Understanding How COVID-19 Impacted Telehealth and Cancer Screening Services Through Healthcare Provider Perspectives

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Abstract

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Millions of cancer screenings in the U.S. were missed at the beginning of the COVID – 19 pandemic, which also saw the quick implementation of telehealth services. Using a qualitative study design on extracted interviews from Kaiser Permanente's RESTORE study with healthcare providers and staff, this study explored their perceptions on the evolution of telehealth and cancer screening services as the pandemic progressed. Barriers included inequalities and disparities, lack of financial coverage, and logistics. Facilitators included increased patient accessibility to healthcare providers and increased infrastructural efficiency. Other findings included the effects on cancer screening, the sudden pivot to telehealth, and fluctuations in screening and telehealth use due to vaccines and COVID case spikes. Based on these findings,

the following recommendations were made: improving and sustaining telehealth technological support and user-friendly systems, offer translated or language interpreter options, and extending insurance coverage for telehealth and cancer screening services.

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Introduction

Background

The COVID–19 pandemic has created immediate global challenges and instigated significant changes to healthcare systems. Extreme drops in cancer screenings across the United States is one example of how the pandemic has impacted healthcare through the cancer care continuum.[1] It was estimated that almost 9.4 million cancer screenings were missed in the U.S. in 2020 due to factors such as stay at home orders, staffing shortages, closed facilities, and the risk of contracting COVID.[2] The missed screenings are concerning as it increases the potential for later and advanced diagnoses. In addition, health disparities in cancer screening affecting millions of marginalized and minority populations were amplified.

Plunge in cancer care prevalence due to COVID - 19

In March 2020, the Centers for Disease Control and the Centers for Medicare and Medicaid Services issued guidance recommending a temporary delay for "non-urgent medical visits including cancer screenings, to reduce public health risk and preserve personal protective equipment."[3,4] In response to these guidelines, lockdowns, stay at home orders, social distancing and quarantine protocols, the use of telehealth was spotlighted as an alternate means to continue providing healthcare.

The emergency pause initially placed for non-COVID related in person visits during the early pandemic is expected to have cascading adverse effects (Oakes) The extent of the cancer screening deficits from disruptions were initially difficult to gauge because the pre-pandemic medical records that were used to compare against "pandemic-related screening disruptions"

regarding cancer screening were conducted among those who maintained the same health insurance through 2020 or based on restricted geographic regions.[5]

Between March and April 2020, several reports were published that indicated an estimated 90% drop in cancer screening volumes for breast, cervical, and colorectal cancer.[5] Between 2018 and 2020, a nationwide survey study in 2022 found that the prevalence of Breast Cancer and Cervical Cancer screening declined by 6% and 11%, respectively, noting the declines to be consistently higher amongst Hispanic populations and adults with lower educational attainment.[5] A predicted 4.47 million fewer women completed cervical cancer screenings and 2.13 million fewer women completed breast cancer screening. An increased use of stool testing kits for colorectal cancer screening made colorectal cancer screening rates mostly constant compared to past years.[5] It has been claimed that the rebound of screenings starting in the summer of 2020 did not fully compensate for the disruption in the months prior and was not enough to mitigate any long-term follow up consequences during the pause.[5,6] Furthermore, the pandemic worsened existing health inequalities and social and economic issues disproportionately affecting cancer care utilization. [5] It can be surmised that there is a collective, significant loss of care and follow up these last few years of the pandemic.

Rise of telehealth during COVID – 19

Telehealth is defined as "the use of electronic information and telecommunication technologies to support long distance clinical health care, patient and professional health-related education, health administration, and public health" through the use of technologies such as video conferencing and other wireless communications.[7] It provides a protective factor for both at risk individuals and healthcare providers to decrease COVID exposure and remove certain

logistical constraints such as geographic boundaries and in-person wait times. Although telehealth has now become more prevalent as a result of the pandemic, it has been in use for different purposes, areas with underserved populations that are hard to reach, and outpatient visits in integrated healthcare systems such as Kaiser Permanente.[8]

Prior to the pandemic, rates of telehealth services for routine healthcare visits were low. Even within healthcare systems with greater telehealth usage, there were less than 100 video visits per day.[9,10] The pandemic saw a rapid rise in the adoption of telehealth due to its efficiency to adhere to social distancing and lockdown measures and reducing the spread of the breakout.[11,12] Telehealth services also allowed for remote working, synchronous and asynchronous communication, reduced geographical limitations, and supplemented face to face capacity.[8,12]

