

A LeadingAge CAST Report

TELEHEALTH AND REMOTE
PATIENT MONITORING
FOR LONG-TERM AND
POST-ACUTE CARE

A Primer and Provider Selection Guide
2013

TELEHEALTH AND REMOTE PATIENT MONITORING FOR LONG-TERM AND POST-ACUTE CARE:

A Primer and Provider Selection Guide

2013



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LeadingAge Center for Aging Services Technologies:

The LeadingAge Center for Aging Services Technologies (CAST) is focused on development, evaluation and adoption of emerging technologies that will transform the aging experience. As an international coalition of more than 400 technology companies, aging-services organizations, businesses, research universities and government representatives, CAST works under the auspices of LeadingAge, an association of 6,000 not-for-profit organizations dedicated to expanding the world of possibilities for aging.

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1 PURPOSE OF WHITEPAPER AND EXECUTIVE SUMMARY

1.1 Purpose of Whitepaper

The purpose of this paper is to aid LeadingAge and CAST members, long-term and post-acute care (LTPAC) providers, and other aging services organizations in understanding telehealth and remote patient monitoring (RPM) technologies, their uses and their benefits. The paper also includes a Selection Matrix of a number of telehealth and RPM solutions that will help providers select solutions that best fit their requirements.

Case studies were collected highlighting providers' impacts and benefits of telehealth and RPM on health outcomes (blood pressure, blood glucose, etc.), staff efficiencies, quality of life/satisfaction with care, hospitalizations and hospital readmissions, and/or cost of care and return on investment (ROI) to providers, payers, and/or consumers. These case studies will be published separately approximately one month after the release of this paper.

This whitepaper is available in a PDF format as a living document with links. CAST plans to update the Telehealth and RPM Selection Matrix annually. Finally, the Telehealth and RPM Selection Matrix will be used to create CAST's online Selection Tool to simplify and facilitate the process of selecting a telehealth and RPM solution for LTPAC providers; the online tool will be updated as needed.

This whitepaper and the companion Telehealth and RPM Selection Matrix, online Selection Tool and case studies, represent a continuation of CAST's efforts to produce hands-on tools that help LTPAC providers adopt appropriate aging services technologies that enable them to deliver innovative care

delivery models, position them well for strategic partnerships, meet the needs of older adults and prepare them for the future.

1.2 Executive Summary

This paper begins with definitions to help the reader understand the terms used throughout the whitepaper and then delves into the vision of technology-enabled care and the continuum of monitoring. The whitepaper then provides an explanation of the potential uses of telehealth and RPM including patient education and self-management, pre- and post-acute management of chronic conditions, post-acute patient stabilization, long-distance routine check-ups/treatment and specific teleconsults.

A review of evidence of the benefits of telehealth and RPM, including improved health outcomes and reduction in hospitalizations and hospital readmissions, is provided in section 5. Potential LTPAC provider business models including Medicare, Medicaid, Medicaid Waiver, and private insurance coverage are explained in section 6. In addition, this section provides an overview of potential Affordable Care Act (ACA)-related opportunities. Finally, this section concludes with a discussion about return on investment (ROI) for telehealth and RPM and provides a link to an online ROI calculator.

Section 7 reviews the planning process for telehealth and RPM solutions to help organizations prepare through visioning and strategic planning, looking at organizational readiness, operational planning, and technology review and selection.

The whitepaper concludes with a description of the components of the Telehealth and RPM Selection

Matrix, which is included in section 8. Information from the Telehealth and RPM Selection Matrix will be available as an online Telehealth and RPM Selection Tool to help LTPAC organizations narrow their selections to a manageable list of products that meet their business line, care applicability needs and essential requirements, based on their answers to key questions.

1.3 Disclaimer

The information included in this paper is meant to assist care providers in the understanding and selection of telehealth and remote patient monitoring (RPM) solutions, but cannot possibly include all systems that may be available. Products mentioned in this paper serve as illustrative examples. Information about the functionalities and capabilities for this effort were provided by participating vendors of telehealth and RPM solutions. A few telehealth and RPM vendors chose not to participate. Functionalities and capabilities of listed telehealth and RPM products have not been verified, tested, independently evaluated or endorsed by LeadingAge or LeadingAge CAST. Please use this as general guidelines in understanding functionalities and examples of current telehealth and RPM systems. The Telehealth and RPM Selection Matrix may help providers identify potential telehealth and RPM solutions that may meet their requirements, and is intended to help them target vendors to submit a Request for Proposal (RFP). Where appropriate, provider case studies were identified and published separately. However, providers are strongly advised to verify functionalities of the telehealth and RPM solutions prior to final selection through demonstrations, site visits, reference checking and other due diligence steps.

2 DEFINITIONS

2.1 Information and Communication Technology (ICT) Infrastructure

Information and Communication Technology (ICT) Infrastructure includes high-speed Internet connectivity, wired/wireless networks (switches, routers, repeaters), servers, laptop/desktop computers, cloud-based information systems, mobile communications device, etc.

2.2 Electronic Documentation Technologies

Electronic documentation technologies are mainly aimed at health care professionals and professional caregivers such as electronic health records (EHR), point of care (POC), point of services (POS) systems, electronic prescribing (ePrescribing), electronic medication administration records (eMAR), electronic charting and electronic workflow and documentation systems. Some EHR systems offer the individual and/or an authorized family member access to health information on a patient portal or a personal health record (PHR).

2.2.1 Electronic Health Record (EHR)

An EHR is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports. The EHR automates and streamlines the clinician's workflow. The EHR has the ability to generate a complete record of a

clinical patient encounter – as well as supporting other care-related activities directly or indirectly via interface – including evidence-based decision support, quality management, and outcomes reporting.¹

2.2.2 Electronic Medical Record (EMR)

An EMR is an electronic record of health-related information on an individual that can be created, gathered, managed and consulted by authorized clinicians and staff within a single health care organization.²

An EMR is an application environment composed of the clinical data repository, clinical decision support, controlled medical vocabulary, order entry, computerized provider order entry (CPOE), pharmacy, and clinical documentation applications. This environment supports the patient's EMR across inpatient and outpatient environments, and is used by health care practitioners to document, monitor, and manage health care delivery within a care delivery organization (CDO). The data in the EMR is the legal record of what happened to the patient during their encounter at the CDO and is owned by the CDO.³

2.2.3 Personal Health Records (PHR)

A PHR is a universally accessible, layperson-comprehensible, lifelong tool for managing relevant health information, promoting health maintenance and assisting with chronic disease management via an interactive, common data set of electronic health information and e-health tools. The PHR is owned, managed, and shared by the individual or his or her legal proxy(s) and must be secure to protect the privacy and confidentiality of the health information

it contains. It is not a legal record unless so defined and is subject to various legal limitations.⁴ Some EHRs offer patients/consumers the ability to view their records through web portals or the ability to export data to a PHR.

2.2.4 Health Information Technology (HIT)

HIT encompasses a broad array of technologies involved in managing and sharing patient information electronically, rather than through paper records. HIT performs information processing using both computer hardware and software for the entry, storage, retrieval, sharing, and use of health care information.⁵ EHR, EMR and PHR are examples of HIT.

2.2.5 Electronic Point of Care (POC)/Point of Service (POS) Documentation Systems

Electronic point of care (POC)/point of service (POS) documentation systems allow the nurse, physician, aide, or other provider to enter information into an electronic record during or immediately after visits with clients/residents (e.g., kiosks, tablet computers, hand-held devices, etc.).

2.3 Safety Technologies

Safety technologies include technologies for emergency call and personal emergency response systems (PERS), fall detection and prevention technologies (bed and chair alarms), environmental monitoring (temperature, carbon monoxide, flood, smoke and fire alarms), access control, wander management, unattended stove shut-off systems and the like.

2.4 Health and Wellness Technologies

Health and wellness technologies include health promotion technologies, behavioral and health status monitoring systems, telehealth and telemedicine systems, and medication management technologies, which focus on the physical health and wellness of seniors. In addition, cognitive assessment technologies, reminder systems and cognitive monitoring, and stimulation technologies, which focus on the mental health and wellness of seniors, are also classified under this category. Finally, these technologies include physical exercise and rehabilitation technologies.

2.4.1 Telehealth, Remote Patient Monitoring (RPM) and Telemedicine

Telehealth, remote patient monitoring (RPM) and telemedicine capabilities are defined as the use of electronic communication and information technologies to allow interaction between providers and patients in different locations (e.g., wound consultation by a physician at an offsite location using audiovisual equipment, monitoring blood pressure, etc.).

2.4.1.1 Telehealth

Telehealth can be defined broadly as the use of electronic information and telecommunications technologies to provide access to health assessment, diagnosis, intervention, consultation, supervision information and education across a distance.^{6,7} Telehealth technologies include telephones, facsimile machines, electronic mail systems, videoconferencing, and RPM devices, which are used to collect and transmit data for monitoring and interpretation. Common applications of telehealth

include both clinical services (e.g., teleradiology in which test results are forwarded to another facility for diagnosis; home monitoring to supplement home visits from nursing professionals) as well as non-clinical services (e.g., continuing professional education, including presentations by specialists to general practitioners).⁸

There are two primary modes of delivering telehealth:

2.4.1.1.1 Store-and-Forward (Asynchronous):

In store-and-forward telehealth, clinical information (e.g., data, images, sound, video) is captured locally, then temporarily stored for transfer at a later time as encrypted e-mail or messages using specially-designed store-and-forward communications modems and software, to a secure web server or EHR, either via phone lines or high-speed internet connection (including DSL, ADSL, cable, fiber-optic or cellular modems). The consulting provider then reviews the stored data and makes diagnosis, treatment, and planning recommendations.⁹

2.4.1.1.2 Real-Time Interactive Systems (Synchronous):

Real-time telehealth sessions are live and interactive, and frequently use videoconferencing technologies. Often, special instruments such as a video otoscope (to examine the ear) or an electronic stethoscope are operated by a nurse or technician at the consulting provider's direction to remotely perform a physical examination.⁹ Or, real-time communication may be a patient and a nurse practitioner consulting with a specialist via a live audio/video link, or a physician and a patient in an exam room communicating through an interpreter who is connected by phone or webcam.

2.4.1.2 Remote Patient Monitoring

Remote patient monitoring (RPM) is a type of home telehealth that enables patient monitoring as well as transfer of patient health data to a health care provider. To capture data, these technologies use a variety of wired or wireless peripheral measurement devices such as blood pressure cuffs, scales, and pulse oximetry, and they are most often used after a hospital discharge or between routine office visits. Some technologies also permit video interaction/chat between the patient and health care professional in real-time. These systems can prompt users to enter answers to targeted questions, and then use this information for data interpretation, provision of educational materials, as well as instructions such as scheduling an office visit or going to the nearest emergency room. Similarly, these systems can transmit user-entered data, store the data in secure records systems accessible to clinicians, flag abnormal readings or responses, and alert clinicians to abnormalities via e-mail or text messages. In response to these alerts, clinicians can log into the system, review data, follow up with patients, or take other appropriate actions. Some systems have the capacity to connect patients with additional resources such as PHR or EMR, targeted educational materials, interactive self-care tools, medication optimization technologies, and health care providers.¹⁰ Although applications of RPM technologies are often used in the home setting, these technologies have been pilot-tested in congregate settings such as community-based senior centers.¹¹

2.4.1.3 Telemedicine

Formally defined, telemedicine is the “use of medical information exchanged from one site to

another via electronic communications to improve a patient’s clinical health status.” Two-way video, email, smartphones, and wireless tools are examples of a growing variety of telemedicine applications and services.¹² While the terms “telehealth” and “telemedicine” are often used interchangeably, telemedicine can be more narrowly defined to mean the delivery of remote clinical services using technology. Examples of telemedicine include a physician’s review of a patient’s digital images (i.e. x-rays, CT scans, MRI) via a computer, a physician consult done via a web conference, or telepharmacy whereby pharmacy technicians can prepare prescriptions under the supervision of a qualified pharmacist remotely.

2.4.2 Telecare/Telemonitoring/Behavioral Monitoring capabilities

Telecare/telemonitoring/behavioral monitoring capabilities technologies include sensors to monitor functional abilities, activities of daily living, behaviors, sleep patterns etc.

2.5 Clinical Decision Support Systems

Clinical decision support (CDS) systems provide clinicians, staff, patients or other individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care. CDS encompasses a variety of tools to enhance decision-making in the clinical workflow. These tools include computerized alerts and reminders to care providers and patients; clinical guidelines; condition-specific order sets; focused patient data reports and summaries; documentation templates; diagnostic support, and contextually relevant reference information, among other tools.¹³ CDS systems offer sophisti-

cated functions that provide decision support to as a functionality of broader HIT systems including EMRs, EHRs, health information exchange (HIE), and telehealth.

2.6 Social Connectedness Technologies

Social connectedness technologies include special phones (amplified, large-button, and memory phones) and easy to use/simplified cell phones, which may offer, in addition to basic communication functionality, different communication modalities such as video reminders and multimedia messaging to keep seniors connected with family and friends. Senior-friendly social networking websites, easy to use email systems, e-mail-to-paper communications systems, easy to use video phones and video conferencing systems also fall into this category. Some of the computer-based cognitive and/or physical stimulation technologies may also provide an opportunity to connect with peers particularly in congregate living settings.

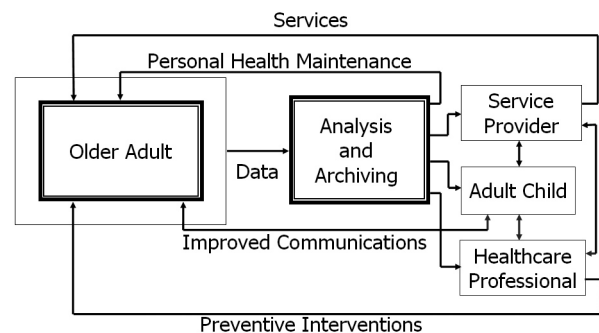
3 VISION OF TECHNOLOGY-ENABLED CARE AND CONTINUUM OF MONITORING

3.1 Vision for Technology-Enabled Care

The use of information technologies in the care environment is perceived by care professionals to have added value on the levels of administration, integration of services, care quality, and professionalism.¹⁴ It can be argued that a new paradigm for technology-enabled geriatric care can emerge with more integrative technologies. For example, the activities and selected physiological parameters

of an older adult can be monitored in his or her own living setting through sensors embedded in the environment or other objects, wearable monitoring technologies, telehealth devices, and other technologies. The environment is the place the older adult calls home and it may be the person's house or apartment in the community, or a residence provided by an aging services provider—a continuing care retirement community, an independent living apartment, assisted living or even a skilled nursing facility. Safety, activity, physiological, health and socialization data can be analyzed, archived and mined to detect indicators of early disease onset, deterioration or improvement in health conditions at various levels. The care delivery diagram in *Figure 1* illustrates the process.

Figure 1. Model for the Technology-Enabled Geriatric Care Paradigm.



Data analysis results, at various levels, can be made available to all stakeholders in the care process, including the monitored older adults, their professional caregivers, informal caregivers and primary health care providers, and integrated into an EMR or PHR accessible to authorized caregivers whenever they need them.

The monitored individual can use the analysis results in personal wellness and health maintenance

(e.g., diet, exercise), or self-management of chronic conditions (e.g., biometric readings, medication management). Informal caregivers will get objective assessment of their loved one's ability to remain independent and peace of mind when everything is fine. This reassurance will eliminate interrogation, questioning and role reversal between the older adult and their adult children and would increase the social content of their communications. This will improve the quality of life for both parties, as well as reduce unnecessary early institutionalization of older adults driven by the anxiety of their children.

When the older adult needs assistance in some of his or her activities of daily living (ADLs)ⁱ or instrumental activities of daily living (IADLs)ⁱⁱ, professional caregivers accessing the reports will have an objective assessment of their actual needs and can determine the appropriate care package. They can coordinate, dispatch and track the delivery of care and services to the monitored older adults via home care agencies (e.g., Meals on Wheels, bathing) if they live in the community, or on-site direct care workers if they live in a continuum of care facility.

Primary health care providers can perform an educated evaluation of the monitored older adult's health that is more objective based on trending health data, and more comprehensive than the

ⁱ ADLs (Activities of Daily Living) include the ability to move from one place to another, eat, bathe, toilet, and dress in addition to the ability to control the bladder and bowels (Katz S, Ford AB, Moskowitz RW. Studies of illness in the aged. The index of A.D.L., a standardized measure of biological and psychological function. *JAMA*; 185:914-919).

ⁱⁱ IADLs (Instrumental Activities of Daily Living) include the ability to use transportation, shop for necessities, prepare meals, and perform house work (Fillenbaum GG. Screening the elderly: A brief instrumental activities of daily living measure. *Journal of American Geriatric Society*. 33:698-706).

“snapshot” assessment obtained during an annual physical examination. They may be able to detect the early onset of disease and prescribe appropriate interventions (including preventive interventions), and can monitor the efficacy of these interventions objectively and longitudinally.

Finally, access to the analysis of the same objective data by all authorized stakeholders is expected to improve the communication between them, including the monitored individual (e.g., the aging services provider and the adult child, when deciding on the most appropriate care package for the older adult) and enhance coordination.

This paradigm exploits the technical capabilities of embedded sensing, ambient intelligenceⁱⁱⁱ, interoperability^{iv} and interconnectivity between different devices in the home, as well as other information and communication technologies, in automating continuous assessment, documentation and communication. It enables a network of professional and informal caregivers to coordinate and deliver high-touch care when needed. The paradigm is expected to prolong and enhance the independence of seniors, delay their transition to nursing facilities and thereby reduce the overall cost of care.¹⁵

Table 1 summarizes the technical capabilities of the technology and the resulting value utility of this paradigm for seniors, caregivers in their network and payers.

ⁱⁱⁱ A vision of the future where we are surrounded by electronic environments that are sensitive and responsive to people.

^{iv} The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

Table 1. Technical capabilities and potential value for the technology-enabled care paradigm for seniors and caregivers in their network

Seniors	Informal Caregivers	Professional Caregivers		Payers
		Service Providers	Health Care Professionals	
Capability				
Objective, up-to-date assessment of health, functional abilities, and care needs	Objective, up-to-date assessment of health, functional abilities, and care needs of their loved ones	Objective, up-to-date assessment of health, functional abilities, and care needs of seniors	Objective, up-to-date assessment of health, functional abilities, and care needs of seniors	Objective, up-to-date assessment of health, functional abilities, and care needs of seniors
Values				
Health self-management	Opportunity to participate in the management of the health and care needs of their loved ones	Identification of services needed	Chronic disease management	Enhanced quality of care
Sense of security	Peace of mind	Coordination of services	Detection of early disease onset	Reduced care costs
Prolonged/enhanced independence	Reduced care burdens and strains	Dispatching appropriate timely services as needed	Early and preventive interventions	Improved customer satisfaction
Improved quality of life	Improved quality of life	Improved caregiver efficiency	Monitoring efficacy of interventions	
		Reduced caregiver workloads	Improved efficiency	
		Improved customer satisfaction	Potential revenue opportunities	
		Revenue opportunity	Improved customer satisfaction	

3.2 Continuum of Monitoring Technologies and their Value

The continuum of technologies that enable this vision of care includes safety monitoring, as well as health and wellness monitoring technologies. The latter covers telehealth, biometric RPM, medication management/monitoring, and telecare/telemonitoring/behavioral monitoring.

3.2.1 Safety Monitoring Technologies

Safety monitoring technologies provide an enhanced sense of security, prolonged independence, improved quality of life and have the potential for improved health outcomes for seniors. They provide peace of mind and reduce the strains of informal/family caregivers. These technologies also have the potential to improve the quality of care and reduce liability for care providers.

