

**Before The
Federal Communications Commission
Washington DC 20554**

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In the Matter Of)	
)	
Fostering Innovation and Investment in the)	GN Docket No. 09-157
Wireless Communications Market)	
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51
_____)	

**DRAFT COMMENTS OF THE CONTINUA HEALTH ALLIANCE
IN RESPONSE TO NOTICE OF INQUIRY ON INNOVATION
AND INVESTMENT**

Chuck Parker
Executive Director
Continua Health Alliance
3855 SW 153rd Drive
Beaverton, Oregon 97006
Phone: +1 503.619.0867
Fax: +1 503.644.6708

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Summary

The Continua Health Alliance hereby submits Comments in response to the Federal Communications Commission recent Notice of Inquiry on Innovation and Investment, GN Docket No. 09-157 and GN Docket No. 09-51, released August 27, 2009. The issues raised in this NOI may be relevant to the Commission's consideration of the National Broadband Plan detailed in GN Docket No. 09-51, thus it has issued this NOI in the National Broadband Plan docket as well as in a new GN Docket No. 09-157.¹

The Commission is seeking comments to better understand the factors that encourage innovation and investment in wireless and to identify concrete steps the Commission can take to support and encourage further innovation and investment in this area. Specifically, the Commission is seeking comments on the innovative uses of wireless and what services and wireless devices are having an impact. By seeking comments, the Commission hopes to determine what it could do to encourage additional growth in this area. This is not the first time the Commission has discussed the dramatic benefits that advanced telecommunications has provided to the healthcare industry, including improving the capacity for telemedicine, and facilitating the exchange of medical data and opinions through broadband.²

The Continua Health Alliance welcomes this opportunity to provide comments through its unique perspective on the innovative uses of wireless interoperability in the healthcare space

¹ The definition of "broadband" for purposes of the Commission's development of the National Broadband Plan pursuant to the American Recovery and Reinvestment Act of 2009 ("ARRA"), Pub. L. 111-5, 123 Stat. 115 (2009).

² See, e.g., Rural Health Care Support Mechanism, WC Docket No. 02-60, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 18 FCC Rcd 24546, 24550 ¶ 6 (2003).

and is willing to make recommendations on what the Commission could to encourage growth in this area.

Continua is a non-profit, open industry coalition of the finest healthcare and technology companies joining together in collaboration to improve the quality of personal healthcare. With more than 200 member companies around the world, Continua is dedicated to establishing a system of interoperable personal health solutions with the knowledge that extending those solutions into the home fosters independence, empowers individuals and provides the opportunity for truly personalized health, wellness and fitness management. The Alliance has joined together to improve the quality of personal healthcare and support efforts to cut costs, improve, and maximize the effectiveness of the U.S. healthcare system through advanced health information technology and specifically through telehealth and “e-Care”.

“e-Care” is a term that encompasses many other defined terms such as remote patient monitoring, telehealth, telemedicine, mHealth, remote chronic disease management, virtual care, etc. It is a term that represents those mentioned supra and embodies remote monitoring, evaluation, and/or management of an individual through the use of technology. e-Care allows caregivers and patients to digitally and securely collect and transmit personal health data for the purposes of clinical review, care management, patient education, wellness and prevention. e-Care fosters independence through innovation and has the power to transform our healthcare system. Commercially available, interoperable health information technologies include sensors, devices, applications and appliances that can reduce the number of hospitalizations, emergency room visits and eliminate unnecessary face-to-face physician visits. Through e-Care, doctors and healthcare professionals can maximize their time to better manage patient care, especially those with chronic conditions that require inpatient care.

