

Opportunities in Latin America Healthcare Sector

Looking Ahead to 2017




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Foreword

Two years of low commodity prices has shaken the economic foundation of Latin America's economies. Political woes rife with corruption have had a compounding effect, buckling some of the region's most important countries. Yet there are some signs of green shoots and opportunities still for private and foreign investors looking to grow their presence in healthcare markets.

The following report delves into three contextual elements to understand the macro elements affecting the region, six major trends affecting healthcare in Latin America's major economies, and three case studies of best practices gathered over the course of the past 24 months, illustrating innovation and resilience to succeed in the face of an apparently adverse market.

Contextual Elements

- **Economic outlook** – Between 2015 and 2016 the region lost over US\$ 1 trillion in GDP due to currency devaluations. Countries whose economies are more closely tied to commodity prices were the most affected, such as Brazil, Colombia and Argentina. However, other key indicators are trending positively, possibly indicating that the worst could be behind.
- **Political environment** – Latin America's political leaders of late have faced the rigorous challenge of governing a growing and increasingly empowered middle class electorate amid the region's 2015-16 economic downturn. As public coffers skimmed the bottom in 2016, the region saw an unprecedented increase in out-of-pocket expenditures from the middle class. There is also the question of the new political climate in the U.S. and what it may mean for geopolitics south of the boarder.
- **Medical devices and equipment** – Latin America's medical equipment, device and consumables market is worth an estimated US\$ 29 billion in 2016. The biggest contrasts appear between Brazil and Mexico – with Brazil's medical market shrinking 22% in 2016 and Mexico's growing by 8%. Other markets have remain relatively stable amid the stark differences in equipment types.

Major Trends

- **Brazil's OTC market** – The Latin American Over-the-Counter (OTC) market is riding tailwinds of social ascension and positive regulatory change, enabling healthy category growth despite choppy economic conditions.

The regulatory landscape is changing for Brazil, a country that already comprises over 50% of the US\$ 11 billion OTC market in Latin America. Key players and industry experts are predicting a boost in category consumption driven by significant regulatory changes on the horizon.

- **The aging population and homecare** – Latin America is the fastest aging region in the world, set to add 130 million people to the over 60 cohort by the year 2055. A geriatric population suffering from multiple diseases is creating a shift in the home care market towards a more precision-based personal care model.
- **Medical and wellness tourism** – The development of medical tourism in Latin America in recent years has been very profitable for destination country economies. Over 1.4 million Americans went abroad for medical cases in 2016. Elective procedures not covered by U.S. health insurance remain the most popular procedures, but complex procedures are on the rise as well.
- **Pharmerging fundamentals** – Robust growth of the pharmaceutical market in Latin America is fueled by the region's emerging market dynamics such as a growing middle class, favorable demographic trends and the self-pay nature of primary healthcare that leans towards growing Over-the-Counter (OTC) consumption. These trends create a "pharmerging" growth dynamic likely to affect pharmaceutical sales in the region for years to come.
- **The expansion of the private sector** – Public health spending in Latin America averages only 3.7% of GDP versus an OECD average of 8.3%. The result is often a tradeoff

between the accessibility and the depth and quality of care. The 100 million Latin Americans who ascended to the middle class over the past decade generate larger disposable incomes and are increasingly willing to pay an out-of-pocket premium in order to achieve faster or higher quality care.

- **Innovation, mobility and expanding the reach of healthcare** – For years, experts have pointed to the healthcare industry as one ripe for disruption. Perhaps it's no surprise that a Colombian-born digital startup, 1DOC3, recently attracted the attention of the world for doing just that.

Case Studies of Best Practices:

- **Seamless CRM data integration** – An old adage in the intelligence industry states that "You don't know what you don't know." CRM data often comes ERP systems which rehash the same client information repeatedly. At any given time, your organization may only serve ~30% of the entire potential market. Real value is obtained when your CRM begins identifying opportunities within the remaining ~70% of the market. In 2015 and 2016, Global Health Intelligence has developed the tools and knowledge necessary to integrate over 12,000 detailed hospital profiles into your CRM, enabling you to focus on growing your business.

- **Sales Force Effectiveness** – Requesting that your sales force oversee the population your CRM can be risky, inefficient and above all, demotivating. Capitalizing on the integration of qualified potential clients into your CRM, your sales force will now be empowered to uncover new opportunities, turning a stale CRM into an effective and powerful lead generation solution.

- **Insights into winning competitive tenders** – In search of lower costs and greater efficiencies, governments are consolidating their tender processes. Selling to the government can represent up to 70% of a company's sales. Understanding the competitive landscape can mean the difference between a year of riches and a year of poverty. Since 2014 Global Health Intelligence has perfected unique competitive intelligence tools that can give your business the insights it needs to make actionable decisions in a reliable and time sensitive manner.

The report's insights are intended to enable decision makers to seize the right opportunities and inform their go-to-market strategies throughout the region.

To learn more about Global Health Intelligence, our services, consulting engagements and speaking opportunities, please contact:

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1.

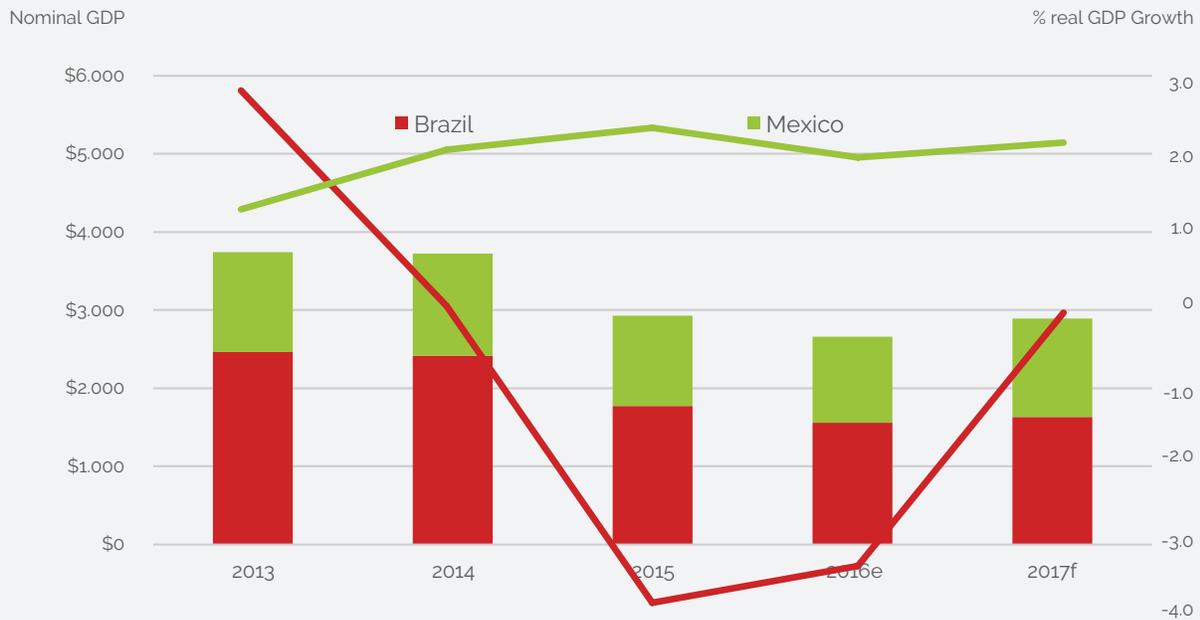
Economic Outlook 2017: The Slow March back to Growth

After five years of decelerating GDP growth, Latin America entered negative territory in 2015, from which it has yet to emerge. The region is expected to end 2016 slightly in the red (GDP decrease of -0.5% to -1.0% in local currency) due to the deep and prolonged contractions in both Brazil and Venezuela who account for a combined 45% of the regional economy. Global growth has been slow to stabilize and financial markets are more volatile. The continued fall in commodity prices over 2016 hit Latin American economies, currencies and public revenues hard, particularly in South America. Brazil is joined by Argentina, Ecuador and Venezuela in posting negative GDP growth for 2016 while Mexico and Central America - who are more closely tied to the U.S. economic cycles - post modest growth between 2.3% and 6.0%. Between 2015 and 2016 the region lost over US\$ 1 trillion in GDP (in dollarized terms)

due to currency devaluations. Countries whose economies are more closely tied to commodity prices were the most affected, such as Brazil, Colombia and Argentina. Socioeconomic progress has stalled and in some cases reversed due to dampening real wage growth from high inflation and weak economic expansion. However, other key indicators are trending positively, possibly indicating that the worst appears to be behind. Urban unemployment is at 6.5%, well below the 8.5% average of the mid-2000s. Regional performance in 2017 will likely be flat - driven primarily by a slow turnaround and recovery period in Brazil - setting the stage for modest growth in 2018.

- **Mexican economy expands against headwinds:** In an economy driven by a robust manufacturing sector and favorable bilateral trades with the U.S., the devaluation of the

NOMINAL GDP & GDP GROWTH IN MEXICO and BRAZIL US\$ billions, 2013-2017



peso has only driven the competitiveness of Mexico's non-oil exports. Continued low unemployment and reform-driven consumer price reductions on key services like electricity and telecom have served to curb inflation and protect domestic demand. However the loss of government budget revenue from the collapse of global oil prices means government spending will remain flat in 2017 and 2018 in order to course for fiscal deficit reduction. Macroeconomic policy is being tightened in the wake of the U.S. presidential election and the uncertainties about future U.S. trade policy. GDP growth, although muted in 2017 and 2018 due to dampened investor and consumer confidence, is

expected to continue expanding at a moderate 2.2% - 2.4%.

