

MEXICO COUNTRY PROFILE

# Sustainable Immunization Financing

October 2018

BREAKING NEW GROUND





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## ACRONYMS

AMIIF	Asociación Mexicana de Industrias de Investigación Farmacéutica (Mexican Association of Pharmaceutical Industries)	ISSSTE	Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (Social Service and Securities Institute of State Workers)
BCG	Bacille Calmette-Guerin	IPV	inactivated polio vaccine
CCNPNM	Comisión Coordinadora para la Negociación de Precios de Medicamentos y otros Insumos para la Salud (Coordinating Commission for Price Negotiations for Medications and other Health Supplies)	MR	measles rubella vaccine
CENAPRECE	Centro Nacional de Programas Preventivos y Control de Enfermedades (National Center for Preventative Programs and Disease Control)	MMR	measles mumps rubella vaccine
CeNSIA	Centro Nacional para la Salud de la Infancia y la Adolescencia (National Center for Infant and Adolescent Health)	NCD	non-communicable disease
CNPSS	Comisión Nacional de Protección Social en Salud (National Commission for Health and Social Protection)	NIP	national immunization program
COFVAL	Commission for the Future of Vaccines in Latin America	OECD	Organization for Economic Cooperation and Development
CONAVA	Consejo Nacional de Vacunación (National Vaccination Advisory Council)	OPV	oral polio vaccine
DTP/DTaP	diphtheria, tetanus, pertussis	PAHO	Pan-American Health Organization
GDP	gross domestic product	PCV	pneumococcal conjugate vaccine
HepA	hepatitis A	PPV	pneumococcal polysaccharide vaccine
HepB	hepatitis B	PEMEX	Petróleos Mexicanos
HPV	human papilloma virus	REPSS	Régimen Estatal de Protección Social en Salud (State Health and Social Protection Regimes)
IMSS	Instituto Mexicano del Seguro Social (Mexican Social Security Institute)	SEDENA	Secretaría de la Defensa Nacional
		SEMAR	Secretaría de Marina
		SSI	social security institution
		Td	tetanus diphtheria
		Tdap	tetanus diphtheria pertussis

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## Executive Summary

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### Context

- Mexico health care services are provided by more than six public insurance institutions – five social security institutions and Seguro Popular - offering unequal access, services, and prices to the Mexican population based on their employment status.
- This fragmented health system is under-performing, with challenges in terms of equity of access to quality health care and efficiency in spending.
- Despite the need for reform and modernization, the government of Mexico has not prioritized investing in health and spends very little on health compared to peer countries from the OECD.
- As a result, Mexico still shows poor health results, with high maternal mortality and the lowest life expectancy of all OECD countries.

### Immunization Financing and Performance

- Mexico has traditionally been considered a regional leader for immunization but is now facing challenges to expand the National Immunization Program (NIP). The current Mexican schedule offers 16 vaccines for 14 diseases, less than the Latin American average of 17.
- Immunization performance is also falling behind, with DTP3 immunization coverage below 90%. With a complex service delivery system, monitoring of the program is challenging, with no accurate information on coverage rates limiting the understanding of under-performance drivers.
- In addition, current global vaccine shortages from multiple manufacturers are negatively impacting Mexican access to the internal supply market.
- Mexico does not participate in the PAHO Revolving Fund. The country has multiple institutions procuring vaccines. This creates difficulties for Mexico in exhibiting strong negotiating power in the international vaccine market.
- Immunization financing is in transition, with the recent pass of the immunization law. The new immunization law prioritizes the NIP in the overall health budget by creating a single line item budget for immunization. The legal requirement for increasing funding to immunizations may create some space to revitalize the program and should provide protection from ad hoc cuts, as happened in 2015.

### Key Trends and Takeaways

- It will be important to leverage the uncertainty of the new administration's health reform platform to advocate for increased access to immunization.
  - There is an active civil society advocating for more investment in health and health system reforms which struggled to get its message across in the past. The coming change in Mexico's administration will transform the political landscape and offers both opportunities and risks for reforms.
  - Expanding the resourcing of financing beyond governmental revenue could provide the budget headroom required to expand the NIP.
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## INTRODUCTION

Mexico has made great strides in its health system to provide financial coverage to its population, with 88% now covered by public and private health insurance. However, within the public system, there are six separate insurance providers – five social security institutions and Seguro Popular. This has resulted in highly fragmented service delivery across the population and an inability to aggregate health information across providers. Each of the schemes differs in their benefits packages, exacerbating existing inequalities and producing varying health outcomes among the Mexican population, including immunization coverage rates.

Although Mexico was an early adopter of vaccines, no national introduction has been made since 2012. In addition, neither national nor subnational coverage rates are known due to the segmentation of information systems. Despite increased public spending, the overall health budget has fluctuated over recent years. This has resulted in insufficient resources to support new vaccine introductions into the National Immunization Program (NIP).

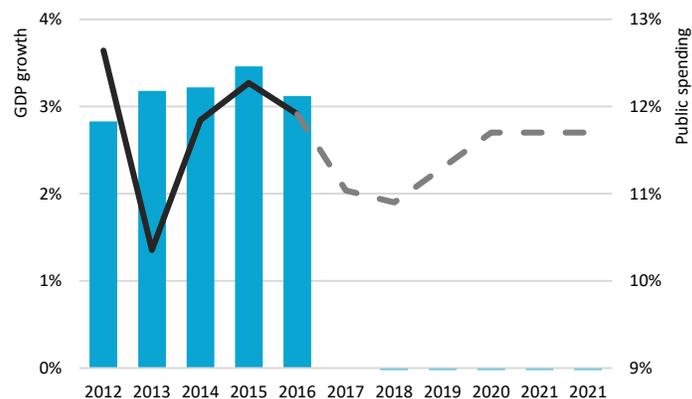
Understanding financing trends and how to leverage the political economy can bolster initiatives that grow and sustain immunization funding and therefore improve the immunization schedule and current coverage rates. Recent success by immunization advocates in passing the new immunization law may catalyze change and revitalize investment. The priority for the immunization program moving forward is to ensure strong support from the administration in the implementation of the law.

This brief is part of a series funded by MSD that analyzes how countries finance their immunization programs and the opportunities and challenges they face within health financing mechanisms. The brief contains valuable information for all stakeholders interested in promoting sustainable and robust immunization programs and illustrates a variety of ways to engage in realizing this outcome.

## BACKGROUND CONTEXT

**Mexico has maintained slow but steady economic growth over the past ten years, impacting the formal working sector.** Annual GDP growth of 2.4% (2012-2017) has resulted in the addition of over 3 million jobs in the formal sector and increased public spending (Figure 1).<sup>1</sup> However, high rates of informal employment (56.6% of the labor market) continue to undermine formal economic growth.<sup>2</sup> Informal workers operate outside of the taxable or contributory health

Figure 1. Public Spending in Mexico



Source: World Bank (2018).

<sup>1</sup> World Bank (2016).

<sup>2</sup> OECD (2016); INEGI (2018)

system, requiring government investment for coverage and limiting the tax revenue available to resource government programs.

