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GUATEMALA HEALTH SYSTEM ASSESSMENT 2015



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It was prepared by Carlos Avila, Rhea Bright, Jose Carlos Gutierrez, Kenneth Hoadley, Coite Manuel, and Natalia Romero and edited by Michael P. Rodriguez for the Health Finance and Governance Project.

The Health Finance and Governance Project

USAID's Health Finance and Governance (HFG) project will help to improve health in developing countries by expanding people's access to health care. Led by Abt Associates, the project team will work with partner countries to increase their domestic resources for health, manage those precious resources more effectively, and make wise purchasing decisions. As a result, this five-year, \$209 million global project will increase the use of both primary and priority health services, including HIV/AIDS, tuberculosis, malaria, and reproductive health services. Designed to fundamentally strengthen health systems, HFG will support countries as they navigate the economic transitions needed to achieve universal health care.

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Abt Associates Inc. | 4550 Montgomery Avenue, Suite 800 North | Bethesda, Maryland 20814
T: 301.347.5000 | F: 301.652.3916 | www.abtassociates.com

Avenir Health | Broad Branch Associates | Development Alternatives Inc. (DAI)
| Johns Hopkins Bloomberg School of Public Health (JHSPH) | Results for Development Institute (R4D)
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ACRONYMS

AECID	<i>Agencia Española de Cooperación Internacional para el Desarrollo</i> Spanish Agency for International Development Cooperation
ALIANMISAR	<i>Alianza Nacional de Organizaciones de Mujeres Indígenas por la Salud Reproductiva</i> National Alliance of Indigenous Women's Organizations for Reproductive Health
ANAM	<i>Asociación Nacional de Municipalidades</i> Association of Municipalities
BRES	Requisitions, Shipping, and Supplies form
CACIF	<i>Comité de Asociaciones Comerciales, Industriales y Financieras</i> Coordinating Committee of Commercial, Industrial and Financial Associations
CAIMI	<i>Centro de Atención Integral Materno Infantil</i> Centers for Integral Attention of Maternal and Child Health
CCGS	<i>Consejo de Comunidades de Guatemala por la Salud</i> Council of Guatemalan Communities for Health
CEGSS	<i>Centro de Estudios para la Equidad y Gobernanza en los Sistemas de Salud</i> Center for the Study of Equity and Government in Health Systems
CMCG	<i>Colegio de Médicos y Cirujanos de Guatemala</i> Guatemala College of Physicians
CNE	<i>Centro Nacional de Epidemiología</i> National Epidemiological Center
CNS	<i>Consejo Nacional de Salud</i> National Health Council
COCODES	<i>Consejos Comunitarios de Desarrollo</i> Community Development Council
CODEDES	<i>Consejos Departamentales de Desarrollo</i> Department Development Council
COMUDES	<i>Consejos Municipales de Desarrollo</i> Municipal Development Council
CONASAN	<i>Comisión Nacional de Seguridad Alimentaria y Nutricional</i> Commission for Food and Nutritional Security
CSO	Civil society organization
CUI	Unique identification code
DALYs	Disability-adjusted life-years
DAM	Procurement Department, MSPAS
DAS	<i>Dirección de Área de salud</i> Health Area Office
DECAP	<i>Departamento de Capacitación y Desarrollo</i> Department of Training and Development



DGRH	<i>Dirección General de Recursos Humanos</i> Human Resources General Directorate
DGRVCS	<i>Dirección General de Regulación, Vigilancia y Control de la Salud</i> Health Regulation, Surveillance and Control General Directorate
DMS	<i>Distrito Municipal de Salud</i> Municipal Health District
DPI	Personal identification document
DRACES	<i>Departamento de Regulación, Acreditación y Control de Establecimientos de Salud</i> Department for Regulation, Accreditation and Control of Health Establishments
DRCPFA	<i>Departamento de Regulación y Control de Productos Farmacéuticos y Afines</i> Department of Regulation and Control of Pharmaceutical and Related Products
EDI	<i>Evaluación de impacto</i> Impact evaluation
EML	Essential Medicines List
ENSMI	<i>Encuesta Nacional de Salud Materno Infantil</i> National Survey of Maternal and Child Health
FBO	Faith-based organization
GDP	Gross domestic product
HFG	Health Finance and Governance
HIS	Health information system
HRH	Human resources for health
HRIS	Human Resources Information System
HSA	Health system assessment
IDRC	International Development Research Centre (Canada)
IGSS	<i>Instituto Guatemalteco de Seguridad Social</i> Guatemala Institute of Social Security
INCAP	Institute of Nutrition of Central America and Panama
INE	<i>Instituto Nacional de Estadística</i> National Institute of Statistics
INFHOS	Information System for Hospitals
ISO	International Organization for Standardization
LAC	Latin American and Caribbean
LMIS	Logistics management information system
MDGs	Millennium Development Goals
MMP	Medicines and medical products
MODA	Acute malnutrition monitoring system
MSPAS	<i>Ministerio de Salud Pública y Asistencia Social</i> Ministry of Health and Social Assistance
NCD	Noncommunicable disease
NGO	Nongovernmental organization

NHA	National Health Accounts
OCSES	National Health Sector Statistics Coordination Office
OECD	Organization for Economic Cooperation and Development
OOP	Out-of-pocket
OSAR	<i>Observatorio de Salud Reproductiva</i> National Center for Reproductive Health
PAHO	Pan American Health Organization
PEC	<i>Programa de Cobertura de Extension</i> Extension of Coverage Program
PHC	Primary health care
POA	<i>Plan Operativo Annual</i> Annual operating plan
PROAM	<i>Programa de Accesibilidad a Medicamentos</i> Program for Access to Medicines
PS	<i>Puestos de salud</i> Health posts
RAMOS	Reproductive Age Mortality Study
RENAP	<i>Registro Nacional de las Personas</i> National Registry of Persons
SCDUR	<i>Sistema de Consejos de Desarrollo Urbano y Rural</i> Urban and Rural Development Council System
SEGEPLAN	<i>Secretaría de Planificación y Programación</i> Planning Secretariat
SEN	<i>Sistema de Estadísticas Nacionales</i> National Statistical System
SESAN	<i>Secretaría de Seguridad Alimentaria y Nutricional de la Presidencia de la República</i> Secretariat of Food and Nutritional Security of the Presidency of the Republic of Guatemala
SHOPS	Strengthening Health Outcomes through the Private Sector Project
SIAMED	Model System for Computer-assisted Drug Registration
SIAF	Integrated System of Financial Information
SIAS	<i>Sistema Integrado de Atención a la Salud</i> Integrated Service Delivery System
SICOINWEB	<i>Sistema de Contabilidad Integrada</i> Integrated System of Accounting
SIGSA	<i>Sistema de Información Gerencial de Salud</i> Health Information Management System
SIINSAN	<i>Sistema de Información, Monitoreo y Alerta de la Inseguridad Alimentaria y Nutricional</i> Food and Nutritional Information, Monitoring and Alert System
SINASAN	<i>Sistema Nacional de Seguridad Alimentaria y Nutricional</i> National System of Food and Nutritional Security

SNTSG	<i>Sindicato Nacional de Trabajadores de Salud de Guatemala</i> National Health Workers Union of Guatemala
SS	<i>Salas Situacionales</i> Situation Rooms
TBA	Traditional birth attendant
TFR	Total fertility rate
UHC	Universal health coverage
UNDP	United Nations Development Program
UPE	<i>Unidad de Planeación Estratégica</i> Strategic Planning Unit
USAID	United States Agency for International Development
WGI	Worldwide Governance Indicators
WHO	World Health Organization

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EXECUTIVE SUMMARY

Purpose of the Assessment

Guatemala's public health system benefits from a well-established regulatory framework, many years of institutional history, dedicated and experienced health sector workers, and an absence of dependence on external sources for financial support. Furthermore, the Peace Accords of 1996 established the basis for the future development of the system for the benefit all Guatemalans. Nevertheless, and in spite of its solid institutional legacy, during recent decades a number of problems have developed which have compromised the public health sector's effectiveness. The result is a system which is fragmented, inefficient and fails to provide an equal level of health services to all Guatemalans. The country's recent political instability has only brought these problems into sharper focus.

Strengthening Guatemala's health system requires a thorough understanding of the system's unique strengths and weaknesses. At the request of the USAID/Guatemala Mission, the Health Finance and Governance (HFG) project conducted a Health System Assessment (HSA) in Guatemala. The primary objective of the HSA was to map the health system's strengths and weaknesses and to prepare a set of written recommendations intended to guide health system strengthening efforts in the country.

Methodology

Health systems experts from HFG and USAID/Washington conducted a rapid assessment of Guatemala's health system according to the building blocks of the World Health Organization (WHO) health systems framework: governance, health financing, service delivery, human resources for health (HRH), health information systems (HIS), and medical products and supply chain. An extensive review of the literature pertaining to each building block was conducted and a zero draft of the HSA was developed prior to the team's arrival in Guatemala in April 2015. This background information formed the basis for a series of questions that would guide the two-week in-country information-gathering exercise. During the visit, the HSA team interviewed a wide spectrum of key stakeholders across the public, nonprofit, and for-profit sectors and through municipal and facility site visits across the regions of Alta Verapaz, Chiquimula, and Quetzaltenango. After the trip, the HSA team prepared the full report with draft findings and recommendations for review and discussion by all team members at two team meetings.

Country Overview

Guatemala ranks as the largest country and economy in Central America, with over 15 million inhabitants, more than half of whom live in poverty. Guatemala's population is roughly equally divided between urban and rural areas, yet large disparities in economic development, access to health services, and health outcome indicators persist, with rural areas faring much worse than their urban counterparts. The rural population is also predominantly made up of indigenous peoples from among Guatemala's many ethnic and linguistic groups. According to the OECD (2014), Guatemala's tax revenue of 12.3 percent of gross domestic product is one of the lowest in the region and limits the government's overall ability to provide publicly funded services. During and following the HSA team visit a number of high-profile scandals alleging corruption have shaken the government leading to several departures across the administration and a crisis of confidence among the general public.



Two central themes provide the context for the findings of this HSA and led the HSA team to prioritize its recommendations on the restoration of access to the most disadvantaged groups:

1. The long-term structural inequity in health care and outcomes
2. The public health sector's current heightened state of crisis related to the cancellation of the Extension of Coverage Program (*Programa de Extensión de Cobertura, PEC*)

A consistent and well-documented finding across all the building blocks during the HSA was inequity in health outcomes, disease burden, service access, and health spending. The north and northwest regions of Guatemala continue to have the country's highest maternal mortality rates – over three times the rate of the metropolitan areas – as well as the highest incidence of stunting. With the exception of the northwest region, the regions with the highest levels of maternal mortality are also those receiving the lowest levels of total health spending per capita.

The stark contrast between urban and rural health worker densities (25.7 health workers per 10,000 population in urban areas compared to only 3.0 per 10,000 in rural areas), the dearth of clinicians fluent in indigenous languages, and the disparities in accessing skilled birth attendants (73 percent among *ladinas* but only 36 percent among indigenous women) all highlight the barriers to access among rural, indigenous populations in Guatemala.

The PEC was implemented by the Ministry of Health and Social Assistance (*Ministerio de Salud Pública y Asistencia Social, MSPAS*) following the 1996 Peace Accords in recognition of the urgent need to extend coverage of basic health services to the 46 percent of the country's population – primarily indigenous communities – without access to health services. MSPAS entered into agreements with a variety of nongovernmental organizations (NGOs) to provide basic health services (primarily mother and child care and immunizations) to underserved communities. The program was rapidly expanded and by 1999 had extended basic health services to 3.5 million people, an estimated 76.8 percent of the previously unserved population at that time.

However, a growing dissatisfaction with what was perceived as a lower level of health services provided to indigenous communities under the PEC, together with accusations of inefficiency and a lack of transparency in the award of PEC contracts to NGOs, led to legislation passed in 2013 prohibiting the outsourcing of health care services to NGOs and to the cancellation of most of MSPAS' contracts with NGOs in the fall of 2014. This cancellation resulted in the suspension of all public health care services provided through the PEC to the majority of Guatemala's rural population. At the time of the cancellation, no plans were communicated on how these programs and services would be replaced.

At the time of the HSA, some measures had been taken to expand MSPAS level I health care (health posts) in areas previously covered by the PEC, under a recently proposed primary health care (PHC) strategy (*Estrategia de Fortalecimiento y Desarrollo Institucional del Primer Nivel de Atención*). While the broad components of the strategy were shared with the HSA team, the strategy continues to evolve. Given the available information about the strategy and its implementation, the HSA team is not in a position to evaluate the strategy or predict its impact. Instead, the Service Delivery chapter outlines some of the main elements that PHC systems should incorporate in order to ensure access to quality health services.

Although inequities, organizational inefficiencies, institutional fragmentation, and a generalized underfunding of Guatemala's health sector have long existed, the abrupt cancellation of the PEC in 2014 served to focus public as well as international donor attention on the deficiencies of the country's public health sector. These factors provide the context for the current health system assessment and frame the opportunities available to the government to rebuild the public's trust in its role as the steward of the health system.

Key Findings and Recommendations

The HSA team witnessed first-hand multiple manifestations of the current crisis plaguing Guatemala's public health care system. This HSA report makes numerous recommendations for both short-term and medium- or long-term improvements in each of the six building blocks, as reported in the corresponding chapters of the report. Below are several higher-level recommendations that cut across the six building blocks and look to improve health system performance as a whole. A summary of the findings for each building block follows the cross-cutting recommendations.

1. **Guatemala should take immediate action to define and implement a PHC strategy that will meet the most basic needs of the entire population while moving toward universal health care**

MSPAS recently presented a full-service PHC strategy (*Estrategia de Fortalecimiento y Desarrollo Institucional del Primer Nivel de Atención*) although the details and, most importantly, the funding of the strategy raise questions regarding its short-term feasibility. Guatemala must further develop and implement a PHC strategy that will achieve both:

- The short-term objective of providing a minimum level of health care, including immunization, maternal and child health, and nutrition interventions to rural areas most directly impacted by the elimination of the PEC, and
- The longer-term objective of providing universal health care, including permanent access to quality health care facilities, attention to all stages of the life cycle, and integration with secondary and tertiary facilities, throughout the country.

Regardless of the methods of implementation for expanding coverage, whether through public provision or contracted private providers as was done in the past, the PHC strategy must guarantee financial risk protection. Trying to roll out the recently proposed strategy without the necessary funding increase will leave large segments of the population without publicly provided health care and expose both MSPAS and the Government to a continuation of the current lack of public trust.

2. **A high-level, multi-sectoral health sector strategic planning process should be initiated to address systemic deficiencies**

Deep systemic deficiencies in the organization and management of the public health sector, health sector financing, the organization and focus of health service delivery, and the level of citizen participation and oversight in health services planning and delivery underlie most current problems. These issues must be addressed as components of an integrated national health care strategy in order to achieve a sustainable improvement in health care for all Guatemalans.

This HSA recommends that a health sector strategic planning process be initiated and led by the Office of the President, focused on addressing the inequities and inefficiencies described across all the building blocks. The process should involve all health- and finance-related ministries, the National Health Council (*Consejo Nacional de Salud, CNS*), congressional leadership, all major political parties, and significant and meaningful representation of community and municipal development councils, traditional community-based organizations, health advocacy organizations and networks, and other relevant civil society organizations (CSOs).

The health sector strategic plan should align with the PHC strategy discussed above, respond to Guatemala's epidemiological transition and the growing burden of noncommunicable disease, strive for complementarity in the delivery of health care by providers in the public, private, and non-profit sectors, and ensure that health financing resources are fully and effectively mobilized to meet the needs of the sector, as further described below.

3. Enact structural health finance reforms that enable both the short-term implementation of PHC strategy and the longer-term health sector strategic plan

Severe budgetary and funding gaps routinely reduce the effectiveness of annual planning processes and result in a constant state of crisis management at MSPAS. Compared to other Central American countries, Guatemala's health system is disproportionately financed by private health expenditures, especially out-of-pocket spending. Adjusted for purchasing power parity, the government of Guatemala devotes the least amount of resources per capita than any country in the region.

A health financing strategy should be developed by MSPAS with the support and participation of the Ministry of Finance and the Congress, and directly linked to both the PHC strategy and the health sector strategic planning process recommended above. The financing strategy must identify clear policies for each of the health financing functions of resource mobilization, pooling of resources, and purchasing of services, with appropriate governance and regulation of the system.

The resource mobilization component of the health financing strategy should identify long-term financing streams to consistently and sustainably support the health system's priority objectives defined in the sector strategy. A resource mobilization strategy explores options to generate revenues, including implementing tax measures, pursuing external grants, and increasing technical efficiency (e.g., bulk purchasing to reduce unit cost of medical products) and allocative efficiency (e.g., reprioritization of resource allocation to more cost-effective interventions). The resource mobilization strategy should be supported by a comprehensive costing exercise that documents the unit costs to provide services across all health facilities and all levels of care. As part of this process, opportunities for resource mobilization at the municipal level should be explored, because this approach has the potential ensure that locally generated resources are applied to local health needs (rather than being sent to the central treasury for reallocation).

While shared financial responsibility for sustained health outcomes is important in all countries, it is an imperative for countries like Guatemala with growing gross national incomes because they have an opportunity to increase cross-subsidies (the rich and healthy subsidize the poor and ill). A formal analysis to expand risk pooling should be undertaken in order to shift from out-of-pocket spending toward pre-payment schemes. How Guatemala expands the risk pool should be aligned to the goals and priorities outlined in the K'atun Nuestra Guatemala 2032. While Guatemala's Institute for Social Security (*Instituto Guatemalteco de Seguridad Social*, IGSS) provides a measure of financial protection for the 17 percent of Guatemalans employed in the formal sector, a significant portion of the remaining 83 percent of the population has minimal access to free MSPAS services or health insurance schemes. Exploring a mix of voluntary contributions and subsidies to expand social insurance coverage targeting the lowest income and informal employment sectors will broaden the government's social compact with the population most at risk for adverse health outcomes and health disparities. Lessons learned from neighboring countries in the region, such as Peru, can further inform the resource mobilization and health strategic planning process in Guatemala. Since implementing health sector reform in Peru, the country has reached 80 percent of its population with health services, putting the country well on the path toward achieving universal health coverage. This progress is significant for a country of 30 million people, characterized by diverse cultures and rugged geography, much like Guatemala. Peru's Comprehensive Health System (*Sistema Integral de Salud*) provides subsidized public insurance, giving priority to populations living in poverty and extreme poverty.

Currently the two major publicly funded health organizations, MSPAS and IGSS, are also service providers, directly employing health workers and operating facilities. This structure, common in the Latin America and Caribbean region, is characterized by the inefficiencies, inequities, and poor health outcomes already discussed. Guatemala should explore new models of purchasing health services, such as a model of a tax-financed purchaser that is separate from service provision.

4. Ensure adequate deployment of health workers to underserved rural areas and improve performance management

An overall shortage of health workers exists across the country, with significant impacts exacerbating access to health services in the rural areas. Deploying health workers to the areas where they are needed most should be a central element of the PHC strategy as well as the long-term strategic planning process. Reforming MSPAS compensation policies to establish incentives for health workers to relocate to rural areas is critical to improving access to skilled health professionals in rural areas. In addition, health worker training programs should recruit and support students who speak indigenous languages in order to improve the likelihood that graduated health workers return and serve their communities, and to develop a multi-lingual workforce that can more effectively communicate with the indigenous population. High dropout rates among health workers and nursing students in particular (69 percent) further hinder the development of Guatemala's workforce. Measures to support nursing students – financially and academically – should be taken to improve graduation rates.

The lack of a formal health worker career track and promotion-based merits further hampers efforts to effectively build and efficiently allocate the health workforce. The proposed Law on Health Administration Careers (*Ley de Carrera Administrativa-Sanitaria*) should be fast-tracked through the legislative process to create the basis for a professionally managed health workforce. Updates should prioritize PHC health workers and align with the PHC strategy. As this career track is implemented, the human resources information system (iHRIS) should be fully implemented in order to facilitate tracking of health workers' educational status, work experience and skills, work location, and performance evaluations. These data elements will facilitate broader planning for allocation of health workers across the health system, which should prioritize placing workers in the regions of highest need (i.e., rural regions) and the creation of incentive programs to recruit and retain in underserved areas.

MSPAS should transition away from relying on contract workers in order to reduce staff turnover rates and enable a more stable workforce. In addition, MSPAS should pursue opportunities to improve the performance management mechanisms for both civil servants and temporary staff. As an interim step, MSPAS should implement longer-term, performance-based contracts for health workers with some (if not all) of the benefits afforded to permanent MSPAS employees.

5. The CNS should be empowered to effectively coordinate the delivery of public health care services and avoid duplication of facilities, staff, and administrative procedures

Although Guatemala's Health Code establishes that MSPAS shall “*formulate, organize, and direct the execution of policies, plans, programs and projects for the delivery of health services to the general population*” and that MSPAS is charged with stewardship or governance (*rectoría*) of the health sector, the institutional and budgetary autonomy of IGSS effectively isolates it from anything other than a voluntary coordination or sharing of resources with MSPAS. This is a significant lost opportunity for Guatemala to improve health system efficiency in areas where there is duplication of facilities and staff, and duplicate, parallel processes such as procurement of medical products. Also, as recommended above under health financing, there is an opportunity to improve equity if social

insurance can be expanded beyond the current 17 percent of the population that benefits from 48 percent of all government health expenditures.

In order to improve inter-institutional coordination, a presidential directive, modifications to the IGSS Organic Law of 1946, and/or modification of the executive agreement governing the CNS may be required to give CNS resolutions an obligatory character and to initiate a process to coordinate MSPAS, IGSS, and other public health system institutions, facilities, resources, and activities. Protocols for reimbursing MSPAS for services provided to IGSS beneficiaries, sharing facilities and resources, and avoiding an unnecessary duplication of facilities and services should be an immediate objective.

A longer-term objective should be to move toward full convergence, as envisioned in the IGSS Organic Law of 1946.

6. NGOs, community development councils, and other CSOs should be strengthened to ensure transparency, accountability, and citizens' voice in health care planning and delivery

The abrupt end of the PEC was partially due to lack of support from local groups who, according to interviewed stakeholders, were concerned about the entrenchment of a second-class health system providing only basic services for their communities. Many structures exist across the Guatemalan health system that provide the opportunity to increase integration of community-based organizations and health workers into accountable governance of the public health sector.

Institutional structures are in place that can be leveraged to incorporate public feedback and build public support for government health initiatives. Community Development Councils (*Consejos Comunitarios de Desarrollo, COCODEs*) should be promoted as the venues through which health facility performance is reviewed and MSPAS is held accountable for management efficiency, responsive allocation of resources (human as well as financial) and, ultimately, improved health outcomes.

MSPAS and the CNS should also encourage the increased participation of nongovernment and traditional community-based organizations and networks in the design and oversight of health care at the community level, and the international donor community should continue its support of these important elements of the Guatemalan health system. As noted in recommendation #1 above, there also should be significant and meaningful representation of community organizations in the health sector strategic planning process.

Summary of findings by HSA building block

I. Governance:

Universal health care for all Guatemalans, as required in the Constitution of 1985, continues to be a long-term goal of the public health sector. Public institutions, however, are underfinanced and currently unable to fulfill this goal with their current financial allocation. While the PEC was intended to reach unserved populations with a minimal level of basic coverage, its limitations and eventual cancellation served to highlight the magnitude of the unmet need. The new MSPAS strategy to expand PHC throughout areas previously covered by the PEC will require resources that are probably beyond its capacity given the recurring funding shortages of MSPAS's operations in the recent past.

Changes in most senior and middle management positions at MSPAS take place at the beginning of each four-year presidential administration, and frequently within the four-year period, with the appointment of a new Minister of Public Health, vice ministers, and most of their management teams. This high level of rotation in the ministry's senior management is frequently accompanied by a new set of institutional priorities and often a rejection of the priorities and implementation plans of the previous management – especially when the changes accompany a change in the political party in power (which has been the case in all recent presidential elections). While many newly appointed members of the management team might have occupied other positions within MSPAS, others are appointed with little experience in or knowledge of public health. The effect of these changes in ministry management is that strategic priorities, such as the PHC strategy, are selected which cannot be implemented in the time remaining in an administration, or even in the entire four years of a presidential term. Successful implementation is precluded by the potentially different priorities of the new administration or ministry management team.