- **Brazil's growth engine sputters back to life:** Brazil is starting to emerge from a severe and protracted recession as inflation and fiscal indicators slowly improve under a new political regime re-invigorating both consumer and investor confidence. The region's financial powerhouse experienced the worst of the recession with a 50% currency devaluation over the past 2 years, a credit downgrade in 2015 and uncertainty surrounding the impeachment of then President Dilma Rouseff in 2016. The economy registered a significant -3.8% GDP contraction in mid-2016. Brazil's

unprecedented socioeconomic expansion experienced a setback with the evaporation of employment and income dynamics that had afforded the ascension of 50 million people (25% of the population) into the middle class from 2004-2014. A 2016 report by one of Brazil's largest private banks, Bradesco, found that social descension was evermore present – between January and November 2015, ~2.6 million people left social classes A and B, and another 3.7 million people left class C due to rising unemployment. New fiscal administration under President Temer and foreign capital inflows from his privatized infrastructure development plans unveiled in the latter part of 2016 are expected to reduce inflation and stimulate growth. Forecasts for GDP growth in 2017 hover are between 0% and 0.5%, with a true return to economic and job growth in 2018. Healthcare spending as a percentage of GDP in 2017 should also increase by 0.5% with growth in private Brazilian healthcare expenditures outpacing public outlays.

- **Colombian tax reform on the table:** The economic slowdown and the fall in oil prices have reduced public revenues, which could slide further in the medium term as temporary taxes expire and peso depreciation pushes up dollar denominated debt and interest spending. The comprehensive tax reform proposed in late 2016 aims to rebuild the tax base by lowering the income tax rate while also lowering its threshold, increasing the value added tax rate on non-essential items, and introducing a dividend tax among other changes. Its approval by the legislative assembly is expected to raise revenues by 0.8% of GDP in 2017, help boost real GDP growth to 2-3% and supply funds for the expansion of health services covered by the national system set to come online in

2017. With inflation finally contained, real GDP growth is projected to pick up to 2%-3% in 2017 and 2018 spurred by stronger external demand and increased workforce formalization.

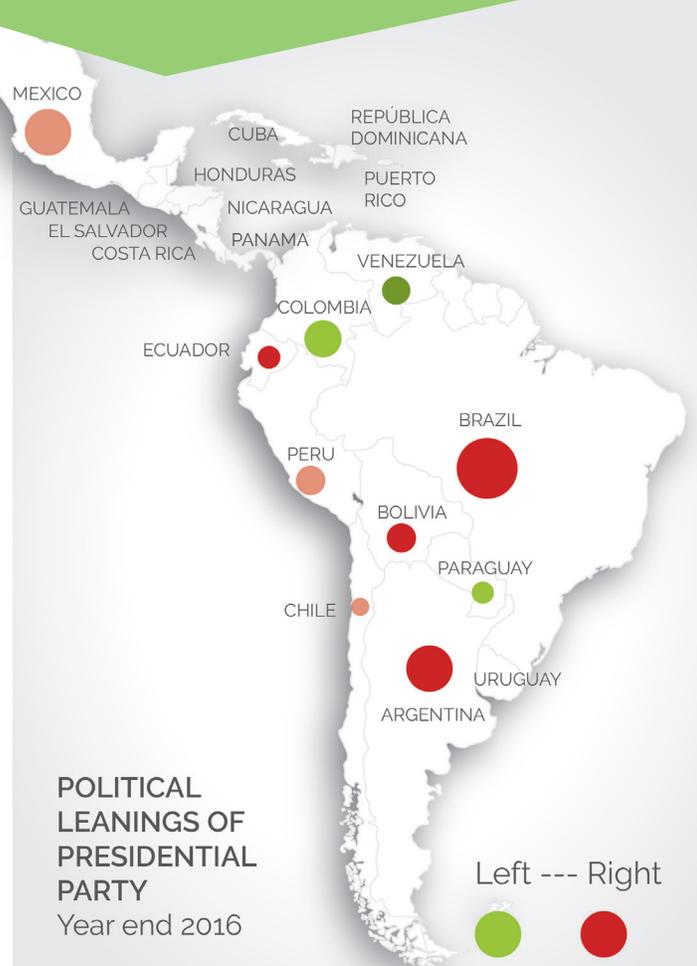
Looking ahead: Despite a sluggish recovery, regional healthcare opportunities remain lucrative

Key external factors create significant uncertainty for the region in 2017, including low global oil prices, higher interest rates, volatile exchange rates and a new administration taking office in the United States. 2017 may not see a stellar return to growth, but inflation pressures are lifting and currency values expected to stabilize, setting the foundation for purchasing power growth in 2018. Public health continues to expand coverage to a greater percentage of Latin Americans while the middle class demonstrates willingness to pay premium for private care. The regions demographic dividends in the short to medium term will stimulate household spending and lift both public and private healthcare expenditures. Healthcare companies would do well to follow the example of major players such as United Health Group in Brazil who have continued to acquire and invest in the region during the recession, taking advantage of the foreign exchange bargain and poising themselves for maximum advantage when the growth engine revs back to full steam.

2.

Latin American Outlook Transitions, Reforms and Trumped-Up Hemispheric Relations

Latin America's political leaders of late have faced the rigorous challenge of governing a growing and increasingly empowered middle class electorate amid the region's 2015-16 economic downturn. Squeezed between growing fiscal deficits and the demands of socioeconomic change, not all are emerging unscathed. By the end of 2016, the region's GDP will have shrunk by an estimated 1.1% in local currency driven by a fall in commodity prices and high currency depreciation across the region. The healthcare market, though more sheltered from economic cycles than other sectors, is affected by the tides of political change and public spending. As public coffers skimmed the bottom in 2016, the region saw an unprecedented increase in out-of-pocket expenditures from the middle class. There is also the question of the new political climate in the U.S. and what it may mean for geopolitics south of the boarder.



- **Brazil's Temer fights debt with privatization:** Brazil has been in a state of political uncertainty since the impeachment and subsequent ousting of former Workers Party President Dilma Rouseff earlier in 2016 for breaking budgetary laws. The government is swimming deeper in debt than during the infamous "lost decade" of the 1980s when the GDP was down 7.6% on a per-capita basis, and faces the country's worst economic recession in eight decades. The new administration led by fiscal conservative Michel Temer initially called for significant cutbacks to social programs including the possible revocation of universal healthcare as a constitutional right guaranteed to citizens since 1988. In September, however, he stated that social programs including health and education would be protected from cuts or expenditure caps, and unveiled a massive privatization plan to rescue the economy by raising US\$ 24 billion from concessions in oil and gas, electricity, and infrastructure operations such as airports, ports and toll roads.

The government recently reapproved foreign doctor participation in Mais Medicos, a program that brings doctors to 38 million people in Brazil's most remote and underserved municipalities. Because Brazilian doctors decline to work in such areas, the program of 18,000 doctors (soon to be reduced to 14,000) relies heavily on 11,400 Cuban doctors on 3-year contracts that Temer had previously vowed to terminate. Like other industries, Temer has made moves to open emergency care services to private sector participation, and may not be long until further liberalization comes to Brazil's healthcare market at a time of both rising public demand and curbed public spending.

- **Mexico's approval of Peña Nieto down, reform momentum to slow:** Since his election in 2012, President Enrique Peña Nieto has been implementing a wide range of reforms to establish a more reliable healthcare system across the country. His 2013 National Development Plan for the Health Sector emphasized the importance of prevention and ensuring adequate access to the healthcare for the poor. This program helped in consolidating health promotion and disease prevention, while granting access to quality care and closing gaps in health coverage between different social groups. Peña Nieto pushed the Ministry of Health to strengthen the already existing universal healthcare programs by promoting cooperation between public and private institutions in order to reach the underserved. However, countercyclical spending meant Mexico's fiscal deficit crept upwards of 3%, prompting a plan to cut public spending in 2017 in order to reverse the trend. The president's approval ratings also struggled in 2016 due to corruption scandals and a widely criticized visit from Donald Trump during the U.S. presidential campaign. Peña Nieto's ratings hit a new low of 25% after Trump's victory, resulting in a series of high profile dismissals including the Minister of Finance. The PRI government will struggle to maintain reform momentum during increased fiscal tightening and political opposition in the ramp up to the 2018 presidential elections.

- **Argentina launches universal health coverage:** Argentine President Mauricio Macri has worked towards stabilizing the economy since his 2015 election through measures to control inflation and reduce the fiscal deficit from 5.4% in 2015 to 4.8% this year. In August, Macri announced an ambitious plan to create a universal healthcare system to

bring an additional 15 million Argentines under coverage, paid for by the newly liberated Solidarity Redistribution Fund (FSR). He has earmarked AR \$8 billion (approximately US\$ 500 million) to invest in bolstering healthcare infrastructure and hospital expansions. He also announced a new National Agency for Health Technology Evaluation to develop ways to achieve technology-enabled cost efficiencies in key public spending areas such as buying equipment and prescribing medications. Macri's plan to boost the economy through increased spending is predicted to contribute towards a 3.2% GDP growth in 2017 after a 1.5% contraction this year.

- **Colombia's appetite for reform bigger than its wallet:** In early 2017, a series of Colombian health care reforms are set to come online from the Statutory Health Law (LES) approved in 2015, making medical service a fundamental right for every Colombian citizen and expanding the definition of coverage. The LES mandates that virtually all medications and medical procedures excepting cosmetic or experimental treatments be considered essential and covered by the public health system. This guarantees access to cutting-edge healthcare in most hospitals regardless of their public insurance provider (EPS) network. Financing these changes, estimated to boost health care costs by 20%, necessitates approval of the tax regime overhaul proposed in late 2016.

- **Chile innovates to broaden access to care:** Chile continues on the path set by legislation passed in 2015 that gradually expands health coverage for high cost conditions from 1,800 patients in 2014 to

20,000 by 2018, even including travel costs so that those living in remote areas can afford care. A recently developed National Dementia Plan attempts to address the growth in Alzheimer's and dementia that will affect 600,000 Chileans by the year 2050, up from 180,000 today.

- **Central America opens up:** Following Mexico's example, Central American countries are opening up healthcare services to foreign investors, with Honduras and El Salvador signing agreements with Japan to fund improvements to existing hospitals.

