

Bridging the Digital Divide:

Using Technology to Improve Access to Health Care for Public Housing Residents

April 2020

National Center for Health in Public Housing

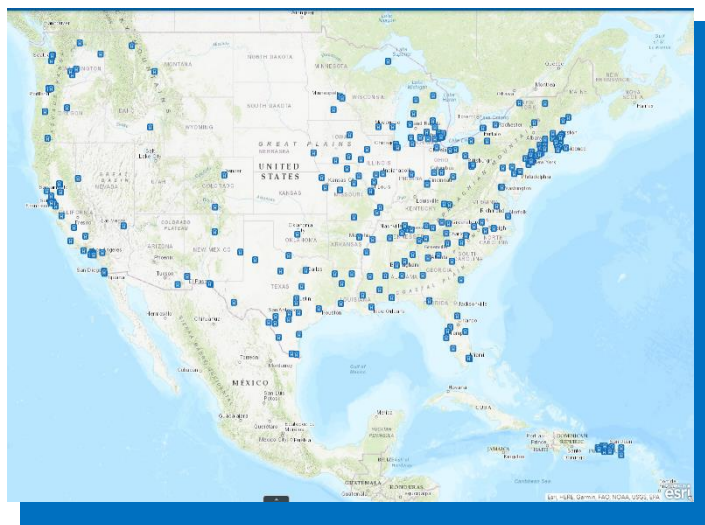


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Introduction

Using technology to improve access to health care for public housing residents is a dual process. It requires educating and improving digital health literacy and broadband access for patients, as well as developing or improving the technology infrastructure at health center sites. In 2018, there were 107 Public Housing Primary Care (PHPCs) health centers in the U.S. serving 817,123 patients.¹ PHPC health centers have a unique role because they provide high quality health care to individuals and are often co-located within public housing developments. They have access to residents, and some have developed relationships with Public Housing Authorities (PHA) to make some education and access opportunities possible. PHPC health centers are also working to address their patients' social determinants of health (SDOH), the social and environmental conditions in which their patients live that can affect health risk and outcomes, including literacy and access to mass media and emerging technologies (e.g., cell phones, the Internet, and social media).



Public Housing Primary Care Grantees

The purpose of this report is to outline the digital needs and challenges of public housing residents, the risks and benefits of using technology to improve patient care, and recommendations on how to prepare health centers and patients to optimize digital tools, improve access to care, and enhance efforts through partnerships to bridge the digital divide.

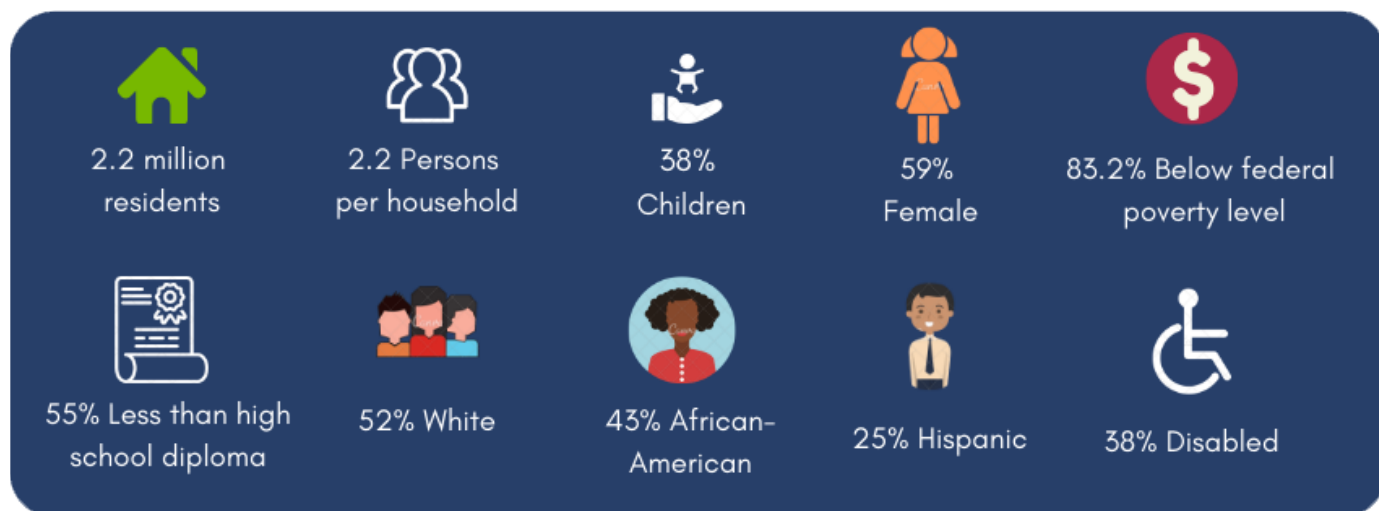


The Need to Improve Broadband Access and Digital Health Literacy

DIGITAL HEALTH LITERACY IS THE ABILITY TO SEEK, FIND, UNDERSTAND, AND APPRAISE HEALTH INFORMATION FROM ELECTRONIC SOURCES.

