

June 29, 1017

To: Multistakeholder Committee on Creating a Framework to Support Measure Development
National Quality Forum

From Personal Connected Health Alliance (PCHAlliance)

RE: Comments on “Creating a Framework to Support Measure Development for Telehealth”

ELECTRONICALLY SUBMITTED at: http://www.qualityforum.org/Telehealth_2016-2017.aspx

On behalf of the Personal Connected Health Alliance (PCHAlliance), we are writing to comment on the draft report titled “Creating a Framework to Support Measure Development for Telehealth”, posted on the National Quality Forum website. PCHAlliance appreciates your work to develop a framework and providing the opportunity for input on this draft report as the inclusion of a robust set of measures for the delivery of health care using today and tomorrow’s information communication technology tools is vital to creating and improving patient centered, evidence-based health care delivery.

The Personal Connected Health Alliance (PCHAlliance) aims to make health and wellness an effortless part of daily life. The PCHAlliance, a non-profit organization formed by HIMSS, believes that health is personal and extends beyond healthcare. The Alliance mobilizes a coalition of stakeholders to realize the full potential of personal connected health. PCHAlliance members are a vibrant ecosystem of technology and life sciences industry icons and innovative, early stage companies along with governments, academic institutions, and associations from around the world. To support its vision, the PCHAlliance convenes the global personal connected health community at the annual Connected Health Conference, the premier international event for the exchange of research, evidence, ideas, innovations and opportunities in personal connected health. The Alliance publishes and promotes adoption of the Continua Design Guidelines. Continua is recognized by the International Telecommunications Union (ITU) as the international standard for safe, secure, and reliable exchange of data to and from personal health devices. The PCHAlliance accelerates technical, business, policy and social strategies necessary to advance personal connected health through its flagship Healthy Longevity Initiative to promote lifelong health and wellness.

PCHAlliance comments represent our collective members’ perspective **with a focus on the need for expanded delivery of chronic care management to the beneficiaries of Medicare and Medicaid.**

Connected care, or more specifically remote monitoring, is a tool that improves delivery of chronic care management by allowing more timely, more efficient, and more engaging care management interaction between patients and providers. PCHAlliance members provide clinical services; design, manufacture,

and market devices that facilitate patient-centered health care delivery. In addition, our members operate the networks that enable the interoperable exchange of personal health data, increase the usability of clinical decision support, improve care transitions, and provide unified communications for providers. PCHalliance member list can be found at <http://www.pchalliance.org>.

PCHalliance urges robust and timely deployment of quality measures of remote monitoring AND telehealth services to promote high quality, patient-centric care using proven information technology. We appreciate the work done by the National Quality Forum (NQF) to support this goal. The identification and definition of the breadth of applications of information communications technology to deliver health care in this report matches the current evidence proven use cases. Further, the domains and subdomains identified for measurement in this report follow both the evidence base and the outcomes that are important to patients.

We would like to suggest that the report more clearly note that in the Medicare program remote monitoring and telehealth are distinct and different services. The report currently (page 5) implies that restrictions on Medicare reimbursement limit telehealth, yet the limitations or restrictions in Medicare are far more extensive than reimbursement. The Medicare statute combined with the program's regulatory definition of telecommunications system severely restricts Medicare telehealth to live face to face applications conducted between health care facilities or clinics. Use of the term telehealth in the context of Medicare refers to a mid-20th century version of telehealth and Medicare telehealth is extremely limited and cannot, because of legislative and regulatory language, include the accurate and full range of services identified in this report as telehealth. Interestingly, Medicare may cover remote monitoring through the physician fee schedule, as a part of chronic care management or in some cases via CPT codes that reimburse physicians for the reading of implanted device data. But, this Medicare remote monitoring coverage is not classified as telehealth and is sporadic at best.

More specifically, we suggest edits to ensure this report be applicable to Medicare:

- Clear notation that Medicare's definition of telehealth is substantially different from the broad and modern understanding of telehealth. And, note that in the context of Medicare measurement both remote monitoring and telehealth must be identified as some remote monitoring is covered by Medicare and Medicare has authority to cover remote monitoring more robustly (even if it has not chosen to do so).

