# Healthcare without Bounds: Trends in Remote Patient Monitoring

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## Introduction

*Trends in Remote Patient Monitoring (RPM)* presents the findings of an end-user market study focused on the current state of remote patient monitoring adoption by healthcare organizations across the United States. The report uncovers strong opinions regarding the market opportunities and challenges for deploying RPM solutions to reduce health care delivery costs, improve patient outcomes and increase patient access to care.

The content for *Trends in Remote Patient Monitoring* was derived from over 100 in-depth interviews with healthcare organizations involved in telehealth/telemedicine including home health agencies, academic medical centers, regional hospitals, government agencies and disease management companies.

The telephone interviews were conducted over a 4-month period starting in November 2005. The purpose of the interviews was to identify the needs and requirements for remote patient monitoring through discussions about:

- Existing workflow inefficiencies in managing chronically ill patients
- Current telehealth/telemedicine initiatives
- Potential impact for deploying remote patient monitoring in the future

Spyglass also evaluated key vendor product offerings and identified early adopter organizations that have successfully deployed remote patient monitoring solutions.

## Target Audience

- **Software and hardware vendors, systems integrators and management consulting groups** who are selling hardware, applications and services into the healthcare industry
- **Healthcare administrators and IT executives** who are making strategic decision to fund clinical information technology solutions
- **Clinicians** who are involved in informatics and clinical system evaluation and selection
- **Investment banking and private equity investors**
### ABSTRACT:

Remote Patient Monitoring (RPM) solutions enable healthcare organizations to remotely monitor and manage patients with chronic diseases such as congestive heart failure, diabetes, chronic obstructive pulmonary disease and asthma. With RPM, healthcare organizations can reduce healthcare delivery costs, improve patient outcomes, and increase access to care for patients living in rural/remote areas.

Early adopters of RPM solutions are capitated managed care organizations that have fiscal responsibility for their patients across the spectrum of care. These organizations include HMOs, integrated delivery systems, home health agencies, hospices, disease management companies and government agencies like the Department of Veteran’s Affairs.

Healthcare organizations are investing RPM today. Healthcare organizations are making limited, focused investments in RPM solutions to better understand the clinical and financial efficacy of these solutions.

Video conferencing is not required for RPM. Healthcare organizations believe two-way video conferencing is an oversold capability that is not required for remote patient monitoring.

RPM solutions are still immature. Healthcare organizations find RPM solutions need to be less expensive, easier to use and better integrated with existing support infrastructure.

Healthcare industry is not ready for RPM due to limited payer reimbursement, restrictive licensure laws, concerns about clinician adoption and a questionable ROI.
The Spyglass Consulting Group is a market intelligence firm and consultancy focused on the current and future potential of mobile computing and wireless technologies within the healthcare industry. Spyglass offers products and services in customer & market intelligence, strategic partnership development, product marketing and investment due diligence.

Spyglass customers include leading high technology vendors such as Cisco, IBM, Microsoft, Intel, HP, Oracle, Siemens Communications, McKesson, Cerner, GE Healthcare, Philips Medical, Cardinal Health, Cingular, Sprint and Verizon.

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, hospitality, manufacturing, communications and entertainment markets.

Prior to founding Spyglass Consulting Group in August 2002, Mr. Malkary was an Associate Partner at Outlook Ventures, a venture capital firm, where he was responsible for making investments in early stage enterprise software and communications companies. Mr. Malkary was the Director of Strategic Planning for Exodus Communications where he was responsible for identifying, evaluating and executing growth initiatives in the managed web-hosting marketplace. 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 IBM, Hewlett Packard, Accenture, Silicon Graphics, SkyTel Communications and Liberate Technologies.

