



June 22, 2015

The Honorable Orrin G. Hatch
Chairman
Senate Finance Committee
United States Senate
219 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Ron Wyden
Ranking Member
Senate Finance Committee
United States Senate
219 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Johnny Isakson
United States Senate
131 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Mark Warner
United States Senate
475 Russell Senate Office Building
Washington, D.C. 20510

Delivered via email: chronic_care@finance.senate.gov

Dear Chairman Hatch, Ranking Member Wyden, Senators Isakson and Warner:

The Alliance for Connected Care (“the Alliance”) welcomes the opportunity to provide a response to the Senate Finance Committee’s request for recommendations based on real world experience and data-driven evidence that improves care for Medicare beneficiaries with chronic conditions. As indicated by the Committee, addressing chronic care is especially pressing, particularly with an estimated 10,000 seniors each day becoming newly eligible for Medicare.¹ Telemedicine and remote patient monitoring are important tools in addressing chronic disease and we appreciate the specific mention of these technologies in your call for comments on May 22, 2015.

The Alliance is a 501(c)(6) organization formed to create a statutory and regulatory environment in which providers can deliver and be adequately compensated for providing safe, high quality care using connected care at their discretion, regardless of care delivery location or technological modality. Our members are leading health care companies from across the spectrum, representing insurers, retail pharmacies, technology companies, and health care entrepreneurs. The Alliance works in partnership with an Advisory Board that includes more than 20 patient and provider groups, including groups representing patients with chronic diseases such as cardiac disease, Parkinson’s disease, Multiple Sclerosis, behavioral health disorders, Alzheimer’s disease and spinal cord injuries. The breadth of groups partnering with the Alliance demonstrates the promise of telehealth and remote monitoring for better chronic disease management.

Our comments focus on the following areas: (1) the use cases for telemedicine/remote monitoring in chronic disease management; (2) the evidence base for effectiveness in reducing costs, improving patient engagement, care coordination and early detection of complications; (3) current federal statutory and

¹ Kaiser Family Foundation, “The Rising Cost of Living Longer: Analysis of Medicare Spending by Age for Beneficiaries in Traditional Medicare” <http://kff.org/medicare/report/the-rising-cost-of-living-longer-analysis-of-medicare-spending-by-age-for-beneficiaries-in-traditional-medicare/>



regulatory barriers to its adoption; and (4) recommendations for Congress to consider as part of its effort to align public policies to support better chronic disease management.

Telemedicine and Remote Monitoring: Tools for Chronic Disease Management

Telemedicine began primarily as a consultation tool between medical providers and as a way to connect rural and medically underserved patients to care not available in their areas. It has grown into a technology used for connecting urban, suburban and rural patients to all kinds of care, improving chronic disease management, providing triage and quick referral and facilitating consultation with specialists across the medical spectrum among other uses.

Specific to chronic disease management, telemedicine and remote monitoring address many of the deficiencies in our current acute care-focused health system that hinder better care for chronically ill patients. These deficiencies were aptly identified by Dr. Ed Wagner, designer of the Chronic Care Model²:

- Rushed practitioners not following established practice guidelines
- Lack of care coordination
- Lack of active follow-up to ensure the best outcomes
- Patients inadequately trained to manage their illnesses

As Wagner noted, effectively managing chronic care requires a departure from the acute care nature of our current system. We need to move toward a reliance on patient self-management and multi-disciplinary care teams connected with the patient beyond the four walls of the medical practice. Telehealth and remote monitoring facilitate these objectives, including enhancing care coordination across various providers, engaging patients in their own care through in-home electronic visiting (real-time self-management training and regular patient self-reported data) and ensuring continuity of care regardless of patient location. Regular transmission of biometric data can also facilitate on-site triage and prompt referral to care.

Indeed, if one of the basic tenets of better chronic care management is to activate patients in managing their own health, the successful implementation and effective use of information technology to help patients connect with their providers is essential.³

Evidence Demonstrating Value of Telehealth & Remote Monitoring for Chronic Care Population

The benefits of telemedicine and remote patient monitoring are well-established for patients with chronic conditions. Below are several recent examples of evidence. APPENDIX A includes a more comprehensive list of recent evidence.