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I. Introduction

The burden of chronic disease in the U.S. is large and growing. Currently, 125 million Americans have one or more chronic conditions and half of those suffer from two or more. In addition, in the U.S. the care of chronic illness accounts for almost 75 percent of total healthcare costs.³ The federal government projects that in less than a decade, healthcare costs will account for 20 percent of the economy.⁴ However, the U.S. healthcare industry is evolving by harnessing the power of modern wireless telecommunications in order to create efficiencies and improve patient care and wellness. Wireless technologies, devices and services have become a key component in the provision of healthcare. Medical sensors, health devices and applications are increasingly relying on wireless functionality and interoperability to transmit data, raw diagnostic health information and electronic medical records. These devices and the wireless local area networks and mobile broadband networks over which they operate have become particularly important as healthcare providers, burdened by massive cost limitations, seek new and improved ways in which to provide quality care.

II. Examples of e-Care

Personal interoperable telehealth and remote monitoring systems are an important answer to the health care challenges facing the U.S. Whether a patient is physically located in a bustling metropolitan setting, or in rural America, remotely collected data can be used for trend analysis,

³ See J. Geyman. 2007. "Disease management: Panacea, another false hope, or something in between?" *Annals of Family Medicine* 5(3): 257-260.

⁴ The Centers for Medicare and Medicaid project that health spending will be 20.6 percent of gross domestic product in 2018. National Health Expenditure Projections, 2008-2018. Available at: www.cms.hhs.gov/NationalHealthExpendData.

alerts of emergent health problems, medication reminders, care plan assessment and other diagnostic information to help individuals with chronic conditions better manage their conditions. Patients simply need a continuous way of gathering information to help them comply with complex treatment plans. For example, patients with congestive heart failure can monitor minute fluctuations in their weight and share that data with health providers who will use it to manage medication doses and prevent costly hospitalizations. Patients with diabetes can better track their blood sugar and use the data to manage daily diets and other health habits. Individuals with hypertension can track their blood pressure as needed and communicate precise fluctuations seamlessly to their healthcare providers. By monitoring their own data, in a readily available and reliable way, individuals become more engaged in self-care. e-Care can also enable a consumer's access to self-care, whether rural or urban, by easing logistical burdens and eliminating the need to travel to a provider's office.

Remote monitoring supports independent living by the elderly and the disabled. We can help keep people in their longer homes, with dignity, by using home sensors to detect falls, monitor medication intake, and even check for home hazards like increased gas levels. These "smart services" and "smart homes" allow seniors to age in place, increasing their wellbeing and avoiding the costs of institutionalization. The Census Bureau projects that the elderly population will grow from about 40 million in 2010 to over 70 million in 2030, when one in five Americans will be age 65 or over.⁵ The federal government also projects that over the next decade, spending on nursing home care will increase by 75 percent, from about \$140 billion in 2008 to

⁵ W He, et al. 65+ in the United States. U.S. Bureau of the Census. December 2005.

over \$240 billion in 2018.⁶ With the aging of the baby-boom, increased longevity and the growing costs of nursing home care, aging-in-place has become the desired outcome.

Studies have also shown that remote monitoring of patients with common chronic illnesses, including congestive heart failure, diabetes and COPD, can improve health outcomes. For example, remote monitoring of heart failure patients has been shown to reduce hospitalizations, clinic and emergency department visits and overall costs by allowing physicians to adjust medications and manage potential complications before they become serious.⁷ In a randomized trial of 280 patients from 16 U.S. heart failure centers, use of a home monitoring device that captured and transmitted the weight of heart failure patients, reduced the six-month mortality rate 56.2 percent, as compared with a group of patients who did not use home monitoring device.⁸

In addition, a recent analysis of the potential cost savings from widespread use of remote monitoring for patients with chronic diseases concluded that the United States could cut \$197 billion from its healthcare bill over the next 25 years by spotting health problems sooner and reducing hospitalizations as well as costly re-hospitalizations after complicated surgeries. This

⁶ Centers for Medicare and Medicaid. National Health Expenditure Projections, 2008-2018. Available at: www.cms.hhs.gov/NationalHealthExpendData.

⁷ RA Clear, SC Inglis, FA McAlister, JG Cleland, S Stewart. 2007. Telemonitoring or structured telephone support programmes for patients with chronic heart failure: systematic review and meta-analysis. *British Medical Journal* 334; 942. Available at www.bmj.com.

