Handheld Healthcare: Mobile Medical Technology

By Sandeep Shah

If knowledge is power, than one of medicine’s most powerful tools is handheld devices, or personal digital assistants (PDA). This new technology is helping save lives, improve care and lower costs. Today’s healthcare practitioners are increasingly mobile yet inundated with critical medical data, reports and research. Amid this flow of important medical information, doctors are forced to make time critical decisions at the point of care, without the information they require.

At hospitals, institutions and medical schools across the country healthcare practitioners are using technology from companies like Skyscape, MedAptus and PatientKeeper to provide medical content and applications on-the-go. These PDAs, which include Palms, Compaq iPaqs, Sony Clies and other devices, enable doctors and nurses to diagnose illnesses, determine treatment, prescribe medication, determine drug interactions, calculate dosages, and perform all necessary steps involved with quality patient care right on location, be it at bedside, at home, in an ambulance or in remote locations.

Today’s new generation of PDAs contain critical medical references that are “smartlinked” to provide instant access to context-sensitive data with the speed of thought, intuitively following the think-refer-act methodology of the medic. Hundreds of well known references are available, including the Physicians’ Desk Reference (PDR), Griffith's 5-Minute Clinical Consult (5MCC), 5-Minute Emergency Medicine™ (5mEmerg), 5-Minute Pediatrics™, A to Z Drug Facts, Davis’ Drug Guide, Drug Interaction Facts, Special Operations Forces Medical Handbook, The Washington Manual of Medical Therapeutics and many more.

CareGroup, comprised of Beth Israel and Deaconess Hospitals, gives its doctors PDAs to ensure that adequate reference works are available anytime, anywhere. Dr. John Halamka, an associate dean of Harvard Medical School who has overseen the creation of CareGroup’s IT infrastructure, is a big proponent of mobile medical technology. He adopted mobile applications from Skyscape, Inc., that enable healthcare professionals to access critical diagnostic and drug information in-context on their handheld devices. This improves doctors’ efficiency as it provides the right information when and where it is needed.

Dr. Halamka says his doctors can place billing codes on their Palm PDAs and send them directly to the billing system, so CareGroup’s time to bill has gone from 40 days to half a day. Halamka adds that they try to be device-neutral, so whatever applications they get can run on any platform, though most of their physicians use Palm.

At MassBay Community College’s licensed practical nursing program in Framingham, Mass., nurse and instructor Cindy Bechtel, MS, RN, EMT-I, has come to rely heavily on PDAs. She says they improve the quality of care and reduce administrative time. Bechtel regularly uses such titles as the Physicians' Desk Reference (PDR), Griffith's 5-Minute Clinical Consult (5MCC), A to Z Drugs, and others in her job and in her teaching. She has turned her nursing and EMT students into converts. Bechtel's Palm contains the same reference information as her students 10 required textbooks thanks to the software from such companies.

Content is important, says Bechtel, but one other factor is key to the success behind PDAs. This is having PDA content in context, and with the ability to instantaneously link different sources and diagnosis, that makes the PDA experience match a doctor’s thought process.
Emergency medical responders at MedFlight are truly mobile, soaring the skies in helicopters to save lives and bring healthcare to truly inaccessible places. MedFlight medics rescue and treat patients in all manner of catastrophic circumstances, from car crashes and sinking boats to fires and natural disasters. Time is of the essence, gear must be light weight, and medical knowledge and data lightning quick.

MedFlight takes PDAs seriously and issues PDA devices to their medics. PDAs can mean the difference between life and death in the extreme situations MedFlight must address. For example, a multi-car pile up on a highway results in multiple traumatic injuries, snarls traffic, cuts off the road for ambulances, and requires rapid patient transport to nearby hospitals. MedFlight is called. They launch out a helicopter and on the way access critical medical data on procedures, medications, and drug interactions.

While instant access to data is key in such medical emergencies at auto accidents and in airplanes, it becomes even more critical when treating uncommon diseases. Cases in point: SARS, the West Nile virus, Norwalk virus, lyme disease, Anthrax, smallpox and others. West Nile fever and others are rare for most physicians. The PDAs provide symptoms, details and procedures not easily remembered by doctors who haven’t treated the illness.

Boston MedFlight medic Bill Cyr, RN/EMT-P, uses a Palm loaded with such titles as 5-Minute Emergency Medicine (5mEmerg), 5-Minute Pediatrics, Davis' Drug Guide and the Washington Manual of Medical Therapeutics. EMTs like Cyr use their PDA five times per shift determine treatments, prescribe medication, determine drug interactions and calculate dosages.

Cyr says that in the field, PDAs have become a necessity because you can’t get new books and updates easily without the Internet. He says that EMT medics just can’t be one specific type of physician because they are treating all kinds of people, from children on up. They cannot take bulky books with them on helicopters, so carry critical content on their PDAs.

With the ability to help doctors and nurses save lives, portable handheld technology is a healthcare advance that we cannot afford to ignore.

About the Author

Sandeep Shah is founder and CEO of Skyscape, a provider of mobile medical technology in Hudson, Mass.