.** Over half of the health centers were focused on improving seamless access to interpreters in video visits. One of the primary challenges was that interpreter services were not easily integrating into video visit platforms. During the learning collaborative, technology solutions were starting to emerge for more seamless access to interpreter services. This and other new technologies should continue to be monitored and evaluated to understand effectiveness, and effective solutions should be amplified to increase adoption.

5. **Consider ways to continue to support patients who face digital barriers.** Through this learning collaborative, health centers worked to provide support to patients who were facing digital barriers. Many reflected that support was most effective when provided one-on-one and in-person. Providing that level of support is staff intensive, and health centers were challenged to find ways to spread and sustain this level of support. Some promising practices emerged during the learning collaborative around using volunteers to provide this type of support to patients, but continued investment will be needed to understand viable models for supporting patients facing digital barriers. Furthermore, models for supporting patients with digital barriers will need to address not only the skills needed to use technology for health care visits, but also access to technology and connectivity for patients with limited financial resources and patients in rural areas.

APPENDIX A:

Participating Health Centers

Organization Name	Type of Organization	City	Region	No. of Annual Patients
Alameda Health System Foundation	County Health System	Oakland	Bay Area Counties	156,000
Asian Health Services	Federally Qualified Health Center	Oakland	Bay Area Counties	26,496
Asian Pacific Health Care Venture	Federally Qualified Health Center	Los Angeles	Los Angeles County	14,180
Center for Family Health and Education	Federally Qualified Health Center	Panorama City	Los Angeles County	23,819
Chinatown Service Center	Federally Qualified Health Center	Los Angeles	Los Angeles County	10,584
Community Health Centers of the Central Coast	Federally Qualified Health Center	Santa Maria	Central Coast Counties	108,762
Garfield Health Center	FQHC Look-Alike	Monterey Park	Los Angeles County	12,600
Golden Valley Health Centers	Federally Qualified Health Center	Merced	San Joaquin Valley	143,500
Los Angeles County Department of Health Services	County Department of Public Health	Los Angeles	Los Angeles County	524,417
Neighborhood Healthcare	Federally Qualified Health Center	Escondido	Other Southern California Counties	77,895
North County Health Project Incorporated dba (TrueCare)	Federally Qualified Health Center	San Marcos	Other Southern California Counties	60,000
Northeast Valley Health Corporation	Federally Qualified Health Center	San Fernando	Los Angeles County	79,829
Peach Tree Healthcare	Federally Qualified Health Center	Marysville	Northern/Sierra Counties	32,445
Saban Community Clinic	Federally Qualified Health Center	Los Angeles	Los Angeles County	22,558
Salud Para La Gente	Federally Qualified Health Center	Watsonville	Central Coast Counties	27,827
San Joaquin County Clinics	FQHC Look-Alike	French Camp	San Joaquin Valley	30,000
TCC Family Health	Federally Qualified Health Center	Long Beach	Los Angeles County	35,509
San Francisco Health Network	County Department of Public Health	San Francisco	Bay Area Counties	59,000
The ROADS Foundation Inc	Federally Qualified Health Center	Compton	Los Angeles County	11,059
Tuolumne MeWuk Indian Health Center	FQHC Look-Alike	Tuolumne	Northern/Sierra Counties	27,778
Vista Community Clinic	Federally Qualified Health Center	Vista	Other Southern California Counties	66,150
Westside Family Health Center	Federally Qualified Health Center	Culver City	Los Angeles County	11,976

APPENDIX B:

Evaluation Methods

The table below presents details on each data collection method, what it entailed, who participated, and how the data were analyzed. After each data source was analyzed, we looked at results across methods to triangulate data and identify key findings. While some key findings rely more heavily on a single data source, all were derived from a mixed-methods, thematic analysis.