⁸ ME Stachura, EV Khasanshina. 2007. Telehomecare and Remote Monitoring: An Outcomes Overview. Prepared for the Advanced Medical Technology Association.

study also recommended that a number of policy changes, including greater investments in broadband infrastructure, are needed to realize these savings.⁹

Many public and private organizations have benefited from the use of modern wireless telecommunications to provide health services. One such user is the federal government which utilizes wireless telecommunications for public health purposes. A good example is how the Centers for Disease Control and Prevention (CDC) use wireless video, voice and text applications to get health information to individuals, when and where they need it. Methods include providing personalized health messages to specific patient populations on the importance of flu vaccines and where such services can be obtained.¹⁰ The National Library of Medicine brings just-in-time, expert information to those responding to emergencies through its Wireless Information System for Emergency Responders.¹¹ Conversely, remotely collected data can also be used as part of a biosurveillance system for tracking dangerous infectious diseases or environmental contaminants.

The Veterans Administration (VA) has already shown a dramatic decrease in healthcare spending with the use of home telehealth for its veterans with multiple chronic diseases. The VA found that the 17,000 patients participating in its Care Coordination/Home Telehealth (CCHT) program experienced a 19 percent reduction in the number of hospital admissions and a 25 percent reduction in bed days of care. The costs of caring for patients with home telehealth

⁹ Vital Signs Via Broadband: Remote Health Monitoring Transmits Savings, Enhances Lives. Robert E. Litan. October 24, 2008. Available at: <http://betterhealthcaretogether.org>

¹⁰ See, Mobile Health at the CDC, an interview with Dr. Jay M. Bernhardt, Director of the National Center for Health Marketing, Center for Disease Control and Prevention, available at: http://www.ctia.org/consumer_info/wow/index.cfm/2009/3/%20.

¹¹ A description of the Wireless Information System for Emergency Responders is available at <http://wiser.nlm.nih.gov/about.html>.

averaged \$1,600 per patient per year — 87 percent less than VA’s home-based primary care services. Furthermore, if they had not been monitored through the CCHT program, many of these patients may have required institutional care.¹²

III. Public Policy and the Importance of e-Care

Increasingly, policymakers are recognizing the importance that e-Care plays in the realm of our healthcare system. Interoperable devices, remote monitoring systems, virtual care and telehealth are a viable and available solution to the nation’s healthcare challenges. Recently, the Executive Office of the President released a report titled “A Strategy for American Innovation: Driving Towards Sustainable Growth and Quality Jobs.”¹³ The report states that the “Expanded use of advanced health information technology (e.g. electronic medical records, mobile health applications, sensors for monitoring chronic diseases) will help prevent medical errors, improve health care quality, begin to modernize the American health care system and reduce costs.”¹⁴ The report goes on to state that the President’s strategy is designed to drive technological innovation that will help cement U.S. leadership in the emerging industry of health information technology.¹⁵

¹² A Darkins, et al. Care Coordination/Home Telehealth: The Systematic Implementation of Health Informatics, Home Telehealth, and Disease Management to Support the Care of Veteran Patients with Chronic Conditions. *Telemedicine and e-Health* 14:10 (December 2008): 1118-1126.

¹³ See “Strategy For American Innovation” <http://www.whitehouse.gov/administration/eop/nec/StrategyforAmericanInnovation/>.

¹⁴ Id. at Pg. 21.

¹⁵ Id. at Pg. iii.

On September 15, 2009, the Commission held a Workshop on Healthcare as part of the National Broadband Plan proceeding, GN Docket No. 09-51, where it sought to determine how broadband networks are deployed to provide telehealth services throughout the nation and to learn of successful telehealth programs and whether telehealth diagnosis and treatments are covered under medical insurance. At this Workshop the Commission heard from various experts including Aneesh Chopra, the Federal Chief Technology Officer of the United States (CTO), who stated “We cannot move forward in advancing our nation's healthcare reform goals without the appropriate use of technology in health care and telemedicine is a key component.”

