



# TELEHEALTH:

## Using Human Centered Design to Reach Underserved Communities



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# OVERVIEW

## Goal

This initiative was designed to answer the question:

How might we use telehealth to provide care for people who are unhoused or live in rural areas to slow the spread of Sexually Transmitted Infections (STIs), HIV, and Hepatitis C (Hep C), and avoid costly emergency care?

With support from the Centers for Disease Control and Prevention's (CDC's) National Center for HIV, Viral Hepatitis, STD, and TB Prevention, the National Association of Community Health Centers (NACHC) led an effort to use Human Centered Design (HCD) principles to answer this question. The goal was to learn how telehealth could support a wide range of care for people who are primarily unhoused including screening, prevention, and management for HIV, Hep C, and STIs. This initiative followed the Quintuple Aim: improved health equity, positive patient and provider experiences, financial sustainability, and improved health outcomes.

## Background

Throughout the COVID-19 pandemic, it became clear that not every condition required in-person services. Healthcare providers had to triage and evaluate patients at risk for STIs differently, while navigating the social drivers and barriers to health often present in rural areas and with populations experiencing homelessness. These steps were more challenging in non-Medicaid expansion states.

A total of three health centers in the southern region of the United States were recruited to participate in this telehealth project. They included: [Care Resource](#) in Florida, [CrescentCare](#) in Louisiana, and [Cherokee Health Systems](#) in Tennessee.

Human Centered Design (HCD) tools were used to inform the telehealth programs created by these three very different communities. The voices of patients and stakeholders became the guides to help care teams address challenges, care-needs, and improve access to care—especially as time and resources were tight.

It was eye-opening to learn how each community health center approached the same challenge uniquely and experienced very different “Wins” and “Challenges”. The case studies that follow highlight the lessons learned during this effort to guide telehealth for infectious disease care using HCD.

# HUMAN CENTERED DESIGN (HCD)

## What is Human Centered Design (HCD)?

HCD is a creative approach to problem-solving. It begins by building empathy with the people involved in a problem and ends with innovative solutions that are tailor-made to suit their needs. HCD emphasizes finding problems as much as solving them.

Some key aspects of HCD are to:

- Build empathy through interviews and observations to understand the patient/care team journey
- Emphasize finding problems as much as solving them
- Create ideas or programs to test
- Allow and encourage pivoting as learnings are identified around patient/care team needs
- Involve patients and care team members throughout the process

To learn more: <https://www.ideo.com/post/design-kit>

Human Centered Design principles intersect naturally with the consumer-focused mission and patient-majority Boards of health centers.

For this initiative, HCD principles were applied to telehealth for patients who do not have a home or who live in hard-to-reach rural areas. At the time of this initiative, telehealth was not broadly used by health centers, and its capacity and effectiveness were not understood. This remains a growing area of research and understanding.

To watch a video on HCD visit <https://www.ideo.org/tools> or click on the video thumbnail.



### INSPIRATION

In this phase, you'll learn how to better understand people. You'll observe their lives, hear their hopes and desires, and get smart on your challenge.



### IDEATION

Here you'll make sense of everything that you've heard, generate tons of ideas, identify opportunities for design, and test and refine your solutions.



### IMPLEMENTATION

Now is your chance to bring your solution to life. You'll figure out how to get your idea to market and how to maximize its impact in the world

IDEO; [www.ideo.com](http://www.ideo.com)



# POSITIVE IMPACTS OF TELEHEALTH FOR PATIENTS IN TRANSITIONAL HOUSING

STI Care Informed by HCD

## Telehealth Scheduled from the Clinic or Remotely in Florida



- **Enabled** more patients, in general, to be served—both from the clinic and remotely
- **Sustained** ongoing care for telehealth patients, throughout the pandemic
- **Satisfied** both physicians and patients due to telehealth's flexibility and hybrid access
- **Made follow-up care after labs easier** by providing expanded hours
- **Solidified telehealth as an important tool** for both primary and STI care

## Mobile Devices Distributed for Telehealth in Louisiana



- **Strengthened** ongoing care for HIV and Hep C patients
- **Improved** patient-provider relationships
- **Increased** the number of behavioral health visits by 53% for patients with STIs
- **Cut the no-show rate in half**
- **Supports** 28% of all medical visits/encounters at the health center
- **Provided a device to patients who could not afford one**, so they could receive care remotely