Method	Description & Analysis
Clinical data reporting 	Teams submitted data for the following metrics: • Number of primary care and behavioral health visits conducted using each modality (in clinic, telephone/audio-only, video) • Unique number of primary care and behavioral health patients seen in each modality (in clinic, telephone/audio-only, video) segmented by age, race and ethnicity and preferred language (English or preferred language other than English) This report includes data from November 2021 through May 2023. Aggregate data were submitted to CCHE every six months using a Microsoft Excel reporting template. CCHE provided individual clinical utilization reports back to each team, containing visualizations of data and comparisons to the full cohort's data, to encourage teams to share and discuss the data within their clinics. *Analysis*: CCHE reviewed data and conducted basic validation checks to identify quality issues and worked with teams to revise erroneous values as needed. Data were excluded when there were data quality concerns: one health center did not submit data; one health center was unable to submit race/ethnicity data due to transition to new a EHR system; and three health centers were unable to segment telehealth data by telephone/audio-only and video due to EHR limitations. Their data was excluded from all analyses and figures that refer to specific modalities in this report. Descriptive statistics were calculated with validated data using Excel, STATA, and Tableau with the aim of exploring and visualizing utilization patterns across the three modalities (in-clinic, telephone/audio-only, and video). The analysis of telehealth rates by demographic variables was complicated by the fact that that we do not know whether a patient had multiple visits in a given month or what mode of visit the patient engaged in. This meant that an overall denominator for computing telehealth rates could not be precisely determined. CCHE conducted sensitivity analyses using the smallest and largest possible denominators given hypothetical patterns of visit modalities. The comparisons across demographic categories were similar regardless of the denominator used. The results in this report assume the largest possible denominator, i.e., that each patient had only one mode of visit each month (e.g., all telephone/audio-only visits). This assumption seemed reasonable given that a month is a short time frame to have multiple visits, for nearly all patients. And the resulting telehealth rates are in line with estimates from other sources.

Method	Description & Analysis
Program participant interviews 	Program participant interviews were conducted at baseline (N=19) in November 2022 and at endpoint (N=22) to collect qualitative data on team's perspectives on advancing equity in telehealth, project learnings and progress, challenges, and feedback for the learning collaborative. Interviews were conducted with CCA team leads and key players involved in the implementation of telehealth at their health centers. Generally, two to three people from the implementation team joined the interview, including a diverse range of staff such as organization leadership (e.g., CEOs and CMOs), operations and IT management staff, physicians and other providers or care team members, and administrative staff (e.g., front office manager, telehealth coordinator, etc.). The interview protocol asked teams about a variety of topics related to telehealth implementation, including: • Reflections on telehealth strategies and increasing equitable access to telehealth • Progress toward project aims for improving video telehealth • Facilitators and barriers • Feedback on participation in the CCA learning collaborative *Analysis*: Interviews were digitally recorded and transcribed. CCHE conducted a thematic analysis of the transcripts. Codes were developed a priori, based on the interview protocol, and empirically, based on emergent themes.
Feedback Survey 	The feedback survey was designed as a collection of Likert-type scale questions, multiple-choice questions, and open-ended questions that assessed participants' characteristics, satisfaction with specific program components, and perception of benefits and challenges with the program. The survey was sent to all participants and administered online via REDCap during October 2022 and April 2023. Results were used to inform program improvement efforts. *Analysis:* Descriptive statistics were calculated using Excel. At baseline, there were 45 responses from 22 health centers and at endpoint 51 responses from 21 health centers. Exploratory comparisons were made based on participant roles and engagement level, but differences were not found to be notable and are not described in this report.
Equitable Telehealth Practices Assessment 	The equitable telehealth practices assessment was developed by CCHE in collaboration with CCI and was adapted from Dr. Jim Meyers' Virtual Care Strategic Deployment Maturity Self-Assessment Model.[14] It was designed to help organizations assess the extent to which their current practices and organizational capacity support equitable access to telehealth. Questions were divided into five domains: technology infrastructure and support; workflows and team-based care; patient engagement and support; strategy, leadership, and governance; and data and quality improvement. Organizations were asked to engage a multi-disciplinary team with various perspectives (i.e., staff and leadership across clinical, operational, and IT roles) to complete the assessment. The assessment was first completed by individual team members; the team then discussed responses and came to consensus on an answer that was submitted via a Redcap online survey. The full assessment was completed at baseline in June 2022 and a shortened assessment with some removed items was completed at endpoint in April 2023. Our methodology involved retaining items we deemed potentially sensitive to change given the focus of the learning collaborative, and excluding those that were unlikely to exhibit change, mainly items related to leadership, governance, technological resources. *Analysis:* Descriptive statistics were calculated using Excel and Tableau. All 22 health centers submitted responses at baseline and 21 submitted at endpoint. Individual health center reports summarizing health centers' responses with a comparison to the full cohort's response were developed by CCHE and shared with health centers in August 2022 and in July 2023.

