HEALING IN PLACE™

Using Technology to Reduce the Risk of Hospital Readmissions

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From Hospital to Home: The Grand Transition

One cannot seriously talk about healthcare reform, improving outcomes, or reducing cost without talking about the aging of America, given the large portion of healthcare costs that are incurred in the later stages of life. Healthcare already consumes a distressing 17% percentage of GDP, and with the “Boomers” entering their chronic condition years, the financial strain on our society is certain to become more acute, if not critical. As a society, we pay for many pounds of cure. GrandCare Systems is passionate about providing those ounces of prevention that allow patients to successfully transition from acute care to heal at home with a technology assist. Only by moving from the monitored life to the analyzed life to the influenced life, can we reverse the cost spiral of post-acute and chronic care.

This paper will take a look at the general causes of hospital readmissions, explore the GrandCare approach to successful transitions, and provide a plan for transition planners and home healthcare teams to prevent hospital readmissions and keep patients safer, happier and more connected, at home. It’s all about “Healing in Place.”

Betty’s Story

In 2008, Betty was admitted to the hospital for an infection in her foot that had affected her kidneys. After 5 days in the hospital undergoing tests and treatment, she was released and given many new rules, diet changes, strength training exercises, as well as a strict medication regimen prescribed by multiple healthcare providers. Betty left the hospital confused and loaded with new responsibilities and lifestyle changes. The pressure and stress of her new routine ultimately led her back into the same hospital bed just twenty days later. This is not an unusual occurrence, and in Betty’s case, was most likely a completely preventable readmission. Betty lacked a clear sense of direction, support and encouragement. Betty was expected to change her entire life within days without essential resources or available technologies.
The Truth About Hospital Readmissions

In 2009, *USA Today* reported that 1 in 5 Medicare patients were readmitted to the hospital within just one month of discharge. Readmissions for a natural course of treatment, secondary conditions, or inevitable medical changes are sometimes unavoidable. However, this article reported that in 2004, a shocking $17.4 billion of the $102.6 billion that Medicare paid to the hospitals went towards unplanned hospital readmission visits.\(^2\) Medication non-adherence accounts for a large percentage of all of the factors involved in hospital readmissions.\(^3\) Fierce Healthcare reported noncompliance to cost up to $250 - $300 billion per year in ER and readmission visits.

It’s clear why this is a concern for any country, and it is of prime importance in the United States, with the looming number of aging baby boomers, half of whom have at least one chronic disease. Additional healthcare costs certainly accompany aging: *USA Today* reported that only 10% of hospital readmissions in 2009 were planned. Sending the patient home with a lack of resources and support for independent recovery is a formula for readmission. Let’s take a look at some of the traditional causes of readmissions and ways that technology can play a key role in mitigation.

**Six Common Reasons for Hospital Readmission**

1. Miscommunication between doctors, staff, patients, caregivers, families at discharge
2. Unclear or inappropriate instructions from hospital discharge staff regarding diet, mobility, medication and general care
3. Lack of social interaction and support once home: 30% of the 65+ population and 40% of those with chronic disease live alone\(^4\)
4. Misunderstanding of “Red Flag” symptoms that signal likely return to the hospital
5. Limited resources, lack of transportation and no accompanying advocate
6. Lack of supervision at home and resulting noncompliance

**Technology to the Rescue**

To mitigate the turmoil of post-hospital transition, patients and their caregivers need to be equipped with education and resources to make good decisions. Forward-thinking business leaders, care providers, technology innovators, and other change agents are using technology to assist patients, especially seniors and the disabled. Remote patient monitoring (RPM) or tele-monitoring technologies and telehealth devices provide an unobtrusive method for reporting the patient’s vital signs including blood pressure and weight; biometric data including pulse oximetry and blood glucose levels; and subjective data including disease signs and symptoms, medication, and/or diet compliance. With the safe haven created by in-home technologies, patients are able to feel safe while maintaining their independence.
A researcher for Mobi Health News, Technavio, a marketing opportunity company, states: “Remote Patient Monitoring (RPM) is minimizing hospital stays, resulting in a reduction of the cost of healthcare delivery. RPM helps healthcare centers reduce costs and increase business opportunities for healthcare service providers, while integrating systems and providing necessary operational facilities. As a result, the Patient Monitoring Systems market stands to gain.”

