HEALTH INFORMATION TECHNOLOGY,
HITEQ
EVALUATION, AND QUALITY CENTER

Electronic Patient Engagement Strategies for SMBP and Diabetes

Presented by Nathan Botts, PhD for the Washington Association for Community Health ~ June 22nd, 2022

Intro to HITEQ

The HITEQ Center is a HRSA-funded National Training and Technical Assistance Partner (NTTAPs) that collaborates with HRSA partners including Health Center Controlled Networks, Primary Care Associations and other NTTAPs to engage health centers in the optimization of health IT to address key health center needs through:

- A **national website** with health center-focused resources, toolkits, training, and a calendar or related events.
- **Learning collaboratives, remote trainings,** and **on-demand technical assistance** on key content areas.

email us at hiteqinfo@jsi.com!

HITEQ Topic Areas

Access to comprehensive care using health IT and telehealth

Privacy and security

Advancing interoperability

Electronic patient engagement

Readiness for value based care

Using health IT and telehealth to improve Clinical quality and Health equity

Using health IT or telehealth to address emerging issues: behavioral health, HIV prevention, and emergency preparedness

Learning Objectives

- To raise awareness of the advantages of remote patient monitoring and how it can help people with conditions like hypertension
- To identify methods for increasing patient activation in relation to self-management of blood pressure
- To identify methods for increasing patient activation in relation to self-management of diabetes
- To review 3-5 specific resources from the HITEQ Center knowledgebase that can improve their ability to implement patient portal and RPM strategies

Presenter – Nathan Botts, PhD, MSIS

- Senior Study Director – Healthcare Delivery, Research, and Evaluation, Westat
- Electronic Patient Engagement domain lead for the HRSA HITEQ Center project.
- Previously CTO for HealthATM – FQHC focused PHR
- Active in patient generated health data research and development with a focus on underserved populations 2007 - present
- HL7 Mobile Health Co-Chair and project lead for the HL7 Consumer Mobile Health Application Functional Framework

Review

Assessing Electronic Patient Engagement Needs

Create Your EPE Problem Statement

- Example: We want to decrease the percent of adult patients with a hypertension diagnosis whose recent blood pressure was above 140/90mmHg
  - Denominator = Patients 18-85 years of age who had a visit and diagnosis of essential hypertension overlapping the measurement period or the year prior to the measurement period
  - Numerator = Patients 18-85 years of age with a hypertension diagnosis and blood pressure above 140/90mmHg

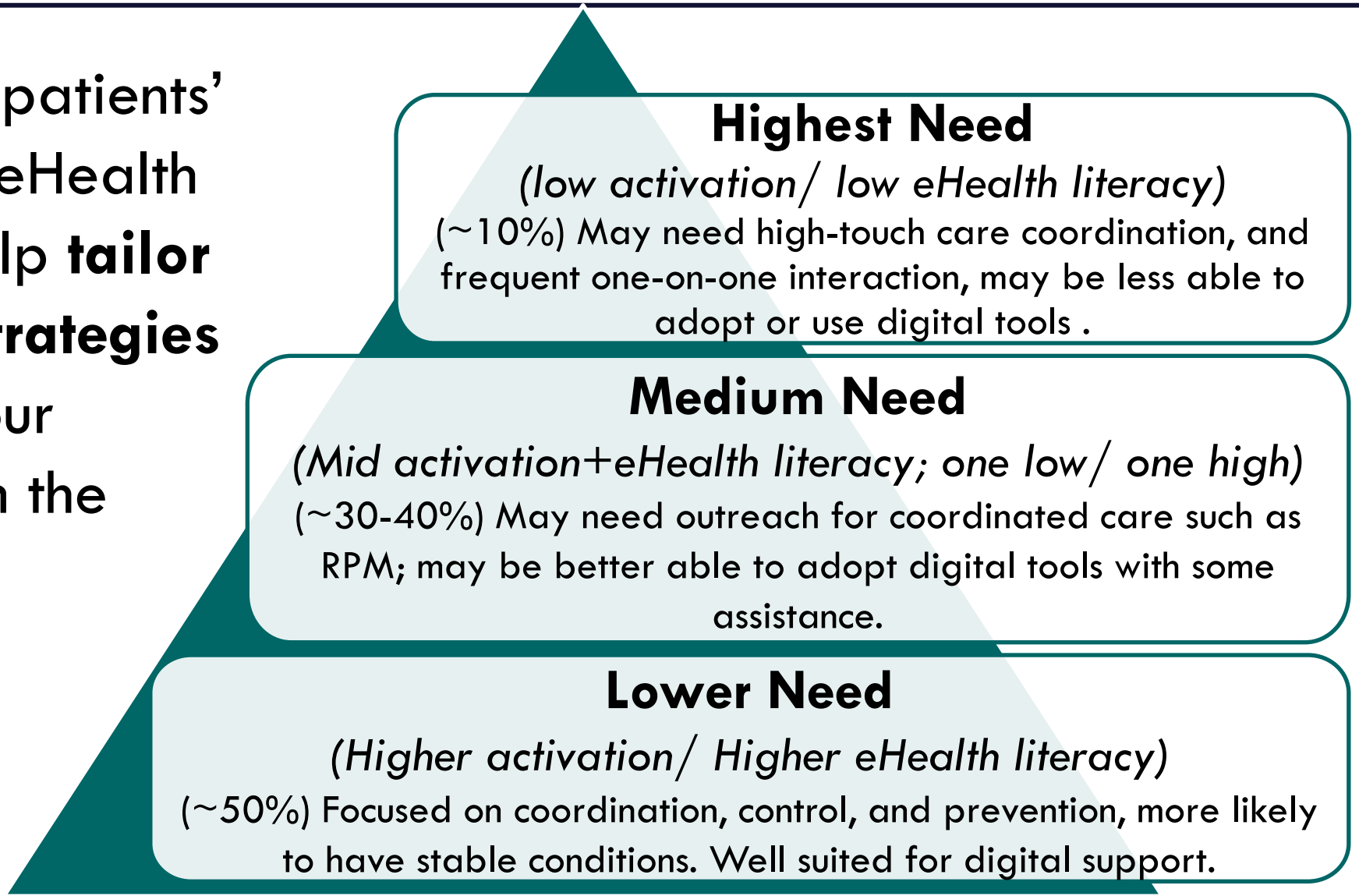
Do the Gap Analysis Math

Optimals - Actuals = EPE Gap

- **Optimals** = the degree to which you want to shift the needle on your actual patient status (increase SMBP activation by X%
- **Actuals** = What is the current state? The calculation of your initial problem statement (number of patients in cohort)
- **Gap** = Informs the project/EPE tool requirements
- **Note:** It is important that in this phase you do not choose the tool first (e.g., Health App X). Determine the goals and needs of the patients you are working with and then evaluate which tool will best support the objectives within

Using Results of Patient Assessment

Understanding patients' activation and eHealth Literacy can help **tailor engagement strategies** to maximize your resources within the health center.

