

CT Primary Care Payment Reform

Draft Capabilities Skeleton: Remote Patient Monitoring for Patients with High Risk Chronic Conditions

This Draft: July 19

Understanding the Need

The Problem:

Over half of Americans have one or more chronic conditions (117 million people), such as heart disease, diabetes, COPD, and hypertension. Chronic and mental health conditions account for 86% of healthcare spending. Chronic conditions lead to increased illness, disability and death – in 2014, seven of the top ten causes of death were chronic conditions (CDC, 2017). Chronic conditions require close management by healthcare professionals, self-management by patients, and a collaborative approach to care management. Limited access to health care services affects disease severity and patient’s functional status (Davis, et al., 2015). Patients who are disabled, elderly/frail, of lower socio-economic status, have poor education or have other conditions that make it difficult to access traditional office-based care settings need other ways to access timely and appropriate care. Lack of access to timely and appropriate care can increase use of Emergency Departments and hospitalizations that may have otherwise been avoided.

Please go to the [survey](#) to rate this capability’s impact as high, medium or low on the following criteria:

Aim
Health promotion/prevention
Improved quality and outcomes
Patient experience
Provider satisfaction
Lower Cost

As the US population ages, there is also an increasing need to transition patients from hospital settings to home-based care, while reducing the risk of readmissions and future adverse events (Davis, et al., 2015). This is especially important for older adults with multiple chronic conditions and complex medication regimens, who are particularly vulnerable to breakdowns in care and need high quality transitional care services. Poor care transitions for these adults leads to adverse events, lower care satisfaction, and high rehospitalization rates (Naylor & Keating, 2008).

Proven Strategy:

Name: Remote Patient Monitoring (RPM) for Patients with High Risk Chronic Conditions

Definition: Remote patient monitoring uses connected digital devices and technology to collect patient health and medical information from one location, such as at a person’s home, and transmit it to a healthcare provider in another location for assessment and recommendations, usually at a different time (HRSA, 2017). Transmission of health data to the care team may be automatic or may require the patient to actively enter information into a secure web portal, smart phone application, etc., depending on the type of device being used and what is being measured. The most commonly collected patient data for patients with high risk chronic conditions includes heart rate, blood pressure, oxygen saturation, blood glucose levels, peak expiratory flow, and symptom severity. There are a wide range of devices that can be used, but they typically include (Vegesna, 2017):

- Wearables (glucometers, blood pressure monitors, heart rate monitors)
- Biosensors (spirometers, oximeter)
- Smart phone and personal assistant devices
- Computer system that allows patient to enter data

The data from devices is transmitted to healthcare professionals in monitoring centers, primary care practices, hospitals, skilled nursing facilities, or other locations. Data may be monitored by nurse care managers in consultation with a primary care physician, physician assistant, or nurse practitioner.

Remote patient monitoring for patients with high risk chronic conditions includes:

- Disease monitoring and management: Monitoring chronic conditions, such as diabetes, COPD/asthma, hypertension, congestive heart failure, obesity, and sleep disorders
- Patients receiving home health care: Monitoring vital information and conditions for those who receive home health services, such as the elderly and persons with disabilities.
- Post-acute care monitoring: Monitoring patient status after post-acute care episodes, for example, congestive heart failure exacerbations

Intended Outcomes:

- Improve clinical outcomes and detect disease onset and progression early
- Ease care transitions from hospital settings to home-based settings after acute episodes
- Reduce utilization that may have been prevented by early intervention, such as ED visits, hospitalizations and readmissions
- Reduce hospital length of stay
- Increase patient activation and self-management

Consumer Needs:

- Transportation, child care and time off work are barriers to office-based care. Consumers need alternative ways to connect to primary care.
- Consumers report difficulty finding free resources for behavior change. They need affordable ways to make lifestyle changes and manage conditions.
- Consumers would like more training and tools to have more productive conversations with care team members

Health Equity Lens:

- Many chronic diseases and risk factor are more common and/or severe among minority groups (CDC, 2017)
- Racial and ethnic minority populations often receive poorer quality of care and face more barriers in seeking care, including preventive care and chronic disease management, than do non-Hispanic whites. These disparities can lead to poor health outcomes and higher health care costs. (CDC, 2017)
- RPM was shown to be effective at reducing readmissions for underserved populations with COPD and heart failure (Davis, et al., 2015)

Implementing the Strategy

Example Scenario: A diabetes nurse care manager is working with a patient to get her blood sugar under control. The patient is a single mother with two children and doesn't have much time to come to the primary care practice. The nurse gives her a glucometer and shows her how to use it at their initial visit. The patient uses the glucometer at home to test her blood sugar twice a day, and the results are sent automatically to the nurse care manager. The nurse care manager assesses the results and has a 15-minute phone call with the patient to discuss recommended treatment.

