

# mHealth and Home Monitoring



**mHealth and Home Monitoring** is the seventh consecutive report from Berg Insight that gives first-hand insights into the adoption of wireless solutions for health monitoring.

This strategic research report from Berg Insight provides you with 250 pages of unique business intelligence including 5-year industry forecasts and expert commentary on which to base your business decisions.

## ***This report will allow you to:***

- **Profit** from 40 new executive interviews with market leading companies.
- **Study** the strategies of 108 key players in the mHealth ecosystem.
- **Learn** about key home health monitoring devices and services.
- **Understand** the dynamics of the health monitoring market in Europe and North America.
- **Comprehend** how wireless technology can become seamlessly integrated with medical devices.
- **Evaluate** the business opportunities in the emerging mHealth segment.
- **Predict** future market and technology developments.



## **Order now!**

Please visit our web site to order this report and find more information about our other titles at [www.berginsight.com](http://www.berginsight.com)

## **Berg Insight's M2M Research Series**

What are the key business opportunities in the emerging wireless M2M/IoT market? Berg Insight's M2M Research Series is a unique series of 25 market reports published on a regular basis. Each title offers detailed analysis of a specific vertical application area such as smart metering, fleet management or vehicle telematics. Once per year we also publish summaries of our research with detailed forecasts for the Global and European wireless M2M markets, respectively.

[www.berginsight.com](http://www.berginsight.com)

See inside for further details →

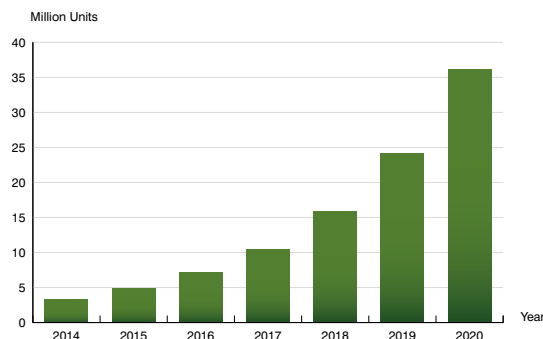


## 4.9 million patients worldwide are remotely monitored

The number of remotely monitored patients grew by 51 percent to 4.9 million in 2015 as the market entered a growth phase fuelled by rising market acceptance in several key verticals. This number includes all patients enrolled in mHealth care programs in which connected medical devices are used as a part of the care regimen. Connected medical devices used for various forms of personal health tracking are not included in this figure. Berg Insight estimates that the number of remotely monitored patients will grow at a compound annual growth rate (CAGR) of 48.9 percent to reach 36.1 million by 2020. Cellular connectivity has already replaced PSTN and LAN as the de-facto standard communication technology for most types of connected home medical monitoring devices and will account for 19.2 million connections in 2020. Using patients' own mobile devices as health hubs is now becoming a viable alternative for remote patient monitoring. BYOD connectivity will be preferred by select patient groups and will be used for the remote monitoring of 15.2 million patients in 2020.

Berg Insight estimates that revenues for remote patient monitoring (RPM) solutions reached € 6.2 billion in 2015, including revenues from medical monitoring devices, mHealth connectivity solutions, care delivery platforms and mHealth care programs. RPM revenues are expected to grow at a CAGR of 32.1 percent between 2015 and 2020 to reach € 25.0 billion at the end of the forecast period. Connected medical devices accounted for 71.0 percent of total RPM revenues in 2015. However, revenues for mHealth connectivity solutions, care delivery platforms and mHealth care programs are growing at a faster rate and will account for 46.3 percent of total revenues in 2020, up from just 29.0 percent in 2015.

