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Defining value in Latin American health systems

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Executive summary

For most of 2020 the covid-19 pandemic has shone a stark spotlight on many health system vulnerabilities globally, and particularly in Latin America. These vulnerabilities, punctuated by huge national death tolls, have catalysed change to some extent by placing pressure on political leaders who have otherwise been slow to invest effectively in the health sector.

Prior to covid-19, continuous demand for treatment of vector-borne diseases and community-acquired infections, as well as high rates of non-communicable diseases, made it difficult for health systems to make ends meet financially. When comparing health investment designed to meet this type of increased strain to similar investments made in other regions, there are more examples of investments in Latin America which a) occur in siloes, b) receive less attention from health policy, or c) are not widely considered effective.

Such regional disparities arise because health investments largely depend on local contexts, such as existing epidemiological conditions, social aspirations, and how well investments are implemented and translate to the desired outcomes, existing prices and competing priorities.[1]

To increase the region's ability to meet health needs and accelerate progress toward vital health goals, there is an urgent need for Latin America to reimagine health finance, including identification of innovative financing solutions. Through a review of previous, current and ongoing health investments in Latin America, we establish a framework for understanding which investments are likely to have the biggest impact on health outcomes over time. The framework has relevance for Latin America as a whole, but in this report we take a deep dive into the health investment landscape in Argentina, Colombia, Brazil and Mexico.

To increase the region's ability to meet health needs and accelerate progress toward vital health goals, there is an urgent need for Latin America to reimagine health finance, including identification of innovative financing solutions.

Through this analysis, this report outlines several critical primary conclusions:

- **There is an urgent need to re-think investment strategies throughout Latin America** in order to avoid losing years of progress toward key health goals, especially in the face of covid-19.
- **Health investment strategies need to be informed by longer-term thinking**, with sustainable financing as a core objective. Short-sighted health investments have contributed to the challenges associated with creating sustainable health systems.
- **Alternative models of investment are needed to fund health.** Innovative financing solutions include reducing inefficiencies to unlock funds, creating fiscal space via indirect and value-added tax (VAT), public-private partnerships (PPPs), and ongoing evaluation to ensure supply meets demand.
- **Focusing on best-buy interventions tailored to local need is the key to effective investment and fiscal sustainability.** This also requires rigid, well-staffed health system infrastructure, surveillance of epidemiological trends and long-term impact assessment.
- **There needs to be better regulation of new technologies using HTA bodies to ensure they are both effective and financially sustainable.** Governments could improve these conditions by, firstly, bolstering the readiness of health systems to assess the value of new technologies and, secondly, improving the ability of national HTA bodies to adjust to the challenges of evaluating novel technologies.

Through qualitative and quantitative analysis, thematic and country-level examples and case studies, and new insights, this report aims to unlock opportunities for renewed thinking and action around investment in health, especially as leaders seek to emerge from the covid-19 crisis.

Introduction

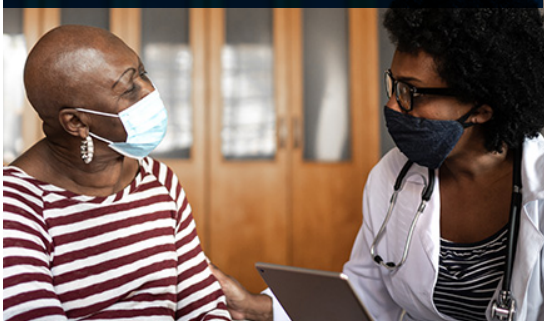
Since the late 1980s and early 1990s, Latin American countries have implemented a series of sector reforms aiming to strengthen health systems and improve health outcomes.[2] The increasing burden of non-communicable diseases (NCDs), coupled with infectious, endemic and emerging diseases, are behind many of these reforms. Equally influential are social movements pushing for a universal right to health, which serve as a driving force for heath-system developments.[2] As such, improvements to health coverage have been made, either through social health insurance plans or other tax-based financing, with healthcare services provided by a combination of the public and private sectors.[2,3]

In 2015 the UN General Assembly adopted the 2030 Agenda for Sustainable Development, encompassing the 17 Sustainable Development Goals (SDGs), which replaced the Millennium Development Goals. Health is a core dimension of the SDGs, with SDG 3—"ensure healthy lives and promote wellbeing for all at all ages"—being the key health goal. Health also features in ten of the other 16 goals, and thus has a strong influence across the whole SDG framework.[4]

Latin America has been slow to begin work on meeting the SDGs. By 2019 Argentina and Brazil had shown no progress towards meeting the goals.[5] The region as a whole showed slower progress than it should, with an overall score of 63.1 out of 100, which does not take into account recent pressures from the 2020 covid-19 pandemic.[5]

The biggest hurdle in Latin America is the quest for universal health coverage, which the World Health Organisation (WHO) defines as "ensuring all people have access to needed health services of sufficient quality to be effective while also ensuring that the use of these services does not expose the user to financial hardship".[6] Underfunding, fragmentation, privatisation, political instability, corruption and substandard governance all hinder progress.[7-12]

The increasing burden of non-communicable diseases (NCDs), coupled with infectious, endemic and emerging diseases, are behind many of the region's healthcare reforms.



Latin America is also facing similar challenges to those of developed healthcare systems, related to social, demographic and epidemiological changes. Population ageing, decreasing fertility rates and an increase in NCDs (the major cause of disease burden in Latin America) are coupled with an ongoing battle with infectious diseases (such as dengue fever, zika, chikungunya, malaria and drug-resistant tuberculosis), as well as accidents and deaths due to violence. All of these combined are a significant threat and risk overwhelming Latin American health systems.[13-16]

This report aims to highlight both the enabling and disabling forces for improving health systems in four Latin American countries (Argentina, Brazil, Colombia and Mexico), focusing specifically on those influences that align with potential strategies for effective investment. We also explore previous healthcare investments and gaps, and the influence of these on health outcomes.

Chapter 1 sets the scene by describing the disease burden in the region, as well as the impact of covid-19 on the health systems in Latin America. It dissects areas of healthcare investment that are shown to produce positive returns in health outcomes and require further investment and innovative thinking to continue setting the region on a positive trajectory. Chapter 2 presents a best-practice framework for health investment, both regionally and specific to the countries of study. In addition, we map individual country investments and health outcomes to the SDG 3 for health, to get a sense of progress and understand where investments are lacking. Finally, Chapter 3 assesses how each country is performing in our best-practice framework, including through the use of case studies, which enable careful examination of some of the nuances. The report concludes with recommendations for health investment at the national and regional levels.

Chapter 1: Health investments for optimal outcomes – a critical need for Latin America

What makes investment in healthcare effective?

In recent decades health economics and financing literature has sought to make clear the link between health investment and wider economic growth. The Tallinn Charter, a document signed by several country representatives in 2008 at a WHO meeting in the Estonian capital, stated that, "beyond its intrinsic value, improved health contributes to social well-being through its impact on economic development, competitiveness and productivity. High performing health systems contribute to economic development and health".[17]

When we think of what makes investments in health systems effective, people often assume that it comes down to money. Although money is a core component, economists and researchers alike also consider other resources (such as time, staff and policy) that may be needed to deliver health outcomes. It is also critical to understand that health investments and resulting outcomes tend to differ in the short and long term. Short-sightedness, especially as it relates to limited political terms and trade-offs for short-term gains, has contributed to the challenges faced by countries in Latin America as they look to create sustainable health systems.

Many health costs can be avoided by a shift in investment to prevent harm and increase health promotion, disease prevention and health protection, which demonstrates excellent value for money and gains both in the short and long term.[18] A prime example of this is investing in best-buy interventions.[19] These interventions, which healthcare policymakers regard as one of the most effective ways to prioritise investments, include prevention efforts like family planning, vaccination programmes and public health campaigns.[20] However, best-buy interventions must be tailored to local need and require the resources for implementation, local data outlining demand and co-operation from local governments, all of which are often sticking points.

Multilaterals, finance ministries and other budget holders must be thoughtful about processes and resources as they manage investments in the health sector. In a policy brief exploring key elements of the economic case for investing in health relating to the Tallinn Charter, the authors put forth four primary objectives that should be actively driving public-sector health investment strategies:

1. demonstrating good stewardship of resources, or showing that governments are achieving optimal value for the money they spend;
2. promoting macroeconomic growth for their economies;
3. supporting societal wellbeing; and
4. ensuring fiscal sustainability.[21]

In order to achieve these outcomes, governments cannot act alone. In Latin America in particular, governments struggle to provide enough investment in the areas needed most to address the burden of health challenges in the region. This is partly due to a poor understanding of what the exact problems in the region are, owing to inadequate disease surveillance. Addressing burden also requires trust and participation from civil societies, innovative finance mechanisms that solve key market failures, and funding that takes into account the disruptive nature of innovations in health technologies and system improvements.

Many recognise that Latin America will be hard pressed to achieve universal health coverage (UHC) without new ways of thinking, performing and bold commitment to progress across the stakeholder landscape. Some of the areas where this is needed most, which we explore in this report, include epidemiological surveillance and public health campaigns through a multisector approach; greater infrastructure for robust primary care with specialised integration, especially leveraging digital health to do so; reducing fragmentation and reliance on out-of-pocket financing; and improving quality of care and access through prevention and access to essential medicines.

Key focus areas for investment in Latin America

Primary Care

While progress has been made to increase access and improve the quality of primary care, Argentina, Brazil, Colombia and Mexico all struggle with equitable resource allocation in their primary care systems. These inequities are exacerbated by regional and socioeconomic disparities, leading to shortages of healthcare staff in poorer and more remote areas. Indigenous populations are particularly disadvantaged.[22] However, primary care remains focused on communicable diseases rather than on NCDs, resulting in the adoption of a more curative approach, as opposed to early detection and prevention.[23,24] Primary care therefore fails to meet the shifting health needs resulting from the rising burden of NCDs.

The Brazilian health system, the Sistema Único de Saúde (SUS), has made significant progress towards universal health coverage—despite being underfunded—through its prioritisation of comprehensive primary healthcare. However, in 2016 the government passed legislation that limited federal expenditure on health for the subsequent 20 years. The health budget is expected to decrease by as much as R415bn (US$81.4bn) by 2036, with primary healthcare, epidemiological disease surveillance and the purchase of medicines being the most likely areas to be affected by budget cuts.[25,26]

In some countries, such as Argentina, the focus on infectious disease is perpetuated by the rise of private insurance.[27] Approximately two-thirds of the country's population has social health insurance (available for workers and retirees) or private insurance, granting them easier direct access to specialists. As a result, the public system primarily serves as reinsurance. Primary care available under the public system largely targets poorer, marginalised groups, among whom maternal care needs and communicable diseases are more prevalent than NCDs. For that reason, public primary care in Argentina has been slow to adapt to the shifting health needs of the region.[27]

In Mexico, where primary care is rather inefficient, investments in a primary care system are on the health agenda, focusing on a shift from episodic care to continuous care for chronic diseases; however, these are yet to come to fruition.[28]

Primary care is still being consolidated in Latin America, and huge gaps remain in the way that it is organised, financed and delivered. Because of this, people use emergency departments for conditions that could be treated in the primary care setting. NCDs now account for around 74% of deaths and 69% of disability-adjusted-life-years in the region, with staggering costs associated with treatment (cancers alone cost the region up to US$150bn annually).[29] Strengthening primary care and making sure that it is integrated with the rest of the health system is now a priority, and a no-brainer in terms of improving health outcomes in the region.

Integrated care

> **One form of innovation that people don't naturally think about is integrated care. Innovation does not have to be about drugs and technology, it can be about process. Improving integrated care is hard, but it doesn't cost a lot.**
>
> Maureen Lewis, co-founder and CEO of Aceso Global

Adding additional funds to a health system does not always produce better outcomes. Integrated care helps to avoid wasteful duplication of diagnostic testing, and can help to avoid unnecessary polypharmacy, inappropriate referrals and conflicting care plans.[30] Integration of care, when implemented effectively, can greatly improve the quality of care.

In Latin America, integrated care has been promoted in response to health system fragmentation. It takes place in two ways: between healthcare providers at the same level, often referred to as horizontal integration; and virtual integration, where healthcare providers work between different services at different levels.[31] Argentina, Brazil, Colombia and Mexico all have a policy, strategy or action plan on integrated care, but this only serves as evidence that there are aspirations from governments to improve the connectedness of

health services, and implementation of these action plans varies.[32-34] There is evidence that a reluctance to better integrate services can result in poor outcomes. Rather than viewing integrated care as an intervention, some have suggested that it should be interpreted as a strategy for innovating long-lasting change across multiple parts of a health system.[35]

There are two main organisational factors that influence integration of care: 1) payment mechanisms for health professionals, and 2) shared objectives or an organisational culture based on collaboration. In both Colombia and Brazil, most physicians work under temporary, short-term contracts. This employment structure has contributed to physicians viewing care as an isolated act with no emphasis placed on co-ordination or supporting care continuity. Furthermore, these short-term contracts and the job instability that accompanies them have created high rates of staff rotation and turnover, further hindering awareness, and uptake, of co-ordination mechanisms. The fee-for-service payment of specialists used in the subsidised networks of Colombia and Brazil has also discouraged co-ordination, as specialists may resist making counter-referrals to primary care to prevent loss of income. Shifting towards a capitation payment system (where the specialist is paid on a per-person, per-time period basis) has emerged in Colombia as one way of addressing this.[30]

Research has shown that inadequate training of health professionals in both Brazil and Colombia is also a factor behind suboptimal integration of care.[30] Inappropriate referrals are often made to secondary care for low-complexity chronic illnesses, owing to uncertainty on the part of primary care providers, as well as specialists undervaluing or not fully understanding the role of primary care. Colombia has had some success with improving care co-ordination between primary and secondary care through electronic health records (EHRs) and effective use of clinical guidelines. Integration of care is not likely to improve more widely until primary care capacity increases and there is consensus among staff that it is the right approach to take.[30]

Digital Health

Digital innovation and artificial intelligence (AI) solutions, which can help to improve both the quality and scope of health services for all populations, could also offer specific advantages for disadvantaged groups such as people living in low- and middle-income countries (LMICs).[36] The innovative approaches of technologies like AI and telehealth could help to optimise the limited resources that are available in Latin American countries.[37] For example, in resource-poor settings where there is strong mobile phone penetration, there is an opportunity to improve mobile health applications. These approaches are currently few and far between.

