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PROJECT PERFORMANCE ASSESSMENT REPORT

WHAT WORKS

MEXICO

Support to the Social Protection System in Health Project

Report No. 124870
JUNE 19, 2018

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MEXICO

SUPPORT TO THE SOCIAL PROTECTION SYSTEM IN HEALTH PROJECT (IBRD LOAN NO.7860)

June 19, 2018

Human Development and Economic Management
Independent Evaluation Group

Currency Equivalents (annual averages)

Currency Unit = Mexican Peso (Mex$)

2010	$1.00	MEX$ 12.63
2011	$1.00	MEX$ 12.42
2012	$1.00	MEX$ 13.16
2013	$1.00	MEX$ 12.77
2014	$1.00	MEX$ 13.29

Abbreviations

CCT	conditional cash-transfer
CNPSS	Comisión Nacional de Protección Social en Salud (National Commission for the Social Protection in Health)
CPS	country partnership strategy
CSS	contributory social security
DPF	development policy financing
ENSANUT	Encuesta Nacional de Salud y Nutrición (National Survey of Health and Nutrition)
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion and Results Report
IEG	Independent Evaluation Group
IPF	investment project financing
IPP	Indigenous Peoples Plan
M&E	monitoring and evaluation
PAD	project appraisal document
PDO	project development objective
PforR	Program-for-Results
PPAR	Project Performance Assessment Report
PSM	propensity score matching
SAP	Sistema de Administración del Padrón (Administrative System of Affiliation)
SINOS	Sistema Nominal en Salud (Personalized Health Registry)
SPS	Seguro Popular de Salud (Popular Health Insurance)
UHC	universal health coverage

All dollar amounts are U.S. dollars unless otherwise indicated.

Fiscal Year

Government: January 1 – December 31

Director-General, Independent Evaluation	Ms. Caroline Heider
Director, Human Development and Economic Management	Mr. Auguste Tano Kouame
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Contents

This report was prepared by Antonio Giuffrida (Task Team Leader), Cristiano Buizza, and Anna Amato (Consultants) who assessed the project in February 2018. The report was peer reviewed by Maria De Las Mercedes Vellez and panel reviewed by Soniya Carvalho. Aline Dukuze provided administrative support.

Figures

Tables

Appendixes

Principal Ratings

	ICR*	ICR Review*	PPAR
Outcome	Satisfactory	Moderately satisfactory	Moderately satisfactory
Risk to Development Outcome	Negligible to low	Negligible to low	Moderate
Bank performance	Moderately satisfactory	Moderately satisfactory	Moderately satisfactory
Borrower performance	Moderately satisfactory	Moderately satisfactory	Satisfactory

* The Implementation Completion and Results Report (ICR) is a self-evaluation by the responsible World Bank Global Practice. The ICR Review is an intermediate IEG product that seeks to independently validate the findings of the ICR.

Key Staff Responsible

Project	Team Leader	Sector Manager/ Global Practice Manager	Country Director
Appraisal	Christoph Kurowski	Keith E. Hansen	Gloria M. Grandolini
Completion	Claudia Macias	Joana Godinho	Gloria M. Grandolini

IEG Mission: Improving World Bank Group development results through excellence in independent evaluation.

About this Report

The Independent Evaluation Group (IEG) assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the World Bank's self-evaluation process and to verify that the World Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEG annually assesses 20–25 percent of the World Bank's lending operations through fieldwork. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which executive directors or World Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEG staff examine project files and other documents, visit the borrowing country to discuss the operation with the government and other in-country stakeholders, interview World Bank staff and other donor agency staff both at headquarters and in local offices as appropriate, and apply other evaluative methods as needed.

Each PPAR is subject to technical peer review, internal IEG panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible World Bank country management unit. The PPAR is also sent to the borrower for review. IEG incorporates both World Bank and borrower comments as appropriate, and the borrowers' comments are attached to the document that is sent to the World Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the IEG Rating System for Public Sector Evaluations

IEG's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEG evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEG website: http://ieg.worldbankgroup.org).

Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current World Bank country and sectoral assistance strategies and corporate goals (expressed in poverty reduction strategy papers, country assistance strategies, sector strategy papers, and operational policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared with alternatives. The efficiency dimension is not applied to development policy operations, which provide general budget support. *Possible ratings for outcome:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for risk to development outcome:* high, significant, moderate, negligible to low, and not evaluable.

Bank Performance: The extent to which services provided by the World Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan or credit closing, toward the achievement of development outcomes). The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank performance:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for borrower performance:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

Preface

This is the Project Performance Assessment Report for the Mexico Social Protection in Health Project (P116226). The project, approved by the World Bank's Board of Executive Directors on March 25, 2010, provided an International Bank for Reconstruction and Development (IBRD) loan of $1,250 million (IBRD-78600), which represents the second largest World Bank operation by commitments of the entire World Bank human development cluster. The Government of Mexico provided counterpart financing of $26 billion equivalent. The loan became effective on December 29, 2010, and closed after three years on December 31, 2013.

This report serves an accountability purpose by evaluating the extent to which the operation achieved its intended outcomes, but also a learning purpose. The Independent Evaluation Group (IEG) Review identified the project for evaluation to verify the project's ratings following IEG's revision of the outcome rating from **satisfactory** in the Implementation Completion and Results Report (ICR) to **moderately satisfactory** in the ICR Review. In addition, this report aims to identify lessons for similar health insurance schemes and relevant World Bank–supported operations.

This report was prepared by Antonio Giuffrida, Lead Evaluation Officer, Cristiano Buizza, consultant, and Anna Amato, consultant. The assessment is based on a fact-finding mission (see next paragraph), a review of all relevant World Bank documentation (that is, the project appraisal document, the ICR report and the IEG Review, World Bank Group country strategies, and relevant sector strategies), a semistructured review of the literature, and the econometric analysis of the 2016 National Survey of Health and Nutrition (see appendix C).

A mission to Mexico was undertaken by Antonio Giuffrida and Cristiano Buizza from February 26 to March 2, 2018, during which interviews were conducted with federal government officials and technical staff, beneficiaries, health service providers, relevant development partners and other involved persons. The team also visited the Secretary of Health and other relevant offices in the city of Cuernavaca, the capital and state of Morelos, chosen in consultation with the federal government and the World Bank's team. The beneficiary perspective was enhanced by focus group interviews conducted with beneficiaries of the Seguro Popular de Salud (see appendix D). Interviews were also conducted in Washington, DC with additional relevant World Bank staff. IEG gratefully acknowledges all those who made time for interviews and provided documents and information, and expresses its gratitude to the World Bank's office in Mexico City for the logistical and administrative support provided to the mission.

Following standard IEG procedures, a copy of the draft Project Performance Assessment Report (PPAR) was sent to relevant government officials and organizations for their review and feedback No comments were received.

Summary

In Mexico, the contributory social security institutions, which cover those working in the formal sector of the economy and their families (about 48 percent to the population), provide health coverage through their respective network of health care providers. Those not covered by social security attend government-sponsored facilities through the Ministry of Health or pay out of pocket for medical care at private hospitals or doctors' offices.

In 2001, the Government of Mexico launched Seguro Popular de Salud (SPS), a public health insurance scheme, totally subsidized for the poor, that eliminated user fees for a comprehensive package of primary and secondary health care services and high-cost specialized interventions. SPS is centrally managed by the National Commission for Social Protection in Health (the Commission), and the 32 federal entities (31 states and the Federal District) are responsible for providing a package of health services through their network of clinics and hospitals.

Over time, SPS coverage expanded to reach 31.1 million poor Mexicans by the year 2009, which represented about 64 percent of those without contributory social security. However, future expansion was jeopardized by the severe economic crisis that hit Mexico in that year. Thus, the government requested World Bank financing to provide the necessary fiscal space to sustain future expansion of the program.

Objectives and Design

The objectives of the Mexico Social Protection in Health Project are to (i) initially preserve and later expand Seguro Popular coverage among people without contributory social security; and (ii) strengthen the capacity of the Commission for Social Protection in Health and federal entities to effectively administer the entitlements of the Seguro Popular.

The relevance of the objectives is rated **substantial** at approval, project closure, and at the time of the IEG mission for this assessment. The project followed the principles of flexibility and fast response of the World Bank's Mexico Country Partnership Strategy for fiscal years (FY)08–13. Project objectives continued to be relevant to the country partnership strategy for FY14–19's engagement areas of (i) increasing social prosperity, and (ii) strengthening public finances and government efficiency. In addition, the project's objectives were well aligned with the National Development Plan and the Health Sector Program for 2007–12, which aimed at reducing impoverishment for health spending through the expansion of SPS, although the first objective could probably have been defined in terms of health outcomes (that is, financial protection and health services use and quality). The objective of preserving and later expanding SPS was highly relevant to the context of severe economic crisis that Mexico was experiencing when the project was approved.

The relevance of the design is rated **substantial.** The results chain between the project's cofinancing of the federal social contributions to SPS premiums and the objective of maintaining and expanding SPS coverage was direct, subject to limited risks and well

monitored by the project's indicators. However, the linkages between the project's activities and the objective of strengthening the capacity of the Commission and federal entities administering SPS were more complex, and project indicators were not able to monitor all relevant aspects.

Achievement of Project Objectives

The achievement of the first objective is rated **substantial.** Project financing allowed the substantial expansion of SPS coverage among those not covered by contributory social security. SPS coverage expanded on average by more than 6 million each year during the period of project implementation. By the end of 2013, SPS covered 55.6 million people. Afterward, the trend flattened and, after reaching a peak in 2014 with 57.3 million people covered, SPS coverage decreased to 53.2 million by September 2017, as a result of efforts to reduce duplications in affiliation. The available estimates confirm that SPS coverage among those not covered by contributory social security improved substantially, even if the ratio is sensitive to the data used.

The achievement of the second objective is rated **modest.** The improvement in the capacity of the Commission and of the federal entities administering SPS was modest. The assessment identified satisfactory improvement in the coverage of health risk screening and in the implementation of supervision activities performed by the Commission and the federal entities. However, the improvement in the diffusion of information on SPS entitlement among the beneficiary population was unsatisfactory.

The efficiency rating of the project is **modest** considering the benefits deriving from the reduction in out-of-pocket health spending among those covered by SPS, the improvement in efficiency observed over time in the provision of health services covered by SPS, and the limited impact that SPS is having on health outcomes such as child mortality.

Overall, the project's outcome is rated **moderately satisfactory.**

Project Risks and Bank and Borrower Performance

The overall rating of risk to development outcome is **moderate.** SPS enjoys broad political support at federal and state levels, and a generally positive view among the population. SPS has been supported by the three presidential administrations that alternated in Mexico since its inception in 2001, under which it experienced sustained expansion.

Overall Bank performance is rated **moderately satisfactory.** Quality at entry is rated **moderately satisfactory.** Even though the World Bank's influence on the design of component 1 was marginal as SPS was fully developed by the Mexican government, the World Bank's financial support added value, as it ensured the fiscal space required to keep the planned pace of expansion during the severe fiscal crisis faced by the Mexican government. However, the monitoring and evaluation arrangements presented some weaknesses in monitoring achievements toward objective 2 and in measuring SPS coverage. Quality of supervision is rated **satisfactory.** The World Bank provided

valuable convening services and technical advice during project implementation that supported the Mexican government's decision making in several technical areas.

Finally, overall borrower performance is rated **satisfactory.** Government performance is rated **satisfactory** because of high government ownership and commitment to the project. However, the performance of the Commission, the agency responsible for the project's implementation, is rated only **moderately satisfactory** because of the delays in the delivery of both technical and audit reports, which revealed weaknesses in the management of the project.

Lessons

- **In times of economic crisis, if the country has a well-designed health program in place, the World Bank's financial support can be effective in helping the government to sustain and expand access to health services, protecting the poor from the adverse impact of the crisis.** Mexico was suffering from a severe economic crisis in the year 2009, when the World Bank project was approved. The fiscal consequences of the economic crisis were putting at risk the expansion of SPS, as planned in the National Development Plan and national health sector strategy. Therefore, in a situation of limited fiscal space, World Bank financing created the fiscal space necessary to sustain and expand a national program for protecting the poor.
- **Investment project financing can be an efficient alternative to development policy financing if there is government ownership of the national program and a strong monitoring and evaluation system to monitor results.** Both development policy financing and investment project financing can provide large-scale disbursements to governments, the former through budget support linked to "prior actions" and "triggers"; the latter through cofinancing large national programs like SPS. However, investment project financing, unlike development policy financing, can provide technical assistance as well as multiyear support and ensure that financial resources are used for a specific sectoral use. These are potentially positive features, as they can help sustain long-term reform efforts in a specific sector or program. Such a program effectively takes on key features of the World Bank's new Program-for-Results lending instrument that links disbursements to defined results.
- **It may not be possible to achieve universal health coverage in fragmented health systems without an individual mandate for health insurance coverage**. The main reason is the presence of adverse selection. Thus, under a voluntary system, the individuals who are most likely to seek health coverage are those who are older and who are less healthy than average. The experience of SPS confirmed that Mexico fell short of achieving universal coverage, as a sizable portion of the population not covered by the contributory social security did not enroll in the heavily subsidized SPS until their health status worsened.
- **In decentralized health systems, to achieve the desired changes at the local level the use of incentives (compatibility) should be preferred to the use of regulations and aligned with the institutional capabilities of the agents**. According to the decision-space model (based on a principal-agent model) the central government (principal) can use diverse tools to shape behavior of the state

(agent), such as monitoring, reporting, inspections, performance reviews, contracts, matching grants, transfers, and so on. In Mexico starting in 2014, the government introduced upper limits to SPS expenditure owing to concerns the states were not utilizing the SPS resources in the best way. However, the measure did not achieve the expected improvements as it reduced the possibility of improving allocative efficiency at the state level.

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1. Background and Context

The Health Care System in Mexico

1. The Mexican health care system has three components: the social security, the public, and the private components. The contributory social security (CSS) systems provide coverage to those working in the formal sector of the economy and their families. The most important schemes are the Mexican Institute of Social Security, which covers about 42 million people, and the Institute of Social Security and Services for Government Workers, which insures about 6 million people. Altogether the various CSS schemes cover about 48 percent of the population. CSS schemes are funded by payroll contributions from the federal government, employers, employees, and a subsidy from the state. Each social security scheme has its own network of health care providers, and beneficiaries typically receive services only from their respective network of providers.

2. Prior to 2001, poor households in the informal sector had three options in the event of sickness: foregoing health care, seeking care from a public clinic or other low-cost informal provider, or spending a large part of their income on private out-of-pocket health care spending. Those not covered by social security, such as participants in the informal economy, had to attend government-sponsored facilities through the Ministry of Health or pay out of pocket for medical care at private hospitals or doctors' offices. These private facilities varied considerably in price, quality, and availability. A modern network of private health services, located mainly in urban areas, served middle- and upper-class individuals without social insurance or private health coverage (about 2 percent of the population is covered by private health insurance schemes) or those who could pay out of pocket for their health care. In contrast, lower-priced private health services of variable quality, including informal providers such as midwives and traditional healers, were available to poor urban and rural families.

3. In 2001, the Government of Mexico launched the Popular Health Insurance (Seguro Popular de Salud; SPS) to provide financial protection to all residents without CSS coverage. SPS eliminated user fees for services covered, and in principle was supposed to collect family contributions among those with the ability to pay, although in practice almost nobody pays. SPS was rolled out gradually during 2001–05. Five states (Aguascalientes, Campeche, Colima, Jalisco, and Tabasco) were included in the initial pilot phase of the program in 2001.[1] An additional 15 states were integrated in the program in 2002; four more states were incorporated in 2003 and the remaining states were incorporated in 2004 and 2005. By the end of 2005, all 32 of Mexico's states had been incorporated.

4. SPS was the key mechanism to foster universal health coverage (UHC) in Mexico. SPS covers a package of mainly primary and secondary health care services (Catálogo Universal de Servicios Esenciales de Salud), which progressively expanded from 78 medical interventions related to prevention, general and specialized medicine, emergencies, surgeries, and hospitalization in 2002 to 294 by 2008. SPS also includes a package of 65 high-cost specialized interventions financed through the Fund for Protection against Catastrophic Expenditures (Fondo de Protección contra Gastos

Catastróficos) associated with eight groups of diseases: neonatal intensive care; pediatric, inherited, and surgical disorders; metabolic diseases; cervical, ovarian, breast, testicular, colorectal, and prostate cancer; treatments for human immunodeficiency virus infection; acute myocardial infarction; type C chronic hepatitis; and transplants. More recently, the SPS added the 21st Century Medical Insurance (Seguro Médico Siglo XXI), which provides complimentary health coverage for every type of disease for children under five years of age.

5. The explicit SPS benefit package was adjusted in response to Mexico's advanced demographic and epidemiological transition. Life expectancy in Mexico has improved significantly in recent decades, increasing from 72.4 years in 1995 to 76.92 years in 2015. The improved health condition was the result of significant reductions in maternal and child mortality, and the improved control of communicable diseases. However, in the same period, the burden of care for noncommunicable diseases has increased significantly owing to population aging and increased exposure to unhealthy diets, physical inactivity, tobacco use, and alcohol abuse. As a result, diabetes and cardiovascular diseases are today the main causes of death and disability, adjusted for life-years, in Mexico.

6. SPS is managed in a decentralized fashion, where the National Commission for the Social Protection in Health (Comisión Nacional de Protección Social en Salud, CNPSS) is the federal actor and the federal entities[2] are responsible to provide the package of health services. The CNPSS reports to the Minister of Health. Health services included in the SPS package are provided through the network of SPS-sponsored health facilities that are managed by the state health secretariats, which certifies them as providing a minimum level of quality of care (the accreditation is based on their infrastructure, equipment, health personnel, and the range of services provided). SPS resources are transferred from the federal level to the states based on an insurance premium equalized across states, which includes (i) the federal social contribution of $65 per individual affiliated with SPS (equivalent to 3.92 percent of the annual minimum wage), and (ii) the federal solidarity contribution of $98 per affiliated individual (equivalent to 1.5 times the federal social contribution). In addition, states provide 0.5 times the federal social contribution. Of this total amount, 89 percent ($174 per affiliated individual) is transferred to the SPS. Individuals in the two lower-income quintiles are exempt from contribution payments. Families classified in the upper three income quintiles can sign up for SPS benefits by paying an income-dependent contribution; however, collection efficiency is weak.

7. Based on the initial positive evaluation, the Government of Mexico decided to expand SPS coverage with the objective of reaching universal coverage by the end of 2012. From its inception the SPS has been subject to periodic financial, process, and results evaluations, both for accountability purposes and to identify opportunities for improvement. Some of these evaluations have been coordinated by government entities such as the General Directorate of Performance Evaluation (Dirección General de Evaluación del Desempeño) of the Ministry of Health and the National Council for the Evaluation of Social Development (Consejo Nacional de Evaluación de la Política de Desarrollo Social), whereas others have been carried out by independent academics. Based on the initial positive assessments (see González-Pier, Barraza-Lloréns, et al.

2006; Frenk, González-Pier, Gómez-Dantés et al. 2006) the administration of President Felipe Calderon decided to expand SPS and to include among the objectives of the National Development Plan (Plan Nacional de Desarrollo) for 2007–12 the objective of reaching UHC by the end of the administration (Presidencia de la Republica 2007).

8. World Bank financial support to SPS was part of a broad package provided to the Government of Mexico, which was facing a severe fiscal crisis. By the end of 2009, SPS was covering about 31.1 million people, which represented about 64 percent of those without CSS. However, the financial crisis in Mexico in 2009 jeopardized the fiscal space necessary to further the expansion. Economic activity declined by 6.5 percent (compared with 2008), unemployment reached 5.3 percent (up from 4.3 percent in 2008), and the informal sector grew to 28.3 percent (up from 27.0 percent in 2008). The government was facing fiscal pressures resulting from a projected shortfall in fiscal revenue in 2010 of 2.9 percent of gross domestic product and requested financial aid from the World Bank and other international organizations.

9. The rules governing SPS evolved over time. For instance, the SPS unit of affiliation was modified from the family to the individual to reduce opportunities to game the system. Initially, SPS covered the entire family unit, which included the head of household, spouse, children, and parents. This gave states an incentive to game the system by subdividing the family at registration to increase the number of units, and in turn, the number of premiums. In 2009, the General Health Law was modified to use the individual as the basis of calculation of the transfers. This change eliminated the possibility of gaming and released resources that contributed to the rise in affiliation observed in the following year.

10. Finally, there was complementarity between SPS and the Mexican conditional cash-transfer (CCT) program, Progresa / Oportunidades / Prospera. The CCT program, created as a response to the economic crisis in 1994–95, was based on a simple idea: give money to poor mothers to encourage them to send their children to school and to the health center. The cash transfers are intended to alleviate poverty in the short-term. The incentivized use of health and education services is an investment in children's human capital to break the intergenerational transmission of poverty. Over time the CCT program changed its name—it was first called Progresa between 1997 and 2002, then Oportunidades until 2014, and now Prospera—and it also expanded its scope to promote beneficiaries' access to higher education and formal employment. Besides sharing their target beneficiary populations, both SPS and the CCT programs share the objective of enhancing the effective use of health services. Therefore, the CNPSS and the management of Oportunidades have been working together to improve the connectivity between the management information systems of the two programs and to articulate their affiliation strategies at the level of the state.