According to Norman and Skinner, digital health literacy is the ability to seek, find, understand and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem.² The Digital Health Consumer Adoption Survey from Rock Health, a venture fund dedicated to digital health, states that a growing number of Americans are using digital health services and technologies, including wearables, apps, telemedicine, and tech-enabled services to address concrete health needs.³ These digital health tools can include use of mobile tracking apps, wearable devices that monitor health, live-video telemedicine, or accessing online provider reviews and health information.⁴ In 2018, approximately 89% reported using at least one digital health tool compared to 80% in 2015.⁵

However, the use of digital health tools varies greatly by geography and socioeconomic status. Even though 90% of low-income individuals own a cell phone⁶, they are less likely to have adopted or utilize a digital health communications system to track, monitor, or maintain their health.⁷ Elderly populations with low education are more likely to have lower levels of digital literacy.⁸ Patients with low health literacy are less likely to use health information technology tools.⁹ Below is a chart of the HUD Public Housing demographics data in 2020.

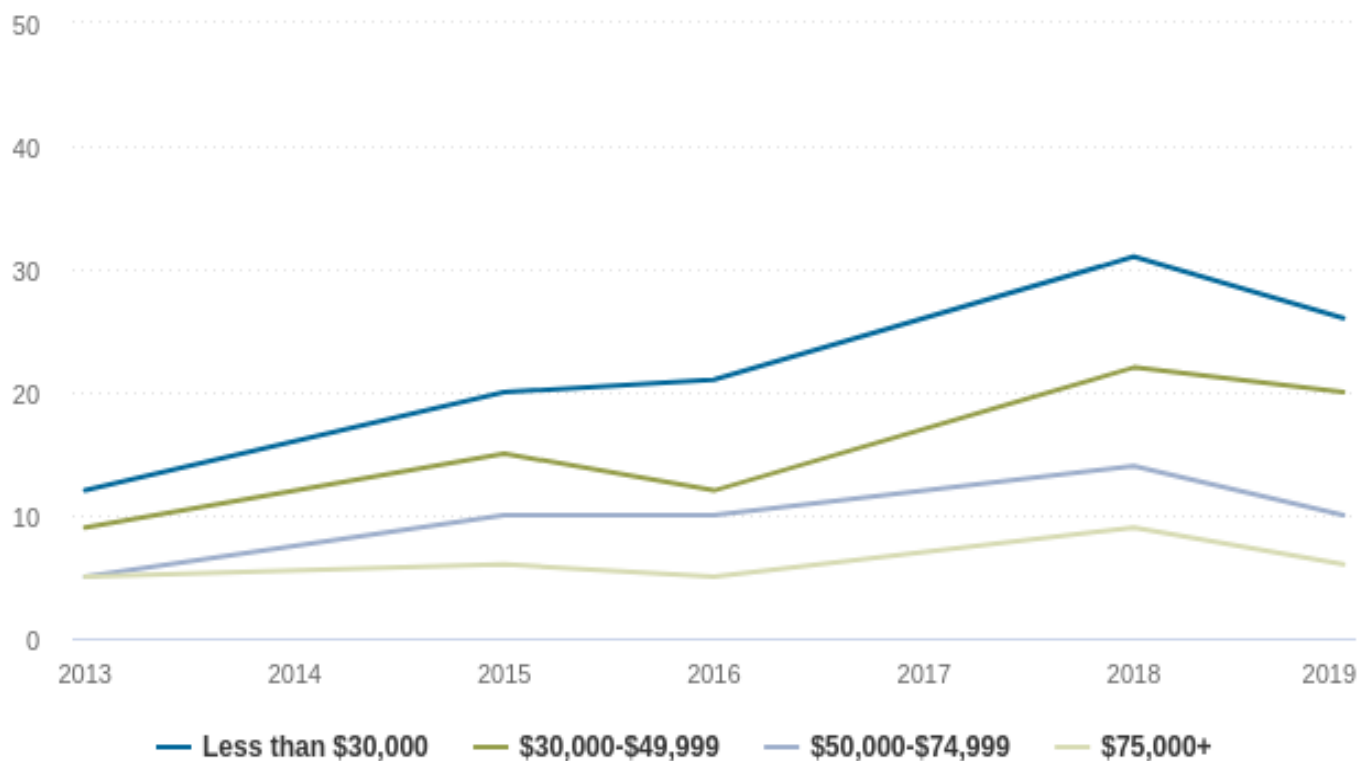


Source: HUD

Nationally, there are a little more than 2 million individuals that live in traditional public housing in the U.S. About half of the households have less than a high school diploma, more than 80% live at or below the poverty line, almost 40% of the households have children, and almost 40% include a member that is disabled.¹⁰

Smartphone dependency by income

% of U.S. adults who do not use broadband at home but own smartphones, by income



Source: Surveys conducted 2013-2019. Data for each year based on a pooled analysis of all surveys containing broadband and smartphone questions fielded during that year.