EHRs, other integrated information systems for health and telehealth are among the forms of digital innovation that have been implemented across Latin America. In addition to improving care for individuals, EHRs also provide data that can be used to assess the health status of a population and the performance of the health system itself. As a result, implementing EHR systems has become an objective in many LMICs. However, according to a 2015 WHO survey on eHealth, only 52.6% of member states in the

Americas region have a national EHR system. Furthermore, only about half of those countries have legislation in place that supports the use of their national EHR systems. Lack of funding for implementation and support and lack of evidence on the effectiveness of EHR systems were cited as the two most common barriers to adoption of EHR systems in the region.[38]

Telehealth technology allows patients to receive long-distance remote care, including diagnostic and monitoring services. All four countries that we have focused on in this report have implemented some type of virtual consultation program that connects patients in remote and underserved areas with specialists such as cardiologists, paediatricians and ophthalmologists, among others.

In 2012 Colombia established its National Cancer Information System, which encourages the uptake of new technologies, including telehealth, for diagnosing and treating cancer. The state of Rio Grande do Sul in southern Brazil conducts virtual physician consultations to improve the quality of care and streamline the flow of users between levels of care.

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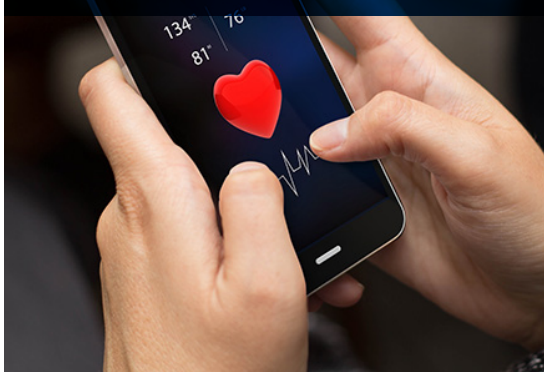

In addition, Brazil also uses telecommunications technology to provide distance education for health professionals.[39] Argentina has been a pioneer in the region, with its eHealth Strategy and Plan of Action 2011-13—which stimulated the development of a policy and ethics framework covering online health—as well as the development of infrastructure and establishment of training programmes.[38]

During the covid-19 pandemic, telehealth has enabled people to continue accessing care during lockdowns and protected clinicians by reducing physical contact with infected patients. In resource-poor regions, where travelling from remote areas to hospitals in urban areas is difficult, costly and time consuming, telehealth can be fundamental to the effective delivery of care.[40]

Local governments should ensure that policies are in place that regulate emerging technologies to ensure equal access, but in reality such policies tend to vary from extreme regulation to none at all.[36,37,41] Implementation has largely been isolated and sporadic, resulting in small, local areas achieving quick improvements in care, rather than wide-spread national progress. A study conducted in 2019 found that while 65% of hospitals in Chile used telehealth, only 30% in Mexico and 25% in Colombia did the same.[42]

Many factors influence the uptake of telehealth, including a specific health system's organisational characteristics, the national environment, regulatory policies, legal frameworks and health spending. It is therefore difficult to roll out telehealth and maximise its impact in any country that lacks comprehensive approaches to address these interrelated concerns.[42]

Prevention

Prevention is one of the most cost-effective ways to maintain the health of the population in a sustainable manner. The WHO "best buy" interventions for NCDs include tobacco and alcohol legislation, reducing salt intake, and increasing physical activity, all of which are highly cost effective and focus on prevention.[19] Preventative approaches have been shown to contribute between 78% to the reduction of mortality from cardiovascular disease globally. The WHO estimates that a further investment of 1-4% of current health spending is needed to reduce the escalating healthcare costs required to treat NCDs in LMICs.[19]

Many of the leading causes of morbidity and mortality in Latin America are now NCDs. To scale up preventative measures, some countries have created targeted programmes and policies aimed at reducing the consumption of junk foods, and promoting healthy eating and leisure-time physical activities. For example, in 2013 the Mexican government implemented a 10% excise tax on non-dairy and non-alcoholic sugar-sweetened beverages, in addition to an 8% sales tax on non-essential, energy dense foods. However, the tax revenue from these initiatives was not earmarked for health, and therefore did not contribute to the preventative care budget.[28] In Brazil, a collaborative programme between government and academia created targets for increasing physical activity, a model that in turn informed new initiatives in Colombia.[43] Prevention programmes that address social and environmental determinants are shown to have early returns on investment.[18]

Prevention also needs to expand to self-care, to enable patients to follow their treatment regimes, and result in less exacerbation of health problems, lowering the need for further medical care. A study that looked at cardiovascular disease patients across multiple countries in Latin America, including Argentina, Colombia and Mexico, found that only two-thirds of patients with hypercholesterolemia and hypertension who were prescribed medication were compliant with their treatment regimen. The two main reasons for non-adherence were forgetfulness and lack of knowledge.[44] Other studies have produced similar results for diabetes.[27]

Epidemiological surveillance of the balance between NCDs and infectious diseases by country and region are needed to target areas for appropriate investment and intervention.[45-47] To date, such surveillance is patchy, especially in rural areas where services are needed the most. Javier Pico of LifeSciences, a pharmaceuticals and biotech consultancy elaborates:

> In healthcare systems, it is not clear whether there would be greater benefit in investing in one disease over another. It's impossible to make this distinction. From an economic perspective, we need to create an investment framework, because otherwise we will rely on tools for selecting between different treatments from a cost effectiveness point of view based on the payer model, which does not have population benefits.

Access to medicines

A major challenge facing healthcare systems in Latin America is the increased demand for high-cost medications and technologies to treat the rising burden from NCDs. Most countries in the region fall into the middle-income category but also are home to many of the poorest populations in the Americas. Roughly 78% of all medicines in the region are paid for out-of-pocket in retail pharmacies, presenting serious challenges for equity.[48] As countries continue to discuss policies and programmes for improving healthcare systems, medicines are increasingly at the centre of debate.

Access to medicines is sometimes granted through the judiciary process, often referred to as "judicialisation." However, court decisions are often not based on scientific evidence or cost-effectiveness criteria, putting the sustainability of the healthcare system at risk. There is an urgent need to determine value and public-sector affordability thresholds for new pharmaceutical products. This can be achieved through health technology assessments (HTAs), the systematic evaluation of medicines and health technology, to inform policy decision making in healthcare, and improve the uptake of cost-effective new technologies.[49]

In November 2017 the Pan American Health Organisation (PAHO) launched the Regional Base of Health Technology Assessment Reports of the Americas (BRISA, by its Spanish acronym). Its main objective is to map the status of HTA across Latin America.[49] At the country level, Argentina is still in the early stages of the HTA process, while Brazil, Colombia and Mexico have more established agencies.[50] In July 2020 the UK National Institute for Health and Clinical Excellence (NICE) signed an agreement with Colombia's Instituto de Evaluación

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Tecnológica en Salud to share knowledge on developing world-leading HTA guidance.[51] Collaborations like these are a promising step, but are hindered across most of Latin America by a lack of technical expertise.

Making medicines affordable in Latin America is an ongoing challenge. In 2015 the WHO found only three evaluated medicines in Argentina and two medicines in Brazil cost less than the average per capita income; only one medicine cost less than the average monthly per capita income in Argentina, Brazil, Colombia and Mexico. Four medicines cost more than 100 times the average monthly per capita income across the seven Latin American countries included in this study.[48]

Latin America has faced significant challenges when it comes to creating the conditions necessary to promote innovation and, in particular, allow for a longer-term view of value. Governments could improve these conditions by, firstly, bolstering the readiness of health systems to assess the value of new technologies and, secondly, improving the ability of national HTA bodies to adjust to the challenges of evaluating novel technologies.[52]

Creating fiscal space to achieve progress

Fiscal space comes from the realisation that not all funding for health can come from public sources. What is particularly concerning about Latin America is [that] the amount of taxes raised as a share of GDP in many of the countries is very low. You must solve the financing bottlenecks around informality and low effectiveness of tax systems before you can solve the availability of funds for healthcare. The tax question is a cross sectional issue; it's not just about health.

Francisco Bercerra, former assistant director, PAHO, Mexico

The WHO/PAHO sets a health spending benchmark of 6% GDP, which the majority of Latin American countries do not reach. The average fiscal gap between what countries actually spend on health as a percentage of GDP and the benchmark spend of 6% GDP stands at 1.9% GDP.[52] All of the region's healthcare systems claim that they offer some kind of universal health coverage, but in reality, only partial coverage is offered.[52]

Many of the inefficiencies in the region stem from health system fragmentation and inequity in both the distribution of rights and access to health services for different segments of the population. This translates into certain, more well-off, portions of the population having access to innovative medical technology, while poorer communities are condemned to receive low-quality services.

Brazil, Colombia and Mexico have all made closing the social and geographical health gaps a political priority. Similarly, Argentina has prioritised achieving universal health coverage by outlining it in the Ministry of Health agenda.[52] For healthcare systems to endure, the region needs to focus on creating fiscal space by improving the efficiency of resource allocation and utilisation, as well as finding ways to generate revenue. Countries can further improve efficiency by aligning payment mechanisms with health system objectives.[53]

The most popular form of revenue generation for health is through indirect taxes and VAT. PAHO evaluated these two forms of taxation and determined that, while both present significant revenue-generating potential, VAT is of greater importance for generating additional funds. Special taxes are placed on sugar, alcohol, and tobacco, giving them the benefit of both promoting change in unhealthy behaviours, as well as generating additional revenue.[54] A study determined that, based on current VAT rates in the four countries

included in this report, a 2% rise could be feasible in Mexico and Brazil, while a maximum 1% increase could be possible in Argentina and Colombia. A 2% increase in Mexico would result in additional generation equivalent to 12% of GDP.[55] However, mechanisms of taxation are only effective in generating additional resources for healthcare systems if they are appropriately earmarked, otherwise additional revenue just goes into the general budget.

Public-private partnerships (PPPs) can tap into alternative sources of funding and engage investors as partners in the development or financial solutions to healthcare issues on the ground. They can be viewed as an instrument to improve value for money rather than an additional source of financing.

Brazil, Colombia and Mexico have had the most experience with PPPs in terms of legislation out of the four study countries, with Brazil and Colombia having laws in place that increase accountability for the government and private partners, and Mexico passing a law that defines a PPP framework.[56] In Argentina, there are laws in place to support PPPs, but not many projects have evolved.

A large contributing factor to the success of PPPs is the competence of the government and internal factors, such as transparency (which boosts public perception), a pilot phase to allow for project fine-tuning, effective project management, aligned incentives and open dialogue when managing contract terms.[56,57]

The impact of covid-19 on fiscal space

Prior to the pandemic, IMF had projected 1.6% economic growth for Latin America in 2020. In April, once the spread of covid-19 had firmly taken hold, this projection had reversed to -5.2%, with an expectation that every country in the region would enter a recession.[58] Emergency responses to covid-19 in Latin America are automatically at a disadvantage compared to those in developed countries, owing to inequality and a lack of social safety nets in the region, which results in competition over resources. Furthermore, the large indigenous and migrant populations of Latin America are especially vulnerable to the pandemic, facing the highest levels of informality and a higher prevalence of illness.[59]

The covid-19 crisis has helped to re-ignite discussions about the need to increase public healthcare budgets in Latin America, and has also resulted in the creation of some innovative solutions to manage the pandemic, which if they stick, could continue to benefit Latin American health systems. For example, in Argentina, the "Tele-Covid" service was created, for medical consultations at a distance, and to promote large-scale production of tests. It is jointly funded by the Ministry of Health and the Ministry of Science, Technology and Innovation.

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In Brazil, the UN Development Programme (UNDP) supported an initiative called HACKCOVID19, which has brought together 983 different professionals such as scientists and researchers, who have presented 82 technological solutions to covid-19. There has also been support for women and adolescents experiencing gender-based violence through online activities, who have been particularly vulnerable during lockdowns enforced by the virus. In Colombia, the UNDP has designed an open information system that allows for data collection and analysis for decision making to combat covid-19, akin to the kind of surveillance system that is greatly needed in mainstream health services.

All these actions are essential for managing the pandemic, but they are also evidence of the innovation and collaboration that is possible when needs must. They are likely to improve health outcomes once the pandemic has eased—if they are maintained.

The impact of Latin America's fiscal woes – a high disease burden and significant healthcare barriers

Population ageing, globalisation, urbanisation, and the rise in obesity and physical inactivity have dramatically increased the prevalence of NCDs, which are now responsible for nearly four out of five deaths in Latin America. Cardiovascular disease (38%), cancer (25%), respiratory diseases (9%) and diabetes (6%) are the four leading causes of NCD deaths.[23] Figures 1a-1d show the number of deaths from four highly prevalent NCDs (cardiovascular diseases, cancers, cardio obstructive pulmonary disease—COPD—and diabetes), two infectious diseases (HIV and tuberculosis—TB), and deaths in children under five years old in Argentina, Brazil, Colombia and Mexico in 2016.

Cardiovascular diseases are the leading cause of death across all countries, followed by cancers in Argentina, Brazil and Colombia. In Mexico, diabetes causes more deaths than cancer. HIV, tuberculosis and malaria (not shown on graphs owing to the relatively small number of deaths) cause fewer deaths than all four NCDs, apart from in Argentina, where HIV is responsible for more deaths than diabetes. Deaths in children under five years old are more common than deaths from diabetes, HIV or TB in Colombia.

Without further investment and health system reform, shifting demographics, coupled with the growing burden of NCDs, pose a significant threat to health systems in Latin America. This is due to the rising costs associated with treating more complex and chronic conditions, including those associated with poor health behaviours and older age.