2. Objectives, Design, and Relevance

Project Development Objectives

11. The project development objective (PDO) was "to (i) initially preserve and later expand the Popular Health Insurance (SPS or Seguro Popular) coverage of people

without CSS; and (ii) strengthen the capacity of the Commission (for social protection in health) and State Health Systems to effectively administer the entitlements of the Popular Health Insurance." The objective is stated identically in the legal agreement and in the project appraisal document (PAD), and remained unchanged throughout the life of the project.

Relevance of Objectives

12. The relevance of the objectives is rated **substantial.**[3] The objectives were relevant at approval, project closure, and at the time of the IEG mission for this assessment.

13. Project objectives followed the principles of flexibility and fast response of the country partnership strategy (CPS) with Mexico, and results of both the project and CPS were aligned. The World Bank Group's CPS for Mexico for FY08–13 (Report 42846, March 4, 2008) identified, among its principles of engagement, flexibility, fast response, and selectivity driven by the key long-term development challenges of Mexico. The operation adhered to these principles, and responded rapidly to the new financing and development needs arising in Mexico during a severe economic crisis. The operation was also closely aligned with two of the strategic development challenges identified in the CPS: (i) promoting social inclusion and reducing poverty, and (ii) strengthening institutions. The project objective of expanding health insurance among those lacking CSS, which are mostly poor families, contributed to the former. The second PDO of the World Bank–financed project was expected to contribute to the CPS objective of strengthening institutions, as it supported the organizational and institutional arrangements and, ultimately, the performance of the SPS.

14. Project objectives continued to be relevant to the World Bank's FY14–19 CPS engagement areas: (i) increase social prosperity and (ii) strengthen public finances and government efficiency. The operation contributed to the CPS's objective of promoting an integrated social protection system under the theme "increase social prosperity" by improving the functioning of the health system. The incentive and accountability framework between the federal government and the federal entities that are SPS fund-holders and providers was also strengthened. Under the theme of "strengthening public finances and government efficiency," the operation also contributed to the objective of enhancing service delivery through better public sector management.

15. In principle, it could have been possible to define the project objective in terms of health outcomes (that is, financial protection, and health services use and quality). SPS coverage is not an end by itself, but a financial mechanism to foster UHC by reducing catastrophic and impoverishing health spending (that is, improved financial protection), and improving the use and quality of cost-effective health services. Therefore, the inclusion of higher-level objectives would have allowed the monitoring and evaluation (M&E) of the entire results chain up to long-term outcomes. However, it should be recognized that such assessment is not straightforward considering the difficulties in identifying the correct counterfactual, as explained in the section on contribution to long-term outcome. Additionally, the evidence shown in the next section shows that SPS coverage is generally positively correlated with health care use and therefore UHC.

16. Project objectives are aligned with national development and sector priorities, and World Bank support became instrumental to their achievement. Objective 7, under priority 3 (equality of opportunities) of the National Development Plan for 2007–12 was to avoid impoverishment of the population for health reasons through the expansion of the SPS (Mexico, Presidencia de la Republica 2007). The objective of the plan was, in turn, perfectly aligned with Mexico's national health sector strategy (Programa Sectorial de Salud) for 2007–12, which shared the same objective of reducing impoverishment for health spending through SPS expansion (Mexico, Secretaría de Salud 2007).

17. The project's objective of preserving and later expanding SPS was highly relevant to the context of severe economic crisis that Mexico was experiencing when the project was approved. Even if the 2007–12 administration had committed to a fast-paced expansion of the SPS, the 2009 economic crisis put at risk the fiscal space required to implement it. Therefore, the financial support provided by the World Bank through the project became instrumental in keeping up the planned pace of expansion.

Project Design

18. The project presented a simple results chain connecting the project's components to its objectives and contributing to the higher-level outcome of UHC. The operation committed $1,250 million of IBRD financing, which represents the largest commitment made by the World Bank to the health sector through an investment project financing (IPF). Most IBRD resources (99 percent) were directed to preserve and later expand SPS coverage among those without social security coverage (PDO1) through component 1. The remaining $32.88 million were allocated to component 2 to strengthen the capacity of the Commission and state health systems to effectively administer the SPS (PDO2). Table 1 shows the planned versus actual expenditures by component. As already indicated, the project contributed to UHC in Mexico, the goal that all Mexicans have access to quality health services when needed, with financial protection.

Table 1. World Bank Project Financing by Component

	Appraisal Estimate			Actual		
Components	**IBRD *($, millions)***	**Percent of total IBRD**	**Government *($, millions)***	**IBRD *($, millions)***	**Percent of total IBRD**	**Government *($, millions)***
Component 1	1,239	99.12	25,586	1,246.9	99.75	24,796
Component 2	7.9	0.63	25	0	0	26
Contingencies	0	0	0	0	0	0
Front-end fee	3.1	0.25	0	3.1	0.25	0
Total	1,250	100	25,611	1,250	100	24,822

Sources: World Bank 2010, 2014b.
Note: IBRD = International Bank for Reconstruction and Development.

19. Component 1: Popular Health Insurance Coverage of People without CSS supports the first project objective. Total cost at appraisal: $26,825 million (IBRD: $1,239 million). Actual: $26,043 million (IBRD $1,246.875 million). This component

was designed to provide fast-disbursing resources to ensure financing for the individuals already covered by SPS, and to cover an additional 10 million individuals. Specifically, the component financed 70 percent of the federal social contributions to the SPS premium (see Article 77 of the General Health Law). The World Bank loan was to be fully disbursed directly to the Federal Expenditure Budget against the number of individuals affiliated with SPS, to cofinance the earmarked federal government transfers to the SPS.

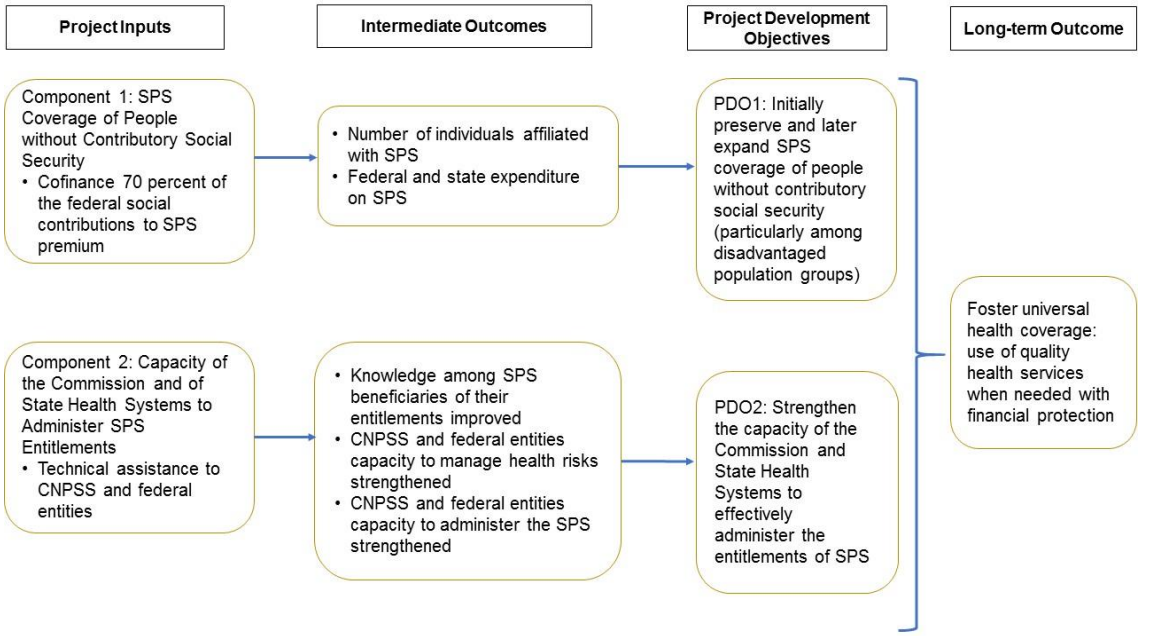
20. Component 2: Capacity of the Commission and of State Health Systems to Administer the Popular Health Insurance Entitlements supports the second project objective. Appraisal: $32.88 million (IBRD: $7.875 million). Actual: $26 million (IBRD: $0). This component was designed to finance technical assistance: (i) to the CNPSS to support enhanced performance management in the administration of the SPS, and support federal entities in preparing and carrying out reforms in the administration of the SPS; (ii) to the CNPSS and federal entities to improve the knowledge of SPS beneficiaries about their entitlements under the SPS; and (iii) to the CNPSS and federal entities to strengthen their capacity to manage health risks.

Relevance of Design

21. The relevance of the design is rated **substantial.**[4]

22. Project design was simple and well aligned with the project's objectives. Component 1 cofinanced part of the federal social contributions to SPS premiums, thus supporting directly the first objective of the project (preserve and later expand SPS). Component 2 was to finance technical assistance to support SPS reforms over the medium term. (See figure 1).

Figure 1. The Project Result Chain



Source: World Bank 2010.

23. The results chain between the activities financed and PDO1 is direct and subject to limited risks. PDO1 is to maintain and expand SPS coverage, therefore the linkage between the activities financed under component 1 (cofinancing federal social contributions to SPS premium) and the desired outcome (expanded coverage) is very strong and subject to the ability of the federal entities to identify and enroll the target population (those without CSS coverage). The M&E framework included additional indicators to monitor expansion of coverage among the poor, indigenous people, Oportunidades beneficiary families, and women and girls, to capture distributional aspects of SPS coverage expansion.

24. The linkages between the activities financed and PDO2 are more complex and the project's M&E framework was not able to record all relevant aspects. The project's M&E framework focused on the knowledge of the right to health by users and patients. This is a key ingredient for citizen's empowerment. Those who do not know that they have rights cannot demand them, which limits the effectiveness of public policy. For this reason, it is the concern of the institutions of the health sector to generate and bring information to the public about how to access health services if they require curative care. Strengthening communication and dissemination strategies, turning toward prevention, and emphasizing healthy lifestyles to improve the quality of life and prevent chronic diseases are factors that will contribute positively to this empowerment. However, the M&E framework, at least initially, had virtually no indicators to measure the effectiveness of SPS with regard to clinical aspects, financial management, affiliation control, and general administration. The only indicator related to clinical activities measures the number of newly enrolled SPS individuals receiving a preventive health screening.

25. The project made large use of the country's public financial management systems (for example, budgeting, accounting, treasury, internal control, and auditing) that, at the federal level, were assessed as strong and acceptable to the World Bank. The federal government contributes to SPS through the Social Contribution and the Federal Solidarity Contribution. States contribute to SPS through the State Solidarity Contribution. The World Bank reimbursed up to 70 percent of the Federal Social Contribution transfers to the states, which itself accounts for approximately 33 percent of the cost of the SPS scheme. Project activities were coordinated and implemented using the organizational structures and staff of the Commission, which had been responsible for implementing the SPS since 2004.

26. The option to complement the IPF project with policy reforms was explored. At the time of project appraisal, the only alternative to IPF was the use of the development policy financing (DPF) instrument. It is possible to argue that IPF was preferable to DPF to ensure that loan proceeds would be used to cofinance SPS premiums and not allocated to other uses under the fiscal pressure of the 2009 financial crisis. In addition, it allowed for longer-term support, which was required to sustain the longer-term reform efforts required to improve the capacity of the Commission and states in managing SPS (see PDO2).

27. Finally, it is worth considering whether the World Bank could have used the Program-for-Results (PforR) financing instrument, if this option had been available at the

time of project appraisal. It is possible to appreciate that the operation satisfied PforR's requirements of providing direct support to government programs (the SPS) and the use of the country's own institutions and processes. In addition, it would have been relatively easy to link disbursement of funds to the achievement of specific results, such as the expansion in SPS coverage. Therefore, based on the evidence that IEG assembled on the effectiveness of PforR (see World Bank 2016b), it is possible to say that it would have been possible to use the PforR financial instrument. In addition, the use of PforR could have provided the opportunity to develop a specific program action plan to enhance the performance of the SPS. Finally, the use of disbursement-linked indicators with clear verification protocols could have helped to strengthen the overall M&E framework.

3. Project Implementation

28. The project was approved by the Board of Executive Directors on March 25, 2010, became effective on December 17, 2010, and its implementation was completed by December 31, 2013. The single activity to cofinance federal social contributions to SPS premium advanced rapidly as planned. Within one year, 80 percent of the available resources was already disbursed, and within three years the project was completed, as envisaged at appraisal. During its implementation the project went through two level-two restructurings.

29. The first restructuring took place on November 22, 2011 to revise two PDO-level indicators. The original PDO2 indicator measuring the "number of state health systems that collect information on system results," which lacked baseline information and targets, was revised as "the percentage of recommended actions implemented by federal entities resulting from the supervision action plan carried out by the Commission in its four action areas (Affiliation and Operation, Health Services Management, Financing, and the Oportunidades program)" to focus on the concrete actions identified to improve SPS administration. In addition, the PDO2 indicator, which originally measured the "number of individuals affiliated with the Popular Health Insurance who have received a health risk screening as a percentage of the total number of individuals affiliated with the Popular Health Insurance" was modified to measure progress in absolute terms rather than in relative terms, as the on-going SPS coverage expansion led to continuous revisions of the denominator of the original indicator and to related target adjustments.

30. The implementation of component 2 was stalled and, on February 28, 2013 a restructuring was processed to reallocate the unspent loan proceeds from component 2 to component 1. At appraisal, it was planned to use loan proceeds to finance component 2 activities. However, after project approval the Commission received sufficient budget funds to carry out the activities without having to use the loan proceeds. This was administratively more efficient, as the use of loan proceeds required following both national and World Bank review processes and clearances, and the services of a financial agent. As a result, component 2 was totally financed by the Mexican government, but the activities were kept as part of the project. The decision to retain this component even though it was entirely financed by the government was justified by the following considerations: (i) it allowed the World Bank to continue supporting the states in the administration of SPS, which was essential to improve the effectiveness of the SPS funds in the long term; and (ii) the activities that were identified under component 2 were

carried out by the Commission with support from the World Bank, albeit only using counterpart funding.

Safeguards Compliance

31. The project did not have potentially adverse environmental effects, but it required the preparation of an Indigenous Peoples Plan (IPP). The project was classified as Environmental Category C (low likelihood of having environmental and social impacts), as it was not financing civil works, delivery of goods, or other physical activity in the field. Therefore, it did not require the preparation of an Environmental and Social Management Framework. On the other hand, the project triggered the indigenous peoples safeguard policy (OP/BP 4.10) and the preparation of the IPP to ensure that indigenous peoples could fully benefit from the project.

32. The IPP aimed to support indigenous people's affiliation to SPS and to ensure that health services provided to indigenous communities were culturally appropriate to enhance accessibility and user satisfaction. These were important aspects, as indigenous peoples in Mexico have historically been poor, had worse access to health services because of remote and rural residence and lack of CSS enrollment, and have experienced worse health outcomes than nonindigenous people. The social assessment prepared during the project's design identified many of the issues hindering indigenous peoples' SPS enrollment. As stressed by the last Task Team Leader of the project, the IPP helped reduce the bottlenecks that were curbing the affiliation of indigenous peoples to SPS. These were not just cultural but also, especially at the beginning, basic administrative issues such as the necessity to translate documents or even to generate birth certificates and all the official documentation required to apply for SPS but in most cases not possessed by indigenous people.

33. The IPP implemented an effective culturally adapted communication strategy targeted to indigenous populations. The significant increase in enrollment among this marginalized population reflects the success of the framework. Between 2006 and 2012, the gap in insurance coverage rates between indigenous and nonindigenous populations was virtually eliminated, and significant advances were made in narrowing gaps between the two populations in hospital-based births and stunting—though, overall, significant service use differences remain (see Leyva-Flores et al. 2013, 2014; Serván-Mori et al. 2014). Overall, the IPP proved to be useful as an instrument to start to address the constraints faced by the indigenous population in health service access. The design, supervision, and implementation of the IPP led to a substantial shift in implementation strategy and tangible benefits for indigenous populations.

Fiduciary Compliance

34. Financial Management arrangements were rated **moderately satisfactory** throughout the project's life. According to the Implementation Completion and Results Report (ICR), "financial management arrangements in terms of accounting, budgeting, flow of funds, internal control and financial reporting were moderately satisfactory throughout the project's life in providing reasonable assurance that loan proceeds were used for intended purposes." Some moderate financial management shortcomings, such

as delays in hiring the technical auditor and in submission of project audits, were identified during project implementation and negatively affected the financial management Implementation Status and Results Report rating, which at one point was downgraded to **moderately unsatisfactory.** In that document, the final financial management rating of the project (prior to closing date) was **moderately satisfactory,** as most of the financial management–related shortcomings were followed-up in a timely way and addressed. Most of the project's interim financial reports were prepared and delivered in a timely manner. Although the final financial audit was submitted with major delays, it was deemed acceptable by the World Bank. Nacional Financiera, in its capacity as the project's financial agent, provided the implementation support and oversight based on its many years of experience with World Bank–financed projects.

35. Procurement. There were no procurement activities under this loan, which disbursed fully to the government's general budget.

Unanticipated Positive and Negative Effects

36. The PAD indicated concerns that SPS may encourage labor market informality. The argument for labor market effects is based on the hypothesis that a larger number of workers will seek informal employment to enjoy health coverage provided by the SPS without contributing to CSS schemes (see Levy 2010).

37. Empirical studies have generally found that the impact of SPS on formal employment is very small and almost negligible. Although the argument for labor market effects is plausible, it assumes that workers try to maximize income and benefits by seeking informal employment and, thus, enjoy health insurance coverage while avoiding contributions to the social security schemes. A World Bank study in Mexico showed a significant effect of the Popular Health Insurance roll-out on contributory health insurance affiliation from 2004 to 2006 in rural areas only. Additionally, this effect was small in absolute terms (coverage was reduced from 7.1 percent to 5.8 percent) and almost negligible when comparing gains in overall insurance coverage. Although SPS improved access to care, it was associated with a 3.1 percentage point reduction in the flow of workers into the formal economy, rather than encouraging exit from the formal sector (Aterido, Hallward-Driemeier, and Pagés 2011).

4. Achievement of Objectives

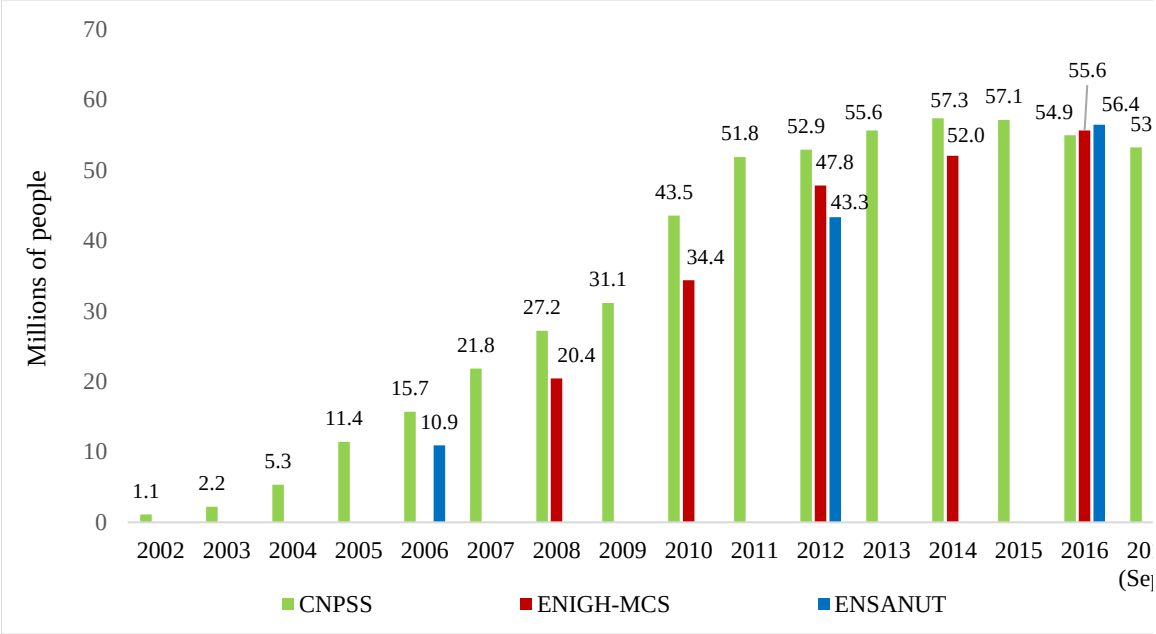
Objective 1. Initially Preserve and Later Expand Seguro Popular Coverage of People without CSS

38. The achievement of objective 1 is rated **substantial**. As detailed below, project financing allowed the substantial expansion of SPS coverage among those not covered by CSS. This section examines step by step the results chain for objective 1 using the most recent values for the indicators comprising the project M&E framework. It shows how the increased number of individuals covered by SPS, expanded SPS coverage among disadvantaged population groups (the poor, Oportunidades beneficiaries, indigenous populations, and women and girls), and together with the expansion of SPS expenditure, improved SPS coverage among those not covered by CSS.

INTERMEDIATE OUTCOME: INDIVIDUALS AFFILIATED WITH SEGURO POPULAR

39. According to the administrative data of the CNPSS, SPS coverage expanded substantially during the period of project implementation. As shown in figure 2, the number of people affiliated with SPS increased from 1.1 million in 2002 to 31.1 million in 2009 (https://datos.gob.mx/busca/dataset/beneficiarios-de-proteccion-social-en-salud-de-seguro-popular, accessed on March 27, 2018). Under the World Bank project SPS coverage increased on average by more than 6 million a year, which represented the fasted pace of expansion over the entire period. By the end of 2013, SPS had expanded to cover 55.6 million people. Afterward, the trend flattened and, after reaching the peak in the year 2014 with 57.3 million, SPS coverage slightly decreased to 54.9 million by the end of 2016 and to 53.2 by September 2017.