Finally, safety technologies have the potential to improve care quality and reduce health care costs for payers and society in general.

3.2.2 Health and Wellness Monitoring Technologies

Health and wellness technologies include health monitoring and promotion technologies, behavioral and health status monitoring systems, telehealth, RPM and telemedicine systems, and medication management technologies, which focus on the physical health and wellness of seniors, among others.

The anticipated value propositions these technologies offer may include better health outcomes for seniors and reduced health care bills for payers. These technologies may provide coordination of care, reduced professional caregiver workloads, in-

creased caregiver efficiency, longitudinal data, peace of mind for informal/family caregivers and reduced informal caregiver burdens and strains.

3.2.3 Scope and Focus

This CAST whitepaper focuses on telehealth and biometric RPM only and does not cover safety monitoring, telecare/telemonitoring of activities/behavioral telemonitoring, or medication management/monitoring. CAST recognizes the importance of all these technologies and acknowledges that the lines separating these categories of technology are sometimes blurred because some telehealth and RPM technology platforms may integrate with, or offer applications/functionalities, for safety, behavioral monitoring or medication management. CAST will consider dedicating whitepapers, selection matrices and online selection tools to these other categories of technology based on providers' interest and demand for such tools. However, the selection matrix of telehealth and RPM products will include information about these products' ability to interface to or integrate with safety monitoring, telecare and medication monitoring technologies, as well as EHRs. Finally, the whitepaper and Telehealth and RPM Selection Matrix will be followed with an online Selection Tool that facilitates and expedites the process of narrowing down potential solutions and identifying vendors to invite to participate in a Request for Proposal (RFP), as well as a set of provider case studies delineating the benefits they experienced and the lessons learned during the implementation of telehealth and RPM solutions.

This whitepaper and the companion Telehealth and RPM Selection Matrix, online Selection Tool and case studies, represent a continuation of CAST's

efforts to produce hands-on tools that help LTPAC providers adopt appropriate aging services technologies that enable them to deliver innovative care delivery models, position them well for strategic partnerships and the future. Telehealth and RPM technologies were the second enabling technology identified in the CAST Strategic Scenario Planning exercise (please see: [A Look into the Future: Evaluating Business Models for Technology-Enabled Long-Term Services and Supports](#)).

4 POTENTIAL USES OF TELEHEALTH AND RPM

4.1 Patient Education and Self-Management

Telehealth and RPM can be used as a tool to not only reinforce disease specific education but also help to instill some of the concepts required for self-management, like the importance of taking medications regularly as prescribed and implications of lifestyle choices, such as smoking, diet and exercise, on the individual's vital signs and condition in general. The variety of educational materials and delivery options available differ with telehealth solutions. All patient education should consist of evidence-based care materials, recommended self-management best practices, and incorporate chronic care management principles to assist in providing consistent disease- or condition-specific education that promotes health, wellness, independence and safety in the home.

In addition, self-management helps individuals with chronic conditions recognize symptoms of exacerbation of their condition and identify what to report to a provider/clinician, and when to report

to it, so that they can make the appropriate interventions in a timely manner. With regular use of telehealth and RPM solutions and the use of data, benchmarks can be established, and individuals can trend and track their readings themselves, noting when they are outside acceptable ranges.

When evaluating technology it is important to keep in mind that what helps people learn most effectively differs from one person to another. Some technologies offer visual, audible and video education to help support different learning needs and abilities.

4.2 Pre- and Post-Acute Management of Chronic Conditions

Telehealth and RPM can provide a means for clinicians to collect vital signs and other data to follow patients between formal interactions with the health care system (physician office and hospital visits). This regular tracking of vitals and daily disease condition monitoring provides clinicians with an opportunity to perform early intervention, such as medication titration, that aim to improve chronic disease management by attending to exacerbations, avoiding the worsening of the condition and preventing the disease from progressing, thereby reducing unnecessary emergency department visits, hospitalizations and associated costs. Similarly, telehealth and RPM can be effective in stabilizing, following and managing individuals with chronic conditions after an acute episode, e.g., emergency department, hospital or physician visit, and can help shorten hospital stays. Telehealth and RPM can be used after hospital discharge to reinforce the discharge plan instructions with daily monitoring, and provide individuals and their clinicians with opportunities to take steps to prevent a second exacerbation and avoid unnecessary hospital readmissions.

4.3 Post-Acute Patient Stabilization

To help with post-acute patient stabilization, telehealth and RPM is used for daily monitoring of disease conditions to detect exacerbation. In theory, telehealth and RPM can keep eyes and ears on patients every day to track conditions; this can be done through biometric data, specific check-in data, and environmental sensors (if/when available).

Telehealth and RPM allow for recognition of key indicators that put the individual at risk for readmission, including medication non-adherence, and provides a means for communication with and between multiple care providers (e.g., primary care physician, hospitalist, home and community-based care provider) for follow-up. Care providers can also use telehealth and RPM to provide reminders for treatment and coordinate care with other providers who may provide supportive services to the individual.

Telehealth and RPM have a much larger penetration in post-acute care as compared to ambulatory care patients as the majority of patients are only considered for home monitoring following hospital discharge to prevent readmission. In the U.S., for example, 140,000 post-acute patients were estimated to have been monitored by telehealth in 2012, as compared to 80,000 ambulatory patients.¹⁶

4.4 Long-Distance Routine Check-Ups/Treatment

Telemedicine, telehealth and RPM improve access to health care and benefits individuals who live in rural areas, are home-bound or have obstacles to accessing traditional delivery of health services to

receive routine check-ups and treatment services remotely.¹⁷

In addition to improved access, telemedicine, telehealth and RPM offer potential cost reductions for patients, as well as health care professionals (e.g., mileage for home health nurses) because of the ability to target visits as needed; this is especially helpful in rural areas, for home bound patients, or those who don't have easy access to transportation.

4.5 Specific Teleconsult

The standard face-to-face method for the delivery of medical care is the preferred means of evaluation and treatment for most health care professionals. Nevertheless, there are times when this type of interaction may not be necessary or possible. In these circumstances, "remote consultation" has served as an alternative in recent years.

For the scope of this discussion, the use of the term remote consultation will refer to all methods (not restricted to the use of the Internet, but also to include traditional technologies of information transfer such as mail or facsimile) where:

1. There is an exchange of medical information.
2. A formal report is issued.
3. A fee is charged for the consultative service.

There are several reasons that a remote consultation may be requested. It may be initiated by the patient (or patient's family), a clinician in an LTPAC setting, a primary care doctor seeking another opinion for their patient, or by a specialist requesting additional expert assistance. In these select instances, the use of remote consultation is a "win-win-win-

win” concept for the patient, their primary doctor, the specialist, and the remote consultant. In the setting in which a treating physician is willing to take responsibility to assist in the process, appropriate reasons for remote consultation could include:

- The patient lives in a remote region where travel would be difficult.
- The patient is hospitalized, institutionalized or otherwise too ill to travel.
- The history and examination are well-established: there is simply a need for more diagnostic or therapeutic suggestions.
- The diagnosis is known and specific treatment options are requested.

The use of telemedicine technologies like imaging devices for example, can increase the efficacy of the consult. In addition, it can save lives in critical care and emergency situations allowing clinicians to consult with specialists and more experienced care teams that they would not have access to otherwise.¹⁸

5 BENEFITS OF TELEHEALTH AND RPM

Improved health outcomes, reduced hospitalizations and readmissions, better quality of life, and reduced costs for both the payer and care provider are all potential benefits of telehealth and RPM. A review of the research conducted thus far, including several meta-analyses on telehealth and RPM show that its direct benefit may be greatest on chronic disease management. These types of conditions including diabetes, heart disease, chronic obstructive

pulmonary disease (COPD), asthma and hypertension involve frequent monitoring, coordination among care providers and effective and sustained self-care, all of which can be addressed using telehealth and RPM technologies. Chronic disease is also quite prevalent and very costly in the United States, especially among older adults; they are the primary cause of death in 7 out of 10 deaths and, in 2009, cost an estimated \$262 billion in direct health care expenditures. Nearly 92% of older adults have at least one chronic condition, and 77% have at least two.¹⁹

5.1 Health Outcomes/Improved Management

Effectively managing weight, blood pressure, and cholesterol is critical for individuals with diabetes, hypertension and heart disease. Telehealth and RPM can play an important role in assisting patients and care providers in monitoring and tracking these types of vital signs. In fact, several studies have demonstrated that, compared to usual care, diabetic patients receiving RPM and telehealth had greater improvements in glucose control, blood pressure, and cholesterol.^{20, 21} A review of studies on the effectiveness of blood pressure monitoring among patients with hypertension found that a majority of the studies showed improvement in both systolic and diastolic blood pressures.²²

5.2 Reduction in Hospitalizations and Hospital Readmissions

Perhaps some of the most promising research conducted thus far has focused on the benefits of telehealth and RPM in reducing hospitalizations and

hospital readmissions, especially among patients with heart disease and COPD. For example, one meta-analysis of telehealth studies conducted in 2011 found that, compared to standard care, those patients with heart failure receiving telehealth had a 42% reduction in hospitalizations.²³ Another study that focused on the impact of telehealth on hospital readmissions found there was a 60% reduction in hospital readmissions using RPM compared with standard care, and a 50% reduction compared with other disease management programs that did not use RPM. This study concluded that RPM has the potential to prevent between 460,000 and 627,000 heart failure-related hospital readmissions each year.²⁴

The Department of Veterans Affairs (VA) has made a strong commitment to telehealth among its large cohort of veterans by developing a national program called the Care Coordination/Home Telehealth (CCHT) program. The purpose of CCHT is “to coordinate the care of veteran patients with chronic conditions and avoid the unnecessary admission to long-term institutional care.” To that end, the VA has broadly deployed a range of RPM technologies in 50 different health management programs across 18 Veterans Integrated Service Networks and conducted various studies showing improved chronic disease management, cost savings, and reduced hospital admissions and emergency department (ED) visits. Findings from comparative studies conducted on 17,025 patients enrolled in the VA CCHT program in 2006 and 2007 show a 25% reduction in bed days of care, 20% reduction in numbers of admissions, and a mean satisfaction score rating of 86%.²⁵

In addition, two studies focusing on the impact of telehealth and RPM on COPD found promising

results. The first study looked at patients with moderate to severe COPD and found that, compared to usual care, case managers’ use of RPM for daily symptom surveillance resulted in a significant decrease in hospital readmission rates as well as a tendency toward fewer hospital days and outpatient visits.²⁶ The second study was a retrospective cohort study using the Veterans Health Administration database of COPD patients enrolled in the CCHT program. Results indicated that 71.5% of the CCHT patients had a reduction in the number of ED visits and exacerbations related to COPD requiring hospitalizations after enrollment in the program.²⁷

5.3 Patient Self-Efficacy, Quality of Life and Satisfaction

The use of educational materials and the delivery of disease-specific self-management tips at the appropriate times through telehealth and RPM, can increase the patient’s knowledge, engagement and self-efficacy. In one study, LaFramboise randomized 103 patients with heart failure to receive (a) a telehealth intervention that included RPM, clinician assessment, and feedback with advice or encouragement; (b) the telehealth intervention plus home care; (c) home care alone; or (d) telephone care. Patients using the telehealth intervention had increased self-efficacy, while all groups had equal improvement in health related quality of life, the 6-minute walk test, and depression scores.²⁸ In addition, telehealth and RPM has the potential to positively impact the patient’s quality of life. A review of home telehealth found that, compared to conventional home care or usual care, home telehealth improved access to care, patients’ medical conditions, and quality of life.²⁹

Finally, active and timely response on the part of health care professionals are important and an expected component of the telehealth intervention. Such active/proactive interventions and timely responses, in turn, lead to higher patient satisfaction rates. For example, one study reported that rapid electronic messaging turnaround and replies by physicians increased patient satisfaction (the average turnaround time was 48 hours in this study).³⁰ In fact, the VA's telehealth program demonstrated a high, 86%, patient satisfaction score.²⁵

5.4 Physician Engagement Key to Success

Engaging physicians and health care providers as partners in care beyond the formal interactions with the health care system (office and hospital visits) is vital to improving health outcomes for patients. Telehealth and RPM technology can play a significant role in increasing such engagement, and consequently, the patient's and family's satisfaction with care. However, telehealth and RPM may not deliver the anticipated benefits unless physicians and health care providers are involved. In fact, the most important and consistent finding of a review of 74 studies that reported the effect of interactive consumer health IT on health outcomes or health care process measures, was that systems were effective when they provided a complete feedback loop. The review revealed that such a feedback loop included (a) monitoring and transmission of patient status; (b) interpretation of this data by comparison with previously established individual treatment goals or published guidelines; (c) adjustment of medications, diet, or information according to patient status; (d) timely communication back to the patient with tailored recommendations or

advice; and (e) repetition of this cycle at appropriate intervals. These "complete loop" interventions were effective across a wide range of medical conditions, monitoring and communication technologies, geographical areas, and patients' socioeconomic status.³¹

Financial incentives for physicians to review data and engage in telehealth interventions may be key to delivering the expected benefits of telehealth and RPM.¹¹ As discussed above, physician's responsiveness and proactive interventions can lead to higher patient satisfaction, and tying physicians' financial incentives to patient satisfaction through the Consumer Assessment of Healthcare Providers and Systems (CAHPS)³² and similar measures is one way to ensure physician engagement. The ability of group practice physicians to negotiate with hospitals and insurance companies are becoming intimately tied with CAHPS outcomes. Initial studies seem to suggest that physicians who spend more time with their patients and are able to effectively communicate and answer all patient questions tend to have better CAHPS scores.³³ There may be an opportunity to study how certain technologies can affect physicians' and health care providers' CAHPS outcomes.

Additionally, the accountable, person-centered, and quality-driven managed care era is driving health care providers to focus more on patient outcomes and satisfaction. Physician-led Accountable Care Organizations (ACOs) tend to focus their cost-saving efforts on keeping patients out of the hospital as much as possible. Conversely, hospital-led ACOs often attempt to reduce the costs involved with hospitalizations and hospital readmissions. In both scenarios, telehealth and RPM can play a role in the ACO model. CAHPS is one of the quality measures

that will be used to evaluate the performance of the Centers for Medicare & Medicaid Services (CMS) Shared Savings ACO program.³⁴

5.5 Caregivers' Workload and Efficiencies

Increasing access to health care through telehealth and RPM, especially to patients living in rural areas, has the potential to reduce health care costs and improve efficiencies in a variety of ways including decreasing the number of nurse home care visits, reducing the number of patient transports to hospitals and physician offices, and increasing access to specialists such as wound care experts or pulmonologists. One study, for example, found that a telehealth intervention utilized by a home health agency reduced the number of home visits by nurses from 8.2 to 5.8 per month.³⁵ Another study found that one out of every four in-person visits can be avoided with telehealth store-and-forward technology. And, one out of every two clinic visits can be avoided with real-time consults.³⁶ Finally, a recent study published in *Health Affairs* found that telehealth and RPM can increase care provider's productivity by decreasing home visit travel time and utilizing automated documentation systems.³⁷

Efficiencies can also be found in reducing patient transportation costs and increasing access to specialists via telehealth technologies. Remote visits to patients in skilled nursing facilities for wound care, for example, can result in avoided transportation costs. In a review of 53 geriatric applications of telehealth, Jennett and colleagues found that telephone consultations to geriatric patients and video consultations related to chronic wounds can be cost-saving because they reduce the use of nurs-

ing home services, and limit the need for patients to be transported.³⁸ Another study by researchers at the University of Virginia Health System found that telehealth interventions in a long-term care community setting replaced patient transport to a local wound care clinic.³⁹ Furthermore, some research indicates there may also be a decreased need or desire to travel outside the local community for health care services in communities where telehealth services are offered.⁴⁰

Operational efficiency is another important consideration. Many telehealth and RPM solutions operate at very low levels of efficiency because of time consuming set-up and inefficient software solutions. A low level of efficiency is very difficult and costly to scale to large populations. Staffing is often times one of the greatest expenses to an organization and ensuring that the telehealth and RPM solution maximizes operational efficiency while maintaining efficacy is a key area to consider.

5.6 Reduced Risk and Liability

Telehealth and RPM, as well as other monitoring technologies, provide a means for detecting arising health issues that would go undetected without the technology. Hence, they have the potential to reduce risks and providers' liability as they generate documentation of events, signs, symptoms and interventions. This is especially true when the use of these technologies is coupled with policies and procedures about response protocols and responsibilities, clear delineations of responsibilities in contractual and service agreements, and documentation of interventions/actions taken, by whom and when.⁴¹

6 POTENTIAL LTPAC PROVIDER BUSINESS MODELS

6.1 Medicare Coverage

Under its fee-for-service model, Medicare pays a distant practitioner for a limited number of Part B services that are furnished by a physician or practitioner to an eligible beneficiary via a telecommunications system. For eligible telehealth services, the use of a telecommunications system substitutes for an in-person encounter. An originating site is the location of an eligible Medicare beneficiary (patient) at the time the service being furnished via a telecommunications system occurs. Medicare beneficiaries are eligible for telehealth services only if they are presented from an originating site located in a rural Health Professional Shortage Area or in a county outside of a Metropolitan Statistical Area. Entities that participate in a Federal telemedicine demonstration project approved by (or receiving funding from) the Secretary of the Department of Health and Human Services as of December 31, 2000, qualify as originating sites regardless of geographic location.

The originating sites authorized by law are all medical facilities; these sites include: offices of physicians or practitioners; hospitals; Critical Access Hospitals (CAH); Rural Health Clinics (RHC); Federally Qualified Health Centers (FQHC); hospital-based or CAH-based Renal Dialysis Centers (including satellites)^v; skilled nursing facilities (SNF); and Community Mental Health Centers (CMHC). The patient's home is not an eligible originating site.

Distant sites from which practitioners furnish telehealth services are not subject to restrictions

^v Note: Independent Renal Dialysis Facilities are not eligible originating sites.

related to the location or geographic areas. Practitioners at the distant site who may furnish and receive payment for covered telehealth services (subject to state law, including inter-state licensure laws) are: physicians; nurse practitioners (NP); physician assistants (PA); nurse midwives; clinical nurse specialists (CNS); clinical psychologists (CP) and clinical social workers (CSW)^{vi}; and registered dietitians or nutrition professionals.

As a condition of payment, an interactive audio and video telecommunications system that permits real-time communication between the physician or practitioner at the distant site and the beneficiary, at the originating site, must be used. Asynchronous store-and-forward technology is permitted only in federal telemedicine demonstration programs conducted in Alaska or Hawaii.⁴² For a list of Medicare telehealth services, please see the following fact sheet: <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLN-Products/downloads/telehealthsrvcfsctst.pdf>.

It is important to note that when telehealth is used with patients in nursing homes, one of the eligible originating sites, the payment goes to the distant physician, clinician or practitioner.