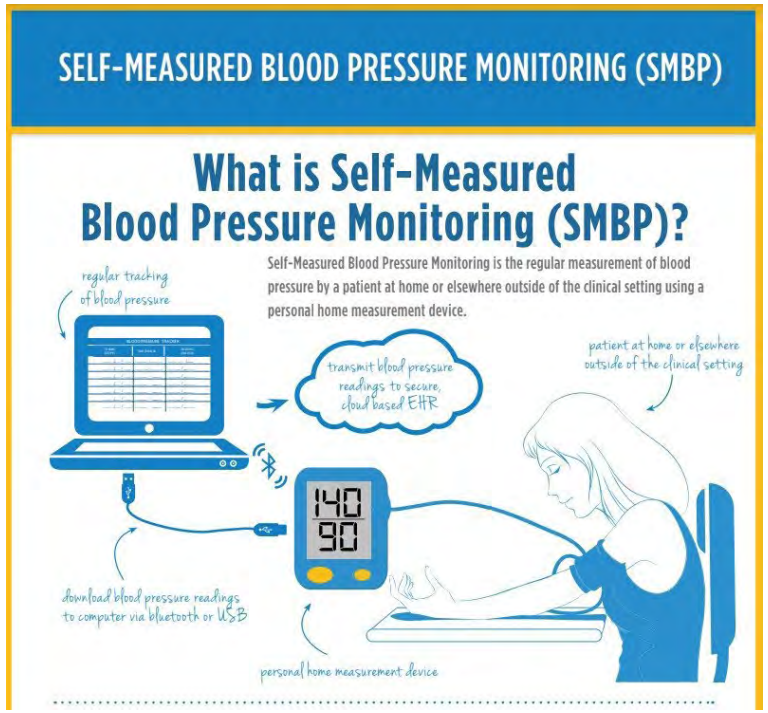


Remote Patient Monitoring

Strategies and Opportunities for Implementation

Remote Patient Monitoring Overview

- RPM is a form of telehealth that uses digital technologies to collect health data from a patient (i.e., patient-generated data) in one location and electronically transmit that information securely to a provider in a different location for assessment and recommendations.
- This allows providers to continuously track or monitor physiological data such as blood oxygen saturation, heart rhythm, or blood pressure when the patient is not in the clinic.
- Health centers use RPM to monitor patients' chronic conditions or symptoms between clinic visits.
- There is a variety of RPM technology available, ranging from internet-connected versions of medical devices like blood pressure cuffs to newer developments in the field like digital medicine systems or 'smart pills'.
- Devices worn by consumers (e.g., smartwatches), often referred to as "wearables", allow for the tracking and monitoring of patient data such as heart rate or activity level.



Getting Started

Prior to rolling out an RPM program, health centers should create an implementation team, assess organizational readiness and needs, and define an RPM conceptual model.

Implementation teams should include leads from diverse departments including clinical, finance, IT, and QI.

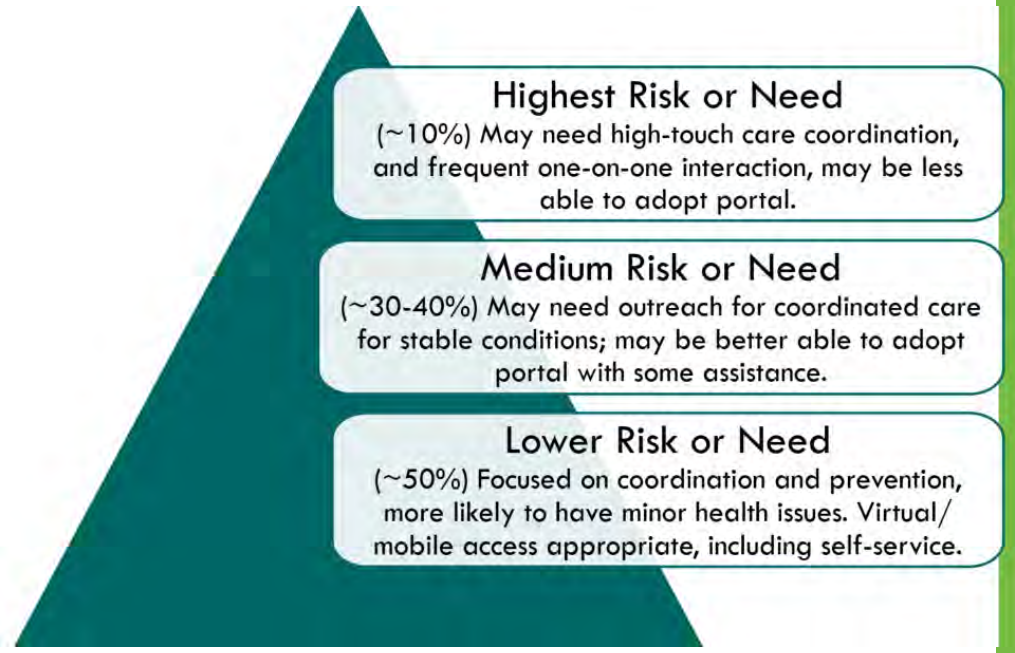
To assess organizational readiness, health centers should identify program supports and barriers, determine RPM champions, and obtain buy-in from staff and partners.

Identifying Patients for RPM

When outlining a patient enrollment prioritization process, health centers should consider factors such as whether patients have the necessary technology requirements for participation (e.g., adequate mechanism for the transmission of data)

Engagement for children and patients who are disabled or older often depends on the presence of a caretaker or support system at home.