HIT Requirements:

- Remote monitoring device with mechanism to transmit data to healthcare provider
- Data transmission method incorporated into existing clinical workflow
- Ideally, platform has ability to alert providers monitoring data when values exceed thresholds
- Ideally, data is received on platform compatible with practice’s EHR (not requiring a separate login)

Implementation Concerns¹:

- Large scale implementation and results are lacking
- Cost of technology and infrastructure (for both practices and patients, which may include connectivity in the home)
- Selecting appropriate patients—who does this and how is it done?
- Patient/caregiver training and comfort with technology
- Sufficient provider training and time to review data
- Actionable, clinically relevant data that is processed with trends identified for use in routine clinical practice
- Determining legal liability for response protocols
- Risk of reduced quality of care from fewer visits
- Risk of overtreatment due to increased monitoring
- Limited patient use

Impact

Aim	Summary of Evidence
<i>Health promotion/prevention</i>	According to a systematic review, some studies report RPM increased patient self-activation, resulting in improved self-management of chronic conditions (Vesegna, 2017).
<i>Improved quality and outcomes</i>	<p>Readmissions: Evidence for impact on readmission rates is mixed. A study of underserved patients with COPD and/or heart failure receiving telemonitoring after an acute care episode showed reductions in 30 and 180-day readmissions compared to control (Davis, 2015). However, other studies have reported no significant differences in readmission rates for heart failure patients compared to control groups (Bowles, et al, 2011; Chaudhry, et al., 2012)</p> <p>Quality of life: According to a systematic review, a key outcome across studies was improved quality of life through self-activation behaviors and reduced severity of symptoms (Vesegna, 2017).</p> <p>Health outcomes: Evidence is mixed as to whether RPM improves outcomes for specific diseases. Some studies report improved diabetes control (or reduced A1c levels) (Stone et al.,</p>

¹ Payment methods to support new capabilities will be considered as part of the payment model options

	2010), while others report no significant differences in diabetes control (Wakefield, et al., 2014). A meta-analysis of use of RPM with heart failure found it significantly reduced mortality compared to usual care (Nakamura, 2013).
<i>Patient experience</i>	Studies measuring patient satisfaction with RPM report patients are satisfied with the intervention and find the device easy to use. A study of telehomecare following hospitalization for heart failure found patients receiving the telehomecare were more satisfied and reported better access to care than the control (Bowles, et al., 2011).
<i>Provider satisfaction</i>	According to a systematic review of clinician attitudes towards RPM, clinicians view RPM positively, but there were concerns about clinical relevance and sufficient staffing. Engaging providers in development and implementation is critical (Davis, 2014).
<i>Lower Cost</i>	Only a few studies evaluate costs. Those that do report cost of RPM as cost-neutral or cost-savings compared to standard care (Vesegna, 2017). For example, one study found that a diabetes RPM intervention cost \$50 per member per month but saved \$1,595 per person annually in medical claims (Javitt, et al., 2013).

Please complete the [survey on this capability](#).

APPENDIX

Learning from Others

Case Study: HealthCare Partners Medical Group (HCP) is an accountable care organization that takes global capitation risk in Southern California, Florida, and Nevada. They implemented a 6-month intervention using TeleVox, an interactive voice response technology for patients to report COPD symptoms and wellness questions 1-2 times per week via phone. Responses were analyzed and live care management phone calls from RNs were conducted as needed (Center for Technology and Aging).

Results

- 50% reduction in COPD-related readmissions 30-days post-hospitalization
- Reduced rehospitalization rates (5% for intervention compared to 14% for traditional patients)
- Patients reported increased ability to stay at residence of their choosing, greater health engagement, increased satisfaction with staff, ease of use of technology
- 1.3:1 ROI, or savings of \$1.30 in savings for each \$1 invested

Lessons Learned

- Build from successful care management programs and technologies to leverage existing provider and staff relationships
- Align RPM strategic goals with organizational vision and mission
- Use an opt-out structure for enrolling patients in the program to increase enrollment

Case Study: Kaiser Permanente in Colorado introduced a Remote Monitoring Diabetes program to increase patient activation and engagement. Patients receive a glucometer for home testing that automatically uploads results into a cloud-based portal that both the patient and provider can review. A diabetes nurse then reviews the results with the patient via a routine phone call. Kaiser reports that time to control diabetes decreased from 90 to 14 days with participating patients, patient satisfaction increased, and call time with the provider decreased from 30 minutes to 12 minutes (Wright, 2016).

Additional Reading:

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