- **Donald Trump at the helm of hemispheric trade:** While much of Latin America has gained more trade and investment-friendly leadership, the U.S. appears to be heading in the other direction. The November election of protectionist candidate Donald Trump to the office of president calls into question the future of trade relations in the region. His repeated vilification of the North America Free Trade Act (NAFTA) caused the Mexican peso to drop 12% following his victory in November in light of the country's high dependency on its complex web of supply chains to the U.S. Ironically, the 300 multinationals producing 90% of NAFTA-enabled manufactured exports from Mexico have mostly American ownership. Ford, for example, announced a plan to move small car production exclusively to Mexico on the heels of the election, and that plan has not changed. What's more, raw materials originating from the U.S. accounts for almost 40 cents of every dollar the United States imports from Mexico, according to the Woodrow Wilson Center. American-owned OEMs in Mexico have long combined U.S. materials with the cost efficiencies of local labor to export a competitive product for

North American consumers. These supply chain interlinkages, creating over US\$ 1 billion in cross-border trade, will be hard to unravel without a severe blow to U.S. multinationals and effectively handing North American manufacturing dominance to Asian players.

The Trans-Pacific Partnership (TPP) deal, a 12-country agreement that would have included Mexico, Chile and Peru, was abandoned by Congress the week following Trump's win. South American countries like Brazil and Argentina will be watching for Trump's response to lobbyists calling for increased tariffs on their key raw material exports like steel and soybeans. Although Trump has not taken specific aim at the DR-CAFTA deal, Central American economies dependent on U.S. remittance payments are concerned with a possible crackdown on immigration and undocumented workers. Just how much (if any) of Trump's anti-global trade rhetoric will come to fruition remains to be seen, but it seems clear from President Xi Jinping's Latin American tour in mid-November that the Chinese are eager to expand their array of free trade agreements in Latin America and fill any partnership gaps in trade and investment that might be created by the new U.S. administration.

Looking ahead: Broader healthcare access presents affordability challenges and opportunities.

Although 2017 may not be a year of stellar GDP growth, the effects of more prudent fiscal management will gain traction and provide a basis for growth in 2018. The region has benefited from expanded medical services to underserved groups and will likely see increased healthcare liberalization or public-private partnerships to reduce the mounting cost of care. Pent up demand from austerity measures taken during the recession will see increases in public spending and investments in healthcare for 2017 as economies and currencies stabilize. Capital equipment and med-tech companies in particular stand to gain as hospitals expand and invest in cost-reducing technologies. Entrenched U.S. business interests in the region will likely prevent any major changes to existing hemispheric trade relations, but only time will tell.



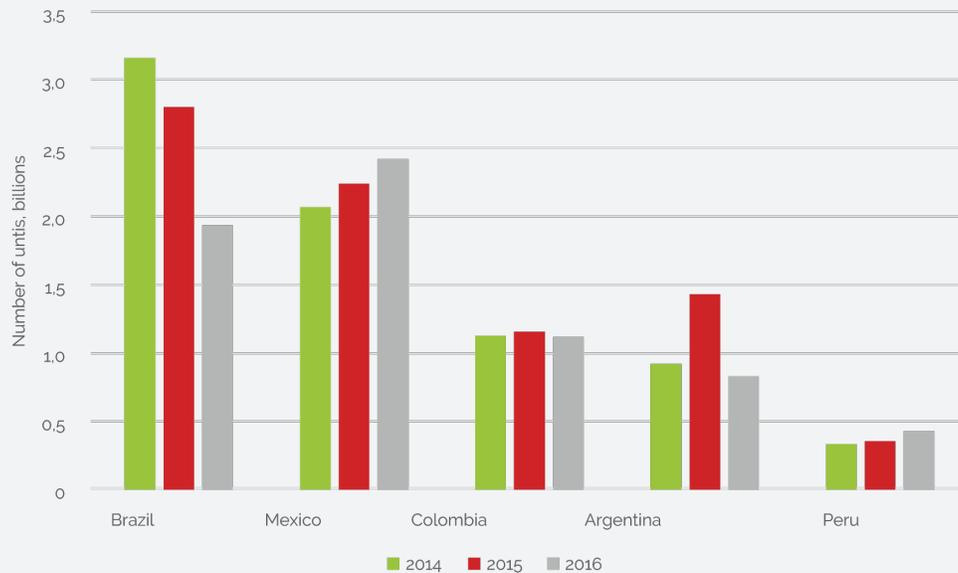
3.

Key Growth Opportunities for Medical Devices and Equipment

Latin America's medical equipment, device and consumables market is worth an estimated US\$ 29 billion in 2016f. Imports account for 85%-90% of this market, with limited production for the local market in Brazil, Mexico, Argentina and Costa Rica. As a result, the market has a high exposure to currency fluctuations and lost significant purchasing power due to foreign exchange rate devaluations across the region in 2015 and 2016. In 2015, imports of medical capital equipment contracted slightly from US\$ 5.2 billion to US\$ 5.1 billion year-over-year (YoY). As players absorb currency drops, distributors are forced to squeeze margins in order to maintain volumes. Despite stagnant numbers, there are still a number of profitable product classes in response to the region's aging population and the rise of non-communicable diseases (NCDs).

- **A look at medical device/equipment import trends:** Brazil's imports of medical devices/equipment has declined across all categories at a -22% CAGR from 3.2 billion units in 2014 to 1.9 billion units in 2016f, a direct result of lower demand affecting most product classes, of which CT scanners, X-Ray machines, Radiography/Radiotherapy equipment, Breathing appliances, and Respiration equipment. Devices whose use is directly tied to patient wellbeing, such as Orthopedics equipment, Artificial teeth, Artificial joints, Heart valves, Hearing aids, and Pacemakers continued to witness pent-up demand (in number of units), albeit being imported from lower cost countries.

IMPORT TRENDS ACROSS MAJOR MARKETS



Conversely, the Mexican market for medical equipment, devices and consumables grew by 8% in 2015 and 2016f, lifting the market from 2.0 billion units in 2014 to 2.4 billion units in 2016f. Leading the trend were products related to artificial respiration, Massage equipment, Instruments and equipment using UV, visible or IR optical radiations, as well as CT scanners, X-Ray machines, Radiography/Radiotherapy equipment which all demonstrated a CAGR of over 20% from 2014 to 2016f, in number of units.

Colombia remained a flat market, demonstrating 2.7% growth in 2015 and then shrinking 3.2% in 2016f, in number of units. While the number of units has remained relatively stable, the value of imports decreased by -13% from 2014 to 2016f. This is

in part due to a shift in import origin towards Asian manufacturers – Colombia is now serviced by 21 different Chinese medical equipment distributors. The government hopes to lower the cost of care by increasing competition in the local market and enabling Asian products to compete directly with traditional American and European counterparts.

After countercyclical spending in 2015 (which boosted the imports of medical devices and equipment), Argentina's imports returned to their historic norm of 800,000 units in 2016f.

The Peruvian market demonstrated steady growth, from a relatively small base, growing 7% in 2015 and an additional 19% in 2016f. The Peruvian government has been urgently

replacing obsolete hospital machines that are failing due to lack of maintenance.

- **Chronic disease-related product classes grow:** The economic burden of non-communicable diseases such as diabetes and hypertension is on the rise. The cost of obesity alone is expected to reach US\$ 8.7 billion in 2050, up from US\$ 5.0 billion in 2010. Demand for product classes such as infusion pumps, defibrillators, MRIs, electrocardiographs, blood pressure monitors, and ultrasound machines are on the rise. In 2015 electrocardiograph machines were Brazil's highest-growth medical device class, increasing by 28% to reach US\$ 4 million. The country also saw growth of 6% in ultrasound machines, reaching an import value of US\$ 107 million. Infusion pumps in Mexico saw a 7% YoY growth from 2014 to 2015, trailing behind breath-enhancing machines and defibrillators which saw a 20% YoY growth during the same period.

- **Portable, remote patient monitoring (RPM) devices for home care:** Regional healthcare costs are climbing steadily, with an ageing population mostly covered by universal public health and suffering from an increasing prevalence of chronic diseases. This necessitates a shift in focus from acute care to prevention and monitoring. The Chilean government piloted remote patient monitoring via telehealth provider AccuHealth with an average cost savings of US\$ 4,500 per person per year. Such devices may be a way to advance improved primary care in the region cost effectively.

- **Capital equipment, med-tech investments to meet expanded public coverage:** In mid-2016f, Argentina

announced plans for a universal healthcare system to bring an additional 15 million citizens under coverage, including US\$ 500 million will be invested in bolstering healthcare infrastructure and hospital expansions. A new National Agency for Health Technology Evaluation to develop ways to achieve technology-enabled cost efficiencies in key public spending areas such as buying equipment. Colombia is also scheduled to implement reforms in 2017 that expand the range of services covered by national healthcare to include virtually all non-elective procedures.

Looking ahead: Investment returns to both public and private hospitals, re-fueling sales.

Pent up demand from austerity measures taken during the 2015-2016 Latin American downturn will begin to see a reversal in 2017, with slight increases in public spending and investments in healthcare as economies and currencies stabilize.

Per capita health expenditure gains in Brazil of roughly US\$ 1,200 by 2018 will fuel the expansion of private practices and their investment in medical equipment. The government recently opened the healthcare market's doors to foreign investors, and the expected addition of 13,000 hospital beds by 2017 will reinvigorate demand for devices and hospital equipment. Likewise, the Mexican healthcare sector is forecasted to grow at a CAGR of 6.1% to reach US\$ 101 billion in 2019, with the medical device market expanding from US\$ 4.9 billion in 2015 to US\$ 6.5 billion in 2020. Latin America's aging population will require



increasingly constant monitoring, thus driving the demand for new wearable and portable medical devices. Capital equipment and med-tech companies in particular stand to gain as hospitals expand and invest in cost-reducing technologies. Players should expect to see increased competition from Asian suppliers as well as local Latin American manufactures. The four countries of the Pacific Alliance trading agreement, Chile, Colombia, Peru and Mexico, recently enacted regulations to standardize the quality and characteristics of medical devices to facilitate intra-regional trade.