A recent University of Michigan and University of Kentucky literature review demonstrates the impact of connected care on three chronic diseases – congestive heart failure (“CHF”), stroke, and chronic obstructive pulmonary disease (“COPD”).

² Chronic Disease Model: http://www.improvingchroniccare.org/index.php?p=The_Chronic_CareModel&s=2

³ Coleman K, et al. Evidence on the chronic care model in the new millennium. *Health Aff (Millwood)* 2009;28:75–85



Among CHF patients, telemonitoring was significantly associated with reductions in mortality ranging from 15 percent to 56 percent as compared to traditional care. Meanwhile, telestroke provides an advantage for stroke patients without readily available access to stroke specialists. The various modalities of telestroke have demonstrated the ability to reduce mortality in the range of 25 percent during the first year after the event. In addition, there is evidence to support the economic benefit of telemonitoring among CHF, stroke and COPD patients, as measured by changes in hospital admission and readmission rates and cost-benefit analyses.

The findings of the literature review are proving true in health care settings across the country. St. Vincent Health—a member of Ascension Health and Indiana’s largest health care system – conducted a study to determine the impact of a remote care management program on patients with CHF and COPD recently discharged from the hospital. During the 30-day follow-up period, the remote care management program included daily monitoring of patient biometrics (e.g., blood pressure, body weight), interactive daily questionnaires and video conferencing. Initial results showed a reduction in hospital readmissions to 5 percent as compared to 20 percent in the control group – a 75 percent reduction.

Translated to the Medicare program, which spends an estimated \$26 billion on readmissions annually, of which over \$17 billion is preventable, this type of connected care program could significantly reduce program costs, while improving beneficiary outcomes.

In a recent study, the RAND Corporation analyzed the experiences of 300,000 members of the California Public Employees’ Retirement System (“CalPERS”) who used telehealth services.⁴ The study found that patients who participated in telehealth “visits,” which consisted of remote physician consultations by phone or Internet, were less likely to require follow-up visits for a similar condition in any setting. Only six percent of patients sought follow-up care as compared to 13 percent who visited a physician office or emergency department. While cost savings were not the focus of the study, the RAND authors noted that the telehealth visit as a replacement for physician office and emergency department visits could generate savings for payers. While the focus of these video visits in the commercial marketplace is primary care, the application of these visits can translate into fewer trips to the physician office or hospital for chronically ill patients.

Barriers to the Adoption of Telemedicine and Remote Patient Monitoring in Medicare

The current federal statutory and regulatory framework has failed to keep pace with innovation, hindering wider adoption of telehealth and remote monitoring in the Medicare program. While there are several major barriers, including definition and licensure, for purposes of our comments, we will focus on coverage and reimbursement restrictions.

As part of the Medicare, Medicaid and SCHIP Benefits Improvement Protection Act of 2000, Congress added section 1834(m) of the Social Security Act (the “Act”) to expand Medicare coverage and reimbursement for telehealth services. Specifically, under section 1834(m), the Medicare fee-for-service program covers and reimburses for telehealth services furnished to beneficiaries located at “originating sites” in rural Health Professional Shortage Areas (“HPSAs”) or counties outside of Metropolitan Statistical

⁴ Lori Usher-Pines and Ateev Mehrotra. “Analysis of Teladoc Use Seems to Indicate Expanded Access to Care for Patients without Prior Connection to a Provider,” HEALTH AFFAIRS (February 2014).



Areas (“MSAs”).⁵ As defined, originating sites include physicians’ or practitioners’ offices, hospitals, rural health clinics, skilled nursing facilities, critical access hospitals (“CAHs”), federally qualified health centers, community mental health centers, and hospital-based or CAH-based renal dialysis centers.