Source: <https://www.pewresearch.org/internet/fact-sheet/mobile/>

According to a Pew Research Center survey, disabled Americans are about three times as likely as those without a disability to say they never go online (23% vs. 8%).¹¹ The Pew survey also found that there are broadband disparities among households with school-aged children. Households with low incomes or from minority racial and ethnic groups are less likely to have internet service.¹² The average internet adoption rate for families living in public housing is about 54% compared to 80% nationally.¹³ Since home internet access is less prevalent, there is a reliance on smartphones for online access, especially common among younger adults, non-whites and lower-income Americans.¹⁴

Approximately 13% of Hispanics and 12% of African Americans (compared to 4% of Whites) are smartphone-dependent, meaning they do not have a broadband connection at home and have few options for going online other than their cellphone.¹⁵ Nearly three-quarters of Hispanic smartphone owners have used their phone in the past year to research a health condition, which is similar to the share of African Americans.¹⁶

As a result, broadband access and digital health literacy are two additional social and environmental risk factors health centers must consider when delivering care to public housing residents.

Benefits and Risks of Using Technology to Improve Patient Care

Individuals that receive housing assistance from the U.S. Department of Housing and Urban Development (HUD) are more likely to have chronic health conditions and are higher utilizers of health care than the rest of the U.S. population.¹⁷ Using technology could benefit health centers across many HRSA priority areas, including diabetes and behavioral health disorders.

Tech benefits for diabetes management:

Russell-Minda and colleagues conducted a systematic review to determine the effectiveness of remote patient monitoring devices and technologies for individuals with type 1 or type 2 diabetes based on specific health-related outcome measures, such as a reduction in HbA1c levels. They explored issues of feasibility, usability, and compliance among patients and providers and found that email and text messaging can help facilitate patient self-management of diabetes. They conclude that wireless technologies are practical and cost-effective methods for monitoring clinical outcomes and increasing patient adherence to treatments.

Tech benefits for behavioral health:

Some of the challenges involved with the delivery of substance abuse services include cost, treatment adherence, and providing a continuum of care. Patients suffering from substance abuse disorders, particularly those living in public housing, face several stressors shaped by their environments, resulting in a need for ongoing support. Health centers and other substance abuse treatment centers often provide case management, however the demand for this care management often exceeds the resources available. Therefore, technology-centric solutions that deliver effective evidence-based substance abuse programs offer a

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good alternative. One of the benefits of using a digital solution is the ability to capture data regarding engagement with and adherence to a program more frequently, which enables evaluation of a program's outcomes and modification of the program over time.

Technology does carry some risk, including access and privacy. The Health Insurance Portability and Accountability Act (HIPAA) created several actual and perceived barriers to collection, sharing, and dissemination of data needed to coordinate information and services between public and private stakeholders seeking to address the social determinants of health.¹⁸ To address those concerns, health centers must work proactively to obtain permissions to release or share patient information in advance and work with housing and social service agencies on data sharing agreements. Other risks include data privacy. Patients may be unaware of how their personal information is collected, used or disclosed to third parties.¹⁹ Additionally, data privacy policies may be written with technical language that make it difficult for a layperson to understand and assess potential risks.²⁰

How Can Health Centers Use Technology to Improve Health?

“TECHNOLOGY ALLOWS PEOPLE TO CARRY THEIR SUPPORT NETWORK AND PROGRAMS QUITE LITERALLY IN THEIR POCKET. IT ALSO EXTENDS THE WORK OF CARE MANAGERS AND SPONSORS, GIVING THEM A SCALABLE WAY TO MONITOR AND COMMUNICATE THROUGHOUT A PATIENT’S JOURNEY.”

CHIPPER STOTZ AND MEGAN ZWEIG, ROCK HEALTH

The 107 PHPC health centers that serve vulnerable populations, including those living in public housing, have an opportunity to improve the health outcomes of the patients they serve through technology. Rather than employing the same approach across patients from all backgrounds, health centers can develop an SDOH screening process that includes assessing the digital health literacy and broadband access of their patients and tailoring their patient engagement strategies based on those needs. They can also work in partnership with federal, state, local agencies, and non-profits to educate and train individuals on how to access health information electronically.