For transparency, patients should be able to request or access any of their health information collected and transmitted by the RPM technology.



Vendor/Device Selection

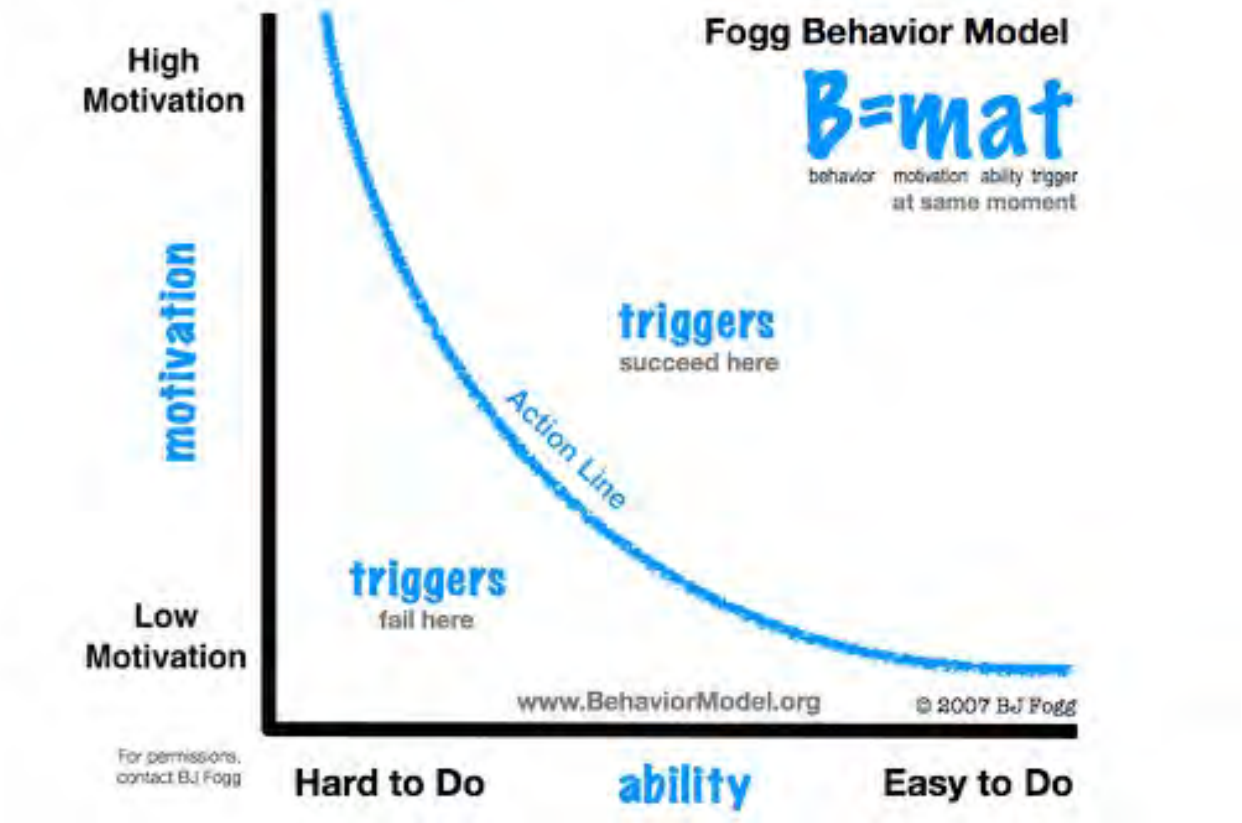
- It is important for health centers to increase access to and incentivize the design and use of evidence-based remote patient monitoring technologies.

- Important considerations include:
  - RPM technologies should be customizable to patients' specific needs
  - Training and support should be available for all patients and be dependent on patient ability
  - RPM technologies should address the needs of all patients without disenfranchising financially disadvantaged populations or those with low literacy or low technological literacy.

Overcoming Adoption Barriers

Patient Activation and Engagement Strategies

Fogg Behavior Model



MAT = Behavior Change

- **MOTIVATION:** help patients understand the impact that small changes in aspects of self-management can make
- **ABILITY:** anticipate objections, educate accordingly, and deploy the right interventions at the right time
- **TRIGGER:** get patients enrolled in a "project" that supports them in every step

Patient Activation Measure

Patient Activation

The skills and confidence that equip patients to become actively engaged in their health care.

Evidence suggests that:

- Patients who **are more activated** have better health outcomes and care experiences.
- Interventions that **tailor support to the individual's level of activation**, and that build skills and confidence, are effective in increasing patient activation.
- Policies and interventions aimed at strengthening patients' role in managing their health care can contribute to improved outcomes and that patient activation can—and should—be measured as an intermediate outcome of care that is linked to improved outcomes.

Patient Activation Levels

Promising Examples

RPM and Self-Measurement of Blood Pressure

UDS eClinical Quality Measure: Controlling High Blood Pressure

- **Measure:** Percentage of patients 18–85 years of age who had a diagnosis of hypertension overlapping the measurement period or the year prior and whose most recent blood pressure (BP) was adequately controlled (less than 140/90 mmHg) during the measurement period

- **Denominator:** Patients 18 through 84 years of age who had a diagnosis of essential hypertension overlapping the measurement period or the year prior to the measurement period with a medical visit during the measurement period

- **Numerator:** Patients whose most recent blood pressure is adequately controlled (systolic blood pressure less than 140 mmHg and diastolic blood pressure less than 90 mmHg) during the measurement period.

RPM and Telehealth Opportunities for UDS reporting

Clinical Measure Name, eCQM Code, UDS Table, and UDS Section	Examples of Types of Visits	Include patients with telehealth only visits in the Denominator?	Can service, test, or procedure be done by telehealth to meet UDS requirements?	Do documented services performed by external providers count in the numerator?
Controlling High Blood Pressure, CMS165v8, Table 7, Section B	• Physical with PCP or specialist • Acute pain or illness • Care for chronic condition	Yes	No. Patient self-report blood pressure is not acceptable in this way. Yes. Blood pressure through remote monitoring device only is acceptable in this way.	Yes. Blood pressure taken at a qualified encounter is to be performed, paid for, or approved by a health center provider or provider delegate or done by a remote monitoring device.