A survey was done in 2021 that measured attitudes and perception on telehealth of cancer care clinicians.[13] 76% of the 202 clinicians responded were generally satisfied with telehealth although 99% still thought that in-person visits promoted the strongest patient to clinical connection compared to video, phone, and digital communications.[13] In another study, less than half the responding physicians agreed that telehealth maintained patient-provider relationships.[4] In this same study, some even reported that their patient relations suffered during the pandemic with subsequent observed telehealth communications being found to be less patient centered, shorter total visit times, and decreased small talk and verbal praises compared to in person visits.[4]

RESTORE Study

The Kaiser Permanente's Center for Health Research's "RESTORE" study is part of a larger research trial that seeks to understand the long terms impacts of the COVID – 19 pandemic on cancer screening services, specifically for breast, colon, and cervical cancer, in a community health center setting.[14] The study collected data from a large federally qualified health center (FQHC) in Southern California that operates 25 medical clinics serving over 270,000 patients, 82% of whom identify as Latino. This thesis uses extracted qualitative interview data from the RESTORE study, pertaining to telehealth from healthcare providers.

Current Study Aims

The purpose of this study is to explore healthcare providers' perceptions and experiences with telehealth and cancer screening as impacted by COVID – 19. Understanding the facilitators and challenges of telehealth and cancer screening utilization can help realize what improvements can be made to address observed barriers.

Methods

Study Design

This thesis uses an exploratory qualitative study design to assess the perspectives, facilitators, and barriers of telehealth use and cancer screening during COVID - 19 among healthcare providers. Data collection was conducted and provided by a RESTORE research team. The use of the Diffusion of Innovation theory and Human Factors approach underpins the

study design in aligning the codebook development, qualitative analysis, and identification of themes with the research questions.

Diffusion of Innovation Theory

E.M. Roger's diffusion of innovation theory guides the explication of factors that affect the adoption and uptake of telehealth.[15,16] The theory was born from social science and communication theories and explains how diffusion "is the process in which an innovation is communicated over time among members of a social system."[16,17] The adoption of an innovation is processed through units consisting of innovators, early adopters, early and late majorities, and laggards whose responses determine the rate of or lack diffusion, to its ultimate implementation.[15–17] This theory posits relative advantage, compatibility with potential adopters and innovators, trialability, observability, and complexity as attributes that shape the rate of adoption of innovations.[17] The use of this theory pertains to observing the use of telehealth during the pandemic as these attributes can assessed from the perceptions and experiences of healthcare providers.

Human Factors Approach

The Human Factors and Ergonomics Society defines human factors as "the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance."[18] Human factors within the context of telehealth is the "study of the user experience and the effort to maximize the positive elements of telehealth system design, implementation, and operation."[19] This approach for

examining telehealth is imperative as it can be used to ensure the effectiveness, efficiency, and useability by a wide range of people with varying physiological and psychological abilities of telehealth-care systems.[19] With respect to the demographically and culturally diverse population the FQHC serves, the human factors approach will be used to center the technology knowledge gap as well as socioeconomic disparities in access and resources.

Sampling and Recruitment

Participant stakeholders were recruited and interviewed by a RESTORE research team from a FQHC in Southern California. A total of 19 stakeholders were recruited and interviewed. All participants were healthcare providers that worked at the FQHC over the course of the pandemic. Participants included physicians, nurses, administrative staff, and executives. Figure 1 (Appendix A) shows a list of the de-identified stakeholder's titles and roles.

Data Collection

The RESTORE research team conducted 19 interviews, of which 18 contained data relevant to this analysis. The extracted data was de-identified and only ID#s and interviewee's roles or titles were shared. As telehealth is not the primary focus of the parent study, only excerpts from the interviews pertaining to telehealth, cancer screening, and COVID were taken and shared for the purposes of this thesis project. Additionally, one whole transcript from a stakeholder was included because their interview was solely about telehealth. The interview questions covered the timeframe of the pre-pandemic, the early implementation stages of March 2020, the later stages during 2021, and until the summer of 2022.

Data Analysis

A qualitative analysis was done to study the provided transcript excerpts. This was approached by applying a mixed deductive and inductive coding method on the transcripts. The research software Dedoose was used for the codebook creation and transcript coding. Interview questions from the transcripts and information from the literature research were used in the deductive portion of the codebook creation. Parent and child codes were added during the coding process as part of the inductive portion. Thematic analysis, guided by the Diffusion of Innovation theory and Human Factors approach, was used to reveal and categorize prevalent themes.