1. *Increase digital health literacy and partner with other organizations to improve broadband access*

A critical starting point for bridging the digital divide is by addressing technology needs of public housing residents and increasing education on how to access health information. HUD developed a new pilot initiative called [ConnectHome](#) that engages PHAs, city municipalities, and private sector stakeholders to close the digital divide by providing digital literacy training, broadband access, and digital devices. Since its launch in 2015, 37% of HUD-assisted households with children have gained internet access through ConnectHome efforts.²¹ That includes 7,000 new devices and 200 digital literacy trainings. PHPC health centers can access the [ConnectHome Playbook](#) for guidance on public housing resident engagement, developing partnerships with local nonprofits, measuring and tracking progress on digital goals. Though intended for housing organizations, there are many strategies and solutions that could be applied within the health care setting. For example, the Playbook includes recommendations on how to build research teams, engage partners, and key metrics to include in surveys. ConnectHome has developed a tool to measure a baseline of internet adoption and digital literacy in public housing communities. Health centers also have an opportunity to work with ConnectHome communities to ensure that trainings include a health component. Likewise, health centers can train outreach and other enabling staff on assessing digital health using the ConnectHome as a model.

Health centers also have an opportunity to collaborate with local libraries to develop customized online health curricula to train residents in digital health literacy. The Richmond Library and Cultural Services Department's Literacy for Every Adult Program (LEAP) created [The Digital Health Literacy Project](#) to provide low-income Richmond, VA residents with tools and skills needed to access online information to improve their health. The pilot program, funded by a two-year National Leadership Grant from the federal Institute for Museum and Library Services, had four primary aims: to train low-income community members, provide refurbished laptop computers to participants, provide free internet services, and create partnerships to sustain and expand digital health literacy work in Richmond. It developed a self-paced, bilingual (English and Spanish), online digital health literacy training in partnership with the Minnesota Literacy Council and the Literacy, Language, and Technology Group at Portland State University, and LearnerWeb. Team members conducted classes and provided training for program partners to lead DHLP classes at their own sites. For example, members of a cohort of Wellness Navigators discussed learning how to:²²

- Research symptoms prior to meeting with a doctor to inform their conversation
- Research a diagnosis after a medical appointment to better understand their health and treatment options
- Determine what type of specialist to contact
- Research alternative and holistic treatments
- Locate doctors and specialists
- Research wellness information, particularly recipes
- Find resources about work-life balance
- Determine their eligibility for public health insurance programs.

These activities enabled participants to develop skills and habits of using online resources to meet health and other needs, access online information relevant to their lives, and make positive changes related to health.²³ Using matched pre- and post-assessments, the project evaluation

showed an increase in the use of the Internet to research a broad variety of health and wellness topics.²⁴ For instance, prior to the course only 60% of participants reported using the Internet to find health information compared to 92% of participants that completed the training. Participant confidence in knowing where to find health resources increased from 35% to 93% after the training.²⁵

Internationally, many countries have made efforts to improve the digital health literacy of their citizens. [IC-Health Consortium](#), which consists of 14 partners from seven countries in Europe, developed a series of 35 open access online courses (MOOCs) in eight languages. The courses were geared towards different population cohorts including children, adolescents, pregnant and lactating women, elderly and people affected or susceptible to be affected by type 1 and type 2 diabetes.

2. *Increase telehealth services*

From the patient perspective, telehealth can include a telephone call, joining an online support group, obtaining health information and self-management tools online, or having email and online communication with health care providers.²⁶ From the provider perspective, telehealth can range from the use of electronic health records (EHR) and remote monitoring of vital signs and symptoms, to conducting consultations and patient visits by video.²⁷ In 2018, approximately 75% of individuals reported using at least one channel (text, email, or video) to access remote care compared to 68% in 2017.²⁸ Growth in live video telemedicine has increased six-fold over the past three years.²⁹ However, the increase is largely seen among urban individuals. Only 17% of rural adults over the age of 35 use video telemedicine compared to 46% of urban adults over 35 years old.³⁰



According to 2018 National Health Center Data, only 42% of PHPCs use telehealth services.³¹ For those health centers that do provide telehealth services, 58% use it to communicate with patients at remote locations and 42% use it to communicate with specialists outside of their organizations.³² Most health centers (87%) use real-time telehealth technologies, such as video conferencing, while a small percentage (13%) use remote patient monitoring and store and forward telehealth.³³

Telehealth applications for home health care can enhance the management of individuals with multiple chronic conditions by providing daily monitoring (between in-person visits), timely intervention as the patient's condition warrants, triage of clinical needs, and reinforcement of the treatment and discharge plan.³⁴ These patient management improvements assist physicians with both the coordination of care and the communication of health care problems and in the long run can save clinicians' time through improved coordination and collaboration.³⁵ One of the main challenges in accessing care for public housing residents in urban settings is a lack of transportation. Therefore, telehealth offers an optimal alternative to providing primary and behavioral health services to a population at greater risk, particularly the disabled.