Traditional community-based organizations among indigenous peoples, as well as the various community-based organizations such as health committees, COCODEs, and networks of community health facilitators and traditional birth attendants, constitute important elements of the country's health system that have not thus far been successfully integrated into the national health system. While some degree of interaction between community-based organizations, community health workers, and the PEC system did characterize the PEC, its elimination without a clear strategy for its replacement has effectively cut the ties between community health systems and the MSPAS structure. The recently announced PHC strategy makes explicit reference to community organizations and health workers or facilitators, and intends to involve them in its community outreach and health prevention activities.

Numerous CSOs and federations play important roles in oversight and advocacy in Guatemala, especially with regard to maternal and child health and family planning. These CSOs have been instrumental in developing innovative approaches to health financing, as exemplified by the tax on alcoholic beverages. While the presence of the Urban and Rural Development Council System (*Sistema de Consejos de Desarrollo Urbano y Rural*, SCDUR) provides a government-sanctioned platform for civilian input into policymaking and oversight, NGOs, especially those that include local community-based affiliates, provide an important alternative vehicle, less susceptible to political influence, for PHC advocacy.

2. Health Finance

The assessment team identified three health financing issues requiring special attention: (1) improving financial management practices; (2) mobilizing resources to the health sector, and (3) planning and implementing a health financing reform to expand financial risk protection and reduce out-of-pocket spending. Implementation of these recommendations requires the creation of enabling conditions and defining specific roles of different stakeholders, consideration of funding options, and revisiting legal provisions.

Several aspects of the health financial management system require immediate attention. The health financing system operates under weak standard procedures, lacks solid management and accounting mechanisms, and suffers from outdated budgetary and planning processes. Weak financial management leads to an environment of inefficiency, waste, and risk of fraud at all levels, compromising even more access to and quality of care. It is also a barrier to political support for increased public funding of health. The Ministry of Finance, legislature, and general public have legitimate concerns about the health sector's ability to account for how funds are spent.

Guatemala spends the least amount of government resources per capita on health (\$176 at PPP) than any country in the region (average of \$436 at PPP). The lack of sufficient funding of the public health sector was frequently cited by stakeholders interviewed for the assessment as a root cause for a number of the health sector's shortcomings:

- Lack of access to health services, especially in remote rural areas
- The demise of the PEC
- Limited levels of care at rural health posts and the lack of referral systems
- Frequent stockouts of medicines and other critical health care supplies

Spending in the overall health sector represented 6.3 percent of the country's GDP, which is average for the region. (Within Central America, total health care spending ranges from a low of 5.4 percent in Belize to a high of 9.9 percent in Costa Rica.) However, health spending is dominated by the private sector (4 percent of GDP), mostly (83 percent) household out-of-pocket spending. Public sector expenditures constitute the remaining 2.3 percent of GDP going to health: 1.1 percent of GDP was spent by IGSS, financed primarily by contributions from employers and employees, to cover an estimated 17 percent of the population. All other government agencies combined spent 1.2 percent of GDP: MSPAS expenditures were equal to 1.0 percent of GDP, to cover 83 percent of the population. These data clearly illustrate the grave inequity in health financing.

While it is difficult to accurately estimate the level of funding that would be required to adequately provide health care to all those not currently covered by social security, key stakeholders interviewed indicated that approved budgets were generally 20 percent and 40 percent below the amounts requested – and that the cuts to their requested budgets resulted in lower supplies of medicines and other health materials required by rural health centers and posts. The budget for initial (2015) implementation of the new PHC strategy alone was estimated at 167 million quetzals. Given the budgetary shortfalls in recent years that have resulted in medicine and supplies stockouts, and an almost total absence of investment in health system infrastructure, it is fair to question if MSPAS will be able to fund the PHC strategy roll-out.

3. Service Delivery

The poor performance and fragmentation of service delivery networks are reflected in poor health outcomes. The maternal mortality ratio stands at 113 deaths per 100,000 live births, reflecting a lack of access to maternal health services; only half of Guatemalan women deliver in a health facility assisted by skilled personal. Guatemala will not reach the MDG target of reducing maternal mortality by three-fourths.

Major gaps in access to care between different segments of the population lead to inequalities in health outcomes. Those who are poor, indigenous, have less education, or live in rural areas typically suffer worse health outcomes. Thirty percent of indigenous women delivered in a health facility compared to 71 percent of their non-indigenous counterparts. As a result, the maternal mortality ratio is 163 deaths per 100,000 live births among indigenous women and 77 among their non-indigenous counterparts. The lack of effective referral systems limits the efficiency and effectiveness of the health system and presents a major barrier to effective maternal care in emergency situations. Efforts to improve intercultural services and engage traditional birth attendants to build effective referral systems are a top priority for improving maternal health outcomes among indigenous women.

Inequalities in access to education and information contribute to gaps in the utilization of family planning and preventive services. Among Guatemalan women ages 14-49 and in a union, 60 percent of women who have completed high school utilize modern methods of contraception, compared to 30 percent among those who did not complete primary school. Sixty-two percent of women have never undergone a Pap smear exam for cervical cancer screening, with 34 percent responding that they have no knowledge of the test. Poverty, indigenous ethnicity, and having little education were correlated with having no information of the Pap smear test. Adult men also exhibit low rates of utilization for a number of preventive screening tests including for hypertension, high cholesterol, and prostate cancer. Most men who receive treatment for these conditions do so in the private sector, which indicates a lack of access to these services in MSPAS facilities. Low levels of access to preventive services illustrate the need for service delivery networks to reorient their services toward health promotion and prevention. As described in the Overview chapter, the aging of the population is contributing to the rising burden of noncommunicable disease. It is imperative that the Guatemalan health system adapt to these challenges.

Finally, the closing of the PEC has exacerbated the situation and led to decreased geographic access to basic health services; replacing these services and strengthening PHC is a top priority. Moving forward, strategies to strengthen PHC should adopt a comprehensive approach that provides priority interventions such as immunization, nutrition, and family planning while also incorporating services for other stages of the life cycle, including treatment for common noncommunicable diseases among adults. Experiences from other countries in the region, including Brazil, Costa Rica, and Peru highlight the diverse approaches that countries can take to financing and organizing the provision of PHC services.

4. Human Resources

Efforts to achieve universal health coverage and ensure access to PHC services will fall short unless adequate steps are taken to improve the management of the health workforce and increase the deployment of HRH to rural areas. As the WHO stated simply, there is “no health without a workforce.” The unequal distribution of HRH in urban and rural areas – there are 25.6 skilled workers per 10,000 population in urban areas and 3 per 10,000 in rural areas – contribute to inequalities in access to health services and in health outcomes. In addition to the lack of health workers in rural areas, language barriers between health workers and marginalized, indigenous communities present a major obstacle to the utilization of health services among those populations.

The proliferation of temporary contracting mechanisms by the public health sector has taken a heavy toll on the health system and its workers, particularly on MSPAS, where more than half of the workforce is hired via temporary mechanisms. Temporary contracts create unstable working conditions for health personnel and contribute to high rates of staff turnover. In addition, the uneven application of hiring norms and practices, together with reported influence of external actors such as unions and politicians in staffing decisions, contributes to perceptions of a lack of transparency and accountability in hiring, promotion, and compensation. Both temporary contracts and permanent civil service entail their own challenges to improving performance and accountability, and efforts to improve the accountability and performance should be taken for both. Guatemala needs an updated legal framework in order to professionalize the workforce and establish clear and transparent mechanisms for hiring, compensation-setting, and promotions.

Another major barrier to the establishment of performance evaluation systems, as well as to the general management and governance of HRH, is the lack of high-quality, comprehensive, up-to-date, and accessible information on HRH. Existing HRH information systems are highly fragmented, both within MSPAS and between MSPAS and other institutions.

Finally, training and education must be designed to prepare health workers to address the specific health needs of the Guatemalan population. There is currently an imbalanced provider mix between physicians and nurses; there are only 0.66 nurses per physician, whereas the WHO recommends 2.8 nurses per physician. High dropout rates among health workers and nurses in particular (69 percent) exacerbate the health worker shortage.

5. Health Information Systems

The MSPAS Office of Health Management Information Systems (*Sistema de Información Gerencial de Salud, SIGSA*¹) is responsible for integrating all databases needed to make informed decisions at each level of MSPAS. It is also the single entity responsible for managing, leading, guarding, and maintaining the information system platform of MSPAS, and for improving the current information systems or creating new subsystems. Despite the presence of SIGSA, the MSPAS HIS is plagued by fragmentation and the existence of 40 or more additional health information systems that are not yet integrated into the single SIGSA platform.

Neither SIGSA nor other offices in MSPAS has strategically planned the integration of all the information systems needs within MSPAS considering the real use of the information and the burden that information system(s) put on local staff. Therefore, MSPAS's HIS tools have been developed and continue to be developed as a response to *ad hoc* decision-making requests from top officials and donors based on their dissatisfaction with existing information quality or accuracy for their particular needs.

Unfortunately, the current institutional structure of MSPAS does not provide the *de facto* authority or the resources to integrate all the information systems in MSPAS, which would enable it to be the leading organization for HIS as established by law.

In addition to the fragmentation of information systems within MSPAS, inter-institutional health data are either non-existent or published too late to be of use to health system administrators. Aggregated health data from IGSS and MSPAS have been published for 2007-2009 by the National Health Sector Statistics Coordination Office (OCSES) within the National Institute for Statistics (*Instituto Nacional de Estadística, INE*). At the time of the HSA visit, OCSES was working on the 2010-2012 report. HSA interviewees also noted that epidemiological information is only shared across private and public sector in cases of emergency.

MSPAS has made significant progress with the development and improvement of its HIS through the integration of many of the databases and information systems within MSPAS, and through the improvement in the quality of the data collected. Much, however, remains to be done to address the fragmentation and lack of strategic planning both within MSPAS and between MSPAS and other public and private health sector institutions in Guatemala.

6. Medical Products and Supply Chain

Effective management of medicines and medical products (MMP) is an important part of a high-quality health system. MMP management comprises the whole set of activities aimed at ensuring the timely availability and appropriate use of safe, effective, quality medicines and related products – vaccines, test kits, and related commodities and equipment – and services in any health care setting. MMP management activities include the selection, procurement, distribution, and use of products that flow through the supply system. The monetary value of MMP is generally substantial and the systems for managing these products often face political and managerial challenges.

¹ In this report, as in MSPAS, the acronym SIGSA is used to refer to both the Health Management Information System coordinating office as well as to the information management system itself.

Generally speaking, purchasers can achieve lower pricing and access to more established, often high-quality suppliers, when buying via pooled procurement mechanisms (framework contracts and bulk procurements that have not been exempted) because volume-buying extends purchasing power. However, Guatemala-specific challenges were identified by the HSA team:

- Framework contracts in Guatemala require the active collaboration of MSPAS, IGSS, and the Armed Forces health system (*Sanidad Militar*), all separate entities with uncoordinated procurement processes.
- The MSPAS procurement department (DAM) indicated during interviews that some items may actually be more expensive when purchased via a framework contract, because if the entities are not able to promptly pay suppliers, unit cost savings can be eaten up by late payment penalties. This issue was identified as a risk by multiple stakeholders interviewed.
- If the procurement process for setting up framework contracts is flawed (by poor advertising, improperly negotiated terms, corruption, etc.), essentially requiring administrative units to purchase from suboptimal suppliers, framework contracts would actually make the overall system worse.

Despite these challenges, the opportunity represented by buying more health commodities via bulk contracts is significant. In a parallel study of “Experiences and Opportunities for Joint Purchases in Guatemala” undertaken at the time of the HSA, a number of modifications to current purchasing procedures are recommended in order to significantly reduce the costs of medical supplies.

Since October 2014, health area and hospital stockout data have been electronically reported, aggregated, and shared with the public through SIGSA. SIGSA data are reported weekly and refreshed via a publicly accessible online dashboard. Making such data widely available is a positive step taken by MSPAS to ensure transparency and improve the availability of medicines and medical supplies. The HSA team was able to evaluate stockouts at the health area level and the hospital level for the seven-month period of October 1, 2014–April 30, 2015. Stockouts existed across almost all health areas and hospitals. The SIGSA data showed an average stockout rate of 12 percent for health areas over the period, while hospitals showed an average stockout rate of 19 percent. It should be noted, however, that health areas are an intermediate level of the supply chain (there are two additional levels below the health areas, specifically the health districts and health posts/centers), meaning that the stockout rate at the lower levels is likely much higher than the average at the health area level.

The 2014 medicines budgets for the administrative units provided to the HSA team by the MSPAS Finance Department showed significant variation between the budget assigned (*Presupuesto Asignado*) by the Strategic Planning Unit (UPE) and the actual amount received (*Presupuesto Devengado*) for each administrative unit. For hospitals, the actual was 14 percent lower than what was budgeted; for health areas, the actual was 34 percent below the budget; and for health programs, the actual was 42 percent below the budget. The HSA team was told by interviewees that actual shortfalls were even higher than this. In one case, according to interviews, the assigned medicines budget was estimated to be 40 percent of what was needed.



I. METHODOLOGY

I.1 Framework for the Health Systems Assessment Approach

The Health Finance and Governance (HFG) project used the Health Systems Assessment (HSA) approach to undertake a rapid assessment of the Guatemala health system. The HSA approach was adapted from USAID's *Health Systems Assessment Approach: A How-To Manual, version 2.0* (Health Systems 20/20 2012), which has been used in 25 countries. The HSA approach is based on the World Health Organization (WHO) health systems framework of six building blocks (WHO 2007).

The approach used in Guatemala covered the six health systems building blocks: governance, health financing, service delivery, human resources for health, health information systems, and pharmaceutical management. Special emphasis was placed on the health financing and service delivery building blocks given Guatemala's transition dynamics.

The objectives of the assessment were the following:

- ▶ Understand key constraints in the health systems and prioritize areas needing attention
- ▶ Identify opportunities for technical assistance to strengthen the health system to improve access to quality health services
- ▶ Provide a road map for local, regional, and international partners to coordinate technical assistance.

I.2 HSA Process

Phase I: Prepare for the Assessment

During the preparation phase, the HFG project identified a seven-person HSA team of technical specialists, one for each building block. Three team members were HFG staff and three were from USAID Washington; the overall technical lead was from the HFG project.

Phase 2: Conduct the Assessment

The majority of health systems data were collected through a review of published and unpublished materials available to the team from development partners and the Ministry of Health (*Ministerio de Salud Pública y Asistencia Social, MSPAS*) and obtained online. Team members produced a literature review for each of the health systems building blocks to develop an initial understanding of the system and identify information gaps. Semi-structured interview guides were developed for each building block based on the noted information gaps and the indicators outlined in the HSA approach. A local logistics coordinator assisted in further identifying background information, identifying key stakeholders, and arranging interviews.

Key stakeholders in both the public and private sectors were invited to participate in key informant interviews to provide input and validate what had been collected through secondary sources. Key informants also provided additional key documents and referred the team to other important stakeholders. During the two-week data collection period in April, 2015, the in-country assessment team interviewed 123 stakeholders. Interviewees included representatives of government, professional



associations, health training institutions, nongovernmental organizations (NGOs), private businesses, health providers, and many professionals from MSPAS. Site visits to the departments of Alta Verapaz, Chiquimula, and Quetzaltenango were conducted to verify data from key informants. These visits included stops at public hospitals, health centers, health posts, and district health offices. Responses were recorded by the interviewers and examined for identification of common themes across stakeholders while the team was still in country. The team presented a preliminary overview of the emerging findings and recommendations to MSPAS prior to the team's departure.

Due to the presence of a concurrent Guatemalan private health sector assessment (Cisek et al. 2015), the HSA focused primarily on the public health sector and in particular, MSPAS. The in-country visit took place at a time when Guatemala was facing notable challenges to its leadership in the political and social spheres, as well as facing potential transitions with the upcoming elections in the fall of 2015.

Phase 3: Analyze Data and Prepare the Draft Report

Following the in-country data collection, the HSA team transcribed the responses of the stakeholders and reviewed the additional documents collected. The lead for each building block drafted a summary of the findings and recommendations for that area. The team lead, with input from the rest of the team, identified key findings and cross-cutting issues and further developed recommendations. The results were compiled in an initial draft and submitted to quality advisors from the HFG project for review. A final draft was submitted to USAID for review and approval.

Phase 4: Disseminating Findings

The HSA team used the findings in this draft report to prepare for a dissemination conference in January 2016 at which MSPAS and key local stakeholders will meet to discuss assessment findings and recommendations. Special emphasis will be placed on looking at the strengths and weaknesses of the health system and the recommendations to strengthen it. The final report will be shared with key stakeholders by the USAID Guatemala Mission.

2. GENERAL OVERVIEW

With roughly 15.5 million inhabitants, the Republic of Guatemala is the most populous nation in Central America (World Bank 2014). The country spans an area of 108,890 km² lying between the Pacific Ocean and the Caribbean, and it is bordered by Mexico, Belize, Honduras, and El Salvador. Forty-nine percent of the population lives in rural areas, in contrast to 21 percent of the Latin American and Caribbean (LAC) region overall (World Bank 2014), and out of 15.5 million Guatemalans, 40 percent self-identify as indigenous (INE 2011). Members of many different indigenous groups speaking more than 20 languages throughout the country make up an important though often marginalized sector of Guatemala's diverse society, and large inequalities in access to health services and health outcomes exist between the indigenous and non-indigenous (or *ladino*) populations.

While Guatemala has made important strides over the past two decades, the legacy of a long civil war between 1960 and 1996 looms large, visible not only in Guatemala's persistent levels of violence but also in weak social services and a sluggish economy. Decades of neglect during the conflict left the health system seriously underfinanced, with very little coverage of health services outside of urban areas. While the Peace Accords of 1996 called for measures to address the structural causes of poverty, the high levels of poverty and exclusion of minority groups that fueled the conflict persist to this day (USIP 1998). With a gross domestic product (GDP) per capita of US\$3,478, or US\$7,297 when adjusted for purchasing power parity (World Bank 2015), and ranked 125 (out of 187 countries) according to the Human Development Index (UNDP 2014), Guatemala is among the poorest nations in the LAC region. Fifty-three percent of Guatemalans live in poverty and 13 percent live in extreme poverty (ENCOVI 2011). While the economy has grown at an average rate of 3.6 percent since 1990, annual GDP per capita growth has averaged only 1.2 percent due to the average annual population growth rate of 2.5 percent in the same interval (World Bank 2015).

In terms of education, the literacy rate among adults is 78 percent, and, while it is much higher among the 15-24 age group (94 percent), large gaps persist between men and women. Females age 15-24 are almost twice as likely to be illiterate than males (8 percent vs. 4.5 percent), highlighting the barriers to education faced by women and girls (World Bank 2015).

The government of Guatemala's ability to provide health and education is largely hampered by weak tax systems. According to the Organization for Economic Cooperation and Development (OECD), Guatemala's tax revenue of 12.3 percent of GDP is among the lowest in the region (OECD 2015). Among the many challenges to creating a more robust tax base is the large informal sector of the economy. According to the Employment and Income Survey (*Encuesta Nacional de Empleo e Ingresos*), 69 percent of Guatemalans work in the informal sector, with 42 percent of them working in subsistence agriculture (INE 2014b).

FIGURE 2.1. MAP OF GUATEMALA SHOWING DEPARTMENTS



Source: <http://www.dedalesdeblanca.com/escudos percent20y percent20banderas/guatemala percent20mapa.gif>

2.1 Demographic Trends

Compared to other countries in Latin America, Guatemala is at an early stage of the demographic transition characterized by high fertility rates and a rapidly growing population made up largely of children and youth (Table 2.1). With a total fertility rate (TFR) of 3.6 births per woman and an annual population growth rate of 2.5 percent, the Guatemalan population is growing at double the average rate (1.1 percent) of other LAC countries (WHO 2014c). According to the Population Reference Bureau the Guatemalan population is set to double by 2037 (Haub and Gribble 2011).

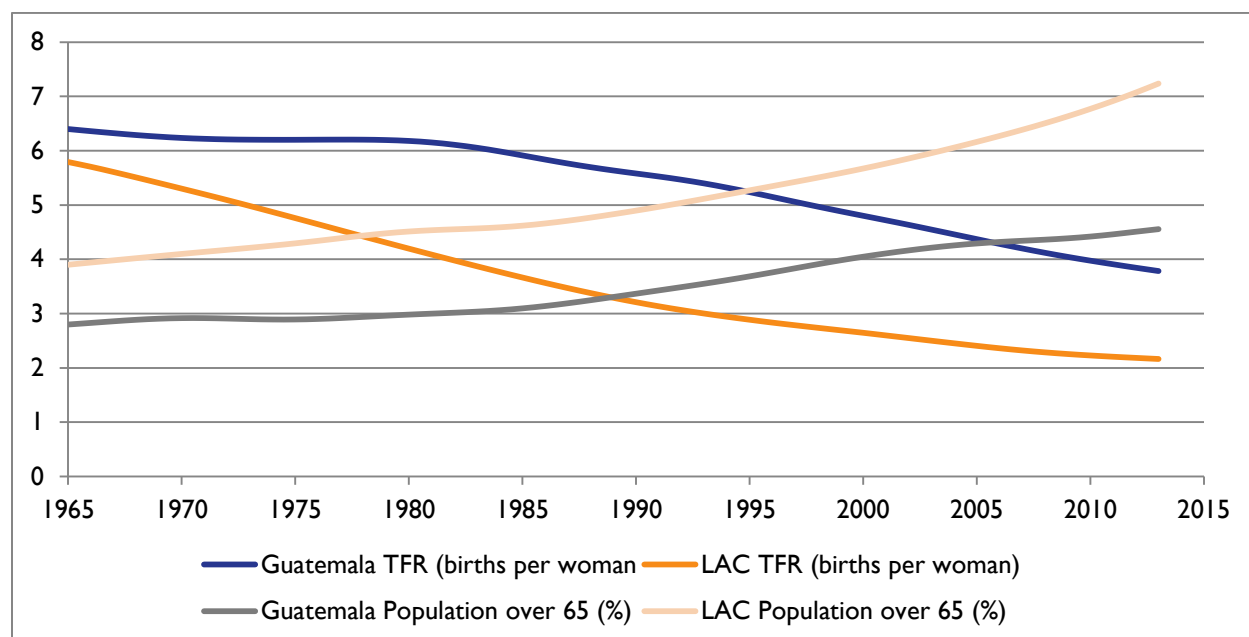
TABLE 2.1. POPULATION INDICATORS IN GUATEMALA AND THE LAC REGION (2013)

Indicator	Guatemala	LAC
Population total (millions)	15.5	588
TFR (births per woman)	3.8	2.2
Population growth (annual %)	2.5	1.1
Rural population (percent of total)	49.3	21
Population ages 0-14 (percent of total)	40.4	27
Population ages 65 and above (percent of total)	4.6	7

Source: World Bank 2015

Guatemala's rapid population growth presents tremendous challenges for the health sector, which must expand to provide services to the growing population. As shown in Figure 2.2, Guatemala's TFR has decreased at a slower pace than the rest of the LAC region. Consequently, the population in Guatemala is aging at a slower pace as well. Nonetheless, the population over age 65 is steadily increasing, and now represents 4.6 percent of the population. As Guatemala's population grows older, the health system will need to address the growing chronic and noncommunicable disease burden associated with an aging population.