Hypertension Key Factors

Figure 1. Prevalence, Control Status, and Treatment of Hypertension Among U.S. Adults, National Health and Nutrition Examination Survey, 2013–2016

[a] Based on the American College of Cardiology and American Heart Association's 2017 Hypertension Clinical Practice guideline for adults aged 18 years or older who have blood pressure ≥130/80 mmHg or who are currently using prescription medication to lower their blood pressure.

[b] Among those recommended to take prescription medication and make lifestyle changes.

- Hypertension is common; control is not; together we can change that.
- Progress has stalled and disparities persist.
- Hypertension control is possible.
- We know what works to control hypertension; we must tailor, replicate and scale those interventions.
- Partners are critical to achieving hypertension control among all Americans.

SMBP Roles Designations

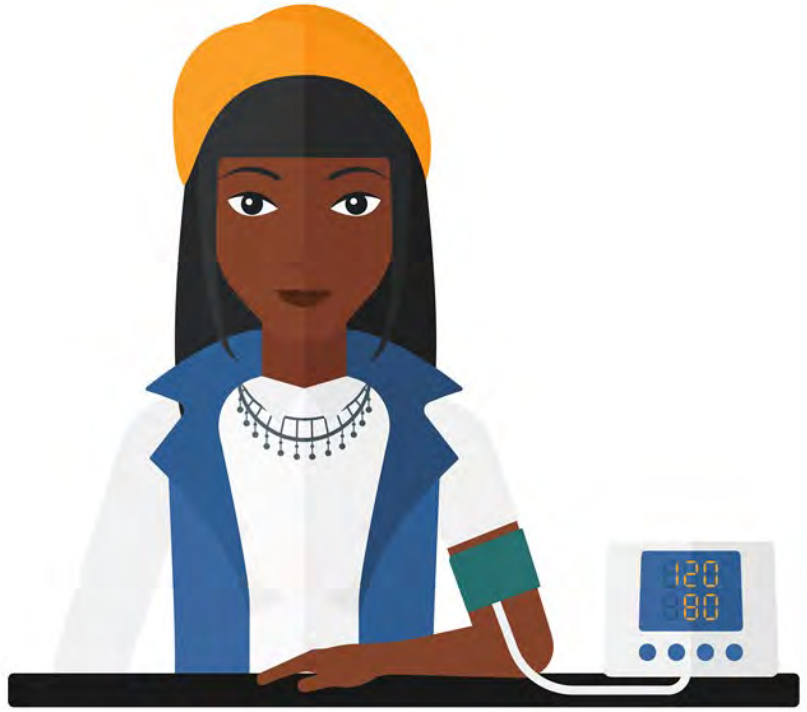
Must Be Done by a Licensed Clinician	Can Be Done by a Non-licensed Person (e.g., medical assistant, local public health department, community health organization, community health workers)	Must Be Done by Patient
1. Diagnose hypertension 2. Prescribe medication(s) 3. Provide SMBP measurement protocol 4. Interpret patient-generated SMBP readings 5. Provide medication titration advice 6. Provide lifestyle modification recommendations	1. Provide guidance on home blood pressure (BP) monitor selection 2. If needed, provide home BP monitor (free or loaned) 3. Provide training on using a home BP monitor 4. Validate home BP monitor against a more robust machine 5. Provide training on capturing and relaying home BP values to care team (e.g., via device memory, patient portal, app, log) 6. Reinforce clinician-directed SMBP measurement protocol 7. Provide outreach support to patients using SMBP 8. Share medication adherence strategies 9. Provide lifestyle modification education	1. Take SMBP measurements 2. Take medications as prescribed 3. Make recommended lifestyle modifications 4. Convey SMBP measurements to care team 5. Convey side effects to care team

Optional Tasks – Can be Done by a Non-licensed Person
1. Reinforce training on using a home BP monitor 2. Reinforce training on capturing and relaying home BP values to care team (e.g., via device memory, patient portal, app, log) 3. Reinforce knowledge of behaviors that can trigger high blood pressure

Meador, M., Hannan, J., Roy, D. *et al.* Accelerating Use of Self-measured Blood Pressure Monitoring (SMBP) Through Clinical-Community Care Models. *J Community Health* (2020). https://doi.org/10.1007/s10900-020-00858-0

Patient Education Factors

- Most patients do not take home blood pressure correctly
- Demonstrate proper method
- Education on hypertension in general
- Both written and verbal instruction



Home Blood Pressure Monitors

- Determine if eligible for one from benefit plan with a diagnosis of hypertension
- Recommend a cuff that is validated by an association that looks at cuff accuracy
- https://www.validatebp.org/
- Assist in relationship building for the indigent population with the BP manufacturers

Notes on SMBP Device Features

Bluetooth-enabled Self-reporting
Bluetooth allows for short-range data transfer between devices. A device with Bluetooth-enabled self-reporting transmits blood pressures measurements electronically directly from the device over Bluetooth to a mobile app, which transmits the measurements using cellular data or Wi-Fi (Internet connection) to a monitoring dashboard, and/or clinical portal.

Apps
Most vendors sell devices with a proprietary app that must be used with their product. However, some devices also have an application programming interface (API) that allows for data to flow into a vendor-neutral or non-branded general app, e.g., Sphygmo. **This may be important if a practice chooses multiple brands of devices and wants all of their patient data to be consolidated into one app and one monitoring dashboard/clinical portal.** In this case, consider a device that will also work with a vendor-neutral app.

Monitoring Dashboards/Clinical Portals
Dashboards/portals allow care teams access to patient home blood pressure measurements between visits. Practices can reach out quickly to patients to follow up if data are not being received as expected, to titrate medications telephonically, or to monitor values that are very high or low. A vendor-specific dashboard/portal will only receive data from their brand of devices.

Follow Up!