**Despite steady economic growth, Mexico is underinvesting in the health sector.** Mexico's total healthcare expenditure is 6.5% of GDP, 1.5% below the average 8% in Latin America, and per capita spending is four times lower than the OECD average of US\$4,000.<sup>3</sup>

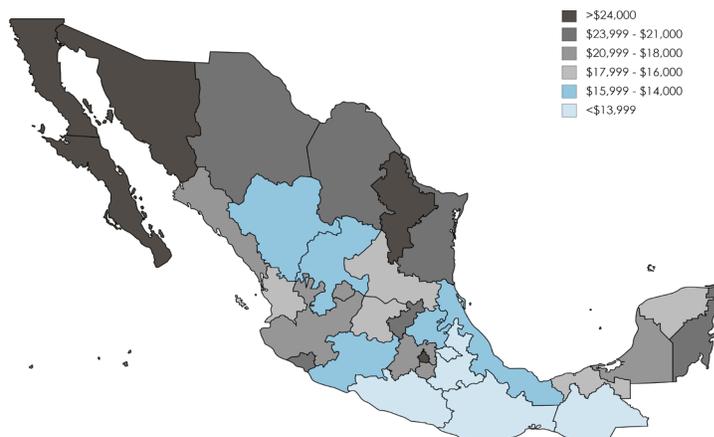
Government health expenditure has also remained low, staying at approximately 2.7% of GDP since 2003, compared to the OECD average of 6%. This underinvestment in public health is reflected in lower public health indicators. The maternal mortality ratio of 34.6 per 100,000 live births is far above the average ratio for OECD countries of 14.0 per 100,000. Furthermore, health investment needs are anticipated to grow due to the rise in chronic disease and an ageing population.

**Systemic corruption undermines gains made in public services, including healthcare.** In 2017, Mexico was ranked 135<sup>th</sup> out of 180 countries for corruption and transparency by Transparency International. Mexico also has one of the highest bribery rates of all countries, including within the healthcare. A staggering 51% of the population has paid a bribe to access basic public health services.<sup>4</sup>

**High levels of income inequality have left rural and indigenous Mexicans in poverty and reliant on the government for health coverage.** Income remains highly concentrated in the richer north and central states with per capita income four to six times higher than per capita income in poorer, southern states (Figure 2).

Inequality is also found in rural versus urban populations – while only one-quarter of the Mexican population lives in rural areas, more than 60% of the poor live there.<sup>5</sup> Additionally, 80.6% of Mexico's indigenous population lives in extreme poverty.<sup>6</sup>

Figure 2. GDP per State, Mexico



Source: UNDP (2016).

**Significant demographic and epidemiological shifts have left Mexico with a high burden of non-communicable diseases (NCDs) and an aging population. Elevated investment from the health sector is required to contain the impact of these shifts.** The population aged 65+ is projected to grow from 7.2% in 2015 to 21.5% of the population by 2050. The prevalence of communicable diseases has decreased, in part due to the success of the Mexican immunization program in eradicating neonatal tetanus, rubella, polio, and indigenous cases of measles. However, this is offset by the sharp rise in chronic disease. Six out of the top ten causes of death are now chronic diseases and chronic disease represents the leading cause of disability.<sup>7</sup> The prevalence of diabetes alone has increased from 8% in 2000 to 16% of

<sup>3</sup> IQVIA (2017).

<sup>4</sup> Transparency International (2018).

<sup>5</sup> World Bank (2005).

<sup>6</sup> United Nations (2015).

<sup>7</sup> Institute for Health Metrics and Evaluation (2018).

adults in 2017, more than double the OECD average of 7%.<sup>8</sup> This rise in NCDs threatens to consume the already limited healthcare budget.

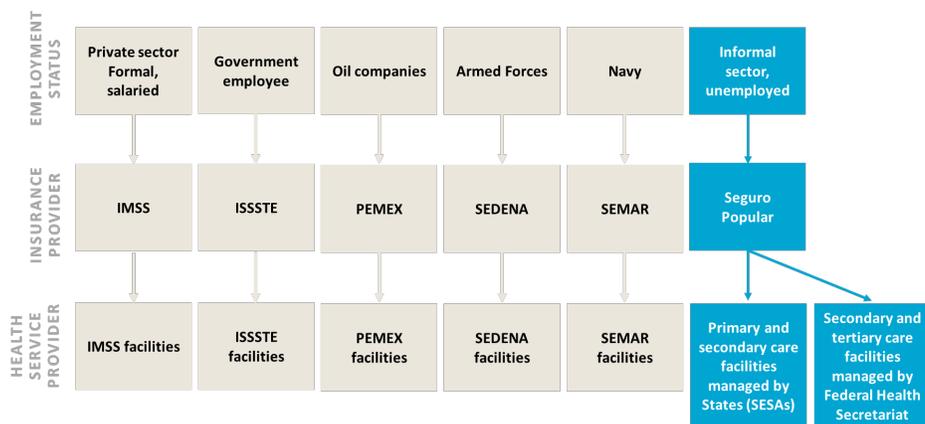
## THE MEXICAN HEALTH SYSTEM

### ACTORS

**Six health insurance mechanisms provide healthcare coverage to 88% of the population.**

Access to the Mexican health system is largely dictated by the employment status of citizens. There are six parallel health insurance schemes which cover 88% of the Mexican population: five social security institutions (SSIs) for those that have formal employers and one public health insurance mechanism (Seguro Popular) for the unemployed and those in the informal economy (Figure 3). The public health insurance mechanism, Seguro Popular, defines its own benefits package with oversight from the Ministry of Health, but currently collects very limited premiums from the informal sector beneficiaries that could afford to contribute. These insurance schemes have limited purchaser-provider split, meaning the entity that pays for the health services also runs the health facilities in their network. 12% of Mexicans are uninsured and not covered under any mechanism.

**Figure 3. Segmentation of Health Services Based on Employment**



### Five Social Security Institutions

Since 1943, salaried workers and their families have been entitled to healthcare through automatic enrolment into a social security institution. There are currently five SSIs, the two largest being the Mexican Social Security Institute (IMSS) for formal workers and the Institute for Social Services for State Workers (ISSSTE) for civil servants and their families. These two schemes cover 42 million and 6 million Mexicans, respectively. All five institutions cover approximately 43% of the population (Figure 4).<sup>9</sup> Each social security institution offers different benefits packages with variable premium contributions and prices for services. Each of the five SSIs also manages its own network of public providers. With limited exceptions (Box 1 on *convenios*), there is no portability of services across the various

<sup>8</sup> Meza (2015); OECD (2017).

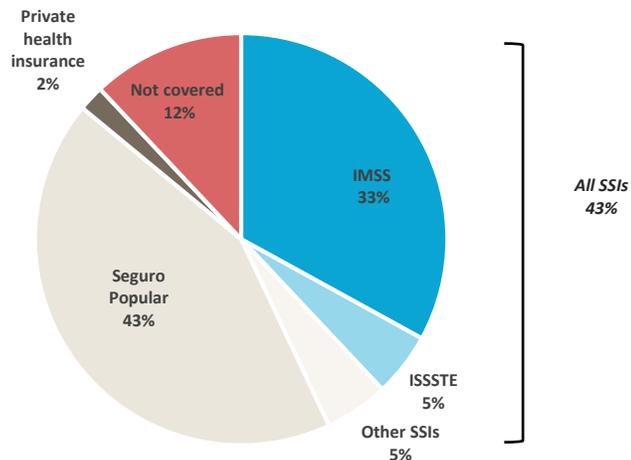
<sup>9</sup> World Bank (2018).

institutions, and members are forced to change their insurance scheme and their network of providers if their employment status changes.