6.1.1 Medicare Reimbursement of Home Telehealth

Section 1895(e) of the Social Security Act⁴³ states that telehealth services are outside the scope of the Medicare home health benefit and home health Prospective Payment System (PPS). This provision

^{vi} CPs and CSWs cannot bill for psychiatric diagnostic interview examinations with medical services or medical evaluation and management services under Medicare. These practitioners may not bill or receive payment for Current Procedural Terminology (CPT) codes 90792, 90833, 90836, and 90838.

does not provide coverage or payment for Medicare home health services provided via a telecommunications system (i.e. home telehealth, or RPM are not covered under PPS). The law does not permit the substitution or use of a telecommunications system to provide any covered home health services paid under the home health PPS, or any covered home health service paid outside of the home health PPS. As stated in 42 CFR 409.48(c), a visit is an episode of personal contact with the beneficiary by staff of the home health agency (HHA), or others under arrangements with the HHA for the purposes of providing a covered service.⁴⁴

However, this provision clarifies that there is nothing to preclude a home health agency from adopting telemedicine or other technologies they believe promote efficiencies, but those technologies will not be specifically recognized or reimbursed by Medicare under the home health benefit. This provision does not waive the current statutory requirement for a physician certification of a home health plan of care under current §§1814(a)(2)(C) or 1835(a)(2)(A) of the Act.⁴⁵ Within its home health agency manual, CMS states that “an HHA may adopt telehealth technologies that it believes promote efficiencies or improve quality of care. Telehomecare encounters do not meet the definition of a visit set forth in regulations at 42 CFR 409.48(c) and the telehealth services may not be counted as Medicare covered home health visits or used as qualifying services for home health eligibility. An HHA may not substitute telehealth services for Medicare covered services ordered by a physician. However, if an HHA has telehealth services available to its clients, a doctor may take their availability into account when he or she prepares a plan of treatment (i.e. may write requirements for telehealth services into the POT). Medicare eligibility and payment would

be determined based on the patient’s characteristics and the need for and receipt of the Medicare covered services ordered by the physician. If a physician intends that telehealth services be furnished while a patient is under a home health plan of care, the services should be recorded in the plan of care along with the Medicare covered home health services to be furnished.”⁴⁶

6.2 Medicaid Coverage

Medicaid and the Children’s Health Insurance Program (CHIP) provide health coverage to nearly 60 million Americans, including children, pregnant women, parents, seniors and individuals with disabilities. In order to participate in Medicaid, federal law requires states to cover certain population groups (mandatory eligibility groups) and gives them the flexibility to cover other population groups (optional eligibility groups). States set individual eligibility criteria within federal minimum standards. Medicaid coverage is based on financial and other non-financial eligibility criteria that are used in determining Medicaid eligibility. In order to be eligible for Medicaid, individuals need to satisfy federal and state requirements regarding residency, immigration status, and documentation of U.S. citizenship; these criteria vary by state.⁴⁷

The Center for Telehealth and e-Health Law (CTeL) completed a 50 state survey which reviewed each state’s telehealth reimbursement policies. CTeL’s research found that 45 states have some type of reimbursement for services provided via telehealth. There are many factors that states use to determine the scope of coverage for telehealth applications, such as the quality of equipment, type of services to be provided, and location of providers

(e.g., remote rural sites).

CMS requires that reimbursement for Medicaid-covered services, including those with telehealth applications, must also satisfy federal requirements of efficiency, economy, and quality of care. With this in mind, states are encouraged to use the flexibility inherent in federal law to create innovative payment methodologies for services that incorporate telehealth technology.

For example, states covering medical services utilizing telehealth may reimburse both the provider at the distant site from which the services are provided for the consultation as well as the provider at the originating site where the patient received the telehealth services for the office visit. States also have the flexibility to reimburse any additional cost (i.e. technical support, line-charges, depreciation on equipment, etc.) associated with the delivery of a covered service by electronic means as long as the payment is consistent with the requirements of efficiency, economy, and quality of care. These add-on costs can be incorporated into the fee-for-service rates or separately reimbursed as an administrative cost by the state. If they are separately billed and reimbursed, the costs must be linked to a covered Medicaid service.⁴⁸ For specific information about Medicaid coverage of telehealth in each state, please see: <http://ctel.org/expertise/reimbursement/medicaid-reimbursement/>.

6.3 Private Health Insurance Coverage

There is no single widely-accepted standard for private insurance coverage of telehealth services. Some insurance companies value the benefits of telehealth and will reimburse a wide variety of services. Others have yet to develop comprehensive reim-

bursement policies, so payment for telehealth may require prior approval. Likewise, different states have various standards by which their Medicaid programs will reimburse for telehealth expenses. As with Medicaid, regulations for telehealth reimbursement by private insurers are set by the states.⁴⁹ Nineteen states have enacted parity laws requiring that services provided via telehealth must be reimbursed if the same service would be reimbursed when provided in person. These states include: Arizona, California, Colorado, Georgia, Hawaii, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, New Hampshire, Oklahoma, Oregon, Texas, Vermont and Virginia.⁵⁰

Some insurance programs cover specific telehealth services, e.g., behavioral health. Even in the absence of a definitive policy, some insurers and Medicaid agencies will reimburse for telehealth services as long as the rationale for using telehealth is justified to the agency's satisfaction. State waivers or special programs offering remote diagnostics, remote monitoring for specific disease entities or for particular populations, allow for additional coverage of telehealth services. A few states simply pay claims regardless of whether the encounter was in person or via telehealth. The introduction of managed care, within Medicaid and the private sector, has complicated telehealth reimbursement policies since a number of state programs acknowledge using telehealth within managed care but do not keep specific telehealth utilization data. In many cases, state Medicaid managed care and fee-for-service are separate programs with separate guidelines.

6.4 Medicaid Waiver Coverage

Medicaid waivers are vehicles states can use to test new or existing ways to deliver and pay for health care services in Medicaid and CHIP. There are four primary types of waivers and demonstration projects:

- Section 1115 Research & Demonstration Projects: States can apply for program flexibility to test new or existing approaches to financing and delivering Medicaid and CHIP.
- Section 1915(b) Managed Care Waivers: States can apply for waivers to provide services through managed care delivery systems or otherwise limit people's choice of providers.
- Section 1915(c) Home and Community-Based Services Waivers: States can apply for waivers to provide long-term care services in home and community settings rather than institutional settings.
- Concurrent Section 1915(b) and 1915(c) Waivers: States can apply to simultaneously implement two types of waivers to provide a continuum of services to the elderly and people with disabilities, as long as all federal requirements for both programs are met.⁵¹

According to a CAST Analysis of Medicaid Waiver Programs, seven states, including Kansas, New York, Pennsylvania, South Carolina, South Dakota and Texas reimburses for home telehealth under sections 1915(b) and/or 1915(c). The analysis showed that Pennsylvania has the most comprehensive coverage for aging services technologies in its telecare program, which includes home telehealth, activity/wellness monitoring, medication dispens-

ing and personal emergency response systems (PERS). New York, South Carolina, and South Dakota also have exemplary telehealth and RPM reimbursement programs.⁵² Rates and requirements vary. For more details about the coverage of telehealth and other aging services technology services in these states, please see: http://www.leadingage.org/uploadedFiles/Content/About/CAST/CAST_State_Paymen_%20Analysis.pdf.

6.5 Potential Affordable Care Act (ACA) Related Opportunities

The Affordable Care Act (ACA) is shifting the health care system in the U.S. away from the traditional fee-for-services to a pay-for-performance system. Moreover, CMS is moving to reimburse Medicare Certified Home Health based on a value-based purchasing model instead of a Prospective Payment Model. This is starting to eliminate the misalignment of incentives inherent in traditional Medicare, Medicaid and private insurance programs. There are many provisions and models in the ACA that would benefit from, provide opportunities to cover, and consequently encourage the adoption of telehealth and RPM technologies and services.⁵³ The act created the Center for Medicare and Medicaid Innovations (CMMI), which is tasked with exploring new care delivery and payment models and initiatives⁵⁴ that:

- Use more holistic, patient-centered and team-based approaches to chronic disease management and transitional care.
- Improve communication and care coordination between/among care providers.

- Improve care quality and population health while reducing growth in expenditures.

The act puts explicit emphasis on the use of health information technology (HIT), including telehealth and RPM, in Health Homes for Enrollees with Chronic Conditions, the Independence at Home Demonstration and the Use of Technology in New State Options for Long-Term Services and Supports.⁵⁵

These initiatives include:

- Hospital Readmission Reduction Program (HRRP)⁵⁶
- ACOs⁵⁷
- Bundling of Payments models, of which the following two are relevant to LTPAC providers:
 - Retrospective Acute Hospital Stay plus Post-Acute Services⁵⁸
 - Retrospective Post-Acute Care Only⁵⁹

LTPAC providers bring a significant value for hospitals, physician groups, payers and ACO partners, by providing the following services:

- Rehabilitation and skilled nursing facilities provide post-discharge/post-acute patient rehabilitation.
- Skilled nursing facilities, assisted living facilities, continuing care retirement communities, housing with services, and home health agencies provide post-acute patient stabilization and sub-acute chronic disease management.

- LTPAC provides holistic person-centered care, including support services.
- LTPAC offers lower cost care settings than hospitals.

These new care delivery and payment models will provide LTPAC providers utilizing technologies, like telehealth and RPM technologies, with opportunities to derive revenue sources from strategic partners. The following whitepaper offers some key questions LTPAC providers should discuss with their acute care partners: http://www.leadingage.org/uploadedFiles/Content/About/CAST/Re-sources/The_importance_of_home_and_community_March_2013.pdf.

6.6 Private Pay

Another payment source for telehealth and RPM services may be private payers or out of pocket. As mentioned above, home health services under the prospective payment system may use telehealth to enhance the efficiency and effectiveness of home visits during the 30-60 days of post-acute services. When the Medicare coverage period expires, these agencies usually offer an extension of telehealth and RPM services, with home visits as needed, to clients if they would benefit from such a program as private duty services covered out of the patient's or family's pocket.

6.7 Standard of Care and Other Payment Sources

LTPAC and community health providers, special population agencies, self-pay and self-insured organizations and others, especially not-for-profits, may offer/cover an array of telehealth and RPM services.

These services may be covered by grants, or offered as standard of care with the cost absorbed by the organization and covered from different revenue sources, including charitable contributions.

6.8 Return on Investment (ROI) of Telehealth and RPM

Return on investment (ROI) represents the ratio of the net gains relative to the initial investment over a certain period of time. Subsequently, ROI can be expressed in the following equation:

$$ROI = \text{Net Gains} / \text{Investment}$$

As discussed above, telehealth and RPM delivers various benefits, including potential financial savings to different stakeholders, including patients and/or their families, payers, care providers, etc.

However, the financial savings and ROI, depend on a number of factors including the care delivery model, the payment/reimbursement model, the technology, and of course costs. The first and most important step in calculating ROI is to consider the different stakeholders, identify the investors, and calculate the gains and savings netted/accrued to each investing stakeholder under each particular care delivery and payment model. When calculating ROI, one should only include the gains that accrued to that particular stakeholder minus all expenses, relative to that stakeholder's own investment/cost. Often the reduction of hospital days is erroneously included in the providers' ROI, which is not true under the traditional fee-for-service reimbursement model and can be misleading; such a reduction usually accrues to the payer.

6.8.1 ROI to Patients and/or their Families

ROI to patients and/or their families can be calculated as:

$$ROI_{\text{Patient or Family}} = \text{Net Gains}_{\text{Patient or Family}} / \text{Investment}_{\text{Patient or Family}}$$

For private pay patients and their families, for example, the financial gains of home telehealth and RPM lie in prolonging independence by avoiding deterioration in health that may lead to disability and avoiding the need to move into assisted living or skilled nursing facilities, which is significant. The gains may also include savings in co-pays for recurring hospital visits, and of course a higher quality of life, which is difficult to quantify. The patient's/family's expenses/investment are the monthly out of pocket cost of private home telehealth services, and any co-pay for the occasional physician office visit, lab tests, and prescriptions.

6.8.2 ROI to Payers

$$ROI_{\text{Payer}} = \text{Net Gains}_{\text{Payer}} / \text{Investment}_{\text{Payer}}$$

For dual Medicare and Medicaid eligible patients who are nursing home eligible, for example, the financial gains of home telehealth and RPM under a Medicaid Waiver program that accrue to Medicaid, which would otherwise be liable for the costs of nursing home room and board costs, lie in remaining in their own home with home health, home care and other supportive services. Medicaid's investment is the monthly rate of home telehealth services and additional supportive services aimed at keeping the individual independent.

In this particular example there may be additional savings, like reductions in hospitalization and hospital readmission costs that accrue to Medicare,

which is liable for and covers health care costs. Consequently, such savings or gains should not be included in calculating Medicaid's ROI, which is investing in the home telehealth and supportive services in this case.

6.8.3 ROI to Care Provider

ROI to care providers can be calculated as:

$$ROI_{\text{Care Provider}} = \frac{\text{Net Gains}_{\text{Care Provider}}}{\text{Investment}_{\text{Care Provider}}}$$

For the care provider who makes investments in information and communications technology infrastructure, the telehealth technology, as well as the clinical and care services, benefits may include: lower costs in delivering the same services including staff efficiencies, staff travel costs (if the payer covers the remote services, rather than just the in-person visit), and higher reimbursements/payment from the payer or strategic partner in terms of incentive payments for avoiding more costly care settings, procedures, events, or penalties.

For example an LTPAC provider partnering with a physician group ACO to manage a chronically ill patient population can potentially get a percentage of the incentives or shared savings payments the ACO receives from the payer for reducing hospitalizations and hospital readmissions, which can be significant for certain populations. The LTPAC provider's net gain is the sum of all gains accruing to the LTPAC provider in staff efficiencies, increased referrals from the ACO, traditional fee-for-service payments, and additional incentive payments received from the ACO, minus the costs of leasing the home telehealth equipment and actual costs of services delivered. The physician group ACO's ROI is the portion of the payer's incentive payment that

they get to keep plus any additional fee-for-service payments due to more frequent office-based services minus the actual costs of services they deliver (for example in medication reconciliation or care coordination), relative to the portion of incentives they pass through to the LTPAC provider.

In contrast, a partnership between an LTPAC provider and hospital under the traditional fee-for-service model, for example, the LTPAC provider may help their hospital partners reduce 30-day readmission rates for pneumonia, congestive heart failure and acute myocardial infarction (heart attack) patients, hence helping the hospital avoid Medicare's payment penalties under the HRRP. The hospital may contract with and pay the LTPAC provider a percentage of the penalties saved for delivering telehealth that lead to reducing 30-day readmissions for patients discharged from the hospital after being admitted for one of the above mentioned three conditions. The LTPAC's net gain is again the sum of all gains accruing to the LTPAC provider in staff efficiencies, increased referrals from the hospital, traditional fee-for-service payments, and additional payments received from the hospital, minus the costs of leasing the home telehealth equipment and actual costs of services delivered. The hospital's ROI is the portion of avoided penalties they get to keep plus any additional fee-for-service payments they gain for more referrals due to improved quality ratings minus the actual costs of services they deliver, relative to the portion of avoided penalties they passed through to the LTPAC provider plus any additional costs incurred for staff time in care coordination, medication reconciliation, or health information exchange, for example.

6.8.4 Online ROI Calculator for RPM

Once individual investors have been clearly identified, an estimate of the ROI to the different stakeholders can be calculated. The Center for Technology and Aging and the Center for Connected Health jointly developed an [online tool](#) to facilitate calculating ROI for a RPM program for the management of chronic conditions, like Congestive Heart Failure (CHF). The tool was funded by the California Healthcare Foundation⁶⁰.

The online ROI calculator asks users to enter data in 5 areas:

1. **Patient Enrollment:** Users specify the size of patient enrollment in the RPM program in year 1 and project what enrollment will be in year 5.
2. **Technology:** Users estimate their investments in HIT. These estimates include 1-time investments in medical devices and infrastructure; if applicable, an amortization period for purchases/expenditures can be specified. The tool also asks for recurring costs like hardware rental, data costs and server hosting.
3. **Staffing:** Users enter the RPM program's staffing requirements. This includes fixed management costs, as well as clinical and support staff costs that will change with the number of patients enrolled.
4. **Other Costs:** Users can enter other RPM-related costs, including costs for services, subscriptions, travel, administration, patient materials and external monitoring services.
5. **Outcomes:** The final step helps users estimate their potential savings from the RPM program.

The tool bases its calculation of savings on whether patients change their health care utilization as a result of the program. One of the advantages of the tool is that it allows users to identify the stakeholder that will bear the financial risks or enjoy the financial gains when service utilization changes. It is important to precede any anticipated *increase* in utilization (home visits, for example) with a minus (-) sign to have the correct results, as the calculator assumes savings, i.e. decrease in utilization.

Once users answer the ROI Calculator's 5 questions, the tool provides 4 reports:

1. A Cost Summary gives users a quick overview of the RPM program's total cost by year and total cost per patient per year.
2. A Savings Summary charts the potential cost savings to the stakeholders identified in question 5.
3. An ROI Evaluation compares the RPM program's financial gains to its financial costs. The tool provides a score indicating the extent to which the RPM intervention will generate enough savings to cover the cost of the program.
4. A Sensitivity Analysis allows users to see how the ROI at year 5 would change if patient enrollment and costs changed.

Please see the ROI Calculator tool at: <http://www.telemedroi.com/#home>

7 PLANNING FOR TELEHEALTH AND RPM SOLUTIONS

Telehealth and RPM technologies help manage and monitor health conditions to improve the care of chronically ill patients and people who have trouble accessing care. Initiating, expanding or integrating telehealth as a service is complex and begins with understanding organizational strategic goals and vision for a telehealth program in order to strategically plan for this initiative. The next step is evaluating operational readiness and conducting operational planning, followed by due diligence in selecting a vendor partner with experience in strategic planning, program design and ongoing program development to support unique organizational goals and needs to help ensure success.

7.1 Visioning and Strategic Planning

Visioning and strategic planning is a key foundational step to the success of a telehealth program. Telehealth should be viewed as a tool to achieve specific organizational goals and part of a well-founded overall organizational strategy. Getting true value from telehealth comes from the organization's ability to align the telehealth and RPM initiatives with the organizational strategic goals, understand their operational needs, set operational goals, engage all stakeholders, including strategic care partners (e.g., hospitals and physician groups), and plan for such an initiative ensuring that the plan is realistic in terms of timeline and resources. Then selecting and implementing one or more of the numerous types of telehealth and RPM technologies and solutions.

The following areas should be considered as part of an organization's initial vision and strategic planning:

- **Care Setting and Business Goals**

Visioning and planning process starts with understanding the care settings in which the organization is considering implementing telehealth and RPM vis-à-vis the strategic and business goals of the organization. The setting will have implications on the availability of professional caregivers, the technologies that fit the setting and operational needs, the characteristics of the patient/user population, and operational, care and business model for the telehealth initiatives. For example, the organization's strategic goals may be making their skilled nursing facility a strategic partner and a preferred discharge destination to the local hospital, or offering cost-effective home health services into the broader local community.

- **Target Population**

Have a vision for the population that will be impacted by telehealth program. Different targeted patient populations should have different telehealth solutions, care delivery and support services. When it comes to telehealth, one size does *not* fit all and having the flexibility to match proper technology to the targeted patient population is a key factor to success. It is important to stratify the population, based on health condition, acuity, risk, utilization of health care services, etc.⁶¹ Examples of target patient populations that should receive different types of technology may include patients who are high-risk, with

specific conditions, post-acute, rural, facility-based, those that require video-based visits, or those that require additional activity and/or safety monitoring. Many organizations will have a need to address several different types of patient populations so it is critical to select a vendor partner that can match the telehealth solution that will meet the organization's needs.

- **Technology Review**

Learn about the types of telehealth and RPM technologies, how they functionally operate and what network infrastructure and connectivity they require. For example, some technologies are designed to help individuals with chronic care management and post-acute care management by identifying disease exacerbation risks and alerting health care professionals with a goal to help avoid unnecessary hospitalization, provide chronic condition education, and promote self-management. Others are designed for health care professionals to connect with more specialized or experienced clinicians to seek guidance, advice, or interventions. In addition it is important to understand the technology transmission requirements and what alternatives are available should the technology not be able to be utilized in some specific patient environments.