Results

The following themes were generated from the qualitative analysis. The themes were categorized into facilitators, barriers, and COVID impacts. COVID impacts included the sudden shift and implementation to telehealth, effects on cancer screenings, and fluctuations in telehealth use caused by vaccines and surges. Facilitators include increased accessibility to patients and progressing infrastructural efficiency. Barriers include financial coverage, logistics, and inequalities and disparities.

COVID impact: The Sudden Shift and Implementation

Most stakeholders mentioned that prior to the pandemic, like many other healthcare provider systems, their FQHC had no telehealth system in place.

"We weren't ready for telehealth. We had no system in place set up."

Though there were some talks about starting telehealth before the pandemic, one stakeholder mentioned that it was more like a distant idea so much as during the early pandemic

and telehealth implementation was occurring, they described it as being chaotic for both healthcare systems and patients.

"In the beginning of tele-health during the pandemic it was chaos. But the way they spoke about it seemed like it would be 10 years or something. But no it came quicker than we thought. So we were all caught off guard. We didn't really know the process. We were like chickens with no heads, just trying to figure out how to call the patients, how to document. Some patients would get confused and they would come to the clinic when there's no provider."

One reason implementation was a challenge was the FQHC's existing difficulties to get patients from the community to engage even though their system was totally geared towards providing help and service to the community.

"... [the FQHC] primarily services low income areas with high health disparities so getting patients to come in for anything has always been traditionally very hard for us."

Despite the disorder this caused, the FQHC was remarkably able to get their telehealth system set up and running within two weeks.

<u>COVID impact: Effects on Cancer Screening</u>

The role of telehealth for cancer screenings was described as being very limited and seemingly deterring. Some cancer screenings require physical procedures that could not be accomplished through telehealth or accessed during the shutdowns. Cancer screenings relegated

via telehealth consisted merely of scheduling appointments, placing orders for pap smears and mammograms, consultations with providers, and referrals.

"So here suddenly we had now, only 40% face to face visits. And we also had mammography was shut down for some time during the surges initially so there was no access to mammography at all. Because they weren't coming in you can't render a cervical cancer screening, you can't do that if the patient is not actually in the office."

For example, for colorectal cancer screening, normally when distributing the FIT kit in person, providers would give instructions and demonstrate how to use the kit correctly. As they pivoted to mailing the FIT kits, they did not see much follow up correspondence back.

"The GI centers were closed because of the precautions for Covid. So that was an access issue. We did have the FIT kit mailing part but we were really in crisis mode here trying to adapt to all the changes. So although we were giving out FIT kits at the offices there was no big mail in campaign at that time to assist with that so we were behind on that for the same reasons again."

When asked if they thought that telehealth could help facilitate cancer screenings because of the ease of reaching someone via phone or text, two stakeholders interestingly had opposite responses but stated the same reasoning. One said they were "inclined to say yes" and another said that they "don't feel there had been any real successes." However, the examples they both cite is the increase of telehealth use for behavioral and mental health screenings. The one stakeholder that said yes goes on to explain that perhaps the same concept behavioral health of

being more comfortable to share intimate details for is easier over the phone as opposed to in person, can be applied to cancer screenings.

> *"I am inclined to say yes, but only because I've seen it in different examples. So not necessarily let's say the cancer or different screenings, but I've seen it more in a sense of like our mental and BH screenings … Just feedback that I received from my nurses is that when they speak to a patient over the phone compared to their experience in the clinic…the patients are a lot more open to sharing their anxiety or depression levels versus sharing some of that information in person in clinic. I would imagine for the screenings it could be an easier conversation for people to have."*

> *"it doesn't feel like we had any real successes on preventative screenings through tele-health. But we did have some successes. BH [behavioral health] went to 100% tele-health approach. They were seeing more patients than ever. We shifted all of our group, at one point I think women's health, they were the ones that was 70% face to face 30% tele-health. But family practice and internal medicine they shifted to be like 60% tele-health 40% in the office face to face"*

<u>COVID impact: Fluctuations Caused by Vaccines and Surges</u>

Telehealth usage and cancer screenings and follow up fluctuated based on vaccine adherence and surges and spikes in COVID cases. Vaccine adherence opened the door for more in-person visits causing a dip in telehealth use but an increase in cancer screening and follow ups. Conversely, surges and variants saw a bounce back in telehealth use.

"…but when the surge started to come down, we see some people start to trickle back into the clinics a little bit more."

"Go back to the surge and get more telehealth."

Facilitator: Increased accessibility for patients

Stakeholders saw that telehealth increased patients' accessibility to healthcare providers. Telehealth served as an alternative way to still be able to reach providers and streamline patient experience, thus reducing some burden on the patients.