Figure 2. Evolution of Seguro Popular Coverage, 2002–17



Sources: CONEVAL 2014; Méndez Méndez 2017; Shamah-Levy et al. 2016a; and data from the National Commission for the Social Protection in Health.
Note: ENIGH-MCS = National Household Income and Expenditure Survey-Socioeconomic Conditions Module (Encuesta Nacional de Ingresos y Gastos de los Hogares-Módulo de Condiciones Socioeconómicas); ENSANUT = National Survey of Health and Nutrition (Encuesta Nacional de Salud y Nutrición).

40. The reduction in the number of SPS beneficiaries in 2016–17 stems from government efforts to strengthen mechanisms to reduce duplications in affiliation. In the year 2010 the Superior Audit of the Federation (Auditoría Superior de la Federación) reported that 14.2 percent of SPS beneficiaries (about 4.4 million) were also covered by CSS. In 2014, the percentage of SPS beneficiaries with multiple coverage was estimated to be about 12 percent (about 6 million SPS beneficiaries also covered by Mexican Institute of Social Security and 800,000 by the Institute of Social Security and Services for Government Workers; World Bank 2016a, 222). The CNPSS addressed the issue by setting up a new administrative system of affiliation (Sistema de Administración del Padrón, SAP) that gives immediate notification if someone is already covered by CSS. During 2015–17 the CNPSS identified and corrected about 3 million cases of multiple registrations.

41. SPS coverage estimated from population surveys is lower, but confirms the overall trend of SPS coverage expansion. SPS coverage estimates from population surveys is usually lower than CNPSS administrative data.[5] The observed differences may in part be explained by individuals being unaware of, or mistaken about, their own insurance status and reporting it incorrectly in the census. However, the differences between estimates from administrative data and population surveys have disappeared since 2016, which may reflect both improved knowledge of SPS status and a reduction in the cases of individuals with multiple health coverages.

42. In future, further increasing coverage will require focusing among those without CSS with lower health needs. Population survey data also allow us to better understand the underlying reasons for health coverage gaps. As shown in table 2, uninsured individuals have, on average, a lower risk profile than those covered by SPS or CSS; they are more likely to be young men and with lower prevalence of noncommunicable diseases such as diabetes and hypertension. Affiliation strategies for this population group are needed, such as stressing the importance of preventive services (see Gutiérrez et al. 2012, 41).

Table 2. Prevalence of Low-Risk Population Groups by Type of Health Insurance (percent)

Population Group	*SPS*	*CSS*	*Uninsured*	*Total*
Men 20–45 years old	16.2	18.5	23.5	18.1
People without diabetes	90.1	90.1	94.5	49.1
People without hypertension	86.8	81.8	87.5	84.8

Source: Shamah-Levy et al. 2016a, Shamah-Levy et al. 2016b.
Note: CSS = contributory social security; SPS = Popular Health Insurance (Seguro Popular de Salud).

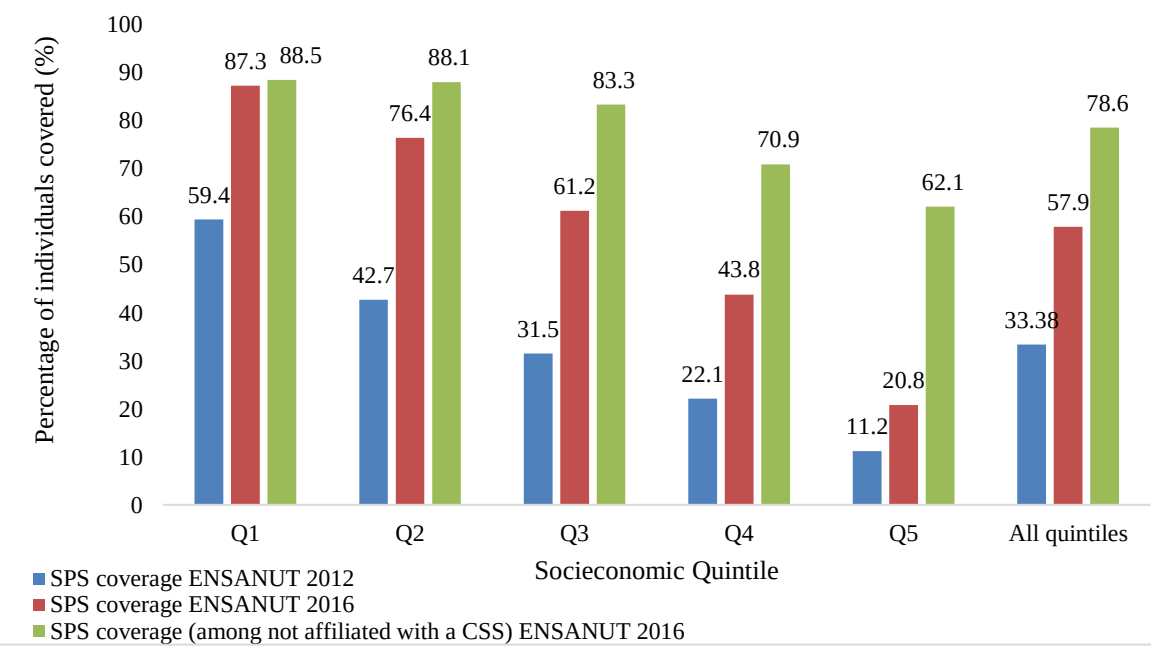
INTERMEDIATE OUTCOME: SEGURO POPULAR COVERAGE AMONG DISADVANTAGED POPULATION GROUPS

43. SPS coverage has been expanding among individuals not covered by CSS in the lowest income quintile. The PAD estimated that SPS coverage among those without CSS in the lowest income quintile was at 48 percent in 2009 (baseline year: 9.9 million individuals with SPS out of 20.7 million without CSS in the lowest income quintile). The target for 2013 was set at 77 percent, also in this case without adjusting the number of individuals not covered by CSS in the lowest income quintile (that is, the 2009 baseline estimate of 20.7 million was used).[6] The 2012 National Survey of Health and Nutrition (Encuesta Nacional de Salud y Nutrición) showed SPS covered 17.9 million individuals (59.4 percent in the lowest income quintile with a total population of 115.5) out of 20.7 million estimated to be without CSS coverage (Gutiérrez et al. 2012), which represents a value of 87 percent, well above the target. The 2016 National Survey of Health and Nutrition (Encuesta Nacional de Salud y Nutrición; ENSANUT) de Medio Camino (MC) showed SPS coverage increased to 27.8 million (88.3 percent coverage in the lowest income quintile (Shamah-Levy et al. 2016a, 2016b). However, using the estimate of 20.7 million without CSS provided by the PAD would give an unrealistic value for the

indicator of 134 percent. The estimated number of individuals without CSS derived from the ENSANUT MC 2016 is 31.6 million, which gives a more realistic indicator value of 88 percent, well above the 77 percent target value (see figure 3 and table 3, Indicator A).

44. SPS coverage among the Oportunidades beneficiaries was above the 2013 target and remained at that level after the project was completed. SPS coverage among Oportunidades beneficiaries increased from 3.06 million in 2008 to 5.7 million according to the ENSANUT 2012 (Gutiérrez et al. 2012). The relative indicator had the value of 113 percent,[7] well above the 80 percent target. The most recent value of SPS coverage among Oportunidades beneficiaries is provided by the Prospera Module of the ENSANUT 2016 (Shamah-Levy et al. 2016b), which calculated an 81.8 percent SPS coverage among the Prospera population (95 percent confidence interval of 78.6–84.6 percent; see table 4, Indicator B). SPS affiliation among Prospera beneficiaries is greater in the rural localities (85.2 percent) than in the urban ones (75.7 percent) and among families in the lowest quintiles of income distribution (92.1 percent and 88.6 percent in quintiles 1 and 2, respectively). Only 4.4 percent of the Prospera population is not covered by any social security institution, compared with 17.9 percent of the non-Prospera population (Shamah-Levy et al. 2016b, 37, 39).

Figure 3. Seguro Popular Coverage by Socioeconomic Quintile



Sources: Guttiérrez et al. 2012; and Shamah-Levy et al. 2016a.
Note: CSS = contributory social security; ENSANUT = National Survey of Health and Nutrition; SPS = Popular Health Insurance (Seguro Popular).

45. The evolution of SPS coverage among indigenous populations through time is affected by the questions used to identify the reference population. The indicator adopted by the M&E framework measured the percentage of individuals not affiliated with a CSS system residing in areas where more than 40 percent of the population speaks an indigenous language keeping constant the denominator. According to the ENSANUT 2012, by the end of the project, SPS coverage in these areas had reached 131 percent,

well above the 92 percent target. However, according to the more recent ENSANUT 2016, 3.1 million individuals are covered by SPS out of 3.7 million individuals without CSS coverage living in areas where 40 percent of the population speaks an indigenous language. As a result, the value of the indicator is 59 percent if the same denominator of the baseline year is used and 83.3 percent if the contemporaneous denominator is used (see table 3, Indicator C). ENSANUT 2016 also asks the persons interviewed if they consider themselves indigenous people. Using this question, it is possible to calculate that 18 million are covered by SPS out of 21.1 million without CSS coverage, which gives a value of 85.3 percent, very close to the previous indicator.

Table 3. Seguro Popular Coverage among Disadvantaged Population Groups (percent)

Indicator	*Baseline Value at PAD*	*Target Value (2013)*	*End-Line Value at ICR*	*Most Recent Value*
(A) Percentage of individuals in deciles 1 and 2 that are not affiliated with a CSS system affiliated with SPS	48 (9.9 million out of 20.7 million)	77 (16 million out of 20.7 million)	87 (17.9 million out of 20.7 million) ENSANUT 2012	134 (27.8 million out of 20.7 million)[a] 89 (25.3 million out of 28.56 million)[b] ENSANUT MC 2016
(B) Percentage of Oportunidades beneficiary families affiliated with SPS	60.7 (3.06 million out of 5.03 million)	80 (4 million out of 5.03 million)	113 (5.7 million out of 5.03 million) ENSANUT 2012	81.8 (95 confidence interval of 78.6–84.6) ENSANUT MC 2016
(C) Percentage of individuals not affiliated with a CSS system residing in areas where more than 40 percent of the population speaks an indigenous language, that are affiliated with SPS	78.5 (4.13 million out of 5.27 million)	92 (4.84 million out of 5.27 million)	131 (6.9 million out of 5.27 million) ENSANUT 2012	59 (3.1 million out of 5.27 million)[a] 83.8 (3.1 million out of 3.7 million) [b] 85.3 (18 million out of 21.1 million)[c] ENSANUT MC 2016
(D) Percentage of the total number of women and girls who are not affiliated with a CSS system, that are affiliated with the SPS	68 (16.94 million out of 24.8 million)	88.7 (22 million out of 24.8 million)	120 (30 million out of 24.8 million) ENSANUT 2012	112.1 (27.8 million out of 24.8 million)[a] 79.9 (27.8 million out of 34.8 million)[b] ENSANUT 2016

Note: ICR = Implementation Completion and Results; PAD = project appraisal document.
a. Calculated using as denominator the value of the baseline year.
b. Calculated using contemporaneous values for numerator and denominator.
c. Based on the percentage of people speaking an indigenous language.

46. The indicator measuring estimated SPS coverage among women and girls is also sensitive to the choice of the denominator. According to the ENSANUT 2012, by the end of the project, SPS coverage among women and girls without CSS coverage had reached 120 percent, well above the 88.7 percent target. The level of coverage of SPS of women and girls has been estimated using both the historic denominator estimated in 2009 (24.8

million) and the contemporaneous denominator estimated by the same ENSANUT 2016 (34.8 million). Also in this case the two values tend to diverge. In the first case, the indicator shows a percentage of 112.1 percent, still well above the target value, whereas in the latter the percentage is equal to 79.9 percent, below the 2013 target (see table 3, indicator D).

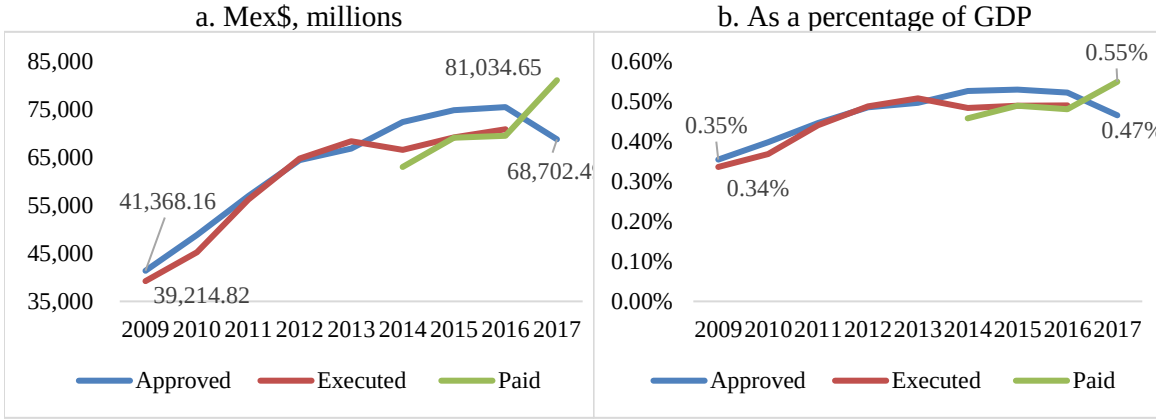
INTERMEDIATE OUTCOME: FEDERAL AND STATE EXPENDITURE ON SEGURO POPULAR

47. Federal and state expenditure on SPS expanded mirroring SPS coverage expansion. Figure 4, panel a, shows that the amount approved for SPS rose from 41,368 million pesos in 2009 to 75,437 million pesos in 2016. In 2017 there was a significant reduction in the amount approved to 68,702 million pesos (–8.9 percent). The reduction in the amount approved may be the consequence of the decision to focus on payment in arrears. In fact, during 2017 the amount of resources paid to providers rose from about 70,000 million pesos to 81,035 million pesos. Also, since 2009 most of the amount approved was appropriated. Figure 4, panel b, shows that the level of SPS expenditure as a percentage of gross domestic product increased from 0.35 percent in 2009 to 0.47 percent in 2017.

PROJECT OUTCOME INDICATORS

48. The key indicator for PDO1—the ratio between the number of individuals affiliated with SPS and the number of individuals not covered by CSS—is sensitive to the data used. The numerator (the number of individuals affiliated with SPS) is provided by the CNPSS. If the denominator (the number of individuals not covered by CSS) is estimated from population surveys, such as the ENSANUT, a statistical confidence interval should be used in the comparisons to take account of the fact that the estimates for the entire population are inferred from a probabilistic sample. In contrast, the denominator estimates based on the 2010 census, which covers the entire Mexican population, or the 2015 intercensal survey that has a sample size of 6.1 million households, are precise.

Figure 4. Seguro Popular Expenditure 2009–17, Amount Approved, Appropriated, and Paid



Source: https://datos.gob.mx, accessed on March 27, 2018.
Note: GDP = gross domestic product.

49. The available estimates confirm substantial improvements in SPS coverage among those not covered by CSS. The PAD estimated that 48.4 million individuals were not covered by CSS in 2009, which represented a 64 percent SPS coverage ratio (baseline value). The target for 2013 was set at 85 percent. The end-line value at the time of the ICR in 2013 was 115 percent, which exceeded the target.[8] However, it is worth noting that the end-line value in the ICR was calculated without adjusting the number of individuals not covered by CSS (that is, the 2009 estimate of 48.4 million was used through time). Table 4 presents values of the indicator for additional years. The estimate for 2012 based on the ENSANUT is 71 percent (95 percent confidence interval: 68–74 percent). The more recent 2015 intercensal survey estimates that 59.3 million individuals were not covered by CSS, which represents a value of 96 percent, well above the 85 percent target. Finally, the estimate based on the 2016 ENSANUT is 76 percent [95 percent confidence interval: 73–79 percent].

Table 4. Project Development Objective Indicator 1: Individuals Affiliated with Seguro Popular as a Percentage of the Total Number of Individuals Not Covered by CSS

Year	*Mexico Pop. (millions)*	*Numerator: Individuals Affiliated with SPS (millions)*[a]	*Indiv. Not Covered by CSS (millions)*	*Individuals Not Covered by CSS (as percent of total population)*	*PDO1: Individuals without CSS with SPS (percent)*	*Source of the Denominator*
2006	110.1	15.7	69.1	63	23	ENSANUT 2006
2009		31.1	48.4		64	PAD
2010	117.3	43.5	82.1	70	53	Census 2010
2012	120.8	52.9	74.9 (CI95: 71.2–78.5)	62 (CI95: 59–65)	71 (CI95: 68–74)	ENSANUT 2012
2013		55.6	48.4		115	PAD/ICR
2015	125.9	57.1	59.3	47	96	Intercensal Survey 2015
2016	127.5	54.9	72.5 (CI95: 68.9–76.5)	57 (CI95: 54–60)	76 (CI95: 73–79)	ENSANUT MC 2016

Note: CI95 = 95 percent confidence interval. ICR = Implementation Completion and Results; ENSANUT = National Survey of Health and Nutrition; PAD = project appraisal document.
a. Data from the National Commission for the Social Protection in Health (CNPSS).

Objective 2. Strengthen the Capacity of the CNPSS and State Health Systems to Effectively Administer the Entitlements of the Popular Health Insurance

50. The achievement of objective 2 is rated **modest.** The project achieved only part of the expected outcomes that contributed to an effective administration of SPS entitlement by the CNPSS and the federal entities. Specifically, the federal entities improved the identification of health risks at affiliation, and implemented as planned the actions identified by the CNPSS to improve SPS management. However, a large number of individuals covered by SPS remain unaware of their rights and responsibilities.

INTERMEDIATE OUTCOME: KNOWLEDGE OF SEGURO POPULAR RIGHTS AND RESPONSIBILITIES

51. The evidence on the provision of information about SPS rights and responsibilities, benefits, and fees during project execution showed mixed results. The specific indicators used to monitor knowledge about rights and responsibilities among the SPS-affiliated population are presented in table 5. The percentage of SPS individuals who report having received a bill of rights and responsibilities at the time of affiliation dropped from 82 percent in 2006 to 78 percent in 2012, thus not meeting the target of 88 percent set at appraisal. A similar downward trend is observed in the percentage of individuals with SPS who report having received a catalog of their benefits package at the time of affiliation (a reduction from 77 percent to 74.3 percent over the same period). However, over time, the percentage of SPS beneficiaries who report receiving information at affiliation about their right to not pay service fees has increased from 53.4 percent to 89.2 percent, thus meeting the 80 percent target set at appraisal. Information materials on SPS rights, responsibilities, and affiliation processes were to be designed and distributed to Oportunidades beneficiaries in the states where the program operates, where they continue to be used.

52. A significant proportion of individuals with SPS remain who do not know all their benefits. Recent user satisfaction surveys report that the percentage of SPS beneficiaries receiving information at affiliation about their rights went down to 47.1 percent (well below the 80 percent target set at appraisal; CNPSS and INSP 2015, 18). In addition, 48 percent of respondents do not know that SPS covers high-cost diseases such as cancer through the Fund for Protection against Catastrophic Expenditures, and only about half of the members surveyed (48.9 percent) know that they can be attended anywhere in the national territory (CNPSS and INSP 2016, 23). In addition, the clear majority did not know how to file a complaint (81.7 percent), did not know the role of the SPS manager (72.1 percent, which confirms the focus group findings of limited knowledge of this administrative figure), and in smaller percentages did not have information on the rights of affiliates, such as membership, the use of the catastrophe protection fund, and portability. Charging for services that should be free is infrequent but still occurs, as reported by 2.4 percent of respondents. These findings were confirmed by the focus group, which found that many did not know the role of the SPS manager and that drugs covered by SPS could be collected in other health clinics. None of the persons interviewed in the focus groups reported being charged for services, medicines, or laboratory work at the clinic. Finally, it is worth mentioning that the CNPSS has developed an app, freely available at Apple Store and Google Play, that provides information about SPS affiliation and re-affiliation requirements according to the user's location and verifies the validity of SPS coverage.

Table 5. Intermediate Outcome Indicators on Knowledge

Indicator	*Baseline Value at PAD (percent)*	*Target Value (2013) (percent)*	*End-Line Value at ICR (percent)*	*Most Recent Value (percent)*
Percentage of individuals with SPS who report having received a bill of rights and responsibilities at the time of affiliation	81.9[a]	88	77.7[b]	Indicator not included in ENSANUT MC 2016
Percentage of individuals with SPS who report having received a catalog of their benefits package at the time of affiliation	77[a]	83	74.3[b]	Indicator not included in ENSANUT MC 2016
Percentage of individuals with SPS who report having received information about their right to not pay service	53.4 (source satisfaction survey 2009)	80	89.2 (source satisfaction survey 2013)	47.1 (source satisfaction survey 2015)
Information materials on SPS rights, responsibilities, and affiliation processes designed for distribution by the	Not designed	Designed and distributed in the states where the	Designed and distributed in the states where the	Continue to be distributed in the states where the

Sources: ENSANUT 2006, 2012; World Bank 2014b.
Note: ICR = Implementation Completion and Results; PAD = project appraisal document.
a. National Survey of Health and Nutrition (ENSANUT) 2006.
b. ENSANUT 2012.