- **Software Considerations**

Software considerations should not only include the user's experience but also the operational efficiency it may provide. Different telehealth software products will actually allow organizations to manage many more patients because of operational efficiencies built into

the software products and will result in lower telehealth program operating costs.

Be sure to understand internet and mobile access requirements, interfacing opportunities with current EHR systems, potential customization requests, reporting options, inventory management systems and any other systems-specific factors that will potentially assist in the organization's successful implementation of a telehealth program.

- **Access Requirements**

Understand how the organization and provider partners will access the telehealth information, who will need to access the information and what unique types of information each recipient will need to access. It is important to understand not only whether the telehealth solution meets the unique organizational needs, but also the requirements of any care partners (e.g., a partner physician practice) and the lead time should needs change from the initiation of the program. Since telehealth requires broad data sharing, organizations should ensure that such data sharing is done in compliance with all the applicable Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Rule requirements. Under the new HIPAA Omnibus Rule, which became effective in March 2013, business associates of covered entities (including telehealth vendors) are now directly liable for compliance with certain of the HIPAA Privacy and Security Rules' requirements. These measures include "a mechanism to authenticate," "a mechanism to encrypt and decrypt electronic protected health information (EPHI)," and "policies and

procedures to protect EPHI from improper alteration or destruction.”

- **Program Support**

Program Support includes the internal requirements to set-up, operate and maintain the support of the telehealth program within organizations as well as the ongoing support provided by the vendor selected. Not only is it critical for organizations to understand their infrastructure options and requirements but it is important to understand the level of clinical expertise needed to operate the program, availability of such expertise internally or from care partners and any clinical support services offered by the vendor (if applicable). It is also critical to understand the burden of support that will be expected by any internal IT support staff or development resources to support the ongoing program.

Another key consideration regarding support is the level of support the vendor provides to the customer, including technical support. Keep organizational operating hours and access in mind. For example, if an organization operates seven days a week it is important to match those operating hours with vendor support availability.

- **Budget Considerations**

There are many items to think about when creating a budget for telehealth including per-unit cost, software and user-licensure cost, ongoing maintenance and repairs, staffing, and training to name a few. One additional budget issue rarely planned up front is the changes to work flow that impact staff training and accountabilities. Organizations often overlook

the fact that existing staff with current job assignments often do not appreciate how their work will change (for example, how staff will input new data, how messages will be shared with the health care team, how much new data will be incoming, etc.).

There are several different models of agreements and fee requirements available from vendors, including purchase or lease of hardware and software. Consider the long-term and short-term advantages and disadvantages of these different options when considering purchase versus lease options. Technology changes very rapidly and understanding the opportunities included in upgrades and replacements are critical to future success. Keep an eye out for hidden costs not only with the telehealth unit, but other items such as additional staffing requirements because of lack of operational efficiencies in the software, maintenance, repair, lost units, fees associated with ordering new units and any training fees for additional or replacement staff.

- **Remember the Future**

Be a visionary when it comes to telehealth in general and in particular within your organization. Telehealth programs evolve over time due to the changing landscape of health care, market and technology; it is critical to select a vendor partner that can support, grow and change with your organization’s needs.

7.2 Organizational Readiness Assessment

Determining organizational readiness to initiate and operate or expand a telehealth program is a basic step towards ensuring success. Planning and developing a comprehensive telehealth program takes time, resources and dedication. Many vendor partners offer turnkey solutions with program materials available for telehealth policy and procedures, staffing models, patient population selection and eligibility criteria, participant enrollment process, evaluation methods, outcome measures, data sources, and analysis plan. Even with all of the supporting materials, it is important to understand that there is still a need for leadership engagement and a significant time commitment required in both planning and ongoing program support.

Designating individuals that are accountable, qualified and available for the required areas of responsibilities is a first step in evaluating the state of an organization's preparedness for telehealth. Review staffing resources and determine if there are significant staff shortages or excessive staff turnover that may influence whether to initiate or expand a telehealth program. Some key roles to consider are:

- **Leadership** – the engagement of a senior-level leader that articulates the organization's strategic visions and goals as well as ensuring staff accountability will be key to the success of a telehealth initiative. A leader will help the organization influence the adoption of the telehealth program to help achieve its goals for telehealth. The telehealth program may be led by the chief executive officer (CEO), chief operations officer (COO), chief medical officer (CMO), or a senior/executive vice president.
- **Patient Management Registered Nurse** – have a clear plan for who will be responsible for receiving and monitoring the telehealth and RPM information. Consider items such as 24-hour coverage, business days-only coverage, seven days a week coverage, or holiday coverage and always ensure that there is backup staff fully trained to take over at any time. There are a few vendor partners that offer patient management as a service to help meet organizational needs. Consider what interventions the clinical team will implement and who will be responsible for implementing them; keep in mind that there are very few vendors who provide clinician or clinical support services. In addition, consider the full scope of clinical interventions the team plans to deliver, as some intervention plans may require partnerships, or at least coordination, with other health care providers and professionals, such as physicians, hospitals, pharmacies, etc. In these cases, make sure those other providers are on board with and would be willing to work, coordinate and collaborate with the team.
- **Inventory Control** – consider utilizing administrative staff for equipment control to help reduce operational costs. This is especially important for individual home telehealth as well as wearable telehealth/mobile health (mHealth) units, contrasted with telehealth kiosks.
- **Marketing and Business Development** – involve business development teams early in the planning process to help ensure engagement, marketing support, ongoing

growth and ultimately success of the telehealth program.

7.2.1 Staff Competencies

Competency-based training programs to demonstrate the ability to perform the above roles is another element to success. The individual designated initially may not always be the right person to help ensure success. What makes people learn most effectively differs from one person to another. Ensure that there are multiple options offered for training to guarantee competencies, which may include self-learning modules, video-based training modules, webinar training modules, and live training. Competency-based training is an avenue to achieve a highly knowledgeable and skilled telehealth team which will contribute to the goals of a telehealth program.

7.2.2 IT Infrastructure

Selecting the appropriate telehealth solution will depend on an organization's IT infrastructure and needs. Typical options include purchasing and locally hosting the telehealth software onsite at the organization's data center, purchasing the software and having a 3rd party host it in their data center, or the vendor hosting and offering their own Software as a Service (SaaS). Each has pros and cons depending on the size of an organization and its current IT infrastructure.

Some things to consider when evaluating these options are:

Local/Locally Hosted Software	3 rd Party Hosted	SaaS
<ul style="list-style-type: none"> • Software and license are purchased and installed on each desktop/client device or local servers • Software updates must be downloaded and installed • Central server onsite; information stored locally at individual computer level and/or local servers • Onsite IT support needed for clients and servers • Internet connectivity not required except for exchanging information with other sites; no downtime without Internet • Cost: High upfront investment in hardware and software, ongoing licensing fees, and high IT staffing cost. 	<ul style="list-style-type: none"> • Software (including commercial packages originally designed for individual users) installed on remote servers and accessed via desktop computers or thin client devices to multiple users on a lease or per-use basis; but software may need to be installed on local machines • Software updates on remotely hosted applications are managed by the application/hosting service provider; updates to local software may need to be downloaded and installed • Information stored offsite in the cloud • Onsite IT support needed for clients • Internet connectivity required; downtime without Internet • Cost: Medium upfront investment in hardware and software, ongoing hosting and licensing fees, and medium IT staffing cost. 	<ul style="list-style-type: none"> • Leased software installed on remote servers and accessed via desktop computers or thin client device, but special browser-like software may need to be installed on local machines • Allows for immediate software updates • Information stored offsite in the cloud • Onsite IT support generally not needed • Internet connectivity required; downtime without Internet • Cost: Low upfront investment in hardware and software, ongoing use fees, and low IT staffing cost.

7.2.3 Operating Environment

The type of software solution will most likely be directly influenced by the type of operating environment required to meet your business needs. Understanding and defining organizational, provider and family access will help determine the most effective operating environment. Items to consider include:

- Required access to the system remotely from any web-enabled device.
- Provider access, including partner providers.
- Family portal access.
- Storing all information securely behind firewall protection.

It is important to consider unique organizational needs and applications to ensure selection and setup of the appropriate operating environment.

7.3 Operational Planning

7.3.1 Project Team

Successful implementation of telehealth relies on a wide array of stakeholders on the project. The most successful telehealth programs incorporate the program into the day-to-day operations of the organization and provide all staff with some involvement with and exposure to the telehealth program. Since telehealth is enabling a new care delivery model, most staff will need to be involved, including executive leadership, clinical teams, technical representatives, DME/logistics, finance, operations and marketing/business development. Getting all of these groups on board with a clear set of goals,

timelines, resource requirements, and deliverables will lead to success.

7.3.2 Goal Setting

Defining goals of the telehealth program is critical to measure success. Each organization will have different ideas of what success looks like based on internal operations. Before starting a telehealth program, the organization should set a clear series of goals and metrics.

Keep in mind that goals should be measurable and routinely reported on within your operations. The fundamentals to setting goals are to ensure that they are SMART goals (specific, measurable, attainable, realistic and track-able). Setting both short-term and long-term goals for the telehealth program is highly recommended. Telehealth programs will naturally change and progress over time. Organizational goals set at the initiation of the program will likely be different six to twelve months post implementation. Telehealth program goals should continuously be evaluated and updated as programs change. It is also important to understand that a new program will have the ability to achieve several major goals during the initial adoption of the program.

Goals for each organization should be unique and may incorporate ideas from the following categories:

Clinical Outcomes

- Improved control of chronic conditions.
- Improved integration/coordination of care.
- Reduction of hospitalizations.
- Hospital readmission reduction.

- Increased chronic condition education.
- Improved self-management skills.

Satisfaction Outcomes

- Improved patient satisfaction scores.
- Improved provider satisfaction scores.
- Employee satisfaction and retention.
- Increased trust from the patient.
- Provide security in the home environment.

Operational Outcomes

- Increased staff productivity/efficiencies.
- Focused intervention and needs.
- Attracting new talents.
- Positioning and market advantage.

Financial Outcomes

- Readmission reductions.
- Increased productivity.
- Decreased travel time.
- Increased market share/referrals.
- Increased occupancy.
- Opportunity for new lines of business.

Be sure to define outcome measures that will help in evaluating the success of the program in the short- and long-term. After program goals have been determined, ensure that baseline data has been captured and discussed during telehealth planning sessions. These goals and metrics should be periodically reviewed and updated throughout the planning and implementation process.

7.3.3 Program Design

Telehealth programs should be designed with the organizations' short- and long-term goals in mind to help ensure success. In addition to the organization's goals, care coordination, collaboration and communication to enhance patient care and outcomes with other care providers along the continuum of care should also influence the program design. The design of each program should always consider how to align objectives, strategies, and technical plans with care partners by using telehealth and the EHR, as a source of information and a facilitator of communications. Be sure to share experiences from other similar organizations to assist in strategies to build a telehealth program within the organization or strengthen an already existing telehealth program (please see the companion case studies that CAST is collecting).

7.3.3.1 Operating Model, Workflow, and Change Management

When a new telehealth program is implemented, it does not just mean adding technology into an existing care model; on the contrary, care models themselves change because the delivery of patient care is being done via telehealth technology. This is particularly significant for the clinical care model. Before starting any program, make sure that the

new model of care is clearly defined and that staff have been prepared with training and support plans. To gain the most benefit out of telehealth, ensure it is used as a tool for changing care delivery and workflows, both inside the organization and with outside partners, and not simply an add-on. Adding telehealth, or any other technology for that matter, without assessing and redesigning processes and workflows to take advantage of the technologies' capabilities and efficiencies, will likely fail to produce the anticipated benefits.

7.3.3.2 Patient Population

Identifying the patient population an organization wants to reach with telehealth-enabled care should be done at the earliest stages of planning. As part of this process, ensure that there is a process for patient identification, enrollment and gathering of their consents. Demonstrating the value of telehealth and making sure that patients understand their care will be improved, not diminished, is at the heart of the consent process.

7.3.3.3 Business Model: Expenses and Revenue Sources

Consider the care deliver and payment model(s) being proposed for the telehealth program. Identify all expenses including technology infrastructure, connectivity, telehealth system expenses, installation, troubleshooting, maintenance and support, change management, training, clinical services and support. Identify all the revenue sources (private pay, payer, strategic partner), and carefully calculate the organization's ROI, as well as the other stakeholders' (please see section 6.8).

7.4 Technology Review and Selection

Once an organization has completed the visioning and strategic planning exercise, assessed organizational readiness, assembled the project team, set the project's goals and designed the program, then the team needs to develop a set of requirements to use as criteria to review and select the appropriate telehealth technology solution that can help achieve desired program's goals and meets an organization's needs. When reviewing possible telehealth technology options, it is important to know what type of telehealth technology embodiment fits within an organization's care setting and planned care delivery model, etc. In the CAST Telehealth and RPM Selection Matrix that follows, we outline options that will help narrow down the selection to a limited number of vendors that can be invited to submit request for proposals.

8 TELEHEALTH AND RPM SELECTION MATRIX COMPONENTS

CAST's Telehealth Workgroup, consisting of providers, vendors and consultants, compiled a list of telehealth and RPM products that serve the LT-PAC market, as well as a list of functionalities and capabilities that would help providers choose the telehealth and RPM product that fits their business line and functional requirements best. Each of the telehealth and RPM vendors was then provided the opportunity to complete a self-review of the workgroup's pre-determined questions. Some of these vendors chose not to participate. Those who did participate were then offered the opportunity to nominate a case study from a provider's perspective on the use of the vendor's telehealth/RPM product.

Some telehealth and RPM vendors have multiple embodiments of their products (Single-User/Patient Home Base Unit, Single-User/Patient Mobile/Wearable Unit, Staff-Operated Multi-User Mobile Unit, and/or Multi-User Unit/Kiosk). In this case, the vendor was asked to provide information on each product separately.

The Telehealth and RPM Selection Matrix includes the following sections:

Business Line/Care Applicability lists all the various business lines to which the telehealth/RPM solution is applicable, including Physicians' Offices, Emergency Department, Hospitals, Housing with Services, Home Health/Home Care, Hospice, Adult Day Care/Senior Centers, Assisted Living Facilities, Acute Rehab Facilities, Long-term Acute Care Hospitals, Long-term Care Rehab Facilities, Skilled Nursing Facilities, Intermediate Care Facilities, Intellectual Disabilities/Mental Retardation/Developmental Disabilities (ID/MR/DD) Facilities, Continuing Care Retirement Communities (CCRC), Program of All-Inclusive Care for the Elderly (PACE), Accountable Care Organizations (ACOs), and Multiple Site Integration.

System Type defines the basic function of the solution and includes Store-and-Forward: Interactive Voice Response System (IVR), Store-and-Forward: Biometric Remote Patient Monitoring, Other Store-and-Forward Systems: Other than IVR & Biometrics (e.g., Imaging, Consultation Notes, etc.), Real-Time Biometric Remote Patient Monitoring (exists with Store-and-Forward as well) and Real-Time Interactive Two-Way Video Conferencing with Clinician.

Embodiment provides information about the physical system and includes the options of Single-

User/Patient Home Base Unit, Single-User/Patient Mobile/Wearable Unit, Staff-Operated Multi-User Mobile Unit, and/or Multi-User Unit/Kiosk.

Program Development & Support Offered includes Program Development (Planning, Business Model Templates, etc.), Telehealth/RPM Nurse Services, Other Store-and-Forward Clinician Services, Real-Time Interactive Video Conferencing with Physician/Clinician Services, Physician Engagement Services, Patient Education, Patient Engagement, and Family Engagement.

Available Ancillary Sensors/Devices covers Sensor Types (Stethoscope, Temperature Probe, Blood Pressure Cuff, Weight Scale, Heart Rate, Peak Flow, Glucometer, Pulse Oximeter, Pulse Waveform, Spirometer, EKG/ECG, High-Definition Still Camera, High-Definition Video Camera, Other Sensors listed, and Notes on Specialty Sensors Offered), and Sensor Connectivity (Wired, Wireless, and/or Others).

Front-End Hardware Unit User/Patient Interface & Communications identifies the unit's functionalities, user interface capabilities, and communications modalities with the user/patient including Touch Screen, Audible Prompts, Visual Prompts, Standard Disease-Specific Questionnaires, Customizable Questionnaires, Biometric Thresholds are Customizable, and Branching Logic Based on Biometric Data and User's/Patient's Responses. Additionally, the various Communications Modality options are listed as Plain Old Telephone System (POTS) Line, DSL Internet Connectivity, High-Speed Internet Connectivity, Wi-Fi Connectivity, Cellular Connectivity, and Minimum Internet Connectivity Speed Required.

Hardware and Software Requirements - Front End lists the required Desktop/Laptop specifications for Software-Only Solutions including requirements for Minimum Processor, Minimum Processor Speed, Minimum RAM, Minimum Hard Disk Storage, Operating System (OS) - Windows, Operating System (OS) - Apple, and/or Operating System (OS) - Unix/Linux. Other features compared include Network Specifications, Wireless Specifications, Browser Based Requirements, Minimum Internet/Bandwidth Specifications, Miscellaneous Software/Applets Needed (i.e. Citrix), Miscellaneous Reporting Specifications (i.e. Crystal Reports), Scalability, Local Model, Hosted Model, Software as a Service Model (SaaS), Remote Access, Off-Line Functionality Support, Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.), Available for Purchase, and Available for Lease. Last, Mobile options are listed as Cellular Carriers that Support Solution, Mobile OS - Android, Mobile OS - BlackBerry, Mobile OS - iOS, Mobile OS - Unix/Linux, and/or Mobile OS - Windows.

Front-End Unit Support lists materials delivered through the front-end unit, including On-Screen Educational Self-Management Material, Self-Management Educational Audios, and/or Self-Management Educational Videos. Front-End Unit Multi-Language Support section lists the available languages. The final options here include Remote Updates and/or Remote Configuration Capability.

Report and Personal Health Record (PHR)/EHR examines options to provide Customizable Reports or Ability to Schedule Automatic Reports, and to whom Health Record/Report Access is provided (Client/Patient's Physician, Client/Patient's Nurse/Other Licensed Clinician, Client/Patient/User/Self, Care Manager/Professional Caregiver, Family and/

or Other).

Alerts and Chronic Disease Management Decision Support includes to whom Alerts can be sent (Client/Patient's Physician, Client/Patient's Nurse/Other Licensed Clinician, Client/Patient/User/Self, Care Manager/Professional Caregiver, Family, and/or Other) and the Alert Sending Modality, which includes options for Pager, E-Mail, Text Message, and/or Other.

Single Condition Clinical Decision Support System has options for Congestive Heart Failure (CHF), Myocardial Infarction, Pneumonia, Chronic Obstructive Pulmonary Disease (COPD), Diabetes, Hypertension, Asthma, Arrhythmia, Stroke, Pressure Ulcers/Wound Care, End-Stage Renal Disease, Depression or Other.

Customizable Pathways and Clinical Decision Support Systems for Multiple Chronic Conditions and Comorbidities builds upon the previous section and lists all comorbidities. Vendors were instructed to only check comorbidity options that can be handled simultaneously. Options included Congestive Heart Failure (CHF), Myocardial Infarction, Pneumonia, Chronic Obstructive Pulmonary Disease (COPD), Diabetes, Hypertension, Asthma, Arrhythmia, Stroke, Pressure Ulcers/Wound Care, End-Stage Renal Disease, Depression or Other.