Develop a follow up plan:

- Lifestyle modification: exercise diaries
- Blood Pressure Logs
- Review of home BP monitor memory on future appointments

Potential Barriers

- Patient is not taking BP readings as prescribed
  - Determine where the issue lies (technical issues vs education issues)
- BP measurements in the office are higher than home
  - Have the patient work on taking their BP in the office and compare results between devices
- Home BP measurement readings are running high
  - Work with patients to develop a communication plan to determine when its an emergency and/or other aspects of their health to communicate that might be a part of the issue

Patient Activation and Engagement Use Case for SMBP

1. SMBP program design may consists of an initial visit where patients learn to use the blood pressure cuff and log their blood pressure twice per day for 1 week. Check ins continue with a one-week follow up, one-month follow up, two-month follow up and six-month follow up.

2. **The initial visit is critical**; it's a great opportunity to engage intensively with a patient. While a 30-minute visit might be sufficient for teaching about the blood pressure cuff, an opportunity to do much more education may be missed. The initial visit could be increased to an hour so that medication reconciliation and health coaching could be included in the visit.

3. At the one-week follow up visit, patients return the cuffs and turn in their log. Blood pressure readings for the week are verified and scanned into the EHR. Nurses report from previous efforts that this visit – and the power of the data – can be especially influential in building a patient's activation and engagement.

4. Over the course of six months, health education and coaching continues at each follow up visit, and patients are encouraged and supported to take small steps and set goals for healthier eating, smoking cessation, increased exercise, etc. Often they work with a care coordinator and are given a referral to the Health Education department or are given further motivational literature.

Based on a Use Case from Livingston Community Health: https://www.visitlch.org/

Partner with Patients

- Create a blame-free environment in which patients are recognized for achieving treatment goals and encouraged to answer treatment-related questions honestly
- Establish methods at your health center for educating staff on collaborative communication
- Meet them where they are at in terms of medication and lifestyle goals that could make an impact

Critical Success Factors for SMBP

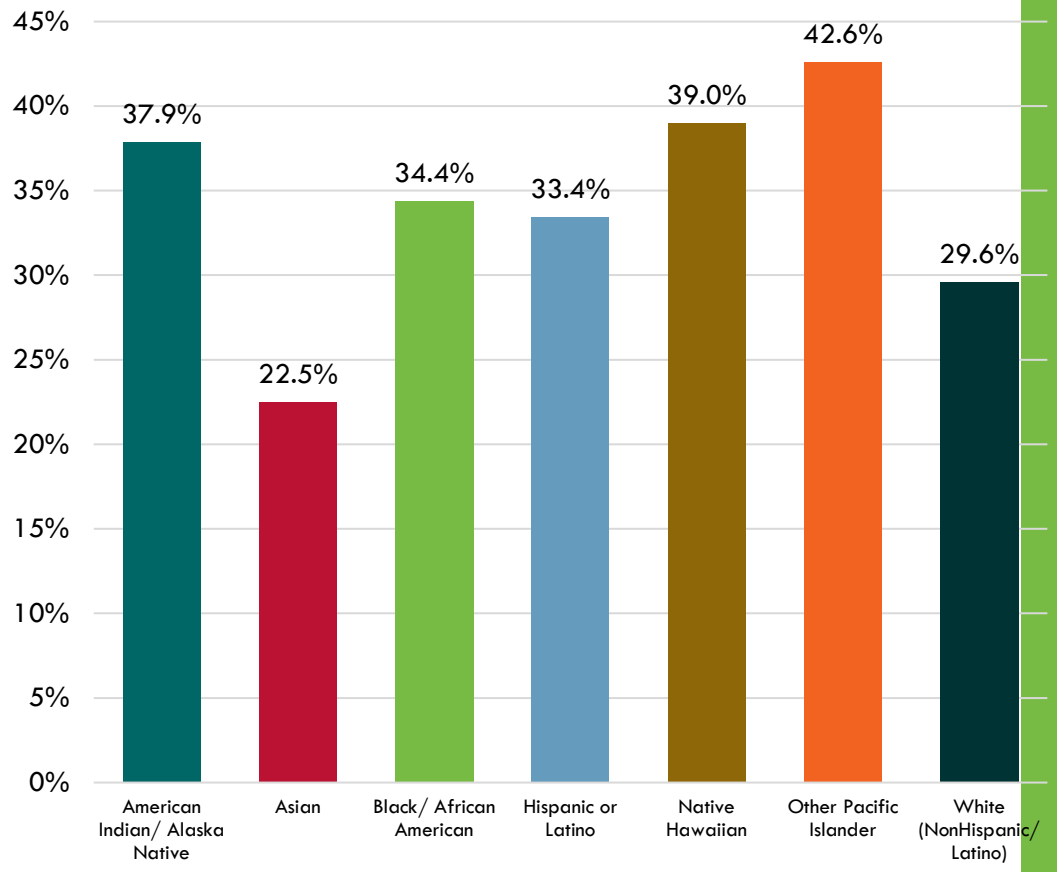
- Staffing
  - Enrollment
  - Monitoring
  - Communication, outreach, and patient education
  - PCP and clinical pharmacist champions that actively guide the treatment plan
- Technology
  - Secure clinical portal to access BP readings
  - EHR functionality to document averages
  - A BP cuff that works for the patient as well as the health center

Promising Examples

Electronic Patient Engagement for Diabetes Management

BPHC Diabetes Improvement Goal

- **Performance Measure:** Percentage of patients 18-75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period
- **Target Goal:** By the end of the project period, decrease the percent of adult patients with type 1 or 2 diabetes whose most recent HbA1c is greater than 9%
- **Numerator:** Patients whose most recent HbA1c level (performed during the measurement period) is >9.0%
- **Denominator:** Patients 18-75 years of age with diabetes with a visit during the measurement period



Problem Statement

- Key barriers to effective diabetes care:
  - lack of patient activation and engagement with their diabetic care plan
  - lack of medication adjustment by physicians during clinical encounters