As the Commission itself has found in May of this year, 95.6% of the US population is covered by at least one mobile broadband network, and 99% of the non-rural US population and 82.8% of the rural US population is so covered.¹⁶ The Commission should strive for 100% mobile broadband coverage as quickly as possible, an achievable goal, which is vital for wireless health. Wireless networks are paramount to this nation’s infrastructure and technology ecosystem. Wireless technologies and mobile broadband are continually driven to evolve air interfaces, improve the efficient utilization of spectrum, increase the capacity that networks can absorb and improve powerful mobile devices that are offered over various bands and technologies (licensed for wide area networks and unlicensed for local area networks). Devices and applications also offer a seemingly limitless number of options for consumers based on prices, features, content and necessity.

¹⁶ See Bringing Broadband to Rural America, Report on a Rural Broadband Strategy, released May 22, 2009, at Pgs. 12-13.

IV. Interoperability

Interoperable personal telehealth systems harness technological innovations that allow individuals to better manage their healthcare. Central to personal telehealth and e-Care is remote monitoring of biometric data that can be used for disease management, safety, wellness and fitness. These technologies allow people to monitor vital signs such as blood pressure, weight fluctuations, oxygen levels, blood sugar levels and other health indicators from their homes or remote locations. Today there are a myriad of available interoperable telehealth devices that range from common blood pressure cuffs and pedometers to hand-held pulse oximeters, spirometers and implanted cardioverter-defibrillators that can electronically transmit a patient's data to their personal health records, their physicians or other healthcare providers and loved ones. Medication tracking devices provide guidance and information on when medications are taken and in what dose. Home monitors incorporate data from many peripheral devices for safety and critical alerts.

Since its establishment in June 2006, Continua members have worked collaboratively to develop interoperability standards and design guidelines that enable health management devices to be connected and share data. Continua has also developed a voluntary certification program for devices meeting its interoperability standards. Continua's Version One Guidelines have been incorporated by member companies and are currently implemented in certified devices.

Continua has announced the availability of five Continua Certified™ devices from member companies. These certified products mark an important milestone in the group's mission to establish a system of interoperable personal connected health solutions. By extending these solutions into the home, Continua is driving a new model in healthcare, which truly enables

personalized health and wellness management. This model empowers individuals and fosters independence while improving healthcare outcomes and reducing costs.

The five Continua Certified™ connected health devices were developed by member companies of the Alliance. These devices recently completed rigorous testing to qualify for Continua certification, signifying interoperability with other specified Continua Certified solutions. Products include the world's first Bluetooth® -enabled fingertip pulse oximeter, certified as compliant to the Continua™ Version One Design Guidelines in June 2009. By using the Bluetooth Health Device Profile (HDP) and ISO/IEEE 11073 data protocol, the Continua™ Certified product signified a major step in the adoption of interoperable standards in telemedicine and chronic disease management such as COPD, CHF and asthma. Other products include the first Continua Certified blood pressure cuff and weight scale, as well as the first Continua Certified blood glucose meter device reader. These personal connected health devices enable convenient data sharing for consistent monitoring of individuals' health and care status. In addition to empowering individuals to maintain greater responsibility for their health, this also enables more informed treatment decisions by the care team for their patients.

Working in a voluntary, open process, Continua will continue advancing the interoperability of medical devices and health information systems.

V. Conclusion

Continua recommends that the Commission should set a national goal of universal mobile broadband coverage. 100% of the US population should have access to modern wireless and mobile broadband networks, and by extension, to interoperable personal telehealth systems that will improve healthcare delivery and save lives. Patients, care providers, health professionals and healthcare facilities could all benefit from the proliferation of ubiquitous mobile broadband coverage, the availability of mobile broadband networks, interoperable devices, telehealth applications and services.

Respectfully submitted,

By: /s/Chuck Parker

Chuck Parker
Executive Director
Continua Health Alliance
3855 SW 153rd Drive
Beaverton, Oregon 97006
Phone: +1 503.619.0867
Fax: +1 503.644.6708

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