Figures 1a-1d: Causes of death from NCDs and infectious disease in select Latin American countries

(Causes of death 2016, both sexes, number of deaths)

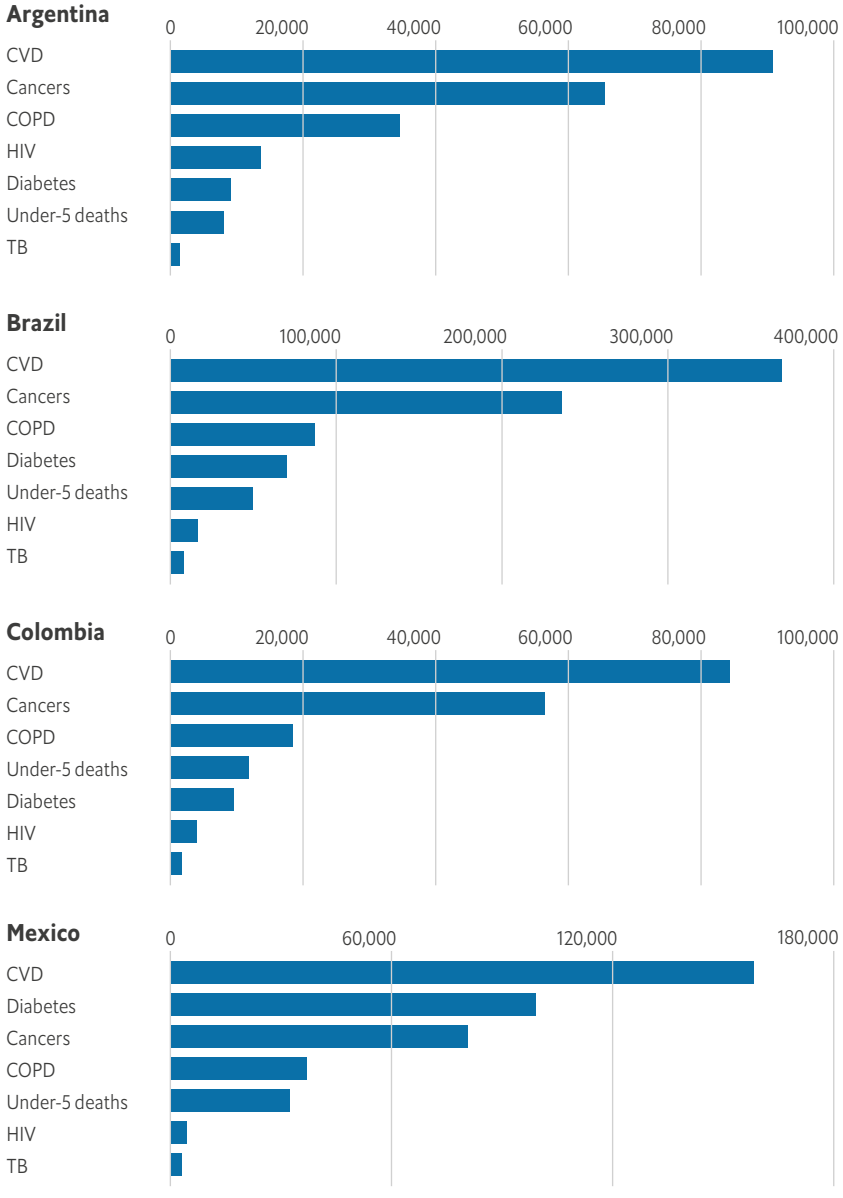


Table 1: Demographic and economic data

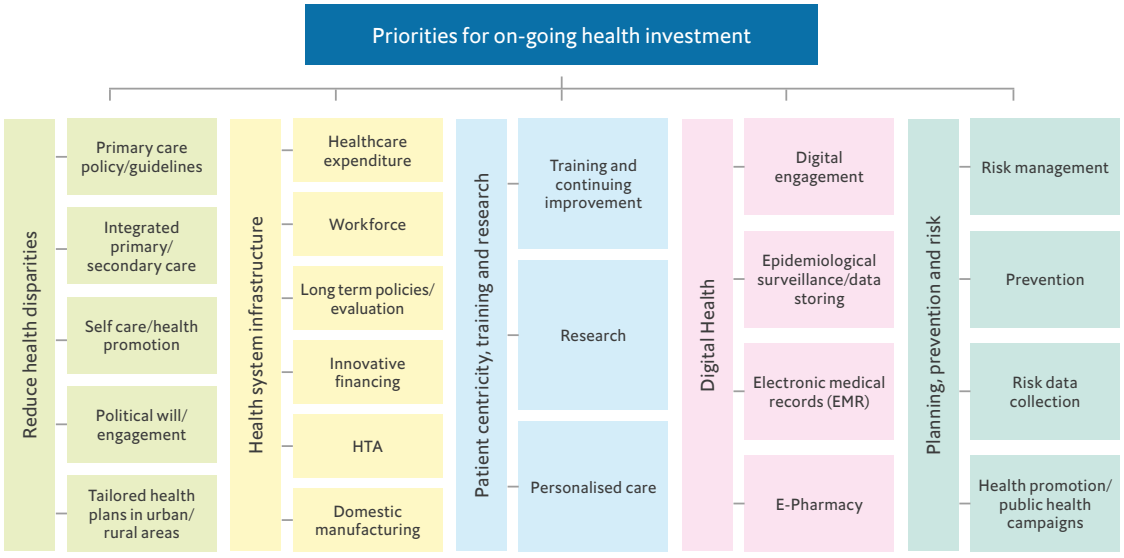
	Argentina	Brazil	Colombia	Mexico
Life expectancy (WHO, 2016)	74 for males and 80 for females	71 for males and 79 for females	72 for males and 79 for females	74 for males and 79 for females
Healthcare spending per head (EIU, 2017)	1,083	944	461	513
% of GDP spent on health (World Bank, 2018)	9.6%	9.5%	7.2%	5.4%
Out of pocket spending per capita (PPP $; World Bank, 2018)	552	422	175	448
Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE) (WHO, 2017)	17%	27%	16%	41%
Number of nurses per 10,000 population (WHO, 2017)	26	97.4	12.7	25.1
Number of physicians per 1,000 population (WHO, 2017)	4.0	2.2	2.1	2.4
Number of psychiatrists working in the mental health sector per 100,000 population (WHO, 2016)	21.7	3.2	1.8	0.2
Number of hospital beds per 10,000 population (WHO, 2017)	49.9	20.9	17.1	9.8
GINI coefficient (World Bank, 2018)	41.4	53.9	50.4	45.4
% of the population above 65 (World Bank, 2019)	11%	9%	9%	7%

Chapter 2: A new framework for effective health investment

Taking the key elements and issues around driving effective health investment into account, a new framework is needed to structure thinking and action around key areas specific to the Latin American context. Health ministries and policymakers must prove that they are serious about achieving value for money by monitoring health system performance and showing commitment to policies that seek to minimise waste.[21] This involves providing each government sector with an appropriate level of resources, as well as ensuring that resources are used within each sector to achieve the outputs valued by society.[21]

There are some clear themes that emerge throughout this report in terms of the enablers or the "safe" areas for investment that are known to improve health outcomes if funding is implemented correctly. Figure 2 presents these themes in a best-practice framework that includes the core constructs required from financial investments, as well as highlighting where strategic and operational investments from health ministries are required.

Figure 2: A best practice framework for ongoing health investments in Latin America



Understanding the framework

The framework explores the concept of ongoing investments through five broad domains. Each of these domains work together to define key elements that build toward a strong health system:

- The first domain, **reducing health disparities**, focuses on both the evolution and resilience of healthcare systems in Latin America, to make sure that the quality of healthcare does not depend on geography.
- The second domain, **health system infrastructure**, looks at whether health systems have the infrastructure to sustain healthcare in the future, which includes financing systems, staffing, and approaches to care and patient advocacy.
- The third domain, **patient centricity, training and research**, seeks to understand whether healthcare systems are appropriately training the healthcare workforce to remain up to date and agile to changing health contexts.
- The fourth domain, **digital health**, investigates whether healthcare systems have the appropriate information technology systems to collect, organise and manage information about patients, as well as plan future services based on the data collected.
- The final domain, **planning, prevention and risk management**, aims to find out if countries have appropriate surveillance systems to collect data on and appropriately assess the future health risks among their population, and whether they take steps to prevent them.

The five domains are broken down into subdomains. Chapter 3 explores the alignment of each country to this framework.

Understanding influential factors and context for the framework

> **Innovation is not solely about new diagnostics and new services; it's about how we are doing things. How can we get to patients more effectively, how can we better integrate care and what kind of re-organisation can be achieved? It doesn't have to be expensive.**

Maureen Lewis, co-founder and CEO of Aceso Global

We know that even the most well-planned and monitored investments may elicit unintended consequences and face varying levels of success when implemented into imperfect and complex systems. In the absence of detailed financial data on healthcare spending and cost effectiveness of certain interventions, Table 2 maps previous and current health investments according to our evidence review and interviews with experts (as a proxy for financial investment), and aligns them to SDG 3 for health (as a proxy for health outputs valued by society).

Table 2 also lists the barriers and enablers to each country achieving each part of SDG 3 for health. This exercise helps us begin to understand what areas of healthcare countries have previously and are currently invested in, and provides opportunities for future action.

Table 2: Barriers and enablers to achieving SDG 3 for health in select Latin American countries

SDG target 3 for health	Argentina		Brazil		Colombia		Mexico	
	Barriers	Enablers	Barriers	Enablers	Barriers	Enablers	Barriers	Facilitators
Other Barriers/ facilitators facilitating healthcare	• Highest suicide rate across all countries (9.1 per 100,000 population) • Poor ability to store data • Control of corruption = 47.6%	• Comprehensive EMR system (a pioneer in EMR, according to PAHO)	• No explicit policy exists outlining the role of e-health within primary health care • E-health is not implemented across all levels of the SUS[60] • Control of corruption = 36.06%	• Investments in primary care (although recent austerity measures will limit progress) • E-health is distributed free to every primary healthcare unit • Improving health surveillance is on the MoH agenda • Improving the regulatory framework is on the MoH agenda	• Only 25% of hospital use health technology • Control of corruption = 43.75%	• Individual Records of Health Services Provision system (RIPS) • Sistema Integral de Información de la Protección Social (SISPRO)	• Only 35% of hospitals use health technology • Control of corruption = 16.35%	• EMRs are mandatory in the public system but data entry is poor[61].
3.1: Reduce global mortality ratio to less than 70 per 100,000 live births	• Limited older peoples' care (Does not feature on the 2020 MoH budget)			• Reduce malnutrition (National School Food Programme	• Maternal mortality remains high		• Premature deaths from interpersonal violence rising • Maternal mortality remains high	
3.2: End preventable deaths of new-borns and children under 5 years	• Deaths in children under 5 years causing more deaths than TB	• Plan Nacer	• Deaths in children under 5 years causing more deaths than HIV and TB		• Deaths in children under 5 years of age cause more deaths than diabetes, HIV and TB.	• Más Familias en Acción	• Deaths in children under 5 years cause more deaths than HIV and TB	• Progresa-Oportunidades[62]
3.3: End AIDS, TB, malaria and neglected tropical disease	• HIV causing more deaths than diabetes • HIV/AIDS services reduced • Rise in incidence of dengue	• Interruption of chagas transmission in 9 out of the 19 endemic provinces	• Deaths from HIV continue to rise	• Domestic production of antiretroviral drugs free of charge • Continued investment in vector-borne diseases	• Antiretroviral treatment for individuals with HIV/ AIDs is poor • Poor tracking of malaria cases in rural and remote areas		• Unmet need for HIV treatment	

Note: SDG 3.5, 3.6, 3.9 and 3.A omitted from table as they were not in scope of the analysis.

SDG target 3 for health	Argentina		Brazil		Colombia		Mexico	
	Barriers	Enablers	Barriers	Enablers	Barriers	Enablers	Barriers	Facilitators
3.4: Reduce by one third, premature mortality from NCDs	• The rise of private insurance for patients seeking NCD services, leaving public insurance to provide services for the poor only (maternal care, infectious diseases) • Limited health education/ self-care advice/ prevention • Cardiovascular disease is the leading cause of death. • Four common NCDs cause more deaths than common infectious diseases	• Improving mental health services features on 2020 health agenda • Improving NCD services features on MoH 2020 health agenda	• Limited health education/self-care advice/ prevention • Most drugs for NCDs are paid for out of pocket		• Limited health education/self-care advice/ prevention	• National Cancer Information System established in 2012	• Limited health education/self-care advice/ prevention • Diabetes causes more deaths than cancer • Primary care system has limited access • Negligible services for chronic kidney disease • Negligible access to mental health services	• Federal District Mental Health Act established in 2011 in Mexico City
3.7: Ensure universal access to sexual and reproductive health-care services	• Investments in sexual health services have been reduced in recent years	• Increasing sexual health services features on MoH agenda	• A political shift to far-right populism reduced the funding programmes for sexual and reproductive health				• Disinvestment in HIV/AIDs and sexual health services	
3.8: Achieve UHC	• Rural/urban disparities in healthcare access • Inequitable access to essential medicines (dependent on insurance subsector) • One of the most fragmented healthcare systems with 3 subsections	• Highest healthcare spend per head (US$1,083) • Rationalising the introduction of new technologies and medicines • Plan Nacer • 76% UHC	• Rural/urban disparities in healthcare access • Concentration of medium to high complexity equipment in cities • Government austerity measures further aggravated underfunding • Second highest out of pocket spending on healthcare* • Highest GINI index (most unequal country) * • Only country in Latin America where public health expenditure lower than Private.	• Achieving sustainable financing is on the MoH agenda • Family Health Strategy (access to primary care) • Partnerships for Productive Development (expanding access to medicines, technologies and health products) • 77% UHC	• Rural/urban disparities in healthcare access • Supply-side constraints increase inequalities in accessing healthcare	• Más Familias en Acción • Plan Vive Digital 2014-2018 (promote use of ICT to improve access to marginalised communities • Law creating interoperable health records[63] • 76% UHC • Ten-year public health plan (2012-2021)	• Highest out of pocket spend on healthcare* • Rural/urban disparities in healthcare access • Primary care system has limited access	• 76% UHC • Progressa-oportunidades[62] • Investments in primary care on the MoH agenda

Note: SDG 3.5, 3.6, 3.9 and 3.A omitted from table as they were not in scope of the analysis.