There is a strong trend towards incorporating more connectivity in medical devices and pharmaceuticals in order to enable new services and value propositions. Implantable cardiac rhythm management (CRM) has traditionally been the largest market segment, led by companies such as Medtronic, Biotronik and St Jude Medical that included connectivity in CRM solutions more than a decade ago. However, the sleep therapy segment is growing at the fastest rate and will surpass CRM in 2016. The number of remotely monitored sleep therapy patients grew by 170 percent in 2015, with market growth mainly driven by the vendor ResMed that has made connected healthcare a cornerstone of its strategy. Berg Insight predicts that three of the fastest growing market segments in the next five years will be glucose monitoring, air flow monitoring and connected pharmaceuticals. Today, the leading connected healthcare players in these segments include forward-thinking incumbents as well ►



Connected home medical monitoring devices, million units (World 2014–2020)

► as innovative new entrants such as AstraZeneca, Dexcom, Merck, Novartis, Propeller Health, Proteus Digital Health, Roche, Sanofi, Voluntas and WellDoc.

Care delivery platforms and mHealth connectivity solutions are two of the most rapidly developing parts of the mHealth technology value chain. Care delivery platforms are software solutions that enable the remote delivery of healthcare services and allow care efforts to be coordinated between patients, various professional caregivers and other stakeholders such as the patient's family. Care delivery platforms will be instrumental for engaging patients in their own care and delivering remote monitoring services to a large number of people in a cost efficient way. There are various types of care delivery platforms available on the market. General-purpose platforms can be adapted to a wide variety of use cases and are often used as the foundation for developing therapeutic area specific mHealth products. Companies that specialize in this area include BePatient, Exco InTouch, Medixine, OpenTeleHealth and Vivity Health. mHealth connectivity solutions include products and services that are used for collecting data from medical monitoring devices, transmitting this data to caregivers and enabling the data to be used by care delivery platforms. The leading players include Qualcomm Life, eDevice, Tactio Health, Validic and MedM.

The adoption of remote patient monitoring solutions is driven by a wide range of incentives, related to everything from demographics and technology development to new advancements in medical treatment. However, there are a number of barriers, including resistance to change among healthcare organizations and clinicians, misaligned incentive structures and the financing of wireless solutions by what is at large an underfunded healthcare sector. Several catalysts are nevertheless speeding up the rate of adoption – in particular incentives from payers and insurance companies, national health systems that support remote monitoring and a shift to performance-based payment models.

### This report answers the following questions:

- Which medical conditions offer the best potential for wireless health monitoring solutions?
- Who are the leading providers of connected medical devices?
- What are the mHealth strategies of medical device vendors and pharmaceutical companies?
- Which are the general technology trends for home health monitoring equipment?
- What initiatives have been taken by the leading players in the telecom and IT industries?
- How can connectivity redefine the use cases of medical devices and the value propositions to patients and other stakeholders?
- What are the market shares of the top 5 integrated telehealth solution vendors?
- Why are smartphone applications so significant for the mHealth market?
- How can healthcare providers and payers benefit from mHealth solutions?

**Executive summary**

**1 The challenge from welfare diseases**

**1.1 Introduction**

- 1.1.1 The ageing world population
- 1.1.2 Metabolic syndrome and lifestyle related diseases

**1.2 Common chronic diseases**

- 1.2.1 Cardiac arrhythmia
- 1.2.2 Ischemic diseases
- 1.2.3 Hypertension
- 1.2.4 Sleep apnea
- 1.2.5 Chronic respiratory diseases
- 1.2.6 Diabetes
- 1.2.7 Hyperlipidemia

**1.3 Healthcare providers and reimbursement systems**

- 1.3.1 Healthcare in Asia-Pacific
- 1.3.2 Healthcare in Europe
- 1.3.3 Healthcare in North America

**1.4 Regulatory environment**

- 1.4.1 Regulatory environment in Europe
- 1.4.2 Regulatory environment in the US
- 1.4.3 Regulatory environment in other major markets
- 1.4.4 International standardisation

**2 mHealth platforms**

**2.1 Overview of the mHealth market**

- 2.1.1 mHealth market segments
- 2.1.2 Connectivity options for medical devices
- 2.1.3 The mHealth technology value chain