4.

Brazil's Over-the-Counter Market Welcomes Long-Awaited Regulatory Changes

Today's Latin American Over-the-Counter (OTC) market is riding tailwinds of social ascension and positive regulatory change, enabling healthy category growth despite choppy economic conditions. OTCs in Latin America have long competed against prescription drugs that were commonly sold "under the counter" without the necessary prescription. It is a common tale that if a consumer felt a sore throat coming on, they could stop by their local pharmacy to pick up antibiotics without a confirmed diagnosis, leading to mounting concerns in the region over bacterial resistance.

However, this began to change in 2010 when both Brazil's National Health Surveillance Agency (ANVISA) and Mexico's Ministry of Health stepped up enforcement by requiring prescription duplicates and imposing hefty fines on noncompliant pharmacies. In 2012, Brazil's ANVISA passed a new regulation that

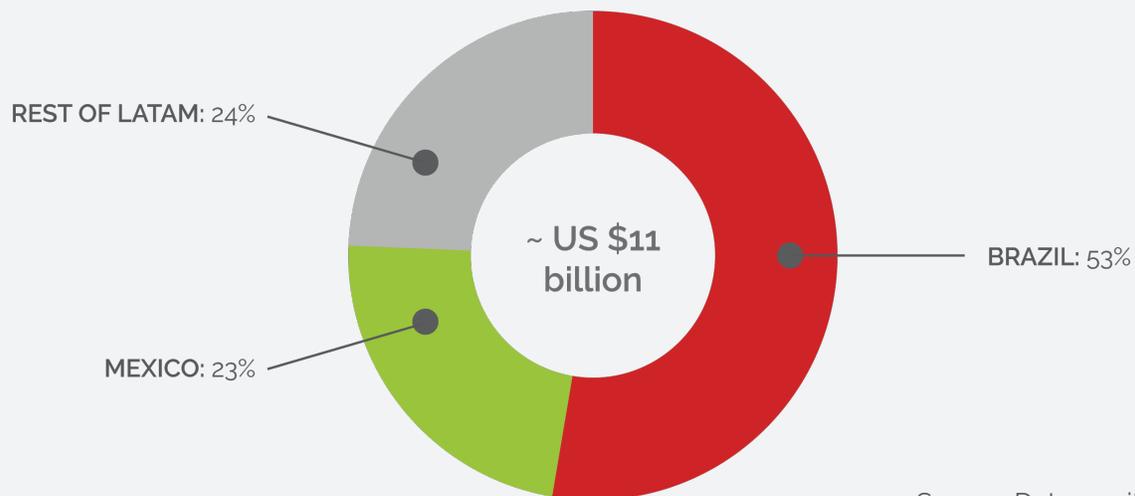
allowed OTCs to come out from behind the pharmacy counter to be sold on retail shelves in drugstores, making them more accessible to consumers.

Now the regulatory landscape is changing again for Brazil, a country that already comprises over 50% of the US\$ 11 billion OTC market in Latin America. Key players and industry experts are predicting a boost in category consumption driven by some significant regulatory changes on the horizon:

- **Expansion of OTC drug list and reformed selection criteria:** In July 2016, ANVISA passed a new policy establishing a clear, timely process and more relaxed criteria for new products to be included on the OTC list. A new classification system for OTCs will streamline the approval process, which currently takes an average of 1.5 years to complete. This would include an immediate

BRAZIL PHARMA REGULATION

Latin American OTC Markets: Country Breakdown (2014)



Source: Datamonitor, 2015

"switch" from prescription to nonprescription status for hundreds of products. For example, products already sold as OTCs for over 5 years in other countries will be reclassified from prescription to OTC in Brazil. The current OTC wait list includes antacids, antifungals, antihistamines, expectorants, decongestants and hair loss products, among others.

Industry leaders and OTC producers have been waiting 12 years for this legislation to pass. They believe the inclusion of new products already sold as OTCs in the U.S. could replace up to 200 million prescriptions per year in Brazil. The Brazilian association of both domestic and multinational OTC producers (ABIMP) anticipates that the OTC share of the overall Brazilian pharmaceutical

market may expand from 27% currently to as high as 35%. One major local player, Ache Laboratories, believes it could double the size of its OTC portfolio.

- **Pharmacists who "prescribe" OTCs:** Major pharmacy chains in Brazil, in partnership with the academic community, are piloting new in-store programs that enable pharmacists with specialized knowledge of OTCs to "prescribe" them to consumers. Post-graduate courses are being created to train pharmacists on OTCs, allowing them to diagnose and accompany customers as if they were patients, and all from within the store. The idea behind this initiative is to provide professional guidance for consumers who self-medicate, particularly those with lower

education levels, in an effort to reduce OTC misuse.

- **Increased potential for new retail channels:** In 2012, the Brazilian senate passed a law that would allow OTCs to be sold in general stores and supermarkets, but it was halted by a veto from then-president Dilma Rouseff. Now that she has been impeached, the new and more business-friendly administration of Mr. Michel Temer may revisit the legislation in a more favorable light. The Brazilian Association of Supermarkets (ABRAS) is actively promoting this legislation, while the Association of Pharmacy and Drug Chains (ABRAFARMA) and wider pharmaceutical community strongly oppose it. Yet, it is likely a matter of time before Brazil adopts the same retail environment as is common in the U.S. and Mexico, and giving OTCs expanded retail opportunities in new markets and underserved areas. However, each state must adopt the new policies in their laws before change can occur so the market impact may be slow.

- **Rosy outlook attracting more R&D and value growth:** The Brazilian economic recovery to be realized more fully in 2018 should have a net positive effect on the OTC market. Although some consumers may

“upgrade” from OTC to prescription drugs, an overall spending boost on consumer health from higher employment and rising incomes will boost the category. Major players like Ache in Brazil are planning to capitalize on the positive outlook by investing in R&D for new products within dietary supplements. Hypermarcas is also planning to focus new launches on the OTC segment which they see as having pent up demand.

Looking ahead: Gaining an early position to ride growth momentum.

Unlike before, foreign OTC manufacturers have the opportunity to bring product lines sold elsewhere into the Brazilian market relatively quickly and painlessly. With much needed regulatory change on the horizon, the category will enjoy long-term benefits from continued income growth, aging dynamics and increased investment focused on the region. Players should position themselves into these tailwinds by building brand strength with customers today to reap dividends as the market grows.

5.

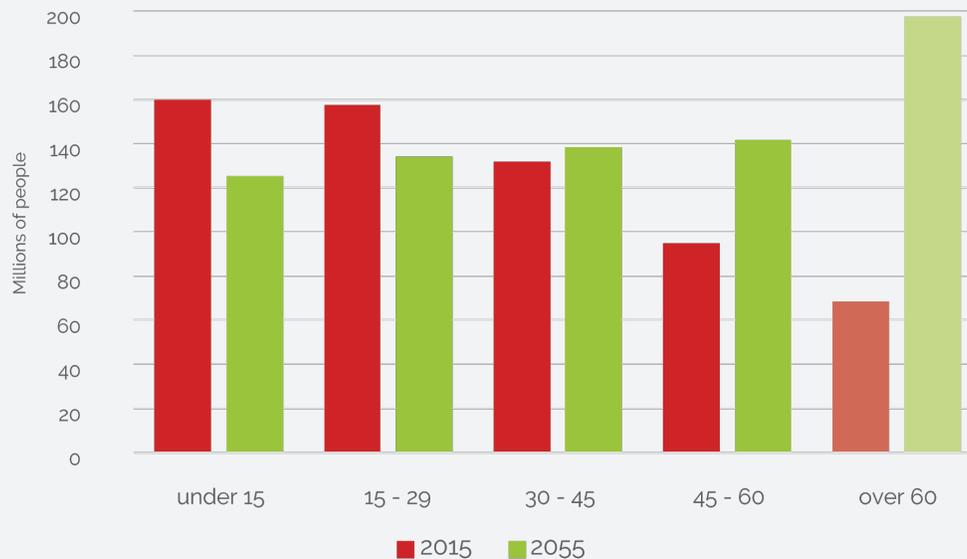
Going, Going, Gray: Latin America's Aging Population Fuels Connected Home Health

Latin America is the fastest-aging region in the world, set to add 130 million people to the over-60 cohort by the year 2055. This tripling of the region's senior population by mid-century combined with an unprecedented growth in chronic disease rates are expected to expand the home healthcare market by 9% CAGR through 2020. A geriatric population suffering from multiple diseases is creating a shift in the home care market towards a more precision-based personal care model. Local telehealth player AccuHealth is demonstrating the power of public-private partnerships, remote patient monitoring (RPM) and predictive data to improve outcomes and reduce the cost of conditions such as respiratory or cardiovascular diseases by reducing trips to the emergency room. Meanwhile, dialysis treatments within the home setting can help reduce the burden on the hospital infrastructure as well as improve the treatment outcome. The penetration of

homecare solutions is currently highest in Brazil, Chile, Argentina and Colombia, and is expected to increase considerably in Mexico in years to come. The Latin American home healthcare market is expected to reach US\$ 17.5 billion by 2020, concentrated heavily in Brazil and Mexico and aided by the growing connected wearables market.

- **Brazil's elderly increasingly unhealthy:** With a population of 200 million and high urbanization rate, Brazil alone accounts for 35% of the regional home health market. The economic burden of non-communicable diseases such as diabetes and hypertension is on the rise. The cost of obesity alone is expected to reach US\$ 8.7 billion in 2050, up from US\$ 5.0 billion in 2010. The Family Health Strategy (FHS) program launched in 1994 provides for lower income communities by delivering home health care services to the elderly. This allows patients to remain

FORECAST OF LATIN AMERICAN POPULATION BY AGE



connected to trusted care givers while avoiding more costly hospital stays. Brazil's pensionable population as a percent of the working age population will nearly double from 8.8% 2005 to 16.3% by 2025, putting additional strain on the public health system as the rate of social contributions versus withdrawals shifts unfavorably.