SDG target 3 for health	Argentina		Brazil		Colombia		Mexico	
	Barriers	Enablers	Barriers	Enablers	Barriers	Enablers	Barriers	Facilitators
3.B: Support research and development of vaccines and medicines	• On-going development of a HTA process • In-country production of pharmaceutical accounts for over 50% • Domestic drug producers given competitive advantage through government benefits • Remediar programme	• Raw materials remain largely imported • Research and development constrained by government funding		Established HTA agency—mandatory or decision making	• HTA agency requires a budget impact analysis	• Established HTA agency	• HTA agency requires a budget impact analysis • HTA funding has been reduced in recent years	• Established HTA agency
3.C: Increase health financing and the recruitment, development and retention of the workforce	• Inadequate training for health professionals	• Policy on integrated care • Highest number of psychiatrists per 10,000 population (21.71)* • 9.1% of GDP spent on health • National Health Fund created to support coverage for select, high-cost, low-incidence health problems.	• Decrease in the number of hospital beds (2.5 to 2.2 per 1,000 population in 2016 • Physicians work under temporary contracts, working against development and integration of care • Inadequate training for health professionals	• Policy on integrated care • Highest number of nurses per 10,000 population (97.37) • More Doctors programme • Following covid-19, the MoH granted widespread use of telemedicine capabilities assisting staff • 9.5% of GDP spent on health	• Lowest number of nurses per 10,000 population (12.71) • Physicians work under temporary contracts, working against development and integration of care • Fee-for-service payment system works against care coordination • Inadequate training for health professionals • 7.2% GDP spent on health	• Policy on integrated care • A shift towards capitation payment systems has started • Results based financing loan from the World Bank • Taxes levied from alcoholic drinks, gaming, tobacco and firearms transferred to the health system.	• Inadequate training for health professionals • 5.4% GDP spent on health (lowest of all 4 countries) • 0.21 psychiatrists per 100,000 population (lowest of all 4 countries)	• Policy on integrated care
3.D: Strengthen the capacity of all countries for early warning, risk reduction and management of health risks.		• 0.6% of GDP spend on covid-19 subsidy packages	• 10.1% of GDP spent on covid-19 subsidy packages (highest of all 4 countries) • During covid-19, the MoH changed twice in Brazil	• Improving health surveillance is on the MoH agenda	• 0.9% of GDP spent on covid-19 subsidy packages		• 0.2% of GDP spent on covid-19 subsidy packages (lowest of all 4 countries)	

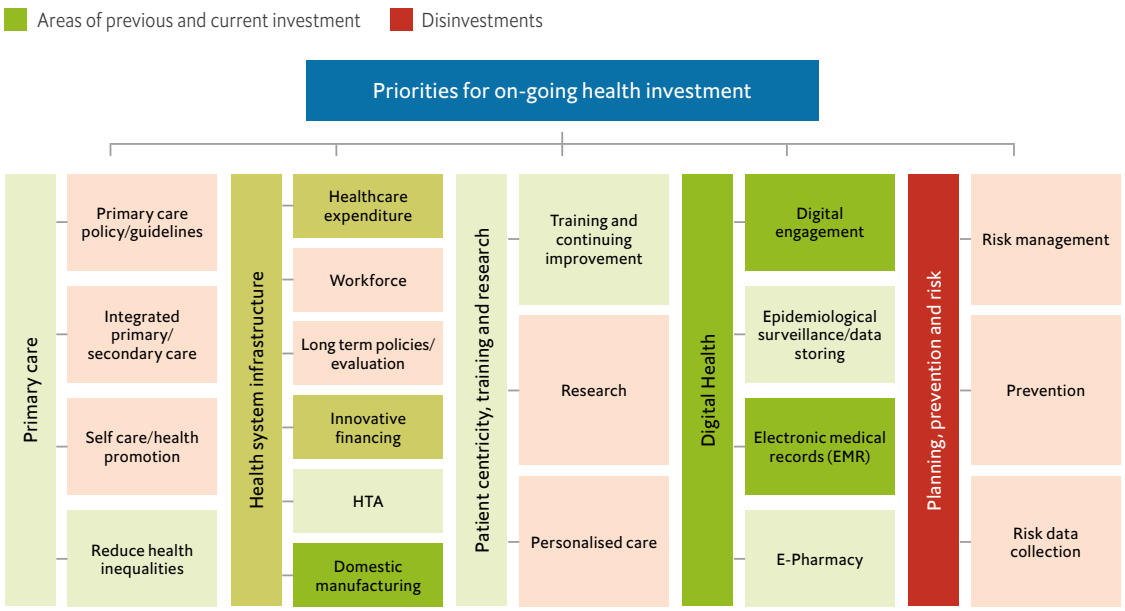
Note: SDG 3.5, 3.6, 3.9 and 3.A omitted from table as they were not in scope of the analysis.

Chapter 3: Implementing effective investment strategies - lessons from local practice

This chapter explores how each country's current, previous and future aspirations for health investment deviate from or align to our best-practice framework. We use the evidence base and official ministry of health priorities to assess the strength of current investments, combined with the information gathered in Table 2 on burden and healthcare resources to measure progress towards SDG 3.

Previous, current and ongoing investments are highlighted in green (darker green indicating stronger evidence of investment and lighter green weaker evidence of investment), and gaps and disinvestments are heighted in red (darker red indicating absence of investment and lighter red indicating disinvestments). We dig into the nuance of specific effective investments in each country using case studies.

Argentina



Official MoH Health priorities

- Universal health coverage
- Developing an agency for health technology assessment
- Establishing a quality-accreditation system
- NCDs
- Mental health services[47,48]

There are promising signs that the Ministry of Health aims to align its 2020 health priorities with those that have been neglected in the past. As the most fragmented healthcare system out of all four focus countries in this study, improving universal healthcare access is also on the agenda.

Similarly, a previously weak HTA body is set to receive further funding in 2020, as is improving care for people with NCDs and expanding mental health services.

There are also some barriers outlined in Table 2 that are not being remedied by current or previous health investments. Older peoples services are limited, and the Argentinian population is ageing faster than those of other countries in this study (Table 1), with 11% of the population aged 65 and above in 2019.[64] A rapid revision of social protection systems with active state interventions are needed to guarantee economic security for older people.[14] Increasing the availability of healthcare staff and ensuring that health workers receive adequate training and professional development is reliant on urgent improvements, as reflected by the heterogeneous distribution of medical personnel in the country.[65]

A further cause for concern is disinvestment in HIV/AIDS services, even as the number of deaths from HIV/ AIDS is higher than diabetes. Similarly, a rise in the incidence of dengue emphasises the risk of drastically reallocating resources from infectious diseases to other areas, and the need to consider monitoring epidemiological trends.

A previously weak HTA body is set to receive further funding in 2020, as is improving care for people with NCDs and expanding mental health services.

Case study 1: Argentina's domestic production for ensuring access to essential medicines

> **I think PAHO could work on improving the production of pharmaceuticals in the region, to be consumed in the region, which will have money in the long term. Latin America can be very competitive, creating opportunity for the region. But this is currently not happening, and we need to work out why.**
>
> Francisco Becerra, former assistant director, PAHO

Argentina has made significant efforts to scale up domestic production of pharmaceuticals to improve access to essential medicines. As a result, in 2017 Argentina's pharmaceutical sector comprised of 210 laboratories and 190 manufacturing plants, and employed 43,000 people. Production yielded a total revenue of US$5.8bn, of which US$5.4bn was from the domestic market.[66] Currently, in-country production accounts for over half of the Argentinian market and includes key manufacturers such as Roemmers and Bago. External pharmaceutical giants also operate within the country; however, domestic producers are given a competitive advantage through government benefits such as favourable tariff production.[67]

The effort to scale up domestic production is driven in part through the Remediar programme. The programme operates within the framework of the National Drug Policy and is overseen by the Ministry of Health. Rememdiar supports the four phases of the pharmaceutical management cycle: selection, procurement,

distribution and use of drugs, to guarantee access to essential medicines for the public health system.[68] Through this programme, the Ministry of Health is able to guarantee access to drugs for the 16m people who rely on the public health system for care.[68] The current government, in power since December 2019, has discussed plans for expanding public coverage of medical costs. However, financial pressures due to the covid-19 crisis are likely to limit this.

Medicines manufacturing capabilities in most industries have been heavily restricted owing to lockdown measures associated with the covid-19 pandemic. However, key industries have thus far been protected. Production of chemicals, pharmaceuticals and food products in Argentina were up in March 2020, both in year-on-year terms and compared with December 2019, reflecting commitment to keeping supply chains open for essential items during the early outbreak of the pandemic.[66] Conversely, challenges within the global supply chain are also creating an opportunity for Argentina as other markets seek to diversify supply away from China.[69] One positive to the pandemic, is that it has created a shift in thinking around collaboration. Rafael Andrés Díaz-Granados, executive director of FIFARMA, adds:

> One thing that you are seeing is collaboration between pharmaceutical companies that often compete, and collaboration between pharmaceutical companies and academia, like we are seeing with the Oxford vaccine for covid-19. You are seeing collaboration very closely with multilateral organisations and governments, so the access to a vaccine is accelerated.

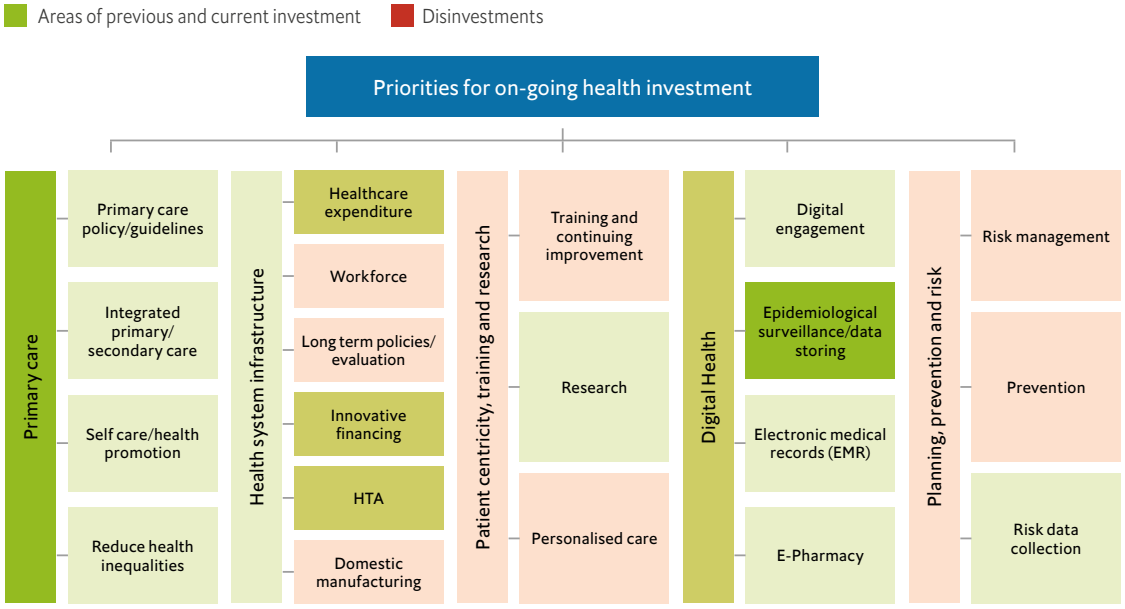
A similar opportunity has also been created through the WHO 2030 immunisation agenda, encourages establishing and building upon partnerships to create immunisations, including with civil society organisations, the private sector and other sectors.[70]

Looking forward

Strengthening the domestic pharmaceutical industry is in Argentina's best interest, as it guarantees access to lower-cost essential medicines. Although Argentina has achieved significant success in expanding access to essential medicines through supporting domestic production of pharmaceuticals, several challenges remain. While domestic production has been scaled up, most raw materials and inputs are still imported. This leaves Argentina vulnerable to any supply-chain or pricing challenges associated with procurement. In addition, there is minimal government funding for investment and production, which has put constraints on research and development (R&D) efforts. As a result, Argentina is still reliant on outside pharmaceutical companies for newer medications. Argentina should continue to capitalise on collaborative opportunities and make additional investment in R&D to improve its pharmaceutical industry.

Strengthening the domestic pharmaceutical industry is in Argentina's best interest, as it guarantees access to lower-cost essential medicines.

Brazil



Official health priorities

- Expanding access to health services and medicines
- Improving the regulatory framework and system management
- Achieving sustainable financing
- Health surveillance

In Brazil, the Ministry of Health 2020 agenda outlines a list of priorities that is fairly consistent with previous investments, which include access to medicines, improving regulatory frameworks, achieving sustainable financing and improving health surveillance (Table 2). However, there are barriers to achieving SDG 3 that have not received attention.

For instance, preventative healthcare services have consistently been subject to underinvestment; obesity services have also received less attention than they require. Better understanding of (and services that help to prevent) common risk factors for NCDs, such as obesity, should develop as NCD services advance.

Brazil has an established HTA system, yet many people still pay out of pocket for drugs. Training and staff development remains an area of underinvestment and even though an EMR system exists in primary care, it is largely not linked to secondary care, which makes continuity of care difficult.