**2.2 mHealth connectivity solutions**

- 2.2.1 Apple HealthKit
- 2.2.2 PTC
- 2.2.3 eDevice
- 2.2.4 Ericsson
- 2.2.5 KORE
- 2.2.6 Microsoft HealthVault
- 2.2.7 Orange Healthcare
- 2.2.8 Qualcomm Life
- 2.2.9 MedM
- 2.2.10 Telenor Connexion
- 2.2.11 Vodafone

**2.3 mHealth care delivery platforms**

- 2.3.1 AT&T
- 2.3.2 BePatient
- 2.3.3 Domicilis
- 2.3.4 Exco InTouch
- 2.3.5 Get Real Health
- 2.3.6 HealthyCircles
- 2.3.7 Medixine
- 2.3.8 OpenTeleHealth
- 2.3.9 S3 Group
- 2.3.10 Tactio Health
- 2.3.11 Verklizan

**3 Physiological monitoring solution providers**

**3.1 Medical devices and remote monitoring**

- 3.1.1 Medical device revenues by market segment
- 3.1.2 Overview of the remote patient monitoring market

**3.2 Cardiac rhythm management**

- 3.2.1 Overview of the CRM device market
- 3.2.2 Use cases for CRM monitoring
- 3.2.3 Remote monitoring solution providers
- 3.2.4 Biotronik
- 3.2.5 Boston Scientific
- 3.2.6 Medtronic
- 3.2.7 LivaNova
- 3.2.8 St. Jude Medical

**3.3 Remote ECG monitoring**

- 3.3.1 Overview of the remote ECG monitoring device market
- 3.3.2 Use cases for remote ECG monitoring
- 3.3.3 Remote monitoring solution providers
- 3.3.4 Aerotel Medical Systems
- 3.3.5 AliveCor
- 3.3.6 BioTelemetry
- 3.3.7 CardioComm Solutions

- 3.3.8 LifeWatch
- 3.3.9 ScottCare
- 3.3.10 TZ Medical
- 3.3.11 Zenicor

**3.4 Blood pressure monitoring**

- 3.4.1 Overview of the blood pressure monitoring device market
- 3.4.2 Use cases for blood pressure monitoring
- 3.4.3 Remote monitoring solution providers
- 3.4.4 Omron Healthcare
- 3.4.5 A&D Medical
- 3.4.6 Microlife
- 3.4.7 Rossmax
- 3.4.8 Sotera Wireless

**3.5 Coagulation monitoring**

- 3.5.1 Overview of the coagulation monitoring device market
- 3.5.2 Use cases for blood coagulation monitoring
- 3.5.3 Remote monitoring solution providers
- 3.5.4 Accriva Diagnostics
- 3.5.5 Alere
- 3.5.6 CoaguSense
- 3.5.7 Helena Laboratories
- 3.5.8 iLine Microsystems
- 3.5.9 Siemens Healthcare Diagnostics
- 3.5.10 Roche Diagnostics

**3.6 Sleep therapy monitoring**

- 3.6.1 Overview of the sleep therapy device market
- 3.6.2 Use cases for sleep therapy monitoring
- 3.6.3 Remote monitoring solution providers
- 3.6.4 Fisher & Paykel Healthcare
- 3.6.5 Philips Respironics
- 3.6.6 ResMed
- 3.6.7 SRETT
- 3.6.8 SomnoMed
- 3.6.9 Weinmann

**3.7 Home sleep diagnostics**

- 3.7.1 Overview of the home sleep diagnostics market
- 3.7.2 Use cases for home sleep diagnostics
- 3.7.3 Remote monitoring solution providers
- 3.7.4 Cadwell Laboratories
- 3.7.5 CareFusion
- 3.7.6 Compumedics
- 3.7.7 Infoscán
- 3.7.8 Natus Medical
- 3.7.9 NovaSom
- 3.7.10 SleepMed