FIGURE 2.2. TOTAL FERTILITY RATES AND POPULATION OVER AGE 65 IN GUATEMALA AND THE LAC REGION

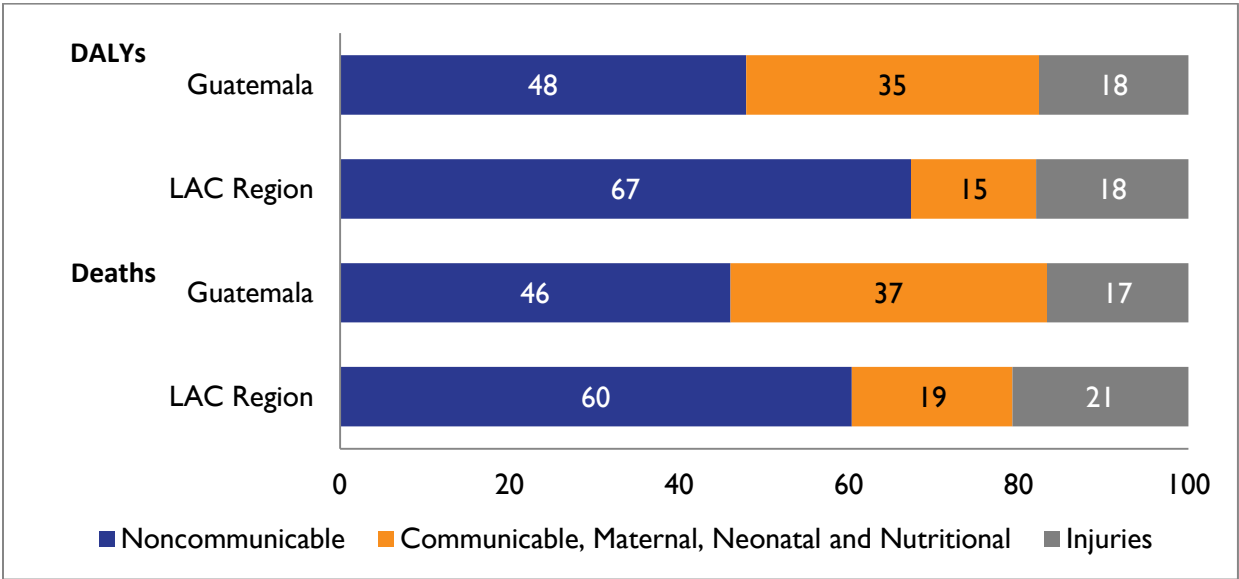


Source: World Bank 2015

2.2 Epidemiological Profile

In comparison to the rest of the LAC region, Guatemala is heavily burdened by communicable, maternal, neonatal, and nutritional diseases. Figure 2.3 shows the burden of disease, measured in both disability-adjusted life-years (DALYs) and deaths in Guatemala and the region. Nonetheless, the “double burden of disease” caused by the persistence of these diseases and the increase in noncommunicable diseases (NCDs) is also evident.

FIGURE 2.3. BURDEN OF DISEASE BY BROAD WHO CATEGORY IN DALYS AND IN DEATHS (2010)



Source: IHME 2013

While cardiovascular and circulatory diseases are ranked sixth in terms of DALYs, they are now the number one cause of death in Guatemala, as is shown in Table 2.2. The table also illustrates the often overlooked burden of mental health disorders, as well as the heavy toll that violence has taken on the health of society – 11 percent of all deaths are attributable to interpersonal violence. Ultimately, the table illustrates that despite the growth of NCDs, large challenges remain to stamping out morbidity and mortality from communicable, maternal, neonatal, and nutritional causes.

TABLE 2.2. TOP TEN CAUSES OF DALYS LOST IN GUATEMALA (2010)

Top 10 causes of DALYs	(% of burden of disease)			
	DALYs		Deaths	
	Guatemala	LAC Region	Guatemala	LAC Region
Cardiovascular and circulatory diseases	6.1	11.0	15.1	27.9
Lower respiratory infections	10.7	3.3	14.1	5.3
Interpersonal violence	10.3	5.0	11.3	4.6
Cancer	5.2	7.2	11.0	14.6
Diabetes, urogenital, blood, and endocrine diseases	5.7	7.2	8.5	10.2
Diarrhea	6.1	1.6	5.4	1.1
Neonatal disorders	8.0	5.5	5.2	2.8
Nutritional Deficiencies	5.3	2.7	4.9	1.4
Mental and behavioral disorders	8.4	10.4	0.5	0.7
Musculoskeletal disorders	5.7	7.8	0.3	0.5

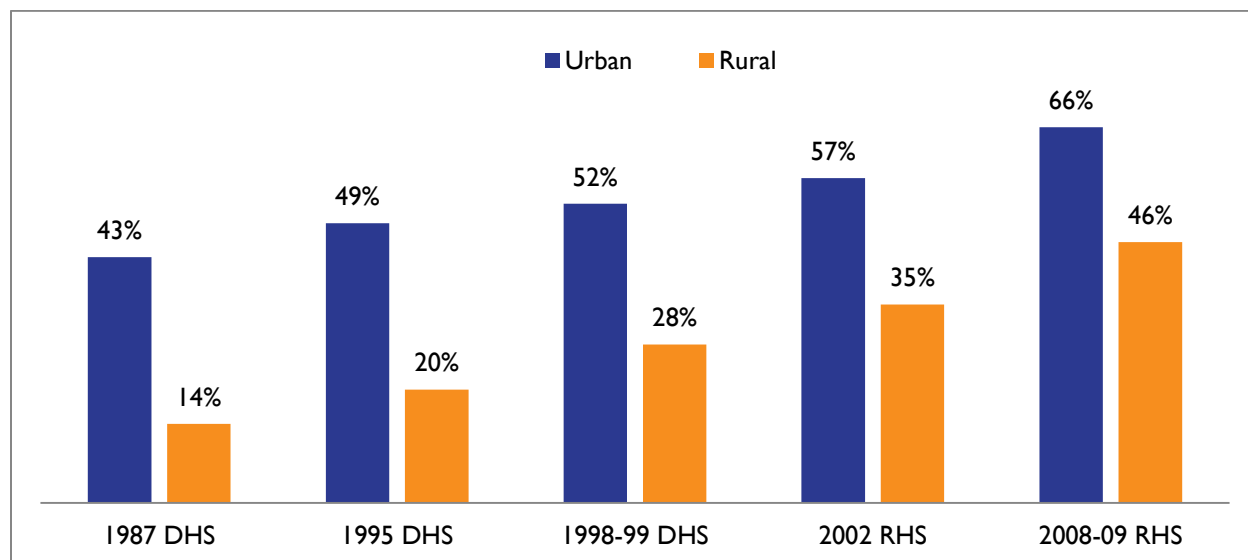
Source: IHME 2013

2.3 Reproductive Health and Family Planning

Guatemala has made notable strides in improving access to reproductive health and family planning services, but important gaps remain. As shown in Figure 2.5, the prevalence of contraceptive use among women of reproductive age has increased over the last 30 years. According to the National Survey of Maternal and Child Health (*Encuesta Nacional de Salud Materno Infantil, ENSMI*) 2008-09, 54 percent of Guatemalan women of reproductive age and in a union use modern methods of contraception, but significant differences remain between utilization in urban areas (66 percent) versus rural areas (46 percent) (MSPAS 2010). This gap closely mirrors utilization among indigenous women (43 percent) and non-indigenous women (63 percent), and this disparity reflects not just different preferences, but the lack of access to contraceptives. Utilizing data from MSPAS 2010, Ishida et al. (2012) calculate that the met need for contraceptives was 72 percent among non-indigenous women, but only 49 percent among indigenous women.

Significant disparities between the indigenous and non-indigenous populations also exist in the percentage of women delivering at health facilities. Nationwide, 48 percent of Guatemalan women deliver in the home, compared to 51 percent in health facilities. Only 30 percent of indigenous women deliver in health facilities, however, compared to 71 percent of their non-indigenous counterparts. In the Western Highlands, a predominantly indigenous region, 79 percent of women deliver in the home. Ultimately, these low levels of institutional delivery and contraceptive use are major drivers of Guatemala's high levels of maternal mortality.

FIGURE 2.3. UTILIZATION OF MODERN METHODS OF CONTRACEPTION AMONG WOMEN OF REPRODUCTIVE AGE IN UNION



Source: Ishida 2012, utilizing MSPAS 2010 data.

2.4 Maternal Mortality

While Guatemala has made important strides toward reaching the Millennium Development Goals (MDGs) for maternal mortality – the maternal mortality ratio decreased from 270 per 100,000 live births in 1990 to 113 per 100,000 live births in 2013 (MSPAS 2015d), it will not reach the goal of reducing maternal mortality by three-fourths by 2015 (Countdown 2015). Furthermore, large gaps exist between wealthier, urban regions and poorer, rural regions, as depicted in Table 2.3. According to a maternal mortality study utilizing the Reproductive Age Mortality Study (RAMOS) methodology, these gaps are even greater by ethnicity. Analyzing records from 2013 the study revealed a maternal mortality ratio of 159 per 100,000 live births among indigenous women and 70 per 100,000 live births among non-indigenous women. Of the 452 maternal deaths in 2013, 68 percent were indigenous women (MSPAS 2015d).

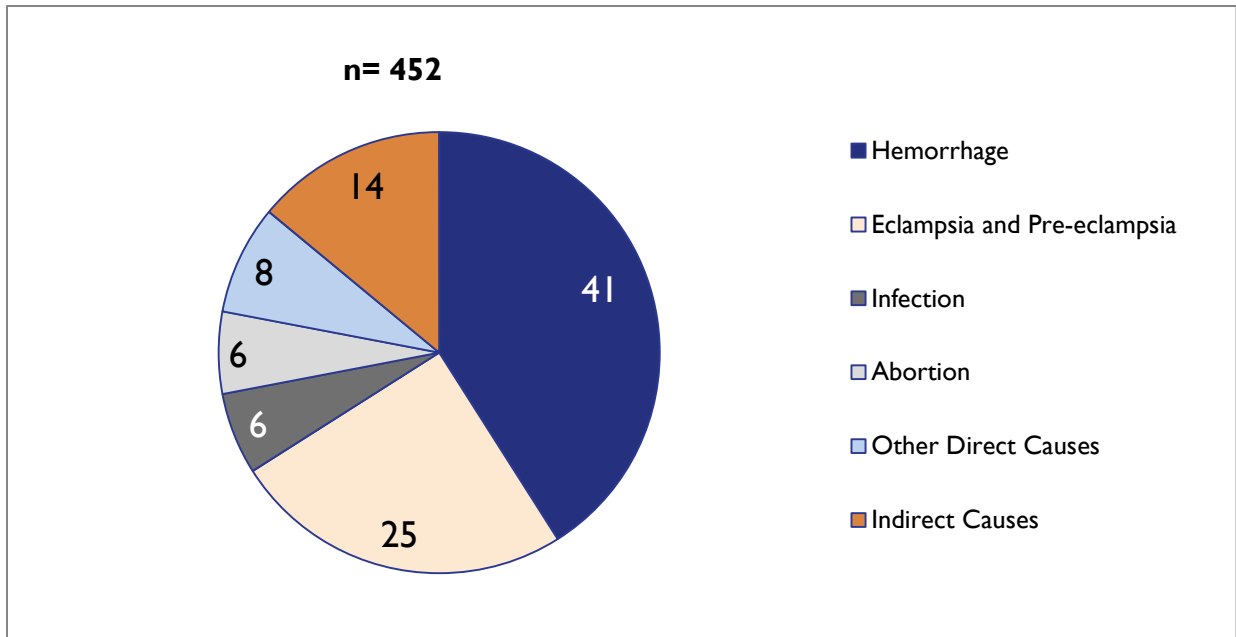
TABLE 2.3. MATERNAL MORTALITY RATIO BY MOTHER’S REGION OF RESIDENCE, 2013

Region	Maternal Mortality Ratio (per 100,000 live births)
National	113
Metropolitan	48
North	119
Northeast	98
Southeast	86
Central	104
Southwest	105
Northwest	202
Petén	150

Source: Adapted from MSPAS 2015d

Among women of all ages, the top causes of death were hemorrhage (41 percent) and eclampsia and pre-eclampsia (25 percent). That these are preventable conditions highlights the need for improved access to timely and high-quality obstetrical care, which is likely exacerbated by the frequency of home delivery (48 percent) and/or birthing with a traditional birth attendant (TBA), rather than in a health facility with skilled birth attendants. Figure 2.4 shows the causes of maternal deaths in 2013.

FIGURE 2.4. PERCENTAGE OF MATERNAL DEATHS BY CAUSE, 2007 AND 2013

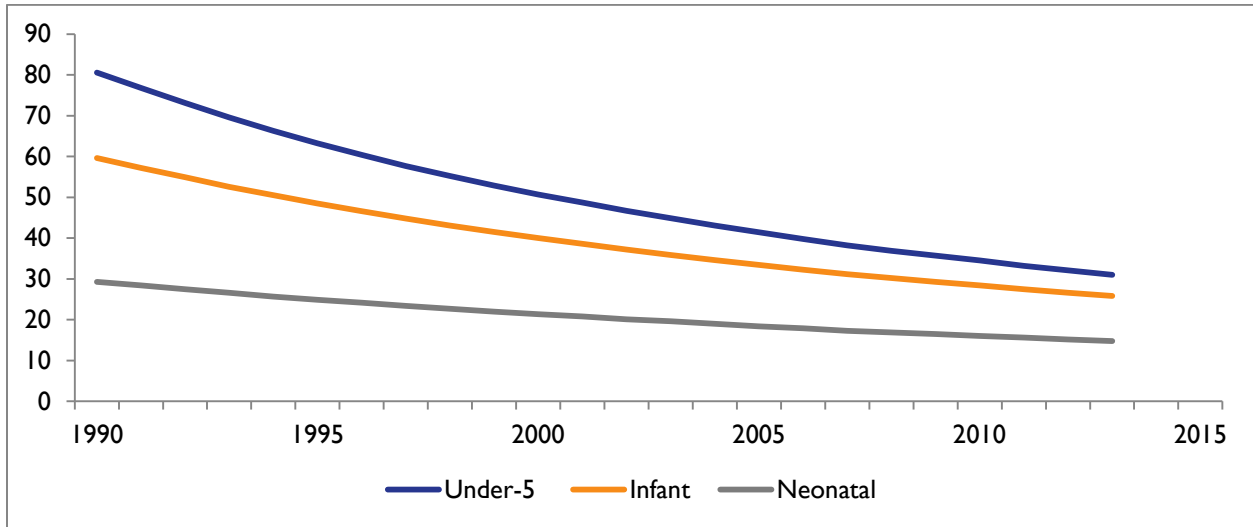


Source: MSPAS 2015d

2.5 Child Health

Guatemala has dramatically reduced the mortality rate for children under five years of age in the past 25 years. Between 1990 and 2013, the under-five mortality rate fell from 80 deaths per 1,000 live births to 31 deaths per 1,000 live births, nearing the MDG target of reducing under-five mortality by two-thirds (target of 27 in Guatemala's case). As evidenced by Figure 2.5, under-five mortality is largely made up of infant mortality (deaths of children under one year of age) and neonatal mortality (deaths in infants under one month of age). These mortality rates have proven more difficult to reduce than those in children older than one year of age. Whereas children between one and four years old made up 26 percent of under-five mortality in 1990, that figure has fallen to 17 percent by 2013. Meanwhile, neonatal mortality has gone from 26 percent to 48 percent of under-five mortality over the same period. These figures illustrate that in order to significantly reduce under-five mortality, further inroads must be made in the reduction of infant and neonatal mortality.

FIGURE 2.5. UNDER-FIVE, INFANT, AND NEONATAL MORTALITY RATES PER 1,000 LIVE BIRTHS

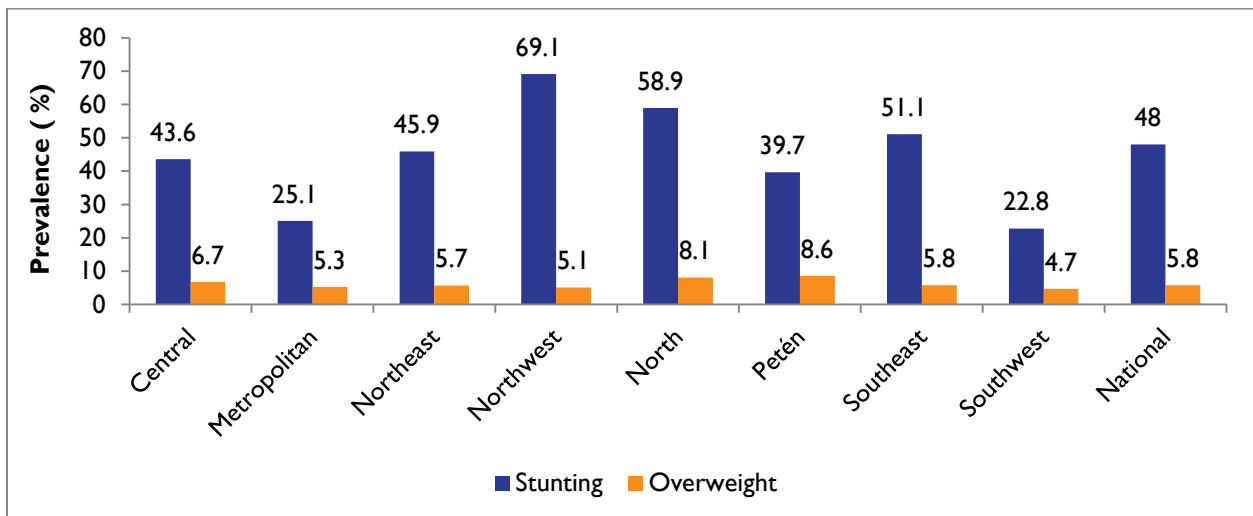


Source: World Bank 2015

2.6 Nutrition

Combating childhood malnutrition is a top priority for the Guatemalan government. As outlined in *Pacto Hambre Cero* (or the Zero Hunger Pact); 166 priority municipalities have been targeted for combating hunger and promoting food security; reducing the prevalence of chronic malnutrition by 10 percent for children under three years of age; and preventing and reducing the childhood mortality rate for children under five years of age due to malnutrition. Among children under five, 48 percent are stunted and chronically malnourished and 13 percent are underweight. Another 5.8 percent are overweight (MSPAS 2010). As shown in Figure 2.6, these statistics vary widely across geographic regions in Guatemala, with stunting levels in the Northwest region nearly three times the rate in the Southwest or Metropolitan regions.

FIGURE 2.6. PREVALENCE OF STUNTING AND OVERWEIGHT CHILDREN BY REGION



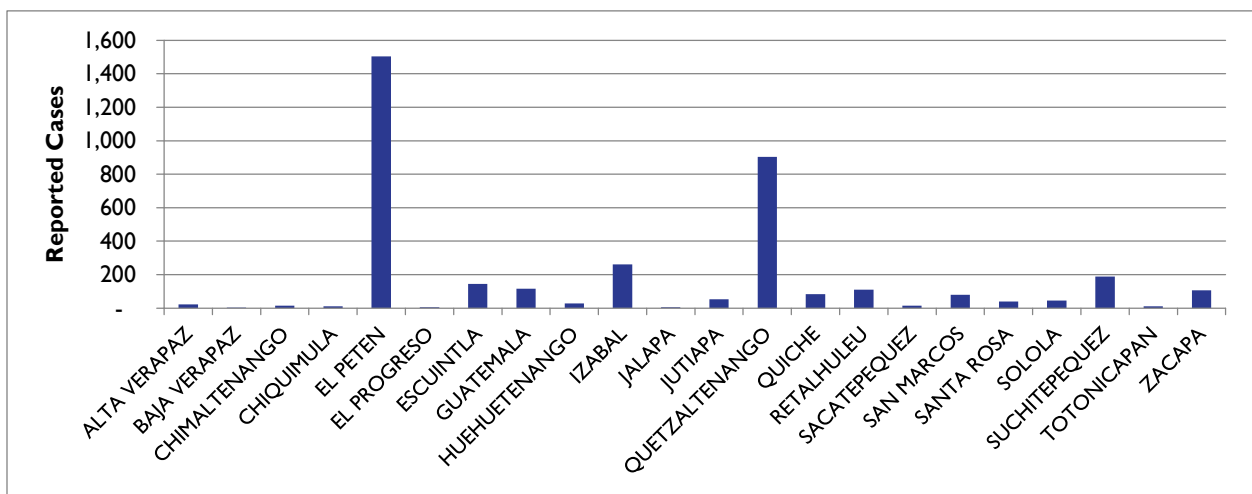
Source: MSPAS 2010

Though it has not advanced as far along in the nutrition transition as some of its neighbors in the region, Guatemala is nonetheless experiencing a rise in obesity. Together, the persistence of stunting and the rise in childhood obesity is alarming, as mounting evidence demonstrates that individuals who are malnourished as children – whether stunted or overweight – are more likely to become obese as adults (Black et al. 2013). Among women ages 15-49 with a child under five years old, 15 percent are obese and 35 percent are overweight (MSPAS 2010). Among all women in Guatemala age 20 or older, 26.7 percent are obese (WHO 2014a). These figures are important not only because rising obesity NCDs, but also since children born to obese mothers are more likely to be overweight themselves (Martorell 2012). In addition to obesity, poor maternal nutrition is also reflected in Guatemala’s elevated levels of maternal anemia (29.1 percent) which drive childhood anemia (47.7 percent) and stunting (Martorell 2012).

2.7 HIV/AIDS

According to MSPAS’s most recent summary report of estimates given to UNAIDS in 2013, Guatemala has 53,000 people living with HIV and an adult (aged 15 to 49) prevalence rate of 0.6 percent (MSPAS 2014c). A review of published data from MSPAS’s data portal shows that between 2009 and 2014, the Petén Department (and the Petén Norte health area in particular) had the highest number of HIV cases reported at 1,504 (or 40 percent of all cases reported) over the last four years, while Quetzaltenango accounted for the next highest number of cases at 903 (or 24 percent of all cases reported).

FIGURE 2.7. CUMULATIVE HIV CASES BY DEPARTMENT, 2009-2014



Source: SIGSA 2015c

2.8 Health System Overview

The Guatemalan health system is characterized by high levels of fragmentation among various public institutions, as well as by a private sector that, despite interacting with the public health system on many levels, operates largely independently, with minimal regulation. On the public side, the main actors are MSPAS, which is responsible for governance as well as providing services, and the Guatemalan Institute of Social Security (*Instituto Guatemalteco de Seguridad Social* or IGSS), a social health insurance system that covers workers in the formal sector. Members of the armed forces are covered through *Sanidad Militar*. Despite low levels of private health insurance coverage (less than 5 percent), there are many diverse actors in the private sector. These include both for-profit providers and not-for-profit providers such as NGOs, faith-based organizations (FBOs), and traditional and alternative forms of medicine.

Besides providing services, MSPAS is the main regulatory agency, responsible for governance of the health sector. In practice, however, MSPAS holds little influence over IGSS or the private sector. Only about 25 percent of Guatemalans have some form of health insurance, as shown in Table 2.4. MSPAS is theoretically responsible for providing services for the rest of the population, but its effective coverage is much lower. NGOs provide services to roughly 18 percent of the population (Becerril-Montekio and Lopez-Dávila 2011).

TABLE 2.4. INSURANCE COVERAGE LEVELS

IGSS	Sanidad Militar	Private Insurance	Uninsured Population
17.5%	0.5%	<5%	75%

Source: MSPAS 2010 and MSPAS 2011

Over the past 20 years, NGOs have been contracted by MSPAS to provide health services in rural areas, and they have played a major role in the expansion and improvement of health services throughout the country. This began with the signing of the Peace Accords of 1996, which provided a new impulse for the health system, mandating increased public expenditure for health and specifying that the funds should be used to extend health services to marginalized rural areas. Faced by many challenges to expanding its services directly, MSPAS elected to contract NGOs to expand coverage more rapidly through the Extension of Coverage Program (*Programa de Extensión de Cobertura, PEC*). With additional funding from the international donor community, this program expanded rapidly to cover approximately 2.9 million people by 2000 (Lao Peña 2013). However, a growing dissatisfaction with what was perceived as a lower level of health services provided to indigenous communities under the PEC, together with accusations of inefficiency and a lack of transparency in the award of PEC contracts to NGOs led to legislation prohibiting the outsourcing of health care services to NGOs, and the cancellation of most of MSPAS' contracts with NGOs in the fall of 2014.

Service utilization patterns highlight the fragmentation of the Guatemalan health system. As shown in Table 2.5, publicly funded sources (MSPAS, IGSS, and informal and rudimentary health centers called "Convergence Centers" (*Centros de Convergencia*)) account for 98 percent of immunizations among children under five. Notably, however, 28 percent of children received their immunizations at Convergence Centers that were part of the PEC, highlighting the urgent need for MSPAS to fill the gap in services previously provided by the PEC to ensure that coverage levels of critical preventive interventions such as immunizations do not fall.

TABLE 2.5. SOURCE OF IMMUNIZATION FOR CHILDREN UNDER FIVE (%)

	MSPAS*	IGSS	Private	Convergence Centers
Immunization	64	6	2	28

* Excluding Convergence Centers (run by NGOs but financed by MSPAS)

Source: MSPAS 2011

Utilization patterns for adults reveal that the Guatemalan population regularly turns to the private sector for health services, particularly for the treatment of chronic conditions such as diabetes and hypertension (Table 2.6), as well as preventive screening services such as prostate exams and Pap smears (Table 2.7). These figures highlight the need for MSPAS to address the growing burden of noncommunicable and chronic diseases, which will drive future health care costs and particularly out-of-pocket expenditures if the public sector's capacity to deliver these services is not improved.