Interfacing, Integration and Add-Ons looks into the telehealth/RPM solution with Electronic Health Records (EHRs), Medication Adherence Monitoring Dispensers, Safety Monitoring Systems (e.g., Personal Emergency Response Systems (PERS)), Wellness, Behavior and Activity Monitoring Systems, or Others.

Interoperability, Interoperability Standards and Certification begins with Type of Interoperability Supported (None, Export Data Only, Import Data Only, or Bi-Directional data import and export), Supported Interoperability Standards: HL7 Personal Health Monitoring Report and/or Other, Back-End EHR/PHR Certification in the form of ONC-ATCB, Comprehensive CCHIT-LTPAC: Home Health and/or Comprehensive CCHIT-LTPAC: Nursing Home. The section ends with information on Front-End System Certification, namely the Continua Health Alliance Certification.

Program Support Services includes options for Equipment Delivery/Pick Up, Site/Home Installation, IT/Network Troubleshooting & Support, Front-End System Set-up, Front-End System Customization, Back-End System Set-up, Back-End System Customization, Onsite Staff Training, Online Staff Training, Onsite User/Patient Training, Online User/Patient Training, Equipment Cleaning, Equipment Refurbishing and/or Other.

Clinical Supportability includes options for 24-Hour Support-Phone, Limited Hours Support – Phone, 24-Hour Support – Web, Limited Hours Support – Web, E-Mail Support, Listserv and/or Usergroup, Online Training, Onsite Training, and/or Other.

Technical Supportability and Warranty Information includes technical support options for 24-Hour Support-Phone, Limited Hours Support – Phone, 24-Hour Support – Web, Limited Hours Support – Web, E-Mail Support, Listserv and/or Usergroup, Online Training, Onsite Training, and/or Other, as well as warranty options that include Length of Product Warranty and goes onto share what is covered under warranty: Parts, Parts & Labor, or Parts, and In-Field/On-Site Labor.

Legal/Regulatory/Cyberliability touches on FDA Approval (Approved, Cleared, Pending, Listed, None), FDA Classification (Class I, Class II, etc.), HI-TECH, HIPAA, Security - List HIPAA & HITECH Act Requirements Met, List Applicable Regulatory Requirements Met, Provide a Link to Company's Cyberliability Policy, and List Any Other Legal Requirements, as well as an option to Provide a link to Sample Contract.

Hardware and Software Requirements - Back End provides required specifications for Desktop/Laptop systems including requirements for Minimum Processor, Minimum Processor Speed, Minimum RAM, Minimum Hard Disk Storage, Operating System (OS) - Windows, Operating System (OS) - Apple, and/or Operating System (OS) - Unix/Linux. Other features compared include Network Specifications, Wireless Specifications, Browser Based Requirements, Minimum Internet/Bandwidth Specifications, Miscellaneous Software/Applets Needed (i.e. Citrix), Miscellaneous Reporting Specifications (i.e. Crystal Reports), Scalability, Local Model, Hosted Model, Software as a Service Model (SaaS), Remote Access, Off-Line Functionality Support, Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.), Available for Purchase, and Available for Lease. Last, Mobile options are listed as Cellular Carriers that Support Solution, Mobile OS - Android, Mobile OS - BlackBerry, Mobile OS - iOS, Mobile OS - Unix/Linux, and/or Mobile OS - Windows.

Company's Experience and Viability includes Number of Years in Business, Release Date of Current Version, Number of Patients served, Core Customer Base, Focus of Line of Business, as well as Links to Additional Case Studies.

The last section of the matrix is dedicated for Strengths, Areas for Improvement, Ongoing Development and References.

9 ACKNOWLEDGEMENT OF CONTRIBUTORS

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Endnotes

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Telehealth and Remote Patient Monitoring (RPM) Selection Matrix

Disclaimer

The information included in this paper is meant to assist care providers in the understanding and selection of telehealth and remote patient monitoring (RPM) solutions, but cannot possibly include all systems that may be available. Products mentioned in this paper serve as illustrative examples. Information about the functionalities and capabilities for this effort were provided by participating vendors of telehealth and RPM solutions. A few telehealth and RPM vendors chose not to participate. Functionalities and capabilities of listed telehealth and RPM products have not been verified, tested, independently evaluated or endorsed by LeadingAge or LeadingAge CAST. Please use this as general guidelines in understanding functionalities and examples of current telehealth and RPM systems. The Telehealth and RPM Selection Matrix may help providers identify potential telehealth and RPM solutions that may meet their requirements, and is intended to help them target vendors to submit a Request for Proposal (RFP). Where appropriate, provider case studies were identified and published separately. However, providers are strongly advised to verify functionalities of the telehealth and RPM solutions prior to final selection through demonstrations, site visits, reference checking and other due diligence steps.

Business Line/Care Applicability

	Acute Care Settings								
	Physicians' Offices	Emergency Department	Hospitals	Housing with Services	Home Health/Home Care	Hospice	Adult Day Care/Senior Centers	Assisted Living Facilities	Acute Rehab Facilities
Ambio Health www.ambiohealth.com	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Biosign - Healthanywhere www.biosign.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Business Line/Care Applicability	Long-term Acute Care Hospitals	Long-term Care Rehab Facilities	Skilled Nursing Facilities	Intermediate Care Facilities	Intellectual Disabilities/ Mental Retardation/ Developmental Disabilities (ID/MR/DD) Facilities	Continuing Care Retirement Communities (CCRC)	Program of All-Inclusive Care for the Elderly (PACE)	Accountable Care Organizations (ACO)/ Integrated Delivery Networks (IDN)	Multiple Site Integration
Ambio Health www.ambiohealth.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GrandCare Systems www.grandcare.com	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes

Business Line/Care Applicability

	Acute Care Settings								
	Physicians' Offices	Emergency Department	Hospitals	Housing with Services	Home Health/Home Care	Hospice	Adult Day Care/Senior Centers	Assisted Living Facilities	Acute Rehab Facilities
Healthsense, Inc. www.healthsense.com	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Honeywell HomMed - Genesis DM www.hommed.com	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Honeywell HomMed - Genesis Touch www.hommed.com	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
IDEAL LIFE, INC. www.ideallifeonline.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Independa www.independa.com	No	No	No	Yes	Yes	No	No	Yes	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VRI TeleHealth www.monitoringcare.com	No	No	No	Yes	Yes	Yes	Yes	Yes	No
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes	No	Yes	Yes	No	Yes	Yes

System Type

	Store and Forward: Interactive Voice Response System (IVR)	Store-and-Forward: Biometric Remote Patient Monitoring	Other Store-and-Forward Systems: Other than IVR & Biometrics (e.g. Imaging, Consultation Notes, etc.) (Please List)	Real-Time Biometric Remote Patient Monitoring (exists with Store-and-Forward as well)	Real-Time Interactive Two-Way Video Conferencing with Clinician
Ambio Health www.ambiohealth.com	Yes	Yes	Yes; Motion data	Yes	No
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	No	Yes	No
Biosign - Healthanywhere www.biosign.com	No	Yes	Yes; Consultation notes	Yes	No
Cardiocom - Commander FLEX www.cardiocom.com	No	Yes	No	Yes	No
Cardiocom - Link View www.cardiocom.com	No	Yes	No	Yes	Yes
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	No	Yes	No
Cardiocom - NetResponse www.cardiocom.com	No	Yes	No	Yes	No
Cardiocom - Attentiv www.cardiocom.com	No	Yes	No	Yes	No
Cardiocom - Telescale www.cardiocom.com	No	Yes	No	Yes	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	No	Yes	Yes; Audio/Video messaging including video clips, assessment questionnaire, responses to Q&A via touchscreen	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	No	Yes	Yes; Daily patient journals and surveys	Yes	Yes
GrandCare Systems www.grandcare.com	No	Yes	No	Yes	Yes

System Type

	Store and Forward: Interactive Voice Response System (IVR)	Store-and-Forward: Biometric Remote Patient Monitoring	Other Store-and-Forward Systems: Other than IVR & Biometrics (e.g. Imaging, Consultation Notes, etc.) (Please List)	Real-Time Biometric Remote Patient Monitoring (exists with Store-and-Forward as well)	Real-Time Interactive Two-Way Video Conferencing with Clinician
Healthsense, Inc. www.healthsense.com	Yes	Yes	No	Yes	No
Honeywell HomMed - Genesis DM www.hommed.com	No	Yes	No	No	No
Honeywell HomMed - Genesis Touch www.hommed.com	No	Yes	No	No	Yes
Ideal Life, Inc. www.ideallifeonline.com	No	No	No	Yes	No
Independa www.independa.com	No	Yes	Yes; Environmental and safety sensors	Yes	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	No	Yes	No	No	Yes
Philips telehealth.philips.com	Yes	Yes	Yes; Medication adherence, International Normalized Ratio (INR)	Yes	Yes
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	No	No	No	No
Tunstall - Telehealth americas.tunstall.com/Telehealth	No	Yes	No	Yes	No
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes; Triage notes	Yes	Yes
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes; Data, wound imaging, notes	No	No

Embodiment

	Single-User/Patient Home Unit	Single-User/Patient Mobile/wearable Unit	Staff-Operated Multi-User Mobile Unit	Multi-User Unit/Kiosk
Ambio Health www.ambiohealth.com	Yes	No	No	No
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	Yes	Yes
Biosign - Healthanywhere www.biosign.com	Yes	No	Yes	Yes
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	No	No
Cardiocom - Link View www.cardiocom.com	Yes	Yes	No	No
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	No	No
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	No
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	No	No
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	No	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	No	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	No	Yes	Yes
GrandCare Systems www.grandcare.com	Yes	No	Yes	Yes

Embodiment	Single-User/Patient Home Unit	Single-User/Patient Mobile/wearable Unit	Staff-Operated Multi-User Mobile Unit	Multi-User Unit/Kiosk
Healthsense, Inc. www.healthsense.com	Yes	Yes	Yes	Yes
Honeywell HomMed - Genesis DM www.hommed.com	Yes	No	No	Yes
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	No	No	No
Ideal Life, Inc. www.ideallifeonline.com	Yes	Yes	No	Yes
Independa www.independa.com	Yes	Yes	Yes	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	No	No	No
Philips telehealth.philips.com	Yes	Yes	No	No
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	No	No
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes
VRI TeleHealth www.monitoringcare.com	Yes	Yes	No	Yes
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes	No

Program Development & Support Offered

	Program Development (Planning, Business Model Templates, etc.)	Telehealth/RPM Nurse Services	Other Store-and-Forward Clinician Services	Real-Time Interactive Video Conferencing with Physician/ Clinician Services	Physician Engagement Services	Patient Education	Patient Engagement	Family Engagement	Other (Please List)
Ambio Health www.ambiohealth.com	Yes	Yes	No	No	No	No	Yes	Yes	N/A
Beacon® by HealthInterlink www.healthinterlink.com	Yes	No	No	No	No	No	Yes	No	Clinical content is customizable by provider.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Content completely customizable by the provider - existing content can be brought into the system
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Turn-key materials and ongoing program development
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	Yes	Yes	No	No	No	No	Alerts and data can be sent to patient, family members, etc.
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	No	No	Yes	Yes	Yes	Yes	Yes	N/A
GrandCare Systems www.grandcare.com	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Content completely customizable by the provider - existing content can be brought into the system.

Program Development & Support Offered	Program Development (Planning, Business Model Templates, etc.)	Telehealth/RPM Nurse Services	Other Store-and-Forward Clinician Services	Real-Time Interactive Video Conferencing with Physician/Clinician Services	Physician Engagement Services	Patient Education	Patient Engagement	Family Engagement	Other (Please List)
Healthsense, Inc. www.healthsense.com	Yes	Yes	No	No	No	No	Yes	Yes	N/A
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Channel Marketing Support Program, Online training and resources
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Channel Marketing Support Program, Online training and resources
Ideal Life, Inc. www.idealifeonline.com	Yes	Yes	No	No	No	Yes	Yes	Yes	N/A
Independa www.independa.com	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Social engagement
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Additional optional professional services, including: logistics, hardware recommissioning, managed wireless service as a connectivity option
Philips telehealth.philips.com	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Transitional care services
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Augment & extend telehealthcare services i.e. appointment scheduling & reminders, referral processing, patient & provider surveys
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Complete spectrum of programs, health interviews, and client customization
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes	No	No	No	No	No	N/A

Available Ancillary Sensors/ Devices

	Stethoscope	Temperature Probe	Blood Pressure Cuff	Weight Scale	Heart Rate	Peak Flow	Glucometer	Pulse Oximeter	Pulse Waveform	Spirometer	EKG/ECG	High-Definition Still Camera
Ambio Health www.ambiohealth.com	No	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No
Beacon® by HealthInterlink www.healthinterlink.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Biosign - Healthanywhere www.biosign.com	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
Cardiocom - Commander FLEX www.cardiocom.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Cardiocom - Link View www.cardiocom.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Cardiocom - TeleResponse www.cardiocom.com	No	No	No	No	No	No	No	No	No	No	No	No
Cardiocom - NetResponse www.cardiocom.com	No	No	No	No	No	No	No	No	No	No	No	No
Cardiocom - Attentiv www.cardiocom.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Cardiocom - Telescale www.cardiocom.com	No	No	No	Yes	No	No	No	No	No	No	No	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
GrandCare Systems www.grandcare.com	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No
Healthsense, Inc. www.healthsense.com	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No
Honeywell HomMed - Genesis DM www.hommed.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Honeywell HomMed - Genesis Touch www.hommed.com	No	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes
Ideal Life, Inc. www.idealifeonline.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Independa www.independa.com	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No
Intel-GE Care Innovations™ Guide www.careinnovations.com	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Philips telehealth.philips.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No

Available Ancillary Sensors/ Devices

	High-Definition Video Camera	Others (Please Specify)	Notes on Specialty Sensors Offered	Sensor Connectivity		
				Wired	Wireless	Others (Please Specify)
Ambio Health www.ambiohealth.com	No	Yes; Motion sensors	N/A	No	Yes	N/A
Beacon® by HealthInterlink www.healthinterlink.com	No	N/A	Custom Bluetooth or manual options available	No	Yes	Manual entry
Biosign - Healthanywhere www.biosign.com	No	N/A	N/A	Yes	Yes	NA
Cardiocom - Commander FLEX www.cardiocom.com	No	N/A	Bluetooth HDP Option	Yes	Yes	N/A
Cardiocom - Link View www.cardiocom.com	Yes	N/A	Bluetooth HDP Option	Yes	Yes	N/A
Cardiocom - TeleResponse www.cardiocom.com	No	N/A	Manual entry for other values	No	No	N/A
Cardiocom - NetResponse www.cardiocom.com	No	N/A	Manual entry for other values	No	No	N/A
Cardiocom - Attentiv www.cardiocom.com	No	N/A	Bluetooth HDP Option	Yes	Yes	N/A
Cardiocom - Telescale www.cardiocom.com	No	N/A	N/A	Yes	No	N/A
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes; Fluid status, prothrombin	N/A	Yes	Yes	Manual entry
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	N/A	N/A	Yes	Yes	Bluetooth
GrandCare Systems www.grandcare.com	No	Yes; Webcam	Also ADL sensors	No	Yes	N/A
Healthsense, Inc. www.healthsense.com	No	Yes; Motion, door contact, bed, toilet	eNeighbor algorithms provide automatic call for help	No	Yes	N/A
Honeywell HomMed - Genesis DM www.hommed.com	No	N/A	N/A	Yes	No	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	N/A	N/A	No	Yes	N/A
Ideal Life, Inc. www.ideallifeonline.com	No	N/A	N/A	No	Yes	N/A
Independa www.independa.com	Yes	Yes; Webcam	ADL + Environmental Sensors	Yes	Yes	N/A
Intel-GE Care Innovations™ Guide www.careinnovations.com	No	N/A	N/A	Yes	Yes	N/A
Philips telehealth.philips.com	Yes	Yes; INR and holter monitoring (5 lead)	N/A	Yes	Yes	N/A

Available Ancillary Sensors/ Devices

	High-Definition Video Camera	Others (Please Specify)	Notes on Specialty Sensors Offered	Sensor Connectivity		
				Wired	Wireless	Others (Please Specify)
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	No	No	N/A	No	No	N/A
Tunstall - Telehealth americas.tunstall.com/Telehealth	No	N/A	N/A	No	Yes	N/A
VRI TeleHealth www.monitoringcare.com	No	Yes; Asthma sensors	N/A	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	N/A	N/A	No	No	Integrated into the mobile device.

Front-End Hardware Unit User/Patient Interface & Communications

	Touch Screen	Audible Prompts	Visual Prompts	Standard Disease-Specific Questionnaires	Customizable Questionnaires	Biometric Thresholds are Customizable	Branching Logic Based on Biometric Data and User's/ Patient's Responses	Communications Modality (R=Required, P=Preferred, A=Available, N/A= Not Available/ Adequate)					
								Plain Old Telephone System (POTS) Line	DSL Internet Connectivity	High-Speed Internet Connectivity	Wi-Fi Connectivity	Cellular Connectivity	Minimum Internet Connectivity Speed Required
Ambio Health www.ambiohealth.com	No	Yes	Yes	Yes	Yes	Yes	No	N/A	A	A	A	N/A	1 Mbs
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	Yes	Yes	Yes	Yes	No	A	A	A	P	A	1 Mbs
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	Yes	No	A	A	A	A	A	28.8 Kbps (minimum) and 1 Mbs for video streaming
Cardiocom - Commander FLEX www.cardiocom.com	No	Yes	Yes	Yes	Yes	Yes	Yes	A	A	A	A	A	POTS
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A	A	A	A	Recommend 1.5 Mb/s+ when using video capabilities
Cardiocom - TeleResponse www.cardiocom.com	No	Yes	No	Yes	Yes	Yes	Yes	A	A	A	A	A	POTS
Cardiocom - NetResponse www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	N/A	A	A	A	A	1 Mbs
Cardiocom - Attentiv www.cardiocom.com	No	Yes	Yes	Yes	Yes	Yes	Yes	A	A	A	A	A	POTS
Cardiocom - Telescale www.cardiocom.com	No	Yes	Yes	Yes	Yes	Yes	Yes	R	N/A	N/A	N/A	N/A	N/A
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	A	A	A	A	POTS
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A	A	A	A	2 Mbs
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	A	P	A	A	1 Mbs

Front-End Hardware Unit User/Patient Interface & Communications

	Touch Screen	Audible Prompts	Visual Prompts	Standard Disease-Specific Questionnaires	Customizable Questionnaires	Biometric Thresholds are Customizable	Branching Logic Based on Biometric Data and User's/ Patient's Responses	Communications Modality (R=Required, P=Preferred, A=Available, N/A= Not Available/ Adequate)					
								Plain Old Telephone System (POTS) Line	DSL Internet Connectivity	High-Speed Internet Connectivity	Wi-Fi Connectivity	Cellular Connectivity	Minimum Internet Connectivity Speed Required
Healthsense, Inc. www.healthsense.com	No	Yes	No	Yes	Yes	Yes	Yes	N/A	A	A	A	A	256 Kbs
Honeywell HomMed - Genesis DM www.hommed.com	No	Yes	Yes	Yes	Yes	Yes	Yes	A	N/A	N/A	N/A	A	POTS
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	N/A	N/A	A	A	When Using Video recommend 1.0 Mbs Up/4.0 Mbs Down
Ideal Life, Inc. www.idealifeonline.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	A	A	A	A	64 kbs
Independa www.independa.com	Yes	Yes	Yes	No	Yes	Yes	Yes	A	A	P	A	A	No minimum - if no video use. When using video, recommend 128 Kbps
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	A	P	A	A	.06 Mbs
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	A	N/A	N/A	A	POTS
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	No	Yes	No	Yes	Yes	Yes	Yes	A	N/A	N/A	N/A	A	N/A
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	A	N/A	A	N/A	A	POTS
VRI TeleHealth www.monitoringcare.com	No	Yes	Yes	No	Yes	Yes	Yes	A	A	A	N/A	P	3 Mbs
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	No	Yes	Yes	No	No	No	N/A	N/A	P	A	N/A	3 Mbs