Based on these geographic and site restrictions, Medicare beneficiaries who live in medically-underserved urban areas or are homebound are unable to benefit from connected care. There is no coverage for about 80 percent of Medicare beneficiaries who live in the areas of the country that are not considered “rural.” To further illustrate this point, in 2009, there were more than 43 million Medicare beneficiaries, yet only 14,000 received telehealth services. In other words, only a fraction of a percent of Medicare beneficiaries are accessing telehealth services compared to the millions in the commercially insured marketplace. While beneficiaries living in rural areas face unique barriers in accessing health care providers and services, many beneficiaries living in metropolitan areas face similar obstacles. The shortage of health care providers, including specialty providers, extends beyond rural areas, making the current distinction between rural and suburban areas “ill-advised” or “artificial”. As more individuals enter the health care system, this problem will only be amplified.

In addition, advances in connected care technology have spurred opportunities that were unimaginable over a decade ago when Congress enacted section 1834(m). From visiting a local retail clinic on the weekend for a remote consultation to on-demand visits with physicians on a smartphone, connected care has the potential to truly modernize health care delivery in this country if current reimbursement and coverage limitations are lifted. It is time for Medicare to allow wider access to these innovative technologies for patients.

Recommendation for Consideration:

We believe that the best policy proposal for telehealth is to lift the originating site and rural restrictions in 1834(m) of the Social Security Act. The evidence supports cost saving to the Medicare program if the restrictions are lifted. Similarly, we believe evidence supports payment for remote patient monitoring for chronic diseases, including cardiac disease, diabetes, diabetic retinopathy, Parkinson’s disease, behavioral health disorders and spinal injuries, however, we recognize Congress’s ongoing reluctance to take this step. Therefore, our recommendation to the Committee centers on the use of telemedicine and remote monitoring in value-based care models.

The tenets of improved chronic disease management, including patient engagement beyond the medical setting, care coordination and early detection of worsening conditions correspond with the tenets of value-based care. Our belief is that chronic care will be dramatically improved by moving away from fee-for-service systems to risk-based models that reward providers for caring for the whole patient. The establishment of Accountable Care Organizations and the passage of the Medicare Access and CHIP Re-authorization Act (MACRA) will dramatically advance our system’s move toward value-based care, and telemedicine and remote patient monitoring will help providers successfully meet the goals of both programs.

⁵ 42 U.S.C. § 1395m(m)(4)(C).



- First, telemedicine and remote monitoring reduce resource utilization by averting expensive hospital or urgent care visits. Real-time visits offer an alternative (?) option for patients who would otherwise visit the ER or urgent care center while remote monitoring diminishes the risk of hospitalization for patients with chronic conditions.
- Second, “clinical practice improvement activities,” a component of the performance composite score in MACRA’s Merit-based Incentives Program (MIPS) and an important part of establishing an effective ACO, include expanded practice access, care coordination and beneficiary engagement, all of which are accomplished by telemedicine and remote monitoring.
- Finally, quality metrics include appropriate use of services and patient experience/engagement. Telehealth and remote monitoring promotes appropriate use of services by offering options for non-emergent care and monitoring of biometric data to mitigate hospital use. Patient experience and engagement in the commercial market is extremely satisfactory. There is no reason to think that Medicare beneficiaries would not also be very satisfied with the option to use telemedicine.

Need for a Reimbursement Bridge to Facilitate Investment: There is significant evidence that changing health system and physician practice is challenging, especially through large-scale, federally-driven mandates. The implementation of meaningful use of electronic health records is one example. Current experience with implementing APMs has also been complicated by low provider participation levels, expensive data infrastructure and confusing requirements. Achieving the goals of both the ACO and MACRA programs will require investment prior to 2019 when physicians will begin to be measured, and challenges must be anticipated and mitigated to allow for a smooth transition to the new payment system. Integrating telemedicine and remote monitoring for achieving high performance scores in the component parts of measurement for MIPS as well as for achieving the requirements of the ACO program requires a glide path. It doesn’t happen overnight. A temporary fee-for-service reimbursement for physicians and other providers preparing to meet the mandates of MACRA will ensure that workflow and patient experience with the tools begin prior to the measurement period.