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 CIO Magazine, CIO Insight, Network World, eWeek, Wireless Week, MIT Technology Review, Health Data Management, Modern Physician, Health Management Technology, Healthcare IT News 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.
Spyglass Consulting Group has provided the Cisco Healthcare Team with excellent, in-depth market research and analysis that clearly maps key healthcare related issues/trends to available mobile technologies and solutions. Spyglass has also been a key resource for Cisco's healthcare channel partners with educational sessions providing partners with detailed and meaningful insights about healthcare customer requirements. Spyglass engagements with Cisco and Cisco partners have been extremely professional and have provided excellent value-add. I strongly believe Spyglass' research could be useful for both healthcare provider organizations and solutions vendors targeting the healthcare industry.

Kacey Carpenter
Healthcare Solutions Marketing
Cisco Systems

Trends in RFID is an impressive and useful analysis of the current state of RFID technologies and solutions in healthcare. Its value to me and other hospital and health systems CIOs comes from the survey of operating managers and its analysis of opportunities for specific departments. Given our construction project and network infrastructure upgrades, the timing of the report's publication could not be better. Creative CIOs of leading organizations will gain many useful insights from the report as they consider investments in RFID solutions targeted to patient safety and operational quality improvements.

Walter Fahey, VP and CIO
Maimonides Medical Center
Brooklyn, NY

Mobile Computing for Physicians and Mobile Computing in Nursing have become essential reference tools for the palmOne healthcare team as we develop our product and partner strategy for handhelds and smartphones. Because of the depth and breadth of the research, we are able to find answers to questions about a broad range of topics – from current and future usage patterns and preferences to workplace realities inhibiting adoption. What is particularly refreshing is the frank discussion of the gap between the panacea of e-health initiatives and the challenging environment in which our healthcare professionals must function today. I highly recommend their research for those seeking a comprehensive environmental scan of mobile technology usage among clinicians.

Gail Moody-Byrd
Director, Business And Healthcare Marketing
palmOne

Trends in Mobile Computing 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.

Andrew Barbash, MD
Bethesda, MD
Director of Mobile Health Program
Medical Records Institute (Boston, MA)

Mobile Computing for Physicians provided the Microsoft TabletPC Group with unique insights and perspectives to had better understand how physicians are using mobile computing solutions at the point of care within wide variety healthcare settings. As a result of this report, we were able to better fine tune our value proposition and messaging toward different constituencies within the healthcare community.

Chris Barry, Group Product Manager
Windows Client PMG, Tablet PC Division
Microsoft
Trends in Remote Patient Monitoring

April 2006

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

IN THIS STUDY ................................................................. 4
METHODOLOGY .......................................................... 4
TARGET AUDIENCE ......................................................... 4
DEMOGRAPHIC SEGMENTATION ........................................... 5
EXECUTIVE SUMMARY ....................................................... 7
MARKET SURVEY RESULTS ............................................... 13
WHAT IS REMOTE PATIENT MONITORING (RPM)? ................. 13
RPM SOLUTION INVESTMENTS ........................................... 17
  Are organizations investing in RPM solutions? ........................... 17
  Is the government providing subsidies for RPM deployments? ....... 18
  Which types of organizations are investing RPM? ....................... 21
  Is there an ideal patient profile? ......................................... 25
  What is the scope of RPM solution deployments? ........................ 26
RPM SOLUTION LIMITATIONS ............................................. 35
  What are the limitations of RPM solutions? ............................. 35
  Are organizations leveraging electronic medical records to support telehealth? ....................... 41
  Is video conferencing a critical requirement for RPM? .............. 44
RPM CHALLENGES .......................................................... 49
  Is the healthcare industry ready for RPM? .............................. 49
  Are healthcare payers providing reimbursement? ..................... 54
  Should the federal government revise healthcare licensure laws? .... 58
  Are patients willing to pay for RPM out of their own pockets? .... 61
RPM FUTURE OUTLOOK .................................................... 64
  What is required for widespread industry adoption? ................. 64
ABOUT SPYGLASS CONSULTING GROUP .............................. 65
GLOSSARY ........................................................................ 66
LIST OF FIGURES ............................................................ 67
ENDNOTES ........................................................................ 68