## Mobile Clinic Enhanced to Include Telehealth in Tennessee



- **Engaged** chronically and transitionally unhoused patients and individuals with addiction problems who tend to avoid brick-and-mortar clinics with telehealth. They could be seen by the physicians and care teams in a non-stigmatizing, mobile clinic environment
- **Increased** patient satisfaction and trust with 1:1 interaction—offered by support staff and remote physicians
- **Increased** behavioral health visits with on-call providers, ready to join a remote session when needed
- **Saved time** for staff through a process that helped streamline and re-distribute the workload, enabling staff to offer multiple services in a short time: lab draws, patient education, HIV and STI screening, and COVID-19 vaccine administration
- **Improved** communication among community partners caring for the same pool of patients

*“Not only could we meet patients where they are and start patients on important medication, but we’re starting a relationship with them. We’re building trust by providing care through the mobile clinic so they’ll eventually start going to the brick-and-mortar clinic. That’s the vision.”*

Knoxville Department of Health (a Community Partner)

## Screening & Diagnosis of STIs Increased Using Two Modes of Telehealth

When limited in-person visits were offered and transportation caused obstacles during the pandemic, Care Resource tapped into two modes of telehealth to provide care:

- ▶ Providers worked remotely while patients were in the clinic, and
- ▶ Both the providers and patients were remote

100 patients were surveyed by medical students to learn if telehealth visits were as effective as traditional clinic visits for primary care, STI screening, and STI diagnosis and treatment.



### WINS

- **Care Resource reached more patients.** Generally, both forms of telehealth increased access.
- **Hybrid scheduling models kept providers engaged.** Providers worked 3 days onsite and 2 full days of telehealth. This allowed clinicians to supply services at all peak times.
- **Patient engagement increased when they could choose how to receive care.** Older adults preferred in-person visits; younger adults preferred telehealth. Higher rates of HIV and Hep C maintenance were observed.
- **Extended lab hours benefited patients and providers.** Patients supplied specimens and completed STI screenings beyond standard health center operating hours to get information to providers quicker.
- **Telehealth made follow-ups easier.** This is true for lab results and treatment (as needed).
- **Telehealth remains an important tool** for ongoing primary and STI care.



### CHALLENGES

- **Data collection was difficult for telehealth services.** Care Resource did not have standard data collection built-in and needed to build this new type of data collection for telehealth.
- **Payors started to mandate which telehealth platform health centers can use.** It took time to learn other platforms and caused unnecessary complexity for patients and care teams.
- **Payor reimbursement rates vary.** Fluctuation in rates and unstable funding interrupted the ability of Care Resource to provide telehealth services. Telehealth service modifier codes are essential for proper reimbursement by payers.
- **Lack of buy-in from the full care team.** A practical care team composition is required for telehealth.
- **Limited staff were available to perform patient surveys.** Utilized medical students to help capture data.



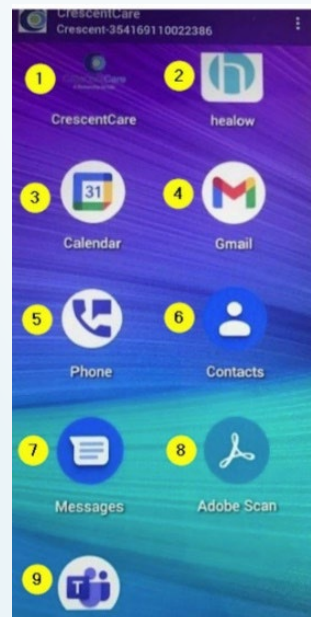
## FCC's Sano Health Mobile Devices Improved Access to Telehealth

CrescentCare was awarded a Federal Communications Commission (FCC) grant, through NACHC, to test the feasibility of Sano mobile devices from the FCC's **Affordable Connectivity Program** for access to telehealth and the patient portal.

Devices were distributed to any interested patient. During the project, 304 patients received a device. Each was equipped with a data plan and programmed to connect with the patient portal and other useful software products.



Mobile device home screen



*"We learned our program needed to be redefined to fit the reasonable expectations of those living in unstable housing."*

Care Team Member, CrescentCare



### WINS

- **Telehealth let HIV and Hep C patients remain in care** throughout the pandemic.
- **Stronger patient-provider relationships developed.** 1:1 connections developed with telehealth generally improved clinicians' ability to connect with patients and keep them engaged.
- **Of the patients with STIs, 53% still use telehealth** for behavioral health (BH) visits.
- **The FCC offers the Affordable Connectivity Program for Emergency Broadband.** Health center success helped solidify this program, which includes the provision of phones, help to onboard users, and payment for data plans.
- **Patient-Provider relationships and trust increased with better communication.** Patients more readily agreed to get the COVID-19 vaccine and PrEP.
- **Fewer appointments were canceled with telehealth.** No-show rates for telehealth visits were cut in half compared to in-person visits.
- **Telehealth improved access to BH services,** which is a highly demanded service and especially important to this population.