- Revise the heart failure case study to describe today's approach to heart failure remote monitoring. Heart failure is an important and vital use case for remote monitoring, but the case study in the report describes very, very old technology and an approach that would have been in deployed over 20 years ago. Modern remote management for heart failure patients involves the following upon diagnosis of congestive heart failure and determination that monitoring would assist in care management:
 - ✓ Patient is provided a remote kit that includes smart-communication device (for example a hug, phone, or tablet that can be used solely for communication with the provider), a BP cuff, a medical grade scale;
 - ✓ Patient uses the device a few times daily, following directions of the provider;

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- ✓ The care coordinator monitors the readings of blood pressure and weight in a dashboard;
 - ✓ The clinician contacts the patient on an as needed basis depending on the readings of the devices to adjust medications, discuss diet, and counsel on activity; and,
 - ✓ Patients may submit inquiries, questions and receive education material via the smart communication device.

We urge NQF to rely upon published pilots or clinical trials that use current methods of remote monitoring to revise this use case. Further, there are many additional complex chronic conditions that are similarly managed using remote monitoring (see appendix A for a current listing of remote monitoring pilots and publications – this listing will also provide helpful descriptions of 21st century remote monitoring technology for the heart failure use case).

- Distinguish how the telehealth used as a tool to deliver care would be classified in the Medicare program in the case studies versus how it would be classified for private payers - i.e. it is telehealth for private payers, but it is remote monitoring and telehealth in the Medicare program.
- Please clarify the MIPS/MACRA section remarks on APMs and ACOs. These are generally Medicare only payment models, and based on rules published by CMS. It is quite complex to navigate implementation of an APM or ACO in which telehealth or remote monitoring would be an included service. To date, CMS has issued very limited waivers of Section 1834(m), hence broad use of telehealth and/or remote monitoring lags compared to the private sector health coverage.
- In Appendix D of the report, we appreciate the identification of a number of MIPS measures that are telehealth and/or remote monitoring relevant. However, it is unclear how the framework outlined in this report would be applied to these measures, and it is not clear how measuring use of telehealth and/or remote monitoring would be incorporated or distinguished from face to face delivery. Would it be possible for the report to provide clarity on how these measures should incorporate telehealth and/or remote monitoring?

Thank you for the opportunity to provide comments. If you have any questions or would like any further information. Please do not hesitate to contact:

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Appendix: [Overview of Evidence on Successful Remote Patient Monitoring Programs:](#)

Review of the extensive literature on remote monitoring, including review of decades of research and publications by Department of Health and Human Services, has provided guidance on the use cases for which remote patient monitoring can improve care. This overview focuses on pilots, programs and translational research focused on the successful use cases – i.e. those that earlier research showed would and could provide improved health outcomes.

Consistently the data shows that using remote monitoring to enable care management demonstrates improved health, reduction in health care utilization, and lower costs of care, when targeted to patients with:

- ✓ Multiple chronic conditions, high utilizations/costs, risk factors for falls [Patients are identified through claims and EHR data]
- ✓ Hospitalization for Congestive Heart Failure
- ✓ Hospitalization for Congestive Obstructive Pulmonary Disease
- ✓ Diabetes

The services provided that are associated with the positive results are:

- ✓ Remote monitoring of patient vital signs/biometric data in their home for a minimum of 90 days
- ✓ Nurse/care manager review of biometric data
- ✓ Self-management education
- ✓ Care plan modification and early intervention when adverse trends in biometric data are observed

Medicare Coverage Currently Does Not Cover Remote Monitoring, But Does Cover Care Management:

- ✓ Limited reimbursement is available, with strict rules, for a physician or the employed care manager to conduct care management
- ✓ Reimbursement does NOT cover investment or use of remote monitoring technology. Specifically, there is no capital adjustment made to accommodate remote monitoring technology that a provider must provide to enable remote monitoring enabled care management.