The evidence suggests that rare diseases have also received limited investment in the past and do not appear on the 2020 health agenda. On paper, Brazil has designed a policy for dealing with rare diseases, which aims to bring medical genetics into the public system. However, budget cuts, which are set to worsen throughout covid-19, mean that any implementation of this policy will be delayed.[71]

Case study 2: Improving access to medicines and technologies via public private partnerships in Brazil

> **I think one of the best examples of PPP success is in the state of São Paulo, where they have 30 hospitals that are under a PPP arrangement, and the success factors are very clear: there is clarity on what is expected, there is a minimum of control and independence for the individual hospitals to function, there is data, there is reporting and there is accountability—and those are absolutely fundamental to make it work. But most governments care more about who is in charge or what they want to control.**
>
> Maureen Lewis; co-founder and CEO of Aceso Global, a healthcare NGO.

A PPP is a co-operative arrangement between two or more public and private sectors, meaning that governments and businesses work together to complete a project or provide services to a population.[72] Another type of PPP specific to Brazil, called The Partnerships for Productive Development (PDP) has been described by Ms Lewis as "a shift in healthcare policy [that] constitutes the main instrument of public action on the part of the healthcare development policy community. PDPs aim to combine economic competitiveness and social inclusion."[72] The PDP programme was implemented in 2009 and is overseen by Brazil's Ministry of Health and the National Health Surveillance Agency (Anvisa). The programme seeks to expand access to medicines, health products and technologies that are considered strategic to the SUS, through strengthening the country's industrial complex. The primary goal is to facilitate and encourage national development of these pharmaceuticals at a reduced cost compared with what is paid for medicines and health products imported for use in the SUS. Partnerships are made between two or more public institutions or between public institutions and private companies.[73]

The PDP programme has been successful in its goal of expanding access to medicines and health products. Between 2009 and 2014, the period between the programme's inception and its first framework evaluation, 105 partnership proposals were approved, involving a total of 19 public and 50 private laboratories. This resulted in the domestic production of 61 medicines, six vaccines, 19 health products and five pieces of equipment. This equated to R2.7bn (US$0.5bn), or approximately one-third (31%) of total Ministry of Health expenditure on pharmaceuticals. In addition, between 2011 and 2014, public purchases through the PDP generated R$9.1bn in revenue for public producers. In 2014 the programme was expanded to incorporate more actors into the process.[74]

The PDP programme has been successful in its goal of expanding access to medicines and health products.

Despite its success, the PDP still faces myriad challenges that prevent it from achieving its maximum impact. Between 2009 and 2014, at least 25 proposals were terminated or suspended by the Ministry of Health. This was primarily due to withdrawals of private partners and inadequate public laboratory infrastructure.[74] Public producers are also restricted by challenges with their management capacity and financial constraints to making investments in production capabilities.[74] In the light of such challenges, there have been two targeted interventions aimed at strengthening and modernising the infrastructure of public laboratories, first through PROFARMA-Produtores Públicos and, subsequently, through the creation of the PROCIS-Development Programme for the Industrial Health Complex.[74]

PDPs largely reflect the priorities of the SUS, and focus almost entirely on the technology transfer process for off-patent medicines and products. This has resulted in most proposals focusing on medications and vaccines. PDPs currently do nothing to improve access to high-cost brand products that are still under patent protection, which include pharmaceuticals for orphan diseases, neglected diseases, and medical equipment and technology.[73]

Looking forward

Despite the progress made through the PDP, further investment is required for the Brazilian health system to fully benefit from the programme. Specifically, the government should prioritise strengthening infrastructure and staff qualification in public laboratories to better support manufacturing capabilities and prevent future termination or suspension of contracts.

Case Study 3: Telemedicine development in Brazil

Telemedicine in Brazil was officially permitted by the Federal Council of Medicine in 2002; however, its use has been restricted to instances where physicians are present on both ends of the communication.[75] Since its inception, a number of telehealth initiatives have been implemented in order to provide better access to high-quality care and enable referrals to be made more easily within the system.[76,77] The majority of these programmes centre on secondary consultations between physicians, where a physician receives input or a second opinion from a specialist off-site. Telehealth initiatives have also been used as a means for improving educational opportunities for medical professionals in more remote areas that lack training opportunities. The use of telecoms technology in healthcare to support and improve the diagnosis and management of conditions at the primary care level is essential to the development of a more effective and equitable health system. Several key telehealth programmes in Brazil are outlined in the table on page 30.

Table 3: Telehealth initiatives in Brazil

Program Name	Telemedicine Model	Location	Description
Teleconsultation hot-line	Teleconsultation	Brazil (all-country: 26 states and 1 federal district)	Used to clarify questions (clinical and administrative) in real time Available to all primary health care doctors and other health professionals in Brazil
RegulaSUS (Ambulatory regulation service)	Teleconsultation	Rio Grande do Sul	Organisation of outpatient access to specialised services through the creation of referral protocols, classification of clinical priorities and discussion in real time of clinical cases of patients on the waiting list
TelessaúdeRS-UFRGS (respiratory, ophthalmology, dermatology, stomatology)	Telediagnosis	Rio Grande do Sul	Allows the interpretation of clinical investigations through a digital platform. This includes the following: DERMATONET and ESTOMATONET (dermatology and stomatology): report based on uploaded images generated within 72 hours RESPIRANET (respiratory): examinations carried out in remote rooms, and the interpretation is conducted remotely TELEOFTALMO (ophthalmology): remote ophthalmologic assessments for patients older than 8 years, including visual acuity measurement and ocular pressure measurement. External appearance of the eye and can be digitally captured
Telemedicine University Network (Rede Universitária de Telemedicine - RUTE)	Tele-education and teleconsultation	19 university hospitals in the major cities of the country	The project goal is to allow all the participating hospitals to use RNP network to run telemedicine and telehealth applications, including videoconferencing for information exchange, second opinion, continuous education and web conferencing[64,75]

These programmes have achieved a certain degree of success, particularly those established in Rio Grande do Sul. For example. the Ambulatory Regulation Service (RegulaSUS) has had a considerable effect on patient wait times for consultation with specialists.[75] However, despite the dearth of programmes, Brazil faces several challenges that have prevented the country from realising the full benefits of telehealth. Several of these key challenges include inadequate response to teleconsultation requests, infrastructure problems, difficulty in incorporating programmes into the organisational culture and lack of managerial support. Furthermore, changes in management organisation have inhibited the full use and adoption of teleconsultation systems.[78]

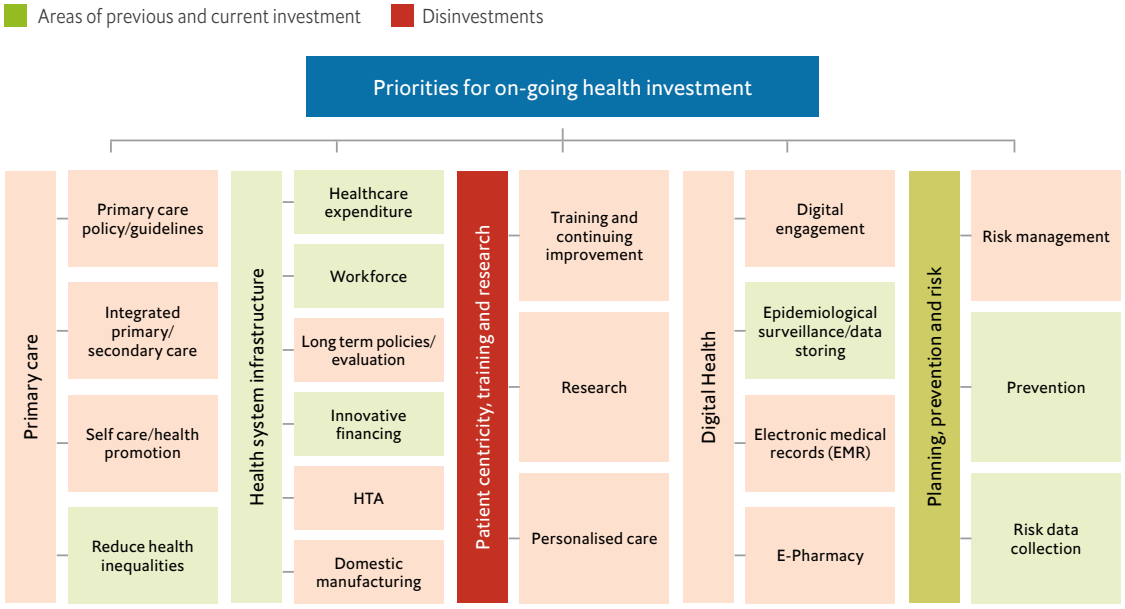
The result is a fragmented system in which certain areas achieve rapid results while others experience little to no improvement. In addition, the use of telehealth services was restricted to physicians and had failed to realise the additional benefits of expansion to consultations between physicians and patients. However, covid-19 changed this, and Brazil's Ministry of Health temporarily allowed more widespread use of telemedicine capabilities through Ordinance No. 467, which was issued on March 23rd 2020. Under this new ordinance, telemedicine is allowed in both public and private health systems throughout the duration of the public health emergency declaration. Consultations between patients and doctors can now be conducted virtually. Reimbursement for these services is only available for services offered under the SUS.[79]

In addition to the widespread adoption of telemedicine, the covid-19 pandemic has also facilitated the temporary adoption of an electronic prescription platform. This platform is a product of joint actions between the Federal Council of Medicine (CFM), the Federal Pharmacy Council and the National Institute of Information Technology, which allows for the handling of secure digital documents, such as prescriptions and medical certificates. Through this platform, physicians can maintain and file documents for patient appointments. Patients also have online access and can request appointments.[79]

Looking to the future

Upon the official conclusion of the covid-19 public health emergency, Brazil does not have any general regulation for telemedicine. There is hope that the broader use of telehealth services during the covid-19 pandemic may pave the way for greater use in the future, particularly regarding physician–patient communication. However, this would require a shift in policy from the Federal Council of Medicine (CFM). Larger uptake of telemedicine may require advocacy on the part of providers and politicians. Telemedicine, if expanded, has the potential to reduce several barriers for both patients and providers through remote monitoring, consultation, conferencing and diagnostic services.

Colombia



Official health priorities

- Achieving greater equity in health
- Improving the living conditions of the population
- Zero tolerance for avoidable morbidity
- Reducing mortality and disability

Colombia's Ministry of Health and Social Protection has earmarked greater equity, improving living conditions, and reducing avoidable mortality and disability as key health goals for 2020. In some respects, these aims are reflected in previous investments in health, such as ongoing efforts to provide healthcare to hard-to-reach and indigenous populations, improve universal healthcare, and increase healthcare resources, all considerable tailwinds towards meeting SDG 3 for health. A low out-of-pocket spend on healthcare could be an indicator that improvements in accessing universal healthcare have been made (Table 1), but is not apparent in other ways, such as the availability of evidence outlining ongoing improvements to the primary care system.

Other tailwinds that are absent from the 2020 health agenda but have received investments in the past include rare diseases and cancer surveillance. Colombia has made the most progress of all countries in this study in terms of rare diseases. A rare diseases policy exists, and Colombia has attempted to implement this via clinical care networks while other countries are still grappling with an accurate registration process for rare diseases.[80] Colombia also has a national cancer information system, which was established in 2012.

Barriers to SDG 3 include the need for urgent reinforcement of the technological infrastructure, which is absent from current health priorities and is greatly needed to improve tracking of infectious diseases in remote areas. Equal provision of healthcare services to older people is not guaranteed under the current health insurance system, and it requires resource

allocation.[81] Similarly to Argentina and Brazil, a shift away from maternal services and HIV/AIDS reflects the epidemiological transition, but this requires ongoing monitoring. Poor staffing is a reoccurring theme in Latin America, and the health workforce lacks investment in Colombia, with a particularly low number of nurses per 10,000 population, limited professional incentives for physicians and poor staff development.

Case study 4: Reaching indigenous populations and marginalised communities in Colombia

What happens with insurance schemes like the one in Colombia, in which you only have integrated healthcare if you're employed? If you're not employed, you do not have integrated healthcare, because of the country's system. What is going to happen when an increment of unemployment hits Colombia? What's going to happen to its population?

Francisco Bercerra, former assistant director, PAHO

Elimination of health inequalities only becomes feasible when governments recognise the importance of bringing opportunities to the worst-off populations. Inequality in accessing healthcare services is inherent in all Latin American healthcare systems. Yet the responsibility of governments to protect the health of marginalised populations is almost universally recognised. Not surprisingly, rural populations with little health infrastructure are being hit the hardest in Colombia during the covid-19 pandemic.

The country is attempting to address this through a whole host of initiatives that aim to increase healthcare access to marginalised populations. Some of these are at state level, but many are provided by international aid organisations and NGOs, such as:

- The Patrulla Aérea Civil Colombiana, a private non-profit that uses a fleet of volunteer pilots who carry doctors and nurses to remote areas to provide treatment, as well as training local communities in public health basics.[82]
- Sinergias, an advocacy and healthcare group that has been working with rural and indigenous communities to tackle ongoing issues such as mental health and food insecurity.[83]

At the state level, one example is Familias en Acción, a programme implemented by the Department for Social Prosperity and aimed at the most financially vulnerable families. It seeks to improve the health, nutrition and attendance of families in poor communities at healthcare outlets.[84] More recently, the health ministry has created the National Rural Health Plan, which aims to ensure that those in rural areas receive appropriate healthcare access and outcomes. This programme, which is scheduled to be in place until 2031, holds great promise in terms of reducing inequalities in healthcare outcomes across rural and urban geographies in Colombia.[85]

Indigenous populations

While indigenous peoples make up only 5% of the world's population, they account for 15% of the extreme poor.[86] The UN Declaration on the Rights of Indigenous Peoples highlights that indigenous peoples often experience major structural barriers in accessing healthcare, including geographical isolation, poverty, discrimination, racism and a lack of cultural understanding and sensitivity on the part of others.[87]

In recent years Colombia has been investing in indigenous-led primary healthcare services that could serve as a role model to other Latin American countries. One such example is Anas Wayúu, a not-for-profit health insurance company created in 2001 by two indigenous associations, representing 120 Indigenous communities and 118,000 people. Anas Wayúu provides both primary and secondary care and has access to services in two specialist centres providing care for cancer, HIV/AIDS and severe burns, alongside renal care, cardiac care, and intensive care.[8] Most of the health workers are bilingual, speaking Wayúunaiki, and indigenous language, and Spanish, and the service seeks to complement traditional medical practices, improve trust and enhance outreach to indigenous populations.