[14] Meyers, JF. (2021) Virtual Care Strategic and Tactical Deployment Maturity Self-Assessment Model. Oakland, CA: Commissioned by The California Health Care Safety-Net Institute. Contact jim@meyershealthconsulting.com with any inquiries for free use.

APPENDIX C:

Responses to Equitable Telehealth Practices Assessment items

Median ratings are highlighted in orange (baseline) and in blue (endpoint) if there was a change over time. Average ratings are displayed in the far-right columns

Table C1: Technology Support

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Just-in-time support for provider/ staff to solve technology challenges for telehealth	Just-in-time support for providers and staff to solve technology challenges for telehealth is not available or is provided ad-hoc by staff working outside of their designated roles.	In between 1 and 3	Just-in-time support for providers and staff to solve technology challenges for telehealth is sometimes available by dedicated staff that have the right technical skills.	In between 3 and 5	Just-in-time support for providers and staff to solve technology challenges for telehealth is readAily available by dedicated staff that have the right technical skills.	**2.7**	**3.2**
Staff training on how to use the systems for telehealth	Training to learn how to use the systems for telehealth is not provided or is provided inconsistently to staff.	In between 1 and 3	Training to learn how to use the systems for telehealth has been provided for all staff but is not customized to the needs of providers or other staff roles.	In between 3 and 5	Training to learn how to use the systems for telehealth is provided for all staff and is customized to the needs of providers and other staff roles.	**2.5**	**3.5**
Staff roles to support patients with telehealth (can include IT staff)	No staff roles have been designated to onboard patients to the telehealth system. Patients receive ad-hoc support from existing care team members.	In between 1 and 3	Staff have been assigned the role of supporting patients to access the telehealth system (possibly including clinical support staff, telehealth coordinators, IT staff, etc.). Assigned staff do not always have adequate time and training and this responsibility may interfere with their other responsibilities	In between 3 and 5	Staff have been assigned the role of supporting patients to access the telehealth system (possibly including clinical support staff, telehealth coordinators, IT staff, etc.). Adequate time and training are provided for staff assigned this responsibility	**2.4**	**3.3**

Table C2: Workflows and team-based care

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Operational and clinical standards for telehealth	The operational and clinical standards for when to use telehealth and which modality to use have not been established (the modality of care depends on the provider and/or patient preferences).	In between 1 and 3	The operational and clinical standards for when to use telehealth and which modality to use are emerging, with some protocols for scheduling in-person, video, or audio consultation for some of the most common medical conditions.	In between 3 and 5	The operational and clinical standards for when to use telehealth and which modality to use are well-established, taking into account quality of care, emerging evidence, and patient preference.	**2.9**	**3.7**
Patients informed of options for accessing care	Patients are not routinely informed of options for accessing care (e.g., telephone, video, or in-person visits).	In between 1 and 3	Patients are informed of options for accessing care (e.g., telephone, video, or in-person visits) and asked their preference.	In between 3 and 5	Options for accessing care (e.g., telephone, video, or in-person visits) are discussed with patients and a decision is made that is informed by patient preference and clinical standards.	**2.6**	**3.8**
Team-based care for telehealth	Limited team-based care functions are in place for telehealth; providers often conduct telehealth visits on their own without support of MAs or other care team members.	In between 1 and 3	Team-based care processes have been established for all critical team functions but are not always smooth.	In between 3 and 5	Team-based care processes for telehealth work as well as or better than in-person appointments.	**2.7**	**3.2**

Table C3: Patient engagement and support

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Screening patients for digital barriers	There is no screening process in place for digital barriers	In between 1 and 3	Screening for digital barriers is used for some patients but has not been adopted organization-wide.	In between 3 and 5	Screening for digital barriers is in place and has been adopted throughout the organization.	**1.8**	**3.0**
Support for patients without connectivity	No support from the organization is available for patients who do not have access to internet connectivity or cellular data.	In between 1 and 3	Support for patients without access to internet connectivity or cellular data is sometimes offered, by providing this to patients or connecting them to external organizations.	In between 3 and 5	There is a clear pathway for providing support to access telehealth for patients without internet connectivity or cellular data, and the processes are working.	**1.6**	**N/A**
Support for patients who do not have a device	No support from the organization is available for patients who do not have access to a device.	In between 1 and 3	Support for patients without access to a device is sometimes offered, by providing this to patients or connecting them to external organizations.	In between 3 and 5	There is a clear pathway for providing support to access telehealth for patients without a device, and the processes are working.	**1.5**	**N/A**