INTERMEDIATE OUTCOME: CAPACITY TO MANAGE HEALTH RISKS

53. The technical assistance provided by the program expanded the use of tools to improve the identification and management of health risks among SPS beneficiaries. The Personalized Health Registry/Safe Consultation (Sistema Nominal en Salud/Consulta Segura, SINOS) is a systematized assessment tool to assess the health risk profile of SPS and Prospera program participants, depending on their age, gender, and life event (Henderson 2012). The SINOS comprises (i) a biometric registry that records all fingerprints of both hands of each one of the members of the family nucleus; (ii) the "Safe Consultation," a computer-assisted medical visit that applies the official national health guidelines (that is, weight, height, blood glucose, blood pressure, abdominal perimeter, and so on) to identify the health risks of SPS members and prescribe the most appropriate treatments; and (iii) a health care monitoring plan, which defines the set of specific health actions according to the identified health risk, age, and gender of the patient. SINOS started as a pilot in Nayarit in 2009. The subsequent year SINOS was already implemented in 18 entities; by 2011 in eight more entities and, by 2012, throughout the entire Mexican territory (see table 6).

Table 6. Intermediate Outcome Indicators on Health Risk Management

Indicator	*Baseline Value at PAD*	*Target Value (2013)*	*End-Line Value at ICR*	*Most Recent Value*
Health risk management program guidelines have been designed and rolled out	No	Yes	Yes	Continue to operate
States in which the health risk management program IT systems for data collection have been rolled out *(no.)*	0	31	32	32
States that capture biometric information of individuals affiliated with the Popular Health Insurance *(no.)*	0	31	32	32

Sources: CNPSS and World Bank 2014b.
Note: ICR = Implementation Completion and Results Report; PAD = project appraisal document.

INTERMEDIATE OUTCOME: CAPACITY OF CNPSS AND FEDERAL ENTITIES TO ADMINISTER SEGURO POPULAR

54. The CNPSS provided continued and sustained support to the states to improve the management of the SPS. As planned, by the end of the project the CNPSS was supervising the four core action areas of SPS—affiliation and operation, health service management, financing, and the Oportunidades program—in all 32 federal entities. Even when financed by the Mexican government (and not under the project as initially planned), adequate resources were allocated for technical assistance to improve the collection and analysis of State Health System results information. (See appendix E for the list of studies carried out by the CNPSS under the project.)

PROJECT OUTCOME INDICATORS

55. The PDO-level indicators show satisfactory improvement in the coverage of health risk screening in the implementation of supervision activities performed by the CNPSS, but unsatisfactory improvement in the diffusion of SPS rights among the beneficiary population. The SINOS has two purposes: (i) to determine the initial risk profile in the health of the beneficiaries; and (ii) to promote the culture of disease prevention in the beneficiaries. During the implementation of the project, about 22.8 million SPS beneficiaries received the "Safe Consultations," well above the target of 10 million, and more than 90 percent of the improvement actions identified by the CNPSS resulted in action plans, well above the 81 percent rate. Knowledge of SPS rights and benefits, considered as a necessary condition to generate demand-side pressure for improving SPS, did not improve as planned (table 7).

56. Additional rules in the use of resources transferred to the states were introduced to improve transparency. The 2014 reform of the General Health Law introduced upper limits to SPS expenditure: 40 percent for human resources, 30 percent for medicine, 20 percent for prevention activities, 10 percent for administrative costs. Each state has a

maximum of five days to accredit resources to the health services in the territory before the person in charge risks imprisonment. Each entity is required to validate its expenditures by April 30 of each year. Failure to show proof of all expenditures results in suspension of funding. As of 2018 states will not manage resources for medications and vaccines directly but will do so through a web-based platform that provides reference prices negotiated at the federal level. States are responsible for the distribution, but as of 2018 this is also going to be negotiated centrally. All the resources not spent by the end of the calendar year need to be devolved.

Table 7. Project Development Objective 2 Indicators

Indicator	*Baseline Value at PAD*	*Target Value (2013)*	*End-Line Value at ICR*	*Most Recent Value or Additional Evidence*
Percentage of recommended actions implemented by federal entities resulting from the supervision action plan carried out by the Commission in action areas (affiliation and operation, health services management, financing, and Oportunidades program).	0	71	90.3	Not applicable
Number of individuals affiliated with SPS who have received a health risk screening.	0	10,000,000	22,800,000	Not available
Percentage of individuals affiliated with SPS who have received enough information to know their rights and obligations.	71.2[a]	80	74.3[b]	Indicator not included in ENSANUT MC 2016

Sources: CNPSS; ENSANUT 2006, 2012; and World Bank 2014b.
Note: ENSANUT = National Survey of Health and Nutrition; ICR = Implementation Completion and Results; PAD = project appraisal document.
a. ENSANUT 2006.
b. ENSANUT 2012.

57. Interviews with SPS operators in one federal entity confirmed that the new rules had improved transparency in the use of resources, but also created some rigidities. Interviews with the management of the state-level Regime for Social Protection in Health (Regímenes Estatales para la Protección Social en Salud) and the Health Secretariat in the State of Morelos indicated that the new regulations have reduced the discretion in the use of SPS resources by state-level actors to mitigate the risk of misuse. However, the stricter rules in the use of resources were also creating additional work for state-level managers, as they now need to plan ahead very carefully for the use of SPS resources to avoid violating the constraints set by the law.

58. Various technological and administrative improvements have also been introduced to improve SPS's effectiveness. Portability of SPS has been added so that members can receive coverage regardless of the state in which one gets sick or where one needs to access SPS services. Prior to 2015 if an SPS affiliate got sick or had an accident

outside his state of residence, he had to go to a private hospital with no possibility of reimbursement from SPS. The National System of Basic Information for Health (Sistema Nacional de Información Básica en Materia de Salud) was established in 2015[9] to homogenize the quality and the performance of the SPS and have a platform where information is identical for all 32 states. The –SAP, introduced in 2016,[10] allows identification of applicants who are covered by another social insurance. As a result, about 3 million individuals with multiple SPS and social insurance coverages have been identified and removed from SPS. An app for Apple and Android mobile devices has been developed to obtain information about SPS benefits, rights, and locations of SPS health providers.

Contribution to Long-Term Outcome: Universal Health Care in Mexico

59. Taking advantage of the extra years and additional data, the PPAR goes one step further in the results chain to try to assess SPS contribution to UHC—use of quality health services, when needed, with financial protection. To cover this gap and provide scope for further lessons, the PPAR summarizes the results of the available SPS evaluations complemented by the econometric analysis of the recent ENSANUT MC 2016[11] (see appendix C) and qualitative focus group interviews with SPS beneficiaries (see appendix D). However, it is worth noting that the results presented in this section refer to SPS, but do not allow identification of the specific contribution of World Bank financing. The evidence on the impact of SPS on financial protection is robust and positive, although SPS beneficiaries still incur significant out-of-pocket health expenditures. SPS, generally, has a positive effect on health service use, but this effect varies significantly across the different types of health services and population groups considered in the comparisons. SPS users have a generally positive perception of the quality of the health services received, but when objective measures of quality are used, SPS services are of lower quality than those provided by CSS. Few studies have found any impact on the health of the beneficiaries.

60. The possible counterfactuals in assessing SPS individuals are those covered by CSS and those without health coverage. In the first phase of SPS expansion it was reasonable to use the uninsured population as counterfactual. However, nowadays SPS coverage is much higher and, conversely, the uninsured population is reduced and comprises population groups with lower health needs (see table 2). The different risk profile is likely to be the result of conscious decision, as individuals with poor self-assessed health are, all else equal, more likely to take up SPS coverage (Spenkuch 2012). In fact, about 30 percent of respondents of a recent SPS satisfaction survey reported they signed up for SPS coverage only when they were sick (CNPSS and INSP 2015, 18; 2016, 23). Therefore, a simple comparison between individuals covered by SPS or CSS, and the uninsured is possibly biased because the apparent difference in outcome between these two groups of units may depend on characteristics that affected whether an individual decided to take up an insurance, instead of the effect of the insurance per se (Huffman and Beltran 2017). Thus, appropriate techniques, such as propensity score matching (PSM) methods should be used to obtain a more consistent estimation of the average treatment effect on the specific aspect examined.

FINANCIAL PROTECTION

61. Various studies have found robust evidence of the financial protection provided by SPS. King et al. (2009) assessed the impact of rolling out SPS during a 10-month period between 2005 and 2006 and found a 23 percent reduction in catastrophic expenditures. Lower incidence of catastrophic health expenditures for SPS households (8 percent lower compared with uninsured households) was also found analyzing the data of the 2002 impact evaluation survey (Hernández-Torres et al. 2008). Negative association with out-of-pocket health spending or catastrophic spending and coverage of SPS was identified, among others by Barros (2008), Knaul et al. (2005) and Knaul et al. (2018). Additional studies have shown that these effects vary according to the characteristics of covered households. For example, the financial protection provided by SPS is stronger for patients with chronic diseases such as diabetes and hypertension or patients who experienced a hospitalization. Other studies have shown that SPS's financial protection varies by geographical location. SPS has sharply reduced catastrophic spending among urban households and households living in rural areas with access to well-staffed facilities, but it is less able to provide financial protection to those living in remote rural areas (Grogger et al. 2014).

62. SPS beneficiaries still incur significant out-of-pocket health expenditures. Out-of-pocket spending in Mexico constitutes 45 percent of total health spending and 4 percent of household expenditure (one of the highest among Organisation for Economic Co-operation and Development countries). Out-of-pocket spending has not fallen over the past decade among SPS beneficiaries. In 2006, 41.3 percent of households reported to have incurred out-of-pocket expenses for health care (Gakidou et al. 2006; Olaiz-Fernández et al. 2006); in 2012 the percentage increased to 51.4 (Ávila-Burgos et al. 2013; Gutiérrez et al. 2012). By the year 2016, 46.9 percent of SPS beneficiaries reported out-of-pocket expenditure, about 20 percentage points more than those covered by CSS (table C.8, Indicator H).

63. Qualitative interviews conducted through focus groups confirm that out-of-pocket expenses for health services are common among SPS members. For example, of six mothers with babies interviewed, two declared that they had to purchase medicine for their children, as they were not available at the SPS health center pharmacy, or had to go to a private doctor because of the excessive waiting time. A mother with a child affected by low glucose after birth reported spending about 1,000 pesos a week for doctor visits and medications. Both groups reported that SPS adequately covered hospital costs (for example, in the cases of delivery or a surgery), but that gaps were more apparent at the primary care level for everyday costs.

USE OF HEALTH SERVICES

64. The estimated effect of SPS on health service use differed among population groups and across time periods, but was generally positive. Additionally, data sources and statistical techniques used to control for potential biases affected results. Arenas et al. (2015) used PSM to analyze the longitudinal data from the Mexican Family Life Survey (Encuesta Nacional sobre Niveles de Vida de los Hogares). They found that, in general, SPS has not affected the number of hospitalizations and out-patient consultations, except

for urban women. Knox (2016) used panel data spanning the years 2002 through 2009 and, using a stepped wedge study design to reduce bias from adverse selection, found both a significant and large increase in the likelihood of using a public clinic for enrolled children and an increase in the total number of health care visits for adult men in the program. Gakidou et al. (2006) and Scott (2006) find that SPS beneficiaries have higher use rates than the uninsured. Bernal et al. (2010) found a 3 percentage point increase in the probability that deliveries in the rural areas were attended by a medical doctor. Sosa-Rubí et al. (2009) found a robust, significantly positive impact of SPS on pregnant women's access to obstetrical services. Harris and Sosa-Rubí (2009) found that enrollment in SPS was associated with a mean increase of 1.65 prenatal visits during pregnancy; 59 percent of this treatment effect is the result of increased prenatal care among women who had little or no prior access to care. However, King et al. (2009) did not find any SPS effect on health services use. These results cannot be attributed to the World Bank program per se but overall suggest that SPS coverage is leading to higher health care use. It is also plausible that the focus on awareness and health screening encouraged by the project may have further contributed to increased health care use.

65. These results are somewhat corroborated by the analysis of ENSANUT MC 2016 (Shamah-Levy et al. 2016a, Shamah-Levy et al. 2016b), which tends to show similar patterns of health care use across CSS and SPS beneficiaries suffering from diabetes and hypertension. This analysis did not find statistically significant differences in the number of visits to the doctor during the past 12 months between SPS and CSS patients for diabetes (table C.2, Indicator D) or hypertension (table C.4, Indicator G). However, SPS patients with diabetes were more likely to use private services (table C.2, Indicator F) than CSS patients with diabetes and also less likely than CSS patients to take medications or undergo examinations for diabetes (table C.2, Indicators H and I), which suggests that health services provided to SPS patients with diabetes are less complete than those provided to CSS patients. Qualitative interviews conducted through focus groups confirm that access to medicine is an issue for SPS patients. In fact, about half of the SPS patients with chronic conditions reported that often only some of the medicines prescribed by the doctor were available at the public facilities.

QUALITY OF HEALTH SERVICES

66. Surveys and focus groups concur that most SPS users have a positive perception of the quality of the health services received. About 80 percent of SPS users reported a positive perceived quality of health services in the ENSANUT 2016, the same percentage found among CSS beneficiaries (see table C.8, Indicator A). Similarly, the satisfaction index, in the years where it has been measured in the SPS user satisfaction survey, shows high values, but a downward trend.[12] Focus group interviews with mothers with young children and patients with diabetes and hypertension expressed generally a positive view of the attention received from doctors and nurses. The positive view also included the physical infrastructure of the health center. In this regard, about 72 percent of SPS respondents in the ENSANUT 2016 were satisfied by the health infrastructure (see table C.8, Indicator C). It is worth noting that SPS users are more satisfied than CSS users with the treatment received from their doctor, though the percentage is only 17.6 percent (see table C.8, Indicator D).

67. However, SPS compares less favorably to CSS with regard to waiting time and availability of medicine. SPS users report, on average, having to wait almost an hour and a half (81.6 minutes) inside the health center for a visit, versus less than one hour (56.5 minutes) spent waiting by CSS users (table C.8, indicator E). Waiting times above one hour have been recorded in all SPS user satisfaction surveys produced between 2008 and 2016 (CNPSS and INSP 2016, 29).[13] SPS users are less likely to find all the medicines prescribed compared with CSS users: 86.8 percent versus 91.8 percent, respectively (table C.8, indicator G).

68. Focus group interviews reveal that SPS mothers with young children face more problems of accessibility to health services than patients with chronic diseases such as diabetes and hypertension. Focus group interviews with mothers conducted in the Federal District indicated that all had received the standard package of primary level maternal and child health services: five controls before delivery and one checkup after delivery, echography, vitamins, iron, and micronutrients, and weekly early stimulation for their children. The main barrier to access to SPS was the difficulty of obtaining consultations compatible with their work schedules and the long waiting time. Therefore, it was common for SPS users to resort to private providers, especially in case of urgent needs (for example, asthma). However, in focus group interviews patients with diabetes and hypertension did not complain about the accessibility of health services. Most of these patients were retired (10 out of 12 were more than 65 years of age) with time flexibility, who did not have the scheduling constraints of the younger, working population.

69. SPS users receive better health care than the uninsured but generally worse than CSS users. Patients with diabetes enrolled in the SPS had more access to testing and insulin and were significantly more likely to have appropriately controlled blood glucose levels than comparable uninsured adults (Sosa-Rubí et al. 2009). However, they do not participate in support groups or take advantage of preventive methods, according to the 2016 user satisfaction survey. Similarly, patients with hypertension covered by SPS had a significantly higher probability of receiving antihypertensive treatment and blood pressure control than uninsured patients (Bleich et al. 2007) but SPS patients, compared with CSS patients, are less likely to know about their condition. These findings suggest that SPS providers are less able than CSS providers to diagnose hypertension in a timely fashion. SPS patients with high cholesterol and triglycerides are checked less frequently than comparable CSS individuals. These values confirm that SPS provides worse preventive services than CSS and that quality is still a work in progress.

70. Finally, fewer studies have identified an effect of SPS participation on health outcomes. Pfutze (2014) found that the program can be expected to reduce Mexico's infant mortality by close to 5 in 1,000 births. Knox (2016) also found both short- and medium-term health improvements, a result that appears to be driven by improvements in the health of children under ten and adult women. On the other hand, Barros (2008) and King et al. (2009) found that SPS had a negligible effect on the health of beneficiaries, perhaps because the quality of care was low or because of the short duration of the evaluation (10 months). Similarly, Gallardo-García (2006) found negligible impact on birth weight.

Efficiency

71. The efficiency rating of the project is **modest.**

72. The SPS efficiency analyses have considered three distinct impacts of the program: reductions in out-of-pocket expenses among the covered population, changes in efficiency observed over time in the provision of SPS health services, and the impact of SPS on health status improvement. In addition, as noted earlier, the new affiliation system SAP has produced efficiency gains as it has allowed the identification and removal from SPS rosters of individuals already covered by CSS.

73. The available studies on the impact of SPS on out-of-pocket expenses show the government spends more on SPS than the affiliated households save. According to the treatment-on-the-treated[14]estimates for the program effect on household health expenditure, each dollar that the government devoted to the SPS program resulted in savings for households of 0.53 dollars (Barros 2008). However, this may reflect the fact that the SPS covers the portion of the Mexican population with fewer resources rather than a problem of inefficiency. The population with few economic resources responds with what it has, which is little, in the face of the adverse health events it faces. In many cases, that little they can afford is far from the real value of the health services they need. It is not surprising, then, that the cost of SPS is greater than the savings that households affiliated with the system achieve as a result of the program. In other words, it is very likely that the SPS has significant redistributive effects.

74. A longitudinal study of state-level efficiency in the provision of SPS services showed that the overall efficiency frontier has regressed, but states, on average, moved closer to the frontier. Few studies have used data envelopment analysis to evaluate efficiency in the production of SPS services at the state level, using as outputs the health services provided to SPS population (consultations, consultations of specialists, surgical interventions, and patient days) and as inputs the resources used (health infrastructure, including hospitals, medical units, beds, and operating rooms, and annual health expenditure; see Miranda, Aburto, and Velázquez 2012). The results show that most states lost productivity between 2004 and 2010. In other words, the provision of SPS health services did not increase at the same rate as resources used between 2004 and 2010, thus the overall efficiency frontier has regressed. However, on average, the distance of the individual states from the frontier has been reduced between 2004 and 2010. This indicates that the relative technical efficiency has improved.

75. The required improvement in health outcomes for SPS to break even (that is, to equalize the costs and the benefits of the program) is unrealistic. SPS could potentially improve multiple health outcomes. Thus, the possible multiple health outcomes can be converted into disability-adjusted life-years and compared with the cost of the program to increase its cost effectiveness. The economic analysis presented in the ICR estimated that an 11 percent reduction in the overall Mexican burden of disease (costed using gross domestic product per capita) would be required for the SPS program to break even. However, this result is not compatible with the existing evidence. As indicated in the previous section, only a few studies could attribute measurable health improvement to

SPS, and the positive impact falls significantly short of the health improvement required to break even (see Pfutze 2014).

Ratings

PROJECT OUTCOME

76. The overall outcome is rated **moderately satisfactory.** The project's relevance of objectives is rated **substantial.** Relevance of design is also rated **substantial.** The achievement of objective 1 is rated **substantial.** However, the achievement of objective 2 is rated **modest**. Efficiency is rated **modest.**

RISK TO DEVELOPMENT OUTCOME

77. The overall rating of risk to development outcome is **moderate.**

78. SPS enjoys broad political support at federal and state levels, and a generally positive view from the population. SPS has been supported by the three presidential administrations that have alternated in Mexico since its inception in 2001, under which it experienced sustained expansion. SPS enjoys even stronger support from the states that receive and manage the program's resources. Finally, SPS has an overall positive view among the population, as shown in the various SPS user satisfaction surveys.

79. Even if the leading candidate for the 2018 presidential election expressed the intention to eliminate SPS if elected, the free access to health services ensured by SPS will not be discontinued. Andrés Manuel López Obrador, the presidential candidate currently leading in most opinion polls[15] has declared he would eliminate SPS if elected.[16] However, at the same time the candidate has promised maintaining free access to the health services provided under the SPS, which suggests that the practical changes for SPS users would not be dramatic if the program is eliminated.

BANK PERFORMANCE

80. Bank performance is rated **moderately satisfactory.**

Quality at Entry

81. Quality at entry is rated **moderately satisfactory.** The World Bank's influence on the design of component 1 was marginal as SPS was fully developed by the Mexican government, but the World Bank's financial support to SPS added value. The World Bank did not affect the design of the SPS, but provided complementary advisory services and studies to support the functional integration of the Mexican health subsystems. In addition, the World Bank mandated the preparation of the IPP that played an important role in supporting the expansion of the program in indigenous communities. The World Bank's financial support ensured the fiscal space required to keep the planned pace of SPS expansion during the severe fiscal crisis faced by the Mexican government. In this context, the World Bank showed high flexibility and the capacity to respond quickly to address Mexico's financing and development needs. Interviews with government officials conducted during the PPAR mission reaffirmed the high value of the World Bank's

financing during the crisis. The World Bank team responded adequately to the government's request for fast-paced preparation and managed to reach Board approval in six and a half months from concept approval.

82. However, the project M&E arrangements presented some weaknesses. The M&E framework was not adequate to monitor all aspects related to objective 2, strengthening the capacity of CNPSS and federal entities to effectively administer the SPS. In addition, the indicators that measure SPS coverage as a percentage of individuals not covered by CSS at baseline year (rather than using the value contemporaneous to the numerator) are ambiguous and potentially misleading as they can take values over 100 percent.