### CHALLENGES

- **Each Sano phone required 1 to 1.5 hours to set up.** Logistics for distribution and tracking, setting up accounts, accessing the portal, and navigating patient eHealth literacy takes time.
- **Data plans are expensive and internet connections are unstable.** Data plans cost \$80K on average for the health center. Interrupted appointments and not being able to connect to WiFi wasted time and prevented the completion of appointments.
- **11% of the refurbished Sano mobile devices were defective (55 of the 493).** This resulted in staff time loss and frustration.
- **Telehealth (alone) doesn't enable the collection of vital signs.** Many STIs require labs, so in-person care is needed to confirm a diagnosis or administer an injection.
- **It's difficult to register new patients with mobile registration.** Patients can't sign HIPAA and other forms. A new strategy to register new patients remotely still needs to be developed.
- **Low-wage earners may not qualify for Medicaid,** so costs make care prohibitive.
- **Patients use public locations to receive care** at libraries or bus stops, which may raise HIPAA concerns.
- **Proper reimbursement by payers is needed.** Currently, telehealth for clinical care, lab follow-up, and BH consultation services cause revenue loss.

## Mobile Clinic Brings Telehealth to People Who are Chronically or Transitionally Homeless



Cherokee Health Systems (CHS) launched a new mobile clinic for patients who are chronically or transitionally homeless. The mobile clinic provides acute care, identifies infectious diseases (HIV, Hep C, STI), and expands telehealth access to primary care, behavioral health care, and other services—reducing the need for costly emergency care.

CHS used HCD to learn they needed to:

- ▶ Reduce mobile clinic workflow inefficiencies
- ▶ Reduce redundancy among community partners
- ▶ Improve communication among patients and community-based organization (CBO) partners

*“Patients feel traditional healthcare systems treat them differently: judged and not good enough. This leads to care avoidance. By coming to them we can break through.”*

Cherokee Mobile Clinic Staff



- **HCD principles helped leadership, clinical teams, and stakeholders better understand problems** so they could meet the needs of patients. Insights led to streamlined workflows, decreased patient enrollment time, and improved patient care.
- **41 stakeholders were interviewed to find pain points and solutions.** This includes health center staff, patients chronic and transitionally homeless, and CBO staff from Knox County Department of Health (DOH), Knoxville Area Rescue Mission, and the Volunteer Ministry Center.
- **Mobile clinics gave telehealth access to people without phones** and in rural areas.
- **Patient satisfaction increased**, and trust increased with 1:1 interaction.
- **Communication Improved with partners caring for the same pool of patients.** Duplication of care was reduced because external providers were communicating.
- **The staffing of the mobile clinic improved**, ensuring the right team for the mobile clinic environment which was very different from the brick-and-mortar environment. This also built trust because patients would recognize the mobile clinic staff and approach them for follow-up.
- **Time-saving strategies were instituted.** The workflow updates allowed staff the ability to draw labs, provide education, conduct screening, and administer the COVID-19 vaccine.
- **A welcoming and non-stigmatizing environment was created in the mobile clinic**, easing stress around STI treatment.
- **Telehealth improved patient access to behavioral health, primary care, and infectious disease management services.** HIV+ patients were kept in care.
- **The use of a data dashboard to improve equity.** CHS sees the value of a dashboard to monitor patient retention with subgroups of homeless and transitional housing patients.
- **Telehealth expanded health care access to the correctional facility reporting center providing care post-incarceration.**
- **Mobile clinic staff received training in HIV/Hep C point-of-care testing** by Knoxville DOH.

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## CHALLENGES

- **Starting a Mobile Clinic requires staff and resources.** Learning what staff to hire, balancing financials, and learning how to keep operational after COVID-19/grant funds end is a challenge.
- **Chronically homeless patients only want to address emergent needs.** It's hard to provide long-term primary care or STI management. This also affects the ability to meet preventative care UDS measures for this patient population.
- **Access to diagnostic tests and STI treatment is limited in a mobile clinic.** The cost of point-of-care testing for patients without insurance for GC/CT and syphilis is a barrier, plus, it takes time to wait for labs. Transient patients don't always wait or come back for results.
- **Lack of Medicaid expansion limits access to enabling services.** Patients must navigate care across several programs: Ryan White, Knoxville DOH, CHS, and community-based programs.
- **The lack of standardized data and data exchange makes it difficult to share treatment plans,** and gain insight into a patient's overall needs when working with multiple partners on different IT systems.
- **Patients would like to see a "menu" of services and costs at each location.** Not easy to provide as there are so many different funds that can cover these services and each patient's situation is different.
- **Providers need telehealth service modifier codes for proper reimbursement.**
- **Funding and resources to support the mobile clinics in the future are unclear.**