Savings reported for remote monitoring interventions, including care management and remote monitoring technologies:

- ✓ **University of Virginia:** \$500K savings for 426 patients monitoring post-discharge
- ✓ **Christus Health:** \$2.65 for every \$1 spent to conduct remote monitoring (includes equipment and labor costs)
- ✓ **Banner Health:** 34% cost reduction for patients monitored who have multiple chronic conditions and high cost profile
- ✓ **Danish Agency for Digitisation:** – Estimated annual net savings for remote monitoring COPD patients \$202M DKK
- ✓ **Medicare Health Buddy:** 7 to 13% lower costs per patient for remote monitored group compared to control group
- ✓ **PartnersHealth:** Estimated annual savings for remote monitoring of CHF patients \$10 million over 10 years for 3,000 patients
- ✓ **Care Beyond Walls:** Estimated total health charges reduced by 67%.
- ✓ **University of MS:** Estimated savings to Medicaid was \$339,184 for the 100 enrolled patients with diabetes
- ✓ **Presence Covenant Medical Center:** \$1 million savings for 665 hospitalized patients
- ✓ **Emory eICU:** \$1,486 average reduction in Medicare costs over a 60 day episode compared to control group

Recent and Focused Remote Monitoring Enabled Care Management for Patients with Chronic Conditions:

Institution & Links to Findings	Attributes of RPM and RPM Patients	Key Findings
Remote Monitoring for Targeted Patients with Multiple Chronic Conditions		
<p><i>Veterans Health Administration Home Telehealth</i></p> <p>Analysis of 15,600 patients, FY2012</p> <p>Office of the Inspector General, “Veterans Health Administration: Audit of The Home Telehealth Program”, March 9, 2015</p> <p>https://www.va.gov/oig/pubs/VA_OIG-13-00716-101.pdf</p>	<p>Three types of patients qualify for home telehealth:</p> <ol style="list-style-type: none"> 1) <i>Non-institutional Care (NIC) Patients, one or more of the following:</i> <ul style="list-style-type: none"> ✓ One or more behavior or cognitive problems ✓ Life expectancy of 6 months or less ✓ Difficulty with three or more Activities of Daily Living, such as bathing, dressing, and eating ✓ Or a combination of two or more of the Activities of Daily Living dependencies. 2) <i>Chronic Care Management (CCM):</i> Patient does not meet NIC criteria but has one or more chronic diseases, such as diabetes, congestive heart failure, or chronic obstructive pulmonary disease that requires ongoing case management, monitoring, and interventions. 3) <i>Health Promotion/Disease Prevention (HPDP):</i> Patient must meet one or more of six conditions, which includes being at risk for developing a chronic care disease, or needs assistance in choosing and maintaining healthy behaviors. <p><u>Services Provided:</u></p>	<p>Home telehealth (care management enabled by remote monitoring) lowered health care utilization.</p> <p>For all three groups:</p> <ul style="list-style-type: none"> ✓ Reduced Hospitalization rates. Average reduction across the groups was 5 per 100 patients ✓ Reduced Bed Days of Care (BDOC) by 1.4 to .3 days per hospitalization. <p>NIC patients had largest reductions in hospitalization and BDOC.</p> <p>“The program has proven to be a low cost alternative (at less than \$2,400 per patient annually) to providing home-based primary care, which includes case management and in-home nursing care (about \$22,200 annually), or placing a veteran in a contract nursing home facility (about \$92,300 annually).”</p>