Similarly, as ACOs continue to struggle to meet the requirements of moving toward 2-sided risk, telemedicine and remote patient monitoring can help achieve the goals of the ACO program, and ensure they proliferate so providers can partner with them as part of fulfilling the vision of MACRA. In their recent ACO rule, CMS said that telemedicine has “significant potential to improve patient care, improve communication between patients and their families and health care providers, support more timely treatment, and help to address barriers to access to care for some beneficiaries.”⁶

Outline of Proposal:

- Within six months of enactment, the Secretary of Health and Human Services (HHS) shall implement a program aimed at assisting providers in implementing telemedicine and remote patient monitoring as part of their effort to comply with MACRA-created performance metrics and/or the ACO program.

⁶ <http://www.gpo.gov/fdsys/pkg/FR-2011-11-02/pdf/2011-27461.pdf>



- Successful applicants to the program will have 1834(m) originating site restrictions waived and be eligible for Medicare reimbursement of real-time telemedicine visits as well as remote patient monitoring for a list of conditions designated by the Secretary, but include at least chronic obstructive pulmonary disease (COPD), stroke, congestive heart failure (CHF), diabetes, renal failure, chronic hypertension, diabetic retinopathy, Parkinson's disease, multiple sclerosis, and behavioral health conditions.
- Program shall expire at the end of federal fiscal year 2021.
- The program shall consist of an application process in which providers attest to their intention to use telemedicine and remote patient monitoring to meet the goals of MACRA or the ACO program, including but not limited to care coordination, resource utilization, patient engagement. Providers shall agree as part of the application process to share information with CMS that is deemed essential to completing an evaluation of the coverage of remote monitoring and impact of telemedicine on Medicare spending and meeting the goals of MACRA and the ACO program.
- Eligible providers shall include all providers subject to MACRA, and ACOs qualifying for the MSSP, Pioneer, Next Generation or other CMS-established accountable care programs.
- One year prior to the expiration of the program, the CMS Actuary shall submit a report to Congress examining the coverage of telemedicine and remote monitoring's impact on Medicare spending, implementation of MACRA and the ACO program.

We believe that the Congressional Budget Office will take into account the fact that this program only covers providers who apply for the program and specifically attest to their desire to use these tools to help them achieve the tenets of value-based care. This structure guards against the use of telemedicine and remote monitoring to simply create utilization. This program is also time limited and meant as an investment toward value-based care.

We would welcome additional discussion of this proposal with the Committee and would be happy to present additional evidence of the effectiveness of telehealth and remote monitoring to the Committee. I can be reached at (202) 415-3260 or kdrobac@connectwithcare.org

Thank you,

A handwritten signature in blue ink that reads "Krista Drobac". The signature is fluid and cursive.

Krista Drobac
Executive Director



APPENDIX A

Summary of Recent Evidence on Remote Monitoring and Telehealth (Not exhaustive)