TABLE 2.6. SOURCE OF CARE FOR MALES AGES 30-59 (%)

	MSPAS	IGSS	Private	Other
Diabetes treatment	21	19	53	7
High cholesterol treatment	15	28	48	9
Hypertension treatment	21	16	54	9
Prostate exam	8	18	60	12

Source: MSPAS 2011

Furthermore, utilization rates among women reinforce the important role of the private sector in providing access to family planning services. In particular, the nonprofit International Planned Parenthood Federation's affiliate in Guatemala (*Asociación Pro-Familia* or APROFAM), provides 16 percent of family planning commodities for the population, and 20 percent of Pap smears. For a more detailed discussion of the private sector and family planning services in Guatemala, please refer to the Guatemala Private Sector Assessment (Cisek et al. 2015).

TABLE 2.7. SOURCE OF CARE FOR FEMALES AGES 15-49 (%)

	Public*	IGSS	Private clinic or hospital **	APROFAM	TBA/ home	Other
Family planning	51	9	22	16	-	2
Place of delivery	35	8	7	1	48	-
C-section	59	17	21	3	-	-
Pap smear	39	6	32	20	-	3

* Public sources consist predominantly of MSPAS facilities, but also include other publicly funded facilities, such as those funded by municipalities.

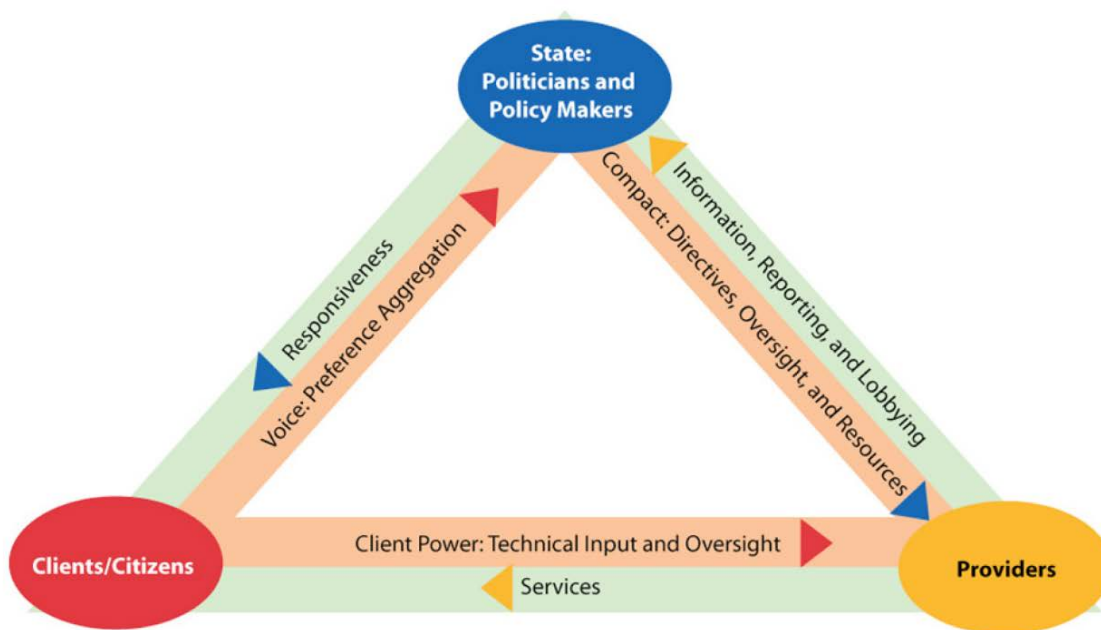
Source: MSPAS 2010

3. GOVERNANCE

3.1 Overview of Governance

Effective governance for health is the ability to competently direct resources, manage performance, and engage stakeholders in order to improve the population’s health in ways that are transparent, accountable, equitable, and responsive to the public (USAID et al. 2006). Sustainable health interventions require that all of these elements are in place, as each element is dependent on the success of all of the others. In order to understand how each element functions, this HSA uses a health governance framework (Figure 3.1) that involves three primary sets of actors responsible for ensuring a strong health system: the state, health providers, and citizens (Brinkerhoff and Bossert 2008).

FIGURE 3.1. HEALTH GOVERNANCE FRAMEWORK



Source: Brinkerhoff and Bossert (2008)

The roles and linkages between these health system actors constitute the core of the health governance framework. State actors include politicians, policymakers, and other government officials. Together, they develop, implement, and enforce the rules and regulations that govern the health system, provide policy leadership and oversight, organize state-managed insurance schemes, and determine financing for significant parts of the health system. Ideally, state actors are also responsible for responding to citizen voice, as expressed in elections or advocacy efforts.

Providers are public and private sector health care staff and facilities and the organizations that support service provision. Their main role is to deliver services to clients and provide information to politicians and policymakers on performance and health indicators. Citizens are consumers of health services. Citizens’ interests in health extend to the societal benefits of health services, not just their impacts on

individuals. Citizens can interact with providers as individuals, or can engage through organizations that represent their interests. Citizens influence policy formulation and service delivery by advocating for change, providing feedback to providers, and demanding performance from both providers and governments. The Guatemalan HSA seeks to understand the linkages between these actors, how structures reinforce or inhibit these linkages, and how they influence the ability of the health system to meet performance criteria.

3.1.1 Key Governance Indicators

In order to study health governance, it helps to frame the health sector within the larger governance environment. The World Bank Worldwide Governance Indicators (WGIs) are composite indicators that draw on a wide variety of sources to create scores of six different elements of governance. The data sources used include survey institutes, think tanks, NGOs, and other international organizations. For the most part, these data sources use surveys, as well as qualitative measures such as interviews and document review to develop their scores. In Table 3.1, the percentiles show the percentages of countries in the world that scored lower than Guatemala and each of its four Central American neighbors on the selected indicators. These indicators can be instructive for looking at health governance as they give an overall picture of the strength of governance structures in Guatemala.

TABLE 3.1. WORLD BANK WORLDWIDE GOVERNANCE INDICATORS: GUATEMALA VS. LAC

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Voice and Accountability					
2003	78.37	51.92	32.69	41.35	49.52
2008	75.96	50.48	41.83	35.58	34.62
2013	82.46	46.45	35.55	31.75	32.70
Political Stability					
2003	64.42	37.02	23.56	31.73	33.17
2008	57.42	46.41	21.05	27.75	36.84
2013	66.82	45.02	23.70	30.33	37.91
Government Effectiveness					
2003	64.39	42.93	38.54	32.68	25.37
2008	64.08	49.03	35.44	31.55	16.99
2013	67.94	49.28	27.27	25.36	22.97
Regulatory Quality					
2003	67.65	50.00	42.16	34.80	40.20
2008	64.08	57.28	50.97	45.63	38.35
2013	68.90	60.29	45.45	45.93	43.06
Rule of Law					
2003	69.38	38.76	14.35	22.49	32.06
2008	62.50	27.40	11.06	18.75	22.12
2013	65.88	29.86	13.27	10.43	31.28
Control of Corruption					
2003	75.61	44.39	30.73	20.00	42.44
2008	69.90	48.06	32.04	20.39	23.30
2013	71.77	48.33	33.97	17.22	24.40

Source: WGI 2014

The WGIs for Guatemala show generally weak performance on most governance indicators, with a lack of significant improvement over the past 10 years and especially weak performance in Political Stability and Rule of Law. These indicator scores are indicative of the continuing difficulty Guatemala has experienced with the implementation of the plans emanating from the Peace Accords in 1996, which brought to an end a 36-year civil war. Although much progress has been achieved in creating a more inclusive social and political environment, much remains to be done, particularly in health. As will be seen in the remainder of this chapter, the governance structure and performance in the health sector mirrors many of the issues that underlie the WGI statistics, although in many ways more has been accomplished in achieving broader coverage with greater citizen input in the health sector than in other sectors of society.

3.2 Policy, Legislation, and Regulatory Framework

As discussed earlier, Guatemala's health sector includes three major components: MSPAS, which plays the dual role of "rector" (overall senior authority, or *rectoría*) of the country's health system, and provider of publicly financed health services including the largest network of local, regional, and national health service providers; IGSS, which provides health services to its affiliates and is financed through employee and employer contributions; and the private health sector, which provides fee-based services to all segments of Guatemalan society, including many who are least able to pay but lack access to public health services. In addition to MSPAS and IGSS, publicly funded health services are also provided to the Armed Forces (*Sanidad Militar*) through a separate health system managed by the Ministry of Defense. A fourth subcomponent, frequently overlooked, includes national and international nonprofit organizations which until recently provided minimal health services on contract with the MSPAS to population groups – generally indigenous – that were not reached directly by MSPAS, as well as organizations that receive financing from international public and private sector donors to provide services to underserved populations and that frequently have no direct relationship with the government. Finally, traditional medicine practices and various community-based health services (such as those provided by TBAs, or *comadronas*) complement the more formal elements of Guatemala's health system.

Although not generally considered a formal part of the health system, Guatemala's municipal governments play an important role in the area of environmental health with particular attention to water and sanitation, a key public health intervention. The Municipal Code requires municipalities to provide chlorinated water to their communities, a requirement with which few municipalities currently comply. Under the Peace Accords of 1996 and the Decentralization Law of 2002, municipal governments are guaranteed a "Constitutional Assistance" (*Aporte Constitucional*) of 10 percent of government ordinary revenue plus 1.5 percent of the 10 percent value added tax. Municipalities are required to spend a minimum of 90 percent of the *Aporte Constitucional* on infrastructure, including – but not limited to – potable water and sanitation. While MSPAS oversees compliance with water and sanitation laws and promotes improvements to water and sanitation infrastructure, it is primarily the responsibility of the municipalities to undertake both their construction and financing (Gómez Sabaini, Juan 2005; and Lopez Rodas, Gerson 2015). According to stakeholders interviewed by the HSA team during field visits, municipal governments play other health-related roles, ranging from providing an ambulance, driver and fuel to transport the sick to district health centers, to financing or co-financing the construction of health posts or additions to health centers, to paying the salaries of staff to complement MSPAS staff in health posts.

According to the Municipal Code (Decree No. 12-2002 as amended by Decree 22-2010), the Municipal Council is required to appoint several commissions including one on Health and Social Assistance; these commissions can make proposals to improve efficiency in municipal public services and management (Arts. 36 y 37). Furthermore, consistent with the objectives of decentralization, a municipality may be delegated the authority, based on its administrative capabilities, to deliver selected public services including compliance with sanitary control regulations governing the production, distribution, and consumption of food and beverages in order to guarantee the health of the municipal population (Art. 70).

3.2.1 National Health Sector Strategy

Guatemala's national health sector strategy is the product of both a series of legislative actions dating back to the Constitution of 1945, and government-wide or public health sector strategic plans, generally associated with a particular four-year government cycle. Such plans may or may not involve legislative proposals, and generally establish priorities for improvement in the delivery of public sector health services. Due, however, to the segmentation of the health sector, such plans have generally applied only to MSPAS and have lacked effective mechanisms to coordinate the separate activities IGSS, the *Sanidad Militar*, or the private health delivery sector.

Since the signing of the 1996 Peace Accords, most Guatemalan government initiatives in the health sector, as well as in other areas of government, have focused on improving the inclusiveness and transparency of the government and providing the country's indigenous populations (principally the Mayan) with improved access to social services, economic opportunities and participation in democratic processes. Significant additional non-health-related initiatives in this area include the Decentralization Law of 2002 and various reforms to increase the transparency of government operations enacted in 2013.

Although broad strategic initiatives, including the goal of universal health care, frequently characterize national health strategic plans, the realities of politically determined four-year planning horizons, frequent changes in MSPAS's leadership and senior management (the current Minister of Health – the third in the current administration – and his management team have only been in their positions since September 2014), and severely limited public health budgets and disbursements have limited the effectiveness of most health sector strategic plans in providing guidance to annual planning and implementation. As an example, the MSPAS Strategic Plan for 2014-2019 reports the presence of 4,506 health establishments, including 2,220 Convergence Centers operated under contract with MSPAS by a number of NGOs (MSPAS 2014). It makes no mention of any plan to eliminate the NGOs or otherwise significantly change the organization of primary level of health care. Yet, as noted above, in 2014, the PEC was virtually abolished as contracts with most NGOs were cancelled, leaving vast segments of the rural population with no access to public health care at all – a situation which is only beginning to be addressed in mid-2015. (The elimination of the PEC and its aftermath are discussed in greater detail below.)

3.2.2 Major Legislation

Guatemala's Political Constitution of 1945

Although Guatemala's MSPAS pre-dates the Constitution of 1945, the only reference the Constitution made to the health sector is in Chapter II: Social Guarantees, Section I: Labor, in which Article 63 calls for the establishment of obligatory social security (“*Se establece el seguro social obligatorio*”), provides for legislation to regulate its scope and operations, mandates that it should include at a minimum coverage for incapacity, old age, death, sickness and work-related accidents, and states that the insurance premiums will be paid by employers, employees and the State (*Constitución Política* 1945).

Legislative Decree 295 of 1946: Creation of the Guatemalan Social Security Institute (*Ley Orgánico del Instituto Guatemalteco de Seguro Social*)

In compliance with article 63 of the Constitution of 1945, Legislative Decree 295 of 1946 created IGSS as an autonomous institution with its own legal persona and defined its governance and administrative structures. While various laws and executive agreements have introduced minor modifications, the Legislative Decree 295 of 1946 continues to provide the legal basis and IGSS's structure, organization, and operations.

Various articles in the original legislation indicate that at the time it was passed, the IGSS was envisioned to be the sole provider of public health services in Guatemala. Article 62 of the decree states that “*the Institute and the Ministry of Public Health and Social Assistance should constantly coordinate their labors with the objective of avoiding a duplication of efforts, expenses and services,*” including “*joint planning for the best way to gradually unify the diverse classes of benefits provided by the Institute with all other assistance and sanitary services of the State, in one single Social security regime, in accordance with the principles of this law*” (Decreto 295-1946).

Constitution of 1985

Guatemala's Political Constitution of 1985, as amended in 1993, established that “[t]he right to health is a fundamental right of the human being without any discrimination” and further stipulates that “[t]he State will see to the health and social assistance in all its inhabitants. It will develop through its institutions preventive measures, promotion, recuperation, rehabilitation, coordination, and appropriate auxiliary measures in order to procure for them the most complete physical, mental, and social well-being” (Section VII, articles 93 and 94, *Constitución* 1985).

Following and as a direct outcome of the Peace Accords of 1996, far-reaching reforms were introduced in Guatemala's health sector involving significant changes to pre-existing laws governing the organization, operations, and services provided by public sector health institutions – primarily MSPAS. The most important reforms were incorporated into a new national health code passed by the Guatemalan Congress in 1997.

The Health Code

The Health Code, passed in 1997, establishes the overall institutional and regulatory framework for Guatemala's health sector and charges MSPAS with its stewardship or governance (*rectoría*). The Health Code establishes as a fundamental principle that all inhabitants of the Republic have the right to *prevention, promotion, recovery and rehabilitation of their health without discrimination.*"

As amended in 2003, the Health Code also states " ...the State will oversee through the Ministry of Public Health and other public institutions, because the provision of health services to all the Guatemalan people is guaranteed to be free."

The amended Health Code also states that "[t]he State will guarantee communities' right of participation in health programs and services concerning planning, organization, control and social funding."

The Health Code establishes the roles and responsibilities of the various health sector institutions including MSPAS, IGSS, municipalities, universities, private entities, nonprofit organizations, community organizations, international cooperation agencies, and professional societies (*colegios*).

Article 10 of the Health Code states that the "Ministry of Health will carry out the following actions:

- a. *Ministry of Health-Guatemalan Institute of Social Welfare coordination. The Ministry of Health and the Guatemalan Institute of Social Welfare will coordinate their plans, programs on promotion, prevention, recovery and rehabilitation of health, and the utilization of their human, physical and team resources in order to achieve the expansion of health services coverage, be efficient, effective and to prevent the duplication of services, infrastructure and expenses.*
- b. *Intra- and Intersector Coordination. To fulfill the duty of coordination within the sector and with other sectors, the Ministry of Health will sign agreements and conventions with national, local and international bodies."*(Decreto 90-97)

Additional health sector legislation and regulations

While the Health Code establishes the broad institutional and regulatory framework for Guatemala's health sector, numerous additional laws (*Decretos legislativos*) address specific areas of health intervention. These include, but are not limited to:

- ▶ Social Development (Ley de Desarrollo Social, Decree 42-2001)
- ▶ Family planning (Ley de Acceso Universal y Equitativo de Servicios de Planificación Familiar y su Integración en el Programa Nacional de Salud Reproductiva, Decree 87-2005)
- ▶ Maternal health (Ley para la Maternidad Saludable, Decree 32-2010)
- ▶ HIV/AIDS (Ley para el Combate del VIH/Sida, Decree 27-2000)
- ▶ Nutrition and Food Security (Ley del Sistema Nacional de Seguridad Alimentaria y Nutricional, Decree 32-2005)

3.2.3 Health Sector Planning

Health sector plans have been produced in Guatemala by at least the current and previous four administrations, but have focused primarily on programs to be implemented by the MSPAS without regard to the roles of IGSS or the private sector. In addition to the four-year plans produced at the beginning of each elected administration, other government planning documents, including those of the Planning Secretariat (*Secretaría de Planificación y Programación*, SEGEPLAN) and the Ministry of Finance (*Ministerio de Finanzas Públicas*), include detailed plans and budget allocations for the health sector.

Within MSPAS, an annual planning process is conducted resulting in the Annual Operating Plan (*Plan Operativo Anual*, POA). It is a “bottom-up” process in which district health centers inform their respective area directors of their expected staffing and materials requirements, and area budget proposals are then developed and forwarded to the MSPAS Strategic Planning Unit. There they are consolidated with program and other central office budgets to produce a consolidated POA or budget proposal, which is in turn forwarded to SEGEPLAN and the Ministry of Finance. Following revision and consolidation with other public sector budget requests, the Ministry of Finance returns an approved POA to MSPAS which, according to interviews with a broad range of stakeholders in the Strategic Planning Unit and a review of Guatemalan budgets, is generally significantly lower than the requested POA. The approved POA is then reallocated back to the areas and programs, frequently resulting in area and district budgets that do not significantly vary from one year to the next. The most recent funding gap between requested and approved budgets (for 2014) was 15 percent of the requested POA (MSPAS 2015a).

While the annual planning process has the appearance of a “bottom-up” approach, severe funding limitations and the practice of re-allocating the Ministry of Finance-approved POA based on central office criteria effectively negates the role of local participation in the annual planning process. At present, the annual planning process also does not formally include community stakeholder input, although, according to interviews conducted, individual district directors may informally be in contact with local community or municipal development councils or other community-based organizations and take their requests into considerations in developing their initial POA requests.

Extension of Coverage Program (Programa de Extensión de Cobertura)

Coincident with the health sector reform process, a decision was made by the Guatemalan government in 1997 to enter into agreements with a variety of NGOs to provide basic health care (primarily mother and child care and immunizations) to 46 percent of the country’s population – primarily indigenous communities – without access to health services. This decision (which created the PEC) was made recognizing that the current organizational structure and resource base of MSPAS was not capable of dramatically expanding its own service network on short notice. The program was rapidly expanded and by 1999 had extended basic health services to 3.5 million people – an estimated 76.8 percent of the previously unserved population (SIAS 1999); by 2012, it had reached 4.3 million people – an estimated 54 percent of Guatemala’s rural population (Lao Peña 2013). Contracts with NGOs were based on the total headcount of a target population and initially included minimal means of surveillance or oversight.

Although modifications were introduced beginning in 2012 to broaden the range of services offered through the PEC and its Convergence Centers, the program came under increasing levels of criticism from various quarters of Guatemala’s civil society due to a lack accountability on the part of the NGOs, a lack of sufficient government oversight, instances of graft and corruption, and a perception that populations served by the PEC program were by definition being discriminated against because they were not afforded the same level of health care as those communities served by MSPAS Level I health centers (MSPAS 2015b). It was also reported (although not universally accepted) that the PEC cost three times as much per beneficiary as institutional models of delivery (Molina et al. 2015). By 2013, opposition to the PEC and especially to the practice of contracting out the provision of health services to NGOs resulted in Legislative Decree 13-2013, which prohibits the State from outsourcing the delivery of services to nonprofit organizations, international organizations, or associations.

Although Legislative Decree 13-2013 provided for a three-year phase-out of current outsourcing contracts related with the delivery of health services under the PEC, during 2014 a decision was made to suspend funding for NGOs working under the PEC and to cancel most NGO contracts for PEC-related services. This decision resulted in the suspension of all public health care services provided through the PEC to the majority of Guatemala's rural population. While the decision to suspend PEC contracts with NGOs was perhaps precipitous, by 2011 PEC funds disbursements had in any case been reduced in real terms to their 2005 level (Lao Peña 2013), resulting in an effective suspension of most services and especially the distribution of medications (Decreto 13-2013).

Strategy for the Institutional Development and Strengthening of the Primary Level of Care (*Estrategia de Fortalecimiento y Desarrollo Institucional del Primer Nivel de Atención*)

The development of a strategy to improve both the quality and extent of primary health care (PHC) has involved a process that included not only the establishment and expansion of the PEC, but also various other models or pilot programs including improved PHC and the integration of health care networks. A major objective in the development and implementation of an improved PHC strategy has been to move beyond the very limited scope and intensity of health care services provided under the PEC, to include ongoing access to MSPAS health care facilities (rather than the once-a-month access provided under the PEC), attention to all stages of the life cycle, and integration with level 2 and 3 health care facilities. Following the termination of the NGO-led PEC program in 2014, and in recognition of the resulting lack of coverage for the majority of Guatemala's rural population, MSPAS, under the leadership of its newly appointed Minister, accelerated the development and initial implementation of a strategy to improve and extend PHC in those regions previously covered by the PEC.

According to some presentations from MSPAS that were shared with the HSA team, the new PHC strategy calls for the identification of health "territories" of approximately 5,000 inhabitants each within each health district, and the establishment of one or more formal MSPAS health post in each territory (making use, in some cases, of the Convergence Centers established under the PEC), each with both a full-time resident auxiliary nurse and a second auxiliary nurse who will travel throughout the territory work with local community health facilitators, TBAs, and health committees to provide community-level care and promote preventive health (MSPAS 2015b). Because of the early stages of development of the new PHC strategy by MSPAS at the time of this HSA in spring 2015, the strategy could not be fully reviewed and evaluated for feasibility by the HSA team.

Success in the implementation of any new strategy in Guatemala will, of course, depend critically on the availability of human and financial resources to staff the new health posts and ensure the availability of medicines, vaccines, and other supplies to allow them to provide the expected level of services. As is discussed further in the Health Finance, HRH, and Service Delivery sections of this report, the availability of such resources is a question very much in doubt in Guatemala.

3.2.4 Private Sector Regulation

The post-Peace Accords reforms to the health sector, and specifically the 1997 Health Code and the 1998 MSPAS internal reorganization, established the Directorate for Health Regulation, Surveillance and Control (*Dirección General de Regulación, Vigilancia y Control de la Salud, DGRVCS*), with separate departments focused on services delivery to individuals, public health and environmental programs, accreditation and control of health establishments, food regulation, regulation and control of pharmaceuticals, and a national health laboratory.

Since staffing limitations limit the degree to which the various departments under DGRVCS can fully exercise their mandates (11 inspectors monitor over 10,000 pharmacies; 5 food safety inspectors must cover all processed food manufacturers and large-scale food retailers), much of the work of DGRVCS consists of responding to complaints (*denuncias*) filed by the public and verified via laboratory analysis in DCGVCS's own laboratory facilities. The Department for Regulation, Accreditation and Control of Health Establishments (*Departamento de Regulación, Acreditación y Control de Establecimientos de Salud, DRACES*) is charged with ensuring that Guatemala's nearly 10,000 hospitals, health centers, clinics (including dental), laboratories, and other health-related facilities (including those managed by MSPAS and IGSS) comply with applicable registration and sanitary regulations and requirements, including the reporting of maternal deaths and communicable diseases. DRACES registration and inspections are generally related with regulations regarding the physical facilities and sanitation procedures; professional registration of medical personnel is through the respective professional associations (*colegios*), to which all health professionals must belong. DRACES employs nine supervisors to conduct site visits, which tend to be more frequent in Guatemala City, with monthly inspections in the departments (DGRVCS 2015). There is no evidence that registration of new health facilities or establishments is in any way restricted as long as compliance with applicable requirements and standards is met. There is also no evidence of any sort of health sector-wide planning for more or fewer private health establishments and facilities, although it is recognized that there are few incentives for doctors to establish their practices in rural areas (DRACES 2015).