**Health financing within SSIs is prioritized against other public benefits.** In

addition to health insurance, the social security institutions also play a broader role by providing pensions and basic living allowances. These additional offerings often are forced to compete for the same pool of funds as medical coverage. As the population ages, more demands on the funds themselves are expected to be a large and growing fiscal challenge for the SSIs.

**Figure 4. Percentage of Population Covered by Health Insurance**



Source: World Bank (2018).

**Seguro Popular de Salud**

**Seguro Popular de Salud (or Seguro Popular) is a social health insurance mechanism offered to the unemployed**

**and to those working in the informal sector who can voluntarily opt-in.** It offers free access to a comprehensive benefits package in a network of contracted public facilities and limited private facilities, regardless of the beneficiary’s ability to pay. As of 2017, Seguro Popular covers approximately 50% of the insured population (Box 2).

**Seguro Popular is spoken of as a national system but is actually a consortium of state-managed health insurance schemes known as Régimen Estatal de Protección Social en Salud (State Health and Social Protection Regimes - REPSS).** At the federal level, Comisión Nacional de Protección Social en Salud (National Commission of Social Protection in Health - CNPSS) provides much of the direction in terms of federal fund transfers to the states and the design of a standard benefits package for *Seguro Popular*.<sup>10</sup> The REPSS serve as the purchasers of *Seguro Popular* health services. The role of REPSS was meant to guarantee a separation between financial allocation and service provision to promote efficiency and allocate resources according to localized population health needs. In reality, this separation has not occurred because most REPSSs, despite being housed in the state governments, report into the federal Ministry of Health structure.

**Box 1. Accessing Services Across Fragmentation: *Convenios***

*Convenios* is a legal framework that allows members of Seguro Popular and the five social security institutions to use each other’s services, allowing sub-systems to become more unified. So far this has mainly taken the form of social security institutions purchasing services from Seguro Popular to alleviate capacity constraints. Current agreements have been used sparingly, primarily to purchase diagnostic tests. However, there are likely significant financial benefits for the integration of providers and further opportunities to expand the application of *convenios* should be explored, primarily in preventive services.

<sup>10</sup> CNPSS is a decentralized body of the Ministry of Health which coordinates the implementation of Seguro Popular. Its functions include: defining criteria for affiliation to the system, integrate the affiliate registry, managing financial resources, establishing drug & medicines policies, evaluating the performance of the policies, and coordinating the actions of entities that operate Seguro Popular in the states.

## Box 2: History of Seguro Popular

Prior to 2004, those without formal employment status were not included in the social security institutions, and therefore were not provided with health insurance. This population had three options for healthcare: forego healthcare, seek care from a public facility, or spend out-of-pocket on a private facility. Public clinics run by the Ministry of Health were significantly underfunded, particularly as compared to those run by SSIs, which exacerbated already existing inequities between the formal and informal sector. Private facilities varied considerably in price, quality and availability, and primarily served middle- and upper-class individuals with private health coverage. This system created huge inequities in spending on healthcare, with the poorest often spending more for worse outcomes. To help correct this, in 2004, the federal government passed the General Health Law and created a voluntary insurance system for those who do not qualify for SSI enrollment.

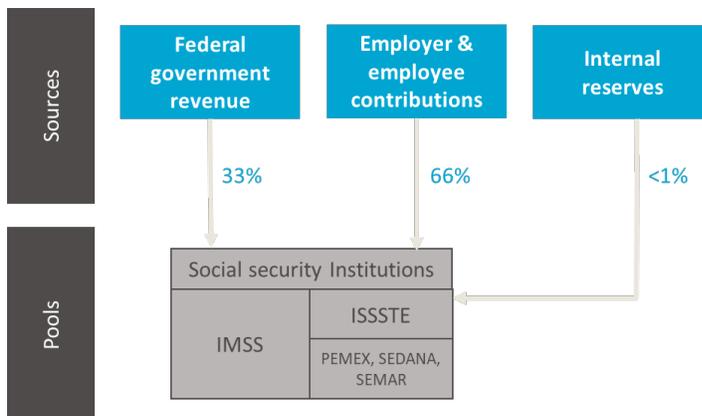
## Ministry of Health

**The Ministry of Health plays many roles, defining policies and priorities, providing operational guidance to states, as well as financing a number of actors within the system.**

The Ministry of Health is the government agency that defines all health policies and priorities for the country and oversees all public health programs in Mexico. While the Ministry is a federal agency, its operational structure is decentralized, with many functions delegated to the states themselves.<sup>11</sup> The Ministry of Health has departments at the state level that are responsible for the provision of services for *Seguro Popular*, yet the strategic decisions and benefits package for *Seguro Popular* are set at the federal level. The Ministry of Health also provides funding to the SSIs and states as well as oversees all health regulatory departments in Mexico.

## SOURCES OF FUNDS

Figure 5. Sources of Funds for SSIs



*Note: The social security box represents all five schemes approximately proportionally; IMSS being the largest of the schemes, followed by ISSSTE and smaller PEMEX, SEDANA and SEMAR.*

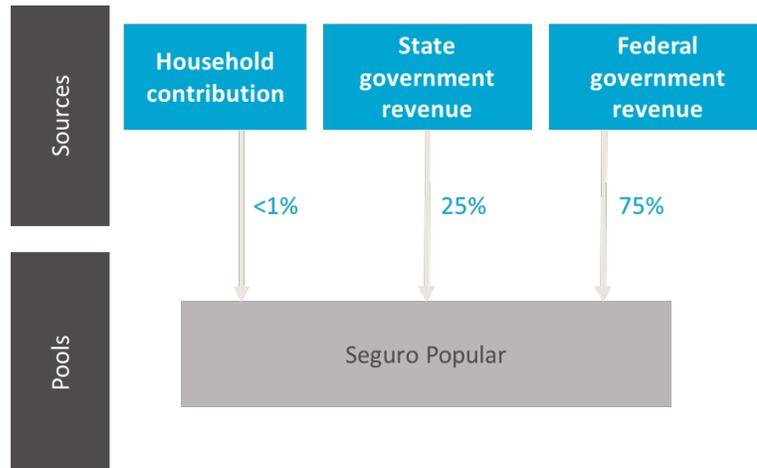
**Social security institutions differ in size, both in population coverage and funding, with high variability in premium rates and central government contributions.** SSIs are financed by contributions from employees and employers (66% of funding) and the central government (33%). Employer and employee premiums vary amongst the five schemes and are autonomously determined. The exact amount, source, and use of the central government funds remains unclear (Figure 5).

<sup>11</sup> OECD (2016).

**Funding for Seguro Popular is provided by central and state government budgets.**

Approximately 75% of the Seguro Popular budget comes from the federal government, 25% from the state governments and <1% from beneficiary contributions in the form of premiums. The federal government pays risk-adjusted premiums to the states for the population covered by Seguro Popular according to the number of enrolled beneficiaries. While Seguro Popular is entitled to collect premiums from beneficiaries meeting certain income thresholds, it has failed to do so in a significant way. The inability of a family to cover premium payments does not preclude them from joining Seguro Popular, and difficulties in effectively identifying those who can afford to contribute continue to plague the system (Figure 6).