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	<p>“The goal of the Home Telehealth Program is to improve veterans’ access to care while reducing patient treatment costs. The program does this by remotely monitoring patients’ vital signs in the home and intervening early when adverse trends are detected.” Page i</p>	
<p><i>Veterans Health Administration Care Coordination/Home Telehealth Program (CCHT)</i></p> <p>Analysis of 17,025 patients, FY 2003-2007</p> <p>http://www.health.gov.au/internet/mbsonline/publishing.nsf/Content/DD0F66183EDF57C6CA257CD20004A3A1/\$File/CHSWTFsub-HP-Attachment2.pdf</p>	<p><u>Non-institutional Care (NIC) Patients, one or more of the following:</u></p> <ul style="list-style-type: none"> ✓ One or more behavior or cognitive problems ✓ Life expectancy of 6 months or less ✓ Difficulty with three or more Activities of Daily Living, such as bathing, dressing, and eating ✓ Or a combination of two or more of the Activities of Daily Living dependencies. <p><u>Chronic Care Management (CCM):</u> Patient does not meet NIC criteria but has one or more chronic diseases, such as diabetes, congestive heart failure, or chronic obstructive pulmonary disease that requires ongoing case management, monitoring, and interventions.</p> <p>CCHT included: remote monitoring of vital signs of the patient in their home, nurse review of biometric data, and intervention/communication when adverse trends begin.</p>	<p>Home telehealth (care management enabled by remote monitoring) lowered health care utilization.</p> <p>CCHT prevented hospital admissions and reduced hospital length of stay.</p> <p>From a cohort of 17,025 CCHT patients:</p> <ul style="list-style-type: none"> ✓ 25% reduction in numbers of bed days of care, ✓ 19% reduction in numbers of hospital admissions, ✓ Mean satisfaction score rating of 86% after enrollment into the program
<p><i>University of Virginia Medical Center; C3 Program (Care Coordination Center)</i></p>	<p><u>Hospitalized Patients Upon Discharge for:</u></p> <ul style="list-style-type: none"> • Congestive heart failure (CHF) 	<p>C3 Care Management enabled by remote monitoring led to</p>

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<p>626 All Payer 313 Medicare</p> <p>Poster session found at: https://www.nationalreadmissionprevention.com/content/documents/case-studies/university-of-virginia-health-system.pdf</p>	<ul style="list-style-type: none"> • NSTEMI/STEMI(AMI) – All Payers • Chronic obstructive pulmonary disease (COPD) • Uncomplicated pneumonia <p>C3 Intervention: Care management delivery system that:</p> <ul style="list-style-type: none"> • Utilizes biometric monitoring and education coaching using current remote monitoring technology • Provides clinical oversight of biometric data by experienced Registered nurse 	<p>reduced re-hospitalizations and estimated cost of care savings:</p> <p>Outcomes:</p> <ul style="list-style-type: none"> ✓ 16-37% reduction in readmissions compared to benchmark rate(s) for Medicare patients ✓ 27-36% reduction in readmissions compared to benchmark rate(s) for All Payers <p>Additional Study for Medicare Beneficiaries that included joint replacement surgeries:</p> <ul style="list-style-type: none"> ✓ Annual cost savings for Medicare estimated at \$500K
<p><i>Christus Health</i></p> <p>53 patients as of 9/30/14 115 patients as of 3/3/2015</p> <p>Slides on RPM Program</p>	<p>Hospitalized patients upon discharge with: CHF, Heart Disease, COPD, Pneumonia, Diabetes, Sepsis</p> <p>Post discharge services: care management enabled by biometric monitoring.</p>	<p>RPM program associated with:</p> <ul style="list-style-type: none"> ✓ Reduced hospitalizations ✓ Lower costs per hospitalization ✓ High Satisfaction ✓ ROI calculated at \$2.65 saved per \$1 spent
<p><i>Banner Health</i></p> <p>128 patients, data for one year pre intervention and one year post intervention</p> <p>Press Release, Forbes Article: http://incenter.medical.philips.com/doclib/enc/12931987/Forbes_May_3_2015_Banner_Philips_eIAC_program_lo_res.pdf%3ffunc%3ddoc.Fetch%26nodeid%3d12931987</p>	<p>Patients with 5 or more chronic conditions and high utilization.</p> <p>90% enrolled were Medicare beneficiaries</p> <p>Intervention: Intensive Ambulatory Care Program – provides coordinated care management enabled by remote monitoring technology.</p>	<p>Intensive Ambulatory Care program led to:</p> <ul style="list-style-type: none"> ✓ 34% reduction in overall health costs ✓ 50% reduction in hospitalization rate ✓ 50% reduction in hospital bed days ✓ 75% reduction in 30 day readmission rates
<p>Remote Monitoring for Targeted Patients with Specific Condition (COPD, Heart Failure, Diabetes)</p>		
<p><i>Danish Agency for Digitisation Ministry of Finance, Denmark</i></p> <p>TeleCare Nord Pilot</p>	<p>Patients with severe COPD (rated as GOLD 3 & 4 on a severity of disease scale)</p>	<p>Telemedicine home monitoring for patients with severe COPD was found to:</p>