- **Mexico's high self-pay rate hits seniors hard:** Mexico is home to the OECD's most rapidly aging elderly population and its highest out-of-pocket expenditure rate at 45-50% of total health spending, meaning individuals feel the need to visit private clinics despite nearly universal coverage. Mexico also has the highest obesity rate in Latin America, affecting 33% of adults who each create an additional US\$ 892 in

health expenditures per year. Dependent pensioners as a percent of the working age population will grow from 8.3% in 2000 to 13.1% in 2025. Improved access to home care could substantially improve the country's poor performance on certain indicators, such as a downward trending 70% survival rate for the month following a heart attack and stagnant 80% rate for the same following a stroke. The Mexico wearable sensors market is expected to top US\$ 3.0 million by 2018 at a CAGR of 40%, creating a potential ecosystem of devices to aid in home monitoring.

- **Colombia's unique care challenge:** Colombia faces the particularly labor intensive and costly senior health challenge of having the highest rate of early-onset Alzheimer's disease in the world. This terminal disease is

expected to affect nearly 700,000 Colombians by 2030 due to the prevalence of an unfortunate genetic mutation.

- **Telehealth proving its case in Chile and beyond:** Chilean telehealth player Accuhealth, the first of its kind in Latin America, began as a pilot with the national health system in 2014. Accuhealth now monitors 9,000 patients 24/7 from home who suffer from one or more chronic diseases, many of whom live in remote areas without access to a local clinic. Constant monitoring and predictive technologies identify concerning trends before a crisis occurs, thereby avoiding hospitalizations and driving down the annual cost burden by an average of US\$ 4,500 per person. AccuHealth now supports the Colombian public health system and aims to add one million patients across Latin America by 2020 in Mexico, Brazil and Argentina.

Looking ahead: Latin America will adopt tech-enabled home healthcare to mitigate costs.

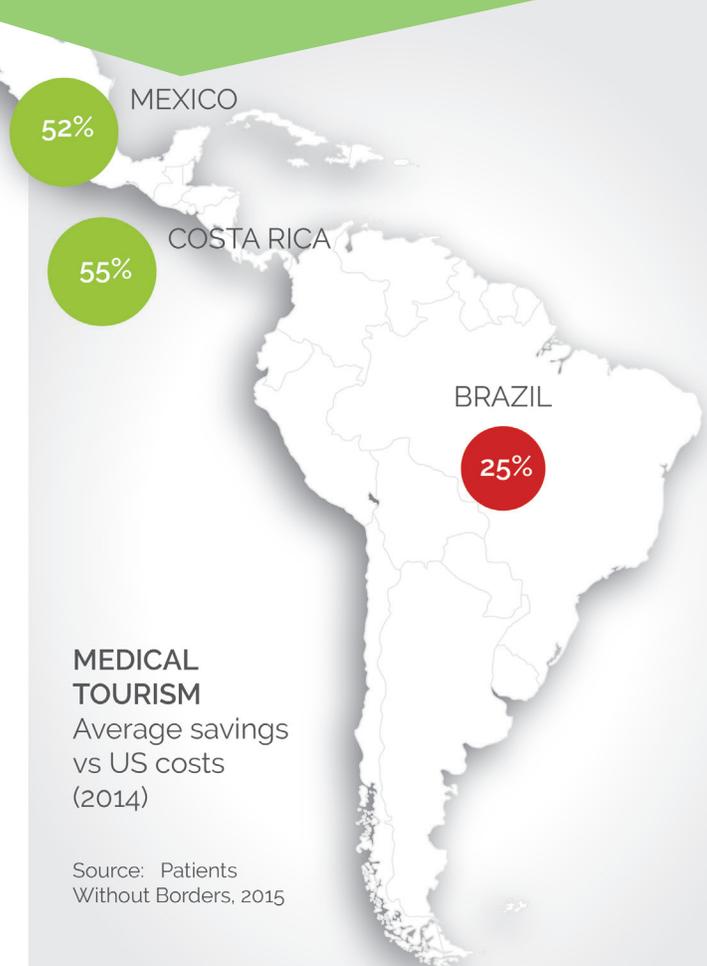
Regional healthcare costs are climbing steadily upwards with an ageing population mostly covered by universal public health and suffering from an increasing prevalence of chronic diseases. These realities necessitate a shift in focus from acute care to prevention and monitoring. The combination of rising home health demand, widespread connectivity through rising home and mobile internet penetration, and a robust 21% annual growth in the global wearables market will make remote patient monitoring increasingly feasible and cost effective. Fiscal pressures may create a "leapfrog effect," driving Latin American adoption of telehealth faster than more developed healthcare markets like North America and creating a regional hub for digital firms redefining the medical care landscape.



6.

Medical and Wellness Tourism: Currency Devaluations Sweeten the Deal

The development of medical tourism in Latin America in recent years has been very profitable for destination country economies. Surgical and dental procedures are offered at a sharp discount compared to U.S. price points. Over 1.4 million Americans went abroad for medical cases in 2016, a number that has grown alongside the rising cost of care following the Affordable Care Act. Latin America is receiving the lion's share with cost-friendly and increasingly excellent medical care combined with developed tourist infrastructure. The establishment of rigorous standards via U.S. based Joint Commission International allows a growing number of accredited Latin American hospitals to leverage a golden seal of approval.



MEDICAL TOURISM

Average savings
vs US costs
(2014)

Source: Patients
Without Borders, 2015

Elective procedures not covered by U.S. health insurance remain the most popular procedures, ranging from liposuction to in vitro fertilization to dental surgery, but specialist procedures like hip and knee replacement, orthopedic surgery and eye surgery are on the rise as well. In addition to medical tourism, the emerging wellness travel category accounts for over 30 million trips to the region, generating an estimated US\$ 22 billion in revenues. With Latin American currencies expected to remain below pre-2015 levels through 2018, key markets are on the high end of the global medical tourism growth rate of 15-25%.

- **Mexico's fast track to regional leadership:**

As a top global hub for medical tourism, Mexico attracts over one million inbound patients each year and is growing at over 20% CAGR. Cost savings on medical procedures in Mexico vs. the U.S. already average 50-60% range prior to the recent devaluations. Border cities like Tijuana and Mexicali each attract 150,000 American patients yearly, prompting the creation of a special "medical lane" at the U.S./Mexico border crossings in 2012. While over 70% of inbound U.S. patients come from border states like California, Texas and Arizona, an increasing number are flying into Cancun and Puerto Vallarta from further afield to combine medical procedures with resort recoveries. Top procedures include weight loss surgery, cosmetic surgery, oncology (including alternative treatments) and dental/orthodonty. By the end of 2016, Mexico boasted 8 JCI accredited hospitals.

- **Brazil, a world capital for cosmetic surgery:** Brazil's well-developed private healthcare services set the bar in Latin America, and while the cost savings are

generally less than other destinations, the medical excellence continues to draw patients from abroad. Brazil was the first country to boast a JCI-accredited institution outside the U.S. and is now home to 43 JCI hospitals. Brazil ranks second behind the United States for number of plastic surgeries performed, and the quality and affordability of such procedures has garnered a strong international reputation. Brazil boasts the highest per-capita number of cosmetic surgeons in the world, with more than 4,500 licensed cosmetic surgeons. The latest improvements in infrastructure due to the World Cup and the Olympics have made the country more accessible for medical tourism, which is expected to grow by 45% in the next five years.

- **Costa Rica becoming a major player:**

Costa Rica also enjoys relative geographic proximity and direct flights to main U.S. airport hubs. Roughly 50,000 medical tourists per year are drawn to the deepest savings on procedures (averaging 55%) among Latin America's top three destinations, well-developed tourist infrastructure and low crime rates. Noted "recovery resorts" have sprung up within easy access of major San Jose hospitals, offering ranch-style accommodations with convalescent nursing care.

- **Colombia finds an attractive niche:**

Colombia is home to roughly 1,000 plastic surgeons who carry out an estimated 300,000 operations every year. The country is ranked within the top 10 by the International Society of Aesthetic Plastic Surgery and their 2014 estimated that Colombia accounts for 2.4% of procedures worldwide. The most popular are liposuction (~50,000), breast augmentation

(~40,000), abdominoplasty (~25,000), eyelid surgery (~22,000) and buttock augmentation (~21,000). The Ministry of Trade, Industry and Tourism reported that 41,000 foreigners visited Colombia in 2014 for medical (mainly cosmetic) tourism purposes, hailing from the US, Spain, Germany, Venezuela and Canada. However, the country is broadening its appeal through developing partnerships with internationally renowned organizations. In 2016, the Fundacion Cardiovascular de Colombia hospital opened a 200-bed advanced oncology center for adults and children developed and managed in partnership with the University of Pittsburg Medical Center famous for its cancer expertise. By the end of 2016, Colombia had four JCI accredited hospitals in Bogota and Medellin.

- **Panama joins the foray:** Panama has experienced rapid growth in the medical tourism sector due to its position as a regional business hub and the use of the U.S. dollar as official currency. Ample qualified doctors are bilingual and use the same medical equipment as American doctors. Direct affiliations with renowned American hospitals such as Johns Hopkins Medicine International have made Panama incredibly attractive for American citizens.

- **The rise of wellness tourism:** Increasing prevalence of chronic and stress-induced diseases in developed countries like the U.S. has prompted a rise of the "wellness tourism" industry of travel oriented towards enhancing personal health and well-being. In Mexico this sub-sector represents nearly \$9 billion in annual expenditures from 11.4 million visits. For example Tulum, a small community along the Riviera Maya, has become a haven for high-dollar yoga retreats and detox therapies

for North Americans staving off corporate burnout. Brazil, a distance second, brings in \$2.2 billion from 5.3 million visits.