**3.8 Blood oxygen monitoring**

- 3.8.1 Overview of the blood oxygen monitoring device market
- 3.8.2 Use cases for blood oxygen monitoring
- 3.8.3 Remote monitoring solution providers
- 3.8.4 ChoiceMMed
- 3.8.5 Masimo
- 3.8.6 Nonin Medical

**3.9 Air flow monitoring**

- 3.9.1 Overview of the air flow monitoring device market
- 3.9.2 Use cases for air flow monitoring
- 3.9.3 Remote monitoring solution providers
- 3.9.4 Aerocrine
- 3.9.5 AstraZeneca
- 3.9.6 Clement Clarke International
- 3.9.7 iSonea
- 3.9.8 Medical International Research
- 3.9.9 Ndd Medizintechnik
- 3.9.10 nSpire Health
- 3.9.11 Propeller Health
- 3.9.12 Sibelmed
- 3.9.13 Vitalograph

**3.10 Glucose level monitoring**

- 3.10.1 Overview of the glucose monitoring device market
- 3.10.2 Use cases for glucose monitoring
- 3.10.3 Remote monitoring solution providers
- 3.10.4 Abbott
- 3.10.5 Bayer Healthcare
- 3.10.6 BodyTel
- 3.10.7 Johnson & Johnson
- 3.10.8 Roche Diabetes Care
- 3.10.9 Dexcom
- 3.10.10 Voluntis
- 3.10.11 Telcare
- 3.10.12 WellDoc

**3.11 Other**

- 3.11.1 Implantable medical devices
- 3.11.2 Home hemodialysis
- 3.11.3 Telerehabilitation

**4 Medication and integrated monitoring solution providers**

**4.1 Telehealth and multiparameter monitoring solutions**

- 4.1.1 Overview of the telehealth solutions market
- 4.1.2 Use cases for telehealth solutions
- 4.1.3 Telehealth solution providers
- 4.1.4 Optum
- 4.1.5 AuthentiDate
- 4.1.6 Bosch Healthcare
- 4.1.7 Cardiocom
- 4.1.8 Care Innovations
- 4.1.9 H2AD
- 4.1.10 Honeywell Life Care Solutions
- 4.1.11 Ideal Life
- 4.1.12 Medvivo
- 4.1.13 Philips Hospital to Home
- 4.1.14 SHL Telemedicine
- 4.1.15 Telefónica
- 4.1.16 Tunstall Healthcare Group
- 4.1.17 Vitaphone

**4.2 Medication compliance monitoring**

- 4.2.1 Overview of the medication compliance monitoring market
- 4.2.2 Use cases for medication compliance monitoring
- 4.2.3 Compliance monitoring solution providers
- 4.2.4 DayaMed
- 4.2.5 Evondos
- 4.2.6 InRange Systems
- 4.2.7 Medicpen
- 4.2.8 Merck
- 4.2.9 Compliance Meds Technologies
- 4.2.10 MedSignals
- 4.2.11 Philips Medido
- 4.2.12 Proteus Digital Health

**5 Market analysis and forecasts**

**5.1 Market forecasts**

- 5.1.1 Cardiac rhythm management
- 5.1.2 Sleep therapy
- 5.1.3 Telehealth and multiparameter monitoring
- 5.1.4 ECG monitoring
- 5.1.5 Glucose level monitoring
- 5.1.6 Medication compliance monitoring
- 5.1.7 Other medical devices

**5.2 Revenue forecasts**

- 5.2.1 Medical monitoring devices
- 5.2.2 mHealth connectivity solutions
- 5.2.3 Care delivery platforms
- 5.2.4 mHealth care programs

**5.3 Industry trends and analysis**

- 5.3.1 New players enter the market
- 5.3.2 Pharmaceutical companies prepare large-scale rollouts
- 5.3.3 Consumerisation of medical-grade mHealth devices and apps
- 5.3.4 BYOD is becoming a viable option
- 5.3.5 Digitalisation of PSTN networks
- 5.3.6 Modularization of the value chain