Telehealth Evidence: Chronic Conditions

- In 2013, Banner Health teamed with Royal Philips to conduct a telehealth pilot program with in-home patients with multiple chronic conditions. The Intensive Ambulatory Care (IAC) pilot program targeted the highest cost and most complex patients— the top five percent of patients who account for 50 percent of health care spend. The results demonstrate the potential of applied technologies for managing such patients. The program achieved a 27 percent reduction in cost of care, 32 percent reduction in acute and long term care costs, and 45 percent reduction in hospitalizations. **Citation:** Press release, “Banner Health achieves 27 percent cost savings through joint pilot telehealth program with Philips.” May 4, 2015 http://www.newscenter.philips.com/us_en/standard/news/press/2015/20150405_Philips_Telehealth.wpd#.VYRbbObjWhG
- In 2012, Geisinger Health Plan (GHP) found that telehealth significantly reduced hospital readmissions and cost of care for members diagnosed with heart failure. The study showed that the odds of a patient being admitted to the hospital in any given month were 23 percent lower during the months when they were enrolled in the telemonitoring program; their odds of 30-day and 90-day readmissions were reduced 44 percent and 38 percent respectively. A total of 541 members— all GHP Medicare Advantage plan members, who were at least 65 years old with confirmed heart failure—were included in the final evaluation. They had a high prevalence of comorbid conditions (most commonly hypertension and coronary artery disease) and incurred a significant cost of care (average per-patient-per-month cost of ~\$1,600). The implementation of the telemonitoring program delivered an 11 percent cost savings during the study period, which is in addition to cost savings attributable to complex care management alone, the study found. **Citation:** Daniel D. Maeng et al. “Can Telemonitoring Reduce Hospitalization and Cost of Care? A Health Plan’s Experience in Managing Patients with Heart Failure.” Population Health Management, 2014, Vol. 0, No. 0. DOI: 10.1089/pop.2013.0107 <http://www.amchealth.com/files/published-outcomes/PopulationHealthManagement-GeisingerHFStudy-May2014.pdf>
- The University of Pittsburgh Medical Center (UPMC) has expanded its telemedicine program between 2012 and 2013, going from about 6,700 telemedicine patient visits in 2012 to about 10,000 in 2013. In this shift, they found that telemedicine helped drop hospital readmissions among patients with congestive heart failure to just 5 percent from 28 percent. **Citation:** Gregg, Helen. “UPMC Sees Improved Readmission Rates From Telemedicine.” Becker’s Health IT & CIO Review, May 29, 2014. <http://www.beckershospitalreview.com/healthcare-information-technology/upmc-sees-improved-readmission-rates-from-telemedicine.html>



- A study from the University of Rochester Medical Center that began in 2010 found that telemedicine helped eliminate one in five emergency room (ER) visits in a pool of 1,500 older adults in independent and assisted living. Also, 90 percent of the cases required no additional care by a primary care physician; and in 97 percent of the cases doctors, physician’s assistants, or nurse practitioners were able to make a definitive diagnosis and treatment recommendation. **Citation:** University of Rochester Medical Center, “Is Telemedicine a Viable Alternative to Ambulance Ride and ER Visit?” June 11, 2015, <https://www.urmc.rochester.edu/research/blog/june-2015/is-telemedicine-a-viable-alternative-to-ambulance.aspx>
- In a 2011 Health Affairs study, researchers examined the impact of a care coordination approach called the Health Buddy Program, which integrates a telehealth tool with care management for chronically ill Medicare beneficiaries. They evaluated the program’s impact on spending for patients of two clinics who were exposed to the intervention and compared their experience with that of matched controls. The findings show significant savings among patients who used the Health Buddy telehealth program, which was associated with spending reductions of approximately 7.7–13.3 percent (\$312–\$542) per person per quarter. **Citation:** Laurence C. Baker et al. “Integrated Telehealth And Care Management Program For Medicare Beneficiaries With Chronic Disease Linked To Savings.” Health Affairs, September 2011, Vol. 30, No. 9: 1689-1697. doi:10.1377/hlthaff.2011.0216
- The Veterans Health Administration’s (VHA’s) national home telehealth program, Care Coordination/Home Telehealth (CCHT), aims to coordinate the care of veteran patients with chronic conditions and avoid their unnecessary admission to long-term institutional care. CCHT patients increased from 2,000 to 31,570 (1,500% growth) between 2003 and 2007. CCHT is now a routine noninstitutional care (NIC) service provided by VHA to support veteran patients with chronic conditions as they age. Routine analysis of data obtained for quality and performance purposes from a cohort of 17,025 CCHT patients shows the benefits of a 25% reduction in numbers of bed days of care, 19% reduction in numbers of hospital admissions, and mean satisfaction score rating of 86% after enrollment into the program. **Citation:** Darkins, Adam et al. “Care Coordination/Home Telehealth: The Systematic Implementation of Health Informatics, Home Telehealth, and Disease Management to Support the Care of Veteran Patients with Chronic Conditions.” Telemedicine and e-Health. December 2008, Vol. 14, No. 10: 1118-1126.
- According to a study by Massachusetts General Hospital, using telehealth to deliver follow-up care to chronic disease patients improves patient satisfaction. Physicians involved in the remote consultations were similarly satisfied, reporting that the virtual meetings saved time, allowed for more continuous follow-up, and gave a better overall picture of the patient’s wellbeing. The study examined the impact of online follow-up for patients with ten common diseases: hypertension, arthritis, diabetes, anxiety, depression, GERD, headaches, asthma, back pain, and weight control issues. After seeing a physician for one of these conditions, patients completed an online survey about their experience asking about improvements or declines in overall health as well as disease-specific questions to answer on a scale from zero, and were subsequently scheduled a video chat, phone call, or in-person consult as necessary. **Citation:** Dixon Ronald F. and Rao Latha. “Asynchronous Virtual Visits for the Follow-Up of Chronic Conditions.” Telemedicine and e-Health. July 2014, Vol. 20, No. 7: 669-672