"I mean tele-health was a very good favor for us because at least we were still able to communicate with our patients and let them know that we're still here for them. We didn't forget about them. And whatever they need, or whatever the case may be we were still there."

It allowed patients to overcome geographical limitations, transportation costs, waiting times, and other logistical barriers.

"….patients appreciated the fact that they could do a telehealth visit and not take off work. Either have their telehealth visits over their break or lunch or whatever it is and not have to take several hours out of their day to get off work."

Facilitator: Progressing Infrastructural Efficiency

The pivot to telehealth systems required adjustments to current workflows, protocols, and processes. Stakeholders cited "disaster preparedness" to have been largely beneficial in easing into the shift.

"…we met every week to assess surge planning, to assess workflows. We met with our infectious disease team, infectious disease providers, access and operation leaders and we adjusted. We made adjustments to how we did care based upon the recommendations from this [infectious disease] team."

As time went on, stakeholders were developing certain processes and protocols to see continuous improvement in telehealth use and increase cancer screening follow ups through adapting different communication methods and messaging.

"… we've reviewed our scriptings[sic] again. We've also explored different platforms of communication. Just with working with different vendors that can help us... reach out to our patients via text message but also looking into ways to see how we can make that more of an interactive communication with our patients."

<u>Barrier: Financial Coverage</u>

One of the key barriers to telehealth use was the lack of financial coverage. According to one stakeholder, prior to the pandemic, FQHCs were not allowed to provide telehealth services as it was not considered as a reimbursable service.

"it was like that in many parts of the country because it was not a covered benefit on our health plan. And then there was also the issue at the state level that there was no assurance that this would be covered at the FQHCs."

They also noted that any diagnosis must have been made over video call or in person and not over the phone to be able to be coded for billing as part of their health plan.

" And interestingly if you diagnose something during the telephone call for Medicare patient, like diabetes with renal complications, that diagnosis doesn't count in terms of the ATC and all that coding stuff with the health plan we work with."

Barrier: Logistics

Another key barrier to telehealth use and cancer screening was logistics. The initial lack of training was a hurdle during the early implementation.

"None of us had ever done tele-health before. So they would teach a couple of us and we would come back and teach the providers and staff how to do it."

Technological challenges abounded as many patients did not have the technology, internet, or know-how to access telehealth services which often did not have user-friendly interfaces.

"that we realized patients did not have the visual capacity many times. They couldn't do the video part of it because of their limitations with their plans on their cell phones, bandwidth, that kind of stuff and internet access."

"they didn't have very robust internet connections, their phone services couldn't handle it. So a lot of it more was telephone than audio visual."

Staffing capacity was also affected as resources and manpower were redirected to the more urgent COVID cases. This was evident during the pause of cancer screening services.

"I know in 2020 a lot of departments put a hold on their regular appointments because they were redeployed and the focus was put on towards Covid.".

Barrier: Inequalities and Disparities

Some stakeholders acknowledged the inequalities and disparities the pandemic has made more evident, especially for the marginalized communities the FQHC serves.

"It was interesting this pandemic exposed more the divide for our under-served populations in terms of ability. A lot of it too you see a video visit with a lot of patients their internet is not great. So the quality is bad and unstable internet."

The stakeholders described their patient population to include patients who are elderly, ethnicities such as Latino, may be immunocompromised, have lower SES, or have limited English proficiency.

"They didn't have the knowledge of how to download the application or a lot of our patients too, mostly 90-95% Spanish-speaking Latinos in this clinic. And they just didn't feel comfortable talking to a doctor over the phone,"

"And older population honestly can't navigate it. They can't, it's very difficult for them and how many patients have we missed because they couldn't navigate that video visit and so they no showed."

Some stakeholders expressed the potential cultural and language barriers in telehealth use. As the FHQC's majority population is Latino, there were times that stakeholders who do not speak Spanish had a hard time communicating with their patients. Additionally elderly patients preferred to meet in person as they were not comfortable nor familiar with telehealth.

"There were some instances... you know most of the patients are elderly and they're not very much English speaking. So as long as they answered the phone it was okay. So once the video visits hit, that's when it was difficult because some patients don't have knowledge on technology. ...it was hard to implement televisits for our elderly Hispanic patients. They're not too familiar with technology. So that kind of took impact as well to our screenings. And then most of the patients were like how are you going to take care of me over the phone. So that kind of took a toll as well. They didn't want to come into the clinic".