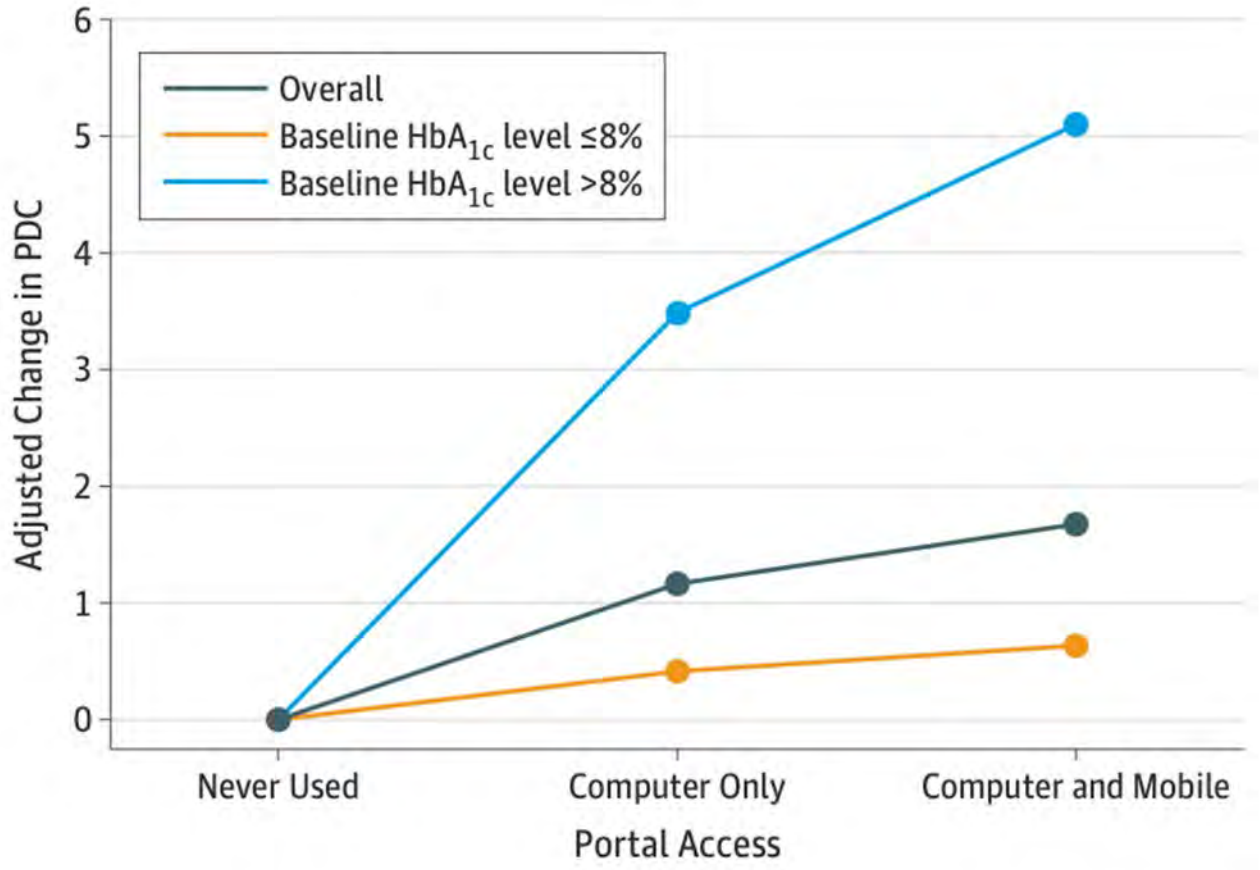
- Patients have difficulty adhering to diabetes regimens including:
  - Glucose monitoring
  - Diet & Exercise
  - Medication adherence
  - Understanding care plans

- A myriad of factors impact a patient's ability to manage their condition including:
  - Health beliefs
  - Current knowledge
  - Physical limitations
  - Related socio-economic factors (e.g., culture, education, economics)

The Evidence Base

- Findings suggest that patients provided with portal access show significantly improved diabetes medication adherence and glycemic control, with increasingly positive outcomes among patients with more clinical need.[5]
- Electronic patient engagement approaches that increase support for patients with diabetes and reinforce self-management behaviors may decrease diabetes-related adverse events. [6]
- There is value in promoting patient portals as a supplementary tool to support care management, particularly for patients with chronic conditions, such as diabetes [7]

EPE Impact on the Tough Cases



Patients with baseline HbA1Cs greater than 8%, who had never used EPE tools such as patient portals or health apps previously, often experienced the greatest impact with diabetes-related medication adherence when exposed to these types of tools

Reference: Graetz I, Huang J, Muelly ER, Fireman B, Hsu J, Reed ME. Association of Mobile Patient Portal Access With Diabetes Medication Adherence and Glycemic Levels Among Adults With Diabetes. *JAMA Netw Open.* 2020;3(2):e1921429. doi:10.1001/jamanetworkopen.2019.21429

Case Example: Diabetes Text Messaging

Project HOPE Chicago - Mobile Phone Diabetes Project

A primary-care–based mobile health program that sends **health-behavior–related text messages to diabetes patients** both improved outcomes and reduced costs.

Treatment participants were an average age of 53 years old and had a diabetes duration of 8 years. Two-thirds were African American.

Total healthcare costs decreased by a significant $812 per patient over the 6 months, including a drop of $1332 for outpatient visits

Costs of the mHealth program were estimated to be $375/participant, **suggesting a net cost savings of $437/participant ($812-$375)**

Case Example: Crossing Healthcare Diabetes Self-Management Education Program

- Providers refer patients and an initial assessment is completed.
- Patients are then enrolled in a total of **10 hours of diabetes education classes** across multiple days throughout the program.
- Three months later, a follow-up appointment is completed to review lab work changes, weight changes, and where each patient is with their personal goals.
- Once they complete the entire education program, patients are then enrolled in a **social media support group** through a private Facebook account that allows them to engage with their peers.

Case Example: Diabetes Self-Management Portal with Dashboards

A qualitative study of the use of a diabetes self-management portal found that:

- Patients and providers believed blood sugar reporting was the most useful feature of the portal; patients recorded their blood sugar frequently.
- Patients liked the dashboards that showed their progress and reminders to log information helpful; however patients who missed logging eventually found dashboards and reminders de-motivating.
- Health Library function (relevant information for patients) was not widely used.
- Use of the portal was helpful for patient support staff to check-in with patients; physicians were more likely to say they did not have time to use it.

The reporting and tracking of blood glucose and other health indicators were believed to be the most useful features of the portal for both patients and providers. The portal provided an added source of motivation especially useful for "new diabetics" learning to manage their disease.

One key to remember

It is key to monitor digital tools for your diabetic population, to determine if you are serving *your* patient population.