- A recent University of Michigan and University of Kentucky literature review found that telemedicine interventions for diabetes patients can help with glycemic control, reduce body weight, and increase exercise. Of particular note, the analysis included a three-year study of patients with Type 2 diabetes in Montana that showed telemedicine use for diabetes to be an "effective mode" of care for rural patients compared to more traditional care. Also part of the analysis, was a Tennessee study that found a 29 percent increase in patient adherence to prescribed glycemic tests when nurses called patients to remind them to test themselves. **Citation:** Rashid L. Bashshur, et al. "The empirical evidence for the telemedicine intervention in diabetes management." *Telemedicine and e-Health*. May 2015, Vol. 21, No. 5: 669-672. doi: 10.1089/tmj.2015.0029.
- The findings of the literature review are proving true in health care settings across the country. St. Vincent Health – a member of Ascension Health and Indiana’s largest health care system – conducted a study to determine the impact of a remote care management program on patients with CHF and COPD recently discharged from the hospital. During the 30-day follow-up period, the remote care management program included daily monitoring of patient biometrics (e.g., blood pressure, body weight), interactive daily questionnaires, and video conferencing. Initial results showed a reduction in hospital readmissions to 5 percent as compared to 20 percent in the control group – a 75 percent reduction. Translated to the Medicare program, which spends an estimated \$26 billion on readmissions annually, of which over \$17 billion is preventable, this type of Connected Care program could significantly reduce program costs, while improving beneficiary outcomes. **Citation:** The Robert Wood Johnson Foundation, "The Revolving Door: A Report on U.S. Hospital Readmissions - An Analysis of Medicare Data by the Dartmouth Atlas Project" (February 2013).
- Telehomecare interventions for chronically ill Medicaid patients were deployed at Windsor Place Home Health in Windsor, Kansas. Hospital readmissions, emergency room visits, and nursing home admissions were reduced to zero over a one year period. Total cost savings over the same time period was approximately \$1.3 million, while the per patient cost of the intervention was just \$6 per patient per day. At Forrest General Home Care and Hospice in Mississippi, targeted telehomecare interventions for patients with CHF and COPD caused hospitalization rates to drop from 20 percent to 3 percent and emergent care rates to fall from 7 percent to 2.5 percent over the course of a year. **Citation:** National Association for Home Care & Hospice, Statement submitted to the House Energy & Commerce Health Subcommittee, May 21, 2015. <http://docs.house.gov/meetings/IF/IF14/20140521/102250/HHRG-113-IF14-20140521-SD010.pdf>
- A recent University of Michigan and University of Kentucky literature review demonstrates the impact of telehealth on health care access, quality, and costs, focusing on three chronic diseases – congestive heart failure ("CHF"), stroke, and chronic obstructive pulmonary disease ("COPD"). Among CHF patients, telemonitoring was significantly associated with reductions in mortality ranging from 15 percent to 56 percent as compared to traditional care. Meanwhile, telestroke provides an advantage for stroke patients without readily available access to stroke specialists.