Figure 6. Source of funds for Seguro Popular



### SYSTEMS CHALLENGES

The Mexican public health system contains numerous technical and structural challenges leading to high inefficiency. Below we have identified a number of key systems issues.

#### Detrimental Fragmentation

**Eligibility for social security schemes based on employment status has skewed risk pools.**

Both the SSIs and Seguro Popular have difficulty optimally spreading risk across their patient populations. For example, since Seguro Popular beneficiaries tend to be poorer than the beneficiaries of SSIs, there is often more risk in insuring them.<sup>12</sup> In addition, IMSS’s beneficiaries are significantly older than the overall population, which results in an overall increase in claims and reimbursements per beneficiary.<sup>13</sup> The growing elderly population, early retirement eligibility, and guaranteed pensions in IMSS are resulting in the redirection of resources from healthcare to pensions.<sup>14</sup> Reforms were introduced following a 2010 study that indicated that if not for drastic changes, the fund would be insolvent by 2014 (Box 3).

#### Box 3: Reforms in IMSS

Despite being the largest insurer in Latin America, IMSS has not been immune to the demographic and epidemiologic shift occurring in Mexico. With NCD rates growing rapidly, a 2010 study estimated that IMSS would be insolvent by the end of 2014. In response to this financial pressure, IMSS introduced a series of technological reforms to simplify the way in which it collected payroll taxes. It also introduced a comprehensive procurement strategy, resulting in the largest consolidated purchase of medicines and medical supplies in the history of the Mexican public health sector.<sup>1</sup> Savings in 2014 alone were estimated to be 4000 million MX pesos.

<sup>12</sup> OECD (2016).

<sup>13</sup> Manatt Jones Global Strategies (2015).

<sup>14</sup> Ibid.

**Figure 7. Coverage Overlaps Amongst the Six Public Health Schemes**



**Fragmentation has led to coverage overlaps and contributed to high administrative costs.** Significant coverage duplication exists throughout the insurance schemes, as many Mexicans are enrolled through their employer as well as their spouse's (Figure 7). With 12% of Seguro Popular beneficiaries estimated to have coverage from multiple sources in 2014, this issue presents a costly inefficiency.<sup>15</sup> The World Bank estimates that eradicating duplications in coverage alone could save Seguro Popular an estimated MXN 16.3 billion (0.1% of GDP). Additionally, as health coverage is dictated by employment status, when enrollees change jobs, they often have to change insurance schemes, creating high amounts of administrative burden on each scheme. These are two contributing factors to the inefficiency leading Mexico to devote 9% of its total current expenditures in the health sector to

administrative costs, the largest share of any OECD country (which averages less than 3%).<sup>16</sup>

### Lack of Accountability

**The absence of a separation between the provision and purchasing functions of SSIs reduces the opportunities to influence providers performance.** When there is no separation between the purchaser and provider, it is difficult for purchasers to implement incentives for efficiency and quality in providers.<sup>17</sup> For example, practitioners under contract by IMSS working at an IMSS facility have little incentive to perform cost-effective care when IMSS will be paying for the services regardless. While Seguro Popular has attempted to rectify this by creating the REPSS, its success has been limited as the majority of its funding is still allocated by the federal government to providers regardless of needs or performance.

**State health budgets are not determined by forecasted needs, but by a combination of Seguro Popular state membership and historical federal budget transfers.** States health budgets are funded through three main sources: federal transfers from the Ministry of Health, transfers from the CNPSS and resources from local government revenue. The amounts transferred are not linked to state performance on health specific outcomes, with the exception of a small portion of the transfers from CNPSS called *cuota solidaria*. Expenditure is discretionary to local government priorities, with limited oversight from central institutions on spending efficiency.<sup>18</sup> This has resulted in several cases of corruption reported in the past, with transfers for the health sector mismanaged. For example, as states receive federal funds in proportion to the number of Seguro Popular affiliates enrolled, large numbers of fraudulent enrollees are claimed by states to increase the amount of discretionary funds received.<sup>19</sup>

**Due to the fragmented information systems amongst schemes, accurate and timely information on health outcomes remains elusive, inhibiting accountability.** The multiple

<sup>15</sup> World Bank (2016).

<sup>16</sup> Ibid.

<sup>17</sup> OECD (2016).

<sup>18</sup> Mukherjee (2016).

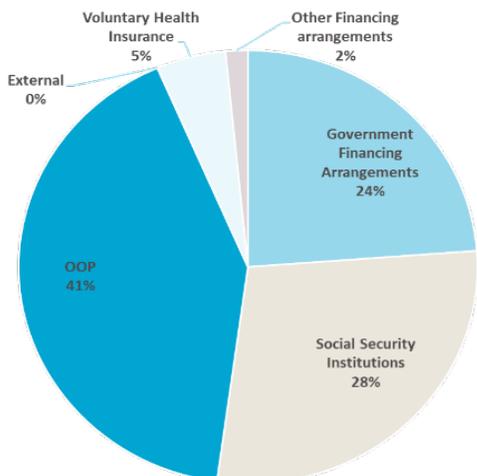
<sup>19</sup> US Department of Justice (2014).

information systems which are run by each individual health insurance scheme are not compatible with each other. For instance, no national patient register or census exists, and patient data systems across the SSIs and Seguro Popular do not communicate.<sup>20</sup> There is also no information system that monitors quality or performance indicators against which to measure health outcomes.<sup>21</sup> Moreover, there are no mechanisms in place to allow patient numbers, service volumes, costs or outcomes to be analyzed for specific patient groups, leaving a significant gap in optimizing purchasing and services to improve population health outcomes.<sup>22</sup>

### Pervasive Inequality

**Insurance coverage has drastically increased since the introduction of *Seguro Popular*, but coverage gaps remain.** Seguro Popular covers approximately 50% of those insured while SSIs cover the other 50%. Overall, as of September 2017, *Seguro Popular* coverage was 53.2 million people, representing a large growth from the initial 5 million enrollees in 2004. However, *Seguro Popular* is a voluntary system, leaving individuals who are most likely to seek health coverage to be those more in need – i.e. the less healthy or aging populations. A sizeable portion of the population not covered by the contributory social security schemes did not enroll in *Seguro Popular* until their health status worsened and required care.<sup>23</sup> According to estimates made by the World Bank, 12% of the population is not covered by either SSIs or *Seguro Popular*, a decrease from 18% in 2012.

**Figure 8. Total Health Expenditure by Source**



Source: World Bank (2018).

**Despite high population coverage by insurance mechanisms, out of pocket expenditures remain the main source of funding for healthcare.** High out of pocket spending continues to plague Mexican citizens, despite the elimination of user fees for covered services under Seguro Popular and SSIs (Figure 8). This suggests that the population is still seeking care outside of their designated networks. Likely reasons for this could be patient dissatisfaction with quality of care within their assigned insurance scheme’s network which leads patients to spend money to seek care outside of it, access to facilities, or patients needing/wanting services outside of their benefits package.

**The variation between benefits packages for each purchaser increases inequality for both essential and advanced care.** The benefits package under Seguro Popular is currently far more limited than that of the social security institutions – Seguro Popular covers 1,603 services while IMSS, for example, covers over 8,000.<sup>24</sup> The difference in coverage is most pronounced for secondary and tertiary care services, which are more expensive to treat.