PHPCs cite several challenges to initiating or broadening their telehealth programs, including lack of reimbursement for telehealth services (34%) and lack of training for telehealth services (24%).³⁶ However, on February 9, 2018, Congress passed the Creating High-Quality Results and Outcomes Necessary to Improve Chronic ("CHRONIC") Care Act of 2018, which contained provisions to expand the integration and coverage of telehealth-based chronic care services under Medicare.³⁷ Previous constraints on the geographic location, such as the originating site, rural health professional shortage areas, and counties outside of Metropolitan Statistical Areas, have been lifted, allowing for wider spread utilization by beneficiaries, specifically those with end stage renal disease, or who have suffered from a stroke, or are treated by practitioners participating in Accountable Care Organizations.³⁸ The expected result is an increase in availability of telehealth services in urban areas, which is promising for public housing residents living in large cities.

Approximately 56.47% of patients served at PHPCs have Medicaid.³⁹ Therefore, Medicaid reimbursement policies are another critical component for PHPCs to provide telehealth services. According to the Center for Connected Health Policy's [State Telehealth Law and Reimbursement Policies Report](#), all states and DC provide reimbursement for live video in Medicaid fee for service. Other findings include:⁴⁰

- Fourteen states provide reimbursement for store-and-forward.
- Twenty-two state Medicaid programs provide reimbursement for remote patient monitoring (RPM).
- Twenty-three states limit the type of facility that can serve as an originating site.
- Thirty-four state Medicaid programs offer a transmission or facility fee when telehealth is used.
- Forty states and DC currently have a law that governs private payer telehealth reimbursement policy.

Telehealth can be an important tool for improving access to quality health care, particularly for public housing residents. PHPCs that include a telehealth component to their work plan can contact one of the 12 HRSA-supported [Regional Telehealth Resource Centers](#), which provide technical assistance to organizations that are actively providing telehealth services to rural or underserved communities.

Currently, HRSA funds the following programs to promote and improve telehealth services:⁴¹

1

Telehealth Network Grant Programs: The purpose of this program is to demonstrate the use of telehealth networks to improve healthcare services for medically underserved populations in urban, rural, and frontier communities. For more information, contact: Carlos Mena, 301-443-3198.

2

Substance Abuse Treatment Telehealth Network Grant Program: The purpose of this program is to demonstrate how telehealth programs and networks can improve access to health care services, particularly substance abuse treatment services, in rural, frontier, and underserved communities. For more information, contact: Stephanie Begley, 301-443-3348.

3

Evidence-Based Tele-Behavioral Health Network Program: The purpose of this program is to use telehealth networks to increase access to behavioral health care services in rural and frontier communities and evaluate those efforts to establish an evidence-base for assessing the effectiveness of tele-behavioral health care for patients, providers, and payers. For more information, contact: Whitney Wiggins, 301-443-4966.

4

Telehealth Resource Center Program: The purpose of this program is to support delivery of telehealth technical assistance. Expert and customized telehealth technical assistance is available across the country. Twelve organizations are located regionally to facilitate grant activities at the local level and to ensure that resources are geographically distributed. For more information, contact: Natassja Manzanero, 301-443-2077.

5

Telehealth Centers of Excellence: The purpose of this program is to examine the efficacy of telehealth services in rural and urban areas. The Telehealth Centers of Excellence are located in public academic medical centers. For more information, contact: Colleen Morris, 301-594-4296.

6

Flex Rural Veterans Health Access Program: The purpose of this program is to provide funding to enhance mental health services. For more information, contact: Monica Cowan, 301-443-0076.

7

Licensure Portability Grant Program: The purpose of this program is to provide support for State professional licensing boards to carry out programs under which licensing boards of various States cooperate to develop and implement State policies that will reduce statutory and regulatory barriers to the provision of health care services through telemedicine technology. For more information, contact: Monica Cowan, 301-443-0076.

8

Telehealth Focused Rural Health Research Center Cooperative Agreement: The purpose of this program is to increase the amount of publicly available, high quality, impartial, clinically informed and policy-relevant research related to telehealth. For more information, contact: Jennifer Burges, 301-945-3985.

3. *Make the most of Electronic Health Records for SDOH*

SDOH are important predictors in clinical care, patient outcomes, and costs.⁴² A 2014 Institute of Medicine (IOM) report suggested that the standardized collection of SDOH data in an electronic health record (EHR) is crucial for diagnosis, treatment choices, policy, health care system design, and innovations to improve health outcomes and reduce health care costs.⁴³ EHR systems can act as both a database of information as well as the tools used in workflows to collect information and support decision making and analysis.⁴⁴ EHR systems often provide a platform for patient engagement, with opportunities to schedule appointments, communicate with providers, and display targeted health education materials. EHRs that collect SDOH information can be used to create tailored referrals, by aligning case management and care coordination with community resources.