“Reducing Hospital Readmissions” written by Jenny Minott from Academy Health reports that “Tele-monitoring high-risk patients alone has decreased readmissions by 15 percent.”

Studies of significance by the Veterans Health Administration have reported even larger reductions in hospital utilization through the use of in-home remote monitoring technologies. The VHA reports that it “delivers healthcare services that serve 5.6 million unique veteran patients annually. A total of 7.6 million veterans are enrolled to receive VHA care. The number of veteran patients aged 85 years or more that VHA treats is set to triple by 2011 compared to 2000. As the U.S. population ages, people are living longer, staying healthier, and choosing to live independently at home.”

GrandCare Systems is a stand-out leader in digital remote monitoring & tele-health technology, and one of the companies that will make up the projected 2014 $9.3 billion dollar industry of remote monitoring. GrandCare technology can provide practical and continuous support, along with care coordination and caregiving tools to help avoid many hospital readmissions. GrandCare technology enables individuals to be independent, safe, healthy and socially connected at home.

Laurie Orlov, Consultant and Principal at Aging in Place Technology Watch says, “GrandCare is a pioneer and leading visionary in the business of using technology to help older adults stay in their own homes. With both telehealth capabilities and communications capability, it enables seniors to connect to families, peers, and caregivers -- as well as be monitored on their safety and well-being in their home. It should be considered by families and senior housing organizations that want to help seniors age in place.”

Charles Brumder, Board Member at Milwaukee Medical Mission, Greater Milwaukee Area, states, “I can recommend the GrandCare system. I use it to monitor my own glucose, BP, Weight and Pulseox on a daily basis. Rather than rush to a doctor if I see an issue I simply call his or her nurse and describe my symptom. Usually we can solve the problem over the phone, adjust medications as necessary etc. This saves significant time and money.”
A closer look at the GrandCare System:

The GrandCare system starts with the GC-HomeBase, a friendly touchscreen computer, typically in the kitchen of a resident who requires post-acute care at home, often following a hospital visit.

The GC-HomeBase looks like a digital picture frame showing a slide show of pictures, communications, and a full range of personalized content, posted remotely by a family or professional caregiver, using the Internet. If the resident touches the screen, a menu appears for accessing additional, optional features.

The GC-HomeBase maintains constant contact with GC-Manage, a cloud based enterprise solution, to handle alerts, share information, backup data, administer software updates, and perform congregate analytics.

Meanwhile, the GC-HomeBase collects information 24/7 from a customized set of wireless activity and wellness devices. The stored data is accessible through GC-Manage by authorized caregivers across the Internet.

With the patient firmly at the center, the GC-HomeBase integrates four components: 1) Wellness, 2) Smart Home, 3) Activity Monitoring, and 4) Social Connectivity.
1) **Wellness**: The HomeBase accepts physiological readings from wireless telehealth devices such as a weight scale, blood pressure cuff, thermometer, glucometer, and oximeter. An EKG device is in alpha test and scheduled for release in 2012.

Each of these devices can produce charts or graphs and can support simple rule sets to alert caregivers of abnormal readings. The data can be accessed by medical professionals and other caregivers or transferred to proprietary electronic health records.

As Health Information Exchanges are created, GC-HomeBase will offer complete interoperability. The wellness component also includes medication compliance by interfacing with the RXtender pill dispenser or more simply with reminders and helpful medication information.

Patients typically participate enthusiastically in their overall wellness through the self-assessment module on the GC-HomeBase touchscreen. As a result, authorized caregivers have access to personalized data that helps describe mental state and chronic conditions in addition to overall wellness. The patient is also allowed and encouraged to view the same data to better understand their own physical and mental state. Videos may be added to the GC-HomeBase to provide telehealth device instructions, health maintenance tips, and medication compliance assistance – enabling progression from the measured life to the analyzed life to the influencing patients’ wellness choices.

2) **The Smart Home**: The GC-HomeBase can control and monitor lighting, thermostats, and cooking appliances. The system will detect someone getting up at night and can light the way to the bathroom to mitigate falls.