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<p>Analysis of 1,225 patients with COPD, CY 2016</p> <p>https://www.digst.dk/Servicecenter/English/News/Telemedicine-benefits-COPDpatients-and-health-expenditure</p>	<p>Intervention group provided with telemedicine home monitoring which includes:</p> <ul style="list-style-type: none"> ✓ Remote monitoring of vital signs of the patient in their home, ✓ Local health department/clinic review of biometric data, ✓ Intervention/communications based on changes in condition, ✓ Care management 	<ul style="list-style-type: none"> ✓ Reduce health costs by an estimated \$202million Danish Krone (DKK) annually ✓ Reduce hospital use and costs ✓ Improve self-care ability and engagement in care ✓ Improve quality of life, comfort and satisfaction
<p><i>Medicare Health Buddy Demonstration</i></p> <p>Baker, et. al., “Integrated Telehealth And Care Management Program For Medicare Beneficiaries With Chronic Disease Linked To Savings”, HEALTH AFFAIRS 30, NO. 9 (2011): 1689–1697</p> <p>http://content.healthaffairs.org/content/30/9/1689</p>	<p>Medicare patients with high costs and utilization and:</p> <ul style="list-style-type: none"> ✓ congestive heart failure, ✓ chronic obstructive pulmonary disease, or ✓ diabetes mellitus <p>Health Buddy Intervention: Care management enabled by remote monitoring. “a telehealth tool that gives providers an opportunity to communicate better with patients and thus improve the information available to care managers.....The application [telehealth tool] incorporated an exception based approach that aimed to identify the need for care management interventions based on deteriorating vital signs and symptoms and to identify gaps in patients’ behavior and knowledge. After reviewing patients’ information, care managers could contact patients who appeared to be at risk for deterioration or who required</p>	<p>Lower health spending for intervention group that received care management enabled by remote monitoring compared to the control group.</p> <ul style="list-style-type: none"> ✓ Mean health spending in the intervention group decreased approximately 7.7–13.3% over two years, compared with a matched control group. ✓ “In the first year after the intervention was available, mean spending in the intervention group was \$3,608, compared with \$4,107 for the control group (p < 0:01).” ✓ “In the second year of the intervention period, mean quarterly spending in the intervention group was \$3,568, compared with \$4,051 for the control group (p < 0:01).”

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<p><i>Partners Health Care Center for Connected Health</i></p> <p>Analysis of 3,000 patients</p> <p>http://content.healthaffairs.org/content/33/2/194.full.html</p> <p>Review of several types of telehealth interventions – Remote Monitoring intervention included was the Partners Congestive Heart Failure Home Monitoring Program</p>	<p>intervention to ensure that they received appropriate services.”</p> <p>Congestive Heart Failure Patients with recent hospitalization</p> <p>Upon discharge patient provided with: remote monitoring and care management for 120 days post discharge. Specifically, in-home monitoring of weight, blood pressure, heart rate, and pulse oximetry. These data were uploaded daily, and decision support software identified those patients who needed attention.</p>	<p>Lower health care costs for group receiving care management enabled by remote monitoring.</p> <p>RPM provided for 120 post discharge associated with:</p> <ul style="list-style-type: none"> ✓ 44% reduction in hospital readmissions compared to usual care ✓ Cost savings of more than \$10 million over a 10 year period compared to usual care.
<p>Care Beyond Walls and Wires: Remote Heart Failure Monitoring and Healthcare Utilization Analysis in a Rural Regional Medical Center</p> <p>50 heart failure patients, Medicaid</p> <p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4365431/</p>	<p>Medicaid patients with hospitalization and diagnosis of heart failure</p> <p>The intervention was to provide remote wireless monitoring via mobile broadband to facilitate patient and care team co-management of HF in a predominantly rural, disproportionately Native American patient population. It included:</p> <ul style="list-style-type: none"> ✓ Remote monitoring of vital signs of the patient in their home, ✓ Care manager review of biometric data, ✓ Intervention/communications based on changes in condition, ✓ Care management 	<p>Analysis of the 6 months prior to enrollment and the 6 months after enrollment in the remote monitoring intervention showed:</p> <ul style="list-style-type: none"> ✓ 42% decrease in the number of hospitalizations ✓ 64% decrease in hospital days ✓ 67% decrease in total health care charges
<p>University of Mississippi Medical Center Mississippi Telehealth Network</p>	<p>Rural residents with type 2 diabetes (and on Medicaid), recruited to participate in</p>	<p>Improved health and reduced health care utilization for those</p>