*"I realized we missed some key informants during this process—like the nurse who takes labs and the driver who took pictures, registered patients, and jumped in to help. All staff on the mobile unit feel stressed by tech issues— they have to care for acute patients who have many needs while having limited capabilities on the van and WiFi problems. We have to make plans to help them so we can ease their struggles."*

Cherokee Health Center Staff

## RESOURCES FOR TELEHEALTH

### BILLING AND REIMBURSEMENT FOR TELEHEALTH

- NACHC's Telehealth Reimbursement Tips for Health Centers [Telehealth Reimbursement Tips](#)
- Direct Telehealth Billing Technical Assistance/Triage—Targeted TA for FQHC telehealth billing questions now has a dedicated consultative service available triaged by the Center for Connected Health Policy, email: [FQHCquestions@cchpca.org](mailto:FQHCquestions@cchpca.org) (Service ends April 2023)
- Telehealth.HHS.Gov: [Billing and Coding for Medicare Fee-for-Service Claims](#)

### RESOURCES TO SUPPORT HEALTH CENTER DATA COLLECTION WITH TELEHEALTH

- **Strategic Investments in Telehealth and Digital Tools for Health Centers**  
This short guide describes FQHC telehealth utilization and barriers to adoption pre and during the COVID-19 pandemic. The document outlines reasons for maintaining or increasing adoption relative to improving health equity through technology access and move to value-based care. [Download here.](#)
- **Telehealth Optimization Quick Guide for Health Centers**  
This Resource Guide is intended to support health centers looking to advance telehealth or virtual services during COVID-19 pandemic response and operational recovery. [Download here.](#)

### TELEHEALTH SOLUTIONS, SHARED BY OTHER HEALTH CENTERS

- **Community Health Centers Telehealth Promising Practices**  
This collection of case studies highlights ten community health centers' promising practices and lessons learned in the adoption or expansion of telehealth delivery in response to the COVID-19 pandemic. [Download here.](#)

### TECHNICAL ASSISTANCE

- NACHC HIT and Cybersecurity resources—Includes links to join the EHR User Groups [here.](#)
- NACHC Telehealth Office Hour page—Quarterly meetings. All previous recordings can be found [here.](#) Look under 'Access Recordings' for some interesting topics.
- 50-State Technical Assistance Webpage—The Center for Connected Health Policy's (CCHP) most recent update to its [Telehealth Policy Finder](#) includes a section specifically for federally qualified health centers (FQHCs) with information on Medicaid fee-for-service telehealth policies in every state and territory. This information enables FQHCs to access relevant information about Medicaid fee-for-service enrollees (through April 2023).
- **Environmental Scan of Telehealth TTA Resources** (National Health Center Telehealth resource Center Project)

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## RESOURCES FOR TELEHEALTH *(...continued from previous page)*

### RESOURCES FOR TELEHEALTH AND HIV/STIs

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NOTE: Many patients with HIV or an STI have a Substance Use Disorder (SUD) as well.

- CDC Sexually Transmitted Diseases information: <https://www.cdc.gov/std/>
- **Demographic, clinical guideline criteria, Medicaid expansion and state of residency: a multilevel analysis of PrEP use on a large US sample.** *BMJ Open.* 2022 Feb 2;12(2):e055487. doi: 10.1136/bmjopen-2021-055487. PMID: 35110323; PMCID: PMC8811583
- National Alliance of State and Territorial AIDS Directors—resources for public health officials who administer HIV and hepatitis programs in the U.S: <https://nastad.org/resources>
- National Health Care for the Homeless Council: <https://nhchc.org/clinical-practice/>
- PrEP (pre-exposure prophylaxis) information <https://www.cdc.gov/hiv/basics/prep/about-prep.html>
- Sample checklist to evaluate HIV Telehealth Care: [HIV telehealth Checklist NYS AIDS Institute \(002\).pdf](#)
- Syringe Services Programs: A Technical Package of Effective Strategies and Approaches for Planning, Design, and Implementation <https://www.cdc.gov/ssp/docs/SSP-Technical-Package.pdf>
- The Coalition for Applied Modeling for Prevention <https://www.campmodeling.org/index.php>
- **Use of and Retention on Video, Telephone, and In-Person Buprenorphine Treatment for Opioid Use Disorder During the COVID-19 Pandemic.** *JAMA Netw Open.* 2022;5(10):e2236298. doi:10.1001/jamanetworkopen.2022.36298

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