

# Mobile data technologies reduce the incidence of medical error

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A cell phone or PDA platform now provides access and even instantaneous decision-making capability in a hospital or other clinical setting regardless of the location of the physician or nurse. In fact, this mobility is especially significant from a physician or clinician perspective; a simple SMS (Short Message Service)-based alert or a more complex wireless thin/thick client application on mobile devices enables healthcare professionals access to sensitive or critical medical data when time is of the essence.

Accordingly, healthcare professionals need to take a closer look at enterprise mobility and its convergence with digital patient information. They are vehicles that can drive the industry to much improved care standards by enhancing timeliness and accuracy.

**What the research shows:** What has caused mobility to evolve from option to necessity for modern healthcare? Technological advances had recently resulted in the emergence of tiny cell phones with fast processors and high-resolution screens capable of quickly crunching data and displaying images. Clinically speaking, perhaps the most important value of mobile devices, whether PDAs or phones, is its ability to help reduce avoidable errors in decision-making.

The frequency of those errors has always been a cause for concern. In 2004, the first nationwide study of its type in Canada, *The Canadian Adverse Events Study: the Incidence of Adverse Events Among Hospital Patients*, graphically detailed the extent of mistakes and their impact on hospital care and cost. Some of those "adverse events" were errors caused by healthcare managers and providers that led to complications, lengthier hospital stays and, in some cases, deaths.

The study found that 7.5 percent of patients hospitalized in Canada experienced an adverse event. The percentage translates to 185,000 patients out of 2.4 million medical and surgical admissions during the period of the study. Even more unsettling, the study determined that 37 percent of the adverse events were entirely preventable.

What does this have to do with mobility as a problem solver? Consider a study of the use of personal digital assistants (PDAs) and their impact on medication safety in primary care published by *Advances in Patient Safety* in February 2005. After a controlled trial involving 78 physicians in the United States, the study found that "(v)oluntary use of the PDA as a prescribing tool results in substantial reductions in errors of legibility, omissions, and use of abbreviations and symbols on prescriptions." The result clearly shows a decline in adverse events with an enhanced quality of medical care.

The value of smartphones or PDAs has not gone unnoticed in the medical profession, especially by younger physicians. According to the *Journal of Internet Medical Research*, more than 50 percent of surveyed doctors under the age of 35 relied on their PDAs for their clinical practice. Fur-

ther, the *Journal of the Medical Library Association* reported that 85 percent of 109 doctors at teaching hospitals in five American states noted that PDA use had influenced their overall clinical decision making. Of that figure, 73 percent specifically cited treatment alterations based on infor-

mation gleaned from their PDA usage.

The common thread that runs through all of these studies is faster and clearer access to data that would have been impossible a few short years ago and the ability to instantaneously translate that data into sound medical decision-making.

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Syntel provides the healthcare industry with a comprehensive, integrated suite of IT and knowledge process outsourcing to help providers, payers and pharmaceutical firms sustain competitive advantages through continuous innovation and knowledge management.

The Company's mobility transformation model and ROAMS framework advocates a holistic and phased approach to meet mobility objectives with an end-to-end plan for transformation to a fully mobile enterprise.