Quality of Supervision

83. Quality of supervision is rated **satisfactory.** The World Bank team worked closely with the national team during the implementation of the project. The presence of task team leaders in the country facilitated communication flow with national counterparts. The World Bank team rapidly addressed government requests for restructuring. The World Bank responded adequately to the various requests for advisory services and analytics, and technical assistance.

84. The convening services and technical advice provided by the World Bank during project implementation supported the Mexican government's decision making in several technical areas. The World Bank worked with the project team to develop some of the studies financed by the project under component 2 (see appendix E). In addition, the World Bank provided independent technical support that served to validate and provide legitimacy to government findings (World Bank 2014a, 76). The interviews conducted during the PPAR mission confirmed the government's appreciation for World Bank's advisory services, technical assistance, and convening services provided under the project. One area that was particularly valued was the World Bank's role in the debate about whether SPS would lead to an increase in workers entering the informal sector, determining that although there is some "crowding out," the impact is small.

BORROWER PERFORMANCE

85. Borrower performance is rated **satisfactory.**

Government Performance

86. Government performance is rated **satisfactory.** Government ownership and commitment to the project was high, as demonstrated by the fact that project design was entirely the responsibility of the government, by the adoption of national systems for procurement and financial management, and by the substantial financial resources assigned annually by the government to SPS. Another positive aspect of government performance is that the project was fully implemented in three years as planned, without the need to process any extension.

Implementing Agency Performance

87. Implementing agency performance is rated **moderately satisfactory.** The CNPSS was responsible for the project's implementation. The CNPSS achieved the expansion of the SPS over the course of the project as planned. The CNPSS also adequately completed the large agenda of studies financed under component 2. The financial arrangement proved to be satisfactory. However, delays in the delivery of both technical and audit reports by the Commission revealed weaknesses in the project's management.

MONITORING AND EVALUATION

88. The quality of the M&E framework is rated **modest.**

Monitoring and Evaluation Design

89. Overall, the M&E arrangements were adequate to monitor progress toward the achievement of the two PDOs, although the M&E framework for monitoring advances toward PDO2 could have been stronger. The M&E framework at appraisal included 4 PDO-level indicators and 15 intermediate outcome indicators. The indicator comprising the M&E framework used both administrative data and population survey data. On one hand, the indicators monitoring progress toward SPS expansion were well developed and assessed the coverage among various disadvantaged groups—the poor, indigenous people, Oportunidades beneficiaries, women and girls. On the other hand, the linkages between the activities financed and PDO2 are more complex and the project's M&E framework could have been strengthened to measure additional aspects of SPS administration, including clinical aspects, financial management, affiliation control, and general administration.

90. The construction of some indicators was ambiguous and potentially misleading. Several indicators were expressed as a percentage of the population not covered by CSS (see tables 4.2 and 4.3). Because the expansion of SPS coverage led to a continuous modification in the denominator (that is, in the percentage of the population not covered by CSS) the indicators were constructed using as the denominator the value at baseline year (rather than the value contemporaneous to the numerator). However, the choice of using a time-invariant denominator was not consistent with the use of percentage. Therefore, it would have been more transparent to present the indicator in absolute terms.

91. Finally, the inclusion of indicators measuring effective health coverage would have enhanced the project M&E framework. The only PDO indicator measuring health service use among SPS affiliate refers to the "number of individuals affiliated with the Popular Health Insurance who have received a Health Risk Screening." However, as shown in this PPAR, SPS success in increasing effective health coverage could have been measured through (i) financial protection, (ii) service availability and use, and (iii) health service quality.

Monitoring and Evaluation Implementation

92. During implementation, the lack of clarity in the design of the indicators resulted in the inability to convey accurate information about the reach of the program. The

indicators constructed using as denominators the value at baseline year (rather than the value contemporaneous to the numerator) ended up reaching values over 100 percent, which was illogical and potentially misleading (see tables 4.2 and 4.3).

93. In addition, two indicators were changed slightly in November 2011 during the first project restructuring. (i) The indicator that was set to monitor compliance by the state on the collection of information requested by the CNPSS, was modified to follow the percentage of specific CNPSS recommendations implemented by the states. (ii) The coverage of health risk screening that was initially expressed as a percentage of new individuals affiliated was changed into an absolute number, owing to the difficulty in defining the denominator because of the accelerated expansion of SPS coverage.

Monitoring and Evaluation Use

94. During the implementation of the project, the Government of Mexico routinely conducted evaluations of the SPS and improved the overall management information system of the program. The National Council for the Evaluation of Social Development, the public entity responsible for evaluating policies, programs, and actions executed by public agencies and to promote evidence-based decision making, has routinely conducted process and results evaluation of the SPS. The National System of Basic Information for Health, conceptualized in 2012 and established in 2015, standardized the information platform that all states collect through SPS, which includes information about health risk screenings, and a biometric identification system for affiliates.

5. Lessons

95. In times of economic crisis, if the country has a well-designed health program in place, the World Bank's financial support can be effective in helping the government to sustain and expand access to health services, protecting the poor from the adverse effects of the crisis. Mexico was suffering from a severe economic crisis in the year 2009, when the World Bank project was approved. The fiscal consequences of the economic crisis were putting at risk the expansion of Seguro Popular, as planned in the National Development Plan and national health sector strategy. Therefore, in a situation of limited fiscal space, World Bank financing created the fiscal space necessary to sustain and expand a national program to protect the poor.

96. IPF can be an efficient alternative to DPF if there is government ownership of the national program and a strong M&E system to monitor results. Both DPF and IPF can provide large-scale disbursements to governments, the former through budget support linked to "prior actions" and "triggers"; the latter through cofinancing large national programs like Seguro Popular. However, IPF, unlike DPF, can provide technical assistance as well as multiyear support and ensure that financial resources are used for a specific sectoral use. These are potentially positive features, as they can help sustain long-term reform efforts in a specific sector or program. Such a program effectively takes on key features of the World Bank's new PforR lending instrument that links disbursements to defined results.

97. It may not be possible to achieve UHC in fragmented health systems without an individual mandate for health insurance coverage. The main reason is the presence of adverse selection. Thus, under a voluntary system, the individuals who are most likely to seek health coverage are those who are older and who are less healthy than average. The experience of SPS confirmed that Mexico fell short of achieving universal coverage, as a sizable portion of the population not covered by the CSS still did not enroll in the heavily subsidized SPS until their health status worsened.

98. In decentralized health systems, to achieve the desired changes at the local level, the use of incentives (compatibility) should be preferred to the use of regulations and aligned with the institutional capabilities of the agents. According to the decision-space model (a principal-agent model first proposed by Bossert 1998) the central government (principal) can use diverse tools to shape the behavior of the state (agent), such as monitoring, reporting, inspections, performance reviews, contracts, matching grants, transfers, and so on (see World Bank 2015). In Mexico starting in 2014, the government introduced upper limits to SPS expenditure as it was concerned the states were not utilizing the SPS resources in the best way. However, the measure did not achieve the expected improvements and, instead, reduced the possibility of improving allocative efficiency at the state level.

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Appendix A. Basic Data Sheet

SUPPORT TO THE SOCIAL PROTECTION SYSTEM IN HEALTH PROJECT (IBRD LOAN 7860-MX)

Table A.1. Key Project Data ($, millions)

	Appraisal Estimate	Actual or Current Estimate	Actual as Percent of Appraisal Estimate
Total project costs	1,250.00	1,250.00	100
Loan amount	1,250.00	1,250.00	100

Source: Project Portal.

Table A.2. Cumulative Disbursements Estimated and Actual

	FY10	FY11	FY12	FY13	FY14
Appraisal estimate *($, millions)*	300.00	1,200.00	1,245.00	1,248.00	1,250.00
Actual *($, millions)*	0.00	815.50	1,136.72	1,246.88	1,250.00
Actual as percent of appraisal	0	68	91	100	100
Date of final disbursement: April 30, 2014					

Source: SAP project supervision disbursement data.

Table A.3. Key Project Dates

	Original	Actual
Concept review	09/10/2009	09/10/2009
Negotiations	02/19/2010	02/19/2010
Board approval	03/25/2010	03/25/2010
Signing	03/30/2010	03/302010
Effectiveness	12/29/2010	12/17/2010
Closing date	12/31/2013	12/31/2013

Table A.4. Task Team Members

Name	Title	Unit
LENDING AND SUPERVISION		
Adam Wagstaff	Research Manager	DECHD
Alejandra Gonzalez	Program Assistant	LCSFM
Christel Vermeersch	Senior Economist	LCSHH
Christina Novinskey	Consultant	LCSHH
Christoph Kurowski	Lead Health Specialist	ECSH1
Claudia Macias	Senior Operations Officer	LCSHH
Dmitri Gourfinkel	Financial Management Specialist	LCSFM
Gabriel Penaloza	Procurement Specialist	LCSPT
Gunars H. Platais	Senior Environmental Economist	LCSEN
José C. Janeiro	Senior Finance Officer	CTRLA
Juan Carlos Serrano-Machorro	Senior Financial Management Specialist	LCSFM
Luis Adrian Ortiz Blas	Junior Professional Associate	LCSHH
Manuel Antonio Vargas Madrigal	Lead Financial Management Specialist	MNAFM
Manuela Villar Uribe	Consultant	AFTHD
Maria E. Castro-Munoz	Consultant	LCSHH
Maria Eugenia Bonilla-Chacin	Senior Economist	LCSHH
Mariangeles Sabella	Senior Counsel	LEGES
Natasha Zamecnik	Consultant	LCSHH
Tomas Socias	Senior Procurement Specialist	LCSPT
Veronica Yolanda Jarrin	Operations Analyst	AES
Xiomara A. Morel	Senior Financial Management Specialist	LCSFM
Yasuhiko Matsuda	Senior Public Sector Specialist	EASPR
Maria E. Castro-Munoz	Consultant	LCSHH
Maria Eugenia Bonilla-Chacin	Senior Economist	LCSHH
Mariangeles Sabella	Senior Counsel	LEGES
Natasha Zamecnik	Consultant	LCSHH
Tomas Socias	Senior Procurement Specialist	LCSPT

Table A.5. Staff Time Budget and Cost for World Bank

Stage or Year of Project Cycle	Staff Weeks *(no.)*	Finance, Including Travel and Consultant Costs *($, thousands)*
LENDING		
FY09	3.40	46,436.00
FY10	84.86	269,834.00
Subtotal	**88.26**	**316,270.00**
SUPERVISION AND IMPLEMENTATION COMPLETION AND RESULTS REPORT		
FY10	18.18	97,086.00
FY11	104.15	244,000.00
FY12	71.75	216,112.00
FY13	28.35	105,375.00
FY14	20.53	84, 688.00
Subtotal	**242.96**	**662,573.00**
TOTAL	**331.22**	**978,843.00**

Appendix B. Project Result Framework

	Baseline Value	Target Values (Original Target at PAD)	Actual Value at ICR	Actual Value at PPAR
(a) PDO indicators:				
1. Number of individuals affiliated with Popular Health Insurance as a percentage of the total number of individuals that are not affiliated with a CSS system				
Value quantitative or qualitative	64% (31.1 million/48.4 million)	71% (52.9 million/74.9 million)	115% (55.6 million/48.4 million)	76% (CI95: 73%–79%) (54.9 million/72.5 million)
Date achieved	12/31/2009	12/31/2012	12/31/2013	12/31/2016
Comments at ICR (including percent achievement): Source: CNPSS. Target surpassed. Percent achievement for numerator: 245% = (55.6-31.1)/(41.1-31.1)				
Comments at PPAR (including percent achievement): Target achieved. Sources: (i) Numerator CNPSS; (ii) Denominator estimated from ENSANUT MC 2016.				
2. Percentage of recommended actions implemented by federal entities resulting from the supervision action plan carried out by the Commission in action areas (Affiliation and Operation, Health Services management, Financing, and Oportunidades program)				
Value quantitative or qualitative		71%	90.3%	—
Date achieved	12/31/2009	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: CNPSS. Description of indicator revised during first restructuring. Target surpassed. Percent achievement: 127% = 90.3/71				
Comments at PPAR (including percent achievement): The indicator was achieved; thus, it is no longer relevant.				
3. Number of individuals affiliated with the Popular Health Insurance who have received a "Health Risk Screening"				
Value quantitative or qualitative	0	10,000,000	22,800,000	—
Date achieved	12/31/2009	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: CNPSS. Description of indicator revised during first restructuring. Target surpassed. Percent achievement: 228% = 22,800,000/10,000,000				
Comments at PPAR (including percent achievement): The CNPSS did not provide the value of the indicator to the IEG mission.				
4. Number of individuals affiliated with the Popular Health Insurance that report having received enough information to know their rights and obligations as a percentage of the total number of individuals affiliated with the Popular Health Insurance				
Value quantitative or qualitative	71.2%	80%	74.3%	—
Date achieved	12/31/2009	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: ENSANUT for both numerator and denominator. Progress made but target not achieved. Percent achievement: 35% = (74.3-71.2)/(80-71.2)				
Comments at PPAR (including percent achievement): Indicator not included in ENSANUT MC 2016				
(b) Intermediate Outcome Indicators:				
1. Federal and state expenditure on the Popular Health Insurance (2009 $ constant exchange rate)				

Value quantitative or qualitative	$1,649.8 million	$4,503.08 million ($6,481.69 million)	$5,236.48 million	$5,555.56
Date achieved	12/31/2009	12/31/2013	12/31/2013	2017
Comments at ICR (including percent achievement): Source: CNPSS. Target surpassed. Percent achievement: 126% = (5,236.48-1,649.8)/(4,503.08-1,649.8)				
Comments at PPAR (including percent achievement): CNPSS				
2. Number of federal entities that contribute with their State Solidarity Contribution (ASE) to the Popular Health Insurance according to the General Health Law				
Value quantitative or qualitative	31	31	32	32
Date achieved	1/26/2010	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Target achieved. Percent achievement: 103% = 32/31				
Comments at PPAR (including percent achievement): Source: CNPSS.				
3. Number of individuals in deciles 1 and 2 affiliated with Popular Health Insurance's subsidized regime as a percentage of total number of individuals in deciles 1 and 2 that are not affiliated with a CSS system				
Value quantitative or qualitative	48% (9.9 million/20.7 million)	77% (16 million/20.7 million)	97% (20.2 million/20.7 million)	88% (27.8 million/31.6 million)
Date achieved	12/31/2008	12/31/2013	12/31/2013	12/31/2016
Comments at ICR (including percent achievement): Source at PAD: ENIGH. Results reported by government based on ENSANUT.				
Comments at PPAR (including percent achievement): ENSANUT MC 2016				
4. Number of Oportunidades beneficiary families affiliated with the Popular Health Insurance as a percentage of the total number of Oportunidades beneficiary families				
Value quantitative or qualitative	60.7% (3.06 million/5.03 million)	80% (4 million/5.03 million)	113% (5.7 million/5.03 million)	81.8% (CI95: 78.6%–84.6%)
Date achieved	12/31/2008	12/31/2013	12/31/2013	2016
Comments at ICR (including percent achievement): Source: CNPSS (numerator); Opportunidades (denominator). Baseline was adjusted in first restructuring. ICR uses numerator only. %Percent achievement for numerator: 280% = (5.7-3.06)/(4-3.06)				
Comments at PPAR (including percent achievement): ENSANUT MC 2016				
5. Number of individuals affiliated with SPS residing in areas where more than 40% of the population speaks an indigenous language as a percent of total number of individuals residing in these areas who are not affiliated with a CSS system				
Value quantitative or qualitative	78.5% (4.13 million/5.27 million)	92% (4.84 million/5.27 million) [50% (4.85 million/9.67 million)]	131% (6.9 million /5.27 million)	83.8% (3.1 million/3.7 million) 85.3% (18 million/21.1 million)*
Date achieved	12/31/2008	12/31/2013	12/31/2013	12/31/
Comments at ICR (including percent achievement): Source: CNPSS (numerator), National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía—INEGI) (denominator). Indicator adjusted at restructuring. Target surpassed. Percent achievement for numerator: 413% = (6.9-4.13)/(4.8-4.13)				

Comments at PPAR (including percent achievement): ENSANUT MC 2016; *based on the percentage of people speaking an indigenous language.				
6. Number of women and girls affiliated with the Popular Health Insurance as a percentage of the total number of women and girls who are not affiliated with a CSS system				
Value quantitative or qualitative	68% (16.94 million/24.8 million)	88.7% (22 million/24.8 million)	120% (30 million/24.8 million)	112.1% (27.8 million/24.8 million)* 79.9% (27.8 million/34.8 million)**
Date achieved	12/31/2009	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: CNPSS/ National Health Information System (Sistema Nacional de Información en Salud—SINAIS) (numerator). Target surpassed. Percent achievement for numerator: 258% = (30-16.94)/(22-16.94)				
Comments at PPAR (including %percent achievement): ENSANUT MC 2016; * calculated using as denominator the value of baseline year; ** calculated using contemporaneous values for numerator and denominator.				
7. Number of federal entities supervised by the Commission in any [of] its four core action areas (Affiliation and Operation, Health Services Management, Financing, and Oportunidades program) during a calendar year				
Value quantitative or qualitative	0	32	32	32
Date achieved	12/31/2009	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Indicator adjusted at first restructuring. Target achieved.				
Comments at PPAR (including percent achievement): CNPSS.				
8. Amount of funds (2009 $ constant exchange rate) allocated for technical assistance to improve the collection and analysis of State Health System results information				
Value quantitative or qualitative	$1.77 million	$2.51 million	$8.02 million	—
Date achieved	12/31/2009	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: CNPSS. Target surpassed. Percent achievement: 845% = (8.02-1.77)/(2.51-1.77)				
Comments at PPAR (including percent achievement): The CNPSS did not provide the value of the indicator to the IEG mission.				
9. Number of individuals affiliated with the Popular Health Insurance who report having received a bill of rights and responsibilities at the time of affiliation as a percentage of total number of individuals affiliated with the Popular Health Insurance				
Value quantitative or qualitative	81.9%	88%	77.7%	—
Date achieved	12/31/2006	12/31/2013	12/31/2013	
Comments at ICR (including percent achievement): Source: ENSANUT. Target not achieved but there is significant variation in achievement among the states.				
Comments at PPAR (including percent achievement): Indicator not included in ENSANUT MC 2016				
10. Number of individuals affiliated with Popular Health Insurance who report having received a catalog of their benefits package at the time of affiliation as a percentage of the total number of individuals affiliated with the Popular Health Insurance				
Value quantitative or qualitative	77%	83%	74.3%	—
Date achieved	12/31/2006	12/31/2013	12/31/2013	

Comments at ICR (including percent achievement): Source: ENSANUT. Target not achieved but there is significant variation in achievement among the states.				
Comments at PPAR (including percent achievement): Indicator not included in ENSANUT MC 2016				
11. Number of individuals who report on the satisfaction survey to have received information at the time of affiliation with regard to their right to not pay service fees, as a percent of [those] who participate in the satisfaction survey				
Value quantitative or qualitative	53.4%	80%	89.2%	47.1%
Date achieved	12/31/2009	12/31/2013	12/31/2013	2015
Comments at ICR (including percent achievement): Source: Encuesta de Satisfacción. Target surpassed but there is significant variation in achievement among the states. Percent achievement: 135% = (89.2-53.4)/(80-53.4).				
Comments at PPAR (including percent achievement): Source: Encuesta de Satisfacción 2015.				
12. Information materials on Popular Health Insurance rights, responsibilities, and affiliation processes designed for distribution by the Oportunidades program				
Value quantitative or qualitative	Not designed	Designed and distributed in the states where the program operates	Designed and distributed in the states where the program operates	Continue to be distributed in the states where the program operates
Date achieved	12/31/2009	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Target achieved.				
Comments at PPAR (including percent achievement): CNPSS				
13. Health risk management program guidelines have been designed and rolled out.				
Value quantitative or qualitative	No	Yes	Yes	Yes
Date achieved	12/31/2009	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Target achieved: Program rolled out in 32 states.				
Comments at PPAR (including percent achievement): CNPSS.				
14. Number of states in which the health risk management program IT systems for data collection have been rolled out				
Value quantitative or qualitative	0	31	32	32
Date achieved	12/31/2009	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Target achieved. Percent achievement: 103% = 32/31				
Comments at PPAR (including percent achievement): CNPSS				
15. Number of states that capture biometric information of individuals affiliated with the Popular Health Insurance				
Value quantitative or qualitative	0	31	32	32
Date achieved	12/31/2009	12/31/2013	12/31/2013	2018
Comments at ICR (including percent achievement): Source: CNPSS. Target achieved. Percent achievement: 103% = 32/31				
Comments at PPAR (including percent achievement): CNPSS				

Note: — = Not available; CI95: 95 percent confidence interval; CSS = contributory social security; CNPSS = National Commission for the Social Protection in Health; ENIGH =; ENSANUT = National Survey of Health and Nutrition; ICR = Implementation Completion and Results Report; IEG = Independent Evaluation Group; INEGI =; PDO = project development objective; PPAR = Project Performance Assessment Report; SINAIS =.

Appendix C. Econometric Analysis of ENSANUT MC 2016

1. The Mexican National Health and Nutrition Survey (Encuesta Nacional de Salud y Nutrición, ENSANUT) 2016 is a multistage probabilistic survey with regional and rural/urban representativeness of Mexico that covered 19,795 people belonging to 9,474 households in the year 2016. The survey asked questions on health services use and quality, health risks and nutrition, and prevalence of chronic diseases such as diabetes and hypertension.