Looking forward: Latin America as a repeat destination along health & wellness journey

Medical tourism in key markets like Mexico is expanding beyond elective procedures to major operations like orthopedic and cardiologic surgery due to the high usage of American standards and equipment. A handful of U.S. health insurance companies already have some form of coverage for medical tourism visits to Latin America as they too are burdened by rising healthcare costs. Healthcare, like manufacturing, may become another sector where cost advantages south of the boarder prompt increasing value chain integration between players in North and Latin America. Advantageous foreign exchange rates expected to continue through 2018 make these procedures even more appealing for in-bound tourists. As wellness tourism in Latin America grows by 13% annually, repeat travelers will develop a more comprehensive health relationship with key destinations providing an expanding variety of services related to general wellness, medical care, and recovery.

7.

Pharmerging Fundamentals: Inside Latin America's Expanding Medicine Cabinet

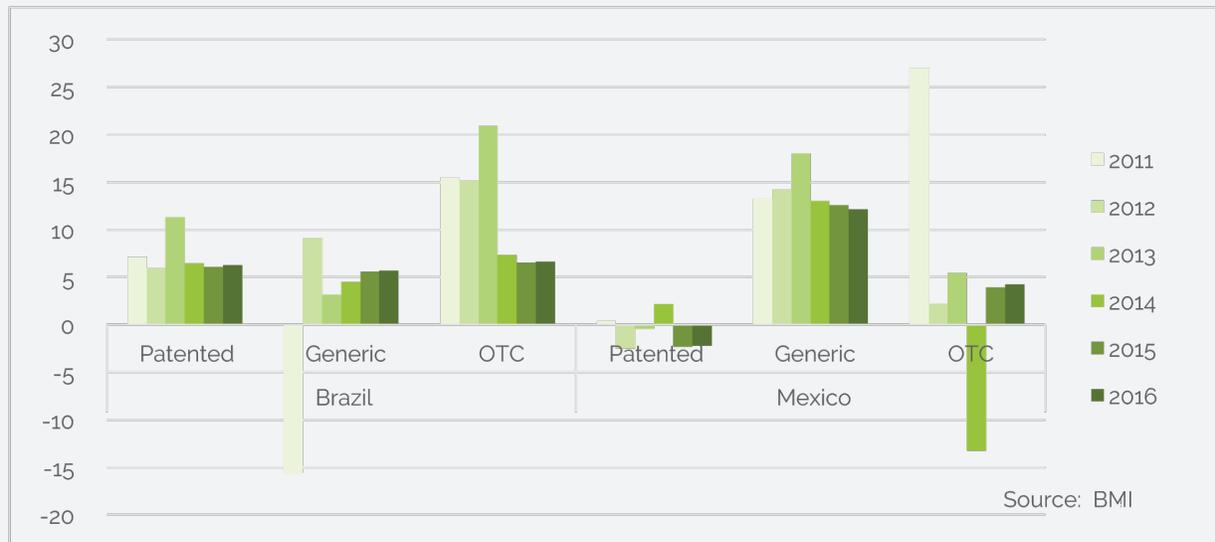
As in other global emerging markets, robust growth of the pharmaceutical market in Latin America is fueled by the region's emerging market dynamics such as a growing middle class, favorable demographic trends and the self-pay nature of primary healthcare that lends towards growing Over-the-Counter (OTC) consumption. These countries are also experiencing increasing urbanization and subsequent access to modern retail, as well as slowly improving regulatory environments that may alter the market landscape. These trends create a "pharmerging" growth dynamic likely to affect pharmaceutical sales in the region for years to come.

- **The importance of OTCs.** As in other emerging markets, the Latin American OTC segment accounts for a substantially higher proportion of the larger pharmaceutical sector. While in mature markets such as North America and Europe OTCs account

for only 9% of total pharmaceutical sales, in Brazil OTCs account for 27%. Yet OTC category growth in Latin America continues to outpace that of patented prescription drugs by a wide margin. Brazilian OTC drug sales outperformed prescription drug sales growth from 2009-2013, registering a CAGR of 18% versus Rx at 13%. Even during the economic downturn of 2015, OTCs continued to outperform while overall retail slowed to 5% growth. This highlights more limited public health coverage of prescription medications that causes consumers to rely more heavily on OTCs. Although growth of the Mexican OTC market was more modest and more cyclically tied than in Brazil, the sector still outperformed its North American counterparts, where the U.S. and Canada registered CAGR of 2.6% and 3.0% respectively during the same period.

PHARMA CATEGORY GROWTH: BRAZIL & MEXICO

Year-on-year % growth, in local currency



- The rise of generics:** The emerging generic prescription drug segment is the fastest growing pharmaceutical category in Latin America. The category has rapidly gained a foothold in Mexico where public sector coverage of medicines has risen, currently purchasing or reimbursing over 50% of pharmaceutical sales in volume terms. High out-of-pocket rates for private healthcare expenditures for the middle class has further damped sales of more costly patented drugs in favor of generics. Public awareness of and trust in generics has also risen and recent IMS Health research shows that over 40% of Mexicans will purchase generic equivalents. Pharmaceutical players in the region are seeing strong growth in the “branded generics” category that gain consumer trust with a recognizable brand

name. Pharmacy retail sales make up 80% of this category for Abbot Laboratories and drove double-digit record growth in 2016.

In Brazil, sales of generic medications more than tripled in value since 2009 at a CAGR of 32% boosted by the “Popular Pharmacy” program to make over 100 “essential” pharmaceutical products (mostly generics) available to consumers for free (or at a reduced cost) at over 30,000 participating pharmacies. Several dozen patent expirations of popular branded prescription drugs in recent years contributed to the rapid growth. By 2018, generics should exceed a third of the volume in the Brazilian market.

- **Emerging market socioeconomic and demographic growth drivers:**

Over the last decade, 100 million Latin Americans ascended from the lower to middle classes, generating both larger disposable incomes and expanding waistlines due to modern lifestyle shifts. The prevalence of adult obesity has reached 33% in Mexico, where 1 in 6 people are diabetic, and 18% in Brazil. The growing non-communicable disease burden, combined with increasing consumer health awareness, are driving increased category demand. While the majority rely on the national health care system, private healthcare has made inroads among middle class segments who are willing to go out of pocket to avoid lines and pay a premium for better health care. Household spending on pharmaceutical products in Brazil increased by 11% in 2013 and 9% in 2014. However, socioeconomic growth is experiencing a setback and Brazilian bank Bradesco found that between January and November 2015, about 2.6 million people left social classes A and B, and another 3.7 million people left class C due to rising unemployment. Pharma sales slowed but continue to post modest growth, pointing to the high priority Brazilians place on this purchase category.

Demographic shifts due to rising birth rates, falling fertility rates and extended life expectancy are hitting home across the region. Nowhere is this more pronounced than in Brazil, where fertility rates plummeted

from 6.2 in the 1960s to below replacement rate at 1.8 in 2015. The country of 200 million people currently enjoys a demographic peak in the economically active population and is seeing an unprecedented increase in its elderly cohort. At an earlier stage in the transition, Mexico has a population of 120 million that is expected to grow by another 18% (21 million) by 2020, contributing more to the region's population growth than any other country. These demographic trends will continue to grow the pharmaceutical market in Latin America into the more distant future.

Looking ahead: Planting seeds for long term growth.

The pharma sector is currently benefiting from growth in lucrative target segments, such as gainfully employed, middle-aged households and senior citizens. Economic woes of the past two years have seen social ascension waver slightly as unemployment rose across the region, yet pharma sales remained relatively healthy. 2017 should see these trends stable out and consumer confidence return with vigor in 2018. Latin America is the fastest aging in the world, and in 2055 there will be 130 million more Latin Americans over 60 than there are today. Pharma players should invest to build and position their brand in key markets today so that a larger and wealthier senior population will turn to them for mounting pharmaceutical needs in their golden years.

8.

Moving to the Middle: The Private Sector Fills the Gap Left by Expanded Public Coverage

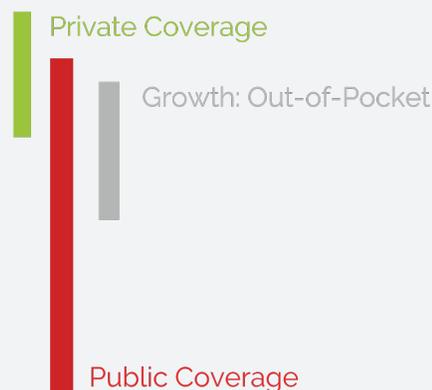
The recent recession in Latin America saw the region's nominal GDP slide in dollar terms from US\$ 5.6 billion in 2014 to an estimated US\$ 4.2 billion by year end 2016, putting additional financial strain on already underfunded public health programs. While countries throughout the region have made efforts to expand healthcare coverage to include a greater percentage of their population, public health spending in Latin America averages only 3.7% of GDP versus an OECD average of 8.3%. The result is often a tradeoff between the accessibility and the depth and quality of care. The range of public services and their utilization are typically limited to more catastrophic health needs. An in-hospital doctor consultation may require a full day in line, or be limited to only 10 minutes. The 100 million Latin Americans who ascended to the middle class over the past decade generate larger disposable incomes and are increasingly dissatisfied with such

care – they are willing to pay an out-of-pocket premium in order to achieve faster or higher quality care. The fiscal budget crunches resulting from the 2015-16 recession are only expected to further private expenditures as private care rises to fill in the gaps left by the public system.