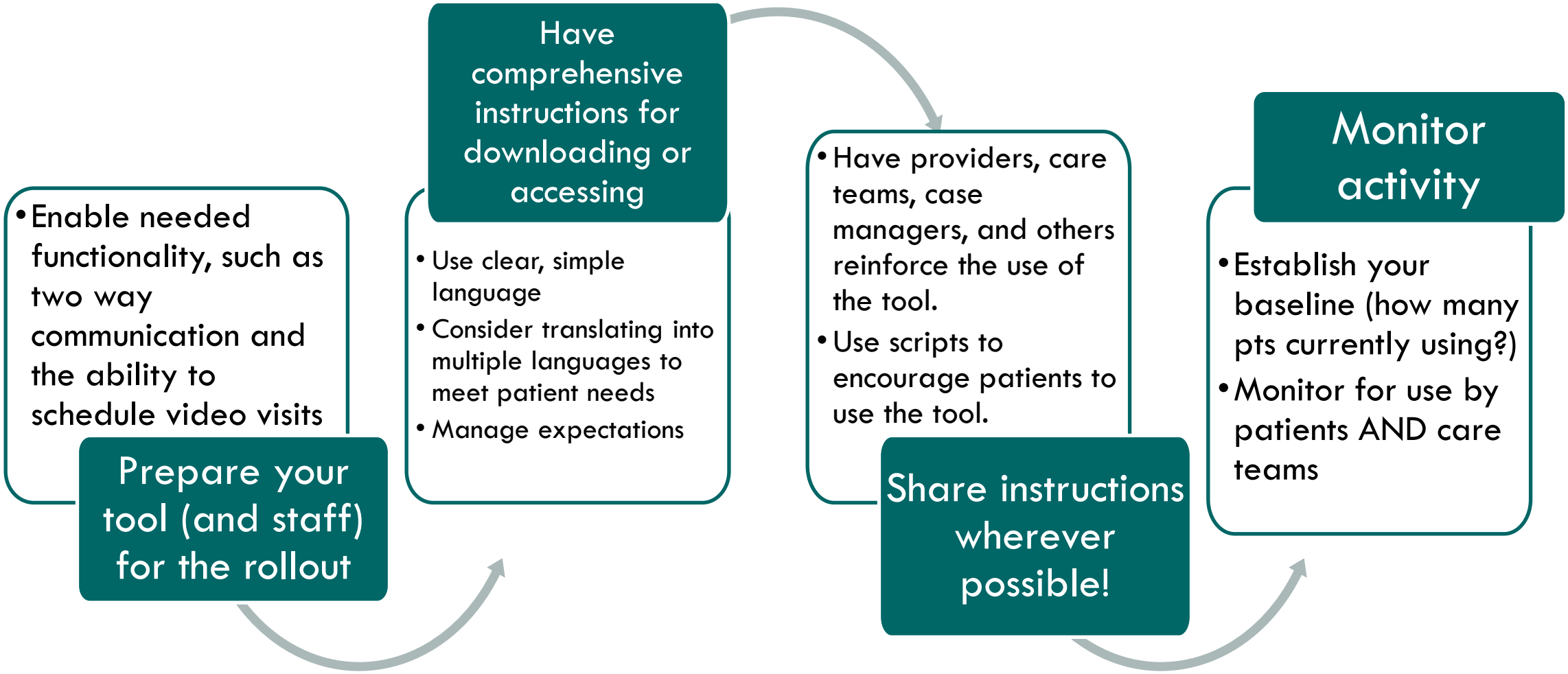
When adopting digital tools, clinics are sometimes suddenly more actively serving a younger or more stable population, because those are the patients ready and able to use digital tools. It's important to be sure all patients are served!

Health Apps & Diabetes

One app does not rule them all!

- Apps that provided feedback (or allow bi-directional communication) from healthcare professionals produce greater reductions in blood glucose levels than automated advice.
- Apps that allowed users to track more than three self-monitoring tasks produce greater reductions in blood glucose levels

Rolling out any Digital Tool



Summary

Resources and Discussion

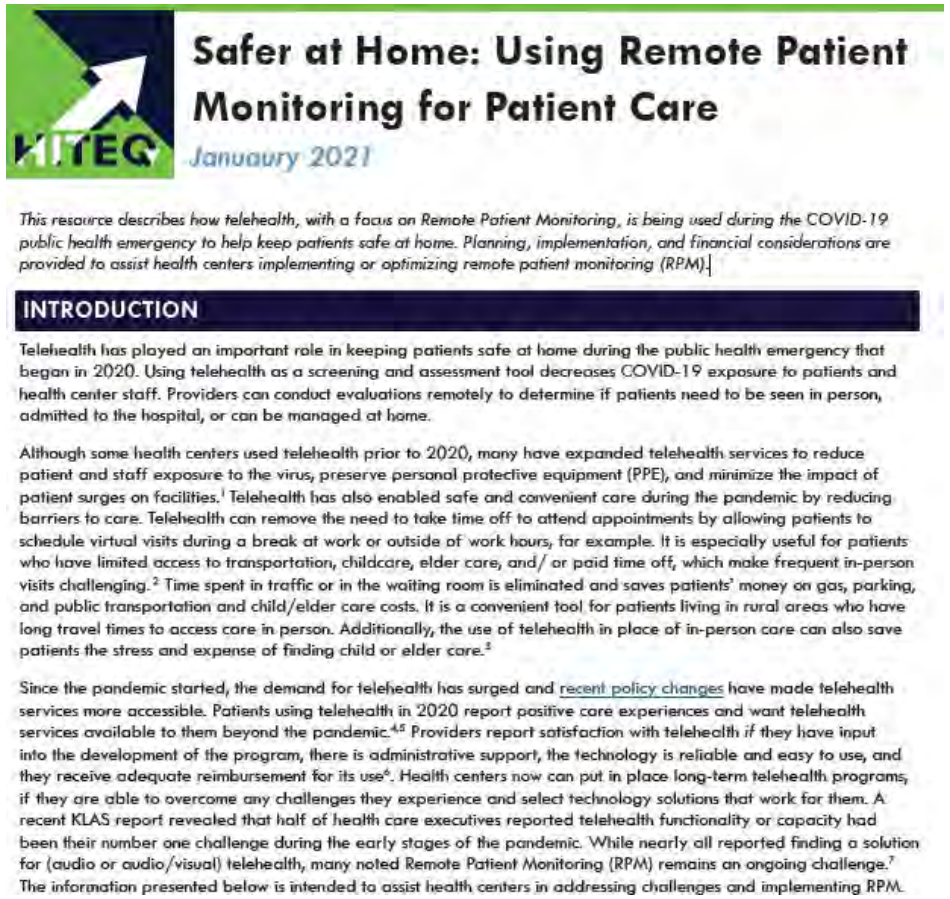
Check it Out!