Hardware and Software Requirements - Front End

	Desktop/Laptop Specifications for Software-Only Solutions				Operating System (OS) - Windows	Operating System (OS) - Apple	Operating System (OS) - Unix/Linux	Network Specifications	Wireless Specifications	Browser Based (List Browser Requirements)	Minimum Internet/Bandwidth Specifications	Miscellaneous Software/Applets Needed (i.e. Citrix)	Miscellaneous Reporting Specifications (i.e. Crystal Reports)	Scalability
	Minimum Processor	Minimum Processor Speed	Minimum RAM	Minimum Hard Disk Storage										
Ambio Health www.ambiohealth.com	Any web browser	Any web browser	Any web browser	Any web browser	Yes	Yes	Yes	Ethernet	Proprietary	IE 9.0+, Firefox, Chrome, Safari	1 Mbs	None	N/A	Yes
Beacon® by HealthInterlink www.healthinterlink.com	Any	1.5 Ghz	1 GB	2 GB	Yes	Yes	Yes	Internet Connectivity	802.11 b/g/n	IE 9.0+, Firefox, Chrome	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
Biosign - Healthanywhere www.biosign.com	Pentium III	1 Ghz	1 GB	500 MB	Yes	No	No	Ethernet	802.11 b/g/n	IE 8.0+, Chrome, Firefox, Opera, Safari	28.8 Kbs (min), Broadband preferred	Windows OS required for device connectivity	N/A	Yes
Cardiocom - Commander FLEX www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
Cardiocom - Link View www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Broadband (1.5Mb/s+)	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5Mb/s+)	Adobe Acrobat Reader; Javascript	N/A	Yes
Cardiocom - TeleResponse www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
Cardiocom - NetResponse www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
Cardiocom - Attentiv www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
Cardiocom - Telescale www.cardiocom.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Internet Connectivity	Adobe Acrobat Reader; Javascript	N/A	Yes
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Any	Any	Any	70 MB (data kept on vendor servers)	Yes	No	No	Ethernet	802.11	IE 6.0+, Firefox, Chrome	Internet Connectivity	RDC	N/A	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Intel Core i3	2 GHz	2 GB	5 GB	Yes	Yes	No	Broadband	802.11 a/b/g/n	IE 9.0+, Firefox, Chrome, Safari	1.5 Mbs	None	N/A	Yes
GrandCare Systems www.grandcare.com	Intel Atom	1 GHz	1 GB	10 GB	No	No	Yes	Ethernet	802.11 b/g/n	IE 9.0+, Firefox, Chrome, Safari	1 Mbs	N/A	N/A	Yes
Healthsense, Inc. www.healthsense.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Healthsense SSID	802.11 b/g/n	IE, Firefox, Chrome	Internet Connectivity	None	N/A	Yes

Hardware and Software Requirements - Front End

									Mobile						Notes
	Local Model	3rd-Party Hosted Model	Software as a Service Model (SaaS)	Remote Access	Off-Line Functionality Support	Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.)	Available for Purchase	Available for Lease	Cellular Carriers that Support Solution (Please List)	Mobile OS - Android	Mobile OS - Blackberry	Mobile OS - iOS	Mobile OS - Unix/Linux	Mobile OS - Windows	
Ambio Health www.ambiohealth.com	No	Yes	Yes	Yes	Yes	No	No	Yes	N/A	Yes	No	Yes	No	Yes	
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Multiple	Yes	No	Yes	Yes	Yes	Locally hosted and enterprise license options based on individual customer environment.
Biosign - Healthanywhere www.biosign.com	No	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	No	No	No	No	No	
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Multiple	Yes	Yes	Yes	Yes	Yes	
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Multiple	No	No	No	No	No	
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Multiple	Yes	Yes	Yes	Yes	Yes	
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Multiple	Yes	Yes	Yes	Yes	Yes	
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Multiple	Yes	Yes	Yes	Yes	Yes	
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	No	Yes	Yes	No	Yes	Yes	Yes	N/A	No	No	No	No	No	
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Agnostic	Yes	No	Yes	No	No	
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	No	No	Yes	No	Agnostic	No	No	No	No	No	
Healthsense, Inc. www.healthsense.com	No	No	Yes	Yes	No	No	Yes	Yes	Agnostic	Yes	Yes	Yes	Yes	Yes	

Hardware and Software Requirements - Front End

	Desktop/Laptop Specifications for Software-Only Solutions				Operating System (OS) - Windows	Operating System (OS) - Apple	Operating System (OS) - Unix/Linux	Network Specifications	Wireless Specifications	Browser Based (List Browser Requirements)	Minimum Internet/Bandwidth Specifications	Miscellaneous Software/Applets Needed (i.e. Citrix)	Miscellaneous Reporting Specifications (i.e. Crystal Reports)	Scalability
	Minimum Processor	Minimum Processor Speed	Minimum RAM	Minimum Hard Disk Storage										
Honeywell HomMed - Genesis DM www.hommed.com	Any	400 MHz	1 GB	1 GB	Yes	No	No	Ethernet	Bluetooth	None	Internet Connectivity	LifeStream Manager	Integrated	Yes
Honeywell HomMed - Genesis Touch www.hommed.com	Any	400 MHz	1 GB	1 GB	Yes	No	No	Ethernet	Bluetooth	None	Internet Connectivity	LifeStream Manager	Integrated	Yes
Ideal Life, Inc. www.idealifeonline.com	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Bluetooth	IE 7+, Firefox, Chrome, Safari	N/A	N/A	N/A	Yes
Independa www.independa.com	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	N/A	Any web-enabled browser	Internet Connectivity	None	N/A	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	Intel Atom	1.66 GHz	2 GB	250 GB	Yes	No	No	Internet Connectivity	802.11 b/g/n	No	Minimum Dial-up speeds	No	N/A	Yes
Philips telehealth.philips.com	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Internet Connectivity	Minimum 3G	No	Internet Connectivity	None	N/A	Yes
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	N/A	IE 6+, Chrome, Firefox	Internet Connectivity	PDF Reader	Exporting enabled	Yes
Tunstall - Telehealth americas.tunstall.com/Telehealth	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	Bluetooth	IE 6+, Chrome, Firefox	Internet Connectivity	PDF Reader	N/A	Yes
VRI TeleHealth www.monitoringcare.com	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	N/A	N/A	N/A	N/A	Yes	Yes	No	Ethernet	N/A	IE 8 minimum	N/A	Adobe Acrobat 10+	N/A	Yes

Hardware and Software Requirements - Front End

									Mobile						Notes
	Local Model	3rd-Party Hosted Model	Software as a Service Model (SaaS)	Remote Access	Off-Line Functionality Support	Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.)	Available for Purchase	Available for Lease	Cellular Carriers that Support Solution (Please List)	Mobile OS - Android	Mobile OS - Blackberry	Mobile OS - iOS	Mobile OS - Unix/Linux	Mobile OS - Windows	
Honeywell HomMed - Genesis DM www.hommed.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	eDevice, AT&T, Verizon	Yes	No	No	No	No	
Honeywell HomMed - Genesis Touch www.hommed.com	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	eDevice, AT&T, Verizon	Yes	No	No	No	No	
Ideal Life, Inc. www.idealifeonline.com	No	Yes	Yes	Yes	Yes	No	Yes	Yes	GSM and CDMA	Yes	Yes	Yes	Yes	Yes	
Independa www.independa.com	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Verizon tablet. Agnostic otherwise.	Yes	Yes	Yes	Yes	Yes	
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	No	No	No	Yes	No	Yes	Yes	Verizon	No	No	No	No	No	Single purpose device
Philips telehealth.philips.com	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Multiple	Yes	No	Yes	No	No	
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	N/A	N/A	N/A	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Agnostic	No	No	No	No	Yes	
VRI TeleHealth www.monitoringcare.com	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	AT&T, Verizon, T-Mobile	N/A	N/A	N/A	N/A	N/A	
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes	Yes	Yes	No	No	Yes	N/A	Yes	No	Yes	No	Yes	

Front-End Unit Support

	Educational Self-Management Materials			Front-End Unit Multi-Language Support													Remote Updates	Remote Configuration Capability	
	On-Screen Educational Self-Management Material	Self-Management Educational Audios	Self-Management Educational Videos	English	Spanish	Mandarin	Cantonese	Korean	Russian	French	German	Hindi	Urdu	Portuguese	Arabic	Hebrew			Other (please specify)
Ambio Health www.ambiohealth.com	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	N/A	Yes	Yes
Beacon® by HealthInterlink www.healthinterlink.com	No	No	No	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	No	Additional languages by customer request	Yes	Yes
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No	Additional Languages can be supported via localizing	Yes	Yes
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
Cardiocom - TeleResponse www.cardiocom.com	No	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
Cardiocom - NetResponse www.cardiocom.com	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Additional languages can be developed as required	Yes	Yes
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	Italian	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	N/A	Yes	Yes
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	UK English; additional languages added upon request	Yes	Yes

Front-End Unit Support

	Educational Self-Management Materials			Front-End Unit Multi-Language Support														Remote Updates	Remote Configuration Capability
	On-Screen Educational Self-Management Material	Self-Management Educational Audios	Self-Management Educational Videos	English	Spanish	Mandarin	Cantonese	Korean	Russian	French	German	Hindi	Urdu	Portuguese	Arabic	Hebrew	Other (please specify)		
Healthsense, Inc. www.healthsense.com	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	N/A	Yes	Yes
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	No	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	UK English, Armenian, Polish, Italian, Welsh, Bengali, Punjabi, Dutch	Yes	Yes
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No	No	No	N/A	Yes	Yes
Ideal Life, Inc. www.idealifeonline.com	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	N/A	Yes	No
Independa www.independa.com	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Supports both US standards and metric units	Yes	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No	Dutch, Italian, Canadian-French, UK English, Canadian English	Yes	Yes
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	N/A	Yes	Yes
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Multi-Language Support Available Upon Request	No	No
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Multi-Language Customization Available	Yes	Yes
VRI TeleHealth www.monitoringcare.com	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Use Pacific Interpreters for all other languages	Yes	No
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	N/A	Yes	Yes

Reports and Personal Health Record (PHR)/EHR Access

Health Record/Report Access provided to the Following External Parties

	Customizable Reports	Ability to Schedule Automatic Reports	Client/Patient's Physician	Client/Patient's Nurse/ Other Licensed Clinician	Client/Patient/User/Self	Care Manager/ Professional Caregiver	Family	Other (please specify)
Ambio Health www.ambiohealth.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Anyone authorized
Beacon® by HealthInterlink www.healthinterlink.com	Yes	No	Yes	Yes	Yes	Yes	Yes	HL7 interface to EMR/EHR or export to enterprise data warehouse.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	EMR interface support exists and can be developed upon request.
Cardiocom - Commander FLEX www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
Cardiocom - Link View www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
Cardiocom - TeleResponse www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
Cardiocom - NetResponse www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
Cardiocom - Attentiv www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
Cardiocom - Telescale www.cardiocom.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Multiple EMR interfaces available, others can be developed upon request.
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	No	Yes	Yes	Yes	Yes	Yes	Social worker
GrandCare Systems www.grandcare.com	No	No	Yes	Yes	Yes	Yes	Yes	Ability to integrate into existing EHR/EMR platforms

Reports and Personal Health Record (PHR)/EHR Access

Health Record/Report Access provided to the Following External Parties

	Customizable Reports	Ability to Schedule Automatic Reports	Client/Patient's Physician	Client/Patient's Nurse/ Other Licensed Clinician	Client/Patient/User/Self	Care Manager/ Professional Caregiver	Family	Other (please specify)
Healthsense, Inc. www.healthsense.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Ideal Life, Inc. www.ideallifeonline.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Independa www.independa.com	No	No	Yes	Yes	Yes	Yes	Yes	Ability to integrate with existing EMR/EHR platforms.
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	Yes	Yes	No	Yes	No	N/A
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	No	Yes	No	N/A
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Wide range of external, multi-channel communications available
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Wide range of external, multi-channel communications available
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	No	Yes	Yes	No	No	No	N/A

Alerts and Chronic Disease Management Decision Support

	Alerts can be sent to the Following External Parties						Alert Sending Modality			
	Client/Patient's Physician	Client/Patient's Nurse/Other Licensed Clinician	Client/Patient/User/ Self	Care Manager/ Professional Caregiver	Family	Other (please specify)	Pager	E-Mail	Text Message	Other (Please Specify)
Ambio Health www.ambiohealth.com	Yes	Yes	Yes	Yes	Yes	Alert services may be customized	No	Yes	Yes	Telephone
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	No	Yes	No	N/A	No	No	No	Alerts within system.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Telephone
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Monitoring software available from any web-enabled device.
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	Yes	Dashboard from PC
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	Care circle	Yes	Yes	Yes	Monitoring software available from any web-enabled device.
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	Yes	Call or text to resident OR caregiver(s) - Message direct to resident's touchscreen

Alerts and Chronic Disease Management Decision Support

	Alerts can be sent to the Following External Parties						Alert Sending Modality			
	Client/Patient's Physician	Client/Patient's Nurse/Other Licensed Clinician	Client/Patient/User/Self	Care Manager/Professional Caregiver	Family	Other (please specify)	Pager	E-Mail	Text Message	Other (Please Specify)
Healthsense, Inc. www.healthsense.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	No	Telephone
Honeywell HomMed - Genesis DM www.hommed.com	No	Yes	Yes	Yes	No	N/A	No	No	No	Alerts sent ONLY through system
Honeywell HomMed - Genesis Touch www.hommed.com	No	Yes	Yes	Yes	No	N/A	No	No	No	Alerts sent ONLY through system
Ideal Life, Inc. www.idealifeonline.com	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	N/A
Independa www.independa.com	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Call, text or e-mail alerts to formal and/or informal caregiver(s). Reminders (med., calendar, ADL, other) to care recipient via embedded TV solution, tablet and/or telephone.
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	No	Yes	No	N/A	No	Yes	No	N/A
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	No	N/A	No	Yes	Yes	N/A
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	Yes	Yes	Alert services may be customized	Yes	Yes	Yes	Alert Sending Modalities can be customized based on client requirements
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	No	Alert services may be customized	Yes	Yes	Yes	Alert Sending Modalities can be customized based on client requirements
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	Yes	Yes	N/A	No	Yes	Yes	Telephone/Fax
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	No	No	No	N/A	No	No	No	N/A

Single Condition Clinical Decision Support System

	Congestive Heart Failure (CHF)	Myocardial Infarction	Pneumonia	Chronic Obstructive Pulmonary Disease (COPD)	Diabetes	Hypertension	Asthma	Arrhythmia	Stroke	Pressure Ulcers/Wound Care	End-Stage Renal Disease	Depression	Other (Please Specify)
Ambio Health www.ambiohealth.com	No	No	No	No	No	No	No	No	No	No	No	No	N/A
Beacon® by HealthInterlink www.healthinterlink.com	No	No	No	No	No	No	No	No	No	No	No	No	Customizable by provider.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All Care plans are customizable by the client (defaults provided).
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Telescale www.cardiocom.com	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	No	N/A
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Customization available
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Platform supports providers implementing own rules.
GrandCare Systems www.grandcare.com	Yes	No	No	Yes	Yes	No	No	No	No	No	No	Yes	Customizable to support any chronic conditions - add on ANY medical information available on the Internet or from a health provider.

Single Condition Clinical Decision Support System

	Congestive Heart Failure (CHF)	Myocardial Infarction	Pneumonia	Chronic Obstructive Pulmonary Disease (COPD)	Diabetes	Hypertension	Asthma	Arrhythmia	Stroke	Pressure Ulcers/ Wound Care	End-Stage Renal Disease	Depression	Other (Please specify)
Healthsense, Inc. www.healthsense.com	No	No	No	No	No	No	No	No	No	No	No	No	N/A
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	N/A
Ideal Life, Inc. www.idealifeonline.com	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	N/A
Independa www.independa.com	Yes	No	No	No	Yes	Yes	No	No	No	No	No	Yes	Can integrate with medical devices to support any chronic condition. Includes ability to present medical or educational information available from provider or payor system.
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Customizable
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	N/A
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Customizable to support client needs.
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Customizable to support client needs.
VRI TeleHealth www.monitoringcare.com	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	No	No	No	No	No	No	No	Yes	No	No	N/A

Customizable Pathways and Clinical Decision Support Systems for Multiple Chronic Conditions and Comorbidities*

	Congestive Heart Failure (CHF)	Myocardial Infarction	Pneumonia	Chronic Obstructive Pulmonary Disease (COPD)	Diabetes	Hypertension	Asthma	Arrhythmia	Stroke	Pressure Ulcers/Wound Care	End-Stage Renal Disease	Depression	Other (Please Specify)
Ambio Health www.ambiohealth.com	No	No	No	No	No	No	No	No	No	No	No	No	N/A
Beacon® by HealthInterlink www.healthinterlink.com	No	No	No	No	No	No	No	No	No	No	No	No	Customizable by provider.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Care Plan capability for comorbidities is available but for dynamic decision tree logic, programming would be required.
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Link View www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Bi-Polar Disease, Schizophrenia, CKD. Can customize new Disease Management Protocols upon request.
Cardiocom - Telescale www.cardiocom.com	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	No	N/A
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	N/A
Family Health Network Connected for Life www.familyhealthnetwork.com	No	No	No	No	No	No	No	No	No	No	No	No	Platform supports providers implementing own rules.
GrandCare Systems www.grandcare.com	Yes	No	No	No	Yes	No	No	No	No	No	No	No	N/A

*Important Note: Selection includes all comorbidities that can be handled simultaneously.

Customizable Pathways and Clinical Decision Support Systems for Multiple Chronic Conditions and Comorbidities*

	Congestive Heart Failure (CHF)	Myocardial Infarction	Pneumonia	Chronic Obstructive Pulmonary Disease (COPD)	Diabetes	Hypertension	Asthma	Arrhythmia	Stroke	Pressure Ulcers/Wound Care	End-Stage Renal Disease	Depression	Other (Please specify)
Healthsense, Inc. www.healthsense.com	No	No	No	No	No	No	No	No	No	No	No	No	N/A
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	N/A
Ideal Life, Inc. www.ideallifeonline.com	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	N/A
Independa www.independa.com	Yes	No	No	No	Yes	Yes	No	No	No	No	No	Yes	N/A
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Additional customization available.
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	N/A
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Care plan capability for comorbidities is available but for dynamic decision tree logic, programming would be required.
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Options for validated clinical pathways and/or customer specific protocols, include branching logic for multiple comorbidities with individual patient prompt feature in response to biometric alerts.
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	No	No	No	No	No	No	No	No	No	No	N/A

*Important Note: Selection includes all comorbidities that can be handled simultaneously.