<sup>20</sup> OECD (2016).

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> World Bank (2018).

<sup>24</sup> CIEP (2018).

## THE NATIONAL IMMUNIZATION PROGRAM IN MEXICO

### PROGRAM SNAPSHOT

**Previously a pioneer, Mexico is falling behind in vaccine adoptions into the National Immunization Program (NIP).** From 1995-2010, the NIP nearly doubled from 6 to 14 vaccines. Mexico was the first country globally to introduce a rotavirus vaccine in 2007. Since 2012, no new vaccine has been adopted by the NIP, and today the national program includes 16 vaccines that cover 14 diseases (Figure 9). In addition, two vaccines, hepatitis A and varicella, are only financed and delivered at a subnational level due to federal budgetary restrictions (Figure 10).

**All Mexicans are entitled to routine vaccines in the NIP in the public health center of their choice, free of charge.** Currently, vaccination strategies focus on the timely completion of free vaccinations in all public health centers countrywide. The NIP promotes these vaccinations during three annual National Health Weeks, which include intensive community vaccination activities and other health promotion efforts.<sup>25</sup> Citizens can access vaccines during these national campaigns, community-based outreach, or at any public health center at any time, regardless of their insurance scheme. However, in the past few years, difficulties in central procurement and delivery to the states have left many health centers with shortages, hindering access to routine vaccines.

**Immunization coverage rates vary by health insurance scheme and state, due to varying degrees of access.** As of 2015, the national vaccination rate for DTP3 in Mexico was 87% - the only country in the OECD with a vaccination rate below 90%. In the past, coverage rates differed between health insurance schemes. 2014 data from the Ministry of Health showed that though over 80% of children completed their full vaccination schedules, results were significantly higher for the social security institutions than they were for Seguro Popular beneficiaries.<sup>26</sup> A stated reason for differential coverage rates is that there is a shortage of vaccines for Seguro Popular members.<sup>27</sup> In addition, immunization coverage rates vary by state – northern states tend to have higher coverage rates than those in the south, reflecting the income inequalities that exist between the regions (Figure 11).

**Figure 10. Number of Vaccines on the National Schedule**



Source: WHO (2018).

**Figure 9. Vaccines in the NIP**

BCG
DTP + Hib + IPV
DTP
HepB
Influenza
MMR
MR
OPV
PCV
Rotavirus
HPV
Td
HepB
Influenza
PPV
Tdap

Pediatric Vaccine  
 Adolescent Vaccine  
 Lifespan Vaccine  
 Source: WHO (2018).

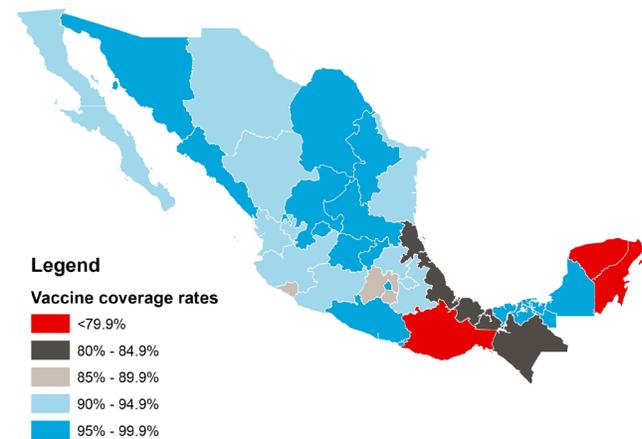
<sup>25</sup> Richardson et al (2014).

<sup>26</sup> Secretaría de Salud. (2014).

<sup>27</sup> Urquieta-Salomon (2015).

**Due to Mexico's underperformance on program monitoring and reporting, coverage rates are artificial.** Coverage rates have not been calculated in Mexico since 2014, and public health officials seem dubious about their accuracy. The lack of accurate coverage data stems from the absence of an immunization information system. Immunization records are managed by the patient. Currently, coverage rates are calculated based on the number of doses distributed. Supply forecasting for procurement then is based on cohort estimation, instead of vaccine consumption. The Carlos Slim Foundation is hoping to address this issue with the future rollout of a national Electronic Immunization Record system. One million children are currently enrolled in public government-run clinics and ISSSTE with a goal of 2.5 million by the end of 2018 (total targeted cohort of approximately 30 million).

**Figure 11. 2014 Rates of Fully Immunized Children at 1 Year of Age**



*Note: Schedule includes BCG, 3<sup>rd</sup> dose of Rotavirus, 4<sup>th</sup> dose of DTP+Hib+IPV, 3<sup>rd</sup> dose of PCV, and MR*  
 Source: Secretaria de Salud (2014).

**Completion of immunization regimes is undermined by vaccine supply issues.** A significant number of those that do not complete the immunization schedule are individuals that drop-out between vaccine doses. When vaccine availability is an issue, early doses within regimens are prioritized. This leaves those still requiring follow-up doses to miss recommended vaccinations. Vaccine supply issues stem from manufacturer delays to supply, potentially due to the lack of negotiating power that Mexico has when competing in a global market due to its fragmented procurement practices.<sup>28</sup> Public systems challenges also contribute to supply issues, though a weak supply chain information system prevents a clear understanding of these challenges. Once vaccines are delivered to the states, there is a large gap in information on the supply chain management down to the clinic level. Therefore, it is unclear where the break is within the system: either supply issues stem from inaccurate estimation during the procurement process, or the vaccines are not being delivered to the clinics. Informal reports cite an example where an entire warehouse was found full of out-of-date polio vaccines that were never delivered to the clinics.

**In a new wave of support for immunization, Mexico recently passed an immunization law, in part to address overall program bottlenecks.** The main objective of the immunization law is to guarantee vaccination as a universal right within Mexico, legally obligating the government to provide access for its citizens to the vaccines on the NIP schedule. Prior to the passing of the law, there was no legal obligation to provide, fund, or introduce vaccines.<sup>29</sup> The executive form of the immunization law was passed in 2017, which provides the legal framework for the law. The norms, which are a more detailed and binding version of the law, are in the process of review and final edits. There is pressure from the current Minister of Health to pass them before the new administration takes over on December 1, 2018. The table below outlines the immunization system before 2017 and how the Immunization law addresses limitations.

<sup>28</sup> Casani (2017).

<sup>29</sup> Johns Hopkins School of Public Health (2013).