HITEQ Safer at Home: Using Remote Patient Monitoring for Patient Care: https://hiteqcenter.org/Resources/HITE_Q-Resources/safer-at-home-using-_remote-patient-monitoring-for-patient-_care

HITEQ: Opportunities to Improve Diabetes Outcome through Electronic Patient Engagement: https://hiteqcenter.org/Resources/Electronic-Patient-Engagement/Mobile-Health/opportunities-to-improve-diabetes-outcomes-through-electronic-patient-engagement

Health Center Resource Clearinghouse:

- https://www.healthcenterinfo.org/results/?Combined=SMBP
- https://www.healthcenterinfo.org/results/?Combined=Diabetes



HITEQ

Safer at Home: Using Remote Patient Monitoring for Patient Care

January 2021

This resource describes how telehealth, with a focus on Remote Patient Monitoring, is being used during the COVID-19 public health emergency to help keep patients safe at home. Planning, implementation, and financial considerations are provided to assist health centers implementing or optimizing remote patient monitoring (RPM).

INTRODUCTION

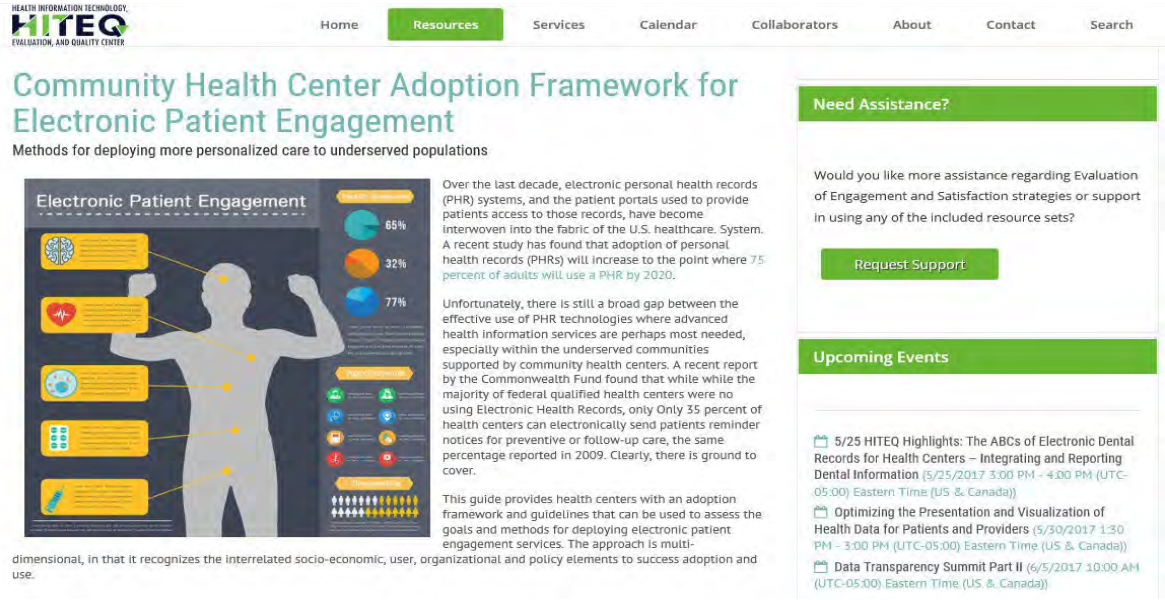
Telehealth has played an important role in keeping patients safe at home during the public health emergency that began in 2020. Using telehealth as a screening and assessment tool decreases COVID-19 exposure to patients and health center staff. Providers can conduct evaluations remotely to determine if patients need to be seen in person, admitted to the hospital, or can be managed at home.

Although some health centers used telehealth prior to 2020, many have expanded telehealth services to reduce patient and staff exposure to the virus, preserve personal protective equipment (PPE), and minimize the impact of patient surges on facilities.[1] Telehealth has also enabled safe and convenient care during the pandemic by reducing barriers to care. Telehealth can remove the need to take time off to attend appointments by allowing patients to schedule virtual visits during a break at work or outside of work hours, for example. It is especially useful for patients who have limited access to transportation, childcare, elder care, and/ or paid time off, which make frequent in-person visits challenging.[2] Time spent in traffic or in the waiting room is eliminated and saves patients' money on gas, parking, and public transportation and child/elder care costs. It is a convenient tool for patients living in rural areas who have long travel times to access care in person. Additionally, the use of telehealth in place of in-person care can also save patients the stress and expense of finding child or elder care.[3]

Since the pandemic started, the demand for telehealth has surged and recent policy changes have made telehealth services more accessible. Patients using telehealth in 2020 report positive care experiences and want telehealth services available to them beyond the pandemic.[4,5] Providers report satisfaction with telehealth if they have input into the development of the program, there is administrative support, the technology is reliable and easy to use, and they receive adequate reimbursement for its use[6]. Health centers now can put in place long-term telehealth programs, if they are able to overcome any challenges they experience and select technology solutions that work for them. A recent KLAS report revealed that half of health care executives reported telehealth functionality or capacity had been their number one challenge during the early stages of the pandemic. While nearly all reported finding a solution for (audio or audio/visual) telehealth, many noted Remote Patient Monitoring (RPM) remains an ongoing challenge.[7] The information presented below is intended to assist health centers in addressing challenges and implementing RPM.

Want more information?

Visit HITEQ Center EPE Resources at: https://hiteqcenter.org/Resources/Electronic-Patient-Engagement



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Email: hiteqinfo@jsi.com

Phone: 1-844-305-7440

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