



<b>Healthcare without Bounds: Mobile Computing in Nursing</b>	
<b>TITLE:</b>	Healthcare without Bounds: Mobile Computing in Nursing
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<b>INTRODUCTION</b>	<p><b>Mobile Computing in Nursing</b> provides valuable insights into how <i>nurses</i> are using mobile computing solutions at the bedside and how these solutions can best be used to solve existing workflow inefficiencies. The study uncovers strong opinions regarding the market opportunities and challenges for deploying mobile nursing solutions within healthcare organizations today.</p> <p>The content for <b>Mobile Computing in Nursing</b> was derived from over 100 in-depth interviews with nursing professionals nationwide. These participants represented a broad range of nursing specialties, institution sizes and varying levels of technical competence and familiarity.</p> <p>The telephone interviews were conducted over a 3-month period starting in March 2004. The purpose of the interviews was to identify their critical needs and requirements through discussions about existing workflow inefficiencies, usage of mobile devices and clinical applications today, and opportunities for mobile computing solutions in the future.</p> <p>Spyglass evaluated key vendor product offerings and identified early adopter organizations that have successfully deployed next generation mobile nursing solutions at the bedside.</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> <li>• <b>Investment banking and private equity investors</b></li> </ul>

**ABSTRACT:**

Nurses represent the largest healthcare professional group in the United States with over 2.69 million active members. They are a scarce resource working in high stress, high risk, and data intensive environments that are dominated by paper-based processes and inefficient workflows. As a result, nurses spend upwards of 50 percent of their time documenting patient care provided.

**Market Trends.** Nurses represent a large market opportunity that can exploit the potential benefit of information technology. According to hospital administrators interviewed, the need for nursing automation and mobile computing is being driven by a number of powerful market forces including:

- Renewed industry focus on patient safety
- Aging baby boomer population
- Skyrocketing healthcare costs
- Acute nursing shortage
- Healthcare industry's under-investment in IT

**Market Opportunity.** Mobile computing is poised to revolutionize the way nurses provide care at the bedside to improve nursing productivity and efficiency, increase patient safety and reduce the risk of medical errors. With mobile computing, nurses can:

- Generate **structured clinical documentation**
- Automate safety checks and procedures through **bar code technology**
- Access **information on-demand**
- Automate **vital sign data collection**
- Facilitate **real-time communications** amongst all care team members
- Practice **evidence-based nursing**

Today, mobile computing is gaining momentum at healthcare organizations around the country. Healthcare organizations are implementing mobile computing initiatives primarily with computers-on-wheels enabling nurses to do clinical documentation and bar code medication administration at the patient's bedside. Large numbers of nurses are also independently purchasing mobile devices and standalone reference based tools themselves.

**Market Challenges.** While a growing number of organizations are implementing mobile nursing solutions, a significant number of challenges exist for widespread deployment. These challenges include

- Priority of nursing automation
- Funding
- Quality of HCIT vendor products
- Clinician adoption

**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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# Mobile Computing in Nursing

## June 2004

**Spyglass Consulting Group**  
**Gregg Malkary, Managing Director**  
**Menlo Park, CA**

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