According to the National Association of Community Health Centers, SDOH data allows health centers to define and document the increased complexity of their patients, transform care with integrated services and community partnerships to meet their needs, advocate for change in their communities, and demonstrate health center value.⁴⁵

In [Capturing Social and Behavioral Domains in Electronic Health Records: Phase 1](#), the IOM committee identified the social and behavioral domains to be considered in all EHRs; criteria for deciding which domains to include; and domains for specific populations or settings defined by age, socioeconomic status, race/ethnicity, disease, or other characteristics.⁴⁶

Table 1. Recommended SDOH Domains to include in EHRs		
Sexual Orientation	Gender Identity	Race and Ethnicity
Country of Origin/U.S. Born or Non-U.S. Born	Education	Employment
Financial Resource Strain: Food and Housing Insecurity	Health Literacy	Stress
Negative Mood and Affect: Depression and Anxiety	Psychological Assets: Conscientiousness, Patient Activation, Optimism and Self-Efficacy	Dietary Patterns
Physical Activity	Tobacco Use and Exposure	Alcohol Use
Social Connections and Social Isolation	Exposure to Violence	Neighborhoods & Communities Compositional Characteristics
Source: IOM, <i>Capturing Social and Behavioral Domains in Electronic Health Records</i>		

The second report, [Capturing Social and Behavioral Domains and Measures in Electronic Health Records: Phase 2](#), pinpoints 12 measures related to 11 of the initial domains and considers the

implications of incorporating them into all EHRs.⁴⁷ IOM acknowledges that SDOH data collection within EHRs can be challenging. Key considerations include:

1. Implications for workflow changes to collect additional information as well as workflow changes that arise in response to new issues identified through the SDOH measures.
 - PHPCs may need to modify how clinical teams operate and how patients report SDOH challenges
2. Time needed to obtain data.
 - PHPCs may need to test collection protocols and determine the best means for gathering information considering domain type and implications for workflow. Staff may consider the modality in which data are collected, i.e. self-reported, clinical judgement, cell phones, personal digital assistants, computer surveys, etc.
3. Responding to SDOH challenges that fall outside of traditional health care
 - PHPCs may need to identify community resources and develop partnerships to aid in areas outside their scope of care.
4. Barriers to the adoption of changes in the EHR
 - PHPCs may need to carefully identify greatest concerns, such as data entry, and reconsider staff's individual roles and workflows.
5. Data storage and data sharing
 - PHPCs may need to consider appropriate ways to transfer data from other sources, such as EHRs from other institutions, third parties such as insurers, employers, or community or national datasets. Open architecture models of health information systems are described in more detail in the IOM report.
6. Privacy protection
 - PHPCs may need to ensure partner compliance with HIPAA Privacy and Security rules, train staff accordingly, de-identify data when appropriate, and inform patients on the specifics of data sharing.

While the IOM report did not identify broadband access as an SDOH domain to include in EHRs, it is still important to consider. IOM does state that if individual health care providers have information on their patients' health literacy level, they will be able to determine when to use particular tools and can target efforts to improve medication adherence and potentially avoid errors resulting from inadequate communication.⁴⁸

Currently, there are few validated screening tools to measure digital literacy and broadband access. However, PHPCs may consider the eHealth Literacy Scale. The eHealth Literacy Scale (eHEALS) is an 8-item scale developed to measure consumers' combined knowledge, comfort, and perceived skills at finding, evaluating, and applying electronic health information to health problems.⁴⁹ Norman and Skinner found that eHEALS reliably and consistently captures the eHealth literacy concept and is a promising tool for assessing skill in using health information technology.⁵⁰ Within a clinical environment, it may be used to identify patients that could benefit from an eHealth intervention or resource.⁵¹

The HUD initiative ConnectHome has developed a tool to measure a baseline of internet adoption and digital literacy in public housing communities that includes metrics on household access to high speed internet and use.

PHPCs may consider the following metrics on digital literacy and broadband access:

1

**DO YOU CURRENTLY
HAVE ACCESS TO
HIGH SPEED INTERNET
ON A COMPUTER OR
TABLET IN YOUR
HOME?**

2

**DO YOU USE A
SMARTPHONE
FOR ACCESSING
THE INTERNET?**

3

**DO YOU VISIT A
SCHOOL OR
LIBRARY WHEN
YOU NEED
INTERNET
ACCESS?**

4

**HOW COMFORTABLE
ARE YOU WITH
FINDING HEALTH
INFORMATION OR
ACCESSING PATIENT
PORTALS?**

Once digital health literacy levels have been assessed, PHPCs can tailor patient engagement strategies, modes of communication, and delivery of health education materials. For example, trainings on how to navigate patient portals may differ whether an individual is viewing and accessing the system through a desktop computer versus on a mobile device. If providers and case managers are aware of technological limitations in a household, they may be more likely to deliver print materials than email or text messages. However, considering all patients, regardless of their health literacy levels, appreciate a simple design, health centers can ask HIT developers to create a straightforward patient interface that would benefit patients with lower levels of digital literacy. In addition, providing information in portals in multiple languages may improve patient provider communication and overall quality of care.

