

# Before the Federal Communications Commission

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

## Comments of The American Telemedicine Association

The American Telemedicine Association (ATA) is pleased to provide these comments regarding the FCC's Notice of Inquiry regarding the fostering of innovation and investment in the wireless communications market. ATA's comments focus on innovative uses of wireless communications for healthcare and include several recommendations for consideration by the FCC.

### Introduction

American Telemedicine Association - ATA is a national non-profit association concerned with telemedicine and representing health providers, medical institutions and vendors involved in providing healthcare using telemedicine. For over fifteen years, ATA has promoted the deployment of telemedicine and represented the interests of those involved in its use.

Telemedicine – Telemedicine (also called telehealth, e-health, e-care, M-health, etc.) is a core component in the transformation of healthcare. It is no wonder. Over 40 years of research has yielded a wealth of data about the cost effectiveness and efficacy of many telemedicine applications. PubMed a bibliographic database of medical research that is maintained by the National Library of Medicine includes over 10,000 citations of published works related to telemedicine or telehealth. Over 2,000 evaluative studies related to telemedicine have been published in two journals devoted to telemedicine alone. The research has revealed that not only does telemedicine expand access to health services it has been

shown to significantly reduce the cost of healthcare and increase efficiency and effectiveness through such areas as better management of chronic diseases, increasing the availability of health specialists in shortage areas, reduced patient and provider travel times, and fewer hospital stays and re-admissions. Scientific studies indicate that the use of telemedicine for such applications as monitoring of chronic care patients or allowing specialists to provide care to patients over a large region have resulted in significantly improved quality of care. And, finally, consumers want it. Patient satisfaction with the use of telecommunications technologies to connect with specialists and other health care providers has consistently been very high.

For the benefits of telemedicine to be fully realized, we must have the ability for patients, consumers, health providers and others to access telecommunications no matter who they are, where they are located, what application is needed or when they need it. This is why a national broadband plan is critical for telemedicine, critical for overall health reform and critical for the future of our nation.

### **Innovation in Wireless Healthcare Applications**

Telemedicine has undergone considerable change and growth in recent years. Once characterized as only point-to-point video conferencing connecting a physician to a patient in rural areas, telemedicine now encompasses a wide variety of applications linking hospitals to specialty services, providing outsourced clinical services, providing remote monitoring services and consumer-based healthcare. Some of this growth is attributable to advances in wireless and related communications technology.

Wireless healthcare applications can be grouped into three different categories:

1. **Use of Wireless Connectivity Benefiting Patients in the Hospital**

New hospital-based wireless medical monitoring devices allow ubiquitous access from patients to nursing stations, avoiding the tangle of wires common to patient rooms. Such devices also allow vital sign monitors to go with the patient from surgery to post-op, to radiology, etc. rather than requiring patients to be unplugged in and re-plugged in at every stop.

In addition, wireless connectivity to cell phones and laptops allows physicians to stay connected with their hospitalized patients when the physician is not in patient's room or even when the physician is outside of the hospital.

One example of such connectivity is the use of a remote presence robot produced by InTouch Health. Access to the robot allows physicians to easily and more frequently visit with patients in the hospital or nursing home. Wherever access to medical expertise is limited, the robot can effectively extend the physician's reach to manage patient care, thereby removing time and distance barriers. With expertise available at a moment's notice, the robot allows for innovative healthcare delivery models leading to improved quality of care.

Another example is the use of a patient monitoring platform using a cell phone, developed by Air Strip Technologies. This application delivers critical patient information, including virtual real-time waveform data, directly from hospital monitoring systems to a doctor or nurse's smart phone, laptop or desktop. The platform is completely reusable, scalable and data independent, and can be employed throughout the healthcare enterprise. The service is provided to physicians by the hospital.

## 2. Use of Wireless Health in the Community and in the Home

A wide variety of home monitoring devices are increasingly being used in the home for patients with chronic illnesses. New wireless applications allow the patients increased mobility by focusing the monitoring on the individual rather than the location. Remote monitoring using mobile platforms allows the transmission of a variety of biometrical data to a physician or monitoring center regardless of the location of the patient. Thanks to the efforts of Continua Health Alliance, many of these wireless devices can easily communicate with each other, creating a truly interoperable network of low-cost, plug-and-play health monitoring devices.

Patients communicate with their doctor or receive medication reminders and other useful health information when on the road, on the job or wherever they may be located. Smart bandages can provide continuous monitoring of patients for such uses as wound care. Currently, 200,000 cardiac patients in the United States use remote cardiac monitors to transmit live 24/7 vital signs using wireless connectivity to a monitoring center linked to their personal physician.

Beyond cardiac monitoring, more comprehensive wireless health systems are now under development. For example, LifeWatch has developed a wireless platform that allows multiple vital signs monitoring for patient condition management. Their Wireless Vital Signs Monitoring System integrates a variety of medical monitors, video-phone and smart phone communication devices and an interactive website. The system is used for screening, monitoring, diagnosis and management of specific disease conditions such as congestive heart failure, diabetes, and chronic obstructive pulmonary disease. Each medical device communicates via Bluetooth technology to a smart screen, cell or land line phone, PDA or laptop that is connected to a web-enabled data server for remote viewing, storage, and report interpretation by the caregiver.

