

Testimony of Eric Dishman

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Health Care Technology Home”**

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Introduction and Perspectives

Good afternoon Mr. Chairman and members of the Committee. It is an honor to testify here on such a socially and economically important issue as bringing healthcare and independent living technologies to the home to help Americans age-in-place with dignity and great quality of life from wherever they choose.

My name is Eric Dishman, and I am here first and foremost as a family caregiver—as a grandson and son. I am eager to help my own parents in North Carolina to live wonderful, healthy retirement years that they deserve—and that they themselves tried to give their own parents in spite of huge challenges upon all of us to cope with many incidents of Alzheimer's, stroke, heart disease, and crippling falls. Like so many Americans—almost 50 million according to AARP and the National Alliance for Caregiving¹, I am living the need for innovative solutions that can help my aging parents to stay healthy and happy at home and out of the hospital. Given the more than \$250 billion worth of care we're collectively providing each year as sons, daughters, and neighbors, there is just too little national attention—and too many barriers—to building aging-in-place inventions, infrastructures, and industries that we will all need eventually.

I am also here today with a professional perspective of having researched and funded aging-in-place technologies since 1992 wearing many different hats. I am pleased to testify on behalf of the Continua Health Alliance (www.continuaalliance.org), a non-profit, open industry coalition of 227 healthcare, technology and medical device companies who have joined together in collaboration to improve the quality of health through the use of telehealth, remote patient monitoring (RPM), and independent living technologies for what we call “e-care.” Continua is dedicated to establishing interoperable personal health solutions with the knowledge that extending those solutions for “electronic care” into the home fosters independence, empowers individuals, and provides the opportunity for personalized health and wellness.

Furthermore, as a social scientist who has run Intel Corporation's research and innovation efforts around aging-in-place and e-care for more than a decade now, I have seen first-hand that these technologies, when designed intentionally to fit into the home and to connect families with professional providers, can dramatically help with prevention, early detection, behavior change, and self-care. As co-founder and inaugural Chair of the not-for-profit advocacy group CAST, the Center for Aging Services Technologies (www.agingtech.org), I have evaluated many promising aging-in-place solutions being researched in universities and companies that now need to move from laboratories to the lives of seniors and families across the country. And as a patient advocate over the past 22 years of my life, I have personally used internet, social networking, and telehealth technologies to help improve the quality of life not only for many elderly cancer patients, but also for their families and their often frustrated, over-worked professional providers.

Thus, I believe the questions raised by this hearing are vitally important to answer: What are we doing as a nation to prepare for Global Aging, and how do we make sure investments in fundamental infrastructure like broadband and health information technologies (HIT) are ready to support e-care in the home? How are we making sure that payment reforms and new care coordination incentives at CMS and in the private market encourage doctors and nurses to care for seniors and patients in their own homes when medically appropriate? How can we accelerate the research and commercialization of aging-in-place technologies to let e-care best practices advantage our nation's families, businesses, and economy? Finally, how do we make sure that seniors and the programs that serve them are not left behind as our nation continues to invest in healthcare reform and innovation?

We must make sure our seniors and those who care for them have access to the proven benefits that technology can bring rather than being precluded from this access because of outdated practices and payment structures inherent in today's government and private reimbursement systems. We must make sure our country's investments in HIT and broadband do not stop at the hospital door but extend to the home and to seniors and their caregivers in the community. In short, we need a 21st century healthcare system for the *entire* care continuum that uses modern technologies to deliver care wherever it is most needed, appropriate, and cost-effective...which will increasingly have to be in the home, at work, and on-the-go for seniors and all people who need access to care.

The Y2K+20 Challenge

We live in demographically challenging times. According to the U.S. Census Bureau, back in the year 2000 there were about 600 million people worldwide who were 60 years old and above. By 2025, those numbers will double to 1.2 billion people. And by 2050, a date not so far from now, we will have more than two billion people over the age of 60 on our planet.ⁱⁱ Our government, like many in Europe are already doing, needs to catalyze a public-private response to this Age Wave that rivals or exceeds what we did for the Y2K challenge that faced our country.

Ten years ago, I referred to this demographic imperative as the "Y2K + 10" challenge because 2010 was when the first Baby Boomers reached official retirement age. In fact, back in 2004, almost six years from this day, I testified to this very Committee on this very topic, calling for a national commission to get our act together and to reinvent long term care *before* we reached the crisis.ⁱⁱⁱ But alas, 2010 is here with a wake-up call recession, and we are still largely unprepared as a nation—technologically, educationally, financially, and personally.

I carry the same message today to a different Congress but with more urgency and a new deadline: we need a 2020 vision and implementation plan for preparing for the Age Wave that uses technology and workforce retraining to bring healthcare home. Let's call it "Y2K+20" to evoke the kind of national momentum, leadership, and public-private

collaboration that it both deserves and needs to be successful. And let's challenge ourselves to move 50 percent of care done in institutions today to the home by 2020!

Simply put, we do not have enough physicians, nurses and other health care providers to meet the needs of an aging population. This is why looking at ways to cost-effectively deploy HIT is, and will be, of growing importance for our national healthcare strategy. Care-shifting from expensive clinical/institutional settings to the broadband-connected home and skill-shifting from scarce medical professionals to trained family caregivers, community workers, and engaged patients themselves—especially for many kinds of long term care and chronic disease care that do not require emergency intervention—are crucial to building a 21st century healthcare system that can be available and affordable to everyone. And government leadership to bring the various agencies, non-profits, and industries together to build, test, and incentivize this national e-care infrastructure is greatly needed if we are to meet the Y2K+20 challenge.