The various modalities of telestroke have demonstrated the ability to reduce mortality in the range of 25 percent during the first year after the event. In addition, there is evidence to support the economic benefit of telemonitoring among CHF, stroke, and COPD patients, as measured by changes in hospital admission and readmission rates and cost-benefit analyses. **Citation:** Rashid L. Bashshur, et al. "The Empirical Foundations of Telemedicine Interventions for Chronic Disease Management." *Telemedicine and e-Health*. September 2014, Vol. 20, No. 9: 769-800 doi: 10.1089/tmj.2014.9981

- Remote patient monitoring technologies positively engage patients while helping to manage chronic and persistent disease states. For example, the Hackensack Alliance in New Jersey reduced readmission rates from 28% to 5% for congestive heart failure patients. Christus Health reduced the average cost for congestive heart failure readmissions from \$12,937 compared to \$1,231 per re-admission after implementing a remote patient monitoring system. **Citations:** Connected Health Case Study: Hackensack ACO - Remote Patient Monitoring for Chronic Disease. HIMSS, March 1, 2014. <http://www.himss.org/ResourceLibrary/genResourceDetailPDFReg.aspx?ItemNumber=29541> Connected Health Case Study: Christus Health - Improving Health at Home: Remote Patient Monitoring and Chronic Disease. HIMSS, September 17, 2013. <http://www.himss.org/ResourceLibrary/genResourceDetailPDFReg.aspx?ItemNumber=22361>
- Remote patient monitoring reduces health care use and improves quality of care in heart failure patients with implantable cardioverter-defibrillators (ICDs). A 2012 multicenter randomized trial involving 200 patients compared remote monitoring with standard patient management consisting of scheduled visits and patient response to audible ICD alerts. The primary end point was the rate of emergency department or urgent in-office visits for heart failure, arrhythmias, or ICD-related events. Over a 16-month period, such visits were 35% less frequent in the remote arm. **Citation:** Landolina M, et al. "Remote monitoring reduces healthcare use and improves quality of care in heart failure patients with implantable defibrillators: the evolution of management strategies of heart failure patients with implantable defibrillators (EVOLVO) study." *Circulation* 2012 Jun 19;125(24):2985-92. doi: 10.1161/CIRCULATIONAHA.111.088971. Epub 2012 May 24.
- The CONNECT (Clinical Evaluation of Remote Notification to Reduce Time to Clinical Decision) study was a multicenter, prospective, randomized evaluation involving 1,997 patients from 136 clinical sites who underwent insertion of an implantable cardioverter-defibrillator (including cardiac resynchronization therapy devices) and were followed up for 15 months. Health care utilization data included all cardiovascular-related hospitalizations, emergency department visits, and clinic office visits. The median time from clinical event to clinical decision per patient was reduced from 22 days in the in-office arm to 4.6 days in the remote arm. In addition, the health care utilization data showed a decrease in mean length of stay per cardiovascular hospitalization visit— 4.0 days in the in-office arm compared with 3.3 days in the remote arm. **Citation:** Crossley GH, et al. "The CONNECT (Clinical Evaluation of Remote Notification to Reduce Time to Clinical



Decision) trial: the value of wireless remote monitoring with automatic clinician alerts”. Journal of American College of Cardiology, 2011 Mar 8, Vol. 57, No. 10:1181-9.

- A study using 2009 data from 5,873 Medicare beneficiaries receiving home healthcare services through a network of community-based home health agencies operating in Texas and Louisiana found that patients in the telehealth group had a 7 percent lower probability of hospitalization within the first 30-day episode of home health care compared to those in the non-telehealth group. **Citation:** Hsueh-Fen Chen et al. “Telehealth and Hospitalizations for Medicare Home Healthcare Patients.” American Journal of Managed Care, 2011 Jun 1, Vol. 17, No. 6.