Looking forward

Evidence shows that indigenous-led healthcare services are often effective at addressing health inequities. Further developments are needed to ensure that sustainable funding and supportive policy frameworks can be applied across the country at both a national and local level.[8]

Case study 5: Funding collaborations in health in Colombia

People with breast cancer and health problems related to violence suffer from poor outcomes in Colombia and require preventative efforts. A recent study in The Lancet Global Health investigated the effect of improved screening and treatment for breast cancer, predicting that it would reduce mortality by 7-25%, or up to 105 lives saved per 100,000 women over a ten year time period.[88] Intimate partner violence is highly prevalent in Colombia, with 49,699 cases reported in 2018. Yet only a couple of preventative programmes exist that are aimed at adolescents.[89]

On March 19th 2020 the World Bank granted a US$150m loan to improve the quality of the Colombian healthcare system. This loan is part of a "results-based financing" approach in Colombia, which links disbursements to the achievement of results agreed between Colombia and the World Bank. Among the expected outcomes of this programme are increased early detection of breast cancer, through increased access to mammograms; improved technical capacity of healthcare workers; and increased awareness and detection of gender violence and health problems related to violence.[90]

How might results-based financing help? And how does it actually work? Such agreements use a system of bonuses to motivate health facilities to improve the efficiency and quality of their services. A matrix of indicators is generally used to conduct regular assessments of the quality of services provided by a health centre, and progress against these indicators is tracked. Results-based financing is not only used in developing healthcare markets, it is used across the globe, including in schemes such as the NHS Quality and Outcomes Framework in the UK (Payment by Results was also included) and Medicare Pay for Performance (P4P) initiatives in the US.

Despite the widespread use of results-based financing, it faces a great deal of scepticism.[91] Some people think that health systems should be producing results regardless, so it is difficult to understand why they should be financially rewarded for doing a job that they should be doing anyway. Others believe that healthcare organisations should only receive funding if they can prove that they are saving lives.

While some experts are convinced that financing and political will are the key influential factors to improving healthcare systems, the results-based financing debate presents an

alternative viewpoint. Throwing money at a health system will not automatically improve health outcomes; there must be improvements across multiple layers of the health system. A health system's performance is reliant on access, incentives for health workers, good management, and data collection to monitor and evaluate progress, among other things.

Results-based financing therefore must support a health system holistically if it is to be successful. It must also motivate staff and managers to improve outcomes by only providing funding when outcomes improve. Careful planning is needed to ensure that the funding provided does not increase inequity and that it can be used to replicate cost-effective outcomes elsewhere and on a larger scale.[92,93]

Can paying by results help to achieve the SDGs? A recent review of results-based financing studies found limited evidence that these are in fact generally effective or cost-effective. But this does not mean that they do not work—instead, it might not be possible to measure their effectiveness in numbers.

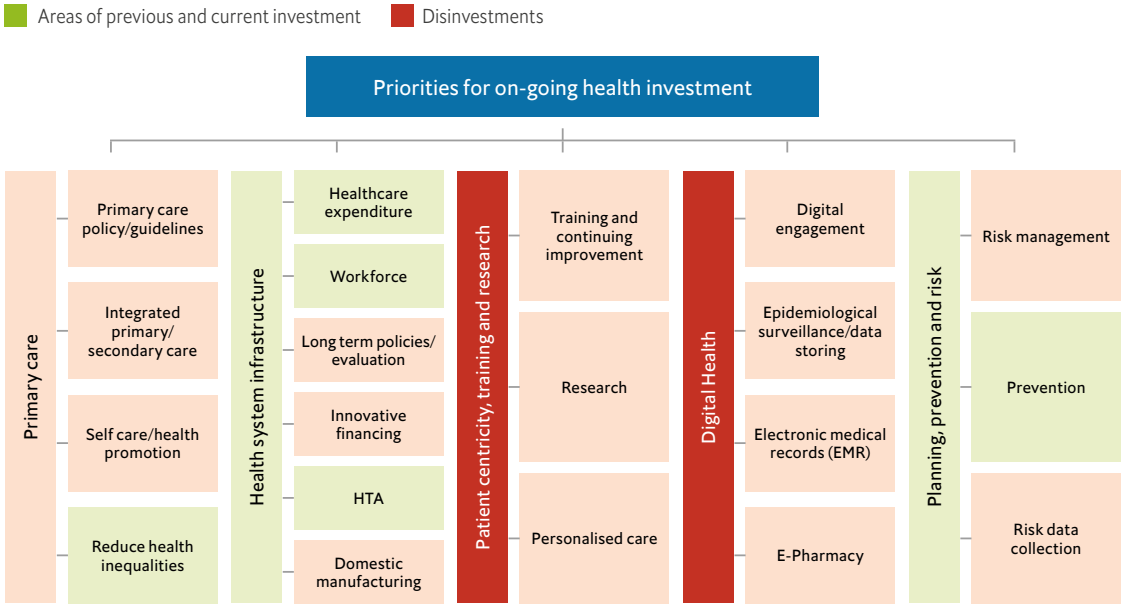
As alluded to in the discussion on integrated care in Chapter 1, healthcare professionals tend to see complex interventions as key to improving efficiency, a belief that is supported by decades of national policy across the world. However, evidence of the cost effectiveness of complex interventions is limited. Given that results-based financing often relies on integrated care to achieve its specific goals, it too is a form of complex intervention.

By nature, complex interventions are very difficult to measure, owing to the multiple interconnecting parts involved. Measuring the quality of these interconnections requires careful thought. A barrier to the success of results-based financing probably lies in the measurement of it, as quantitative data is not always the answer. The qualitative insights from professionals and patients are invaluable in this context to ascertain quality of care. But it is also worth noting that quality is a complex and subjective concept that depends on whose perspective you are viewing quality through. A patient and doctor's perspectives are likely to be different.[91] Healthcare organisations ideally need to measure performance based on both. This will entail using a combination of patient- and clinician-reported outcomes, qualitative insights and epidemiological surveillance data.

Looking forward

Results-based financing should be focused on aspects of healthcare where low compliance is causing poor outcomes, and on interventions that can improve compliance or uptake. The financial sustainability of such programmes beyond pilot phase is largely unknown. However, it is likely that success is only possible if investments are focused on system changes that require an initial injection of cash to support reorganisation and re-education linked to long-term improvements in practice, and that can continue without additional funding.[94]

Mexico



Official health priorities

- Health protection and disease prevention
- Access to quality health services and closing social and geographical health gaps
- Generation and effective use of health resources
- Creation of a universal health system

Although financial investments are still lacking, the Ministry of Health in Mexico has started to prioritise much-needed policies which endorse universal healthcare and healthcare resources. These have been notably deficient areas in the past, partly reflected by the low healthcare spend per head, and the highest out-of-pocket spend and lowest number of hospital beds across the four countries in this study (Table 1). Indeed, the primary care system in Mexico is also the least developed, which has trickle-down effects to all areas of healthcare practice and is a significant barrier to achieving SDG 3 for health. Without primary care, Mexico will not be able to close the social and geographical health gaps, improve disease prevention or effectively use health resources.

Despite struggling to provide the more basic concepts of healthcare, Mexico is a regional leader in the HTA process, but may struggle to make further progress in this area without continued investment in research, training of healthcare professionals and improvements to digital healthcare.[95] Obesity is also a huge concern in Mexico, especially in deprived areas, and it should be an integral part of Mexico's NCD plan.[96] Further barriers include a rising number of deaths from premature violence, and negligible access to mental health services (see Case study 6).

Case study 6: Poor access to mental health services access in Mexico

Mental health services in Latin America are a relegated agenda. It has a lot to do with stigma; people do not go out and talk about mental health. And it has a lot do with the stakeholders and the political pressure that some disease groups and patients have. Also, politicians are not listening, which means that when you have to choose between [building] a hospital for cancer care and a hospital for the mentally ill, you would choose the former one as you respond to political incentives.

Eduardo González-Pier, team lead, Better Health Programme Mexico

There needs to be greater awareness in Latin America as a whole around the positive impact of interventions that affect health behaviours and improve resilience. These include improving mental health and reducing violence, which can have longer-term returns on investment and improved social benefits.[18] Interpersonal violence was the main cause of premature death in Mexico in 2017, reflecting a 218.6% increase compared with 2007, when it was ranked seventh.[97] This has been widely attributed to gang violence and the drug trade; however, expert insights have portrayed a more complicated picture, citing poor access to mental health services as a contributing factor.

Mental health is widely recognised as a major unsolved issue within Mexico's health policy agenda. The topic has been gaining recognition in recent years owing to the increased prevalence of mental health disorders. Between 2008 and 2014, the number of deaths due to mental health and behavioural disorders increased by 33%.[98] Health experts and policy makers have also recognised the correlation between mental health disorders and increased prevalence of other issues within the country, such as violence, inequality and poverty. Furthermore, research has demonstrated that mental health disorders increase the risk for both communicable and non-communicable diseases, and are strongly associated with the incidence of chronic diseases. Despite the impact of mental health disorders, however, treatment gaps continue to be significant.[99]

Primary care in Mexico is just beginning to have a role in the delivery of mental health services. As a result, only 30% of primary care centres report having protocols for detecting and treating mental health disorders, while less than 15% of primary care staff report receiving any training around the topic of mental health.[100] In addition, mental health services are consistently understaffed, underfunded, and poorly integrated with other publicly funded health programmes. There are also significant shortages of multidisciplinary teams (MDTs; composed of psychologists, physicians, social workers and other non-specialists) for treating mental health. Furthermore, most mental health service facilities are located in metropolitan areas, making them difficult to access for individuals living in rural areas, including indigenous communities.[100]

Improving access to mental health services

> **"Mental health is something that has been ignored—it's like an elephant in the room. We do not have many methods to measure prevalence of mental health conditions in Mexico. Perhaps this also impinges on interpersonal violence. These types of problems are left to the family to resolve."**
>
> Mariana Barraza-Lloréns, former advisor to the undersecretary for integration and development of the health sector, Mexico

To improve access to mental health services, the Federal District Mental Health Act was established in 2011 in the capital, Mexico City. It stipulated that all community-based primary care clinics in the district should target mental health and provide referrals to individuals who are considered high-risk. However, this initiative has not had the desired effect, owing to a lack of financial resources and infrastructure, among other issues. Moreover, there have been challenges associated with lack of organisation and co-ordination among the various actors responsible for implementing the policy, further impeding its adoption[99].

More recently, there has been an emphasis on health promotion and prevention of mental disorders, with the goal of increasing early diagnosis, improving quality of care and reducing the overall cost of care. This was previously reflected in the Specific Action Programme for Mental Health 2013-18, which was aligned with the National Development Plan 2013-18 and the Health Sector Plan. (The strategy was often referred to as Hidalgo's Model for Mental Health.) The primary actions of this plan included increasing mental health promotion, implementing ambulatory care in primary care clinics (Centros de Salud) and specialised public clinics with MDTs (Centros Integrales de Salud Mental), the creation of psychiatric units in general hospitals, and improving rehabilitation and social reinsertion.

The latter is achieved through workshops where patients can cultivate skills needed to relate to others, reintegrate themselves into their community and participate in social activities, all while receiving a wage.[101] As part of this momentum, new policy has been implemented that assigns the task of screening for depression to general practitioners, who are also responsible for promoting the use of a psychological assistance telephone line.[102]

Looking forward

Despite these efforts, Mexico still faces significant challenges with improving mental health care and outcomes, as well as addressing stigma, discrimination and low public awareness. Furthermore, the country lacks sufficient funding owing to general budget restrictions on healthcare initiatives and the specialised workforce needed for the implementation of a large-scale programme for the treatment of mental health disorders.[90,100] In October 2020, the Commission for Addictions and Mental Health Care was created, an indication of more recent progress. This brings together the former addiction council and the General Directorate of Psychiatry Services, however it is currently not functional as they need to gain approval of the Federal Secretariat of Health. In order to improve care and outcomes, further investment is needed to strengthen prevention, establish primary care as the primary entry point for mental health services, improve the training of health workers, and improve patient rehabilitation and reinsertion.

Case study 7: Mexico's Better Health programme

The main causes of mortality in Mexico include diabetes, ischaemic heart disease, cerebrovascular disease, cirrhosis and other chronic liver diseases, and COPD. The burden of these diseases has been compounded by the significant rise in risk factors, such as obesity; physical inactivity; consumption of energy-dense, high-caloric foods; tobacco and illicit drug use; and unhealthy consumption of alcohol.[103]

Better Health Programme Mexico (BHPMx), part of the UK's £79.3m Global Prosperity Fund Better Health Programme, aims to address the growing burden of NCDs in Mexico, specifically focusing on heart disease and diabetes by supporting and facilitating research collaborations and lasting partnerships between the two countries.

BHPMx also seeks to strengthen local health system structures by creating systems to improve quality of care. Specifically, this will be achieved through granting the Mexican health system unique access to NHS experience related to primary healthcare, best practice for training the health workforce, high-quality and innovative treatments, and expertise in health systems management.[104,105]

Integrated care

One of the primary approaches for improving NCD outcomes and local health system strengthening is through facilitating better integrated care. Dr Eduardo González-Pier, an expert involved in BHPMx, describes how the programme approaches this and outlines key considerations for diabetes in the context of primary care:

> We do health system strengthening aligned to all the interventions that are health responses to diabetes. So, how do you prescribe the drugs? What kind of equipment do you need? What kind of clinical records do you need? How much outreach and how does the primary healthcare setting link to the hospital? How do they do outreach and community care? How about long-term care for diabetic patients and what do you do for the families?