- **Mexico's low public spending drives high out-of-pocket expenditures:** Although the combined efforts of Mexico's public health institutions (such as IMSS, ISSSTE and Seguro Popular) cover an estimated 90% of the population, the country's public healthcare expenditures lag behind the regional average at only 3.3% of GDP. As a result, Mexico has one of the highest out-of-pocket medical spending rates in the world, which has grown from 44% in 2014 to nearly 50% in 2016 as the rising class of middle income Mexicans (SES C) are increasingly willing to sidestep the public system and pay a premium for

PRIVATE SECTOR GROWTH OPPORTUNITY IN MEXICO

SEC CLASS	% POP.	INCOME '000, USD per month
A/B	7%	>\$5.9
C+	14%	\$2.5-\$5.9
C	18%	\$1.6-\$2.5
C-	16%	\$0.8-\$1.6
D+	20%	\$0.5-\$0.8
D	18%	\$0.2-\$0.5
E	7%	<\$0.2



Source: GHI analysis

superior or faster private care. Mexico is now seeing a burgeoning of small, private, highly specialized clinics who cater to the middle class. One example is Salud Digna, a network of low-cost clinics providing preventative screenings like mammograms and diagnostic tests at affordable rates. They attracted a loan from the InterAmerican Development Bank in to expand services to reach an additional 2.5 million patients. Growth in in-bound medical tourism is also major driver for investments in cutting-edge private care facilities.

- **Brazil's private sector opens to foreigners:** Brazil's private healthcare sector has long been the largest and best developed in Latin America due to its sizable upper classes who sidestep the long lines and poor quality of public services. Of Brazil's 7,800 hospitals,

57% are private operations. Private health expenditures registered 4.5% of GDP versus public expenditures at 3.8% in 2014, but out-of-pocket spending at 25.5% is lower than most of the region due to the prevalence of private insurance. Over 70 million Brazilians or 34% of the population have some form of private coverage, more than doubling from 32 million in 2004 to become the second largest insurance market in the world in terms of subscribers. The private insurance market registered approximately US\$ 48 billion (R\$156.7 billion) in annual revenues for 2016, including employer-sponsored health plans, comprehensive personal plans and dental plans. U.S. insurance giant United Health purchased the majority stake of Brazil's top private insurer, Amil Participacoes, in 2012 for nearly US\$ 5 billion.

In 2015, new legislation passed to allow foreign ownership of private healthcare establishments such as hospitals, clinics and labs. United Health has since been on a delivery acquisition spree and currently has ownership in 31 hospitals in Brazil. In 2016, private equity firm The Carlyle Group bought a stake in Brazil's second largest hospital operator. United Health Group is developing a public-private partnership in Brazil through its Optum division.

- **Colombia's health system still battling financial troubles:** Colombia's publically funded healthcare intermediaries (EPS) have been notoriously late on hospital payments for over 5 years, putting over 500 institutions at risk for closure in 2013. At the end of 2015, Colombia's Ministry of Health reported a deficit of US\$ 1.6 billion caused mainly by mismanagement and embezzlement of its EPS system. The turmoil experienced by the federal bailout of Caprecom posed a threat for the country's health insurance sector, already influenced by corruption and poor accountability. In early 2017, a series of Colombian health care reforms are set to come online from the Statutory Health Law (LES) approved in 2015, making medical service a fundamental right for every Colombian citizen and expanding the definition of coverage. Yet, Colombian out of pocket expenditures have risen dramatically, with some estimates topping 70%, as those with the financial means turn to the private sector for care.

Looking ahead: Supplemental, prevention-focused private care for the middle class.

The current public healthcare model in Latin America is based on acute treatment of medical events and does not provide adequate preventative medical care. Major regional trends like the rising incidence of chronic diseases and an aging population points to the need for improved and affordable primary care that can help avoid costly trips to the emergency room, as well as improving the quality of life for patients. Examples of private clinics like Salud Digna in Mexico will become more common to offer a low-cost primary care alternative targeting middle income patients. As the market opens further, we can expect to see international players increasingly present within the private insurers and hospital operator space. The public health sector should lean into public-private partnerships to expand care, improve facilities and increase efficiency.

9.

Innovation, Mobility and Expanding the Reach of Healthcare in Latin America

For years, experts have pointed to the healthcare industry as one ripe for disruption. Growing cost burdens, rising chronic diseases and the self-pay nature for much of the medical care in Latin America calls for more consumer-centric and value based innovation such as those promised by mobile health and artificial intelligence.

Perhaps it's no surprise that a Colombian-born digital startup, 1DOC3, recently attracted the attention of Mark Zuckerberg—and subsequently the world—for doing just that.

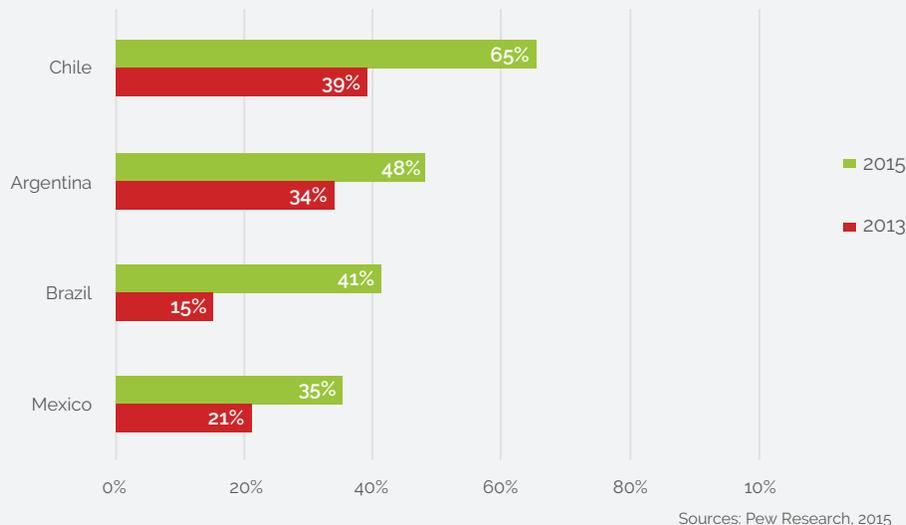
Mobile penetration & innovation

First, it is worth noting that that increased connectivity to underserved people groups in Latin America is brought by smartphone penetration rates (in contrast to mobile penetration). In Brazil, smartphone penetration leapt from a mere 15% in 2013 to 41% in 2015. At 65%, Chile's smartphone

penetration is not far behind that of the United States (72%). Tablet users across the region are expected to have surpassed 100 million by the end of 2016. This widespread mobile internet access has created a viable new pipeline for service delivery, ushering in fresh business model opportunities.

Innovation in health care services, particularly along the lines of mobile health or "mHealth," holds promises of wider, on-demand, and more personalized access at a lower cost. The business models that are emerging offer value chain efficiencies, easy customer targeted and a more engaged customer experience. Emerging markets like Latin America where urgent needs and cost pressures prevail in a less regulated environment often experience a "leapfrog effect" where disruptive new solutions are offered more quickly and pervasively than in developed countries with costly legacy

SMARTPHONE OWNERSHIP RATES (% of total population)



healthcare systems and infrastructure. PWC estimates the total mHealth opportunity in Latin America to reach US\$1.7 billion in 2017, led by Brazil (45%) and Mexico (33%).

The 1DOC3 digital success story

Global Health Intelligence recently spoke with Javier Cordona, CEO of the Colombian-born online medical platform 1DOC3, to understand how mHealth can expand healthcare access. Their original concept was to create a free online platform where users could submit questions and receive medical advice via their computer, mobile phone or Twitter. They received an astounding 10,000 queries in the first month, which grew to 200,000 by month six. They now have 400,000 followers on social media and are calling it a movement.

Such growth brought problems of scaling cost-effectively as a network of 400 doctors became necessary to field inquiries. 1DOC3 made a bold move to integrate IBM's artificial intelligence service Watson into their platform, powering it with cognitive analytics to deliver targeted content for repeat questions, routing only new requests (less than 1% of queries) to a live medical specialist. Then came a request from tech giant Mark Zuckerberg, who invited 1DOC3 to join Facebook's "internet.org" initiative to bring affordable services to less developed countries. They grant free access for mobile users without smartphones to connect to 1DOC3 for free in Colombia, Mexico, Peru, Panama, Bolivia, Guatemala and El Salvador.

Cordona explains that mHealth services like 1DOC3 can reduce the burden on the public healthcare system significantly. He claims that up to 50% of medical consultations provided by the Ministry of Health in Colombia are for not medically necessary concerns, but rather to obtain information on a health issue because the patient has no other professional resource available, creating unnecessary costs and wait times. 1DOC3 also provides critical information to those who cannot spare the time for a non-emergency doctor visit such as for issues of preventative care. In other cases, 1DOC3 acts as an initial point of care for users who live in remote areas where non-emergency care is too costly for the state to provide.

The anonymity of an online (or mobile) interaction allows users to get critical information on topics important to their personal health that they might not feel comfortable asking a doctor about. Sexual health questions are the top subject area for 1DOC3, comprising about a third of queries and often coming from teenagers looking for basic contraceptive information, suspecting a pregnancy or looking for ways to combat an infection. Another common scenario is that a user recently received instructions from a doctor that they did not understand, so they use the platform to ask for clarification rather than appear ignorant by asking the doctor again.

1DOC3 sees its mission primarily as one of education and access to information. "We need to change the way we treat and exchange medical information, bring it out from behind the walls of the healthcare system – the insurance companies, the hospitals, the doctors," says Cordona. The

company analyzes user questions and runs campaigns on most frequent topics, such as contraceptive awareness. The government has even used the site for public awareness campaigns (such as teenage pregnancy prevention) because of its ability to target the message directly to relevant users as they are actively searching for information – a much better use of tax money than mass advertising. 1DOC3 also gathers and analyzes a wealth of aggregated, anonymized health data that help governments to better target their programs.

Access to preventative information for those at risk for a chronic disease or the ability to reach out to a disease-state community in the wake of a shocking diagnosis are patient needs not typically met within Latin America's overburdened medical system. In some cases, a quick answer from the 1DOC3 platform can save someone from actual harm, such as mixing medications or spreading a sexually transmitted disease. As Cordona surmises, "A platform won't cure cancer, but it can provide the right information, to the right person, at the right time."

Looking ahead: Healthcare delivery models poised for change to broaden access, lower cost.