Wireless broadband is also being used by emergency medical technicians in ambulances, transforming the vehicles into traveling emergency rooms. Ambulances in Richmond, Virginia are being fitted with communications cards that enable Emergency Medical Technicians to access a variety of wireless networks from satellite links and Wi-Fi hot spots to cell phone and UMTS networks and private IP networks. All 17 of the City of Tucson, Arizona ambulances have been equipped with the city's new "ER-Link" system to enable critical patient information to be relayed to the hospital in real-time. The system utilizes a 12-lead patient telemetry system and a live video connection in the ambulances in a 228 square mile region to deliver patient diagnostics and enable visual analysis by nurses and doctors at University Medical Center.

### 3. Use of Wireless for Consumer Health Applications

Wireless applications are empowering consumers to control their own health. Common applications available over cell phones include weight management and dieting programs as well as smoking cessation and other wellness applications. Wireless pedometers and related applications that promote exercise, monitor movement and compare progress with others are available in multiple formats. Consumer focused applications that monitor glucose, EKG, body temperature, heart rate, respiratory rate, calorie burn and body mass index over wireless phones are springing up daily. A number of consumer publications and websites now regularly publish their list of the top ten health applications for Apple's iPhone.

## **Issues for FCC Consideration**

A well known axiom in healthcare is “first, do no harm.” The same truism holds for any potential regulatory action by the Federal Communications Commission regarding innovation and market development in wireless healthcare. The suggestions provided here are intended to accelerate and support current innovations and markets in the growing field of wireless health.

- **Incentives for Wireless Broadband Deployment**

As wireless applications become a fundamental component in the delivery of healthcare, access to broadband wireless connectivity moves from an enjoyable option to a requirement. The development of national broadband maps, identifying areas without broadband wireless and the drafting of a national broadband policy provides the FCC an opportunity to make a substantial contribution to wireless access. The Commission should consider various additional incentives that will accelerate access to broadband wireless to every citizen in every part of the nation.

ATA urges the Commission to adopt a national goal of 100% coverage of broadband wireless services. This is one of the most important contributions the FCC can take to help expand access to healthcare services by all Americans.

- **Interference Protection/Set Aside of Spectrum for Health Applications**

It is apparent that wireless medical applications are on the rise and critical medical decisions are starting to be made based on the transmission of information and communication between providers and specialists as well as providers and patients. In certain circumstances and at certain times access by healthcare providers to wireless services may soon become a life and death situation. Reliability for landline services has long been set at 99.999%. However, reliability for wireless access, especially for broadband services is considerably less, especially for maintaining a continuous connection when traveling, such as for ambulances.

Two options for the FCC to consider are priority services for healthcare and set-aside of spectrum.

First, the FCC should consider expanding the existing Wireless Priority Service (WPS) for healthcare providers beyond the current focus on emergency response during times of disaster or major service disruptions. Doctors using a wireless device to communicate with and care for critically ill patients should be assured that their call will not be dropped. Ambulances using wireless communications to bring the emergency room professionals to the scene of an accident should have a priority for wireless bandwidth. Such an expanded national service should be available to certain pre-qualified providers so that they, and their patients, can be assured of uninterrupted connectivity at any time.

Second, the Commission should consider setting aside small portions of spectrum for the exclusive use of healthcare. A current proceeding before the Commission considers such a policy for Medical Body Area Networks (FCC 09-57).

Both of these options require considerable thought and comment. Therefore, ATA suggests the Commission conduct a separate Notice of Inquiry around this issue.

- Better Use of Universal Funds for Wireless Health

ATA has provided the Commission with a number of suggestions to improve its existing rural health program and the related pilot program. As ATA has pointed out, the existing program is flawed in several areas and desperately requires the Commission's action.

An additional concern, relevant to the discussion here, is that the rural health program is almost entirely focused on providing new, dedicated broadband services to hospitals and other stationary health institutions. However, as described above, healthcare delivery has become mobile. Hospitals and rural clinics outsource services to specialists. Ambulances use wireless devices to communicate with hospitals long before arriving at the emergency room. Patients discharged from hospitals are using wireless remote monitoring devices to continue follow-up care. Even hospital-based physicians continue to provide patient services while they are temporarily outside the walls of the institution. None of this can occur without ubiquitous, reliable wireless networks.

ATA suggests that the rural health program be changed to encourage building onto and expanding use of existing, commercially available wireless services as well as integrating such services with existing landline networks, rather than constructing entirely new dedicated networks. Such a change in policy can greatly reduce the cost of connectivity and expand access to health services beyond hospital walls.

ATA wishes to thank the Commission for the opportunity to comment on these important issues which are critical to the nation's efforts to reform the delivery and availability of healthcare.

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September 30, 2009