Definitions and Benefits of “e-Care”

Policy makers, industry members, providers, and patients may mean very different things when using the phrase “Health Information Technologies.” HIT in our nation’s stimulus and reform conversations has come to be almost synonymous with “Electronic Health Records” (EHRs)—with an almost universal presumption that everything we’re talking about is getting doctors to share data about their patients online with electronic equivalents of paper charts. But there are many other kinds of HIT, including personal health technologies, telehealth technologies, telemedicine technologies, aging-in-place technologies, decision-support tools, remote patient monitoring (RPM) technologies, and many more. Thus, Continua has used the term “e-care,” short for “electronic care,” to refer to the class of health information technologies that might facilitate any kind of virtual visit or electronic connectivity outside of traditional office visits among patients, family members, and medical professionals.

“E-care” could mean secure text messaging between a senior and a doctor to change a medication dosage, an audio chat, or a full video visit. It can also mean remote patient monitoring with in-home or mobile devices that can help providers track trend data like blood pressure and weight that seniors take themselves on a regular basis. E-care may also mean using electronic connectivity to help patients remember to take a medication, capture a vital sign, or view customized content sent to them by their doctor to teach them about managing their own disease.

None of this effort is about replacing the traditional doctor-patient relationship, but it’s about *enhancing* and *extending* it to more people and regions of the country. Our nation must simply harness the benefits of interoperable technologies connected by fixed, wireless, or broadband solutions—that have helped improve and extend every other industry—to improve chronic care and long term care. These kinds of technologies allow patients and care providers to use real-world, remotely collected data to make decisions on a continuous basis, rather than waiting for office visits or emergency situations. By

tracking vital signs and other health data on a more regular basis and sharing it through secure systems, e-care offers many beneficial capabilities:

- 1) **Empowering patients** with tools that help them make sense of—and to manage—their own care;
- 2) **Collecting real-world biological and behavioral data** and trends in the home with alerts for out-of-norm situations;
- 3) **Facilitating virtual visits** with providers, when appropriate, via a range of electronic media;
- 4) **Enabling social networking**, awareness, and care support from family and friends who are nearby or distant;
- 5) **Personalizing care plans** and educational content for each patient based on their needs, preferences, data, and capabilities, and;
- 6) **Triaging precious medical resources** to enable the right amount of care to occur in the right place and time.

Just as “email” became a new way of interacting with other people that didn’t replace all other forms of communication such as phone calls and letters, e-care uses new technologies to create a new way of providing care that complements—but doesn’t replace—all clinic visits. Hospital and clinic visits will always have their place. But today, we too often use those expensive institutional settings for every healthcare need, even when those institutions can be misused (e.g., treating non-urgent problems in emergency rooms across America) or even dangerous for patients (e.g., sending seniors with routine, chronic health issues to a hospital during an H1N1 outbreak).

By monitoring their own data from home, seniors (or patients of any age) and their caregivers become more engaged in self-care. E-care can also improve consumers’ access to care, particularly in rural areas, by easing logistical burdens and reducing or eliminating the need to travel to a provider’s office for routine checkups. In addition, providers have more information to make medical decisions rather than only a single or quarterly office visit where they may or may not have captured data that accurately reflects what is really going on with their patient the other 364 days a year.

Like email when it was new, e-care may be frightening to some who don’t understand it or have access to it at first. As with all new inventions, e-care technologies will have both positive and negative consequences for society. But again like email, we will look back some day on e-care solutions and wonder how we ever did effective and ethical care without them. We will learn and develop “best practices” for e-care—and invest in comparative effectiveness studies to know the right balance of in-home, in-clinic, and e-care consultations for different conditions and needs—as with all new medical interventions. But these technologies will ultimately help us move beyond a quantity

oriented system (e.g., number of visits done or tests/drugs prescribed) to a quality one—with new relationships and delivery models that we need to explore, evaluate, and embrace as quickly as possible.

E-care Examples from Intel’s Research with Seniors

For more than a decade now, Intel social scientists, clinicians, and engineers have conducted ethnographic fieldwork in the homes of more than 1000 elderly citizens in 20 countries to help us know what problems our technologies needed to address.^{iv} This longitudinal research has entailed observing these seniors and their family caregivers (who themselves have often been dealing with multiple chronic conditions, high stress, and other health issues) in their homes, at clinic visits or hospital stays, at their grocery stores or exercise clubs, and wherever health and wellness intersects with their lives. We have benefitted enormously from the wisdom and support in our research from seniors themselves, from two several-hundred household cohorts—at the TRIL Centre (www.trilcentre.org) in Dublin, Ireland and at the Oregon Center for Aging and Technology (www.oracatech.org) in my hometown of Portland, Oregon—where new prototypes are tested in their homes with their families and providers.

Also, we have now conducted more than 14 in-home pilots of aging-in-place and e-care technologies, covering a broad range of needs and topics: diabetes, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), asthma, arthritis, cancer, Alzheimer’s, Parkinson’s, medication assistance, virtual visits with doctors, vital signs capture, personalized patient education, fall prevention, social support, transportation support, and support for activities of daily living. Below are some of the participants from our pilots and some of their experiences with personal health technologies that provide many kinds of e-care in their homes:

» **“Ben,”** is a 72-year old CHF patient, now facing the challenge of taking his 12 medications daily, without support from his wife who recently passed away. Wireless sensors in his home help Ben, his adult son, and a nurse practitioner manage his meds routine, with intelligent prompts that can appear on his watch, TV, phone, or small screens placed around the house but that don’t bug him if he has already taken the meds, is asleep, or on the phone.^v

» **“Phillip,”** who is in his 10th year of dealing with diabetes, gets customized patient education sent to him based on his weekly vital signs, his answers to questions from his physician, and his exercise/nutrition logs that he keeps online with a social support group.^{vi}