Discussion

The findings of the qualitative analysis were found to be correlated with previous studies and literature on telehealth and healthcare provider perspectives. A systemic review using primary health care providers perspective identified system quality as barriers of telemedicine systems.[20] System quality barriers encompass issues such as complex system usability and unreliability, and lack of integration and flexibility with existing systems.[20]

A noted observation of the extracted data is that it seemed to reflect more on general telehealth matters than cancer screenings. It is surmised that this was possibly due to the purview of the extracted interview questions and answers from the parent study having been more apportioned to the evolution of telehealth usage during the pandemic at the FQHC.

The barriers of technological challenges and lack of financial coverage aligns this with the Diffusion of Innovation theory features of compatibility, and complexity.[16],[21]These features essentially relay accessibility and inclusivity. Without proper internet and or device resources, an individual would not be able to participate in telehealth. More recently, Medicare has made a permanent change to expand coverage to as well as allow FQHCs to serve as providers for behavioral and mental telehealth services.[22] However, they also imposed a change wherein coverage and FQHC provision of non-behavioral and mental telehealth services are temporarily covered only up until December 31, 2024.[22]

The barrier of inequalities and disparities describes accessibility gaps that are associated with the patient population's demographics. These include lower resources for telehealth devices and internet, little or lack of technological knowledge, and lower health literacy. The Human Factors approach contends with this by articulating a good systems design is user centered, requiring that it considers its user capability and potential functional limitations (e.g. cognitive, hearing, visual, or age-related changes).[19,23] Although potentially costly in proximate terms, it would be a worth-while investment in the long run as increased usability can improve chances of telehealth systems adoption and reduce changes of adoption failure.[19,23]

Suffice to say, despite its ongoing challenges and limitations, telehealth has been widely adopted into the current healthcare system since its abrupt utilization need at the start of the pandemic. Its evolving function and fluctuating usage should continue to be observed because surges in COVID cases, new technologies, and other outstanding circumstances may impact it. As one stakeholder reminisced, "*It was crazy but hey we're here. And we still have tele-health and it keeps on improving."*

Limitations

A limitation of this study is the sample size of recruited stakeholders. There is also potential for sampling bias as stakeholders were interviewed on their self-reported experiences and perceptions. Considering that telehealth was not the main topic of the parent study the interviews were conducted for, another limitation is that the questions asked to stakeholders may not be exhaustive in inquiring about telehealth as it related to cancer screening. Additionally, stakeholders were all recruited from the same FQHC in the same state and their experiences may not necessarily reflect those of other healthcare providers in different settings.

Recommendations

Some examples of recommendations from previous literature specified having sustainable infrastructure to increase efficient use of staff and resources, links to existing telehealth networks, critical expansion to rural and underserved areas, and sustained technical maintenance and support.[12] In addition to these, based on the stakeholder interview findings, it would be prudent to recommend ensuring inclusivity and that telehealth remains ancillary to cancer screening services. To surmount the language and cultural barrier in telehealth communications, an option to request a healthcare interpreter or community health worker for translation purposes is recommended to be included. Further extending the Medicaid coverage for telehealth services beyond the 2024 extension and expanding FQHC eligibility to provide telehealth for non-behavioral mental health services is recommended so that it may also cover cancer screenings which would to accessibility. Lastly, it is within the telehealth industries best

interest to provide education, awareness, and create simplified versions of telehealth services for less technologically adept patients so as to not widen health care disparities.

Disclosure Statement

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Appendix

Figure 1. List of De-Identified Stakeholder Titles and Related Roles

Healthcare Provider (Roles)
Manager Population Health (Colorectal Cancer screening champion)
Director, Quality Improvement (Cancer Screenings champion)
Nursing Manager (Patient Safety, Registry, Breast, Cervical Screenings)
Associate Medical Director for Informatics (Family medicine, Physician assistant)
Medical Director of Quality and Patient Safety (Senior leader over breast, cervical, colon screenings)
Director of Women's Health (Manages screening registries & contract with mobile screening)
Medical Assistant (Helps with cancer/ CRC registry and follow up care)
Patient Access Director and Medial home services (oversees referral coordinators and front office staff workflows)
Manager of the Patient Service Center (call center, covid registry, HEDIS outreach teams)
RN (Colorectal Cancer Screening Registry and patient education)
MD, family medicine (Medical Director for patient service center, telehealth and our patient access team)
Outreach Supervisor (Patient Service Center: call center)
Manager, Nursing RN, (Manages back office staff e.g. medical assistants doing cancer outreach calls)
Manager (Reporting and Analytics)
Vice President of Operational Excellence
Health educator

Front office supervisor
RN (Care gap coordinator)