**Table 1. Comparison of Legislation Components for the New Immunization Law**

<b>Previous to passing the new Immunization Law</b>	<b>New Immunization Law</b>
Only 10 of 4,200+ articles mentioned vaccines, with no specific title or chapter	Entire law dedicated to the prioritization and promotion of immunizations in Mexico
Included obligation to be vaccinated, but no right to vaccination was guaranteed	<p>Right to vaccination is universal and free</p> <p>Federal and local governments are obligated to carry out campaigns</p> <p>Mexican government will supply and distribute vaccines for free, and will guarantee the availability of all necessary supplies for immunization actions</p>
No obligation to allocate a specific budget line, nor earmarked resources in federal budget	Mexican Congress must allocate sufficient budget to cover NIP funding needs each fiscal year
CONAVA had been created by an Executive Decree, but was not legally protected	<p>CONAVA's responsibilities are included in the law, protecting it from administration-bias</p> <p>Reforms for CONAVA included to make it more influential in the NIP decision-making process and obligate it to take a scientific, evidence-based approach</p> <p>Pharmaceutical industry will be allowed to attend relevant plenary sessions as a voice, but without the ability to vote.</p>
No nation-wide electronic information system to measure coverage systematically	Introduction of new performance indicators based on a new Electronic Immunization Record
Lengthy and complicated regulatory procedures with no fast-tracking in case of emergencies	Accelerated procedures for registration, import, and release of vaccines when considered a national security risk
Unclear information on vaccines included in the NIP	<p>List of vaccines included in the National Immunization Program will be listed as an attachment to the bill, creating less administrative burden when adding new vaccines to the NIP</p> <p>Ensures that the best available vaccines are offered, not just the cheapest</p>

#### **Box 4: The History of Mexico's Immunization Law**

In 2012, the Commission for the Future of Vaccines in Latin America (COFVAL) was convened to make recommendations for strengthening evidence-based policy-making and reducing regional inequalities in immunizations. COFVAL found that 27 out of 44 countries in the region have specific legislation on immunization, 96% make vaccinations mandatory, 63% declare vaccinations as a public good, and 44% of countries guarantee a budget line for immunizations. Mexico used the "Seven Solutions for Seven Challenges" findings from COFVAL as a roadmap for revitalizing the immunization program in the country, with a significant effort to bolster legislation around immunizations.

Source: Tapia et al (2013).

## FINANCING FOR IMMUNIZATION

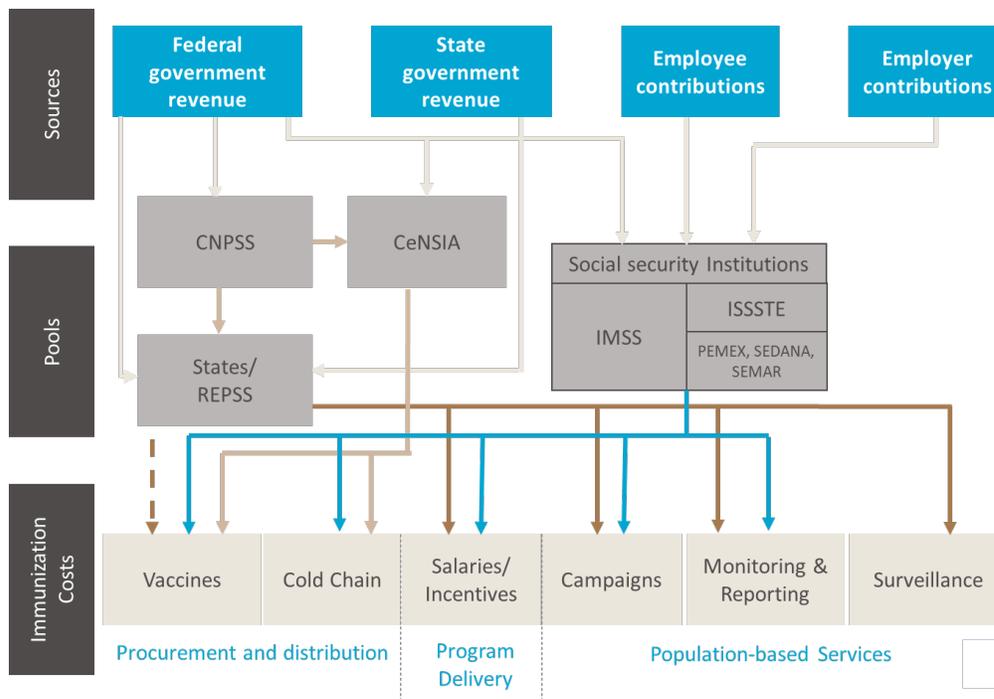
### Sources and Pools of Immunization Financing

**Sources of funding for the delivery of the immunization program is fragmented across the various pools.** The first source of revenue for the immunization program comes from the CeNSIA budget. CeNSIA is funded by both a line item budget from the Ministry of Health (58% of the initial 2015 CeNSIA budget) as well as transfers from the CNPSS (42% of the initial budget). CeNSIA primarily finances the procurement and distribution of the NIP vaccines to public health facilities - essentially the facilities serving Seguro Popular members (Figure 12).

States are the second major financier of the immunization program in public facilities. States are responsible for financing program delivery and population-based activities for the public sector, including the three National Health Week campaigns and outreach activities for immunization. Some states also used their own budget to purchase non-NIP vaccines and/or purchase additional NIP vaccines in case of shortages.

The third source of financing for immunizations are the various SSI budgets. SSI budgets are sourced from employee and employer contributions, as well as block grants from the federal government. The social security institutions finance all the costs of delivering the immunization program for their own health facilities, including vaccine procurement and distribution, staff salaries, infrastructure, training, and monitoring & reporting. However, there is no disaggregation of SSI budgets by health areas, including immunization. This disaggregation makes it difficult to better understand the exact SSI expenditures on immunizations and federal contribution to the SSI-funded immunization costs.

**Figure 12. Who Pays for Immunization?**



**There is no consolidated budget for immunizations, limiting the understanding of the current immunization budget needs and gaps.** As shown in Figure 12, expenditure on the immunization program consists of a number of costs along a spectrum. This spectrum includes vaccine procurement, distribution, program delivery, and population-based services. Almost every cost is financed by multiple actors with procurement, distribution, and program delivery financed by CeNSIA, states, and SSI institutions. While the CeNSIA budget and expenditures are made public, neither SSIs nor states are required to report specific budget or expenditures for immunizations. This leads to a partial understanding of the overall immunization program's financing needs.

### Immunization Financing Challenges

**The CeNSIA budget must fit under Ministry of Health's pre-determined ceilings with limited space to negotiate increases for specific immunization outcomes.** CeNSIA funding for the NIP is negotiated on a yearly basis within the budget of the Ministry of Health. Early in the annual budget process, facilitated by the Ministry of Finance, all federal ministries submit budget requests. At present, there is no formal mechanism for the Ministry of Health to solicit input from the various regulatory and implementation bodies involved in health to determine needed budget allocations. The new immunization law designates the immunization program as a priority within the health budget and now mandates a budget line-item for immunization that is set to increase annually to support the improvement of the program. This will improve the transparency of budget allocations to immunization and help provide the information needed to advocate for increased funding.

**Vaccine procurement forecasting is inaccurate due to fragmented sources of beneficiary information.** Each of the six vaccine procurers in Mexico has its own information system that independently tracks immunization outputs. Despite an intent to consolidate the procurement of vaccines across schemes under one body, the forecasting of needed quantities is based on uncoordinated information systems. This challenge results in duplicative, or potentially gaps, in beneficiary counting across schemes and therefore inaccurate forecasts for vaccine procurement.

