

The Senate Communications and Technology Committee: *“Disease Prevention, Management, and Care Coordination”*

David Paterno, President of Sage Life Technologies

Introduction

Our nation has been struggling for decades with rapidly rising medical costs. Now, we face a larger challenge as we anticipate an expected doubling of our elderly population over the next 25 years.¹ Unless we begin to create affordable and creative solutions to our health care system, we could experience a health care crisis in this country. Since Pennsylvania ranks second in the nation for number of seniors, we have even more reason to prioritize this problem and find acceptable solutions.

Sage Life Technologies is currently developing solutions to address some of these concerns and believes that our priorities should focus on these two key components:

- 1. The health care system must begin to offer tools to the unpaid, informal family caregiver to better support and utilize this important home-based care.*
- 2. We must begin to change our focus toward prevention and early intervention and move away from our current model of only fixing acute problems after they occur.*

The SageMinder System is designed to assist the patient and the caregiver with tools to monitor health status in the home, improve treatment compliance, provide for emergency response in the event of falls or other crises, and assist with personalized reminders for medication schedules and activities of daily living. In addition, our product can be adaptable to receive and give information to and from Area Agencies of Aging, professional care coordinators, physicians, and other stakeholders.

¹ *Older Americans 2004: Key Indicators of Well-Being.* Washington, DC: U.S. Government Printing Office; 2004.

The Continuum of Care

Definition

The continuum of care really refers to the vast array of care options available to a person with chronic disease. At one end of the spectrum is self-management in the home and at the other end is 24-hour direct nursing care. We know that the most cost-effective option along this continuum is the homecare; and we are also aware that from a quality of life perspective, homecare is the most optimal and desired for the patient and the family.

For the purpose of this testimony, we should think of the continuum of care as a range of services available to a senior that reflects their transition from complete independence at home to greater needs of intervention and assistance such as full nursing facilities.

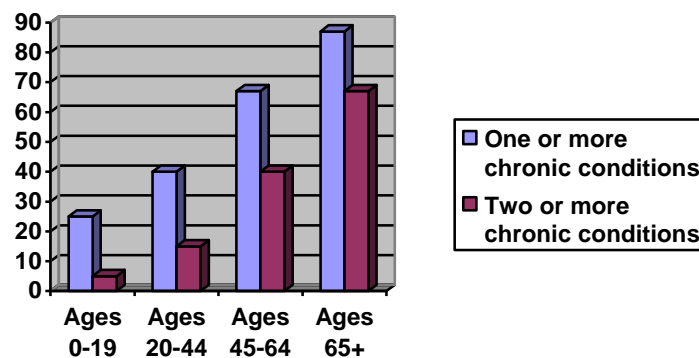
Of most relevance for our committee's goal of improving quality of life and reducing costs, we should note that with each move along this continuum, the costs – both economic and personal – increase with each step toward full nursing care. Therefore, the goal of the SageMinder System and of this committee is to prolong the time a person can stay in their home and remain as independent as possible before moving to the next stage.

Management of Home-Based Services

We must also define what happens when an independent senior begins having health issues and requires some medical intervention and assistance. With today's medical system, many independent seniors with one or more chronic conditions will see a variety of doctors and receive several differing opinions, treatment options, medications, and treatment plans. This labyrinth of medical services can often be compounded by an equally wide array of disconnected social services and government programs. In addition, a person may be receiving meals at home, home nursing care, or assistance with activities of daily living.

In the chart below, we can see that chronic conditions only increase with a person's advancing age. With our aging population increasing, we are facing an ever-increasing need to address how we should coordinate the care of multiple chronic conditions.

Older Adults are More Likely to Have Multiple Chronic Conditions:



Partnership for Solutions, 2004.

Why Disease Management and Care Coordination is Vital:

The Partnership for Solutions² has written a report outlining how we should be addressing Chronic Disease Management. From their report, the following quick facts should be highlighted:

- Inappropriate hospitalizations increase as the number of chronic conditions increase
- More than half of the people with serious chronic conditions have three or more different physicians
- Physicians report having difficulty coordinating care with other health care and social services
- **And finally, physicians themselves believe that poor care coordination produces bad outcomes such as unnecessary nursing home placements, inappropriate hospitalizations, or adverse drug interactions.**

The Partnership recommends that “we find solutions by developing better connections between supportive and clinical care delivery systems....by encouraging and supporting patient self-management and family caregiving.”

