

# Technology innovation – Efficiency Gains and the Advent of Personalized Medical Treatments Beckon — Eventually

The convergence between healthcare and technology is making its mark globally - and is beginning to take hold in Latin America. The adoption of new digital health information technologies such as electronic medical records (EMRs), telemedicine, mobile health applications, and electronic medical prescriptions will change how physicians, patients and hospitals interact, which will require adjustments to sales and marketing channels and in some cases, entirely new business models.

## 1. Efficiency gains in public health care expenditures

Notoriously slow and inefficient, public health care institutions throughout the region could stand to benefit from two promising technological innovations:

- **Telemedicine:** With 20% of the region’s population living in rural areas – approximately 122 million people – building traditional healthcare infrastructure to attend the needs of rural patients is extremely costly. Telemedicine can help reduce some of that burden and global companies are beginning to tap in to the potential market. Since 2011, telemedicine investments in global markets have grown more than 20% per year, reaching \$27.3 billion in 2016. Argentina and Brazil are the most advanced with the design and implementation of such programs, while Mexico, Peru and Colombia are also considering large investments in the field. Such markets represent an interesting opportunity for medical equipment manufacturers who supply integrated technology solutions.
- **“Big data” analysis:** The use of data management tools is one of the most exciting breakthroughs in the industry and is raising great expectations among hospitals across the United States and other more mature healthcare markets. Big data analysis—as modern data management methods are commonly referred to—enables more informed diagnostics, more targeted treatment options and the detection of patterns among patients across hospitals, which yields new insights as well as potential best practices and cost savings.<sup>5</sup> The data management tools being developed to extract value from big data remain costly and their use is not yet widespread even among U.S. hospitals. Yet early movers may reap many dividends, especially with government customers looking to save cost and boost health care cost efficiencies.

## 2. The personalization of medical treatments

Technological innovation is giving rise to a new trend: personalized medical care at scale. Mobile health applications are set to spread throughout Latin America and other emerging markets, while the advent of customized medical devices and health care accessories is on the horizon with as 3D printing technology becomes commercially viable.

- **Mobile health apps:** the use of mobiles and health apps are on the rise among patients across the globe: smartphone apps enable users to monitor many aspects of their health, including measuring their heart rate, counting calories, and blood sugar levels. New apps also allow for more complex regimens like managing chronic diseases, such as diabetes. According to mobile tech consultancy

Research2Guidance, there are now almost 100,000 mobile health apps. The top 10 apps generating over 4 million free downloads every day.<sup>6</sup> In Latin America the use of smartphones is increasing rapidly as the numbers of these devices are expected to double by 2017, accounting for 40% of the region’s total population.<sup>7</sup> The impact of the massive use of smartphones in the region along with a new generation of tech-savvy youngsters will open the door for a closer interaction between hospital and patients (e.g., monitoring serious health conditions through alerts to prevent the worsening medical conditions).

- **3D printing for medical applications:** 3D printing is one of the most promising advancements and is set to gain greater traction and acceptance in the medical technology industry. Several companies are using this technology to manufacture medical devices such as hearing aids, tissue implants, and prosthetics. To date 3D printing has had the greatest impact on personalized surgery and pre-surgical planning.<sup>8</sup>

The days when organs and body parts are printed at the patient’s bedside are not far off, though its spread beyond the wealthiest patients will depend on overcoming significant market entry barriers and other obstacles. These include technological challenges such as the lack of available models and blueprints, and the inability to manufacture at scale cost efficiently. The advent of 3D printing solutions is unlikely to disrupt Latin America’s health care sector in the near future, offering a longer horizon for maximizing profits from traditional medical devices sales.



<sup>5</sup> “Big data” in healthcare refers to electronic health data sets whose size and complexity are such that they are difficult (or impossible) to manage with traditional software programs; nor can they be easily managed with traditional or common data management tools and methods. See Scott Rupp, “2014 Health IT Trends: Technology Set to Tackle Inefficiency in Healthcare,” *Electronic Health Reporter*, December 2013, <<http://electronichealthreporter.com/2014-health-it-trends-technology-set-to-tackle-inefficiency-in-healthcare/>>

<sup>6</sup> Alyssa Clark, “Top 5 high-tech health trends to watch in 2014,” *Healthcare Global*, February 2014, <<http://www.healthcareglobal.com/tech/1466/Top-5-hightech-health-trends-to-watch-in-2014>>

<sup>7</sup> “América latina tendrá un 40% de smartphones para el 2017”, <<http://marketingmobileperu.com/penetracion-smartphones-america-latina-2014/>>

<sup>8</sup> Meribah Knight, “3D printing is revolutionizing surgery,” *Modern Healthcare*, March 2014, <<http://www.modernhealthcare.com/article/20140324/INFO/303249992>>