Interfacing, Integration and Add-Ons

	Electronic Health Records (EHRs)	Medication Adherence Monitoring Dispensers	Safety Monitoring Systems (e.g. Personal Emergency Response Systems (PERS))	Wellness, Behavior and Activity Monitoring Systems	Other (Please List)
Ambio Health www.ambiohealth.com	Yes	No	Yes	Yes	Motion and door sensors
Beacon® by HealthInterlink www.healthinterlink.com	Yes	No	No	No	HL7 interface, data export & customization capabilities.
Biosign - Healthanywhere www.biosign.com	No	No	No	No	N/A
Cardiocom - Commander FLEX www.cardiocom.com	Yes	No	Yes	No	Can be integrated with other home sensors
Cardiocom - Link View www.cardiocom.com	Yes	No	Yes	No	Can be integrated with other home sensors
Cardiocom - TeleResponse www.cardiocom.com	Yes	No	No	No	N/A
Cardiocom - NetResponse www.cardiocom.com	Yes	No	No	No	N/A
Cardiocom - Attentiv www.cardiocom.com	Yes	No	Yes	No	Can be integrated with other home sensors
Cardiocom - Telescale www.cardiocom.com	Yes	No	No	No	N/A
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	No	Yes	Bluetooth weight scale, Bluetooth pulse oximeter, and Bluetooth glucose meter, HL7, customizable integration to existing EMR systems
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	Yes	Yes	N/A
GrandCare Systems www.grandcare.com	Yes	Yes	Yes	Yes	Can be set up to interface with other systems, technologies, databases & EMR/EHRs - can integrate with music, video, socialization tools & brain fitness programs.

Interfacing, Integration and Add-Ons

	Electronic Health Records (EHRs)	Medication Adherence Monitoring Dispensers	Safety Monitoring Systems (e.g. Personal Emergency Response Systems (PERS))	Wellness, Behavior and Activity Monitoring Systems	Other (Please List)
Healthsense, Inc. www.healthsense.com	Yes	Yes	Yes	Yes	Integrates with wander guard, fire life safety systems
Honeywell HomMed - Genesis DM www.hommed.com	Yes	No	Yes	No	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	No	Yes	No	N/A
Ideal Life, Inc. www.idealifeonline.com	Yes	Yes	No	Yes	N/A
Independa www.independa.com	Yes	Yes	Yes	Yes	Social engagement tools, environmental sensors, health sensors, safety sensors, ADL sensors and other technologies. Can integrate with other data sources, including EMR/EHRs, cognitive programs and music therapy solutions.
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	No	No	No	Clinical information systems, business intelligence and analytics, etc.
Philips telehealth.philips.com	Yes	Yes	Yes	Yes	N/A
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	No	No	Yes	Varied reporting options
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	No	Medication Dispenser
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	Yes	Fall detection
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	No	No	No	N/A

Interoperability, Interoperability Standards and Certification

	Type of Interoperability Supported (N=None, E= Export Data Only, I= Import Data Only, or B=Bi-Directional data import and export)	Supported Interoperability Standards		Back-End EHR/PHR Certification			Front-End System Certification
	Interoperability Supported (N=None, E= Export Data Only, I= Import Data Only, or B=Bi-Directional data import and export)	HL7 Personal Health Monitoring Report	Other (please list):	ONC-ATCB (Please provide a link for verification)	Comprehensive CCHIT-LTPAC: Home Health	Comprehensive CCHIT-LTPAC: Nursing Home	Continua Health Alliance Certified
Ambio Health www.ambiohealth.com	E	Yes	HL7, CCD	No	No	No	No
Beacon® by HealthInterlink www.healthinterlink.com	B	No	HL7, CCD	No	No	No	No
Biosign - Healthanywhere www.biosign.com	E	No	N/A	No	No	No	No
Cardiocom - Commander FLEX www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
Cardiocom - Link View www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
Cardiocom - TeleResponse www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
Cardiocom - NetResponse www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
Cardiocom - Attentiv www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
Cardiocom - Telescale www.cardiocom.com	B	Yes	HL7, CCD	No	No	No	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	B	Yes	N/A	No	No	No	No
Family Health Network Connected for Life www.familyhealthnetwork.com	B	Yes	HL7, CCD	No	No	No	No
GrandCare Systems www.grandcare.com	B	No	N/A	No	No	No	No
Healthsense, Inc. www.healthsense.com	E	No	N/A	No	No	No	No
Honeywell HomMed - Genesis DM www.hommed.com	B	Yes	HL7 and can create custom as needed	No	No	No	No
Honeywell HomMed - Genesis Touch www.hommed.com	B	Yes	HL7 and can create custom as needed	No	No	No	No
Ideal Life, Inc. www.ideallifeonline.com	B	Yes	N/A	No	No	No	No
Independa www.independa.com	B	No	N/A	No	No	No	No
Intel-GE Care Innovations™ Guide www.careinnovations.com	B	Yes	HL7 CCD / HL7 ORU	No	No	No	No
Philips telehealth.philips.com	B	Yes	HL7, CCD	No	No	No	No

Interoperability, Interoperability Standards and Certification

	Type of Interoperability Supported (N=None, E= Export Data Only, I= Import Data Only, or B=Bi-Directional data import and export)	Supported Interoperability Standards		Back-End EHR/PHR Certification			Front-End System Certification
	Interoperability Supported (N=None, E= Export Data Only, I= Import Data Only, or B=Bi-Directional data import and export)	HL7 Personal Health Monitoring Report	Other (please list):	ONC-ATCB (Please provide a link for verification)	Comprehensive CCHIT-LTPAC: Home Health	Comprehensive CCHIT-LTPAC: Nursing Home	Continua Health Alliance Certified
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	B	No	N/A	No	No	No	No
Tunstall - Telehealth americas.tunstall.com/Telehealth	E	No	N/A	No	No	No	Yes
VRI TeleHealth www.monitoringcare.com	B	Yes	N/A	No	No	No	No
WoundRounds (Telemedicine Solutions) www.woundrounds.com	I	No	N/A	http://ldng.ag/11hxHft	No	No	No

Program Support Services

	Equipment Deliver/Pick Up	Site/Home Installation	IT/Network Troubleshooting & Support	Front-End System Set-up	Front-End System Customization	Back-End System Set-up	Back-End System Customization	Onsite Staff Training	Online Staff Training	Onsite User/Patient Training	Online User/Patient Training	Equipment Cleaning	Equipment Refurbishing	Other (Please List)
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	N/A	N/A	Customizable to support client needs.
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Comprehensive and customizable support services. Global knowhow.
VRI TeleHealth www.monitoringcare.com	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	N/A

Clinical Supportability	24-Hour Support - Phone	Limited Hours Support - Phone	24-Hour Support - Web	Limited Hours Support - Web	E-Mail Support	Listserv and/or Usergroup	Online Training	Onsite Training	Other (Please List)
Ambio Health www.ambiohealth.com	No	Yes	Yes	No	Yes	No	Yes	Yes	N/A
Beacon® by HealthInterlink www.healthinterlink.com	No	No	No	No	No	No	No	No	3rd party partner options for some of these services
Biosign - Healthanywhere www.biosign.com	No	Yes	Yes	No	Yes	No	Yes	Yes	N/A
Cardiocom - Commander FLEX www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
Cardiocom - Link View www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
Cardiocom - TeleResponse www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
Cardiocom - NetResponse www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
Cardiocom - Attentiv www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
Cardiocom - Telescale www.cardiocom.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Patient management and monitoring services
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	No	No	Yes	Yes	No	Yes	Yes	Web-based audio/video conferencing and videos
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	No	Yes	No	Yes	Yes	Yes	Yes	N/A
GrandCare Systems www.grandcare.com	No	Yes	Yes	No	Yes	Yes	Yes	Yes	24/7 support, in-home caregiving & real time monitoring. Online help videos & user guides.
Healthsense, Inc. www.healthsense.com	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Established a membership organization of customers that provides best practices for implementing technology-enabled care.
Honeywell HomMed - Genesis DM www.hommed.com	Yes	No	Yes	No	Yes	No	Yes	Yes	N/A
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	No	Yes	No	Yes	No	Yes	Yes	N/A
Ideal Life, Inc. www.ideallifeonline.com	No	Yes	No	No	Yes	No	Yes	Yes	N/A
Independa www.independa.com	No	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A
Intel-GE Care Innovations™ Guide www.careinnovations.com	No	Yes	No	No	Yes	No	Yes	Yes	Clinical services monitoring available
Philips telehealth.philips.com	No	Yes	No	Yes	Yes	No	Yes	Yes	N/A

Clinical Supportability

	24-Hour Support-Phone	Limited Hours Support - Phone	24-Hour Support - Web	Limited Hours Support - Web	E-Mail Support	Listserv and/or Usergroup	Online Training	Onsite Training	Other (Please List)
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
VRI TeleHealth www.monitoringcare.com	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
WoundRounds (Telemedicine Solutions) www.woundrounds.com	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes

Technical Supportability

										Warranty Information			
	24-Hour Support-Phone	Limited Hours Support - Phone	24-Hour Support - Web	Limited Hours Support - Web	E-Mail Support	Listserv and/or Usergroup	Online Training	Onsite Training	Other (Please List)	Length of Product Warranty	Parts	Parts & Labor	Parts, and In-Field/ On-Site Labor
Ambio Health www.ambiohealth.com	No	Yes	Yes	No	Yes	No	Yes	Yes	N/A	1 year	N/A	Yes	No
Beacon® by HealthInterlink www.healthinterlink.com	No	Yes	No	Yes	Yes	No	Yes	Yes	N/A	Manufacturer Warranty	N/A	N/A	N/A
Biosign - Healthanywhere www.biosign.com	No	Yes	Yes	No	Yes	No	Yes	Yes	N/A	1 year	Yes	No	No
Cardiocom - Commander FLEX www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
Cardiocom - Link View www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
Cardiocom - TeleResponse www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
Cardiocom - NetResponse www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
Cardiocom - Attentiv www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
Cardiocom - Telescale www.cardiocom.com	Yes	No	No	No	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	Yes	No
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	No	No	Yes	Yes	No	Yes	Yes	Web-based audio/video conferencing and videos	1 year (5-Year and 10-Year extended warranty available)	N/A	N/A	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	No	Yes	No	Yes	Yes	Yes	Yes	N/A	Manufacturer Warranty	N/A	N/A	Yes
GrandCare Systems www.grandcare.com	No	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	1 year	Yes	No	No
Healthsense, Inc. www.healthsense.com	Yes	No	Yes	No	Yes	Yes	Yes	Yes	N/A	1 year	N/A	N/A	Yes
Honeywell HomMed - Genesis DM www.hommed.com	Yes	No	Yes	No	Yes	No	Yes	Yes	N/A	1-5 years	N/A	Yes	No
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	No	Yes	No	Yes	No	Yes	Yes	N/A	1-2 years	N/A	Yes	No
Ideal Life, Inc. www.ideallifeonline.com	No	Yes	No	No	Yes	No	Yes	Yes	N/A	1 year	N/A	N/A	Yes
Independa www.independa.com	No	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	Term of Contract for software. Manufacturer warranty on hardware.	Yes	Varies by Manufacturer	Varies by Manufacturer
Intel-GE Care Innovations™ Guide www.careinnovations.com	Yes	No	No	No	Yes	No	No	Yes	N/A	14 months	N/A	N/A	Yes
Philips telehealth.philips.com	No	Yes	No	Yes	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	N/A	Yes

Technical Supportability

										Warranty Information			
	24-Hour Support - Phone	Limited Hours Support - Phone	24-Hour Support - Web	Limited Hours Support - Web	E-Mail Support	Listserv and/or Usergroup	Online Training	Onsite Training	Other (Please List)	Length of Product Warranty	Parts	Parts & Labor	Parts, and In-Field/ On-Site Labor
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Yes	no	Yes	No	Yes	No	Yes	Yes	N/A	N/A	N/A	N/A	N/A
Tunstall - Telehealth americas.tunstall.com/Telehealth	No	Yes	No	Yes	Yes	No	Yes	Yes	N/A	1 year	N/A	Yes	No
VRI TeleHealth www.monitoringcare.com	Yes	No	No	Yes	Yes	No	Yes	Yes	N/A	1 year	N/A	N/A	Yes
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	No	Yes	no	Yes	No	Yes	Yes	N/A	Term of Contract	N/A	N/A	N/A

Legal/Regulatory/ Cyberliability

	FDA Approval (Approved, Cleared, Pending, Listed (this category may include Medical Device Data System (MDDS)) or None)	FDA Classification (Class I, Class II, etc.)	HITECH	HIPAA	Security - List HIPAA & HITECH Act Requirements Met	List Applicable Regulatory Requirements Met	Provide a Link to Company's Cyberliability Policy	List Any Other Legal Requirements	Provide link to Sample Contract
Ambio Health www.ambiohealth.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	www.ambiohealth.com/pages/terms	Meets federal record retention requirements	Available upon request
Beacon® by HealthInterlink www.healthinterlink.com	Listed	Class I	Yes	Yes	All are met.	ISO 13485, FDA MDDS, Medicare and Medicaid Regulations met.	Available upon request	Record retention among others.	Available upon request
Biosign - Healthanywhere www.biosign.com	Cleared	Class II	Yes	Yes	Available upon request.	Medicare and Medicaid Regulations Met	Available upon request	N/A	Available upon request
Cardiocom - Commander FLEX www.cardiocom.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
Cardiocom - Link View www.cardiocom.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
Cardiocom - TeleResponse www.cardiocom.com	None	N/A	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
Cardiocom - NetResponse www.cardiocom.com	None	N/A	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
Cardiocom - Attentiv www.cardiocom.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
Cardiocom - Telescale www.cardiocom.com	None	Class I	Yes	Yes	All are met.	Medicare and Medicaid Regulations Met	Available upon request	Meets FDA signature and record retention requirements	Available upon request
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Cleared	Class II	No	Yes	All are met.	N/A	N/A	FDA procedures and requirements, ISO procedures and requirements, U.S. Government (GSA Advantage) - approved	Available upon request
Family Health Network Connected for Life www.familyhealthnetwork.com	Listed	Class I	Yes	Yes	All are met.	Our component is a software platform	Available upon request	N/A	Available upon request
GrandCare Systems www.grandcare.com	Listed	Class I	Yes	Yes	All are met.	ISO 13485, FDA MDDS, FDA QSR	http://www.grandcare.com/privacy-policy/	N/A	Available upon request
Healthsense, Inc. www.healthsense.com	Listed	Class I	No	Yes	All are met.	UL-1069, UL-1637	N/A	N/A	Available upon request
Honeywell HomMed - Genesis DM www.hommed.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid regulations	http://www.hommed.com/privacy-statement/	N/A	Available upon request
Honeywell HomMed - Genesis Touch www.hommed.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid regulations	http://www.hommed.com/privacy-statement/	N/A	Available upon request
Ideal Life, Inc. www.idealifeonline.com	Cleared	Class I & II	No	Yes	HIPAA	FDA, CAMDCAS, ISO 13485	N/A	N/A	Available upon request
Independa www.independa.com	None	N/A	No	Yes	All are met.	N/A	http://independa.com/privacy-policy	N/A	Available upon request
Intel-GE Care Innovations™ Guide www.careinnovations.com	Cleared	Class II	Yes	Yes	All are met.	FDA	http://www.careinnovations.com/privacy	Meets requirements of California Health and Safety Code, Division 104, Part 15, Chapter 8, Sections 119400 119402	Reserved for customer engagements
Philips telehealth.philips.com	Cleared	Class II	Yes	Yes	All are met.	Medicare and Medicaid regulations	N/A	N/A	Available upon request

Legal/Regulatory/ Cyberliability

	FDA Approval (Approved, Cleared, Pending, Listed (this category may include Medical Device Data System (MDDS)) or None)	FDA Classification (Class I, Class II, etc.)	HITECH	HIPAA	Security - List HIPAA & HITECH Act Requirements Met	List Applicable Regulatory Requirements Met	Provide a Link to Company's Cyberliability Policy	List Any Other Legal Requirements	Provide link to Sample Contract
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	None	N/A	N/A	Yes	Available upon request.	Available upon request	Available upon request	N/A	Available upon request
Tunstall - Telehealth americas.tunstall.com/Telehealth	Cleared	Class II	N/A	Yes	Available upon request.	Available upon request	Available upon request	N/A	Available upon request
VRI TeleHealth www.monitoringcare.com	Cleared	Class I	No	Yes	All are met.	Medicare and Medicaid regulations	N/A	Available upon request	Available upon request
WoundRounds (Telemedicine Solutions) www.woundrounds.com	None	N/A	No	Yes	All are met.	HIPAA Privacy	Available upon request	N/A	N/A

Hardware and Software Requirements - Back End

	Desktop/Laptop Specifications				Operating System (OS) - Windows	Operating System (OS) - Apple	Operating System (OS) - Unix/Linux	Network Specifications	Wireless Specifications	Browser Based (List Browser Requirements)	Minimum Internet/ Bandwidth Specifications	Miscellaneous Software/ Applets Needed (i.e. Citrix)	Miscellaneous Reporting Specifications (i.e. Crystal Reports)	Scalability	Local Model	3rd-Party Hosted Model
	Minimum Processor	Minimum Processor Speed	Minimum RAM	Minimum Hard Disk Storage												
Ambio Health www.ambiohealth.com	Any web browser	Any web browser	Any web browser	Any web browser	Yes	Yes	Yes	Internet Connectivity	Proprietary	IE 9.0+, Firefox, Chrome, Safari	1 Mbs	None	N/A	Yes	No	No
Beacon® by HealthInterlink www.healthinterlink.com	Any	1.5 Ghz	1 GB	2 GB	Yes	Yes	Yes	Internet Connectivity	802.11 b/g/n	IE 9.0+, Firefox, Chrome	1 Mbs	None	N/A	Yes	Yes	Yes
Biosign - Healthanywhere www.biosign.com	Pentium III	1 Ghz	1 GB	500 MB	Yes	No	No	Ethernet	802.11 b/g/n	IE 8.0+, Chrome, Firefox, Opera, Safari	28.8 Kps (min), Broadband preferred	Windows OS required for device connectivity	N/A	Yes	No	Yes
Cardiocom - Commander FLEX www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
Cardiocom - Link View www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Broadband (1.5Mb/s+)	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
Cardiocom - TeleResponse www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
Cardiocom - NetResponse www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
Cardiocom - Attentiv www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
Cardiocom - Telescale www.cardiocom.com	Intel Core i3	2 Ghz	2 GB	20 GB	Yes	Yes	No	Internet Connectivity	N/A	IE 6.0+, Firefox, Chrome, Safari	Broadband (1.5 Mbs+)	Adobe Acrobat Reader; Javascript	N/A	Yes	Yes	Yes
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Any	Any	Any	70 MB (data kept on vendor servers)	Yes	No	No	Ethernet	802.11	Any	Dial-Up / Internet / Cellular	RDC	N/A	Yes	Yes	Yes
Family Health Network Connected for Life www.familyhealthnetwork.com	Intel Core i3	2 Ghz	2 GB	5 GB	Yes	Yes	No	Broadband	802.11 a/b/g/n	IE 9.0+, Firefox, Chrome, Safari	1.5 Mbs	None	N/A	Yes	Yes	Yes
GrandCare Systems www.grandcare.com	Intel Atom	1 GHz	1 GB	10 GB	No	No	Yes	Ethernet	802.11 b/g/n	IE 9.0+, Firefox, Chrome, Safari	1 Mbs	N/A	N/A	Yes	Yes	Yes
Healthsense, Inc. www.healthsense.com	N/A	N/A	N/A	N/A	Yes	N/A	N/A	Internet Connectivity	802.11 b/g/n	IE, Firefox, Chrome	Any	None	N/A	Yes	No	No
Honeywell HomMed - Genesis DM www.hommed.com	Any	400 MHz	1 GB	1 GB	Yes	No	No	Ethernet	Bluetooth	None	Any	LifeStream Manager	Integrated	Yes	No	Yes
Honeywell HomMed - Genesis Touch www.hommed.com	Any	400 MHz	1 GB	1 GB	Yes	No	No	Ethernet	Bluetooth	None	Any	LifeStream Manager	Integrated	Yes	No	Yes