3.3 Citizen Voice, Responsiveness, and Transparency

3.3.1 Civil Society Environment

Following Guatemala's 36-year civil war "*the 1996 Peace Accords addressed the underlying politico-economic and sociocultural causes of the conflict, particularly the legacy of exploitation and oppression of the Maya. ... Specifically, the accords call for a series of socio-economic and political reforms to facilitate decentralization and the participation of Maya in the prioritization, formulation, and implementation of programs at all levels (Jonas, 2000). The sensitive nature of these reforms limited their implementation, and a 1999 referendum to constitutionally adopt the accords was declined by popular vote. Yet, although the government has made little progress implementing many of the reforms outlined in the accords, healthcare has emerged as a priority for national reform*" (Maupin 2009).

The Health Code and the decentralization and transparency laws are examples of legislative actions taken in the spirit of the Peace Accords. Despite the letter and intention of the Peace Accords, two aspects of Guatemala's social and political environment continue to directly affect the governance and overall effectiveness of its public health sector:

- ▶ As a relatively young democracy in a country with high levels of illiteracy and extreme poverty, Guatemala's political structure is characterized by numerous political parties, frequently more based on populist appeal than on coherent and consistent ideologies. Due to constitutionally mandated four-year term limits and the practice of replacing most middle- and senior-level government employees with party affiliates of each incoming government at the beginning of its four-year term, there is little organizational stability throughout the government, making long-term strategic plans difficult to implement. Regrettably, the same political structure and four-year time horizon has also led to high-profile instances of illicit behavior, which have further eroded the credibility of the government sector.

- ▶ Guatemala's fiscal burden and the resulting availability of funds for social sector spending are among the lowest in Latin America. According to World Bank Indicators, Guatemala's three-year average tax revenue (2010-2012) as a percentage of GDP (10.7 percent) is the lowest of all 24 LAC countries for which these data are available. Corresponding figures for low- and middle-income countries, OECD countries and the world are 13.03 percent, 14.15 percent, and 13.84 percent, respectively (World Bank 2015). Furthermore, as discussed in greater detail in the Health Finance section of this report, Guatemala allocates only 17 percent of its general government expenditure to General Government Health Expenditures – less than the health expenditure portion of government expenditures in Costa Rica (27 percent), Nicaragua (21 percent), and El Salvador (13 percent) but higher than those of Belize, Honduras, and Panama (WHO 2015).

3.3.2 Statutory Structures for Citizen Voice

The 1996 Peace Accords and the various legislative actions since then establish several formal mechanisms via which citizen voices are intended to be heard and incorporated into the governance process. In the sections below, mechanisms by which citizen voices are intended to be heard in the health governance process are described and their effectiveness assessed.

National Health Council (*Consejo Nacional de Salud, CNS*)

The CNS was formally created in the 1997 Health Code as an advisory body assigned to the MSPAS with the following functions:

- ▶ Promote coordinating mechanisms between the institutions that make up the health sector with the goal of assuring efficiency and effectiveness with a sense of equity in health-related activities
- ▶ Provide advice to the MSPAS on the formulation and evaluation of policies and strategies in the development of national health sector and institution plans
- ▶ Other functions assigned to it by the Minister of Health.

Executive Agreement (Acuerdo Gubernativo) No. 68-2001 provided further regulations regarding the structure, organization, attributes, and functions of the CNS. The CNS is presided over by the Minister of Health and includes representatives from IGSS, the Association of Municipalities (ANAM), associations of development institutions providing health care services, the Coordinating Committee of Commercial, Industrial and Financial Associations (*Comité de Asociaciones Comerciales, Industriales y Financieras, CACIF*), the Assembly of Presidents of Professional Societies, the University of San Carlos and private universities, plus other institutions that MSPAS may invite to participate on a temporary basis (Acuerdo Gubernativo No. 68-2001).

Despite its inclusion in the Health Code of 1997 and the Executive Agreement of 2001, the CNS was only formally established in 2011 following a national dialogue regarding the universalization of health care, which – among many other recommendations – called for an expanded CNS membership to include representation of indigenous communities and various other minorities. The CNS met on at least three occasions in late 2011 and early 2012 prior to the inauguration of the current government (CNS 2012). In January 2014, following two years during which the CNS did not meet, it was re-inaugurated with its original membership as defined in Executive Agreement 68-2001, and has met on a monthly basis since then.

While the CNS provides a forum for dialogue, primarily among representatives of the public health sector, professional and academic associations, and the organized private sector, despite the attempted reform of its membership in 2011 it lacks representation of indigenous communities or other underserved segments of the Guatemalan population. Of equal importance, it also lacks the regulatory power to issue agreements or resolutions with binding authority over any segment of the public health system, including MSPAS and IGSS, making it in essence a discussion forum with no power of enforcement. Nevertheless, its existence does provide an opportunity for the interchange of information regarding institutional priorities and programs, which may be taken into account as each institutional actor individually develops and implements its own health-related programs.

Urban and Rural Development Council System (*Sistema de Consejos de Desarrollo Urbano y Rural, SCDUR*)

A unique and internationally praised system (Ramos Muñoz and Sosa Velasquez 2010) to promote democratic participation in the national development process was originally established in Guatemala's Constitution of 1985 and the corresponding Law of Urban and Rural Development Councils (Decreto Número 52-87). A hierarchy of development councils beginning at the community level, and building up through municipal, departmental, regional, and national levels, was to be created to allow broad-based citizen participation in the formulation of public policy. Due to the continuing social turmoil, it was only after the signing of the 1996 Peace Accords that the SCDUR began to appear on the national agenda, and active implementation only began following the decentralization and citizen participation laws of 2002. Since 2002, the SCDUR has led to increased civic participation in public policymaking, especially at the community and municipal levels. However, full implementation has been limited by many factors including a lack of financial and human resources, a lack of coordination between the various levels, and a lack of political will or understanding of the system by the political leadership at local as well as the national level (Ramos Muñoz and Sosa Velasquez 2010).

Field observation carried out as part of this assessment found that the SCDUR system functions at all levels, but may most accurately reflect community input at the base or community level through the Community Development Councils (*Consejos Comunitarios de Desarrollo, COCODEs*). It was reported that in many districts COCODEs or Community Health Committees – technically subcommittees to the COCODEs – had interacted with the PEC system, community health workers (local health volunteers or part-time community health facilitators), and TBAs (*comadronas*) to identify priority health needs and coordinate the activities of the Convergence Centers – which in several cases were constructed by and legally belong to the COCODEs. With the end of the PEC, any organic connection with the formal health system was temporarily lost, although it is the intention of the recently inaugurated strategy to improve PHC to interact more closely with the COCODEs as well as other community actors such as community health workers, Mayan healers, and Community Health Committees (MSPAS 2015b).

Municipal- and department-level Development Councils (*Consejos Municipales de Desarrollo [COMUDEs]* and *Consejos Departamentales de Desarrollo [CODEDEs]*, respectively) are also active in the districts and departments visited, although there appears to be a wide variation in the degree to which the COMUDEs – and the local mayors who preside over them – become involved in health-related issues. At the department level, some participants interviewed reported that due to the large number of organizations that participate in the CODEDEs, meetings are unwieldy and generally unproductive, and tend to focus on non-health issues.

3.3.3 Advocacy Organizations

During and following the end of Guatemala's 36-year civil war, a number of advocacy organizations either directly representing indigenous groups or acting on their behalf became involved in both the design of the peace accords and in the surveillance of their implementation. In many cases, these organizations have received financial support from international development agencies such as the United Nations Development Program (UNDP), Canada's International Development Research Centre (IDRC), Spanish Cooperation (*Agencia Española de Cooperación Internacional para el Desarrollo*, AECID), and the United States Agency for International Development (USAID). Among the more prominent advocacy organizations in the health sector are:

Center for the Study of Equity and Government in Health Systems (*Centro de Estudios para la Equidad y Gobernanza en los Sistemas de Salud*, CEGSS)

CEGSS is a Guatemalan NGO that receives significant funding from Open Society Foundations, IDRC, the Institute of Tropical Medicine Antwerp and the Simon Fraser University (Canada), and sponsors research in the area of citizen's vigilance of public policy and health services. CEGSS publications tend to advocate a stronger role for community-based organizations, primarily those representing indigenous communities, in health sector planning and surveillance (CEGSS 2015).

Council of Guatemalan Communities for Health (*Consejo de Comunidades de Guatemala por la Salud*, CCGS)

CCGS, which receives its funding via CEGSS, focuses its activities on working at the community level to organize and/or fortify Community Health Committees that may or may not be part of COCODEs, and to provide the committees with training to improve their surveillance of health activities at the community level. CCGS also acts on its own to present demands and publicize deficiencies in the health system, citing as an example the assignment of a total of 113 MSPAS-paid staff – mostly with the job title of Health Educators to San Pablo, a municipality of only 8,000 inhabitants (Gómez 2015).

National Center for Reproductive Health (*Observatorio de Salud Reproductiva*, OSAR)

Created in 2008, the OSAR is composed of a central observatory and a network of 22 departmental observatories. OSAR maintains a strong alliance with the Congress to oversee compliance with the legal framework in health and various processes involved in design and implementation of policies. It is a reference for health issues in the media community.

National Alliance of Indigenous Women's Organizations for Reproductive Health (*Alianza Nacional de Organizaciones de Mujeres Indígenas por la Salud Reproductiva*, ALIANMISAR)

ALIANMISAR is an alliance of more than 100 indigenous women's organizations from throughout Guatemala with a primary focus on reproductive health. Supported by USAID through its Health Policy Project, the alliance advocates for compliance with culturally sensitive sexual and reproductive rights through various activities primarily intended to contribute to the reduction of maternal deaths among indigenous women of Guatemala (ALIANMISAR 2015).

Network of Men for Health, Education and Nutrition (*Red de Hombres por la Salud, Educación y Nutrición*)

Currently operating in five departments across Guatemala, the network advocates for health and nutrition as well as for the role/participation of men in health care and services for their families.

3.4 Findings and Recommendations

3.4.1 Findings

Universal health coverage and compliance with legislative mandate to provide free health services to all is an unmet long-term goal

Universal health care for all Guatemalans, as required in the Constitution of 1985, continues to be a long-term goal of the public health sector, which has neither the financial nor human resources to achieve this goal in the foreseeable future. While the PEC was intended to reach unserved populations with a minimal level of basic coverage, its failure and eventual cancellation served to highlight the magnitude of the unmet need. The new MSPAS strategy to expand PHC throughout areas previously covered by the PEC will require resources that are probably beyond its capacity given the recurring funding shortages of MSPAS's operations in the recent past.

Lack of planning for transition from NGO-led Expansion of Coverage Program (PEC) to expanded institutional coverage

The chaos that surrounded the cancellation of the PEC in 2014 without approved and funded plans to replace it with an alternative may be ascribed to a combination of funding shortages and a lack of systematic long-term planning within MSPAS. While the recently unveiled strategy for improving PHC opens the possibility of a solution to the post-PEC crisis, the fact that approximately 4 million people, primarily in indigenous communities, were left without access to any sort of publicly funded health care created the generalized impression that Guatemala's health system was in a state of crisis. Had MSPAS presented a clear strategy to replace the PEC system with expanded coverage via its own health posts *before* eliminating the PEC, its credibility would be far different and the "health crisis" might have been averted. As it is, MSPAS is subject to withering criticism, which threatens the success of its current strategy as new presidential and MSPAS administrations take over in January 2016.

Opportunity to increase integration of community-based organizations and health workers with public sector health care

Traditional community-based organizations among indigenous peoples, as well as the various community-based organizations such as health committees, COCODEs, and networks of community health facilitators and TBAs constitute important elements of the country's health system that have not been successfully integrated into the national health system. While some degree of interaction between community-based organizations, community health workers, and the PEC system did characterize the PEC, its elimination without a clear strategy for its replacement has effectively cut the ties between community health systems and the MSPAS structure. The recently announced strategy for the improvement of PHC makes explicit reference to community organizations and health workers or facilitators, and intends to involve them in its community outreach and health prevention activities.

Role of civil society organizations in health care oversight and policymaking

Numerous civil society organizations (CSOs) and federations play important roles in oversight and advocacy in Guatemala, especially with regard to maternal and child health and family planning. These CSOs have been instrumental in the development of innovative approaches to health financing, as exemplified by the tax on alcoholic beverages. While the presence of the SCDUR provides a government-sanctioned platform for civilian input into policymaking and oversight, NGOs provide an important alternative vehicle, less susceptible to political influence, for PHC advocacy, especially those that include local community-based affiliates.

The fragmentation of Guatemala’s public health sector and the resulting lack of service coordination leads to an inefficient use of resources and stands as an obstacle to the goal of universal health coverage

As noted in the National Health Diagnostic published by MSPAS at the beginning of the current presidential administration in early 2012, “[t]he Guatemalan health system is segmented in various sub-systems, which provide services to different users. In spite of the functioning of these sub-systems, total coverage does not exist. At the same time, the sub-systems are internally fragmented, with an absence of integration and coordination which leads to a duality of functions, higher consumption of resources, low productivity and high levels of inefficiency and ineffectiveness...” (MSPAS 2012).

While it is clear that the original intent of the writers of both the Constitution of 1945 and Legislative decree of 1946 (which created IGSS) was to “gradually unify the diverse classes of benefits provided by the Institute with all other assistance and sanitary services of the state in one single Social Security regime,” the goal of unifying MSPAS and IGSS services is probably further than ever from becoming a reality. The primary reason that the IGSS structure is inappropriate as a single national public health care provider is that it is based on contributions from employers and employees, as well as the state, while the vast majority of Guatemala’s rural population consists of small or subsistence farmers who are neither employers nor employees, and generally do not earn a salary from which social security deductions can be made.

Also, although Guatemala’s health code establishes that MSPAS shall “formulate, organize, and direct the execution of policies, plans, programs and projects for the delivery of health services to the general population” and that MSPAS is charged with stewardship or governance (rectoría) of the health sector, the institutional and budgetary autonomy of IGSS effectively isolates it from anything other than a voluntary coordination or sharing of resources with MSPAS.

Severe budgetary and funding gaps reduce effectiveness of annual planning process and result in constant state of crisis management

The root cause of MSPAS’s continuing budgetary crisis is the inherent conflict between the constitutional objective of providing adequate health care to all Guatemalans free of charge, and the combination of Guatemala’s low level of total revenue available to fund its social services and the relatively low percentage of total revenue allocated to the health sector. Guatemala’s ratio of tax revenues to GDP is the lowest of all 24 Latin American countries reporting these data to the World Bank, and the percentage of government revenues allocated to the health sector ranks at the midpoint for Central American countries (World Bank, 2015; WHO 2015). Despite the existence of a needs-based bottom-up budgeting process, the realities of Guatemala’s budgetary approval and funds allocation processes, together with laws protecting the salaries of permanent MSPAS staff, result in generalized shortages of materials (medicines, vaccinations, etc.), capital improvement budgets, and even gasoline for ambulances. Differences between requested and approved annual budgets (POAs), plus additional cuts to approved budgets due to lower-than-expected government revenues and/or unplanned budget reallocations, result in a constant struggle to relieve the most urgent needs within MSPAS at the expense of shortages and delayed implementation of other plans.

MSPAS organizational effectiveness is weakened by a four-year planning horizon, frequent organizational and staffing changes, and a lack of effective long-term strategic planning

Changes in most senior and middle management positions at MSPAS take place at the beginning of each four-year presidential administration, and frequently within the four-year period, with the appointment of a new Minister of Public Health, vice ministers, and most of their management teams. This high level of rotation in the ministry’s senior management is frequently accompanied by a new set of institutional

priorities and often a rejection of the priorities and implementation plans of the previous management – especially when the changes accompany a change in the political party in power (which has been the case in all recent presidential elections). While many newly appointed members of the management team may have occupied other positions within MSPAS previously, others are appointed with little experience or knowledge in the area of public health. The effect of these changes in the management of the ministry is that strategic priorities are selected which can be implemented in a maximum of the four-year presidential term, or in what is left of it at the time each new management team takes over. (In the case of the current team led by MSPAS Minister Luis Enrique Monterroso, who was appointed in September of 2014, the planning horizon is 15 months, ending with the end of the Pérez Molina government in January 2016.) When new initiatives require a longer time for implementation, such as the case of the newly announced strategy to expand PHC, successful implementation is threatened by the possibility of a very different set of priorities and strategies being put forth by an incoming presidential administration.

This lack of institutional stability and short-term planning horizons reduces MSPAS's organizational effectiveness by reducing its capacity to develop and implement effective long-term strategies.

3.4.2 Recommendations

Short-term

Selection, development, and implementation of primary health care strategy

As understood by HSA team, a nationwide roll-out of MSPAS's proposed new PHC strategy (*Estrategia de Fortalecimiento y Desarrollo Institucional del Primer Nivel de Atención*) would require, under current health sector funding scenarios, many years to achieve significant levels of population coverage. This approach will leave large segments of the rural population with no access at all to public health care during a multi-year roll-out.

Guatemala must develop and implement a PHC strategy that will achieve both the short-term objective of providing a minimum level of health care, including immunization, maternal and child health, and nutrition interventions to those segments of the population currently unserved by any public health service, and the longer-term objective of providing universal health care, including permanent access to MSPAS health care facilities, attention to all stages of the life cycle, and integration with level 2 and 3 health care facilities, throughout the country.

An attempt to roll-out the proposed full-service PHC strategy **without** the necessary funding increase will leave large segments of the population with no public health care and expose both the MSPAS and the government to a continuation of the current lack of public trust.

Communication of vision and strategy

Once a strategy to improve PHC (including provision for the necessary financial and human resources) is finalized, MSPAS, possibly with the assistance of outside communications or social marketing experts, should develop clear and concise messages conveying its vision and strategy, focusing on the primary elements of the strategy and eliminating detailed discussion of competing health care models or implementation details.

Coordination and integration of MSPAS and IGSS systems and services

A presidential directive, modifications to laws creating IGSS, and/or modification of the executive agreement governing the CNS to give its resolutions an obligatory character may be required to initiate a process in which MSPAS, IGSS, and other public health system coverages, facilities, resources, and activities can begin to be coordinated. Protocols for reimbursing MSPAS for services provided to IGSS beneficiaries, sharing facilities and resources, and avoiding an unnecessary duplication of facilities and services should be an immediate objective.

A longer-term objective should be to move toward full convergence, as envisioned in the IGSS Organic Law of 1946 and as has been successfully achieved in other countries such as Costa Rica.

Medium- to longer-term

Further involvement of community-based health systems and civil society organizations

MSPAS should involve all segments of society in health care planning, delivery and oversight activities not only to strengthen the system as a whole, but also to protect it from arbitrary changes in direction by future health administrations.

MSPAS should further involve the existing, and in many cases strongly rooted community-based health systems and organizations to extend MSPAS coverage to all segments of society. MSPAS and the CNS should also increase the participation of CSOs in the design and oversight of health care at the community level, and the international donor community should continue its support of these important elements of the Guatemalan health system.

Improvement of annual budgeting process

In the long term, Guatemala must both increase its tax revenue as a percentage of its GDP through tax increases and a reduction in tax evasion or fraud, and increase the percentage of government revenues allocated to the health sector, so as to provide the necessary funding to achieve Guatemala's objective of universal health care. In the short term, every effort must be made to develop POAs and budgets based on actual needs and subject to pre-announced budgetary ceilings, and to reduce the difference between approved and funded (*devengado*) budgets by avoiding arbitrary transfers and budgeting contingency reserves to cover funding shortfalls. MSPAS's credibility and effectiveness as the country's leading health care provider depends on its ability to avoid service failures and stockouts of medicines, vaccines, and other critical medical supplies.

Reduction of MSPAS management turnover

Increased institutional stability and the ability to make and implement long-term strategic plans require an end to the practice of appointing new management teams at the beginning (and often again during) each presidential administration. Positions below the level of vice minister should be made permanent with appointment based on technical and professional criteria alone, and job continuity based on annual performance evaluations. The HSA team noted that a process is currently underway to rewrite Guatemala's civil service law, which currently covers MSPAS permanent employees. The HSA team recommends that management positions below the vice-ministerial level be incorporated into the civil service under the revised legislation.

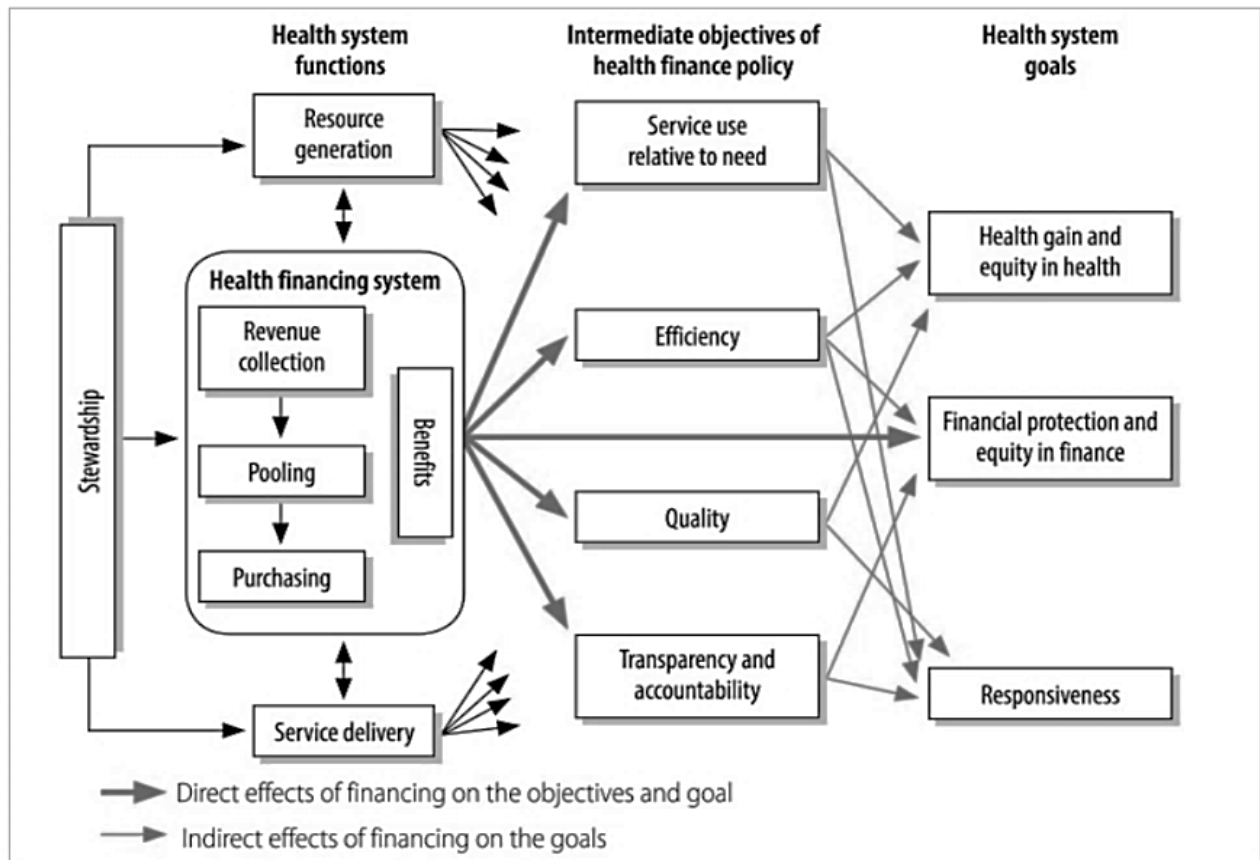
4. HEALTH FINANCE

4.1 Overview of Health Financing

Guatemala is at a turning point: it is a nation facing tremendous inequalities in the provision of health services between rural and urban areas, and it has an underfunded public health system and the compounding effect of inefficient operations. As noted in its own National Strategic Plan for 2014-2019, “The MSPAS budget has increased in recent years, however, it remains insufficient to meet the needs of a poor, dispersed and constantly growing population” (MSPAS 2014b). Coupled with constant changes in leadership at MSPAS, Guatemala needs policy and health financing solutions. Budget, revenue collection, risk pooling mechanisms, and strategic purchasing are key components to be reviewed, but a comprehensive health reform needs to be part of the overall discussion. The Guatemala HSA explores three interrelated functions of health financing in Guatemala comprising the mobilization, accumulation, and allocation of resources to cover the health needs of the population in the health system. Revenue collection analyzes the sources of health care revenue, the type of contribution mechanism, and the agents collecting revenues. The health system in Guatemala has various ways of collecting revenue, such as general taxation, mandated social health insurance contributions (usually salary-related and not necessarily risk-related), voluntary private for-profit health insurance payments (usually risk-related), out-of-pocket (OOP) payments, and donor contributions.