**5.4 Market drivers and barriers**

- 5.4.1 An ageing population
- 5.4.2 Increasing welfare disease prevalence
- 5.4.3 Focus on disease prevention
- 5.4.4 Substitutes to medical monitoring
- 5.4.5 Resistance to change
- 5.4.6 Alignment of financial incentives

**5.5 Potential market catalysts**

- 5.5.1 Increased monitoring during clinical trials
- 5.5.2 Incentives from insurance companies and payers
- 5.5.3 National health systems support remote monitoring
- 5.5.4 New clinical evidence on cost effectiveness
- 5.5.5 Non-prescribed monitoring and healthcare consumerism

**Glossary**

## About the Authors



**Johan Fagerberg** is co-founder and an experienced analyst with a Master's degree in Electrical Engineering from Chalmers University of Technology. He has during the past 20 years published numerous articles and reports about location-based services and wireless M2M markets.

**Lars Kurkinen** is a Senior Analyst with a Master's degree in Strategic Management from the Aalto University School of Science and Technology, Finland. He joined Berg Insight in 2010 and his areas of expertise include wireless M2M verticals including mHealth, retail and smart homes.

**Berg Insight** offers premier business intelligence to the telecom industry. We produce concise reports providing key facts and strategic insights about pivotal developments in our focus areas. Berg Insight also offers detailed market forecast databases and advisory services. Our vision is to be the most valuable source of intelligence for our customers.

Who should buy this report?	Related products
<p><b>mHealth and Home Monitoring</b> is the foremost source of information about the adoption of wireless solutions for health monitoring. Whether you are a medical equipment vendor, telecom operator, healthcare provider, investor, consultant, or government agency, you will gain valuable insights from our in-depth research.</p>	<ul style="list-style-type: none"> <li>■ Connected Care in Europe</li> <li>■ People Monitoring and Safety Solutions</li> <li>■ Connected Wearables</li> <li>■ Smart Homes and Home Automation</li> </ul>

© Berg Insight AB - No. 153

### Order form – TO RECEIVE YOUR COPY OF MHEALTH AND HOME MONITORING

You can place your order in the following alternative ways:

1. Place your order online in our web shop at [www.berginsight.com](http://www.berginsight.com)
2. Fax this order sheet to us at fax number: +46 31 711 30 96
3. Mail this order sheet to us at: Berg Insight AB, Viktoriagatan 3, 411 25 Gothenburg, Sweden
4. Email your order to: [info@berginsight.com](mailto:info@berginsight.com)
5. Phone us at +46 31 711 30 91

#### Choose type of format

- Paper copy ..... 1200 EUR  
 PDF 1-5 user license ..... 1800 EUR  
 PDF corporate license..... 3600 EUR

Family/Surname	Forename	Position	Company
Address		Country	Postcode
Telephone	FAX	Email	

VAT is chargeable on all orders from Sweden. Orders from all other countries in the European Union must include the buyer's VAT Registration number below in order to avoid the addition of VAT.

Your PO number	Your VAT/TVA/IVA/BTW/MWST number
----------------	----------------------------------

#### Please charge my credit card

- VISA    Mastercard

Card number	Expiry date (MM/YY)	CV code
Cardholder's name	Signature	
Billing address		
Postcode	Country	

- We enclose our cheque payable to Berg Insight AB  
 Please invoice me

Signature	Date
-----------	------

Reports will be dispatched once full payment has been received. For any enquiries regarding this, please contact us. Payment may be made by credit card, cheque made payable to Berg Insight AB, Viktoriagatan 3, 411 25 Gothenburg, Sweden or by direct bank transfer to Skandinaviska Enskilda Banken, 106 40 Stockholm, Sweden.

Account Holder: Berg Insight AB  
 Account number: 5011 10 402 80  
 BIC/SWIFT: ESSESESS  
 IBAN: SE92 5000 0000 0501 1104 0280