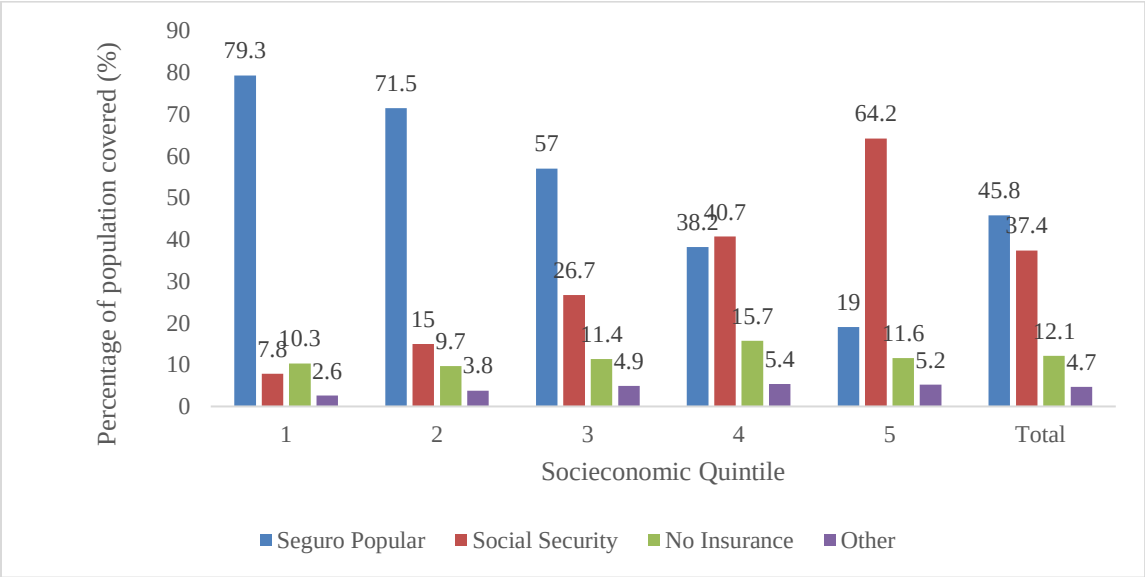
2. ENSANUT de Medio Camino (MC) 2016 collected information about health insurance coverage for each family member. However, social security coverage extends to all family members, which creates the possibility of multiple coverage. For the analysis performed in this annex, the following variables were constructed:

- "Seguro Popular" denotes a family where all family members only own this type of insurance;
- "Contributory Social Security" (CSS) denotes a family covered by any type of social security insurance (Mexican Institute of Social Security, the Institute of Social Security and Services for Government Workers, ISSSTE ESTATAL, PEMEX, DEFENSA/MARINA, Other institution) of the same type or different types;
- "No insurance" denotes families in which no member is covered by any public or private insurance; and
- "Other" represents families in which members have a private insurance or different types of insurance, including "Seguro Popular" or social security.

3. We show the overall distribution of health insurance coverage among socioeconomic quintiles (Figure C.1), between people living in rural or urban areas and people speaking indigenous languages (Figure C.2).[1] It is worth noticing that values are slightly different from those reported in Shamah-Levy et al. (2016) for the different ways multiple insurance coverage within a family are treated.

4. As it is possible to see, 45.8 percent of households in Mexico in 2016 use Popular Health Insurance (SPS) as health insurance, followed by 37.4 percent of households covered by insurances provided by CSS. According to ENSANUT data, the private insurance sector is disappearing because the 4.7 percent of category "other" also includes households with SPS and CSS insurances. About 12 percent of families declare they neither have nor require financial aid for health issues. In any case, table C.2 shows most of these families belong to the richest quintiles.

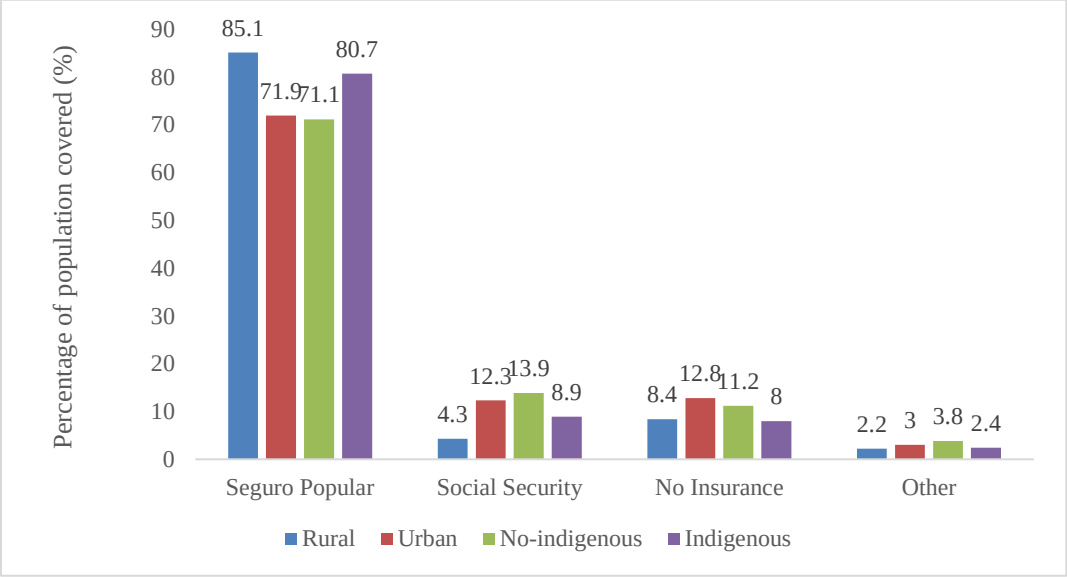
Figure C.1. Distribution of Health Insurance Coverage across Socioeconomic Quintiles



Sources: ENSANUT MC 2016.

5. Figure C.2 shows the type of health insurance coverage among individuals belonging to quintiles 1 and 2. We can see that among the poor (for example, individuals belonging to quintiles 1 and 2) SPS coverage is higher in rural areas than urban (85.1 percent versus 71.9 percent), and higher among indigenous populations than nonindigenous (80.7 percent versus 71.1 percent).

Figure C.2. Health Insurance Coverage among Population Groups Belonging to Quintiles 1 and 2



Source: ENSANUT MC 2016.

6. The aim of the analysis is to estimate the impact of having SPS insurance on access to and perceived quality of health services with respect to CSS insurance. Simple comparisons between the average outcomes of individuals covered by SPS and CSS insurance is possible because the apparent difference in outcome between these two

groups of units may depend on characteristics that affected whether or not a unit received a given treatment instead of due to the effect of the treatment per se. Therefore, we used propensity score matching (PSM), a statistical matching technique that attempts to estimate the effect of a treatment, policy, or other intervention by accounting for the covariates that predict receiving the treatment. If applied properly this technique can provide consistent estimation of treatment effect (Rosembaum and Rubin 1983). Three different PSM models are developed: the first model estimates the effect of SPS on access to health services for patients with diabetes; the second model estimates the effect of SPS on access to health services for patients with hypertension; and the last model assesses the effect of SPS on perceived quality of health services.

7. The first key step in the PSM estimation is the choice of the variables hypothesized to be associated with both treatment and outcome. These variables are included as confounders in a logistic regression where the dependent variable is: $Y = 1$, if the individual has SPS; $Y = 0$, otherwise (Brookhart et al. 2006). To choose the appropriate confounders (that is, common variables) we followed previous SPS impact evaluation studies (see Knaul et al. 2005; Sosa-Rubí et al. 2009; Avila-Burgos et al. 2013; Wirtz et al. 2012) and included

- The type of jobs (unemployed and inactive, employee and worker, daily worker and assistant, employer, and freelance);
- Socioeconomic index,[2] which is strongly statistically associated with the type of insurance;[3]
- Education level (none, primary, secondary, tertiary or more);
- Age (linear and squared);
- Risk factors (consumption of alcoholic beverages in the case of patients with diabetes and tobacco for patients with hypertension; if one or both parents have the same disease; comorbidity, such as permanent physical or mental issues);
- Contextual factors that are potentially associated with both the probability of treatment and the outcomes, such as location (rural, urban or metropolitan area; north, center, south of Mexico or Federal District), if indigenous population or not; number of children and marital status.

8. As a first step of the analysis to evaluate the goodness-of-fit of the model, several tests and scatter plots have been used. This is a fundamental issue to obtain consistent estimators of the propensity score model and consequently of the average treatment effect. As stressed in Hilbe (2009) and Hosmer et al. (2013) scatter diagrams of (i) standardized deviance residuals squared on predicted values and (ii) standardized deviance residuals on leverage of residuals are used to find potential influential points. As suggested by Hosmer et al. (2013) and Allison (2012), the Stukel's test is used to detect misspecification in the estimated PSM model. The Stukel's misspecification test uses a generalized logistic model that allows for departures from the standard logistic model using two additional parameters. Simulation studies suggest that Stukel's test is usually more powerful than the Hosmer-Lemeshow test or the standardized Pearson test (Hosmer et al. 1997; Hosmer and Hjort 2002). As explained in Hilbe (2009) and Hosmer et al. (2013) the area under the Receiver Operating Characteristic (ROC) curve assesses the

ability of the model to classify correctly the fact of belonging to either treatment or control group using the observed factors included in the model.

9. The second step is to obtain the propensity score (that is, the predicted probability) from the above-estimated logistic regression and use standardized differences or graphs to check that: (i) propensity score overlaps across treatment and comparison groups, and (ii) covariates are balanced across treatment and comparison groups. In fact, to obtain a consistent estimate of the effect of a treatment it is necessary that control and treated groups share a similar propensity score.

10. The next step is to match each of the treated (individuals with SPS) to control (individuals with CSS) based on the propensity scores. The objective of the matching is to create a new sample of cases that share approximately a similar likelihood of being assigned to treatment condition. This implies that for each subject with SPS the algorithm found the most similar subject (or subjects) based on the observed variables included in the model but holding CSS coverage. Four alternative matching algorithms are used to test the sensitivity of the results: (i) 1-to-1 matching with no replacement; (ii) 1-to-1 matching with replacement; (iii) 4-nearest-neighbor matching; and (iv) a radius matching with a caliper equal to 0.0002.

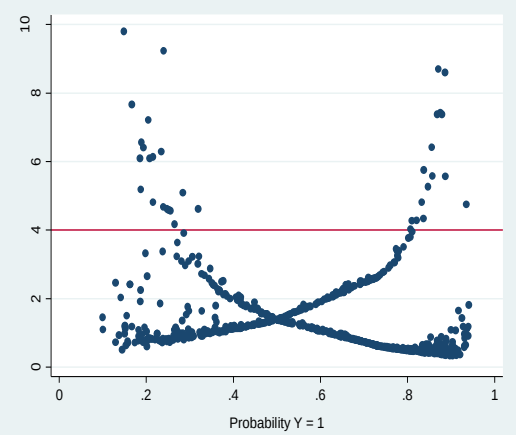
Patients with Diabetes

11. ENSANUT MC 2016 comprises 852 complete responses (that is, persons with diabetes who responded to all questions required by the PSM model), with 850 unique patterns. These observations are used to estimate the impact of SPS, relative to CSS, on the use of health services for patients with diabetes.

12. The tests used to evaluate the specification of the PSM model are positive. The scatter diagrams of standardized deviance residuals squared on predicted values (figure C.3, panel a), and of standardized deviance residuals on leverage of residuals (figure C.3, panel b) show that there are few influential points. The Stukel's test, used to detect misspecification in the estimated PSM model is not significant (the joint Wald test on the two additional parameters added to the initial propensity score model p-value equal to 0.2682) denoting no evidence for misspecification. The area under the ROC curve depicted in Figure C.4 equals 0.8430, which indicates that the model has a high capacity to correctly classify cases. Figure C.5 shows that most of the cases overlap. Cases close to the edge of the distribution of the propensity score can be problematic, and hence, to find the most similar case inside the common support, we developed matching procedures that use the whole range of propensity scores and not just the common support.

Figure C.3. Standardized Deviance for Patients with Diabetes

a. Scatter Diagrams of standardized deviance of the residuals squared on predicted values



b. Standardized deviance residuals on leverage of residuals

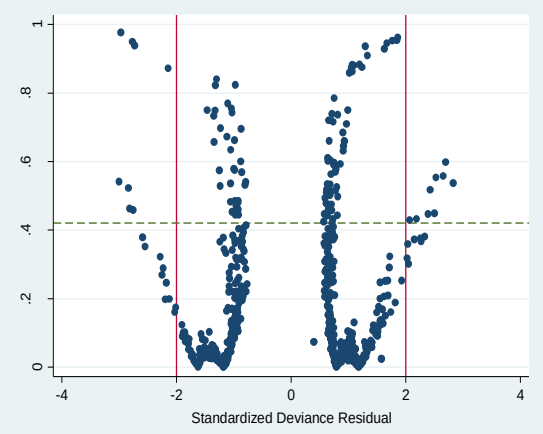
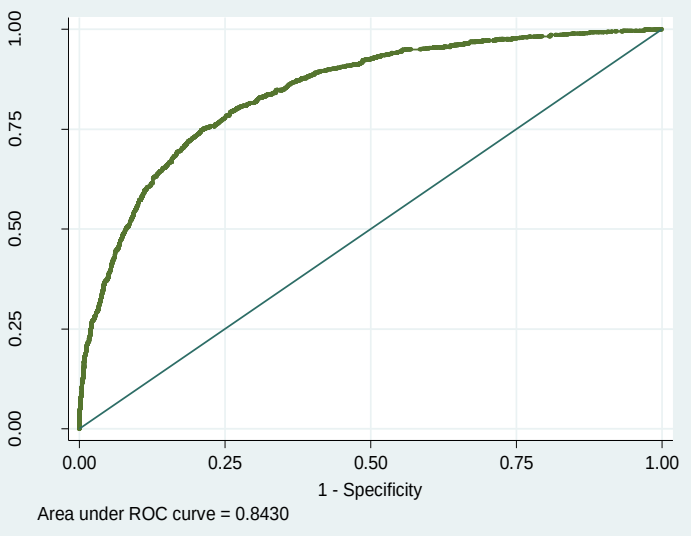
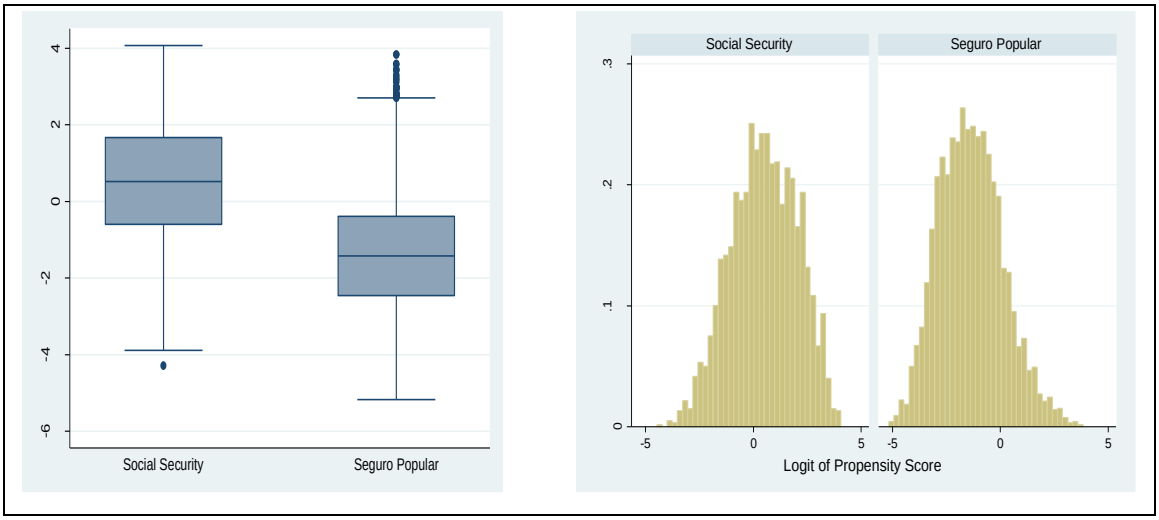


Figure C.4. Receiver Operating Characteristic Curve of the Propensity Score Matching Model for Patients with Diabetes



Note: ROC = receiver operating characteristic.

Figure C.5. Propensity Score Matching Model for Patients with Diabetes: Common Support Region Using the Logit of Propensity Score



13. Table C.1 shows, for each matching algorithm, the size of the sample generated and the ability to balance covariates between treated and control after the matching. The radius matching with a caliper of 0.002 successfully removed all the significant differences of covariate imbalance, but at the same time (as it is possible to observe in Table C.2) it seems to suffer from a nontrivial issue in the reduction of the sample size, which reduces the power of the statistics. In fact, when the number of cases decreases the probability of a type II error (not rejecting the null hypothesis when it is false) increases, owing to a higher standard error of the estimation. The 4-nearest-neighbor matching shows a balanced distribution of the variables, except for number of children, schooling, and age, using all the sample of people with diabetes.

Table C.1. Matching Algorithms Used in the Propensity Score Matching Model for Patients with Diabetes

Types	***Covariates Not Balanced with p-value < .050***
1-to-1 matching with no replacement	Indigenous; number of children; schooling; area; socioeconomic status; region; age; type of job; alcohol consumption; genetic inheritance
1-to-1 matching with replacement	Indigenous; number of children; schooling; socioeconomic status; region; age; type of job
4-nearest-neighbor matching	Number of children; schooling; age
Radius matching with caliper = 0.002	—

14. Table C.2 presents the indicators of interest calculated using both the 4-nearest-neighbor method and the radius matching, as a way to test the sensitivity of the results to the difference in the sample size. If the average treatment effect obtained using 4-nearest-neighbor matching (column 2) and radius matching with a caliper (column 3) are similar (that is, the difference is less than 5 percent) the estimate produced using the radius matching with a caliper, which is based on a larger sample will be preferred. Otherwise,

the estimate produced using the radius matching with a caliper will be preferred, as this method has been able to balance all the observed covariates. The p-value at which the difference between the two estimates for each indicator is less than 5 percent is presented in the last column. The preferred estimates are presented in bold. This strategy can apply to indicators A, C, D, F, and I.

15. On average, the presence of patients with diabetes is not statistically different between those with CSS and SPS insurance (indicator A). However, on average people with CSS are classified as diabetic for a longer time (21.8 months) and at a younger age (2.5 years) than those with SPS coverage. This can be an indication of similar prevalence of the disease among the two populations but better capacity of the CSS systems to diagnose the condition at an earlier stage.

16. The comparison in the use of health services between CSS and SPS patients with is mixed. On average, both CSS and SPS patients with diabetes have visited a doctor three times during the past 12 months (indicator D), but at the same time CSS patients reported visiting their doctor every month, more often than SPS patients. In contrast, SPS patients report visiting their doctor every year more than did CSS patients (indicator E). SPS patients with diabetes also report using private services more than CSS patients (indicator F), which can indicate limited accessibility of services provided by their respective network of providers.

17. SPS patients with diabetes on average take less medication for diabetes (9.3 percent less, indicator G), have fewer exams for diabetes (7.8 percent, indicator H), take fewer preventive actions (indicator I), and receive less information on preventive actions (indicator J) than CSS patients. These indicators can be associated with the level of quality of the medical assistance, although the difference is statistically significant only for the use of medicine—stressed constantly during the qualitative interviews conducted in the focus groups (see appendix D). Finally, SPS patients with diabetes on average report they suffer fewer complications than CSS patients, although the difference is not statistically significant.

Table C.2. Propensity Score Matching Model for Patients with Diabetes

Indicators	*(1) Social Security (percent)*	*(2) Seguro Popular 4-nearest-neighbor matching (percent)*	*(3) Seguro Popular Radius matching with caliper (0.002) (percent)*	*|Change percent| between 2 and 3 if p <= 5 percent (percent)*
A) Do you have diabetes? (A301)	9.7	9.7	9.8	1.03
B) For how many months have you had diabetes? (A302A, A302B)	62.9 [C: 357]	47.2* [T: 491]	41.1** [T: 264]	
C) How old were you when diabetes was detected for the first time? (A3025)	48.8 [C: 356]	46.3** [T: 484]	47.0 [T: 240]	1.51
D) During the past 12 months, how many times did you go to the doctor for diabetes? (A305B)	3.0 [C: 348]	3.0 [T: 452]	2.8 [T: 240]	3.44
E) During the past 12 months, with what frequency did you go to the doctor for diabetes? (A305A)	Weekly: 2.6 Monthly: 77.3 Yearly: 20.1 [C: 349]	Weekly: 3.1 Monthly: 65.7 Yearly: 31.2 [T: 454]	Weekly: 2.8 Monthly: 58.7** Yearly: 38.5** [T: 251]	
F) Do you use private services for visits to a doctor? (A306J)	8.1 [C: 360]	16.3** [T: 492]	15.4* [T: 267]	4.93
G) Do you take medication for diabetes? (A307)	91.4 [C: 360]	87.2 [T: 492]	82.1** [T: 267]	
H) During the past 12 months, have you been examined for diabetes? (A310A-F)	75.7 [C: 360]	63.1* [T:492]	67.9 [T: 267]	
I) Due to diabetes, did you take any preventive actions? [A312A-O]	52.1 [C: 360]	42.4 [T: 492]	42.5 [T: 267]	0.23
J) Did you receive information on possible preventive actions? (A312M)	10.9 [C: 360]	7.2 [T: 492]	6.4 [T: 267]	
K) Due to diabetes, did you suffer complications? (A313A-J)	64.2 [C: 360]	69.3 [T: 492]	58.7 [T: 267]	

Note: Average Treatment Effects Obtained for Specific Outcomes and Number of Observations [between square brackets]. C = control; T = treatment.
*$p < .01$.
**$p < .5$.

