

## Summary

# Executive summary

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 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 Vivify 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.