Table C4: Strategy, leadership, and governance

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Telehealth integration into standard care operations across care sites	Telehealth occurs primarily in response to the pandemic. Operational changes associated with virtual care have not been codified or standardized across departments.	In between 1 and 3	The organization has made efforts to integrate telehealth into standard care operations across care sites, and to standardize efforts across sites and departments.	In between 3 and 5	Virtual care is incorporated into and is a specifically identified tool to support the broader organizational strategic priorities and goals. Approaches to virtual care are standardized across sites and departments.	**2.8**	**3.5**
Organizational plan for telehealth to guide operations and investment strategies	Leaders rely on existing infrastructure and resources to address the shift to virtual care. A specific plan for telehealth operations and investments has not been created.	In between 1 and 3	Leaders have created a plan to guide telehealth operations and investment strategies, but the plan does not have a clear implementation strategy.	In between 3 and 5	Leaders have created a plan to guide telehealth operations and investment strategies, including a clear implementation strategy.	**2.8**	**N/A**
Community needs and equity accounted for in strategic plan for telehealth operations and investments	The existing organizational plan for telehealth operations and strategies does not take into account community needs, equity of access, or quality of care for patient populations served by the organization.	In between 1 and 3	The existing plan for telehealth operations and strategies takes into account community needs, equity of access, and quality to some extent, but equity is not integrated throughout the plan.	In between 3 and 5	The existing plan for telehealth operations and strategies fully integrates considerations around community needs and equity to ensure equitable access and quality of telehealth for patient populations served by the organization.	**1.6**	**N/A**
Resource allocation for strategies to improve equity in access to care with telehealth	The organization has not identified goals or priorities to improve equity in access to telehealth services, and resources have not been allocated to do so.	In between 1 and 3	The organization has established goals and priorities to improve equity in access to telehealth services but has not dedicated adequate staff and resources to achieve those goals.	In between 3 and 5	The organization has established goals and priorities related to strategies to improving equity in access to care with telehealth and has dedicated adequate staff and resources to achieve those goals.	**2.6**	**N/A**

Table C4: Strategy, leadership, and governance (continued)

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Telehealth governance structure	Oversight of virtual care falls to existing in-person care oversight processes.	In between 1 and 3	Virtual care governance structures are established, with implementation in progress.	In between 3 and 5	Virtual care governance structures are established and implemented organization wide.	**2.0**	**N/A**
Equity accounted for in governance structures for telehealth	Virtual care governance structures primarily include executive and clinical leaders.	In between 1 and 3	Virtual care governance structures include leaders as well as staff from a variety of roles, including front-line staff, IT staff, support staff, etc.	In between 3 and 5	Virtual care governance structures include leaders, staff from a variety of roles, and patients and caregivers from communities that represent the patient population served.	**2.3**	**N/A**

Table C5: Data and Quality Improvement

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Telehealth process and outcome metrics	There are no new operational or clinical quality metrics put in place specifically for telehealth processes.	In between 1 and 3	Telehealth process and outcome metrics are defined and tracked. There is not a clear plan for acting on learnings from data.	In between 3 and 5	Telehealth process and outcome metrics are defined, tracked, and acted upon.	**2.8**	**3.4**
Data segmentation by race & ethnicity in telehealth process/ outcome metrics	Telehealth process and outcome metrics do not account for differences in race & ethnicity. Segmented data is not available.	In between 1 and 3	Data is segmented for race & ethnicity and analyzed to understand any differences that exist. Data is not yet being used to inform strategy.	In between 3 and 5	Data is systematically segmented for race & ethnicity, learnings are shared with leaders and staff. We have identified or begun to implement strategies to address variation or disparities.	**2.7**	**N/A**
Data segmentation by language preference in telehealth process/ outcome metrics	Telehealth process and outcome metrics do not account for differences in patients with different language preferences. Segmented data is not available.	In between 1 and 3	Data is segmented for language preference and analyzed to understand any differences that exist. Data is not yet being used to inform strategy.	In between 3 and 5	Data is systematically segmented for language preference, learnings are shared with leaders and staff. We have identified or begun to implement strategies to address variation or disparities.	**2.6**	**N/A**
Data segmentation for other subpopulations relevant to health center in telehealth process/ outcome metrics	Telehealth process and outcome metrics do not account for differences for other patient subpopulations. Segmented data is not available.	In between 1 and 3	Data is segmented for other subpopulations and analyzed to understand any differences that exist. Data is not yet being used to inform strategy.	In between 3 and 5	Data is systematically segmented for other subpopulations, learnings are shared with leaders and staff. We have identified or begun to implement strategies to address variation or disparities.	**2.1**	**N/A**