3) **Activity Monitoring**: The GC-HomeBase can collect data from motion, temperature, door, chair, caller-id, pill-box and bed sensors. The GC-HomeBase can send a text to selected caregivers if the resident doesn’t get up in the morning or if the outside door opens during the night. The GC-HomeBase can also catalog phone calls to send an alert when it detects an unknown number, possibly predicting a telephone scam.
4) **Social Connectivity:** The large, clear GC-HomeBase touchscreen includes a simple GC-VideoChat option, displayed reminders, pictures, games, and brain exercises - all easy to use with no expertise or training required. Caregivers can send messages and write letters to the resident, who can just touch the <reply> button to see an onscreen keyboard and send the response automatically to the caregiver’s email account. Social connectivity is the glue that makes the system meaningful and useful.

**Testimonials from GrandCare clients:**

Carol in Florida: “They told us in 2005 that mom needed to go to Assisted Living because of her medical condition. Now that I have GrandCare, I manage it and she’s STILL at home 6 years later!”

Ms. Smith in California: “How useful GrandCare has been to us as an extra safety net for Dad. For a stubborn old fella who doesn’t want a nurse, this system is the least intrusive and lets the family have some peace of mind.”

GC Client in New York: “My sister was at the hospital with mom yesterday due to a blood pressure issue. They wanted a history of readings. I logged on to GrandCare, generated a blood pressure report, and emailed it to my sister’s phone. Mom was back home the same day. If we didn’t have that history they probably would have wanted to keep her so they could monitor her for a period of time. When she’s in the hospital it turns our lives upside down. It’s HUGE to minimize that as much as possible. Thank you!”
Let’s take another look at the Six Common Reasons for Hospital Readmission and uncover the GrandCare approach to successful transitions and get a handle on reducing the 90% of preventable hospital readmissions.

**The GrandCare Approach to Successful Transitions**

1) Communication:

GrandCare addresses the miscommunication issue between doctors, staff, patients, caregivers, families and physicians by becoming a virtual coordination hub for all. Authorized caregivers and health providers simply sign into the security enabled GC-Manage at GrandCare.com from any Internet-connected computer. From there, caregivers can describe patient needs, changes, and updates. The latest wellness and healing information will display on the GC-HomeBase in the patient’s residence. Health providers can share relevant informational and health videos, health websites, online patient communities, doctor instructions, lifestyle changes and written note communications. The patient/resident needs no computer skills, and a <reply> button pops up an on-screen keyboard to allow questions, comments, and responses. The caregivers can use GC-Manage to record GC-CareNotes, making it possible to coordinate care among all caregivers involved in the patient’s caregiving network. These notes can be added from the online GC-Manage portal or directly from the GC-HomeBase touchscreen in the patient’s home. GC-CareNotes are stored securely on GC-Manage where they are summarized and emailed to a customizable list of caregivers. The GC-VideoChat feature enables easy, interactive video chat visits between family and patient or doctor and patient. GC-VideoChat sessions are fun and critically important for assessment, all at the same time.
2) Doctor to Patient Instructions:
Poorly written or unclear instructions can turn into meaningful and crystal clear directions using the GC-HomeBase. Using the Internet, authorized caregivers and health providers can remotely add recovery instructions, educational videos (diabetes, heart disease, exercise, etc.), danger signs, and encouraging tips - right on the patient’s GC-HomeBase touchscreen. Caregivers can set the GC-HomeBase to automatically remind the patient of medication times and dosages, meal times, and upcoming appointments. Patients can be reminded of desired lifestyle changes and encouraged to fill out self-assessment forms right on the touchscreen. Results can be sent automatically to designated caregivers.

3) Socialization and Support:
GrandCare Systems relieves social isolation and encourages an entire care network to virtually come together and provide a support network. Authorized caregivers and healthcare staff can remotely send messages, encouragement, reminders, check-ins, instructional videos, pictures and fun communications directly to the simple, user-friendly, interactive GC-HomeBase touchscreen. The built-in camera on the touchscreen facilitates ONE TOUCH GC-VideoChat sessions for the patient to talk directly to pre-approved family and other caregivers. GC-HomeBase socialization features include stock photos, streaming music, trivia, word definitions, brain games, card games, and more. Family members are encouraged to engage socially by adding pictures, electronic letters, YouTube videos, favorite music, calendar appointments and reminders. In an age of unprecedented 24/7 connectivity, GrandCare connects all generations, brings fun and entertainment, and enables people of all ages and capabilities to take part in the vast virtual world of information and social connection.
4) Identify “Red Flag” Health Symptoms:
With the GC-HomeBase, patients will be empowered to know which “red flag” symptoms to watch for and what to do if they arise. Health providers and caregivers can clearly define and note “red flag” symptoms to the patient on the touchscreen with concise messaging, pictures, online patient communities, informational websites and supporting videos. If a potential symptom or question arises, the patient can choose to send a question or concern email right from the GC-HomeBase touchscreen or even launch a GC-VideoChat session with a healthcare professional or designated caregiver. Caregivers and health providers can help the patient avoid the symptoms that generate “red flags” by monitoring the customized self-assessment forms and the patient’s blood pressure, blood sugar, pulse/oxygen, weight, medication access, and activity/sleeping patterns.