BHPMx documents provide a more specific example, looking this time at obesity. They propose conducting further research around the relationships between violence, depression and obesity in order to develop an integrated approach, most likely involving mental health services.[104]

Lessons learnt from developed healthcare systems

As part of BHPMx, the Mexican health system has access to UK best practice. One of the concepts that has been adopted through this is around the theory of change, which helps to articulate to and inform the programme team and other stakeholders about the logical pathways to delivering objectives.[105]

"You have to work [through] a step-by-step process by which what you do creates impact, according to a chain or set-ups to get results. We did the theory of change across diabetes, in primary care settings," says Mr González-Pier. "What is good about these things is that the UK and Mexico share a lot of common problems across these issues. The UK is one of the countries with the worst problems with diabetes and obesity in Europe, as Mexico is in Latin America. But what the UK does is they have much better outcomes, despite still having lots of obesity problems."

The theory of change can help to guide training for providers on the most effective ways to engage with patients around NCD care, such as by promoting better treatment compliance or lifestyle changes aimed at reducing risk factors.

Preventative care

BHPMx tackles the rising burden of NCDs though preventative care, primarily through health promotion activities around risk factors.

"What we do is we have a strand which works on risk factors. What you do to strengthen interventions around risk factors, which is mostly promotion, which means habits and prevention, which means preventing people from getting sick in primary care settings," says Mr González-Pier. "We chose obesity as the tracing risk factor to work around strengthening interventions. So when you work on health system strengthening, you have to think about it as a horizontal approach to things, meaning more of a system approach, without working on any disease in particular."

Programme documents expand on this, espousing the need to consider this through an equity lens, emphasising the need to build nuanced understanding of the cultural, political and economic context that drives current behaviour.[104]

Primary care

> **"Primary care is a very important part of the equation in health investments. But it must be framed as primary care for NCDs to meet the SDGs. So it is primary care to strengthen preventative care, to meet SDG targets."**
>
> Eduardo González-Pier, team lead, Better Health Programme Mexico

The areas raised through this case study, including better integrated care, applying best practices from elsewhere and improving preventative care, require a strong primary care foundation. Currently, this is absent in Mexico. There is severe fragmentation, resulting in primary care being delivered by institution-certified family physicians, GPs, or even non-certified family physicians or social service interns, depending on the funder. Patient visits are short (an average of around 12 minutes) and adopt a curative approach, with only a fraction of care spent on prevention.[106] The lack of primary care and prevention has caused an influx of disease, which has progressed to stages that are very difficult to cure.

"Patients are mistreated or misdiagnosed. So when the system gets them, they are just too ill," says Mariana Barraza-Lloréns, a former advisor to the undersecretary for integration and development of the health sector. "We are still living in a country where people skip primary care and go straight to hospital. We are still living with a lot of inertia in Mexico. People still think that big hospitals are the answer."

The lack of a formal, state-driven and funded primary care system has led to citizens and healthcare workers creating one themselves. During the swine flu epidemic of 2009, to prescribe medication rapidly to people who needed it, the government passed a law to allow written prescriptions for antibiotics which encouraged pharmacies in Mexico to hire doctors, so that medications could be prescribed and purchased quickly under one roof. After the flu epidemic resolved, pharmacies started their own private facilities, continuing to hire doctors to work in pharmacies, creating a makeshift primary care service.

Mr González-Pier suggests that these centres might now be the second-largest primary care contact for most of the population, albeit while only providing care for simple issues and acute health problems. "[They are] not working for NCDs, especially the more complicated ones," he says. "The doctors that work in these clinics are straight out of school and have not had any specialty training, so they cannot really diagnose the complicated problems or [provide] cancer care, for example. [The clinics are] not integrated with hospitalisation in any way, which is a big concern."

While acknowledging their limitations, Ms Barraza-Lloréns points to the popularity of such services: "These services were packed [during the swine flu pandemic]. It was easy to get a quick consultation and it was relatively cheap. It's not primary care but it's close."

Regardless of what other measures have been adopted, however, definitive state moves to plug the gaps in primary care provision are long overdue.

Key takeaways & the way forward

This report aimed to provide a best-practice framework for health investment in Latin America, which simultaneously guides progress towards SDG 3 for health. This ensures that health investments are considered through the lens of urgent development issues that already have buy in and ownership from local governments.[107] Clarity on valuable health investments remains an even more pressing need for the region as the covid-19 pandemic places further pressure on social, economic and health goals.

This report arrives at the following key objectives in relation to optimising long-term health investments that foster the sustainability of health systems:

- There is an urgent need to rethink investment strategies throughout Latin America in order to avoid losing years of progress toward key health goals, especially in the face of covid-19.
- Health investment strategies need to be informed by longer-term thinking, with sustainable financing as a core objective. Short-sighted health investments have contributed to the challenges facing the efforts of the region's governments to create sustainable health systems.
- Alternative models of investment are needed to fund healthcare. Innovative financing solutions include reducing inefficiencies, creating fiscal space via indirect taxes and VAT, public-private partnerships, and ongoing evaluation to ensure that supply meets demand.
- Focusing on best-buy interventions tailored to local need is the key to effective investment and fiscal sustainability. This also requires a rigid, well-staffed health system infrastructure, surveillance of epidemiological trends and long-term impact assessment.
- There needs to be better regulation of new technologies using HTA bodies to ensure they are both effective and financially sustainable. Governments could improve these conditions by, firstly, bolstering the readiness of health systems to assess the value of new technologies and, secondly, improving the ability of national HTA bodies to adjust to the challenges of evaluating novel technologies.

References

1. Savedoff WD. What Should A Country Spend On Health Care? Health Affairs. 2007;26(4):962-70.
2. Atun R, de Andrade LO, Almeida G, Cotlear D, Dmytraczenko T, Frenz P, et al. Health-system reform and universal health coverage in Latin America. Lancet. 2015;385(9974):1230-47.
3. Segura-Pérez S, Grajeda R, Pérez-Escamilla R. Conditional cash transfer programs and the health and nutrition of Latin American children. Revista Panamericana de Salud Pública. 2016;40(2):124-37.
4. GBD 2015 SDG Collaborators. Measuring the health-related Sustainable Development Goals in 188 countries: a baseline analysis from the Global Burden of Disease Study 2015. Lancet. 2016;388(10053):1813-50.
5. 2019 SDG Index for Latin America and the Caribbean. Sustainable Development Index, 2020.
6. WHO. Universal health coverage: WHO. Available from: https://www.who.int/healthsystems/universal_health_coverage/en/.
7. Laurell AC. THE MEXICAN POPULAR HEALTH INSURANCE: MYTHS AND REALITIES. International journal of health services : planning, administration, evaluation. 2015;45(1):105-25.
8. Lavoie JG, Kornelsen D, Wylie L, Mignone J, Dwyer J, Boyer Y, et al. Responding to health inequities: Indigenous health system innovations. Global Health, Epidemiology and Genomics. 2016;1.
9. Lopez-Arellano O, Jarillo-Soto EC. A health system's neoliberal reform: evidence from the Mexican case. Cadernos de saude publica. 2017;33(Suppl 2):e00087416-e.
10. Viana ALdÁ, da Silva HP, Yi I. Universalizing health care in Brazil: opportunities and challenges. Towards Universal Health Care in Emerging Economies: Springer; 2017. p. 181-211.
11. Ponce MF. Argentina's Health System's Dilemma: Remain to Being an Old Circus with Elephants and Lions or Wish to Being the Cirque du Soleil [El Dilema del Sistema de Salud de Argentina: Seguir siendo un viejo circo con elefantes y leones o desear ser el Cirque du Soleil]. Available at SSRN 3179556. 2018.
12. Trapé TL, Campos RO. The mental health care model in Brazil: analyses of the funding, governance processes, and mechanisms of assessment. Revista de saude publica. 2017;51:19.
13. Gómez-Dantés H, Fullman N, Lamadrid-Figueroa H, Cahuana-Hurtado L, Darney B, Avila-Burgos L, et al. Dissonant health transition in the states of Mexico, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet. 2016;388(10058):2386-402.
14. Peláez E, Monteverde M, Acosta L. Celebrar el envejecimiento poblacional en argentina. Desafíos para la formulación de políticas. SaberEs. 2017;9(1).
15. Marinho F, de Azeredo Passos VM, Carvalho Malta D, Barboza França E, Abreu DMX, Araújo VEM, et al. Burden of disease in Brazil, 1990–2016: a systematic subnational analysis for the Global Burden of Disease Study 2016. The Lancet. 2018;392(10149):760-75.
16. Aceves B, Ingram M, Nieto C, de Zapien JG, Rosales C. Non-communicable disease prevention in Mexico: policies, programs and regulations. Health promotion international. 2019.
17. The Tallinn Charter: Health Systems for Health and Wealth. WHO Regional Office for Europe, 2008.
18. WHO. The case for investing in public health. 2014.
19. WHO. From Burden to "Best Buys": Reducing the Economic Impact of Non-Communicable Diseases in Low - and Middle Income Countries. 2011.
20. Jamison D, Yamey G, Beyeler N, Wadge H. INVESTING IN HEALTH THE ECONOMIC CASE. Doha, Qatar: World Innovation Summit for Health. 2016.
21. Cylus J, Permanand G, Smith PC. Making the economic case for investing in health systems: What is the evidence that health systems advance economic and fiscal objectives? WHO, 2018.
22. Stein AT, Ferri CP. Innovation and achievement for primary care in Brazil: new challenges. BJGP Open. 2017;1(2):bjgpopen17X100857-bjgpopen17X.
23. PAHO. Communicable Diseases and Health Analysis/Health Information and Analysis. . 2016.
24. Arredondo A. Type 2 diabetes and health care costs in Latin America: exploring the need for greater preventive medicine. BMC Medicine. 2014;12(1):136.
25. Massuda A, Hone T, Leles FAG, de Castro MC, Atun R. The Brazilian health system at crossroads: progress, crisis and resilience. BMJ Glob Health. 2018;3(4):e000829.
26. De Souza LEPF, De Barros RD, Barreto ML, Katikireddi SV, Hone TV, Paes De Sousa R, et al. The potential impact of austerity on attainment of the Sustainable Development Goals in Brazil. BMJ Glob Health. 2019;4(5).
27. Rubinstein A, Zerbino MC, Cejas C, López A. Making Universal Health Care Effective in Argentina: A Blueprint for Reform. Health Systems & Reform. 2018;4(3):203-13.
28. González-Pier E, Barraza-Lloréns M, Beyeler N, Jamison D, Knaul F, Lozano R, et al. Mexico's path towards the Sustainable Development Goal for health: an assessment of the feasibility of reducing premature mortality by 40% by 2030. The Lancet Global Health. 2016;4(10):e714-e25.
29. Macinko J, Guanais FC, Mullachery P, Jimenez G. Gaps In Primary Care And Health System Performance In Six Latin American And Caribbean Countries. Health Affairs. 2016;35(8):1513-21.
30. Vargas I, Mogollón-Pérez AS, De Paepe P, Ferreira da Silva MR, Unger JP, Vázquez ML. Barriers to healthcare coordination in market-based and decentralized public health systems: a qualitative study in healthcare networks of Colombia and Brazil. Health Policy Plan. 2016;31(6):736-48.
31. Ham C, Curry N. Integrated care. The Kings Fund: 2011.
32. Novick GE. Health Care Organization and Delivery in Argentina: A Case of Fragmentation, Inefficiency and Inequality. Global Policy. 2017;8(S2):93-6.
33. The Successful Results of MIAS [press release]. Ministry of Health, Colombia2018.
34. Under Secretariat for Integration and Development of the Health Sector. ATENCIÓN PRIMARIA DE SALUD INTEGRAL E INTEGRADA APS-I Mx: LA PROPUESTA METODOLÓGICA Y OPERATIVA. Government of Mexico.
35. Ellen Nolte EP. What is the evidence on the economic impacts of integrated care? WHO: 2014.
36. J Kirton IK. Delivering Universal Health Coverage 2030. Health: a political choice. GT Media Group Ltd: 2019.
37. USAID. Artificial Intelligence in Global Health. 2019.
38. WHO. eHealth in the Region of the Americas: breaking down the barriers to implementation Results of the World Health Organization's Third Global Survey on eHealth. WHO, 2016.
39. Celes RS, Rossi TRA, de Barros SG, Santos CML, Cardoso C. Telehealth as state response strategy: systematic reviewLa telesalud como estrategia de respuesta del Estado: revisión sistemática. Revista panamericana de salud publica = Pan American journal of public health. 2018;42:e84-e.
40. Sze-Yunn P. Telehealth could be a game-changer in the fight against COVID-19. Here's why: World Economic Forum; 2020. Available from: https://www.weforum.org/agenda/2020/05/telehealth-could-be-a-game-changer-in-the-fight-against-covid-19-here-s-why/.
41. Ajay Agrawal JG, Avi Goldfarb. AI is coming, so economic policy needs to be ready: World Economic Forum; 2018.
42. LeRouge C, Gupta M, Corpart G, Arrieta A. Health System Approaches Are Needed To Expand Telemedicine Use Across Nine Latin American Nations. Health Affairs. 2019;38(2):212-21.

