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 a staggering number here in Latin America. The adoption of new digital health intervention technologies such as electronic medical records (EMRs), telemedicine, mobile health applications, and wholesale mobile penetration will change how physicians, patients and hospitals interact, which will require adjustments to roles and relationships (hybrids and/or consolidation), existing workflows and models.

1. Efficiency gains in public health care expenditures

Intensively clear and inefficient, public health care authorities throughout the region could stand to benefit from new planning and intelligence innovations.

- **Telemedicine:** With 19% of the region's population living in rural areas – approximately 111 million people – tackling traditional healthcare infrastructure to absorb 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 2013, innovative investments in global market have grown more than 14% per year, reaching $17.8 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 witnessing large investments in the field. Such markets represent an interesting opportunity for medical equipment manufacturers who supply integrated technology solutions.
- **"Big data" analytics:** 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 analytics or modern data management methods are commonly referred to as enabling more informed diagnostics, more targeted treatment options and the provision of patients among personal across hospitals, which yields more insights as well as potential best practices and cost savings.[1] 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. For some insurers may now many decisions, especially with governments underwriters 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 or care. 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 an improving technology-based environment to enable.

- **Mobile health apps:** The use of mobile 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 level. Most apps also allow for more complex regimens like managing chronic diseases, such as diabetes. According to mobile tech consultancy Research2Guidance, there are now almost 325,000 mobile health apps. The first 10 apps generating over 4 million free downloads every day in the Latin America the use of smartphones is increasing rapidly as the numbers of these devices are expected to double by 2017, increasing the reach of the region's mobile population.[2] 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 connection between hospital and patients (e.g., monitoring workers 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 open greater horizons and possibilities in the medical technology industry. Global companies are using this technology to manufacture medical devices such as hearing aids, knee implants, and prosthetics. To date 3D printing has had the greatest impact on personalized surgery and pre-surgical planning.[3]

The key drivers behind this trend are centered on the patient's readiness and not for self-change to spread beyond the wealthiest patients and segments overcoming significant market entry barriers and social obstacles. These include technological challenges such as the lack of available experts and designers, and the inability to manufacture at scale and 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 overcoming public from traditional medical devices sales.

[1] "Big data" is used here as a term to describe health datasets whose size or complexity exceed traditional data-set difficult to manage using traditional software and hardware techniques. Data sets can be too large (e.g., all hospital records in a country), too complex (e.g., MRI scans of all patients' brains), or too quickly changing (e.g., stock exchange data). Source: "Big Data in Healthcare: Hype and Hope," Dr. Bonnie Feldman, October 2012. http://www.dbmsmusings.com/wp-content/uploads/2012/10/Big-Data-in-Healthcare-Hype-and-Hope-Oct-2012-Dr-Bonnie-Feldman-Excerpt.pdf

[2] Research2Guidance, "mHealth Economics 2017 – Current Status and Future Trends in Mobile Health," July 2017. http://research2guidance.com/product/mhealth-economics-2017-current-status-and-future-trends-in-mobile-health/

[3] Deloitte, "3D printing in healthcare: Seven shifts that will change healthcare," 2016. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-3d-printing-in-healthcare.pdf