In a diabetes learning collaborative focused on the use of technology hosted by NCHPH, La Maestra Health Center in San Diego, California offered the following example:

"LA MAESTRA HEALTH CENTER HAS BEEN COLLECTING SOCIAL DETERMINANTS OF HEALTH DATA FOR THE LAST 20 YEARS. IT IS EMBEDDED IN THEIR EHR SYSTEM. THE EHR VENDOR HAS A SOCIAL DETERMINANTS OF HEALTH TEMPLATE THAT SERVES AS A CENTRAL POINT TO GATHER AND INPUT DATA ON ITEMS SUCH AS TRANSPORTATION AND LANGUAGE..."

"...LA MAESTRA CUSTOMIZES THE TEMPLATE FOR THEIR OWN NEEDS AND USES THE DATA TO TARGET OUTREACH. THEY HAVE INCORPORATED THE PHARMACY INTO THE DESIGN TO TAILOR TREATMENT PLANS FOR PATIENTS WITH CERTAIN CHARACTERISTICS. AS A RESULT, THEIR COMPLIANCE RATE FOR DIABETES HAS INCREASED BY 5-6%."

-CLINICAL QUALITY MANAGER, LA MAESTRA HEALTH CENTER

[SBH Health Systems](#), formerly known as Saint Barnabas Hospital in New York, found that clinicians and care managers were able to make better decisions using social determinants of health data.⁵² According to the Chief Information Officer (CIO), "It's not only access to housing, food, pharmacy, but also things like lacking broadband service or text-messaging services; those can have severe impact on the patient engagement side."⁵³ SBH has tried to optimize the patient portal to encourage patient engagement.⁵⁴ However, sending health education messages and reminders required the input of patient email addresses into the EHR, a process that involved reengineering workflows at all touchpoints, in the emergency room visits, hospital admissions, or clinic appointments.⁵⁵ They have been successful at obtaining the data because they have learned that engaging clinicians is important for the design, development, testing, and training of the technology.⁵⁶ To gain feedback from clinicians, consider inviting them to participate in planning committees, offer feedback through surveys or interviews, or discuss challenges, solutions, and progress during regular staff meetings. According to the CIO, "adoption will be higher when the clinicians are making the decisions."⁵⁷ Another lesson is that training must be iterative; clinicians need to be trained and retrained using a variety of methods, including hands-on training.⁵⁸

**CLINICIAN INPUT
IN THE DESIGN,
DEVELOPMENT,
TESTING, AND
TRAINING OF THE
TECHNOLOGY IS
CRUCIAL.**

A pilot study conducted by Gold et al. on the implementation of SDOH data tools within EHRs at Health centers showed that 97-99% of screened patients had at least one documented SDOH need, while only 19% received an SDOH referral.⁵⁹ Researchers found that successful implementation of the tool relies on:⁶⁰

1. Understanding the timing required for data entry
2. Appropriate training for staff tasked with SDOH efforts
3. Integrating tools into existing workflow processes at the most opportune and appropriate time

3. Support access to smart home technologies



Finally, there are several smart home technologies that may permit seniors to age in place by creating a safe environment. Adults that can age in place exhibit better levels of cognition, better functioning in daily living activities, decreased levels of depression, and lower levels of incontinence compared to older adults aging in nursing home settings. Seniors are particularly vulnerable because, in addition to the increased

risk of physical or mental disability, seniors living in public housing have limited resources and social supports.⁶¹

Homes can also be equipped with smart thermostats to control indoor temperatures and motion-activated light switches that can be controlled with a smartphone. Smart doorbells often have cameras and microphones that allow seniors to communicate with visitors or alert them when someone is at the front door. Appliances can have safety features, such as automatic stove turn-off devices that can reduce risk of fire, while Wi-Fi-enabled refrigerators can keep track of grocery lists and order items at nearby grocery stores for delivery. In some cases, health care providers can improve access to these devices by providing letters of support explaining the importance of these technologies to the health and well-being of their patients. They can also discuss the importance of these technologies with PHAs as they work together to make healthier environments for public housing residents.

Additionally, providers can encourage seniors to use wearable health monitoring devices that collect data on sleep quality, restlessness, sedentary behavior, as well as track and monitor heart health, exercise activity, and chronic conditions and communicate those issues with health care providers. Technology involving the use of stove sensors, motion sensors, and sensors that detect water and electricity consumption can be used to detect mobility issues for seniors. These platforms utilize sophisticated algorithms to detect patterns of an individual's normal routine and deviations from those patterns. In an optimal

world, these devices would communicate with health care providers to alert them of patient needs in real-time.