Hardware and Software Requirements - Back End

							Mobile						Notes
	Software as a Service Model (SaaS)	Remote Access	Off-Line Functionality Support	Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.)	Available for Purchase	Available for Lease	Cellular Carriers that Support Solution (Please List)	Mobile OS - Android	Mobile OS - BlackBerry	Mobile OS - iOS	Mobile OS - Unix/Linux	Mobile OS - Windows	
Ambio Health www.ambiohealth.com	Yes	Yes	Yes	No	No	Yes	N/A	Yes	No	Yes	No	Yes	
Beacon® by HealthInterlink www.healthinterlink.com	Yes	Yes	No	No	Yes	Yes	Multiple	Yes	No	Yes	Yes	Yes	Web-based clinical care access.
Biosign - Healthanywhere www.biosign.com	Yes	Yes	Yes	Yes	Yes	No	N/A	No	No	No	No	No	
Cardiocom - Commander FLEX www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
Cardiocom - Link View www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	No	No	No	No	No	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
Cardiocom - TeleResponse www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
Cardiocom - NetResponse www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
Cardiocom - Attentiv www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
Cardiocom - Telescale www.cardiocom.com	Yes	Yes	No	No	No	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Turn-key solution for hosting the home telehealth system. Local hosted requirements may be unique based customer environment.
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Yes	Yes	No	Yes	Yes	Yes	Verizon	No	No	No	No	Yes	
Family Health Network Connected for Life www.familyhealthnetwork.com	Yes	Yes	No	Yes	Yes	Yes	Agnostic	Yes	No	Yes	No	No	
GrandCare Systems www.grandcare.com	Yes	Yes	No	No	Yes	No	Agnostic	No	No	No	No	No	
Healthsense, Inc. www.healthsense.com	Yes	Yes	No	No	Yes	Yes	Agnostic	Yes	Yes	Yes	Yes	Yes	
Honeywell HomMed - Genesis DM www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	eDevice, AT&T, Verizon	Yes	No	No	No	No	
Honeywell HomMed - Genesis Touch www.hommed.com	Yes	Yes	Yes	Yes	Yes	Yes	eDevice, AT&T, Verizon	Yes	No	No	No	No	

Hardware and Software Requirements - Back End

	Desktop/Laptop Specifications				Operating System (OS) - Windows	Operating System (OS) - Apple	Operating System (OS) - Unix/Linux	Network Specifications	Wireless Specifications	Browser Based (List Browser Requirements)	Minimum Internet/Bandwidth Specifications	Miscellaneous Software/Applets Needed (i.e. Citrix)	Miscellaneous Reporting Specifications (i.e. Crystal Reports)	Scalability	Local Model	3rd-Party Hosted Model
	Minimum Processor	Minimum Processor Speed	Minimum RAM	Minimum Hard Disk Storage												
Ideal Life, Inc. www.idealifeonline.com	N/A	N/A	N/A	N/A	No	Yes	Yes	Internet Connectivity	802.11 b/g/n	IE7 or higher, Firefox, Chrome	Internet Connectivity	None	N/A	Yes	No	Yes
Independa www.independa.com	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	802.11 b/g/n	Any web-enabled browser	Any	None	N/A	Yes	No	Yes
Intel-GE Care Innovations™ Guide www.careinnovations.com	Any	1.8 GHz	1 GB	N/A	Yes	No	No	Internet Connectivity	802.11 b/g/n	IE 8.0, 9.0	1 Mb/s	Adobe Acrobat Reader	N/A	Yes	No	Yes
Philips telehealth.philips.com	Any	1 Ghz	2 GB	20 GB	Yes	No	No	Internet Connectivity	802.11 b/g/n	IE 6.0 or higher	LAN to public internet	None	N/A	Yes	Yes	Yes
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	N/A	IE 6+, Chrome, FireFox	Any	PDF Reader	Exporting enabled	Yes	N/A	N/A
Tunstall - Telehealth americas.tunstall.com/Telehealth	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Any web browser	Internet Connectivity	N/A	IE 6+, Chrome, FireFox	Any	PDF Reader	N/A	Yes	Yes	Yes
VRI TeleHealth www.monitoringcare.com	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No
WoundRounds (Telemedicine Solutions) www.woundrounds.com	N/A	N/A	N/A	N/A	Yes	Yes	No	Ethernet	N/A	IE 8 minimum	N/A	Adobe Acrobat 10+	N/A	Yes	No	No

Hardware and Software Requirements - Back End

							Mobile						Notes
	Software as a Service Model (SaaS)	Remote Access	Off-Line Functionality Support	Ability to Store/Handle Attachments (Insurance card, Historical Notes, etc.)	Available for Purchase	Available for Lease	Cellular Carriers that Support Solution (Please List)	Mobile OS - Android	Mobile OS - Blackberry	Mobile OS - iOS	Mobile OS - Unix/Linux	Mobile OS - Windows	
Ideal Life, Inc. www.ideallifeonline.com	Yes	Yes	No	No	No	Yes	N/A	No	No	No	No	No	
Independa www.independa.com	Yes	Yes	Yes	No	Yes	Yes	Agnostic. Verizon for tablet.	Yes	Yes	Yes	Yes	Yes	
Intel-GE Care Innovations™ Guide www.careinnovations.com	No	Yes	No	No	Yes	No	Verizon	No	No	No	No	No	
Philips telehealth.philips.com	Yes	Yes	Yes	No	Yes	Yes	Multiple	Yes	No	No	No	No	
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	N/A	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
Tunstall - Telehealth americas.tunstall.com/Telehealth	Yes	Yes	No	Yes	No	Yes	Any web-enabled browser can access	No	No	No	No	Yes	Client operational requirements and specifications can be supported.
VRI TeleHealth www.monitoringcare.com	Yes	N/A	N/A	N/A	Yes	Yes	AT&T, Verizon, T-Mobile	Yes	Yes	Yes	Yes	Yes	
WoundRounds (Telemedicine Solutions) www.woundrounds.com	Yes	Yes	Yes	No	No	Yes	N/A	Yes	No	Yes	No	Yes	

Company's Experience and Viability	Number of Years in Business	Release Date of Current Version	Number of Patients (Regardless of setting)	Core Customer Base, Focus of Line of Business	Link/s to Additional Case Study/ies
Ambio Health www.ambiohealth.com	2	December 2012	Available on Request	ACO/IDNs, Assisted Living, Chronic Disease Management, Home Health, Person Centered Medical Homes, Post-Acute Care	None
Beacon® by HealthInterlink www.healthinterlink.com	3	August 2013	Available on Request	ACO/IDNs, CCRCs, Health Plans, Home Health, Hospital, PACE, Person Centered Medical Homes	None
Biosign - Healthanywhere www.biosign.com	10	January 2012	Available on Request	Chronic Disease Management, Home Care, Post-Acute Care, Independent Living, Skilled Nursing Facilities	http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3192601/ http://www.biosign.com/media/1777/Thompson-Telemedicine-and-eHealth-2011.pdf
Cardiocom - Commander FLEX www.cardiocom.com	15	February 2011	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
Cardiocom - Link View www.cardiocom.com	15	June 2013	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
Cardiocom - TeleResponse www.cardiocom.com	15	November 2011	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
Cardiocom - NetResponse www.cardiocom.com	15	November 2012	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
Cardiocom - Attentiv www.cardiocom.com	15	June 2013	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
Cardiocom - Telescale www.cardiocom.com	15	January 2005	1,000,000 Patient Months of Service	ACO/IDNs, Health Plans, Home Care, Special Needs Plans	http://www.cardiocom.com/video.asp
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	Device/Software = 9 years; Entity = 6 years	February 2013	Not Disclosed	Home Care, Hospice, Hospitals, Independent Living, Physicians' Offices, Skilled Nursing Facilities	None
Family Health Network Connected for Life www.familyhealthnetwork.com	4	May 2013	Available on Request	ACO/IDNs, Health Care Systems, Home Health, Person Centered Medical Homes, Skilled Nursing Facilities	None
GrandCare Systems www.grandcare.com	8	April 2013	Not Disclosed	Assisted Living, CCRCs, Health Care Providers, Home Care, Home Health, Hospital Transitions, Independent Living	http://www.grandcare.com/testimonials/

Company's Experience and Viability

	Number of Years in Business	Release Date of Current Version	Number of Patients (Regardless of setting)	Core Customer Base, Focus of Line of Business	Link/s to Additional Case Study/ies
Healthsense, Inc. www.healthsense.com	10	April 2013	Not Disclosed	Assisted Living, Housing with Services	http://healthsense.com/index.php/resource-material/white-papers
Honeywell HomMed - Genesis DM www.hommed.com	17	April 2012	Available on Request	ACO/IDNs, Home Health, Hospice, Telehealth Operators	http://www.hommed.com/lifestream-resources/
Honeywell HomMed - Genesis Touch www.hommed.com	17	February 2013	Available on Request	ACO/IDNs, Home Health, Hospice, Telehealth Operators	http://www.hommed.com/lifestream-resources/
Ideal Life, Inc. www.ideallifeonline.com	11	July 2007	Available on Request	ACO/IDNs, Home Care, Home Health, Independent Living	http://ideallifeonline.com/whitepapers/
Independa www.independa.com	4	February 2013	Not Disclosed	ACO/IDNs, Assisted Living, CCRC, Home Care, Home Health, Hospice, Hospital Transitions, Independent Living	None
Intel-GE Care Innovations™ Guide www.careinnovations.com	2	Client: December 2012 Backend: July 2012	Not Disclosed	ACO/IDNs, Large Providers, Medicare Advantage Health Plans	http://www.careinnovations.com/data/sites/1/downloads/Guide_Product/guide_stvincent_profile.pdf http://www.careinnovations.com/data/sites/1/downloads/Guide_Product/guide_customer_profile.pdf
Philips telehealth.philips.com	120	May 2013	Available on Request	ACO/IDNs, CCRCs, Health Plans, Home Health, Hospital, PACE, Skilled Nursing Facilities	http://telehealth.philips.com/testimonials.html
Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center	55	August 2012	Over 3 million supported worldwide	ACO/IDNs, Health Plans, Hospitals Systems, MCOs, Pharmaceuticals	http://uk.tunstall.com/solutions/case-studies
Tunstall - Telehealth americas.tunstall.com/Telehealth	55	August 2012	Over 3 million supported worldwide	ACO/IDNs, CCRCs, Health Plans, Home Care, Hospital Systems, Independent Living, MCOs	http://uk.tunstall.com/solutions/case-studies
VRI TeleHealth www.monitoringcare.com	24	August 2012	100,000	Home Care, Home Health	None
WoundRounds (Telemedicine Solutions) www.woundrounds.com	7	December 2012	200,000	Intermediate Rehab Care, Long-term Acute Care Hospitals, Skilled Nursing Facilities	http://www.woundrounds.com/woundrounds-clinical-study-o/

Strengths, Areas for Improvement, Ongoing Development and References

	Strengths	Areas for Improvement	Ongoing Development	References
Ambio Health www.ambiohealth.com	<ul style="list-style-type: none"> • Most affordable remote monitoring system • No extra steps for patient to send readings • Functionality for population health management 	<ul style="list-style-type: none"> • Continue to enhance capabilities based on customer and market needs 	<ul style="list-style-type: none"> • Cellular gateway option • Wireless pedometer with fall detection • Additional health meters and ADL sensors 	References are generally part of the RFP process.
Beacon® by HealthInterlink www.healthinterlink.com	<ul style="list-style-type: none"> • Flexible software deployment options (tablets, smartphones, touch-tone phones, IVR/text) • Modern, easy to use, patient and clinician interfaces • Multiple sensor device options 	<ul style="list-style-type: none"> • Decision support/branching logic (pending) • Clinician support features 	<ul style="list-style-type: none"> • Clinical workflow optimization • Data warehouse integration • Clinician/decision support features 	References are generally part of the RFP process.
Biosign - Healthanywhere www.biosign.com	<ul style="list-style-type: none"> • Platform independence • Supports every stage in the continuum of care • Supports commercially available Bluetooth medical devices 	<ul style="list-style-type: none"> • R&D roadmap functionality delivery 	<ul style="list-style-type: none"> • Platform modernization • Self-management functional enhancements • Clinical CDM case management enhancements 	References are generally part of the RFP process.
Cardiocom - Commander FLEX www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
Cardiocom - Link View www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
Cardiocom - TeleResponse www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
Cardiocom - NetResponse www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
Cardiocom - Attentiv www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
Cardiocom - Telescale www.cardiocom.com	<ul style="list-style-type: none"> • Comprehensive health communication platform and patient advocacy and support services • 1,000,000 patient months of service over past 15 years • Proven results in home care, health plans, SNPs, ACOs, integrated systems and government services 	<ul style="list-style-type: none"> • Expanding into other areas of wellness 	<ul style="list-style-type: none"> • Invest 9% - 10% of annual revenue in research and development 	Available on Request
CJPS Medical Systems (VitalPoint HOME) www.cjps-medicalsystems.com	<ul style="list-style-type: none"> • Patient compliance and readmissions reduction • Approved GPO and government supplier • Cost 	<ul style="list-style-type: none"> • Increase name recognition 	<ul style="list-style-type: none"> • More interfaces • More languages • More peripherals 	Available upon request (although our policy is not to use/bother existing customers for the sake of getting new contracts).
Family Health Network Connected for Life www.familyhealthnetwork.com	<ul style="list-style-type: none"> • Incorporates vitals inside communication platform • Population management • Patient Dialog Engine 	<ul style="list-style-type: none"> • Intergration with EMR 	<ul style="list-style-type: none"> • BlueButton+ Intergration • Population management • Hospital/health care provider relationships 	References are generally part of the RFP process.
GrandCare Systems www.grandcare.com	<ul style="list-style-type: none"> • Mature & proven product - retailed in 2006 • Flexible, interoperable, protocol-driven • Easily scalable 	<ul style="list-style-type: none"> • Penetration of international markets • EHR/EMR integration partnerships • Hospital/health care provider relationships 	<ul style="list-style-type: none"> • Congregate analytics • Clinical assessments • Complex rule sets 	References are generally part of the RFP process.

Strengths, Areas for Improvement, Ongoing Development and References

	Strengths	Areas for Improvement	Ongoing Development	References
<p>Healthsense, Inc. www.healthsense.com</p>	<ul style="list-style-type: none"> Scalable platform Intelligent/Adaptive No additional network (operates over WiFi) 	<ul style="list-style-type: none"> Decision support systems that combine biometric and activity data Using the information to redesign provider workflows 	<ul style="list-style-type: none"> Additional sensors to round out data set Increasingly flexible reporting Flexible UI/Dashboarding 	<p>Reference are generally part of the client acquisition process.</p>
<p>Honeywell HomMed - Genesis DM www.hommed.com</p>	<ul style="list-style-type: none"> Complete solutions for remote patient monitoring from telehealth to telecare An efficient way to improve patient care while streamlining clinical workflows Flexible/customizable care plans 	<ul style="list-style-type: none"> Continuously improving products to meet the changing needs of the health care marketplace. 	<ul style="list-style-type: none"> Improving user device to incorporate video/touch screen Evolving to better, more efficiently manage large populations of people 	<p>Available on request.</p>
<p>Honeywell HomMed - Genesis Touch www.hommed.com</p>	<ul style="list-style-type: none"> One touch video visits Complete solutions for remote patient monitoring from telehealth to telecare An efficient way to improve patient care while streamlining clinical workflows 	<ul style="list-style-type: none"> Continuously improving products to meet the changing needs of the health care marketplace. 	<ul style="list-style-type: none"> Improving workflows and scheduling capabilities to improve efficiencies Evolving to better, more efficiently manage large populations of people Expanding diseases managed 	<p>Available on request.</p>
<p>Ideal Life, Inc. www.idealifeonline.com</p>	<ul style="list-style-type: none"> Most diverse and complete ecosystem of products and services Complete end to end affordable solution Customizable platform easily integrated 	<ul style="list-style-type: none"> Expanding beyond our current target conditions that already include: congestive heart failure, hypertension, diabetes, asthma, COPD and obesity 	<ul style="list-style-type: none"> Expansion of health records Additional medical devices 	<p>Available on request.</p>
<p>Independa www.independa.com</p>	<ul style="list-style-type: none"> First and only television with embedded eldercare services Integrated and holistic solution Central monitoring and alerting on health, activity, environmental and safety information 	<ul style="list-style-type: none"> Constantly strive to improve the product to meet the needs of the enterprise and the individual care managers and care recipients 	<ul style="list-style-type: none"> Expanding integrations to include an even broader and diverse set of technologies to continue to deliver a holistic and integrated solution 	<p>Available on request.</p>
<p>Intel-GE Care Innovations™ Guide www.careinnovations.com</p>	<ul style="list-style-type: none"> Enterprise-class clinical care management application Easy-to-use in-home solution on touchscreen tablet Professional clinical program design services 	<ul style="list-style-type: none"> Not well-suited for small implementations 	<ul style="list-style-type: none"> Disease protocol expansion, cost reduction, care team expansion 	<p>Available on request.</p>
<p>Philips telehealth.philips.com</p>	<ul style="list-style-type: none"> Breadth of leading health care solutions from hospital to home Deep health care domain experience Exceptional customer service 	<ul style="list-style-type: none"> We are continuously improving our products to meet the changing needs of the health care marketplace. 	<ul style="list-style-type: none"> Invest billions of dollars every year in R&D to improve products for customers 	<p>Please contact us.</p>
<p>Tunstall - Contact Center Services/IVR americas.tunstall.com/Contact-Center</p>	<ul style="list-style-type: none"> Dedicated telehealthcare specialists with over 55 years global experience Personalized, flexible, & customizable solutions that build to scale Partner in building clients' success and brands 	<ul style="list-style-type: none"> Increasing solution platforms to expand wellness and client program support tools Integrating our successful global solutions within North America (30+ countries/3 million supported) 	<ul style="list-style-type: none"> USA deployment of products & solutions already proven at scale in Europe Patient and professional portals, integration, business intelligence 	<p>References are generally part of the RFP process.</p>
<p>Tunstall - Telehealth americas.tunstall.com/Telehealth</p>	<ul style="list-style-type: none"> Dedicated telehealthcare specialists with over 55 years global experience Personalized, flexible, & customizable solutions that build to scale Partner in building clients' success and brands 	<ul style="list-style-type: none"> Increasing solution platforms to expand wellness and client program support tools Integrating our successful global solutions within North America (30+ countries/3 million supported) 	<ul style="list-style-type: none"> USA deployment of products & solutions already proven at scale in Europe Patient and professional portals, integration, business intelligence 	<p>References are generally part of the RFP process.</p>
<p>VRI TeleHealth www.monitoringcare.com</p>	<ul style="list-style-type: none"> Device agnostic, service based model Upfront rental and financing Ability to triage 90% of alerts to ensure clinical resources are focused on actionable alerts 	<ul style="list-style-type: none"> Mountain state ability to install Limited video due to high cost and limited connectivity of high cost Medicare eligible members 	<ul style="list-style-type: none"> Mobile apps PT/INR 	<p>Available upon request.</p>
<p>WoundRounds (Telemedicine Solutions) www.woundrounds.com</p>	<ul style="list-style-type: none"> Nurses save time Patients achieve better outcomes Providers reduce risk and liability 	<ul style="list-style-type: none"> Refine functionality for home health market Refine functionality for acute care market Provide advanced analytic solutions 	<ul style="list-style-type: none"> Deliver application on Android & iOS platforms Meet HL7 interoperability standards Develop patient-centric data model 	<p>References are generally part of the RFP process.</p>