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<p>100 Medicaid Patient Pilot</p> <p>Poster Presentation by K. Henderson, 2015 “How Mississippi is Leading the Way in Innovation”</p>	<p>University of Mississippi Telehealth Network remote patient monitoring project through rural health clinics.</p> <p>Intervention: care management and education enabled through remote monitoring technology</p>	<p>who received care management through a remote monitoring.</p> <ul style="list-style-type: none"> ✓ Estimated savings to Medicaid was \$339,184 for the 100 enrolled patients. ✓ Reduced HbA1C by 1.7% ✓ No hospitalizations or emergency department visits for 12 months for the enrolled patients ✓ 71% of enrolled patients lost weight ✓ Medication compliance improved
<p>Medication Adherence and mHealth: The George Washington University and Wireless</p> <p>50 Patient Pilot</p> <p>https://www.ncbi.nlm.nih.gov/pubmed/?term=Mobilizing+Your+Medications%3A+An+Automated+Medication+Reminder+Application+for+Mobile+Phones+and+Hypertension+Medication+Adherence+in+a+High-Risk+Urban+Population</p>	<p>Medicaid patients with hypertension and prescribed 2 or more medications to control hypertension. 96% enrollees were African American.</p> <p>Intervention: Provided a automated medication reminder on their mobile phone.</p>	<p>“Average blood pressure and level of control during study period improved significantly after initiation of the study and remained improved from baseline through the course of the study.”</p>
<p>Remote Monitoring in Hospital Setting to Improve Care, Address Staffing Shortages, and Promote Efficiency</p>		
<p><i>Presence Covenant Medical Center, Urbana, IL Remote Sitter</i></p> <p>Monitored 665 elderly patients</p> <p>https://www.chausa.org/publications/catholic-health-world/archives/issues/september-15-2016/remote-sitter-aims-</p>	<p>Pilot in October of 2014, monitored 665 elderly hospitalized patients for over 5,000 hours.</p> <p>Hospitalized elderly patients at risk of falling</p> <p>Service provided: Remote monitoring for danger and signs of patient fall</p>	<p>The remote sitter monitoring system prevents falls and fall-related injury among elderly hospitalized patients and led to a cost savings.</p> <ul style="list-style-type: none"> ✓ 665 patients were successfully monitored with no adverse events and no patient injury