**The diversity and number of purchasers is a burden for effective procurement and distribution of vaccines.** When there is only one manufacturer for a vaccine, the Coordinating Commission for Negotiating the Price of Medicines and Other Health Inputs (CCNPNM) negotiates a single price to be procured by all individual health insurers. However, when a vaccine has a competitive tendering process, SSIs pool procurement and negotiate as a unit while CeNSIA negotiates separately. These separate negotiations result in different price points between the different health insurance schemes. They also result in multiple contracts with manufacturers, increasing administrative costs and inefficiencies for the country and

#### Box 5: Devolving Vaccine Procurement in 2018

In 2018, due to uncertainty around access to federal funds due to elections, CeNSIA procurement of vaccines has been devolved to states. Funds for procurement are now included in the central fund transfers to states, earmarked for immunization procurement. This change requires significant administrative and financial investments, both from the state as well as the manufacturers. Though the reasoning behind the switch needs to be triangulated, the federal government feared budget approval would be too late for the provision of vaccines for the National Health Weeks. The procurement responsibility for public health facilities is expected to shift back to CeNSIA in 2019 after the administration change.

manufacturers. This process was further complicated in 2018 when the procurement of some vaccines was devolved to the states (Box 5).

**Delays in the federal budgeting cycle negatively impact the purchasing of vaccines by CeNSIA.** CeNSIA is not able to go through the tendering process before the national budget is approved, which is frequently delayed. In addition, transfers from CNPSS to CeNSIA follow a separate cycle, creating tension for CeNSIA to procure vaccines on time when those transfers also occur late in the year. At this point, the supply of vaccines is often already sold to other markets resulting in manufacturers recusing themselves from the tendering process and limiting competition. IMSS has historically taken an advance from their internal funds to purchase vaccines so as not to have this timing issue. Mexican immunization advocates are looking at ways to move to multi-year contracting as a way to overcome those issues.

**No resource tracking mechanism exists in Mexico to fully understand expenditures on the immunization program.** At the national level, there is no overarching tracking of SSI expenditures on immunizations. At the subnational level, REPSS have high-level spending rules determined by Seguro Popular; however, the tracking system for state-level spending is extremely weak and is fraught with cases of fraud and corruption.<sup>30</sup> The lack of resource tracking results in an overall limited sense of ownership over, or responsibility towards, the delivery of the National Immunization Program.

### Prioritization of New Vaccines

**The prioritization of new vaccine introductions is led by the national immunization technical advisory group, CONAVA.** CONAVA was established in 1991 from a presidential decree as a national advisory council for vaccinations. Its role is to make recommendations to CeNSIA on vaccine introductions, the national immunization schedule, and target population cohorts. Members include national and state health leaders in the government, academics, the National Health Institute, and civil society. It takes a cross-functional approach to vaccine recommendations, incorporating medical, pricing, and public policy data for decision-making.

**Table 2. Key Actors in New Vaccine Prioritization Process**

Governmental Organization	Role
<b>CeNSIA</b> (Centro Nacional para la Salud de la Infancia y la Adolescencia)	Sets priorities and sectoral coordination for immunization program overall
<b>CONAVA</b> (Consejo Nacional de Vacunación)	Responsible for public policy in vaccination. Conducts costing studies and determines burden of disease, target population, type of intervention, vaccine schedule and mechanisms for financial support.
<b>CCNPMM</b> (Coordinating Commission for Negotiating the Price of Medicines and Other Health Inputs)	Negotiates pricing of vaccines with manufacturers for single-sourced vaccines. Includes all social security institutions and CeNSIA.
<b>Ministry of Finance</b>	Approves budget for the purchase and distribution of vaccines

<sup>30</sup> The main components of resources transfers include: maximum of 40% of transferred resources to finance payroll; a maximum of 30% to pay for drugs for the Seguro Popular benefits package and diseases covered in the catastrophic health expenditure fund; a minimum of 20% to pay for promotion, prevention and public health activities; and a maximum of 6% for operation and administration. [Mukherjee (2016).]

**CONAVA has in the past lacked the mandate and capacity to prioritize vaccines based on evidence.** In the decision-making process for new vaccine introduction, CONAVA recommends that the epidemiology, cost-effectiveness, and delivery strategy of the vaccine should be assessed in order to make a recommendation to CeNSIA.<sup>31</sup> Despite this major role in prioritization, in the past CONAVA has had limited capacity to generate the necessary data in order to make evidence-based recommendations. In order to support the production of evidence for vaccines, expert advisory working groups are often created. Should a recommendation be made, CeNSIA can approve it and negotiate the budget with the Ministry of Finance for introduction of the vaccine if they determine that there is sufficient burden of disease at a national level, the vaccine passed the technical or clinical evaluation, and it is deemed financially viable. As an example, despite the high levels of endemicity of hepatitis A and varicella diseases throughout the country, the lack of available epidemiological data and a cost-effectiveness analysis prevents CONAVA and the Ministry of Health from convincing the Ministry of Finance to allocate resources for national scale up.

**CeNSIA's hesitancy to adopt new vaccines has forced states and SSIs to provide and pay for vaccines outside of the NIP.** Independent of CeNSIA, state governments, as well as social

#### **Box 6: Rotavirus Introduction: A Phased introduction**

The introduction of the rotavirus vaccine has been used as a success story for a subnational vaccine roll-out brought to scale within the NIP. In 2004, an outbreak of rotavirus occurred in several states, which prompted CeNSIA to respond to demand for the vaccine in these areas. Two years later, the Ministry of Health introduced the vaccine in the poorest municipalities where the disease burden was the greatest, accounting for less than 5% of the Mexican birth cohort. In addition, the vaccine was also made available for children who were insured through IMSS. By 2007, Mexico had expanded its use nationwide to include all Mexican children, incorporating the vaccine into the NIP. A rigorous cost-effectiveness analysis undertaken by CONAVA justified the national introduction of the vaccine financially.

Source: Johns Hopkins Bloomberg School of Public Health (2013).

security institutions, can purchase vaccines directly from manufacturers, using their own budgets. Additional NIP vaccines can be purchased if the state estimates the in-kind donation allotment from CeNSIA will not be adequate. Non-NIP vaccines can also be purchased if it is relevant for their risk profile due to disease burden, cost-effectiveness, or demand from the population at the local level. It is also common practice for SSIs to procure non-NIP vaccines for their beneficiaries. Particular states and SSIs procure hepA and varicella vaccines directly for manufacturers for at-risk populations.<sup>32</sup>

**The new immunization law includes provisions to strengthen and institutionalize evidence-based decision-making for vaccine introduction.** Language in the law focuses on the role of CONAVA, mandating it to meet regularly, increasing its influence over vaccine introductions, and requiring a scientific approach to recommendations with the utilization of evidence to

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<sup>31</sup>The following evidence should also be considered prior to vaccine introduction: type of intervention, vaccination schedule, efficacy, legal and regulatory aspects, financial support, overall costs, and burden of disease. [Source: Johns Hopkins Bloomberg School of Public Health (2013).]

<sup>32</sup> Hepatitis A is delivered only to children attending childcare units; Varicella vaccine is delivered to risk groups, and children in nurseries and childcare centers

support decision-making. Despite this push to strengthen CONAVA in the new law, implementation of this facet has not yet been prioritized. CONAVA met in October, 2018 for the first time since the passing of the immunization law in 2016, despite a 90-day requirement to do so.

## KEY TRENDS AND TAKEAWAYS FOR IMMUNIZATION FINANCING

**1. Mexico's investment in the health sector has not kept pace with rising health costs and changing health needs.** Mexico's healthcare expenditure is only 6.5% of GDP, below the average 8% for Latin America. The health budget in place is also not stable, varying in size depending on the performance of the overall economy. Rising rates of NCDs coupled with an aging population will continue to put stress on the healthcare sector. The new administration, a left-leaning government after years of conservative rule, is changing the rhetoric around social services and prioritizing the government's role in providing universal health coverage to its citizens. Actors within the Mexican system recognize the need for reform and are promoting more investment and increased coherency across the different insurance mechanisms to increase equality. However, the implementation plan for this health platform under the new administration is still vague and uncertain.

