





The Future of EMS Telemedicine

An Interview with R. Lee Heath by Dan White

Distinguished with more than 30 patents, Roger Lee Heath is best known as the inventor of 'hands-free' noninvasive cardiac defibrillation and pacing R2-Pads' electrodes are now a world-wide standard. In 1995, he was recommended by American Heart Association officials, and other peers, for the Lemelson MIT Prize, the highest prize awarded inventors, and credited with making possible the modern AED (Automatic External Defibrillator) and related intermediate first responder programs.

Mr. Heath has served 33 years in the medical industry, with more than 15 years in senior management positions. In 1978, Mr. Heath was the sole founder of R2 Corporation, where he was also Chairman of its Board for eight years. He was the sole inventor of all of its products, including the 'R2 Pads.'

Currently, Mr. Heath is involved in the design and deployment of critical communications for EMS telemedicine addressing potential terrorism and mass casualty incidents funded largely by the Department of Homeland Security. He has performed similar services for many prominent institutions including Northwest Community EMS, Milwaukee County EMS, Cook County EMS Chicago, Detroit Fire Department EMS, University of Chicago EMS, Advocate Healthcare, City of Tucson EMS, and many others.

From 1986, Mr. Heath is listed in, "Who's Who in Technology" for his "significant contributions to the knowledge and application of science, engineering, or technology." He has been guest speaker or served on the faculties of the American College of Emergency Physicians, the Association for Advancement of Medical Instrumentation, the U.S. Federal Food and Drug Administration, Sweden's University of Lund and Northwestern University.

What Is The State Of Today's EMS Telecommunications Systems?

Some people compare today's EMS communications systems to "Cups and Strings." The fact is you can have good Cups and bad or broken Strings or you can have great Strings and very bad Cups that don't work. That leaves you wondering how to communicate effectively or at all. You just have to have both of these properly functioning and reliable or the whole system simply doesn't work.

Identify Ways To Improve Our Systems?

The Joint Advisory Committee Report to Congress and the 9/11 Commission issued in February of last year, clearly states that the future of communications lays in IP (Internet Protocol) based or wireless broadband technologies. It indicates that these communications systems were the most reliable ones after Hurricane Katrina. After recommendations by both the FCC and APCO, most of the billions in broadband Stimulus Grants are deliberately pointed towards supplying these new wireless technologies for critical public safety communications. They also put great emphasis on EMS Telemedicine and

(CONTINUED ON PAGE 32)



how it may significantly reduce healthcare costs and save lives.

What Is Next Generation Broadband Technology? I Mean, Don't We Have That Already?

Well, the honest answer to that question, is no. Many cities have limited deployments of Wi-Fi Mesh systems. Most of these use the same communication protocols based on 802.11B or G, the older versions of Wi-Fi. This is very similar to your common old home Linksys router. There are two major problems with these wireless Wi-Fi versions. First, they don't go very far or cover a large area or operate over a long distance. Typically, they can reach only as far as 300 or 400 feet. You know, you go outside your home and suddenly your laptop Internet browser won't work. The other problem with these older versions of Wi-Fi is that they are not made for a moving object, like an ambulance, for example. They were never really developed with this in mind.

What Will The Industry Need To Do To Make Transmitting A Lot Of

Data While Moving Possible?

I think it will be made possible with next generation Wi-Fi called WiMAX or LTE. New versions of Wi-Fi are available that will cover much greater areas, even a 2 to 6 miles radius with just one router system. And, these new versions have 'Mobile' variations designed to handle a moving object, like a vehicle or ambulance. The Strings are really changing and this will open the door to all sorts of possibilities for public safety and EMS; 12-lead ECGs can be sent over in a few seconds, ePCRs can transmit patient entered data much faster and easier and at lower cost. Even full voice-video-data and telemedicine monitoring, reporting and collaboration capabilities become possible! The door is opening and you can concentrate on quality patient care while patient data flows transparently to the hospital. Less talking and more patient care will be the end result of current trends.

Will It Be Very Expensive To Do, And If So Exactly How Will We Pay For It?

There is a big cost advantage here. Using the old Wi-Fi, one would have to use many

towers or routers to cover a large city or geographical area. That can cost millions of dollars. But, since the new Wi-Fi can cover much larger areas with just a few routers, it costs much less. So it works better and costs less, a great combination which means you can supply mobile wireless coverage in many communities where you could never think about it or afford it before.

We are starting with the Strings, but the next generation hybrid broadband systems are now becoming available. There are also Stimulus Grant funds to make these systems a reality for Emergency Medicine. Billions in Stimulus Grants are now available to radically expand the use of these technologies for public safety and EMS. We are also working on next generation broadband EMS telemedicine hardware and software for critical emergency operations and EMS. This means better Cups and Strings for everybody, so everything may work the way it's supposed to.

Where Can Our Readers Learn More?

For reference materials, Stimulus Grants assistance, or to simply to sign-up to learn more about these technologies as they evolve, visit: www.lifebot.us.com. 