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<p>to-lower-fall-risks-while-improving-staffing-efficiency</p>	<ul style="list-style-type: none"> ✓ A certified nurse assistant at a remote location (140 miles away) watches the patient on a monitor ✓ Upon recognition of activity in which there is danger and/or risk of a fall, the assistant triggers a warning to attending staff ✓ At the facility, the attending nurse's phone sounds a special alarm. <p>Utilized 10 carts for observation of patients</p> <p>Expanded across four sites in 2016 and logged 16,131 hours monitoring fall risk patients from the TeleHealth center</p>	<ul style="list-style-type: none"> ✓ System identified and prevented 161 potential falls ✓ Of the 665 patients, 3 patients fell, but experience no injury and no adverse event ✓ Estimated Combined savings of \$1.1 million through reduced falls, claims and FTEs
<p>Emory Rapid Development and Deployment of Non-Physician Providers in Critical Care</p> <p>CMS, CMMI Health Care Innovation Award Pilot Program</p> <p>Abt Associates, Evaluation of Hospital-Setting HCIA Awards, Submitted to CMS, November 1, 2016</p> <p>https://downloads.cms.gov/files/cmmi/hcia-hospitalsetting-thirdannualrpt.pdf</p>	<p>Train/deploy critical care NPs and PAs, supported by an eICU, to address intensivist shortage</p> <p>The eICU program monitored critical care patients 24/7 and provided intensivist physician oversight and support on the night and weekend shifts, when physicians are not consistently present in ICUs</p> <p>The eICU staff:</p> <ul style="list-style-type: none"> ✓ Remotely monitored patients in participating ICUs via telemetry ✓ Alerted clinicians at the bedside when they noticed any potentially problematic changes in 	<p>The program reduced hospital utilization, reduced per episode Medicare costs, and was rated highly by patients.</p> <p>Evaluation of the program found it was associated with:</p> <ul style="list-style-type: none"> ✓ a \$1,486 reduction in average Medicare spending per 60-day episode relative to the comparison group ✓ a 2.1 percentage point decrease in the rate of 60-day inpatient readmissions relative to the comparison group <p>“This monitoring was credited with numerous “saves” when problems were brought to the</p>

Institution & Links to Findings	Attributes of RPM and RPM Patients	Key Findings
	patient vital signs that exceeded clinical guidelines	attention of bedside staff that might otherwise have gone undetected, endangering patient safety.” (Abt Associates Evaluation Report)

Recent and Comprehensive Literature Reviews and Meta Analyses

<p><i>AHRQ Evidence Review</i></p> <p>Technical Brief No. 26 Telehealth: Mapping the Evidence for Patient Outcomes From Systematic Reviews</p> <p>June 2016</p> <p>www.effectivehealthcare.ahrq.gov/reports/final.cfm</p>	<p>Overview of the extensive body of evidence on telehealth for use by decision makers.</p> <p>1,494 citations about telehealth were identified, from which 58 systematic reviews met our inclusion criteria.</p>	<p>The evidence supports use of telehealth technologies as effective for:</p> <ul style="list-style-type: none"> • “Remote monitoring of patients with chronic conditions; • Communication and counseling for patients with chronic conditions; and • Psychotherapy as part of behavioral health.”
<p>Inglis, et. al.,</p> <p>“Structured telephone support or telemonitoring programmes for patients with chronic heart failure (Review)”</p> <p>Cochrane Library 2010, Issue 8</p> <p>http://www.thecochranelibrary.com</p>	<p>Review of randomized controlled trials (RCTs) of structured telephone support or telemonitoring compared to standard practice for patients with CHF in order to quantify the effects of these interventions over and above usual care for these patients</p> <p>Included 25 studies and 5 published abstracts</p>	<p>Consistent finding of reduced hospitalization rates.</p> <p>“This review demonstrates that CHF interventions utilising information technology can reduce the rates of death and hospitalisation and improve the quality of life.”</p>
<p>Bashur et. al.,</p> <p>“Original Research The Empirical Foundations of Telemedicine Interventions for Chronic Disease Management”</p> <p>Telemedicine and e-health, VOL. 20 NO. 9 SEPTEMBER 2014</p>	<p>Comprehensive review of telehealth and telemedicine research.</p> <p>Focus on remote monitoring and telemedicine for Congestive Heart Failure (CHF), Congestive Obstructive Pulmonary Disease (COPD), and Stroke.</p>	<p>Studies consistently found reduced hospital admissions, reduced length of stay, reduced emergency room use when remote monitoring was deployed for CHF, stroke and COPD.</p> <p>Study provides detailed citations and listings of the findings of these studies.</p>

<https://www.ncbi.nlm.nih.gov/pubmed/24968105>

“The preponderance of evidence from studies using rigorous research methods points to beneficial results from telemonitoring in its various manifestations, albeit with a few exceptions. Generally, the benefits include reductions in use of service: hospital admissions/re-admissions, length of hospital stay, and emergency department visits typically declined.”