### Box 7: AMLO Platform on Healthcare

While access to healthcare is a priority in the platform of the new president, Andrés Manuel López Obrador (AMLO), the administration is still defining a way forward, both priorities and solutions. The time to engage in the conversation is now.

1. Strengthen the public healthcare to guarantee access to care for all Mexicans
2. Increase the healthcare budget by at least 1% of Mexican GDP
3. Eliminate existing fragmentation in the public system
4. Transfer current healthcare model toward one based on primary care
5. Provide medications and services in public hospitals and clinics free of charge

Source: Arizpe (2018).

**2. The provision and purchasing of healthcare in Mexico are fragmented on many fronts leading to a number of inefficiencies.** The health system relies on multiple social security institutions and Seguro Popular, with little coordination between them. The consequences of this fragmentation include coverage overlaps and a high administrative burden. Mexico spends 9% of its health budget on administrative costs, 6 percentage points higher than the average OECD country. Fragmentation also exists within the immunization program in the pricing, procurement, and delivery of vaccines between SSIs and CeNSIA. The recent experience of decentralizing the procurement of vaccines to states only served to exacerbate this issue. The new administration has promised to eliminate the fragmentation within the health system, although there does not seem to be a clear vision in how this integration would be implemented. The recent introduction of *convenios* is one attempt to promote equal access to key services across populations. Mexico has also shown interest in utilizing financial innovations within the public sector (Table 3). Innovative financing mechanisms could help to improve accountability, alignment, and cohesion within the health system.

**Table 3. Innovative Financing Experience in Mexico**

Innovation	Use in Mexico
<b>Low-interest multilateral loans</b>	Third Basic Health Care Project supported by the World Bank in Mexico has been established to improve the quality of healthcare services in rural and marginal urban communities by focusing on cost-effective health interventions in hospital care and emergency medical services, and providing training for HIV/AIDS prevention and control – US\$581M, supported by IBRD/IDA <sup>33</sup>
<b>Conditional cash transfer schemes</b>	<i>Oportunidades/Prospera</i> : Since 2012, this federally funded health service and conditional cash transfer program targets the country’s poorest families for incentivized benefits tied to school attendance, vaccinations, or trips to the doctor. Partners include the World Bank and the Government of Mexico.
<b>Performance-based contract</b>	In 2014, Instiglio advised IMSS on the design of a performance-based contract to scale up high-quality diabetes management services. This included the structuring of the results metrics, the payment function, the verification system, and advice on the design of the impact evaluation.  <i>Alcace in Chiapas</i> : A traditional RBF structure with local government of Chiapas paying the service provider directly. The purpose of the project was to ensure secondary education for students. Services included a combination of personal goal-setting exercises and scholarships to cover the costs associated with schooling.
<b>Multilateral Investment Fund</b>	Its mandate is to serve as the IDB Group’s innovation laboratory to promote development through the private sector by identifying, supporting, testing, new solutions for development challenges and seeking to create opportunities for poor and vulnerable populations in Latin America and the Caribbean. To play this role, the MIF involves and inspires the private sector and collaborates with the public sector when necessary. 152 approved operations in total with US\$159M approved by MIF
<b>Public-Private Partnerships law</b>	In 2012, the law on public-private partnerships was issued in order to regulate and provide legal and economic certainty to public-private partnerships.
<b>Social Impact Bond</b>	The only social impact bond that has been attempted fell through due to waning long-term political support. “El Futuro en Mis Manos” was a social impact bond pilot in the Guadalajara Metropolitan Area, with impact investors and MIF as the investors, the government of Jalisco and the Global Innovation Fund as outcome payers, and multiple service providers within the state implementing. The purpose was to use training to empower female heads of households to increase their purchasing power. While there was initially strong political support from the state and national government (including the Office of the President), this political support did not endure the lengthy start-up process. In the end, the pilot failed. There were multiple lessons learned from this experience, primarily concerning political support, state dependency on federal funds, the level of risk and impact investment capital, and demand-side challenges.

**3. The Mexican health system does not currently collect or utilize data for budgeting and planning for immunizations in a systematic way, making it nearly impossible to understand the resourcing needs for program delivery.** Immunization coverage rates have not been calculated since 2015, stemming from the absence of an immunization

<sup>33</sup> World Bank (2009).

information system. Procurement forecasting is then done based on cohort estimations, rather than vaccine consumption, impacting vaccine supply availability in health centers. The absence of data also impacts vaccine introductions as CONAVA lacks the proper evidence to advocate for introduction at national level. The new immunization law should reinforce the use of evidence for CONAVA decision-making, as well as the introduction of new performance indicators based on a new Electronic Immunization Record, funded by the Carlos Slim Foundation.

- 4. The new immunization law provides a path forward for immunization financing, but implementation needs to be supported.** The law will mandate the obligation of the government to vaccinate every person within Mexico and will provide the budgetary protection in order to do so. With the presidential administrative turnover underway, the implementation of the law continues to be ironed out. A strong civil society presence, and the support of other immunization stakeholders, was imperative during the legislative process and will continue to be needed as the implementation guidelines are written up and executed.

**Table 4. Mexican Stakeholders for the Prioritization of Health and Immunization**

<b>Immunization Advocates</b>	<b>Role</b>
<b>Asociación Mexicana de Vacunología</b>	<p>Non-profit scientific organization with the purpose of disseminating advances in the field of immunizations to health workers as well as the population.</p> <p>Created the Vaccine Alliance to promote the immunization program within the new administration.</p>
<b>Carlos Slim Foundation</b>	<p>Non-profit foundation that works in a variety of sectors, including health. The foundation engages with local and national governments to improve the delivery of healthcare, primarily through training, technology, and impact evaluations.</p> <p>Leading the development of the immunization e-card and information system. The leadership team, including Dr. Betancourt and Dr. Tapia, are major players in the health and immunization space, and both have past Ministry of Health experience.</p>
<b>SMSP (Sociedad Mexicana de Salud Publica)</b>	<p>Autonomous and independent organization, recognized by the Mexican government, to strengthen the role of public policy in decision-making for public health.</p> <p>Lead in the creation of the new Immunization law and is a thought leader for public health in the overall government.</p>
<b>Health Advocates</b>	
<b>AMIIF (Asociación Mexicana de Industrias de Investigación Farmacéutica)</b>	<p>Pharmaceutical association representing more than forty pharmaceutical and biotech national and international companies within Mexico. Overall objective is to contribute to prioritizing and strengthening health of Mexicans through pharmaceutical innovation.</p> <p>AMIIF is working with the presidential candidates to prioritize the health agenda in the medium- to long-term, through creating efficiencies rather than generating more funding.</p>
<b>FUNSALUD (Fundación Mexicana para la Salud)</b>	<p>Independent, non-profit civil society association made up of Mexican businesses from different economic sectors, linked to health at the national level. The overall objective of the foundation is to contribute to the improvement of health in Mexico, through channeling philanthropic actions as well as social investment for the benefit of health.</p>

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