Pooling of resources pertains to the accumulation and management of funds from individual members of a pool and ensures that the individual contributors cover the risk of having to pay the full cost of care out of pocket in an event of illness. Pooling in Guatemala represents the insurance function of IGSS and insurance providers, as well as the activities of MSPAS, using explicit insurance (people enrolled into a scheme) or implicit insurance (as in the case of funding health services via tax revenues). Pooling reduces uncertainty for both citizens and providers. Finally, purchasing of health services is conducted by public and private agencies to provide services directly or to purchase services on behalf of their beneficiaries. Strategic purchasing involves a continuous search of value for money as well as the maximization of the health system performance by deciding which interventions should be purchased, how, and from whom. Figure 3.1 depicts a generic framework proposed for the descriptive assessment of the health financing.

FIGURE 4.1. LINKS OF HEALTH FINANCING SYSTEM TO POLICY OBJECTIVES, OTHER SYSTEM FUNCTIONS, AND OVERALL SYSTEM GOALS



Source: Kutzin 2008

Guatemala is the largest economy in the Central American region; however, tax collection ranks among the lowest in Latin America as a proportion of the country's national incomes. At the upper end are Argentina (37.3 percent) and Brazil (36.3 percent), which are both above the OECD average, while at the lower end are Guatemala (12.3 percent) and Dominican Republic (13.5 percent) (OECD 2015). In 2014, the economy grew more than 3 percent, internal consumption grew 4 percent, and exports grew 4.7 percent, but despite Guatemala's dynamic economy, there is a disconnect between economic growth and social protection policies. The country has made substantial political and democratic progress, yet income distribution remains profoundly unequal. The Multidimensional Poverty Index, which measures deprivation² of households in terms of education, health, and standard of living, showed that 26 percent of the population experienced multiple deprivations and another 10 percent are vulnerable to such deprivations (UNDP 2011).³ Large inequalities are evident when analyzing income and wealth

² Social deprivation refers to the reduction or prevention of culturally normal interaction between an individual and the rest of society. This social deprivation is included in a broad network of correlated factors that contribute to social exclusion; these include mental illness, poverty, poor education, and low socioeconomic status.

³ Poverty is multidimensional – but this is ignored when using purely financial measures of poverty. The Multidimensional Poverty Index complements financial measures of poverty by considering overlapping deprivations suffered by people at the same time (Oxford Poverty and Human Development Initiative 2011).

distribution. The wealthiest 20 percent of the Guatemalan population retains two-thirds of all income while approximately 30 percent of the population lives in poverty and 10 percent in extreme poverty.

The health sector in Guatemala, as in many other countries, is financed from public sources, private corporations, consumers (households), and international donors. According to the 2013 National Health Accounts (MSPAS 2015c), total health expenditure in Guatemala reached 26,640 million quetzals (US\$3.4 billion),⁴ representing 6.3 percent of GDP. This figure is equivalent to approximately 1,721 quetzals (US\$219) per capita health spending.

As seen in Table 4.1, OOP expenditures make up the bulk of health expenditure. Only 36 percent of total health expenditure is public, and out of this, only 42.5 percent is from MSPAS, with IGSS accounting for 54 percent of government health expenditure.

TABLE 4.1. HEALTH FINANCING INDICATORS

Indicator	Value	Year	Source
Total expenditure on health as percent of GDP	6.3	2013	MSPAS
Per capita total health expenditure, at international exchange rate (USD)	219	2013	MSPAS
Government expenditure on health as percent of total government expenditure	17	2013	WHO
Government expenditure on health as percent of total health expenditure	37	2013	MSPAS
External resources for health as percent of total health expenditure	1.9	2013	WHO
OOP spending as percent of total health expenditure	52	2013	MSPAS
Social security funds as percent of government expenditure on health	48	2013	MSPAS
MSPAS and municipalities as percent of government expenditure on health	52	2013	MSPAS
OOP expenditure as percent of private expenditure on health	83	2013	MSPAS

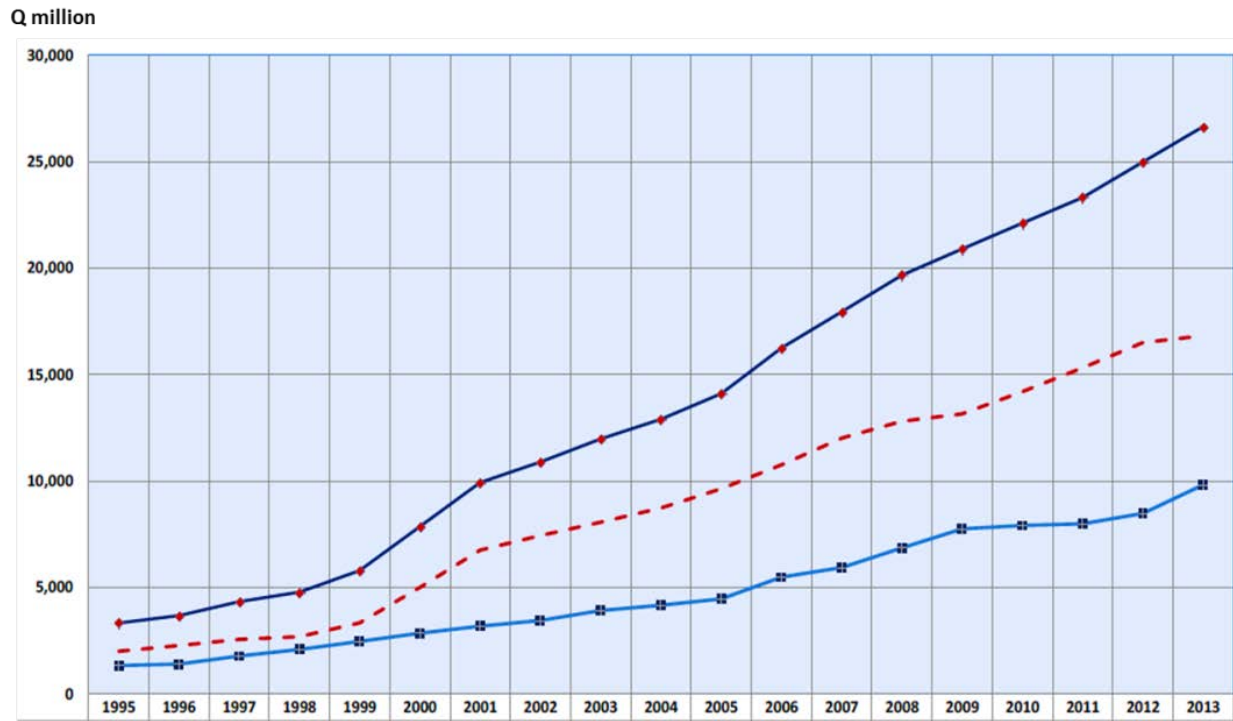
Source: MSPAS 2015c and WHO 2015

Households remain the largest contributors of health funds in Guatemala – in 2013, OOP expenditures were 14,000 million quetzals (US\$1.8 billion), or 52 percent of the total health expenditure and equivalent to 3.4 percent of GDP. The central-level Guatemalan government and the local municipalities spent a total of 5,105 million quetzals (US\$650 million) or 19 percent of the total health expenditure and equivalent to 1.1 percent of GDP. Finally, international donors contributed less than 5 percent of the total health expenditure.

Trends in health financing relative to the economy showed a 60 percent growth, from 3.8 to 6.8 percent of the GDP between 1997 and 2001, and peaked at 7.1 percent of the GDP in 2006; health spending has stagnated since then and even declined to 6.3 percent in 2013, the most recent year for which official National Health Accounts data are available (Figure 4.2).

⁴ The national currency in Guatemala is the quetzal (Q). The official exchange rate used for all 2013 figures was of 7.857 quetzals per U.S. dollar. We used official exchange rate by year as reported by the Bank of Guatemala (MSPAS 2015c).

FIGURE 4.2. TRENDS IN HEALTH EXPENDITURE; TOTAL, PRIVATE, AND PUBLIC EXPENDITURES



Source: MSPAS 2015c

A major barrier to improving the performance of the Guatemalan health system is the fragmentation of the financing system for health. Guatemala operates under several health subsystems with different financing modalities and objectives, and utilized by different segments of the population. These health subsystems prevent access and discriminate among beneficiaries by economic stratum, ability to pay, employment status, and geographical access. Hospitals, specialized care, and diagnostic services are concentrated in two major cities: Guatemala City and Quetzaltenango. These cities also are where the formal sector, civil servants, private providers, and major IGSS hospitals are concentrated. Therefore, access to public hospitals, to jobs with health insurance benefits, and to pay for access to private providers is concentrated in cities, leaving the poor in rural areas with minimal or no access to health services (MSPAS 2012).

The high OOP household expenditures for curative services along with an underfinanced public health system, especially for preventive and primary health care, require the development of a health financing strategy aiming to reduce the burden of OOPs to households. The development of a long-term vision for health aligned to a national development plan therefore is a major priority.

As shown in Table 4.2, Guatemala scores poorly against its neighbors in internationally comparable health financing indicators. Compared to other Central American countries, Guatemala's health system is disproportionately financed by private health expenditures, especially OOP spending. Adjusting for purchasing power parity, the Guatemala Government devotes the least amount of resources per capita than any in the region (WHO 2015).

TABLE 4.2. REGIONAL COMPARISON OF HEALTH FINANCING INDICATORS (REGIONAL RANKING IN PARENTHESIS)

Country	THE as % of GDP	THE per capita at PPP	PvtHE as % of THE	OOPS % of THE	GGHE as % of THE	GGHE as % of GDP	GGHE as % of general government expenditure	GGHE per capita at PPP
Guatemala	6.4 (6)	467 (4)	62 (7)	52 (7)	38 (7)	2.4 (7)	17 (4)	176 (7)
Belize	5.4	458	38	26	62	3.4	12	286
Costa Rica	9.9	1,369	25	23	75	7.4	27	1,026
El Salvador	6.9	539	33	28	67	4.6	18	360
Honduras	8.7	400	51	45	49	4.3	12	197
Nicaragua	8.4	382	46	40	54	4.5	21	205
Panama	7.2	796	32	25	68	4.9	13	544

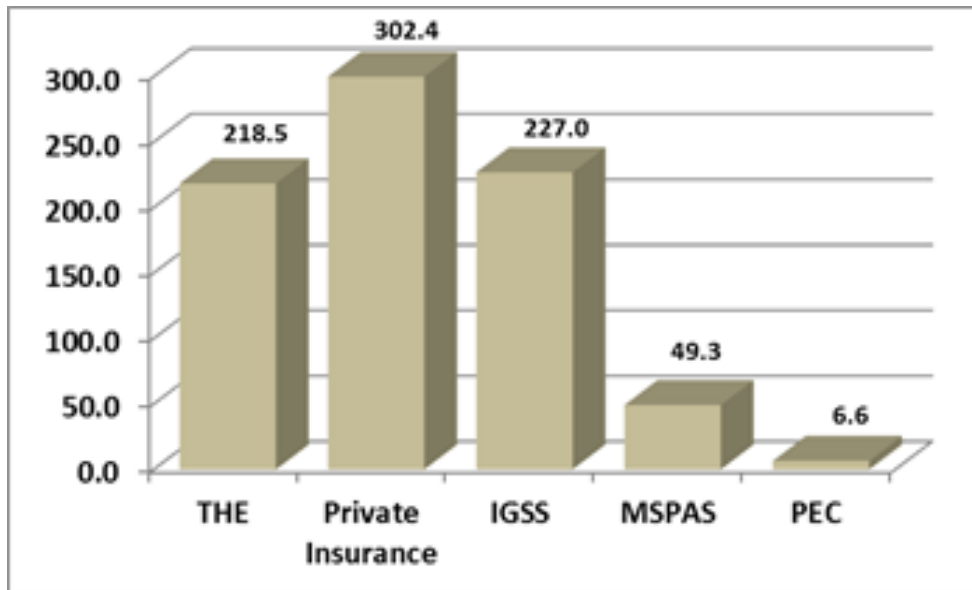
Note: THE=total health expenditure, PPP=purchasing power parity, PvtHE=private health expenditure, OOPS=out-of-pocket spending, GGHE=government of Guatemala health expenditure
Source: WHO 2015

4.2 Resource Flows and Management

As the steward of the health system in Guatemala, MSPAS is responsible for policy formulation, resource mobilization, and delivery of promotion, prevention, curative, and rehabilitation services. Currently, MSPAS services cover an estimated 67 percent of the population. The other major player in the Guatemalan health system is IGSS, which was founded in 1946 and provides health insurance to the formally employed sector as well as coverage for accidents, maternity services, and medical services. In 2013, IGSS reported a total beneficiary population of 2.643 million people (about 17 percent of the population) including direct beneficiaries, spouses, and children less than seven years of age. The armed forces and private insurance cover a minor proportion of the Guatemalan population, estimated at a combined 10 percent.

Government expenditure on health has not only been static over the years, at an average of 1.1 percent of GDP, but also the flow of resources to the beneficiary populations shows enormous disparities. The annual per capita expenditures from MSPAS was approximately one fifth (184 quetzals or US\$23) of what IGSS beneficiaries received (841 quetzals or US\$107) in 2013. Figure 4.3 shows the disparities in per capita expenditures by financing source and programmatic activity for data available from the PEC in 2010; for every dollar spent in benefits to those protected under social security (IGSS), PEC beneficiaries received less than 7 cents per capita (6.6 percent). While services under PEC included health promotion, the large majority of IGSS expenditures pay for curative services, leaving a slim budget for health promotion and prevention.

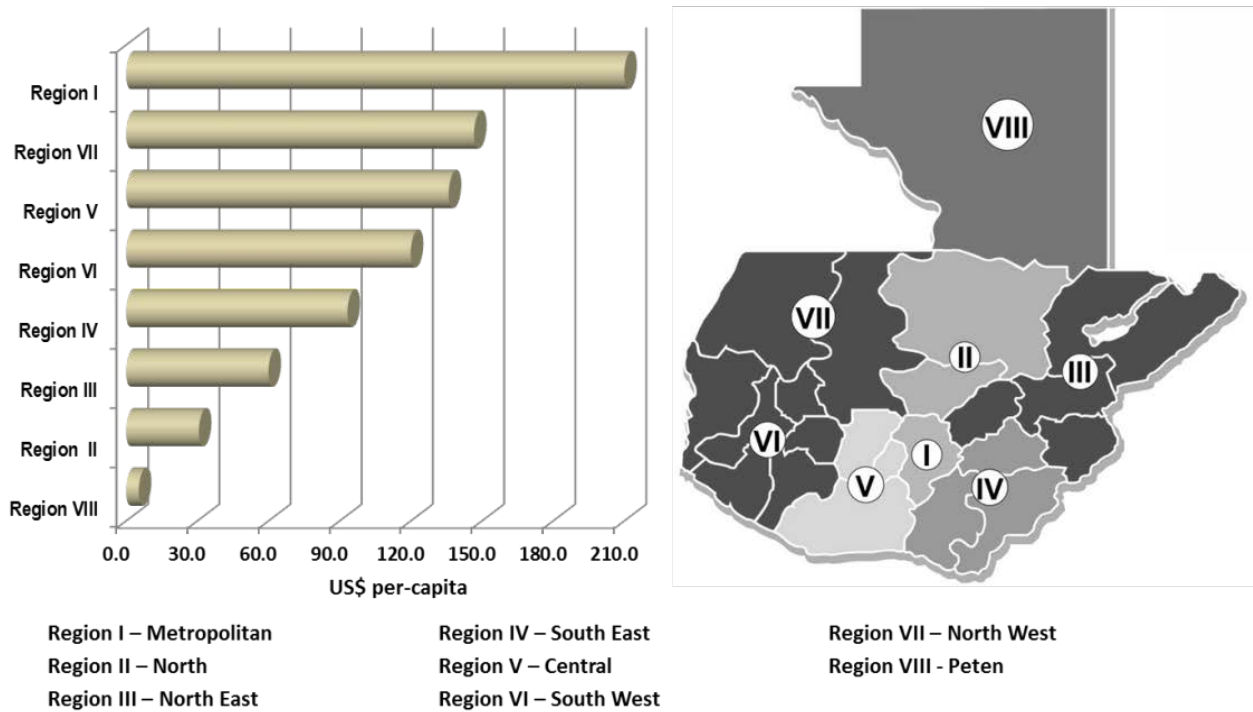
FIGURE 4.3. HEALTH EXPENDITURES PER CAPITA, BY PROGRAM AND FINANCING SOURCE, 2010



Source: Adapted from MSPAS 2012b and MSPAS 2015c

Approximately 95 percent of MSPAS resources spent on operating expenses, including wages and procurement of supplies for service delivery, with only 5% invested in capital improvements. 40% of MSPAS resources are consumed by hospitals (2,000 million quetzals or US\$254 million). Resources allocated to prevention represent 22% percent of total health expenditures (1,097 million quetzals or US\$140 million), (MSPAS 2015c). Of course, these averages mask enormous disparities in the flow of resources by region; access to health services coincides with ethnic distribution. More than three-quarters of the indigenous population live in poverty. Indigenous Mayan, Garifuna, and Xincas account for 72 percent of the extremely poor sector in Guatemala (United Nations 2011). The worst social determinants of health affect largely indigenous populations living in the departments of Alta Verapaz, Quiché, and Huehuetenango. Chronic malnutrition and food insecurity is rampant in nine departments located in the Dry Corridor: Santa Rosa, Jutiapa, Jalapa, El Progreso, Zacapa, Chiquimula, Izabal, Baja Verapaz, and Quiché (Red Humanitaria 2009). Figure 4.4 show the distribution of financing resources (on a per capita basis) ranging from US\$212 in the metropolitan region of Guatemala City to US\$5.30 in the northern rural region of Petén.

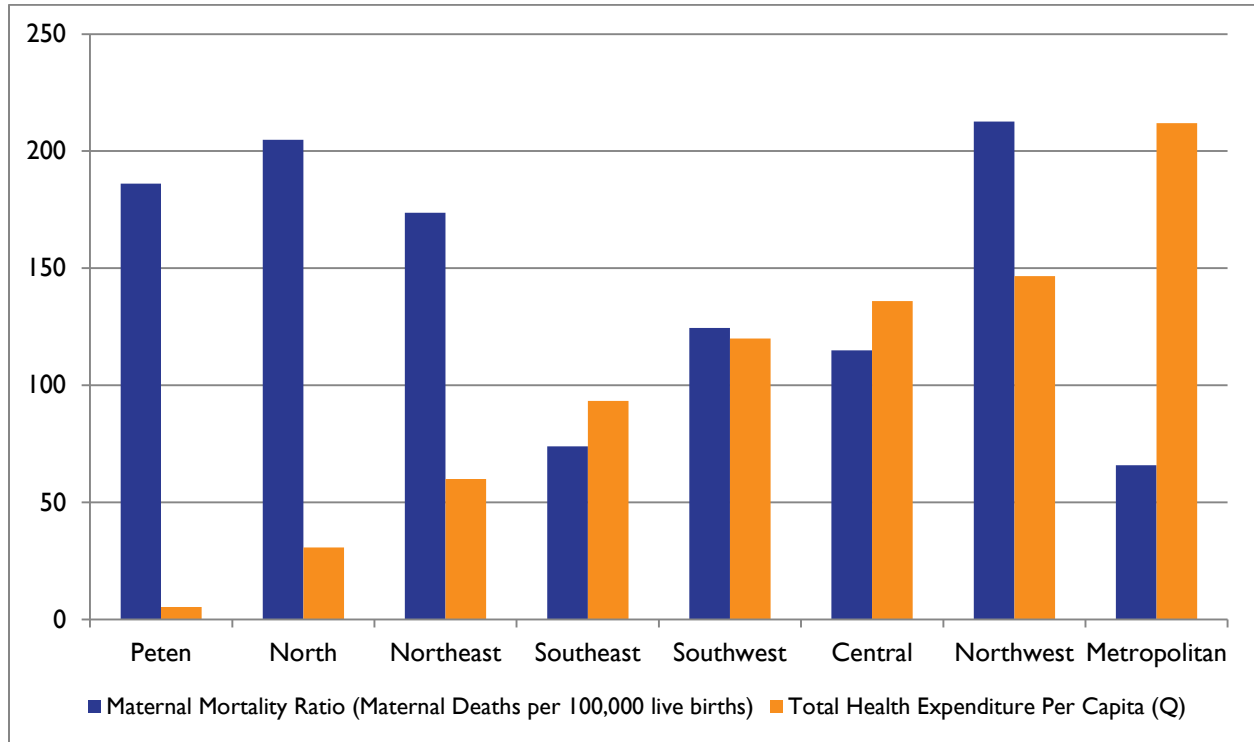
FIGURE 4.4. TOTAL HEALTH EXPENDITURES PER CAPITA, REGIONAL DIFFERENCES, 2008



Source: Adapted from Flores 2008

Furthermore, the unequal distribution of resources contributes to inequalities in health outcomes. As shown in Figure 4.5, increased health expenditure is negatively correlated with maternal mortality, and with the exception of the Northwest, the regions with high maternal mortality register low health expenditures. This chart underscores the importance of funneling further resources to the regions and departments with greater need.

FIGURE 4.5. REGIONAL DIFFERENCES IN TOTAL HEALTH EXPENDITURES PER CAPITA AND MATERNAL MORTALITY, 2008



Source: Flores 2008 and MSPAS 2010

MSPAS is responsible for managing the core functions of the Guatemalan health system and owns the network of public hospitals. At the local level, delivery of health services is responsibility of the Municipal Health Districts through a combination of central funds and local resources. The health area director is responsible for preparing the regional operation plan and budget, ensuring that there is an integrated budget strategy and coordinated health teams for providing logistical support, and preparing monthly reports. Inadequacy of funds to cover the non-wage recurrent spending has been an issue overall for these health area administrative units. MSPAS and IGSS have the largest installed capacity to provide health services; however, there is a lack of coordination and missed opportunities to develop bulk purchasing and use of their infrastructure. The support of municipal governments in the provision of health services varies widely and in most cases their contribution is only marginal.

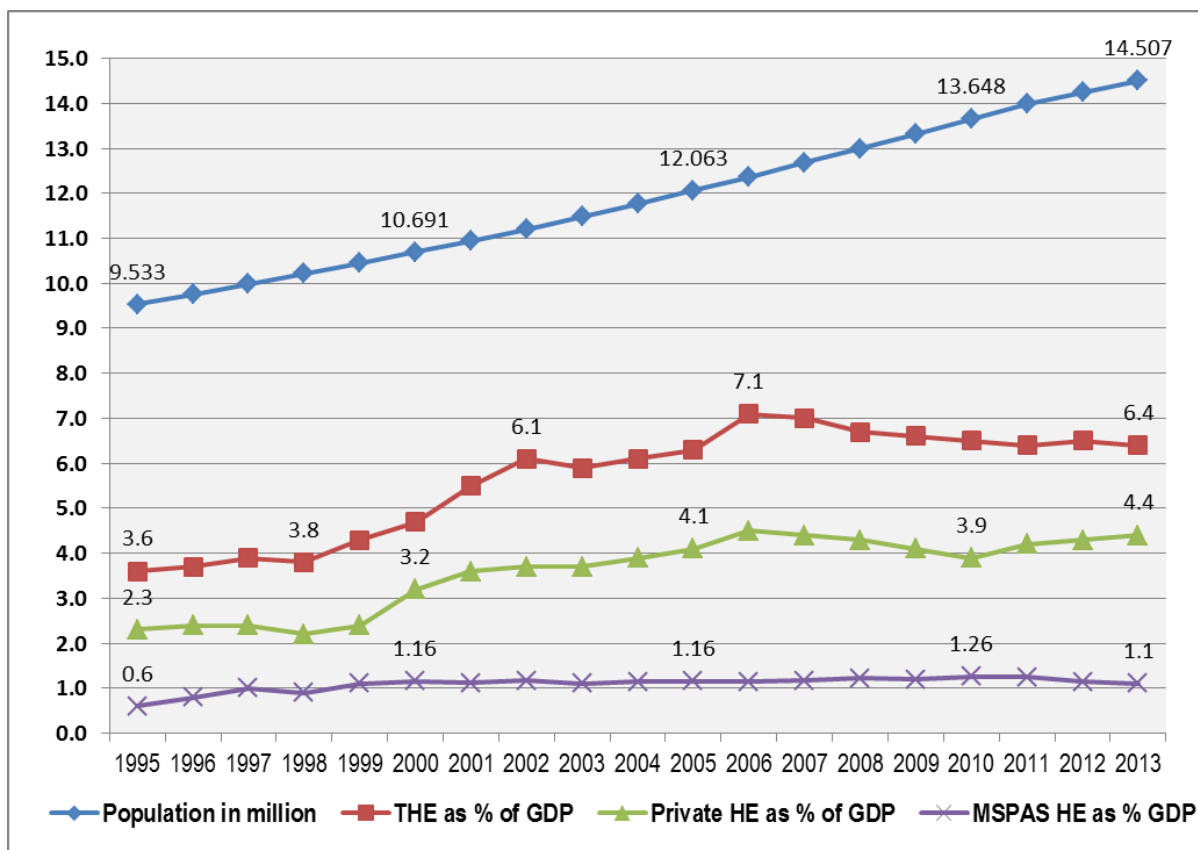
4.3 Resource Mobilization

Resources to finance the health system in Guatemala are mobilized through three main domestic sources – the government, households, and employers – complemented by external resources from international donors and workers’ remittances.