One Solution - Technology for The Family Caregiver

The SageMinder System

The SageMinder system will provide new services over conventional telephones and enhanced services by interfacing with existing telehealth monitoring equipment. The concept includes bundling these technologies in a new way so as to allow family caregivers to fulfill their supporting role, while helping third-party care coordinators manage the chronic care needs of their clients.

The intent of our system is to empower family caregivers to better manage the support role in caring for an individual with chronic conditions, and accommodate linking them with professional care providers and coordinators. The proposed system will be tiered by level of need, and adaptable to changing levels of care and the varying needs of all stakeholders involved. The system will utilize software and telephony technologies to provide a comprehensive and continuous intervention tool for the chronically ill. It will provide services tailored to family caregivers, providing them a convenient means to set reminders and receive compliance notifications anywhere. The system will do so through their existing communications tools; telephones, email, and /or Internet.

² *Chronic Conditions: Making the Case for Ongoing Care*, 2004. Partnership for Solutions.



Our Primary User: The Family Caregiver

The family caregiver could be one of the most important and consistent elements in a person's overall health care program. Often, the caregiver is the person most likely to be handling multiple prescriptions, treatment plans,

and appointments. Yet, this person is the least likely to have tools to help them with this sort of care coordination.

Unlike most telehealth monitoring systems, the SageMinder is being designed primarily for use by the family caregiver and his or her loved one, the care recipient. Right now, most home monitoring devices are utilized for a limited amount of time after an acute medical episode or hospitalization. They are often used by home health agencies and have been shown to be effective in reducing costs and improving outcomes.³ However, because current systems are designed for use by medical professionals, the payment for this type of intervention is often limited by the health plan of the patient. Once monitors are removed from the home – in most cases within a month or two – they are obviously no longer useful.

If we could get monitors to stay in place continuously, then we have the potential of detecting early signs of a worsening condition and/or new health problems. In the long run, this type of prevention could prove to be the most cost-effective way of addressing the chronic conditions that often occur in our advanced years.

Caregivers are cost-effective

It is estimated that family caregivers provide an overwhelming majority – approximately 80 percent - of homecare services in the United States for free. The overall national value of this “free” service is estimated to be \$257 billion annually. This dollar amount is twice as much as actual annual expenditures for homecare and nursing home care combined.⁴

One of the most expensive care options is nursing home care. While often necessary, it is usually not the patient that decides alone that he or she needs to enter into nursing care – it is often a decision initiated by the family caregiver who feels that he or she can no longer provide the assistance needed. This is also a painful decision and one that caregivers usually avoid as long as possible. One predictor of nursing home placement is thought to be the level of burden a caregiver feels.⁵ If we can reduce this burden by providing tools for the caregiver, we may be able to also reduce nursing home admissions. Not only is this potentially best for the caregiver and the patient, it is also much more cost effective.

³ According the Department of Veterans Affairs, Telehealth home monitors can reduce health care costs by one-third. At <http://www.medicalnewstoday.com/medicalnews.php?newsid=48253>, 9/12/06.

⁴ Arno, Peter s., “*Economic Value of informal Caregiving*,” Presented at the American Association of Geriatric Psychiatry, February 24, 2002.

⁵ Yaffe K., Fox P., Newcomer R., et al. *Patient and caregiver characteristics and nursing home placement in patients with dementia*. JAMA 2002; 287(16):2090-2097.

The SageMinder Empowers and Educates Caregivers

Currently, over forty percent of family caregivers provide some type of nursing care for their loved one – such as changing bandages or monitoring vital signs. Yet, one third receive limited or no instructions. The SageMinder System can offer up-to-date educational material for the caregiver and the recipient through the monitor itself and/or the web interface. Telehealth education includes learning about caregiving itself, about the chronic condition of the loved one, and about some simple instructions for nursing care. These tools can enhance a caregiver's sense of competence and understanding of their role in a loved one's health plan.