43. Heisler M, Kaselitz E, Rana GK, Piette JD. Diabetes Prevention Interventions in Latin American Countries: a Scoping Review. Current diabetes reports. 2016;16(9):80.
44. Silva H, Hernandez-Hernandez R, Vinueza R, Velasco M, Boissonnet CP, Escobedo J, et al. Cardiovascular risk awareness, treatment, and control in urban Latin America. American journal of therapeutics. 2010;17(2):159-66.
45. Sommerfeld J, Kroeger A. Innovative community-based vector control interventions for improved dengue and Chagas disease prevention in Latin America: introduction to the special issue. Trans R Soc Trop Med Hyg. 2015;109(2):85-8.
46. Araújo CEL, Gonçalves GQ, Machado JA. Brazilian municipalities and their own expenditures on health: Some associations. Ciencia e Saude Coletiva. 2017;22(3):953-63.
47. Costa E, Cunha RVD, Costa EAD. National Dengue Control Program implementation evaluation in two border municipalities in Mato Grosso do Sul State, Brazil, 2016. Epidemiol Serv Saude. 2018;27(4):e2017478.
48. Homedes N, Ugalde A. Availability and affordability of new medicines in Latin American countries where pivotal clinical trials were conducted. Bull World Health Organ. 2015;93(10):674-83.
49. PAHO. Health Technology Assessment 2012. Available from: https://www.paho.org/en/topics/health-technology-assessment.
50. Castro HE, Moreno-Mattar O, Rivillas JC. HTA and MCDA solely or combined? The case of priority-setting in Colombia. Cost effectiveness and resource allocation : C/E. 2018;16(Suppl 1):47.
51. NICE. NICE signs agreement with Colombia's Institute of Health Technology Assessment to forge closer working ties, 2020. Available from: https://www.nice.org.uk/news/article/nice-signs-agreement-with-colombia-s-institute-of-health-technology-assessment-to-forge-closer-working-ties.
52. Kanavos P, Parkin GC, Kamphuis B, Gill J. Latin America Healthcare System Overview. 2019.
53. Health Financing in the Americas: PAHO; 2017. Available from: https://www.paho.org/salud-en-las-americas-2017/?p=178.
54. The Economist Intelligence Unit. Healthy budgets and healthy people. The Economist Intelligence Unit, 2019.
55. Kanavos P, Parkin GC, Kamphuis B, Gill J. Latin America Healthcare System Overview: A comparative analysis of fiscal space in healthcare London School of Economics and Political Science, 2019.
56. Llumpo A, Montagu D, Brashers E, Foong S, Abuzaineh N, Feachem R. Lessons from Latin America: the early landscape, of healthcare public-private partnerships. San Francisco: Global Health Group. 2015.
57. Kosycarz EA, Nowakowska BA, Mikołajczyk MM. Evaluating opportunities for successful public–private partnership in the healthcare sector in Poland. Journal of Public Health. 2019;27(1):1-9.
58. UNDP. In Latin America, COVID-19 infections surge as virtually every country faces recession 2020. Available from: https://www.undp.org/content/undp/en/home/news-centre/news/2020/LAC_COVID19_infections_surge_as_countries_face_recession.html.
59. OECD. COVID-19 in Latin America and the Caribbean: An overview of government responses to the crisis: OECD; 2020. Available from: http://www.oecd.org/coronavirus/policy-responses/covid-19-in-latin-america-and-the-caribbean-an-overview-of-government-responses-to-the-crisis-0a2dee41/#section-d1e309.
60. Lima-Toivanen M, Pereira RM. The contribution of eHealth in closing gaps in primary health care in selected countries of Latin America and the Caribbean. Pan American Journal of Public Health. 2019;42(188).
61. Gómez Reynoso JM, Tulu B. Electronic Medical Records adoption challenges in Mexico. AMIA Annu Symp Proc [Internet]. 2007 2007/10//:[1093 p.]. Available from: http://europepmc.org/abstract/MED/18694190.
62. Barber SL, Gertler PJ. The impact of Mexico's conditional cash transfer programme, Oportunidades, on birthweight. Trop Med Int Health. 2008;13(11):1405-14.
63. Gnatienko N, Lioznov D, Raj A, Blokhina E, Rosen S, Cheng DM, et al. Design of a randomized controlled trial to Link Infectious and Narcology Care (LINC-II) in St. Petersburg, Russia. Addiction science & clinical practice. 2020;15(1):1.
64. The World Bank. Data 2019. Available from: https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS?locations=MX-BR-AR-CO.
65. PAHO. Health in the Americas: Argentina 2017. Available from: https://www.paho.org/salud-en-las-americas-2017/?page_id=83
66. Santiago F. Latin America: Kickstarting manufacturing in the time of COVID-19: United Nations Industrial Development Organization 2020 [cited 2020 September]. Available from: https://www.unido.org/stories/latin-america-kickstarting-manufacturing-time-covid-19.
67. Argentina: The Pharma Letter; 2017. Available from: https://www.thepharmaletter.com/listing/argentina/pharmaceutical-argentina?tagid%5B%5D=7083&tagid%5B%5D=8305.
68. Nascimento J, Souza Jr E, Bonfante H, Pinto A. Evaluation of the hematological alterations after the therapeutic use of dipyrone sodium in healthy volunteers. Basic Clin Pharmacol Toxicol. 2014;115:70.
69. Latin America To Capitalise On Supply Chain Diversification But Risks Remain: Fitch Solutions; 2020 [cited 2020]. Available from: shorturl.at/mwGJN
70. WHO. "Immunization Agenda 2030" Towards a Vision and Strategy for Vaccines and Immunization for the Decade Ahead. WHO, 2019.
71. Giugliani R, Vairo FP, Riegel M, de Souza CFM, Schwartz IVD, Pena SDJ. Rare disease landscape in Brazil: report of a successful experience in inborn errors of metabolism. Orphanet Journal of Rare Diseases. 2016;11(1):76.
72. World Bank. What are Public Private Partnerships? 2018. Available from: https://ppp.worldbank.org/public-private-partnership/overview/what-are-public-private-partnerships.
73. Silva GdO, Elias FTS. Parcerias para o Desenvolvimento Produtivo: uma proposta de monitoramento estratégico. Saúde em Debate. 2019;43:217-33.
74. Vargas MA, Almeida ACS, Guimarães ALC. Parcerias para desenvolvimento produtivo (PDPS-MS): contexto atual, impactos no sistema de saúde e perspectivas para a política industrial e tecnológica na área de saúde. 2017.
75. Agarwal P, Kithulegoda N, Umpierre R, Pawlovich J, Pfeil JN, D'Avila OP, et al. Telemedicine in the driver's seat: new role for primary care access in Brazil and Canada: The Besrour Papers: a series on the state of family medicine in Canada and Brazil. Can Fam Physician. 2020;66(2):104-11.
76. Harzheim E, Gonçalves MR, Umpierre RN, da Silva Siqueira AC, Katz N, Agostinho MR, et al. Telehealth in Rio Grande do Sul, Brazil: Bridging the Gaps. Telemed J E Health. 2016;22(11):938-44.
77. Soriano Marcolino M, Minelli Figueira R, Pereira Afonso Dos Santos J, Silva Cardoso C, Luiz Ribeiro A, Alkmim MB. The Experience of a Sustainable Large Scale Brazilian Telehealth Network. Telemed J E Health. 2016;22(11):899-908.
78. de Melo M, Nunes MV, Resende RF, Figueiredo RR, Ruas SSM, Dos Santos AF, et al. Belo Horizonte Telehealth: Incorporation of Teleconsultations in a Health Primary Care System. Telemed J E Health. 2018;24(8):631-8.
79. Covid-19: Brazil's Telemedicine Act (Law #13,989/2020) and CFM's Digital Platform: Licks Attorney; 2020 [cited 2020]. Available from: https://www.lickslegal.com/news/covid-19-brazils-telemedicine-act-law-13-989-2020-and-cfms-digital-platform.
80. Mayrides M, Ruiz de Castilla EM, Szelepski S. A civil society view of rare disease public policy in six Latin American countries. Orphanet Journal of Rare Diseases. 2020;15(1):60.
81. Garcia-Ramirez J, Nikoloski Z, Mossialos E. Inequality in healthcare use among older people in Colombia. International Journal for Equity in Health. 2020;19(1):168.

82. Rhodes T, Sarang A. Drug treatment and the conditionality of HIV treatment access: a qualitative study in a Russian city. Addiction (Abingdon, England). 2012;107(10):1827-36.
83. Meyers T. In Colombia's Farthest Reaches, These Groups are Battling Covid-19 2020.
Available from: https://www.directrelief.org/2020/08/in-colombias-farthest-reaches-these-groups-are-battling-covid-19/.
84. Kelly SL, Shattock AJ, Kerr CC, Stuart RM, Papoyan A, Grigoryan T, et al. Optimizing HIV/AIDS resources in Armenia: Increasing ART investment and examining HIV programmes for seasonal migrant labourers. Journal of the International AIDS Society. 2016;19(1).
85. Velasquez P. Plan Nacional de Salud Rural: CONSULTORSALUD. Available from: https://consultorsalud.com/plan-nacional-de-salud-rural/.
86. World Bank. Indigenous peoples: World Bank; 2019. Available from: https://www.worldbank.org/en/topic/indigenouspeoples.
87. United Nations. The State of The Worlds Indigenous People: Indigenous People's Access to Health Services.
Available from: https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/03/The-State-of-The-Worlds-Indigenous-Peoples-WEB.pdf.
88. Birnbaum JK, Duggan C, Anderson BO, Etzioni R. Early detection and treatment strategies for breast cancer in low-income and upper middle-income countries: a modelling study. The Lancet Global Health. 2018;6(8):e885-e93.
89. Garzón Segura AM, Carcedo González RJ. Effectiveness of a Prevention Program for Gender-Based Intimate Partner Violence at a Colombian Primary School. Frontiers in psychology. 2019;10:3012.
90. World Bank. Colombia Obtains World Bank Support to Improve Healthcare Quality and Combat Breast Cancer 2020.
Available from: https://www.worldbank.org/en/news/press-release/2020/03/19/colombia-obtiene-apoyo-del-bm-para-mejorar-la-calidad-de-la-salud-y-luchar-contra-el-cancer-de-mama.
91. Mark Pearson MJaRE. Review of major Results Based Aid (RBA) and Results Based Financing (RBF) schemes DFID Human Development Resource Centre, 2010.
92. Paul E, Albert L, Bisala BN, Bodson O, Bonnet E, Bossyns P, et al. Performance-based financing in low-income and middle-income countries: isn't it time for a rethink? 2018;3(1):e000664.
93. Morgan L. Results-Based Financing for Health: Performance Incentives in Global Health: Potential and Pitfalls. World Bank.
94. Oxman AD, Fretheim A. Can paying for results help to achieve the Millennium Development Goals? Overview of the effectiveness of results-based financing. J Evid Based Med. 2009;2(2):70-83.
95. The Economist Intelligence Unit. Personalised Healthcare in Latin America: Universalising the Promise of Innovation. 2020.
96. Esposito L, Villaseñor A, Rodríguez EC, Millett C. The economic gradient of obesity in Mexico: Independent predictive roles of absolute and relative wealth by gender. Social Science & Medicine. 2020;250:112870.
97. Mexico: Institute for Health Metrics and Evaluation. Available from: http://www.healthdata.org/mexico?language=149.
98. González-Pérez GJ, Vega-López MG, Souza ERd, Pinto LW. Mortalidad por violencias y su impacto en la esperanza de vida: una comparación entre México y Brasil. Ciência & Saúde Coletiva. 2017;22:2797-809.
99. Martinez W, Galván J, Saavedra N, Berenzon S. Barriers to Integrating Mental Health Services in Community-Based Primary Care Settings in Mexico City: A Qualitative Analysis. Psychiatric services (Washington, DC). 2017;68(5):497-502.
100. Gonzalez D, Alvarez M. Depression in Mexico: Stigma and its Policy Implications: Yale Global Health Review; 2016 [cited 2020].
Available from: https://yaleglobalhealthreview.com/2016/12/21/depression-in-mexico-stigma-and-its-policy-implications/.
101. S Berenzon, N Saavedra, M Medina-Mora, V Aparicio, Galván J. Evaluación del sistema de salud mental en México: ¿hacia dónde encaminar la atención? Rev Panam Salud Pública. 2013;33(4):252-8.
102. Khan F. Why Depression Screenings Should Be Part of Routine Check-Ups. The Atlantic. 2016.
103. Jacqueline Alcalde-Rabanal, Victor Becerril-Montekio, Julio Montañez-Hernandez, Olga Espinosa-Henao, Rafael Lozano, Luis García-Bello, et al. PRIMARY HEALTH CARE SYSTEMS(PRIMASYS): Case study from Mexico. 2017.
104. Mexico—Prosperity Fund Better Health Programme (BHPMx): DAI; 2019 [cited 2020].
Available from: https://www.dai.com/our-work/projects/mexico-prosperity-fund-better-health-programme.
105. Mexico – Prosperity Fund Better Health Programme: Institute of Development Studies; 2019 [cited 2020].
Available from: https://www.ids.ac.uk/projects/fco-prosperity-mexico-dai-better-health-programme-mexico/.
106. Chris van Weel DT, José Ramirez, Andrew Bazemore, Robert Graham, Richard H. Glazier, Carlos Jaen, Bob Phillips, Jon Salsberg. SUPPORTING HEALTH REFORM IN MEXICO: EXPERIENCES AND SUGGESTIONS FROM AN INTERNATIONAL PRIMARY HEALTH CARE CONFERENCE. Annals of family medicine. 2016;14(3):279-80.
107. Susan Nicolai TB, Chris Hoy and Thomas Aedy. Projecting progress: The SDGs in Latin America and the Caribbean Overseas Development Institute, 2016.

Appendix 1: About this report

This is a report produced by The Economist Intelligence Unit (EIU) and commissioned by Sanofi Pasteur Ltd. Our approach to this research programme comprised of the following components:

In concert with interviews of leading researchers, clinicians, financiers, and other stakeholders in the field, we performed a structured literature search based around factors related to health investment in Latin America. We supplemented our search results with grey literature such as health ministry policy documents, reports from the public health community and data on epidemiological trends. We limited our search to studies relating to health investment within the past ten years (2010-20) to account for the changing nature of consumer and treatment costs and new policy guidelines at the national and international level.

To explore key gaps and questions, and add to the narrative richness of existing data, we conducted approximately 12 expert interviews with researchers, advocates, financiers and other stakeholders. We also conducted a half-day expert panel meeting in June 2020 with ten experts to discuss priorities for health investment in Latin America. The meeting was held under Chatham House rules, meaning that discussions can be reported but not attributed. Those experts who are cited in this report gave us their permission to do so.

Contributors

The findings and views expressed in this report are those of the EIU and do not necessarily reflect the views of expert panel members, interviewees, or project sponsors.

Our thanks go to many people for both their time and contributions to our work as members of our expert panel or interview participants (in alphabetical order):

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