Government: Public expenditures on health are covered by contributions from the central government and municipalities. In 2013, together they spent 5,105 million quetzals (US\$650 million), which represents only 19 percent of total health expenditure and was equivalent to 1.2 percent of GDP, a percentage that, as illustrated in Figure 4.5, was almost unchanged from that of 2005 (1.16 percent) – in recent years, public expenditures have essentially plateau stagnated, showing only minor variation: government expenditure was 4,287 million quetzals (US\$546 million) in 2012, increased in 2013,

declined in 2014, and increased again to 5,400 million (US\$687 million) in 2015. According to interviews by the HSA team, there were budget reductions to health allocations made by the 334 autonomous municipalities and increases attributable to MSPAS and discretionary allocations to upgrade and refurbish health facilities by the Ministry of Communications, Infrastructure and Housing. Additional expenditures for health promotion were allocated by the Ministry of Education.

FIGURE 4.6. PATTERNS OF HEALTH SPENDING AND POPULATION GROWTH



Adapted from: MSPAS 2015c

MSPAS is the main source of financing for medical services in public facilities. IGSS operates as a parastatal health insurance scheme that functions like social health insurance and is regulated by a decree (Decreto No. 265) issued in the Guatemalan Constitution in 1946 to provide medical care and retirement benefits. IGSS provides coverage for its members based on a public group insurance system. Membership in the IGSS health insurance plan is compulsory for formal sector workers and is financed by the contributions from those workers (who contribute 25 percent), the enterprises that employ them (50 percent), and government (25 percent) (Decreto No. 295). The level of contribution is specified by law and based on the worker's salary level. In 2013, IGSS health expenditures totaled 4,718 million quetzals (US\$600 million), compared to an MSPAS expenditure of 5,105 million quetzals (US\$650 million) despite the large difference in their covered populations: 2.6 million for IGSS and 12 million for MSPAS.⁵

⁵ Calculated based on insurance coverage rates in Becceril-Montekio and López-Dávila 2011 and latest Guatemalan population statistics (World Bank 2015).

Guatemala has experience with mobilizing resources to the health sector from a dedicated tax. Since 2004, the Tax Law on Distribution of Alcoholic Beverages has guaranteed that 15 percent of the income from the tax on alcoholic beverages would be dedicated to financing reproductive health and family planning, as well as prevention of alcohol consumption (Decreto 21-04). The 15 percent of the tax allocated to MSPAS's budget for reproductive health, family planning, and prevention of alcohol consumption was 46.4 million quetzals (US\$5.9 million) in both 2013 and 2014.

Additionally, the Law on Tobacco (Decree 61-77, article 25) mandates that “the taxes collected will be used to finance the health sector budget.” The use and allocation of the funds collected by this tax is planned in MSPAS's annual budget. Tax collection from tobacco products amounted to 385.2 million quetzals (US\$49 million) in 2013 and 404.4 million quetzals (US\$51 million) in 2014. MSPAS executed 99 percent of this amount in 2013 and 92 percent in 2014.

Private sources: Private expenditures represent aggregated contributions of households, enterprises, and domestic not-for-profit organizations. Private sources of health financing contributed 16,816 million quetzals (US\$2.14 billion) to the Guatemalan health system in 2013, which represented 63 percent of total health expenditure and was equivalent to 4 percent of GDP in that year. Economic growth in Guatemala has boosted the expansion of private health providers and private health expenditures grew from 2.4 of GDP in 1995 to 4 percent in 2013, a 66 percent increase in private spending on health.

Private expenditures from employers represent contributions to the IGSS, to private insurance, and also to directly pay for the provision of medical services and workplace care. A significant number of companies in Guatemala provide health services to their staff through company-owned facilities, on-site clinics, workplace health programs, and contracted private health services. Private health insurance in Guatemala accounted for 11.4 percent of total health expenditures in 2013 (2,804 million quetzals, US\$357 million), which was equivalent to 0.6 percent of GDP.

Household spending: Currently, households represent the main source of health financing in Guatemala. Fifty-two percent of the total health expenditure in Guatemala comes from OOP spending. These private payments go toward medicines, medical visits, and access to private hospitals. The stagnation of government funding for health has resulted in an increasing share of total health spending coming from OOP payments, which has increased the health care financing burden on households. The absence in Guatemala of widespread financial risk protection mechanisms (such as insurance coverage) increases the likelihood that the informally employed sector and the vulnerable poor will incur catastrophic health expenditures (burdensome health expenditures measured above a certain threshold of household income) or “health impoverishment” (when high health expenditures push a household into poverty). Financial protection is an important element of universal health coverage (WHO 2010) and yet neither of these indicators is routinely tracked in Guatemala. According to one study utilizing data from the 2006 Living Standard Measurement Survey, however, 19 percent of Guatemalan incurred catastrophic health expenditures – health spending that exceeds 40 percent of a household's ability to pay – and these were disproportionately concentrated among the poor. Sixty percent of households in the lowest wealth quartile incurred catastrophic health expenditures compared to only 3 percent among the wealthiest quartile (Bowser and Mahal 2011).

Households share more than half of the country's overall spending on health, which amounted to 14,000 million quetzals (US\$1.8 billion) in 2013, or 3.6 percent of GDP. Trends in OOP spending are higher than increases attributable to the consumer price index for health and pharmaceuticals. Projecting OOP expenditure of 1,850 million quetzals from 1995 levels and adjusting for the effect of inflation would result in an expected OOP expenditure of 7,346 million quetzals in 2013, or about half of actual OOP spending. This suggests that the steep trend in OOP spending observed in Guatemala over the last decade represents a combination of increased prices of services as well as increased demand for medical services. This steep increase in OOP expenditures over the years has been a growing concern for the

Guatemalan government and is viewed as a barrier to access to public services. A decree was enacted by Congress in 2003 establishing that health services should be provided by the government (Decreto del Congreso de la República de Guatemala, Número 53-2003 que reforma al artículo 4 del código de Salud, Decreto Número 90-97 del Congreso de la República. Gratuidad de la Salud). An additional accord was issued in 2008 stating that the government is responsible for providing health services to all residents free of charge (Acuerdo Gubernativo 295-2008, Guatemala 18 Noviembre 2008. http://www.infile.com/leyes/visualizador_demo/index.php?id=59972). There is no documentation of the number of households incurring health expenditures of catastrophic proportions before and after the policy implementation. However, this policy apparently had no impact on household expenditure as OOP spending continued to grow in the following years. It is likely that the increasing prices on drugs and doctor fees offset the impact of the abolition of user fees on household expenditures. According to interviews conducted at hospitals by the HSA team, the abolition of user fees also eliminated an important source of revenue that paid recurring costs, including medicines and supplies, at health facilities. No provision was made by MSPAS to substitute this source of funding for hospitals.

External sources: Donor assistance in Guatemala is mainly channeled through off-budget contributions. Donor sources are difficult to track and probably underestimated, which also makes it challenging to plan for and align these resources to Guatemala's national health goals. International assistance to support access to health services tends to be directed to rural populations. Some of the main donors include the European Union, the Global Fund, the World Bank, Spain's AECID, and the U.S. government, including PEPFAR. Cuba provides scholarships for Guatemalan medical students and Cuban doctors are also contracted by MSPAS. The Global Fund has disbursed US\$125 million over the past 10 years to support HIV, malaria, and tuberculosis programs in Guatemala. In fiscal year 2014, USAID contributed US\$23.4 million to Guatemalan health programs. In addition to development partners, NGOs (both domestic and international) and FBOs provide financing of health services with their own funds and also act as sub-recipients of health funds from other donors. The provision of these services is coordinated with district authorities and to a lesser extent with MSPAS at the central level; in fact, some of the HSA interviewees pointed out that the central government is trying to build a register of donors, coordinate resources, and ultimately regulate the work of these multiple NGOs operating in Guatemala.

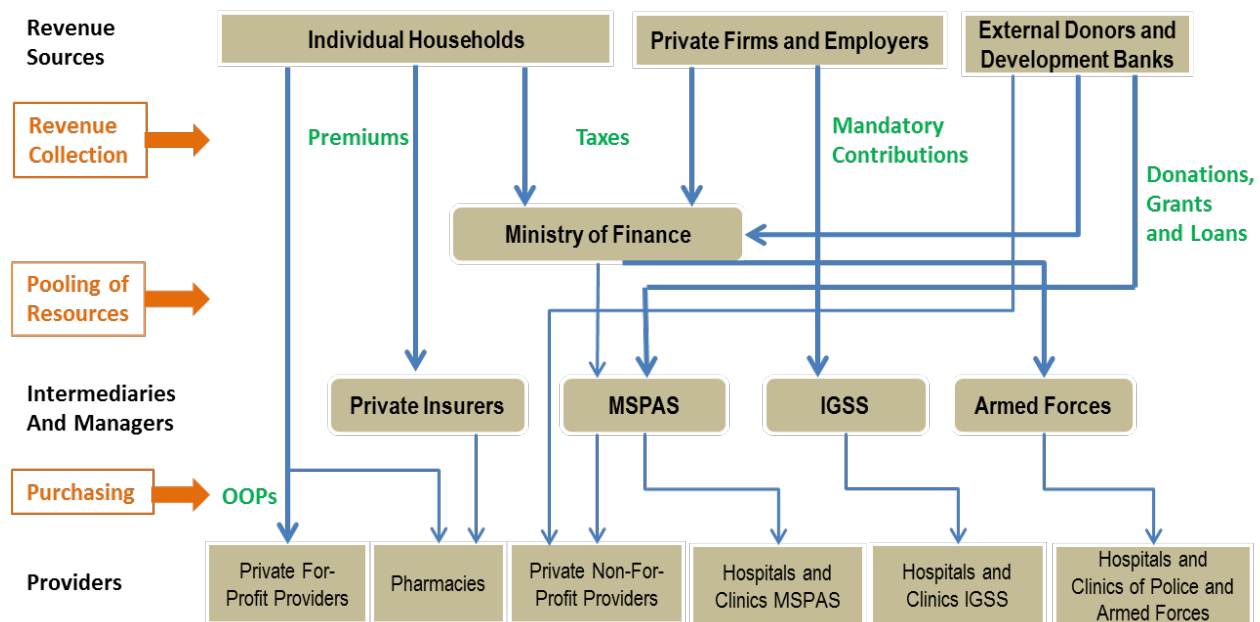
Health spending channeled through NGOs providing health services was estimated in 1,746 million quetzals (US\$222 million). External sources contribute significantly to health care financing of rural Guatemala and provide a three to five percent of total health expenditure.

Remittances: Remittances have been steadily increasing in Guatemala in recent years. The amount of money sent by expatriate workers accounts for about 10 percent of the country's GDP (World Bank 2015) and the Guatemalan Central Bank predicts the figure will grow by around five percent this year. Guatemala received more than US\$5.3 billion in remittances in 2013 and it is the second highest amount in Latin America after Mexico. According to the family remittance survey conducted in 2010, 6.2 percent of all remittances received were used to pay for health services, mainly drugs, diagnostic tests, medical fees, and hospitalization, and only 2.5 percent was used to pay for insurance coverage. In 2010, the total amount of remittances spent on health was approximately US\$316 million, more than half of the total health expenditure made by MSPAS that year (UNICEF and IOM 2011).

4.4 Resource Allocation

Administratively, central government spending units are classified into ministries (including MSPAS) and top-level public authorities. At the local government level, Guatemala is divided into 22 departments, which are further subdivided into 338 municipalities. Public resources for health services represent contributions from the central government and locally from municipalities. The MSPAS Department of Finance (*Gerencia General Administrativa y Financiera*) oversees the budget execution of 85 administrative units (29 health areas, 43 hospitals, and 13 units in charge of governance and technical areas) these units are responsible of budgeting and execution of resources. The 29 health areas are organized into health networks as opposed to conforming to the political divisions across 22 departments. Health areas follow geographical access to facilitate medicines and medical supply distribution as well as to align supportive supervision activities. The majority of central-level spending can be tracked to regions and municipalities and is publicly available on the Internet (*Sistema de Contabilidad Integrada, SICOINWEB*) providing a comprehensive mapping of spending at the subnational level. The flow of health funds from the central level (mobilization) through financing agents (pooling and allocation) to the facilities (purchasing) is presented in Figure 4.7.

FIGURE 4.7. SCHEMATIC CHART OF THE FLOW OF HEALTH RESOURCES FROM SOURCES OF FUNDS TO AGENTS AND PROVIDERS OF HEALTH SERVICES IN GUATEMALA



MSPAS is responsible for policy formulation, quality assurance, resource mobilization and health service provision. Health services at the local (municipal and sub-municipal) level are delivered and financed by MSPAS through health centers (*centros de salud*) and health posts (*puestos de salud*) at the municipal level. Both centers and posts are under the direction of the district health officer, who reports to the area health director. The entire finance and operation of the rural health delivery services are the responsibility of the Integrated System of Health Care (*Sistema Integrado de Atención a la Salud, SIAS*) office, whose director reports to the MSPAS Vice Minister of Health Service Delivery.

Municipalities' contributions to health services are in the domain of water and sanitation, which is financed primarily with municipal revenues. Municipal governments also finance – at the discretion of the mayor– ambulance services to transport patients from the rural areas to the health center. Municipalities support MSPAS, based on the priorities of the municipal council, for example, paying salaries for additional health post personnel. Article 257 of the Municipal Code establishes financial provisions for the municipalities and mandates that the executive branch of the government annually assign an amount equal to 10 percent of the general budget to all municipalities. This amount should be distributed according to law and at least 90 percent should be allocated to programs and services in the areas of education, health promotion, infrastructure, and public services that improve the quality of life of the population. The remaining 10 percent can be used to cover operating and recurrent costs. Therefore, municipal governments have the potential to play an important role in the financing of health services. Their role in health financing should be strengthened by developing capacity in planning, increasing transparency in all their processes, and enforcing accountability.

MSPAS, through Municipal Health Districts, is responsible for the delivery of health services at the local level. The health districts report to the health area directors and a fluid and dynamic coordination between health areas and hospitals should be expected. While both are MSPAS's implementing units, there is almost no coordination between health areas and hospitals.

Guatemala's National Health Accounts exercise estimated expenditures on administrative activities were 764 million quetzals (US\$97 million) in 2013, equivalent to 3.1 percent of total health expenditure. Budgetary allocations to health are made by the government from public revenues managed by the Ministry of Finance. Overall government budget performance (funds released versus budgeted) was about 90 percent for wages and 85 percent for non-wage expenditures over the past four years (MINFIN 2015). Government disbursements in Guatemala rarely match implementation schedules (MSPAS 2012b); at the center, officials consider municipalities and administrative units to have little absorptive capacity, while at the district level, there are complaints about late disbursements of funds, according to interviews conducted by the HSA team. There are recent presidential orders to achieve efficiencies by cutting transportation costs, reducing per diem payments and limiting fuel consumption for vehicles (*Comisión Presidencial 2014* and *Decreto 31-2002*). According to interviewed stakeholders, these cuts have been affecting outreach activities for health. As in many other countries, unexecuted funds are returned to the central government, which results in reduced allocations for the subsequent period. Delays in disbursements can result in waste and misuse of resources and potentially provide an incentive for reporting activities that never take place.

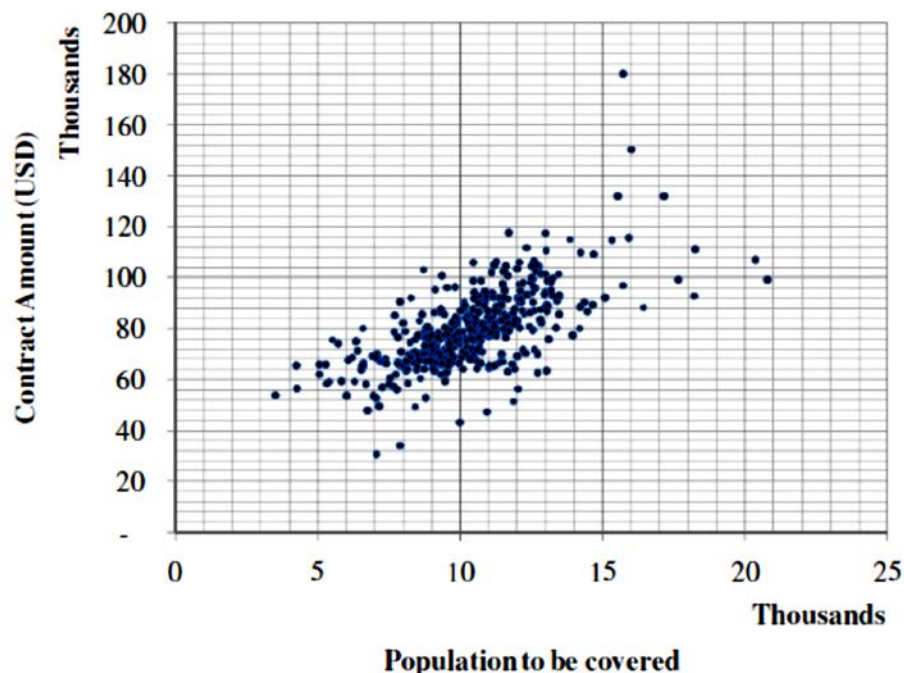
Overall central government allocation to the 338 municipalities is based on a resource allocation formula that assigns weights according to population density and poverty levels (SEGEPLAN 2014). However, the flow of health resources from MSPAS to the administrative units does not follow an allocation formula. The allocation process is based on needs as identified by a POA). The budgetary process follows historical trends of service provision. The administrative units send the information to the Directorate of Planning; then the consolidated budget is adjusted based on the budgetary ceilings set by the Ministry of Finance. The lack of an allocation formula adjusted by health needs, poverty, population size, and dispersion ends up in a discretionary assignment process (Flores 2008). According

to our interviews, this process does not ensure that the administrative units get the funds they planned. Underfinancing and late disbursements from the central government are major barriers to maintaining effective execution across health areas and hospitals. According to key informant interviews, municipality governments allocate funds for health in a discretionary fashion mainly due to local constraints and the inability to mobilize local revenue.

According to interviews conducted during the HSA, the budgeting process follows a bottom-up approach starting with the administrative units and going up to the Directorate of Planning at MSPAS. Underfunded administrative units and budget ceilings are barriers to efficient planning and effective execution of resources. According to interviews with key informants, the decentralized process has led to fragmentation and multiple mini-contracts for medicines and other consumables, thus missing the opportunity to create economies of scale with bulk buying schemes to attain value for money. Strategic alliances between MSPAS, IGSS, and the Armed Forces health system (*Sanidad Militar*) to establish bulk purchasing could potentially save the health system millions of dollars in the cost of pharmaceuticals, while benefitting the purchasers of medicines, equipment and diagnostic services. Additional factors make the system nonfunctional. First, the health delivery outlets (health centers and health posts) usually lack of transportation, are understaffed, and suffer of recurrent stockouts of basic medicines and supplies, as discussed below in the Medical Products and Supply Chain section.

Primary health care financing: Provision of PHC services is currently in transition from outsourcing to insourcing clinical services. The PEC strategy, once prized as one of the most innovative and successful public-private partnerships to expand health coverage in Latin America (La Forgia 2006) was terminated. The program consisted of outsourcing an explicit package of services that was delivered by contracting CSOs. According to MSPAS, the PEC allowed it to expand coverage and reach 4.6 million people by 2008. In the same year, the PEC granted 487 contracts with a total value of 229.2 million quetzals (US\$30.6 million), equivalent to 9.1 percent of total MSPAS expenditures of 2,251 million quetzals (US\$336.1 million) in 2008. Only certified providers were eligible and their contracts ranged from 255,000 quetzals (US\$30,000) to 1.350 million quetzals (US\$180,000). Beneficiary communities ranged from 4,500 to 21,000 inhabitants. The PEC's basic package provided 26 services including maternal, child, emergency, and environmental services. Visits to the community were scheduled once a month and a nurse or doctor provided maternal care, immunizations, nutritional supplementation, and growth monitoring to children under five. Based on the total cost of contracts and the stipulated population, capitation was approximately 50.00 quetzals per person-year (\$6.64 per capita) in 2008. As Figure 4.8 shows, there was variation in the size of the contract due to differences in size of the population covered as well as in the modality of services provided either by nurses or doctors; thus, per capita allocations varied from 30 to 150 quetzals (US\$4.00 to US\$17.00) (Bossert et al. 2009).

FIGURE 4.8. CORRELATION BETWEEN CONTRACT AMOUNT AND POPULATION COVERED BY PEC IN 2008



Source: Bossert et al. 2009.

Over the years, PEC expansion accounted for legal coverage to 4.6 million people mainly in poor communities. The program was handling almost 500 contracts and operating in more than 4,000 health facilities located in 4,500 jurisdictions. There was a broad mix of “facilities,” the majority of which were actually rooms in the houses of local community leaders who loaned them to ensure the existence of “health services” closer to their communities. Other PEC facilities were built by local government municipalities and by community members and a few were built by the government. According to health officials interviewed for the HSA, management capacity was a challenge, supervision was weak, service level agreements were poorly monitored, there was a lack of key performance indicators, and it was difficult to measure results and outcomes and almost impossible to audit actual delivery of services and medicines to beneficiaries living in dispersed and rural communities. MSPAS decided to end the program and start the transition from outsourcing to insourcing clinical services and as a first step is contracting CSO staff into the public service. During the current transition phase, it may be expected to observe gaps in coverage and provision of health services, placing more health risks on already underserved populations.

The financing strategy of the new and emerging PHC system is critical to effectively cover the third of the population living in the most rural and poor communities in Guatemala. A successful strategy to fully finance PHC is needed to reduce inequalities in access to health services and prevent poverty derived from catastrophic health expenditures. Annual resources to finance an efficient PHC strategy would require more than the current US\$6.67 per capita (250 million quetzals, US\$32 million) allocated to the 4.5 million population living on underserved areas.

A recent study conducted by the Central American Institute for Fiscal Studies (*Instituto Centroamericano de Estudios Fiscales, ICEFI*) and UNICEF estimated the investment required to reduce maternal mortality among the eight departments with the highest mortality rates in Guatemala. The costs estimates include human resources, infrastructure and equipment, medicines and consumables, transportation,

management and information systems, as well as maternal waiting homes to protect pregnant women. This plan to strengthen the first and second level of care is estimated to cost 1.024 billion quetzals (US\$130 million) in 2015, which is equivalent to additional health expenditures of US\$8.10 per capita and represents 0.21 percent of Guatemala GDP. A sequential scale-up of these services was estimated to cost 2.924 billion quetzals (US\$372 million) by 2022, which is equivalent to an increase in health expenditures of US\$23.40 per capita representing an investment equivalent to 0.40 percent of GDP. According to UNICEF, these investments would result in a 60 percent reduction of maternal mortality in the eight priority departments and substantial gains in maternal and newborn health nationally (Contreras and Estrada 2012).

Guatemala's slow progress in improving maternal health will prevent the country from reaching MDG 5: decrease the maternal mortality ratio by 75 percent to the target of 55 deaths per 100,000 live births from the recorded 210 per 100,000 live births deaths at baseline in 1990 (Conadur/Segeplán 2014).