In addition, the SageMinder is designed to allow professional and government sponsored care coordinators tools to interact with the patient through the device. For example, an Area Agency on Aging staff can send alerts to the patients warning them of a coming heat wave and what a patient needs to know to stay safe. With such additional communication, a caregiver will be armed with information to do the job that they are committed to doing and feel more confidence that they will be up-to-date and capable of meeting their loved one's needs.

Home Based Technologies Focus on Prevention

As Ben Franklin put it, “An ounce of prevention is worth a pound of cure.” Especially when dealing with chronic diseases. Helping a diabetic manage their blood sugars can avoid emergency hospitalizations, amputations, and preventable death. The same holds for many other chronic diseases that are so common among our elderly populations. For someone living with chronic heart failure, we can monitor their weight daily. If they have a sharp increase in weight overnight, this indicates they are retaining water, which will lead to a heart attack in just days. If this overnight weight gain is caught by daily monitoring, they only need to use a diuretic to address the water retention – avoiding preventable emergency room visits, and lengthy hospitalizations.

People over the age of 65 use more OTC and prescription drugs than any other age group and the typical elderly person has 4-5 prescriptions at any time⁶. Elderly outpatients in the U.S. suffer from almost 2 million medication-related injuries per year, close to 40% of which are serious, life threatening or fatal.⁷ This alone is estimated to cost annually between \$85 and \$177 billion of preventable hospital utilization⁸ - not to mention the impact on quality of life. Such preventable health complications too often force our elderly to move out of their homes and into long term care facilities. Preventing health complications through better disease management is critical to assisting the elderly and the family members that provide 80% of the care for them.

⁶ Beers MH. “Age-Related Changes as a Risk Factor for Medication-Related Problems.” *Generations* 2001, 4:22-27.

⁷ HPSO 2006 Webflash., Healthcare Providers Service Organization
<http://www.hpso.com/newsletters/2006/webflash2006.php> Accessed 9/12/06.

⁸ The Need for Medications Management for the Elderly, <http://www.homemedics.org/problemstatem.htm>
Accessed 9/16/06.

Government Challenges and Opportunities

Senator Wonderling's committee is paramount to finding and enabling new methods of care delivery that are not only more cost effective, but also enhance the quality of life. The disease management and technology workgroup has done this work to broaden public interest in how we can further develop technologies like the SageMinder System and others in an effort to meet our upcoming health care challenges.

One challenge to overcome is how we could begin to find payers for home health technologies and family caregiver services. Unfortunately, we are still in a medical model of fixing problems rather than preventing them. Although this is changing, we need to continue the dialog and encourage research and realistic home trials to begin demonstrating the value of such preventative technology solutions. In Pennsylvania, we are currently making strides in this area with our Pennsylvania Family Caregiver Support Program which supports and assists income-eligible family caregivers with money for some assistive technologies.

If Pennsylvania heavily supports companies in research efforts and toward developing technologies in the healthcare arena, our state could lead what is expected to be one of the most promising markets for new technology in the next several decades. If successful, we could also dramatically reduce healthcare costs for our state.

Conclusion

The demand for informal caregivers is on the rise and their role in the coming decades will be significant. Any way we can help ease their burden, educate them, and provide them with assistive technologies is sure to help our society address the coming challenge of caring for our increasing elderly population.

We believe that solutions like the SageMinder system can also reach a large segment of the population. While more sophisticated solutions exist on the market with sensors and video monitoring, we believe that our solution is potentially more agreeable to more seniors who may be concerned about their sense of privacy. Also, we can offer this monitoring solution at a much lower cost.

The SageMinder system also has the advantage of being completely and easily adaptable to patient and caregiver preferences and changing needs over time. This will accommodate a larger portion of seniors who could be at varying levels of need.

Sage Life Technologies is constantly looking at new ways to understand the caregiver role. While we have been talking with Area Agencies on Aging, providing focus group discussions with seniors, talking with healthcare providers, and examining the specific technologies that already exist, more work in this area seems warranted to fully address the needs of this growing important component of the health care system: the family caregiver.