5) Resources & Coordination:
GrandCare can supplement the limited resources normally available to patients recently dismissed from the hospital. The GC-HomeBase is the bridge to providing remote and long distance support as well as educational resources to inform the patient about health conditions and lifestyle changes. Long distance family caregivers can play a pivotal role by participating in the patient’s care and well-being, by supporting the doctor’s message, and by providing encouragement. Care providers can arm a patient by using GC-Manage online to add relevant websites (remotely programmable right into the GrandCare touchscreen), helpful videos, chronic disease management tips, exercise videos, instructions, guidance and more. GC-Manage capabilities include the ability for the caregivers to remotely program specific website services (for example: prescription refills, cab services, meal ordering, etc.) available for the patient directly through the touchscreen. Multiple caregivers and care providers hold each other accountable to ensure a patient is receiving proper care, instructions and is continuing to remain healthy. Should the patient need anything, a family or care provider is just one touch away.
6) Supervision and Compliance:

    The GC-HomeBase is the supervision that will mitigate medication non-compliance and promote a healthier lifestyle. Monitoring is critical to ensuring that a patient is reminded and accountable to take the right medications at the right time. Care providers can choose to be notified by phone, email or text if a patient should fail to take medications at a specified time. The RXTender encourages a patient to take the correct medication by dispensing the correct dosage and showcasing a picture on the touchscreen of the medication, along with indications, contraindications, and any administered instructions. Members of the care network can monitor the vitals and activity levels to ensure that medications are achieving the desired effect. GrandCare enables earlier intervention, as well as boosting staff, patient, physician and family awareness, ultimately leading to a healthier patient and reducing chances for an unplanned hospital readmission.
The GrandCare Transition: 8 steps to ensure Success

1) As patients are “transitioned” from the hospital to home, a Care Manager will assign the patient to a “GrandCare Transition Partner.”

2) This Partner will be a direct link to the patient, the family, and healthcare professionals and use GrandCare to share, monitor and assess patient information. The Partner’s role will be to ensure a patient is sufficiently supported with the GC-HomeBase, facilitate patient questions, coordinate among family caregivers using GC-CareNotes, and monitor resolution of sensor alerts.

3) The “GrandCare Transition Partner” will collect and coordinate the various healthcare provider recommendations and red flag symptoms to determine which GrandCare Sensors to employ in the patient’s home. For example, a CHF patient may need to monitor blood pressure & weight in addition to the touchscreen resources and support. A diabetes patient may need to monitor blood sugar levels, while another patient may require medication access monitoring along with sleep pattern assessments.

4) The GrandCare Transition Partner can easily add or select doctor provided resources and personalized directions through GC-Manage, providing a display on the patient’s GC-HomeBase touchscreen. Examples are: relevant informational/educational videos; doctor directions; lifestyle tips and instructions; online patient communities; medication compliance reminder rules; and cognitive assists.

5) Through GC-Manage, the GrandCare Transition Partner will select the alert notifications relevant to the patient, e.g. if medications are not accessed, send a text message to Caregiver B, or if a patient fails to measure blood glucose levels, send an email to Caregiver A.

6) Family Caregivers will have instructions to access GC-Manage to stay current with healthcare communications and the patient, using the GC-HomeBase touchscreen.

7) One of GrandCare’s 300 authorized installation experts in the US and Canada can be scheduled to quickly and successfully place the GC-HomeBase and integrate the wireless activity and wellness devices and sensors. Wellness sensors and touchscreen alone do not require professional installation.

8) The GrandCare System will be used for the period of time recommended by the healthcare provider to successfully ensure a patient is safe, healthy and transitioned to home life.