Evaluating Success

Once a PHPC has assessed their readiness and ability to use telehealth technology, identified patient's SDOH needs, and modified their EHR systems to take into account the digital health literacy and broadband access limitations of their patients, they can measure, monitor, and evaluate whether their efforts are leading to improvement in health care delivery, access, and overall patient health outcomes. Some metrics to consider include:

- Patient portal⁶²
 - Characteristics of portal users (i.e. identify changes in the number of public housing residents and other vulnerable populations that access the portal.)
 - Portal usability (i.e. feedback on ease of navigation, portal features used such as health tracking, appointment tracking, etc.)
 - Provider-patient relationship (i.e. improvements in communication or response time between staff and patients, patient satisfaction)
 - Disease management (i.e. medication adherence)
- EHR
 - Implementation⁶³(i.e. training, system testing)
 - Work Flow Assessment⁶⁴ (i.e. scheduling, patient arrival, follow up and referrals)
- Internet Access and Use
 - Households with high-speed internet access (not smartphones)
 - Number of individuals trained in digital health skills

Summary:

Providing health care to vulnerable populations that are faced with a range of SDOH needs can be very challenging. In addition to income, education, access to healthy foods, and housing status, health care providers must also consider how patients access health information and engage with the health care system electronically. Despite this challenge, there are many evidence-based technological solutions that can improve patient provider interaction, quality of care, and create efficiencies in determining patient needs and optimizing health center workflows.

PHPCs have an opportunity to address the digital divide by partnering with other housing and non-profit organizations to improve digital health literacy and access to the internet. They can increase access to care by improving their telehealth capacity. Finally, they can make the most of their EHR systems to address SDOH needs, including access to broadband and digital health literacy. The results of their efforts can have a long lasting and ripple effect. It can lead to an improvement in educational attainment, job skills, and the overall improvement of health and well-being of their patients.

Resources:

The following resources may help health centers bridge the digital divide:

[ConnectHome](#) the HUD pilot initiative launched in 2015 works in collaboration with public housing agencies, local government, internet service providers, and nonprofit organizations to improve broadband access and increase digital literacy.

The [Lifeline](#) program from the Federal Communications Commission (FCC) provides a discount on phone service, including internet access, for qualifying low-income consumers.

[EveryoneOn](#) is a nonprofit dedicated to creating social and economic opportunity by connecting low-income families to affordable internet service and computers and delivering digital skills trainings.

[PCs for People](#) refurbishes desktop and laptop computers for distribution to eligible recipients. Individuals and families that meet income eligibility requirements can receive a computer, computer repair, internet service and learning resources.

The [IC-Health MOOC](#) is an open online learning course on co-creation and co-design in the health sector. The MOOC presents an overview of the concepts of "co-creation", "co-design" and "Communities of Practice" applied to the health sector.

The [Institute of Medicine's reports](#) that identify domains and measures that capture the social determinants of health for meaningful use of EHRs.

[National Consortium of Telehealth Resource Centers \(NCTRC\)](#) is an affiliation of the 14 Telehealth Resource Centers funded individually through cooperative agreements from the Health Resources & Services Administration, Office for the Advancement of Telehealth. The goal of the NCTRC is to increase the consistency, efficiency, and impact of federally funded telehealth technical assistance services.

[State Telehealth Laws and Reimbursement Policies Report](#) The Center for Connected Health Policy's (CCHP) semi-annual State Telehealth Laws and Reimbursement Policies report offers the nation's most current summary guide of Medicaid provider manuals, applicable state laws, and telehealth-related regulations for all fifty states and the District of Columbia. CCHP also has as is an [interactive map](#) of existing and pending telehealth-related policies by state and an easy to read [infographic/fact](#) sheet summarizing these most recent findings.

The [Health Center Controlled Networks \(HCCN\)](#) are networks of health centers working together to improve access to care, enhance quality of care, and achieve cost efficiencies. HCCNs are uniquely positioned to help health centers improve quality of care and patient safety by using health information technology to cut costs and improve care coordination.

[Agency for Healthcare Research and Quality's Health IT Evaluation Toolkit](#) is designed to help project teams develop an evaluation plan of their health IT project. It consists of three sections. The first section is a step-by-step process to determine feasible goals and metrics, the second section includes a list of potential measures, and the third section outlines examples of implementation projects.

[Agency for Healthcare Research and Quality's Workflow Assessment for Health IT Toolkit](#) This toolkit is designed for organizations involved in the planning, design, implementation, and use of health IT in ambulatory care and evaluating its impact on both clinical and administrative workflow.

About the National Center for Health in Public Housing

The mission of the National Center for Health in Public Housing (NCHPH) is to strengthen the capacity of federally-funded Public Housing Primary Care (PHPC) health centers and other health center grantees caring for public housing residents by providing training, technical assistance, and research.

The PHPC program is built on a foundation of collaboration between health centers, public housing agencies, and residents.

For more information, visit www.nchph.org.



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