



Healthcare without Bounds: Trends in Mobile Computing	
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<b>INTRODUCTION</b>	<p>This report provides insights into the current state of mobile computing within the healthcare industry. It identifies the market drivers, trends, opportunities and challenges to using mobile computing devices and medical applications at the point of care.</p> <p>The primary content for this report was derived from <b>over 100 in-depth interviews</b> with practicing clinicians at leading healthcare institutions around the country. These clinicians represent a broad range of medical specialties, age groups and varying levels of technical competence and familiarity.</p> <p>The interviews were completed over a 5-month period starting in <b>June 2003</b>. The interviews were conducted both over the phone and in-person. The purpose of the interviews was to identify their critical needs and requirements through conversations about medical practice inefficiencies, usage of mobile devices and medical applications today, and opportunities for mobile computing solutions in the future.</p> <p>Spyglass also evaluated key vendor product offerings and identified early adopter organizations that have successfully deployed next generation mobile clinical solutions at the point-of-care.</p>
<b>TARGET AUDIENCE</b>	<ul style="list-style-type: none"> <li>• <b>Software &amp; hardware vendors, systems integrators and management consultants</b> who are selling mobile computing devices, applications and services into the healthcare industry.</li> <li>• <b>Hospital administrators and IT executives</b> who are making strategic decisions to fund clinical information technology solutions including mobile computing.</li> </ul>

**ABSTRACT:**

**Mobile computing** is an enabling technology that is poised to **revolutionize the way medicine is practiced at the point of care**. Mobile devices enable clinicians to access patient information quickly, efficiently and securely from any location and at any time. Clinicians are no longer tied to a computer terminal or forced to physically track down missing or incomplete data required for informed decision making.

Mobile computing usage among physicians has grown significantly over the past few years through the use of standalone knowledge-based applications. **More than 90 percent of clinicians interviewed under the age of 35 use some form of reference application on a daily basis**. Grass roots initiatives are inciting large numbers of medical clinicians to independently purchase handheld devices that are being used primarily for **drug reference databases, reference manuals and medical calculators**.

Mobile computing usage, however, faces a significant number of obstacles to widespread adoption within an inpatient hospital setting as the applications become more comprehensive and require increased integration with existing legacy-based clinical and financial systems. According to **hospital administrators** interviewed these obstacles including **physician adoption, funding, integration complexities** with legacy-based systems and **protection of patient information** on handheld devices.

Early adopter organizations are starting to experiment with next generation mobile computing solutions. Approximately **5 percent of the organizations interviewed** are deploying pilot projects that include **e-prescribing, charge capture, patient data management and structured documentation applications**.

More than **92 percent of the clinicians interviewed were affiliated with healthcare organizations that are still using legacy-based systems completed by inefficient paper-based processes and workflows**. Many of these organizations are under a significant amount of pressure to invest in clinical information systems to improve quality of care and patient safety, increase clinician productivity and reduce the risk of medical errors.

**ABOUT  
SPYGLASS  
CONSULTING**



The **Spyglass Consulting Group** is a market intelligence firm and consultancy focused on the nexus of information technology and healthcare. Spyglass offers products and services in customer & market intelligence, strategic partnership development, product marketing and investment due diligence.

Spyglass' current research is entitled **Healthcare without Bounds** that focuses on the current and future potential of mobile computing and wireless technologies within the healthcare industry.

Spyglass customers include leading high technology vendors such as **McKesson, Cerner, Philips Medical, Cardinal Health, MercuryMD, ePocrates, IBM, NEC, Palm, Symantec, Citrix, Foundry Networks, Vocera Communications, PwC, and Cap Gemini.**

**Mr. Gregg Malkary** is the **Founder and Managing Director** of the **Spyglass Consulting Group**. He has over 20 years experience in the high technology industry working with Fortune 2000 companies to help them use information technology for competitive advantage. Mr. Malkary has domain expertise in mobile computing, wireless and broadband technologies with direct experience in the healthcare, government, manufacturing, communications and entertainment markets.

Prior to founding **Spyglass Consulting Group** in August 2002, Mr. Malkary was an Associate Partner at a venture capital firm, **Outlook Ventures** that focused on early stage investments in enterprise software and communications companies. Mr. Malkary has also held consulting and senior management roles in business development, strategic planning and product marketing for public and private technology companies including **Exodus Communications, Liberate Technologies, Edify, SkyTel Communications, Silicon Graphics, Hewlett Packard and Accenture.**

Mr. Malkary is a frequent speaker at regional and national conferences focused on mobile computing, wireless technologies and healthcare related issues. He has been written about and quoted in numerous industry publications such as **Network World, eWeek, Wireless Week, Health Data Management, Healthcare Informatics, Healthcare IT News, Modern Physician and ADVANCE for Health Information Executives.**

Mr. Malkary is an **honors graduate** of **Brown University** having earned a MS and BA in Computer Science. He was awarded the prestigious North American Philips Corporation Fellowship for his graduate research work in graphical simulation environments.

For additional information about this study, please contact Gregg Malkary at [gmalkary@spyglass-consulting.com](mailto:gmalkary@spyglass-consulting.com).

<b>CUSTOMER TESTIMONIALS</b>	<p><i><b>Trends in Mobile Computing</b> is an excellent review. People of your caliber should be recognized at national meetings for your valuable contribution of legitimate end-user based research, so we can all better understand the market realities of mobile technology in healthcare. Your findings are both encouraging to those trying to advance the usage of mobile technologies, and words of caution to those who extrapolate or make assumptions solely based on anecdotal success stories.</i></p> <p><b>Andrew Barbash, MD</b> Bethesda, MD Director of Mobile Health Program Medical Records Institute (Boston, MA)</p> <p><i><b>Trends in Mobile Computing</b> is engaging, comprehensive and thorough. It provided us with valuable insights and perspectives on we can effectively use mobile computing today to automate clinician workflow and processes at the point of care. I recommend this report to healthcare organizations who are looking to make new investments in clinical IT to improve the quality and safety of patient care.</i></p> <p><b>Richard G. Ellenbogen, MD, FACS</b> Chairman, Department of Neurological Surgery University of Washington School of Medicine Theodore S. Roberts Endowed Chair in Pediatric Neurological Surgery The Children's Hospital and Regional Medical Center Seattle, WA</p> <p><i>"The Spyglass report offers one of the best overviews of the promises and pitfalls of mobile computing solutions for the healthcare community. It is useful for both vendors and providers; helping us plan together to make the best of a promising technology. It is well researched and thoughtful."</i></p> <p><b>Kevin Whelan</b> Director of Product Marketing, Mobile Solutions McKesson Corp</p> <p><i>"<b>Trends in Mobile Computing</b> provided us with an interesting early view of an emerging market segment that we are sure will evolve to become a significant component of healthcare industry. The Spyglass study provided us with provocative information that we are hoping can be further developed with additional research studies as the market continues to evolve."</i></p> <p><b>Victor Camlek</b> Director, Market Intelligence Thomson Scientific &amp; Healthcare</p> <p><i>"Mobile medicine through clinicians' use of wireless networks and handheld devices has emerged as a compelling application for healthcare organizations who want to improve care while reducing costs. Gregg Malkary stands out among industry experts following wireless in healthcare-- he's done extensive a priori research (talking to mobile users and those who deploy WLANs; analyzed the results and made worthwhile conclusions that will be of interest to HCOs contemplating wireless rollouts as well as valuable to vendors targeting health IT as a market."</i></p> <p><b>Patrick Rafter</b> Vice President of Marketing Bluesocket</p>
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