9) After the patient has been successfully transitioned to home, the GrandCare System can be purchased by the patient for permanent use; or it can easily be removed, remotely wiped of all stored data and transitioned to the next discharged patient.

GrandCare Systems maximizes healthcare resources and provides increased, flexible opportunities for consumers to self-manage their hospital discharges, creating successful and happy transitions.
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Sources:

1 75% of Americans die in a hospital; last year Medicare paid $50 billion for patients during their last 2 months of life from CBS News: http://www.cbsnews.com/stories/2009/11/19/60minutes/main5711689.html


9 A Care Manager or “GrandCare Transition Partner” can be a geriatric care manager, visiting nurses association, social worker, home health care agency, hospital discharge planner, companion services provider or family caregiver.
Additional Facts, Telehealth Studies

The national Average Hospital Readmissions is listed at 29% Source: Fazzi & Associates

“Patients who don’t take their prescribed medication cost the U.S. healthcare system anywhere from $250 billion and $300 billion a year in ER visits and inpatient hospitalization, leading some hospitals to explore medication adherence as a way to prevent costly readmissions.” Source: Fierce Healthcare

Age In Place Technology Watch Market Analysis: http://www.ageinplacetech.com/comment/reply/590


Projections for the telehealth market: http://mobihealthnews.com/13333/report-telehealth-market-6by-2020/

Telehealth investment opportunities: http://mobihealthnews.com/13270/healthtech-capital-invests-200k-in-pharmasecure/

Online Resources

http://ageinplacetech.com – Industry Analyst Laurie Orlov

http://www.aarp.com - AARP

http://grandcare.wordpress.com – GrandCare Aging/Tech Industry Blog

http://www.aahsa.org – American Association of Homes and Services for the Aging

http://www.agetek.org – Aging Technology Industry Alliance

http://www.silverssummit.com – Silvers Summit

http://www.telecareaware.com – TeleCare Aware

http://www.leadingage.org/cast.aspx - Leading Age CAST (Center for Aging Services Technologies)

http://dealerweb.grandcare.com – GrandCare chat forums, downloads, literature, webinar recordings

http://www.grandcare.com/page/features/how_it_works - How GrandCare Works

http://www.grandcare.com/page/buzz/testimonials - GrandCare Testimonials

http://www.grandcare.com/presskit/ - GrandCare Online Media kit

http://www.youtube.com/gcsys - GrandCare YouTube Channel

http://www.grandcare.wordpress.com – GrandCare Blog
Laura Mitchell, VP Marketing, GrandCare Systems

Laura is a founding member of GrandCare Systems, a software technology that combines aspects of Home Automation, Social Networking, Video Chat, Entertainment, Activity of Daily Living monitoring and Tele-health assessment into one flexible and easy-to-use system. A significant part of her role was to bring the product to market through the development of a nation-wide distributor/dealer network while getting the GrandCare brand known throughout the industry. Laura specializes in Social Media and non-traditional guerilla marketing. Laura was a 2011 recipient of the Flame Award for Excellence in Leadership and Innovation from the Silicon Valley What’s Next 2011 Boomer Business Innovation Awards.

Laura speaks throughout the country on Digital Home Health, Social Media, Go-to-market Strategies and Enabling Technologies in the Aging Industry. She has spoken in various venues including AHIMA, NAHB, Connected Health Symposium, ASA, CEDIA, CEA Industry Forum, CES, etc. She is a founding member and serves as a Director on the AgeTek Alliance board (www.agetek.org), is a key organizer for the EHX and CEDIA Home Health Pavilions and Educational Tracks, and in 2008, created (and still hosts) the industry-wide Thursday bi-weekly GrandCare Aging and Technology webinars.

Laura is a graduate of the University of Wisconsin in Madison and lives in Wisconsin with her husband and her two little boys.

GrandCare hosts an industry-wide Aging/Technology Webinar (the 1st and 3rd Thursday of each month) at 2pm Eastern Time (http://grandcaresystems.webex.com) for aging/technology industry participants, GrandCare Distributors, GC-Partners and other interested individuals. It’s a free webinar and GrandCare staff is always available to field questions, take suggestions, offer answers, etc. This webinar has been available since 2008 and is thought of as a key aging/technology resource.