The case of 1DOC3 and other emerging solutions point to the power of increased connectivity and information access to change the way everyday people manage their health. Latin American consumers are more ready than some might expect to adopt alternative solutions to find faster,

cheaper and more targeted solutions to their health needs. It is striking how a relatively inexpensive solution can provide significant healthcare cost savings to both the individual and the government by unburdening the public health system, while providing an avenue to better connect to its people. Moving forward we should see Latin American governments nurture strategic innovation partnerships with private digital firms as key players in the ecosystem of public healthcare, tasked with hacking their most costly public health challenges.



10.

Case Study #1

Forget the Donkey Work— Seamless CRM Data Integration Arrives in Latin America

Customer Relationship Management (CRM) strategies and processes are the foundation of a company's success in targeting, acquiring and serving its customers, and Latin America is no exception. CRM solutions are the fastest growing enterprise application today with tools like Salesforce and Microsoft Dynamics taking the region by storm. But CRM software is only as good as the data that populates it, which until recently has been quite poor in Latin America.

With inconsistent hospital data, companies operating in the region attempted to fill this gap by diverting sales rep time towards data gathering. Some estimate that upwards of 50% of sales rep time can be dedicated to CRM data entry via surveys and questionnaires, resulting in a partial database full of inaccuracies. A reluctant salesforce feels burdened by the requirement to populate an IT solution with information they already know.

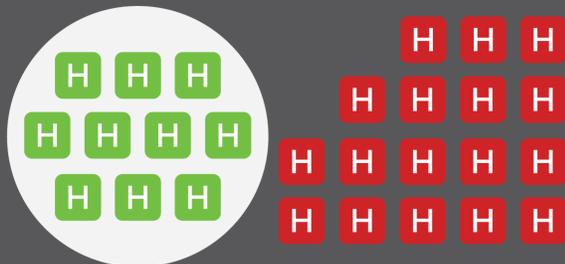
Most importantly, the CRM will inevitably focus on existing clients and fail to provide a view of additional market potential. Despite the millions invested in CRM, the data problem prevents companies from obtaining the desired return—identifying and quantifying revenue opportunities. The problem isn't the engine, it's the fuel.

Thankfully, the CRM data dilemma has changed for healthcare companies operating in Latin America. With highly detailed profiles on over 12,000 hospitals, the Global Health Intelligence (GHI) Hospital Demographics Database can be used to populate CRM solutions so they deliver results. Over 2 million datapoints provide clients with CRM coverage for 80% of hospitals in Latin America across the top markets: Brazil, Mexico, Colombia, Argentina, Peru, Chile, Panama, Guatemala, Costa Rica, Puerto Rico and the Dominican Republic.

Companies can finally get a full picture of the potential market for their equipment and assess their sales performance against it. Automated data updates keep the CRM current and relevant for the sales teams, improving sales force effectiveness and ultimately boosting revenue for the business.

Identify Opportunities through CRM Complement

Always looking at the same accounts. Not considering the rest of the potential market - Low hanging fruit.



Current clients

Other potential accounts in the market.

Solution

Integrated potential customers into your CRM to drive sales force effectiveness,



Data in Action

Global medical device player uses GHI database for CRM

Who:

A leading global player in infusion pumps operating in Latin America.

How the data is used:

Quantifying infusion pumps in key hospitals; Identifying potential clients representing his sales opportunities; Delivering qualified leads to clients.

What they love:

It's eye opening to have concrete data. We can see which hospitals have the most number of pumps and, more importantly, which hospitals represent the greatest new revenue opportunities.

Best feature:

Database integrates into our CRM so that it can be accessed company-wide.

11.

Case Study #2 Sales Force Effectiveness, from Art to Science

Sales Force Effectiveness (SFE) is a broad concept, ranging from sales force overhauls to targeted improvement initiatives for highest priority segments. Until recently, sales modeling was not feasible for players in the Latin American healthcare sector due to the lack of comprehensive hospital data. The patchwork quilt of information pieced together from field teams is often inconsistent across hospitals and even more so across geographies. Such information is often developed by the sales team, focusing on hospitals where reps have pre-existing relationships and leaving aside hospitals with hidden potential. Asking sales teams to gather market information is an unwanted distraction often met with resistance. Salesmen should be focused on the best opportunities, but how do you identify them properly?

Thankfully, companies can now leverage a robust and user-friendly database comprising 80% of Latin American hospitals to put their SFE into action. The Global Health Intelligence (GHI) Hospital Demographics Database covers 12,000 hospitals with over 2 million unique datapoints for a comparable view within and across Latin America's top markets: Brazil, Mexico, Colombia, Argentina, Peru, Chile, Panama, Guatemala, Costa Rica, Puerto Rico and the Dominican Republic.

Major medical device companies and other healthcare players are arming their SFE programs with GHI's database, allowing them to quantify and improve ROI on sales initiatives. It takes out the guesswork and reduces the information asymmetry from local reps. Clients use the GHI database to feed sales modeling for Latin America, with the following benefits:

- **Accurate, comprehensive view of targets and business potential:** Developing an all-inclusive list of a target hospitals can be an enormous task. GHI's database puts that information at the client's fingertips in seconds, enabling companies to identify target and quantify opportunities in a few clicks of the mouse. For example, a medical imaging company might seek to generate a target list of hospitals with over 100 beds and a minimum number of imaging machines on the premises.
- **Put the data on autopilot:** Synthesizing and updating data from a myriad of external and internal sources to feed SFE/CRM programs is a laborious and costly task. It is easy for a company to feel like it is "drowning in data" and yet struggling to produce comprehensible, actionable information for business decisions. The GHI database can be tailored to integrate seamlessly into your management systems with automated

updates in just a few clicks so you never have to think about it again.

- **Optimize and tailor sales force design and account coverage:** The granularity of this data enables the company to staff local salesforce and allocate resources towards maximum impact on the company's objectives at a territorial level. Companies can identify where their market share is low and implement a differentiated strategy accordingly. Understanding the true business value of each hospital enables field sizing optimization and proper segmentation so a sales rep can tailor their interactions with each account.
- **Replicating success:** Arming SFE initiatives with proper data allows the company to more accurately evaluate sales effectiveness and institutionalize best practices, removing risk from the individual and empowering the organization.

Use the Installed Base to Conduct Sales Modeling

Which clientes represent the highest sales opportunities moving forward?



Current clients

Other potential accounts in the market.

Solution

Conduct sales modeling based on hard criteria.

	Cr1	Cr2	Cr3	CrN	Focus
H	○	◐	◑	◒	✓
H	◐	◑	◒	○	✗
H	◑	◒	◑	◑	✓
H	○	◐	○	◐	✗
H	◐	◑	◑	◑	✓
H	○	◐	○	◐	✗

Data in Action

Top hospital equipment player uses GHI data for SFE modeling

Who:

Leading global healthcare solutions company operating in multiple LatAm markets.

How the data is used:

Sales force effectiveness, propensity modeling, managing distributors.

What they love:

"We do all of our sales modeling on it. Our business intelligence team is using the data to identify hospitals with the highest sales opportunity by modality, weighting and scoring attributes to create tiers. We can direct and target our salesforce accordingly."greatest new revenue opportunities.

Best feature:

Dashboard filtering tools generate a quick list of targets based on selected criteria.n be accessed company-wide.

12.

Case Study #3 Why Bid in the Dark? An Enlightened Approach to Competitive Healthcare Tenders

Public sector institutions (i.e. governments) are by far the largest purchasers of medical devices and equipment in Latin America. Over 85% of these products are imported from outside the region with the exception of limited production for the domestic market in Brazil, Mexico, Argentina and Costa Rica. The domination of imports affords unique market and competitive insights from detailed data which until recently has been prohibitively arduous to collect, aggregate and update at a granular level.

In the search for process efficiencies and economies of scale, public sector tenders have become less frequent, higher-volume contracts, presenting “feast or starvation” dilemmas for manufacturers of equipment and devices. One such contract could represent up to 50% of an equipment provider's' total sales in the country – a winning bid makes a multi-million dollar

difference in annual revenues, while a losing bid results in immediate budget cuts and corporate restructuring.

Today, actionable import intelligence is available virtually off the shelf from Global Health Intelligence (GHI). At the request of our clients, we have developed analytical techniques to draw surprisingly useful competitive intelligence that can help you gain a deeper understanding of the competitive environment surrounding the public tender process. Moving beyond general product categories, we can drill down to access the names of the importers, types of product being imported, descriptions of use, and the manufacturer supplying the equipment.

Clients intending to bid on a public tender leverage GHI's Import Intelligence to understand the level of stock their



competition has in-country, revealing who is also in the capacity to bid. Clients can see if a major competitor has stockpiled product or not, and who can successfully deliver on tender requirements. This gives our clients the unique ability to tailor their pricing in accordance to competitive dynamics, resulting in the potential gains of multi-million dollar contracts.

This service is available for the region's top healthcare markets: Brazil, Mexico, Colombia, Argentina, Peru and Chile, amongst others.

Import Data Analysis for CI in Public Tenders

Stage gate filtering methodology

Hundreds of thousands of records need to be processed to identify and focus on those of interest.

- HS code and/or Taxpaper ID.
- Product description (sometimes model).
- Date of import.
- Commercial quantity.
- Commercial value.
- Supplier.

Data in Action

Global medical device player uses GHI Import Intelligence to gain a competitive advantage in Mexico's largest public tender.

Who:

A leading global player in infusion pumps, vaporizers and dialysis equipment.

How the data is used:

To monitor competitive activity in the import of specific medical devices and equipment, thus identifying the ability of key competitors to bid on certain government contracts.

What they love:

Being able to make decisions from hard data is literally worth millions compared to the alternative of basing critical action on rumors – it makes the difference between winning or losing our biggest contracts of the year. And sometimes, losing a government contract means that we won't have a chance to bid on it for another 12 months. This level of detail also enables us to price our margins correctly, maximizing profitability.

Best feature:

The analysis can be done very quickly with standardized parameters. It can be in our Inbox within a question of hours, not months.



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