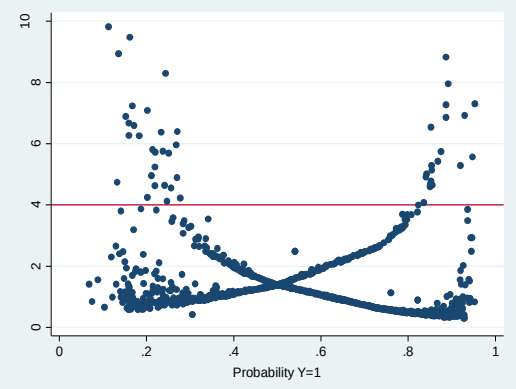
Patients with Hypertension

18. The PSM for patients with hypertension includes the same variables used in the model for diabetes. The only differences are the use of tobacco consumption as a risk factor (instead of alcohol consumption) and the variables used to indicate if one or both parents had hypertension. The survey contained complete information for 1,194 people, with 1,188 unique patterns.

19. The plot of the squared standardized deviance residuals (with the standard threshold of 4 used to define outliers) and the plot of the residuals jointly with the leverage associated to each error term shows few influential points (Figure C.6). Owing to the small amount of influential points (22) and the fact that without these cases the tests performed and ROC would change only marginally, the PSM analysis was developed using all 1,194 observations. Also in this case the Stukel's misspecification test is not significant (p-value equal to 0.7579). The area under the ROC equals 0.8440, which indicates that the model has a high capacity to correctly classify cases (see Figure C.7). Also for people with hypertension the level of overlap of propensity score between treated and controlled groups is high (see Figure C.8). Because it can be problematic to find the most similar case inside the common support for cases close to the edge of the distribution of the propensity score, matching procedures that use the whole range of the propensity score and not just the common support are developed.

Figure C.6. Standardized Deviance for Patients with Hypertension

a. Scatter Diagrams of Standardized Deviance Residuals Squared on Predicted Values



b. Standardized Deviance Residuals on Leverage of Residuals

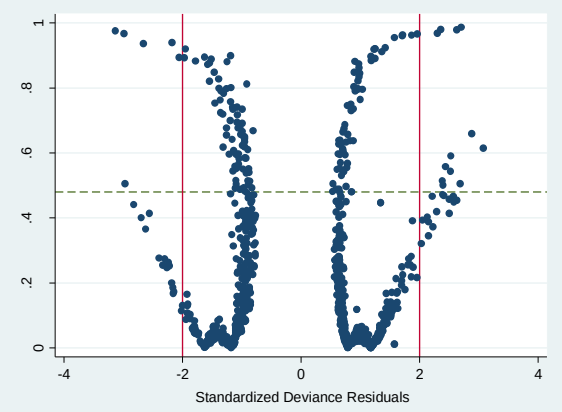
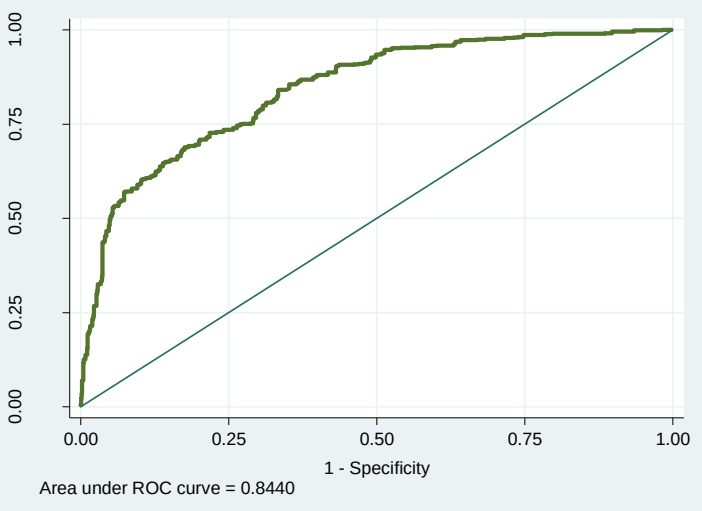
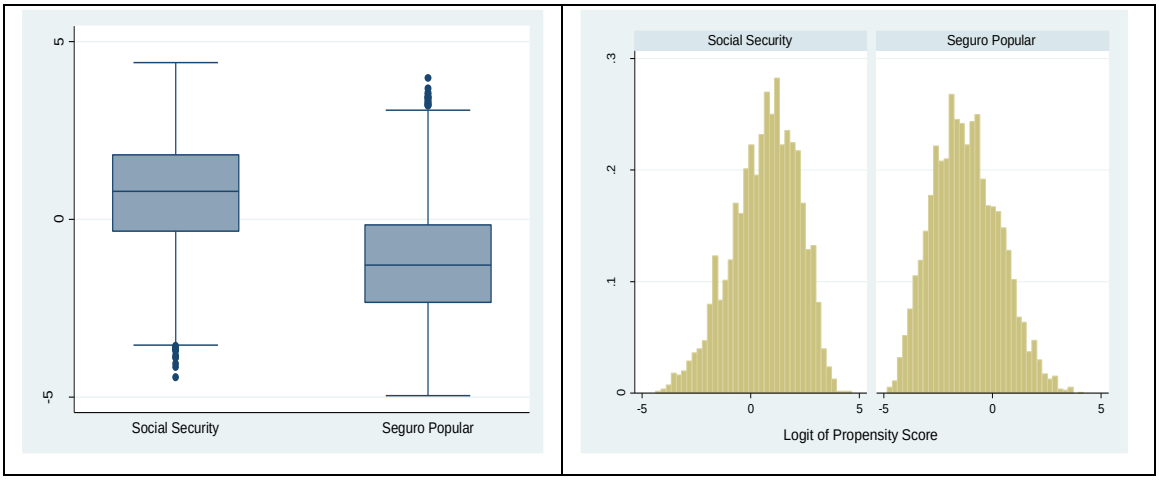


Figure C.7. Receiver Operating Characteristic Curve of the Propensity Score Matching Model for Patients with Hypertension



Note: ROC = receiver operating curve.

Figure C.8. Propensity Score Matching Model for Patients with Hypertension: Common Support Region Using the Logit of Propensity Score



20. The only matching method able to balance all the observed variables in the PSM model with patients with hypertension is the radius matching with a caliper set equal to 0.002. The number of treated cases is large and we have no problem of power. Thus, we present only the results produced using the radius matching (see Table C 3).

Table C 3. Matching Algorithms Used in the Propensity Score Matching Model for Patients with Hypertension

Types	Covariates not balanced with p-value <0.050
1-to-1 matching with no replacement	Indigenous; number of children; schooling; area; socioeconomic status; region; age; permanent health problems; type of job; tobacco consumption; genetic inheritance
1-to-1 matching with replacement	Indigenous; schooling; area; region; type of job; genetic inheritance
4-Nearest Neighbor Matching	Marital status; indigenous; schooling; region; type of job; genetic inheritance
Radius Matching with caliper = 0.002	—

21. The first set of indicators compare the prevalence and awareness. Table C.4 shows the average treatment effects of having SPS coverage compared with CSS estimated by the PSM model. The two groups present similar prevalence of patients with hypertension (indicator A). However, SPS patients are less likely to have been diagnosed with hypertension by their doctor (indicator B) and report having suffered from hypertension for a shorter period (indicator C), compared with CSS patients. Patients with CSS insurance have known about their condition on average for about 10 years (117.2 months) and patients with SPS insurance for about 7 years (83.4 months). These findings are similar to those found for patients with diabetes, and suggest that SPS health services are less able than CSS providers to diagnose hypertension in a timely way. Finally, on average CSS patients are more capable (14.3 percent difference) of controlling their hypertension (indicator D).

22. At the same time, the two groups of patients with hypertension do not show significant differences in the use of health services. No significant differences can be observed in the percentages of patients receiving medications (indicator E, 77.2 percent for CSS and 75.8 percent for SPS), in the number of visits with a doctor during the past 12 months (indicator H, 6.8 percent for CSS and 6.4 percent for SP), and in the use of private services in the past 12 months (indicator H, 15.1% for CSS and 13.5% for SP).

23. Finally, the two groups do not show a statistically significant difference in the capacity to control hypertension. The indicator is constructed as the ratio between the number of those reporting suffering from hypertension, plus those having hypertension at the time of the interview (that is, blood pressure higher than 140/90 mmHg), and those having hypertension under control at the time of the interview (that is, blood pressure lower than 140/90 mmHg) (indicator I).

Table C.4. Propensity Score Matching Model for Patients with Hypertension

Indicators	(1) Social Security (percent)	(2) Seguro Popular Radius Matching With Caliper (0.002) (percent)
A) Prevalence of hypertension (>140/90 mmHg, sistol and diastol)	14.1 [C: 543]	16.3 [T: 651]
B) Do you know you have hypertension thanks to a doctor? (A401)	18.3 [C: 543]	13.3* [T: 651]
C) For how many months have you had hypertension? (A402A, A402B)	117.2 [C: 535]	83.4** [T: 431]
D) People with no knowledge of having hypertension of people with hypertension (>140/90)	51.2 [C: 422]	65.5* [T:463]
E) Do you take medication for hypertension? (A405)	77.2 [C: 543]	75.8 [T: 434]
F) Do you use other treatments to relieve hypertension? (A407A-F)	31.1 [C: 543]	23.6 [T: 434]
G) During the past 12 months, how many times did you go to the doctor for hypertension? (A405B)	6.8 [C: 543]	6.4 [T: 434]
H) Did you use private services? (A306J)	15.1 [C: 543]	13.5 [T: 434]
I) People with hypertension under control?	62.4 [C: 543]	57.1 [T: 434]

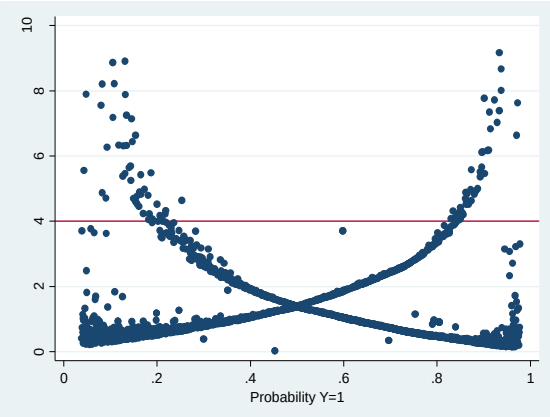
Note: Average Treatment Effects Obtained for Specific Outcomes and Number of Observations [between square brackets]. C = control; T = treatment.
*$p < .05$.
**$p < .01$.

People with High Cholesterol or Triglycerides

24. The PSM model for individuals with high cholesterol or triglycerides includes both tobacco and alcohol consumption but no information about their parents as this variable was not included in the questionnaire. The survey provides 2,947 observations with complete information for all the variables, with 2,921 unique patterns. The plot of the squared standardized deviance residuals (with the standard threshold of 4 used to define outliers) and the plot of the residuals jointly with the leverage associated to each error term shows that there are few influential observations (Figure C.9). Also in this case the Stukel's misspecification test is not significant (p-value equal to 0.9443). The area under the ROC equals 0.8500, which indicates that the model has a high capacity to correctly classify cases (see Figure C.10). Also for people with high cholesterol or triglycerides the level of overlap of propensity score between treated and controlled is high (see Figure C.11). Also in this case, matching procedures that use the whole range of propensity scores and not just the common support were developed.

Figure C.9. Standard Deviance for Patients with High Cholesterol or Triglycerides

a. Scatter diagrams of standardized deviance residuals squared on predicted values



b. Standardized deviance residuals on leverage of residuals

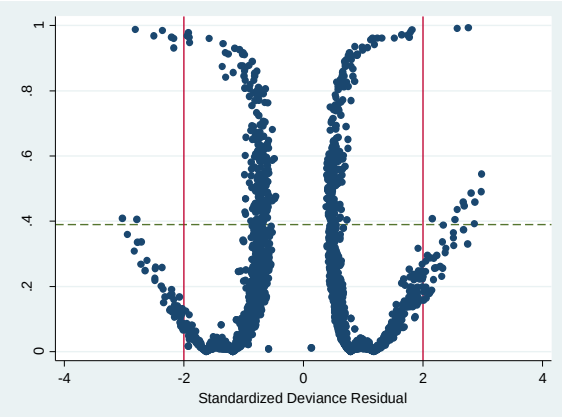
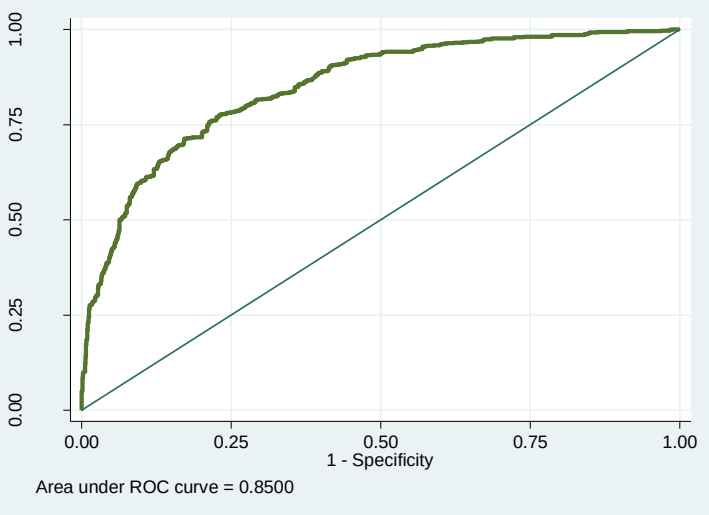
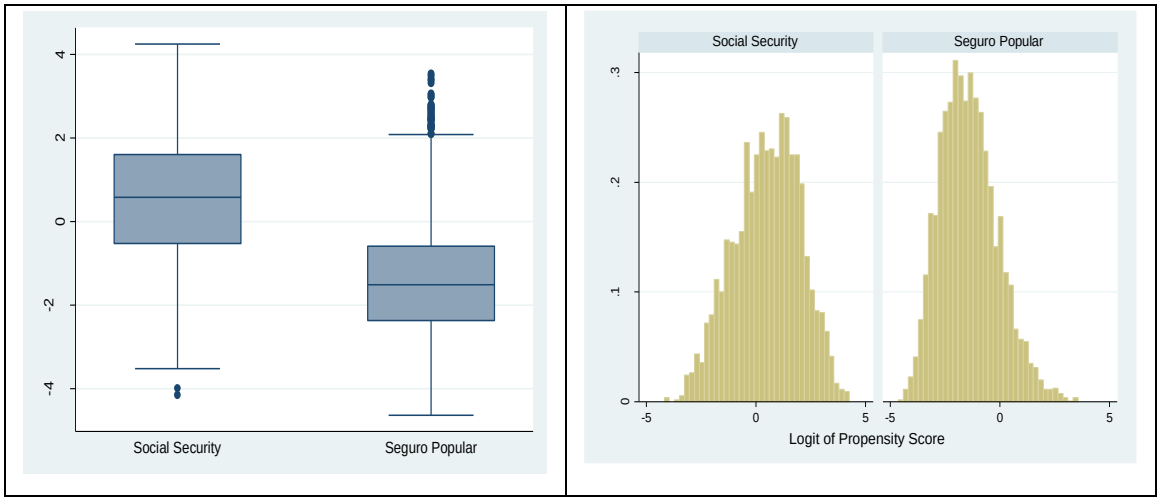


Figure C.10. Receiver Operating Characteristic Curve of the Propensity Score Matching Model for Patients with High Cholesterol or Triglycerides



Note: ROC = receiver operating characteristic.

Figure C.11. Propensity Score Matching Model for Patients with High Cholesterol or Triglycerides: Common Support Region Using the Logit of Propensity Score



25. Also in the PSM model of patients with cholesterol and triglycerides, the only matching method able to balance all the observed variables is the radius matching with a caliper. This time, to obtain a perfect balance of distribution of observed variables, the caliper has been set equal to 0.001. Also in this case, the number of treated cases is large and we have no problem of power. Thus, only the results produced using the radius matching are presented (see Table C.5).

Table C.5. Matching Algorithms Used in the Propensity Score Matching Model for Patients with High Cholesterol or Triglycerides

Types	***Covariates Not Balanced with p-value < .050***
1-to-1 matching with no replacement	Indigenous; number of children; schooling; area; socioeconomic status; region; age; type of job; tobacco consumption; alcohol consumption
1-to-1 matching with replacement	Indigenous; schooling; area; region; age; tobacco consumption; alcohol consumption
4-nearest-neighbor matching	Indigenous; schooling; area; age; tobacco consumption; alcohol consumption
Radius matching with caliper = 0.001	—

26. The prevalence of patients with high cholesterol or triglycerides is not statistically different between CSS and SPS patients (indicator A). However, SPS patients on average report fewer measurements for cholesterol or triglycerides than CSS patients (indicator B). This result (together with a similar result from the PSM model with hypertension) suggests a worse accessibility to health services among SPS patients, compared with CSS patients. Finally, about 28 percent of patients with high cholesterol or triglycerides use treatments for the condition, but we do not observe statistically significant difference between the two groups (indicator C). (See table C.6).

Table C.6. Propensity Score Matching Model for Patients with High Cholesterol or Triglycerides

Indicators	(1) Social Security *(percent)*	(2) Seguro Popular Radius Matching with Caliper (0.001) *(percent)*
(A) Prevalence of cholesterol or triglycerides of people with cholesterol and triglycerides measured? (A607-A609)	33.2 [C: 1,269]	39.1 [T: 1,121]
(B) Did someone measure your cholesterol and triglycerides? (A600A)	54.2 [C: 2,322]	37.6* [T: 4,103]
(C) Are you using treatments against cholesterol or triglycerides? (A608A-C, A610A-C)	26.8 [C: 1,269]	30.7 [T: 1,121]

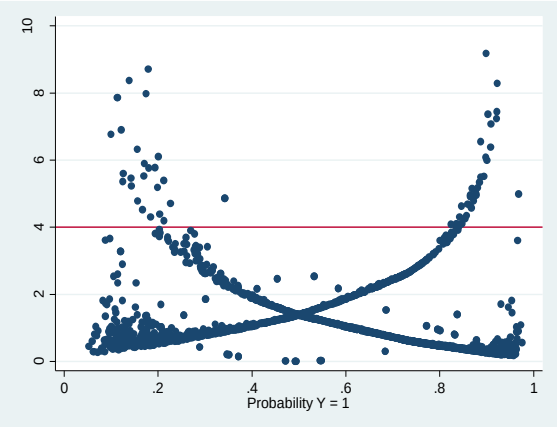
Note: Average Treatment Effects Obtained for Specific Outcomes and Number of Observations [between square brackets]. C: Control; T: Treatment.
*p < .01.

Perceived Quality, Accessibility, and Affordability of Health Services

27. The PSM model for the perceived quality, accessibility, and affordability of health services is based on 2,191 complete observations, with 2,156 unique covariance patterns. The plot of the squared standardized deviance residuals (with the standard threshold of 4 used to define outliers) and the plot of the residuals jointly with the leverage associated to each error term identifies just 15 cases as influential points (Figure C.12). Without these cases the tests and ROC would change only slightly, the analysis is developed using all the observations. Also in this case the Stukel's misspecification test is not significant (p-value equal to 0.5382). The area under the ROC equals 0.8449, which indicates that the model has a high capacity to correctly classify cases (see Figure C.13). Also in the model for the perceived quality of health services, the level of overlap of propensity score between treated and controlled groups is high (Figure C.14). Also in this case, because it can be problematic to find the most similar case inside the common support for cases close to the edge of the distribution of the propensity score, matching procedures that use the whole range of propensity scores and not just the common support are developed.