Table C5: Data and Quality Improvement (continued)

	1 Low/Not in place	2	3 Medium/ Variable	4	5 High/In place	Baseline Average Rating	Endpoint Average Rating
Patient feedback and satisfaction with telehealth	Patients' satisfaction with telehealth is not measured.	In between 1 and 3	Patient satisfaction with telehealth is measured in a single-timepoint survey.	In between 3 and 5	Patient satisfaction with telehealth is measured on a regular basis, and actions are taken to improve satisfaction over time.	**2.6**	**3.4**
Continuous improvement cycles to address equity of access to and quality of telehealth for patient subpopulations	Continuous improvement cycles for telehealth operations are not used to address equitable delivery of telehealth.	In between 1 and 3	Continuous improvement cycles for telehealth operations are sometimes used to address equitable delivery of telehealth.	In between 3 and 5	Continuous improvement cycles for telehealth operations are regularly used to address equitable delivery of telehealth, with a high level of engagement from staff.	**2.0**	**3.1**

APPENDIX D:

Responses to Equitable Telehealth Practices Assessment Workflows and Team-based Care for Audio-only and Video items

		Phone/audio-only visits*			Video visits		
		Mean	Median	Range	Mean	Median	Range
Multiple participants can move in/out of the connection seamlessly	**Baseline**	2.6	1	1-5	2.0	2	1-4
	Endpoint				2.8	3	1-5
Patient check-in occurs smoothly	**Baseline**	3.5	4	1-5	2.6	3	1-4
	Endpoint				3.5	4	1-5
Pre-visit screenings and other intake processes are completed seamlessly before or during the visit	**Baseline**	3.2	4	1-5	2.7	3	1-5
	Endpoint				3.3	3	2-5
Patient education materials and other tools are shared during the visit	**Baseline**	1.9	1	1-4	2.2	2	1-4
	Endpoint				2.9	3	1-5
Post-visit follow-up tasks are completed smoothly	**Baseline**	3.5	4	2-5	3.3	3	1-5
	Endpoint				3.9	4	3-5

Rating scale:
1=Never, not doing or challenges prevent this
2=Between 1 & 3
3=Sometimes/variable or with significant challenges
4=Between 3 & 5
5=Always/consistently and works well

* Audio-only items were not included in the endpoint assessment

APPENDIX E:

Telehealth platforms and extent of use by CCA EC health centers at baseline

Technology	Most used technology platforms (count of health centers)	How/extent to which technology is used
Video visit platforms	Doxy.me (5) Zoom (4) Doximity (3) OTTO (3)	• All health centers have a video platform and half of health centers used multiple platforms (10/22). • Three-quarters indicated video plat form was directly accessible on the web or via a link (i.e., patients did not have to login to a portal or download an app access) (16/22). • Over half of health centers collected data on patients' experience with their video visit (13/22).
Patient portals	EPIC MyChart (5) NextGen/Medfusion (4) Healow (3)	• Almost all health centers use a patient portal (19/22). • Most health centers using a portal want to increase enrollment in patient portal to increase patient communication and engagement (13/19). • Most health centers using a portal indicated their portal is available in English and Spanish (14/19); 3 health centers only have access in English; 2 health centers have portal access in multiple languages.
Patient texting	Well Health (9) CareMessage (4) Healow (2)	• Most health centers use patient texting software (17/22). Health centers use patient texting for a variety of purposes, including appointment reminders and links to virtual appointments. • Most organizations indicated the need for more languages for texting. 13 health centers can text in English and Spanish; 3 health centers also have capability in one additional language (Chinese or Korean).
Remote patient monitoring (RPM)	Data not collected	• While RPM is not a focus of this initiative, it is part of many health centers' telehealth efforts. • 14 health centers use RPM to monitor blood pressure • 9 health centers use RPM to monitor glucose