Figure C.12. Perceived Quality, Accessibility, and Affordability of Health Services

a. Scatter diagrams of standardized deviance residuals squared on predicted values



b. Standardized deviance residuals on leverage of residuals

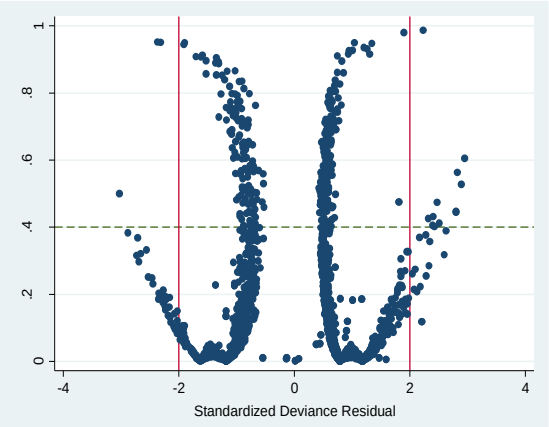
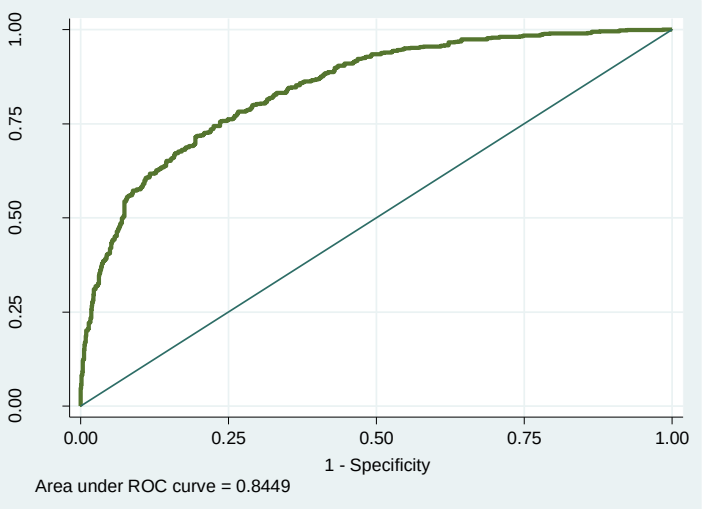
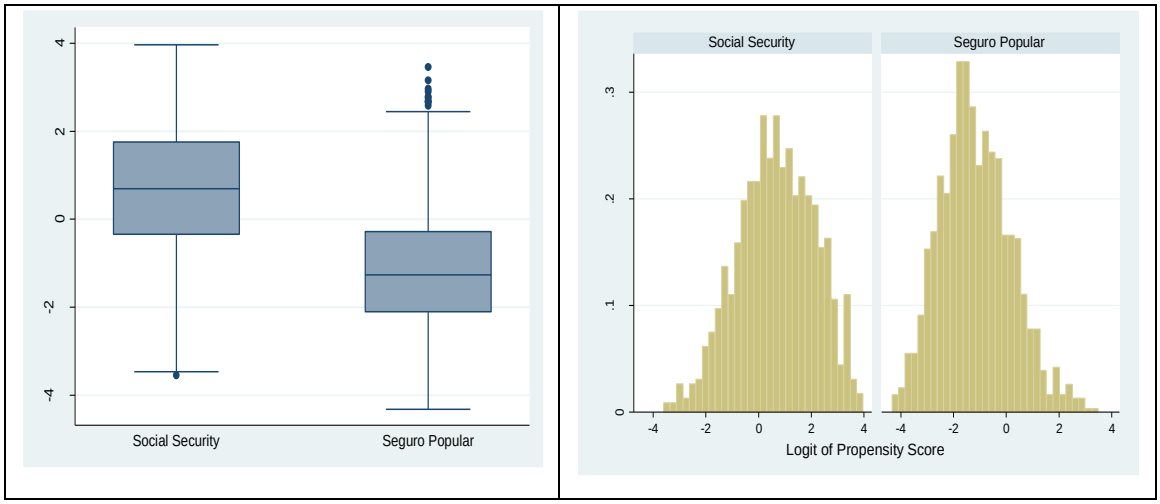


Figure C.13. Receiver Operating Characteristic Curve of the Propensity Score Matching Model for Perceived Quality, Accessibility and Affordability of Health Services



Note: ROC = receiver operating curve.

Figure C.14. Propensity Score Matching Model for Perceived Quality, Accessibility, and Affordability of Health Services: Common Support Region Using the Logit of Propensity Score



28. Also in the PSM model of perceived quality, accessibility, and affordability of health services, the only matching method able to balance all the observed variables is the radius matching with a caliper. To obtain a perfect balance of distribution of observed variables, the caliper was set equal to 0.0005. On one side, the reduction of the final sample is significant (-30%), on the other side the size of both categories (controlled and treated) is sufficiently large to guarantee a good power. Thus, only the results produced using the radius matching is presented (table C.7).

Table C.7. Matching Algorithms Used in the Propensity Score Matching Model for Perceived Quality, Accessibility, and Affordability of Health Services

Types	***Covariates Not Balanced with p-value < .050***
1-to-1 matching with no replacement	Indigenous; number of children; schooling; area; socioeconomic status; region; Age; permanent health problem; type of job;
1-to-1 matching with replacement	Marital status; indigenous; schooling; region; age; type of job
4-nearest-neighbor matching	Marital status; indigenous; number of children; schooling; region; type of job
Radius matching with caliper = 0.001	–

29. ENSANUT includes various questions about the perceived quality of health services (see table C.8). The overall perceived quality (indicator A), the average rating (indicator B) of health services, and the level of satisfaction with the infrastructure (indicator C) are not statistically different between SPS and CSS groups. However, SPS individuals, on average are more satisfied than CSS individuals with the treatment received from doctors (indicator D). In fact, on this item SPS services show a higher positive value equal to 17.6 percent compared with the 7.2 percent in the case of CSS services. SPS patients, on average wait about half hour more inside the health centers

before being visited (indicator E, CSS patients wait for 56.5 minutes, SPS patients 86.8 minutes), although average time to reach health centers (indicator F) is similar between the two groups.

30. A larger share of SPS patients report not receiving all the medications than CSS patients (indicator G, SPS 86.8 percent and CSS 91.8 percent). More SPS patients also report having to pay for medical assistance and/or medications and/or exams compared with people with CSS insurance (indicator H, SPS 46.9 percent and CSS 27.1 percent). However, the average value spent each time (indicator I) is not statistically different between SPS and CSS users (about $15).

Table C.8. Propensity Score Matching Model for Perceived Quality, Accessibility, and Affordability of Health Services

Indicators	*(1) Social Security (percent)*	*(2) Seguro Popular Radius Matching With Caliper (0.002) (percent)*
A) General perceived quality of the services (U403)	Negative: 5.1 Regular: 15.0 Positive: 79.9 [C: 924]	Negative: 4.7 Regular: 15.9 Positive: 79.4 [C: 589]
B) Average rating for the services (1/10) (U810A)	8.0 [C: 930]	8.2 [T: 573]
C) People satisfied with the quality of infrastructure (U810)	Negative: 3.4 Regular: 27.9 Positive: 68.7 [C: 930]	Negative: 4.4 Regular: 23.2 Positive: 72.4 [C: 573]
D) People satisfied with the treatment received from doctors (U405E)	7.2 [C: 930]	17.6** [T: 573]
E) Average waiting time inside the health center (minutes) (U509A, U509B)	56.5 [C: 908]	81.6*** [T: 548]
F) Average time to reach the health center (minutes) (U506A, U506B)	27.2 [C: 912]	25.7 [T: 551]
G) Found all the medications (U603)	91.8 [C: 833]	86.8* [T: 488]
H) People who paid for assistance and/or medication and/or exams (U513, U605a, U704A)	27.1 [C: 930]	46.9*** [T: 573]
I) Average value paid for the last medical assistance and/or medicine and/or exam (pesos) (U513, U605a, U704A)	263.7 [C: 930]	285.6 [T: 573]

Note: Average Treatment Effects Obtained for Specific Outcomes and Number of Observations [between square brackets]. C = control; T = treatment.
*$p < .1$.
**$p < .05$.
***$p < .01$.

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Appendix D. Focus Groups of Seguro Popular Beneficiaries

1. Focus groups were conducted on Wednesday, February 28, 2018 at the health center "Beatriz Velasco Alemán, Mexico City" with two different groups of Seguro Popular (SPS) users: patients with chronic, noncommunicable diseases such as diabetes and hypertension; and mothers with children under the age of five. During the focus groups, questions were asked in an interactive group setting about their experience, opinions, perceptions, and attitudes toward health services received through SPS.

2. The health center is situated in a central neighborhood of Mexico City called "20 de Noviembre" in Eduardo Molina street, located in proximity to the international airport. As stressed by the director of the maternity and voluntary termination of pregnancy area of the center, this cannot be considered as a normal health center owing to the presence of more services than would be available in a normal health center. According to those interviewed within the Federal District there are only five or six health centers similar to this one. In addition to 13 rooms for medical assistance, odontology-stomatology, and laboratories for X-ray, mammography, and colposcopy, the health center provides facilities for voluntary termination of pregnancy and for chronic diseases, and a pharmacy. The pharmacy provides medication for several programs such as SPS, "gratuidad" and "médico vecino." When medications are out of stock the health center uses the SPS net to try to find pharmacies that can provide them to the patients. Moreover, there is an internal backyard for activities such as early childhood stimulation intervention for mothers and their children. The health center has to cover 70,000 assigned people, of which 52 percent are women. 27,000 are registered for SPS insurance or programs for deprived people.

3. A total of 115 doctors, nurses, and social workers operate inside the health centers. The maternity unit has three general doctors, two obstetrics and gynecology physicians with specialization in perinatology, one psychiatrist, and one psychologist. Of the 115 staff, 25 are paid by SPS and they provide care specific to people affiliated with SPS. They have their own activities and working hours. Moreover, as stressed by the director, SPS's professionals have temporary contracts, whereas all the other professionals have a permanent contract.

4. SPS has had a registration office inside the health center since 2005, and an office for the management of the insurance, since 2009, which is unusual. According to the director, thanks to SPS they have significantly increased their funding and they renovated the infrastructure, increased the number of staff, and improved the supply of medications.

5. The focus groups were conducted in Spanish. Each focus group lasted about one hour and took place in meeting rooms inside the health center. At the beginning of the focus groups, general information about the demographics of the patients and the main health conditions that were reasons for using the services provided by the health center were collected (see tables D.1 and D.2).

Table D.1. Focus Group with Mothers with Children Younger than Five Years of Age

Age of the Mother	*Age of the Child*	*Services Mainly Used since the Delivery*
39	3 months	A) Child had low glucose when was 2 months old. B) Postdelivery visits C) Weekly early stimulation (1 hour)
16	4 months	A) Pre- and postdelivery visits B) Weekly early stimulation (1 hour)
19	1 month	A) Weekly early stimulation
20	3 months	A) Pre- and postdelivery visits B) Weekly early stimulation (1 hour)
15	6 months	A) Risk of miscarriage B) Asthma of the child because the father is addicted to tobacco C) Weekly early stimulation (1 hour)
Mother of the 15-year-old mother		

Table D.2. Focus Group with Patients with Chronic, Noncommunicable Diseases

Age (years)	*Gender*	*Health Conditions*
72	Female	Diabetes and hypertension
71	Female	Diabetes and hypertension
66	Female	Diabetes
83	Female	Hypertension
72	Female	Diabetes and hypertension
50	Male	Hypertension
72	Female	Diabetes and hypertension
68	Female	Diabetes
72	Female	Diabetes and hypertension
60	Male	Diabetes and hypertension
73	Female	Diabetes and hypertension
74	Female	Diabetes and hypertension

6. The two focus groups were structured in a similar fashion and engaged in comparable discussions. After each set of questions there was a short interval of time (about five minutes) during which the interviewer took notes, writing a summary of the answers received. The questions asked at the focus groups covered the following topics:

(1) Knowledge of SPS rights and obligations. What does it mean for you to have Seguro Popular insurance? Before going to the health center or requiring a service, did you know the list of your rights and benefits or where you can find it? And what happened if the health center could not provide some benefit (like medications or exams)?

(2) Accessibility and availability of health services. Is it easy for you to reach the health center? Can you balance your job activity with the hours of the health services? How long do you have to wait before being attended at the health center? About your current health condition:

- Did you receive at least five antenatal visits and one postdelivery visit? Did you take blood and urine exams to check the health condition of the mother and the children? Did the center echographer/ultrasound technician check the baby? Did you receive supply of nutrients for the children if needed? Could you find all the services you needed inside this health center or did you have to use other health centers? Do you have to go to private services?

- When did you begin to have hypertension or diabetes? How frequently do you measure your blood pressure or do you check your diabetes? How many times did you go to a doctor during the past 12 months? Did someone explain the lifestyle guidelines you have to follow? Could you find all the services you needed inside this health center or did you have to use other health centers? Do you have to go to private services?

(3) Affordability of health services. How much do you spend normally for health each month? Is this because these diseases are not covered by SPS or due to a lack in the service provided by SPS? Did cost keep you from buying medications or going to a doctor/specialist for you or for your child or did you have to ask for financial help from external sources such as family, friends, loans? If the cost kept you from purchasing medications, is this affecting your health (or the health of your child)?

(4) Quality. What is your personal perception of the quality of the following: (a) doctors and nurses, (b) treatment received, (c) respect for privacy during visits, (d) cleanliness of the spaces, and (e) condition of the infrastructure? If you had experience of services provided by social security could you compare the previous items with services provided by Seguro Popular?

Appendix E. Studies Carried Out by the CNPSS under Component 2

Studies Carried Out by the Commission	*Results and Recommendations*
(a) Support enhancements in performance management in the administration of the SPS	
Analysis of the regulation mechanism, supervision, and performance evaluation of the SPS and identification of best practices	The study completed a literature review of SPS and the health systems in Australia, Brazil, and Colombia, as well as the operation manuals that establish and define the organization, structure, process, and function of the CNPSS. Four strategies were identified to improve supervision and performance evaluation in the health system relating to regulation tools, coordination mechanisms, management tools, and the use of information and communication technology.
Study on the consistency and reliability of the SPS affiliate census (2011, 2013)	The study concluded that the affiliate registry was reasonably reliable, that the financial transfers were calculated and transferred correctly and that World Bank funds were used according to the contract conditions.
Effects of SPS on health and affiliate spending	The study found that affiliates between 20 and 60 years of age went more to the doctor than the nonaffiliated. There was a 5 percent increase in affiliates' perception that they had good health; and a 7 percent decrease in the probability that affiliates (20 and 60 years) suffer from cancer. There was a 56 percent fall in household health expenditure.
Study on the Quality of SPS Operation	—
(b) Support state health systems in preparing and carrying out reforms in the administration of the SPS	
Study to strengthen the coordination, effectiveness, and efficient administration of SPS in the federal entities (2010)	The analysis showed how the social and economic inequality existing between federal entities in Mexico is also evident in health conditions, the availability of interventions, and the human resources and infrastructure capacity. The study recommends the creation of a national office dedicated to the evaluation and planning of SPS, the establishment of results-based financing mechanisms, the design of a national information system, and the establishment of an efficient supervision system.
(c) Improve the knowledge of eligible beneficiaries about their entitlements under the SPS	
SPS Satisfaction Survey (2011, 2012, and 2013)	The survey found that most affiliates were satisfied with SPS.
Evaluation of the use and protection of SPS affiliate rights (2011)	—

Studies Carried Out by the Commission	*Results and Recommendations*
Use and health service access of the SPS-affiliated indigenous population (2011)	The study confirmed the indigenous population's lack of knowledge regarding their rights and responsibilities under the SPS, while documenting the group's growing affiliation and coverage. The study also revealed how health centers in indigenous areas often did not have the necessary infrastructure, personnel, and medicine, while geographic, economic, cultural, and administrative factors hindered health care access.
(d) Strengthen their capacity to manage health risks	
Benefit-cost evaluation of SPS (2012)	The study finds that an increase in SPS coverage lowers out-of-pocket expenditure by 0.088 percentage points (90 percent confidence level). The study also found that for every peso saved in affiliated households in 2004 SPS spent between 1.07 and 2.2 pesos on the program (95 percent confidence level).
Characteristics and potential of the Personalized Health Registry (SINOS): Proposals to improve the quality of health service	The study found that SINOS is a unique database with the necessary information to indicate the likelihood of suffering from a particular disease according to the federal entity, municipality, or clinic, which can provide useful information for decision makers.
Analysis of the design and implementation of Consulta Segura and development of an instrument to measure the strengthening of a preventive culture (2011)	The design and implementation of Consulta Segura vary widely among the states and must be homogenized.

Source: World Bank. 2014. "Mexico—Social Protection System in Health Project." Implementation Completion and Results Report ICR89189-MX, World Bank, Washington, DC.

Appendix F. List of Persons Met

Name	Designation	Institution
Claudia Macias	Senior Operations Officer	World Bank
William Wiseman	Program Leader, Human Development	World Bank
Christel Vermeersch	Senior (Health) Economist	World Bank
Maria E. Bonilla-Chacin	Senior (Health) Economist	World Bank
Ian Forde	Senior (Health) Economist	World Bank
Antonio Chemor Ruiz	National Commissioner	CNPSS
Leonor Ocampo	Deputy Director General	CNPSS
Thania de la Garza Navarrete	Deputy Director General of Evaluation	CONEVAL
Janet Zamudio Chavez	Director of Impact Evaluation	CONEVAL
Juan Angel Rivera-Dommarco	Director General	INSP
Ricardo Perez Cuevas	Deputy Director General	INSP
Eduardo Gonzalez Pier	Former Deputy Minister of Health	Federal Ministry of Health (Secretaría de Salud Federal)
Mariana Barraza	Former Director General of Economic Analysis Unit	Federal Ministry of Health (Secretaría de Salud Federal)
Claudia Anaid Guerrero Ayala	Deputy Director of Integrated Health Services Network	Federal Ministry of Health (Secretaría de Salud Federal)
José Antonio Paulin Badillo	Deputy Director of Citizen Participation	Federal Ministry of Health (Secretaría de Salud Federal)
Benjamin Lopez Angel	Director of Planning	State Ministry of Health, Morelos
Elizabeth Candia Fernández	Director for Evaluation	State Ministry of Health, Morelos
Mariano Munguia Fuentes	Deputy Director for Planning	State Ministry of Health, Morelos
Angela María Rodriguez Gutiérrez	Deputy Director for Health Information and Communication Technologies	State Ministry of Health, Morelos
Alejandro Alvarez-Ramirez	Director General	State-level Regime for Social Protection in Health (Regímenes Estatales para la Protección Social en Salud—REPSS) State of Morelos
De La Rosa Valencia Maria Lizbeth	Director for Financing	REPSS, Morelos
Rodríguez Báez Bertha	Director for Affiliation and Operations	REPSS, Morelos
Ávila Abarca María del Rosario	Director for Health Services Delivery	REPSS, Morelos
Armando Almazan-Barrera	Director General	Health Center, Beatriz Velasco Alemán
Rosalia Escudero Chavez	Deputy Director	Health Center, Beatriz Velasco Alemán
Rosario Simon Calixto	Deputy Director	Health Center, Beatriz Velasco Alemán
Ignez Tristao	Senior Health and Social Protection Specialist	Inter-American Development Bank

[1] The official name of the program during the pilot phase was Health Program for All (Programa Salud para Todos).

[2] There are 32 federal entities in Mexico, of which 31 are states and 1 is the Federal District of Mexico City.

[3] According to Independent Evaluation Group (IEG) guidelines, the relevance of objective is assessed with respect to (i) country conditions, (ii) World Bank and government strategies at the time of project closing, and (iii) the framing of the objective and their ambiguousness.

[4] The relevance of project design is assessed with respect to two elements: (i) the relevance of project design (activities, components, policy areas) to the objectives and (ii) the quality of the results framework, considering the following questions: Was there a clear statement of objectives, linked to intermediate and final outcomes? Was the causal chain between funding and outcomes clear and convincing? Were exogenous factors and unintended (positive and negative) effects identified? In addition to the relevance of the activities to achievement of the objectives, the choice of lending instrument (for example, investment or development policy operation) can also enter into the relevance of design.

[5] Population surveys such as the Module of Socioeconomic Conditions of the National Household Income and Expenditure Survey (Encuesta Nacional de Ingresos y Gastos de los Hogares, Módulo de Condiciones Socioeconómicas—ENIGH-MCS) and the National Survey of Health and Nutrition (Encuesta Nacional de Salud y Nutrición—ENSANUT) ask questions about SPS and social security coverage.

[6] It is worth noting that the indicator can take a value larger than 100 percent if the denominator is not updated to be contemporaneous to the numerator.

[7] Also in this case the indicator in the M&E framework had a time-invariant denominator, thus it was not bounded to 100 percent.

[8] It is worth noting that the indicator can take a value larger than 100 percent if the denominator is not updated to be contemporaneous to the numerator.

[9] The National System of Basic Information for Health was conceptualized in 2012 (Diario Oficial de la Federación, September 5, 2012), but its Operational Manual was not published until 2015 (Diario Oficial de la Federación, September 18, 2015).

[10] SAP's guidelines were published in the Diario Oficial de la Federación, September 20, 2016.

[11] The propensity score matching (PSM) method was applied to ENSANUT MC 2016 to improve the comparison between SPS and CSS. The use of PSM to compare outcomes between SPS and CSS individuals was successful as it helped identify a set of variables able to control for the differences between the two population groups and reach meaningful comparison. On the other hand, because of the larger heterogeneity among the uninsured, the PSM method was not satisfactory in the comparison between SPS individuals and the uninsured (see appendix C).

[12] The value of the satisfaction index (Range: 0.1) was 0.914 in 2014, 0.905 in 2015 and 0.857 in 2016

[13] In comparison, physical accessibility did not appear to be a problem. The average time to reach the health center was reported by both SPS and CSS users as below half an hour (table C8, Indicator F).

[14] The average Treatment Effect on the Treated, refers to the effect of the treatment or intervention on the people who actually took the treatment or intervention.

[15] See https://en.wikipedia.org/wiki/Opinion_polling_for_the_Mexican_general_election,_2018 accessed on April 19, 2018.

[16] See https://news.culturacolectiva.com/especiales/amlo-propone-eliminar-el-seguro-popular/ accessed on April 19, 2018.

[1] All the estimates have been calculated using the SVYSET command in STATA to take into account the complex structure of the sampling strategy. As suggested by methodological guides, variable "code_upm" has been used to define Primary Sampling Unit, a combination of variables Region and Rural has been used to define the statistically representative Strata or "Dominio" and Ponde_i or Ponde_f as expansion factors.

[2] The socioeconomic index was generated from imputed income decile of households in the survey, using information on income levels and demographic and socioeconomic characteristics of Mexican households in the 2010 ENIGH (Gutiérrez 2013).

[3] Socioeconomic index has been often found strongly association to health status and access to health services (our outcome variables) in several settings (see Haan et al. 1987; OECD 2003).