Progress toward improving maternal health across Central America has varied: since 1990, Honduras has had the highest percentage (65 percent) reduction in maternal mortality ratios, followed by Nicaragua (49 percent) and El Salvador (40 percent). New efforts to improve maternal and child health in Guatemala need to focus on the marginalized and poor, who frequently reside in remote and rural areas with limited access to health care services. Institutional deliveries among indigenous mothers are reportedly as low as 29 percent compared to 70 percent among non-indigenous women. The solution requires multiple interventions addressing more than the clinical causes of maternal death. The implementation of a package of interventions aiming to increase institution-based obstetric care among indigenous women in Guatemala is showing promising results. These services include: a low-cost simulation-based training program using a low-tech birth simulator to teach provider teams emergency management during childbirth; a research-driven social marketing campaign encouraging women to give birth in clinics rather than at home; and professional midwife liaisons charged with connecting TBAs to the formal health care system (BMC 2013).

Peru provides some useful lessons of a country that faced similar challenges to those that Guatemala is currently facing. Since implementing health sector reform, Peru has reached 80 percent of its population with health services, putting the country well on the path toward achieving universal health coverage. This progress is significant for a country of 30 million people, characterized by diverse cultures and rugged geography, much like Guatemala. Peru's Comprehensive Health System (*Sistema Integral de Salud*) provides subsidized public insurance, giving priority to populations living in poverty and extreme poverty. Access to the Comprehensive Health System by the poor increased dramatically over the past few years. In 2004, just 37 percent of the Peruvian population was insured. By 2010, the percentages of poor, extremely poor, and non-poor populations with health insurance were 72 percent, 80 percent, and 61 percent, respectively (INEI 2010). Total health expenditure per capita in Peru is US\$267 (compared to US\$219 per capita in Guatemala) and public health expenditures represent only 3.1 percent of GDP, yet the health sector achievements are remarkable. The expansion of health coverage to the current level of 80 percent has had a positive impact on maternal and child health and survival, achieving two MDGs ahead of schedule: (1) the number of women delivering in health facilities increased from 57 percent in 2000 to 89 percent in 2014 – and from 24 to 72 percent in rural areas. (2) Between 1990 and 2013, the maternal mortality rate dropped from 250 to 89 deaths per 100,000 live births, and the infant mortality rate dropped from 80 to 17 deaths per 1,000 live births (Health Finance and Governance project 2015). Although there is no single path toward universal health coverage, Peru's success follows a formula that consists of sound planning and consensus building, inclusive participation by the public and private health sectors, and consolidation of legislative reforms.

4.5 Purchasing

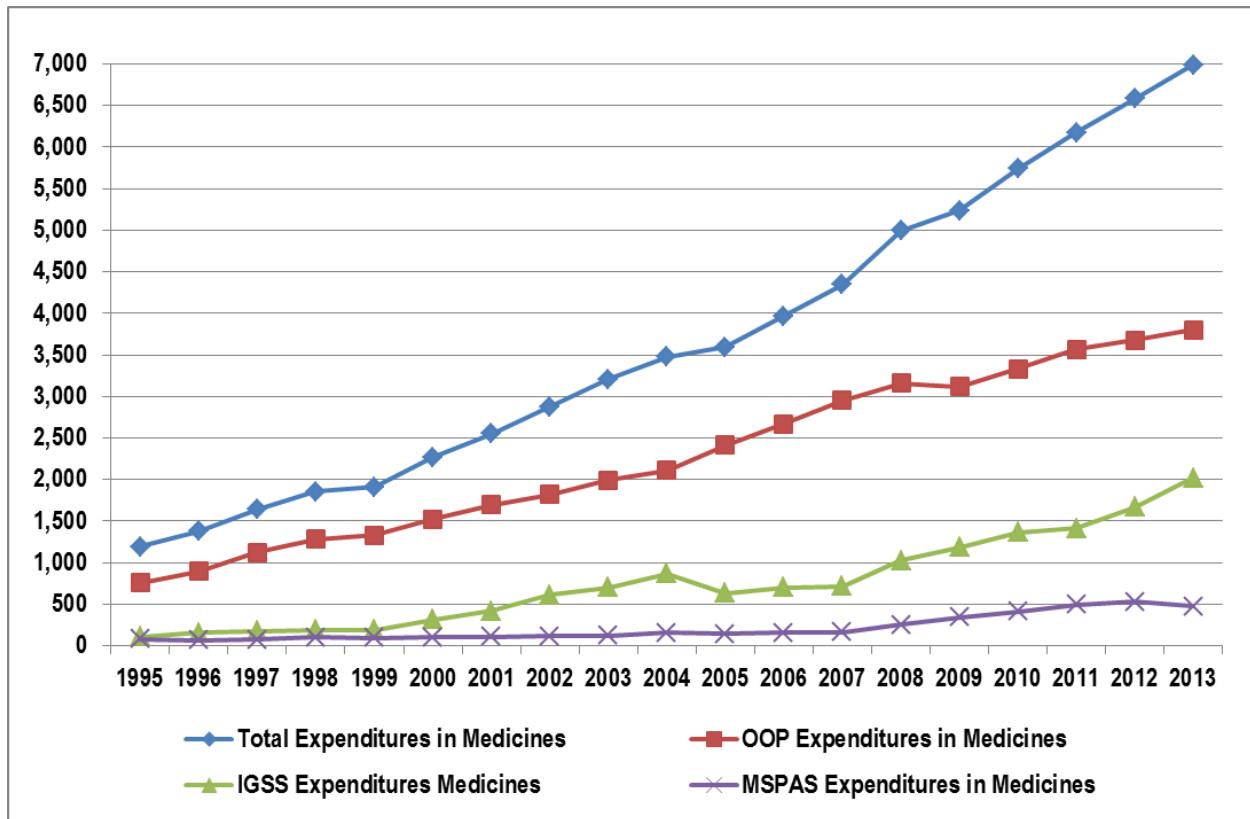
In Guatemala, neither MSPAS nor IGSS operate under traditional separation of functions. Both institutions retain functions as agents and providers of health services. The two institutions contract and pay their own health workers to provide services. MSPAS buys goods and services at multiple administrative levels. The IGSS retains centralized control of its administrative units.

In Guatemala the largest allocation of resources is directed to curative care, amounting to 17,952 million quetzals (US\$2.285 billion) in 2013, which represented 73 percent of total health expenditure and was equivalent to 4.6 percent of GDP in that year. Health expenditures in curative care by MSPAS amounted to 2,180 million quetzals (US\$277.5 million) in 2013, which represented 44 percent of total health budget executed by the MSPAS in 2013. In contrast, IGSS health expenditures on curative care amounted to 4,090 million quetzals (US\$520.5 million) in 2013, 87 percent of the total health budget executed by social insurance that year. Hospital services accounted for 4,497 million quetzals (US\$572 million) of the total allocation. In contrast, expenditures on prevention were reported as 376 million quetzals (US\$48 million) in 2013, or 1.5 percent of total health expenditure. Health promotion and preventive services are mainly limited to the public sector (executed by MSPAS) and to a lesser extent the Ministry of Education and the Office of the President.

As the provision of health services is labor intensive, expenditures on human resources for health represent a major spending category and reached 5,908 million quetzals (US\$752 million) in 2013, which represented 24 percent of total health expenditure and was equivalent to 1.4 percent of GDP. Expenditures on human resources in the public health sector totaled 3,937 million quetzals (US\$500 million), 45 percent of expenditures on the public health sector.

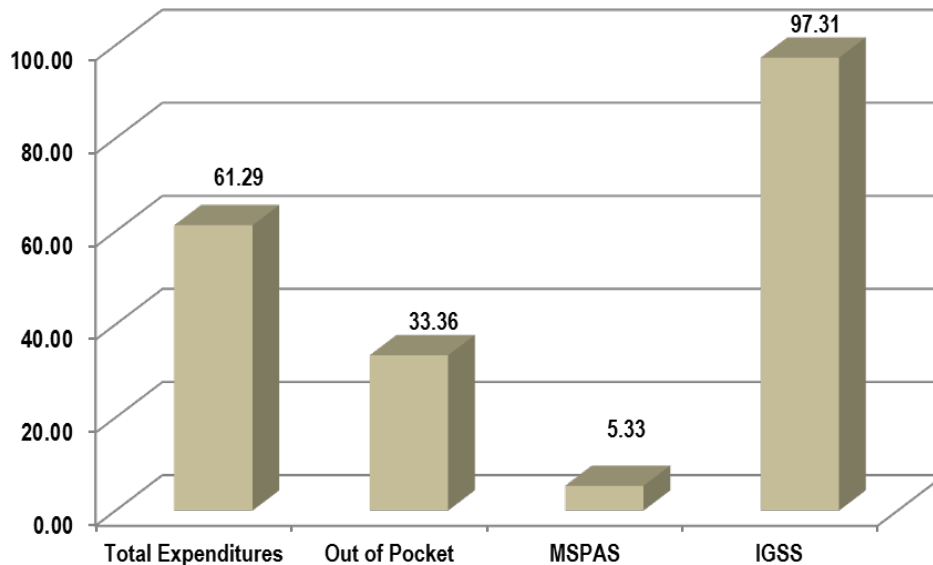
Another major expenditure category is pharmaceuticals. Spending on medicines consumed 6,986 million quetzals (US\$890 million) in 2013, which represented 28 percent of total health expenditure and was equivalent to 1.8 percent of GDP. However, government spending on pharmaceuticals represented only 36 percent (2,511 million quetzals) of the total expenditures. As Figure 4.9 shows, an increasing amount of expenditures on pharmaceuticals are OOP payments.

FIGURE 4.9. EXPENDITURE TRENDS FOR MEDICINES AND PHARMACEUTICALS IN GUATEMALA (Q MILLIONS)



The high levels of OOP expenditure per capita suggest that more Guatemalans get their medicines from private sector pharmacies rather than from MSPAS (Figure 4.10). The enormous consumption of medicines is mainly unregulated as most pharmaceuticals are sold without medical prescription. In addition to showing the small amount of pharmaceuticals procured from MSPAS relative to those bought out of pocket, Figure 4.10 shows IGSS expenditures on medicines are 18 times the amount spent by MSPAS, yet IGSS serves only 23 percent of the MSPAS service population and provides only a third of as many ambulatory services (15.7 million ambulatory visits reported by MSPAS in 2012 (MSPAS 2012b)).

FIGURE 4.10. PER CAPITA EXPENDITURES ON MEDICINES (US\$), GUATEMALA 2013



Adapted from MSPAS 2015c

In 1997, the government of Guatemala launched a nationwide program for access to medicines (*Programa de Accesibilidad a Medicamentos*, PROAM) based on the operation of public pharmacies in municipalities selling low-cost drugs in rural areas (Decreto 69-98). PROAM realized economies of scale and achieved an important expansion of the distribution channels of pharmaceuticals and improved the access to medicines in the country. Approximately 40 percent of the medicines provided by MSPAS are generic. The number of pharmacies affiliated with the program included 923 social drug selling services (*servicios de ventas sociales de medicamentos*), 1,043 rural pharmacies (*botiquines rurales*), 81 municipal pharmacies (*farmacias municipales*), and 41 state pharmacies (*farmacias estatales*). The financing of this program reached 14 million quetzals (US\$1.8 million) in 2013 (Becerril-Montekio and López-Dávila 2011).

Total expenditures on diagnostic services were 1,818 million quetzals (US\$231 million) in 2013, representing 7.3 percent of total health expenditure.

There is a significant backlog of public health sector capital projects, as most of the health budget is allocated to recurrent costs. The MSPAS hospital infrastructure is outdated, but there are no plans for building new facilities, and maintenance and refurbishment of existing facilities is seriously underfunded. IGSS has been actively upgrading its infrastructure, on which in 2013 it invested 322 million quetzals (US\$41 million).

Under the two systems, MSPAS and IGSS, there are public-private partnerships operating at various scales. IGSS has been contracting private providers to expand the coverage of services. Since 2002, IGSS's insured population was assigned to a membership medical unit; these units were in charge of a referral system to private providers. These contracted services allowed IGSS to expand coverage of ambulatory services while reducing the number of health posts it operated and gain in efficiency.

MSPAS was a pioneer in contracting with NGOs to provide a basic package of PHC services targeting vulnerable populations. These arrangements were made under the PEC starting in 1997. Legislation enacted in 2011, however, reversed this course and prohibited contracting out to the private sector or

using a nongovernmental mechanism to manage government resources; thus, some of the positive experiences of contracting services via the PEC will be lost. The provision of services under the PEC, if well managed, represented an opportunity to make progress toward paying for results and community participation. However, institutional capacity to monitor performance and demand accountability to achieving results was weak. Prohibiting contracting out to NGOs is viewed by some experts as a major setback in advancing public-private partnerships, in refining service level agreements, and in overall payments for results.

4.6 Resource Pooling

Public pooling can contribute to equity and access if the healthy members of the pool subsidize the sick, and the wealthy members subsidize the poor. MSPAS and the IGSS are the two major pooling mechanisms for financial risk protection against onerous health expenditure. There are initiatives to expand IGSS coverage; in fact, the high levels of OOP spending at time of illness in Guatemala should be seen as an opportunity to shift part of this household spending into prepayment mechanisms. Pooling these health care resources spreads the financial risk across a large group of insured people and lessens the chance that a few individual households will incur high health care costs.

To ensure a progressive expansion of financial access to health services, prioritization of services must take place, with mechanisms to target vulnerable groups. To achieve universal health coverage, Guatemala must show progress in three critical areas: expanding priority services, targeting vulnerable populations, and reducing OOP payments (WHO 2014b). To do so, it must answer the following questions: Which services should be expanded first? Which populations should be covered first? How can payments be shifted from OOP expenditure to a pooled prepayment scheme? Providing financial risk protection requires health system improvements and exploring ways of shifting the high OOPs into prepayment models.

Social health insurance: IGSS is authorized by law to collect contributions from (formal sector) employers and employees to support and sustain the operation of a social health insurance scheme. The resources collected by IGSS protect its members against contingencies caused by injury, sickness, maternity, disability, and pensions. However, many private firms contributing to IGSS have to buy additional and supplemental private health insurance due long waiting times, delayed clinical appointments, and perceived poor quality of services at IGSS facilities. Also, insurance for formal sector, employed workers is by definition not pro-poor; the gradual expansion of IGSS has also created an access gap to health services between workers in the formal and informal sectors.

IGSS expenditures were 4,718 million quetzals (US\$600 million) in 2013, which represented 18 percent of total health expenditure and was equivalent to 1.2 percent of GDP. However, this figure does not reflect important differences in the allocation of resources. Annual per capita expenditure per IGSS member was estimated at US 227 in 2013. In contrast, annual per capita expenditure per MSPAS general population and non-member of any insurance scheme was estimated at US 49 in the same year. This represents one of the major inequalities in the distribution of resources for health in Guatemala; an IGSS member receives on the average 4.6 times more resources than an uninsured member of the general population. These differences in the distribution of resources can be translated broadly into differences in quantity and quality, opportunity, and access of health services.

Private commercial health insurance arrangements: There are several providers of private medical insurance covering about 5 percent of the population (MSPAS 2010 and 2011). Expenditures on private insurance plans reached 810 million quetzals (US\$103 million) in 2013, which represented only 3 percent of total health expenditure and 0.2 percent of GDP. A small proportion of people are enrolled

in voluntary plans and most private health insurance plans are supported by employers on behalf of employees and provided by major corporations in the main cities.

4.7 Findings and Recommendations

The government of Guatemala would be able to improve the existing health financing system by implementing incremental, high-impact solutions focusing on disadvantaged groups in the short term before embarking on a structural health system reform to improve the performance of the system and eventually the health conditions of the population. The long-term goal is to achieve a high-performance system in five areas: access, quality, equity, efficiency, and sustainability of the health system. The assessment team identified three key issues of health financing requiring special attention in Guatemala: (1) improving managerial practices; (2) mobilizing additional resources for the health sector, and (3) planning and implementing health financing reform. To achieve equity in access to health services and in health outcomes, Guatemala must achieve financial risk protection and reduce OOP spending. Implementation of these recommendations requires the creation of enabling conditions and the definition or clarification of specific roles for different stakeholders; this may require revising the legal framework of existing public institutions. Government institutions tracking progress on health finance reform should be strengthened.

Short-term

There are several characteristics of the health financing system in Guatemala requiring immediate attention. The health financing system operates under weak standard procedures, lacks solid management and accounting mechanisms, and suffers from outdated budgetary and planning processes. These issues lead to inefficiencies at all levels, further compromising even more the access and quality of care.

Recommendations:

- 1. Institutional strengthening and management capacity building:** Improving managerial practices is critical to achieving better use and allocation of resources. The institutional structure and functions of MSPAS should enable it to fulfill its leadership role established by law, and they should enable the effective and efficient use of resources. According to the WHO, managers are an essential component of the health workforce. Good management is integral to quality service delivery and achieving desired health outcomes. Strengthening management capacity needs a strategic approach that comprises four interrelated dimensions: number and distribution of managers, competencies, management support systems, and working environment. An effective management information system is needed to enable managers to make evidence-based decisions. Further, MSPAS should seek opportunities for integration and efficiencies with IGSS and Sanidad Militar, such as conducting bulk procurement and improving existing frameworks for contracting services between institutions. The government of Guatemala must implement transparent managerial processes and promote accountability at all levels.
- 2. Ensure financing for primary health care:** Given budgetary shortfalls in recent years and the cancellation of PEC services, the government of Guatemala should prioritize the allocation of resources to strengthen PHC in rural areas, especially those most affected by the cancellation of the PEC. The budget for the initial implementation of the new PHC strategy for 2015 alone was estimated at 167 million quetzals. MSPAS must ensure that these resources are allocated to PHC, as the coverage and health of more than 4 million undeserved Guatemalans is at risk, and a slow transition could result in serious drops in the coverage of essential services such as immunization. Resources should be targeted at communities with the highest indicators for maternal mortality, stunting, and the lowest per capita health expenditures. Targeted health programs addressing the

needs of vulnerable populations and priority programs such as reproductive health and nutrition must be prioritized. Additional financing could enable investments in infrastructure in rural areas, and should address the recurring stockouts in medicines and supplies. Implementing an effective referral and transportation system across rural areas is a critical and overlooked component of PHC.

- 3. Implement and support a health financing think tank:** A think tank external to MSPAS and the government should contribute to developing health financing policies for the Guatemalan health system. Informed participation of civil society in the development of strategies for revenue generation, improving resource allocation and strategic purchasing, and setting health priorities would help ensure the government's alignment to MSPAS and national development planning. The active participation of external actors in policymaking would contribute to objective discussions of health financing policies while also providing stability during changes in administrations. A health financing think tank could support the development of a strategic plan for health financing, and could present reform proposals such as a health insurance scheme for the informal sector. Such reforms require the separation of purchasing and provision functions within MSPAS, the definition and costing of a package of services, defined provider payment mechanisms, and preparing providers for contracting. The think tank could also complement existing strategies by costing a strategic plan, for example, and would contribute to holding public institutions accountable for allocating resources with a view to improving equity and protecting marginalized groups.

Medium-term

The lack of sufficient funding of the public health sector was frequently cited by stakeholders interviewed for the assessment as a root cause for a number of Guatemala's failures: for not providing universal health care coverage, especially in remote rural areas; for the demise of the PEC; and for the limited levels of care provided through rural health posts due to the lack of referral and counter-referral systems, and frequent stockouts of medicines and other critical health care supplies. Spending in the overall health sector represented 6.3 percent of the country's GDP and the public sector only contributes with 2.3 percent of the GDP. While accurate estimates of the level of funding are required to adequately provide health care to all those not currently covered by health services, key stakeholders interviewed indicated that approved budgets were generally below the amounts requested – and that the cuts to their requested budgets resulted in lower supplies of medicines and other health materials required by rural health centers and posts.

Recommendations:

- I. Implement a resource mobilization strategy for the health sector:** The government of Guatemala spends less on health care than does its regional peers, resulting in high OOP expenditures. OOP expenditures disproportionately affect the poor and contribute to catastrophic health expenditures. An integral resource mobilization strategy should achieve political commitments to increase in a sustained and systematic manner to increase government health financing from its current level of 2.1 percent of GDP to at least the regional average of 3.2 percent within the next 10 years. Guatemala must expand fiscal space for health by assessing several options including: overall increases in government revenue, reprioritization of health within the government budget, organization and alignment of health-specific foreign aid, and increased efficiency of public institutions by implementing strategic purchasing mechanisms. Tax-based options to finance the health system must be revisited, including taxes on alcohol, tobacco, sugar-sweetened beverages, and high-in-fat, salty, and sugary foods that have been associated with excess caloric intake and increased levels of obesity and NCD.

- 2. Improve the effectiveness and efficiency of the health care system:** A fragmented health financing system with an emphasis on curative services has grown over the years, creating overlapping schemes, financing agents, and providers. Existing public and private financing mechanisms do not complement each other; in addition, inefficiencies remain within each of the main financing institutions. Significant centralization, line item budgeting, and lack of service costing mechanisms have made providers unresponsive to local needs. Even with the creation of public-private partnerships under the PEC, the supervision, contracting, payment, and accountability mechanisms and overall interaction between purchasers and providers were poor and deteriorated over time. Improved capacity among providers to execute contracts, especially those targeting disadvantaged groups, is an important precursor to health insurance systems. Given the historical reliance on line item budgeting and poor attention to efficiency, public and private hospitals must improve operations, strengthen management, and develop costing centers.
- 3. Paying for results and implementing performance-based incentives:** Implementing payment systems with performance-based incentives for providers has been shown to be successful at improving efficiency and health outcomes. Performance monitoring systems for health providers should tie incentives to health facility and community indicators. Incentives for health care workers and other skilled workers to work in rural areas are necessary to achieve a more equitable distribution of the health workforce.

Long-term

A long-term health financing strategy should be aligned with the goals and priorities outlined in the 2032 K'atun Plan. The Ministry of Planning has developed a 20-year National Development Plan named K'atun Nuestra Guatemala 2032. This plan represents a long-term, integrated government vision for the country. K'atun is a Mayan concept connecting past, present, and future in a process of social development. Providing universal health services is key to the national social development. The K'atun Plan sets the national agenda and defines strategies to achieve sustainable social and economic development in Guatemala while protecting natural resources and the environment. The plan underscores social protection as a strategy for individual and social development and also prioritizes malnutrition (i.e., stunting, micronutrient nutritional deficiencies, and obesity). Reducing the current high levels of chronic malnutrition among children under five, particularly those under two years of age and with emphasis on groups in vulnerable and high nutritional risk, is a high priority for the government of Guatemala. The K'atun Plan states as priority to adequately address mothers, infants, and children to reduce maternal, neonatal, and infant mortality. The plan promotes the transformation of the health care model to reduce morbidity and mortality in the general population, as well as people-centered actions to increase the welfare of the population. The HSA team's health financing recommendations are aligned with this national development plan with the goal of providing all citizens of Guatemala to access to affordable, equitable, effective, and efficient health care.

Recommendations:

- I. Universal health coverage is instrumental to Guatemala's further development:** Providing universal health services is key to the nation's social development. Health and economic development are intrinsically linked and health has been characterized as a prerequisite of development. In fact, evidence shows that failing to improve health conditions leads countries into a poverty trap. The relation between income and health is well documented, and health is a determinant of human capital, contributing to increase individuals' potential productivity, income and economic growth. The long-term vision of the Guatemalan health system should incorporate reforms that follow "progressive pathways" to universal health coverage, i.e., those that prioritize the coverage of the poor from the outset.

2. **Expanding financial protection through social health insurance** for the poor and those in the informal sector to reduce inequality in the distribution of resources is a promising approach that has proven successful in moving toward universal health coverage in countries including Chile, Thailand, Mexico, and Colombia. A social health insurance scheme must include an affordable package of essential health services within Guatemala's fiscal space and as per its constitutional mandate. Such social health insurance schemes contribute to social protection as well as the provision of essential health services.
3. **Ensure the long-term sustainability of the health system** not only by improving health financing functions (revenue collection, risk pooling, and strategic purchasing) but also by investing in prevention. The design and implementation of a social insurance scheme for all citizens is a rational way to supply health services that are evidence-based, have high health impact, and respond to Guatemala's national priorities. This also represents an opportunity to protect people living in poverty by providing health insurance and taking full advantage of risk pooling mechanisms that implement the principle of social solidarity. However, costing a package of health services is only one part of the equation; the other part involves the design of a financing platform that ensures affordability, timely payments, and long-term sustainability. Ensuring financial sustainability involves the correct balance between revenue collection from different sources (taxes, salary contribution, subsidies, etc.) and expected expenditures from services demanded by enrolled beneficiaries in a public insurance plan.

5. SERVICE DELIVERY

5.1 Overview of Service Delivery

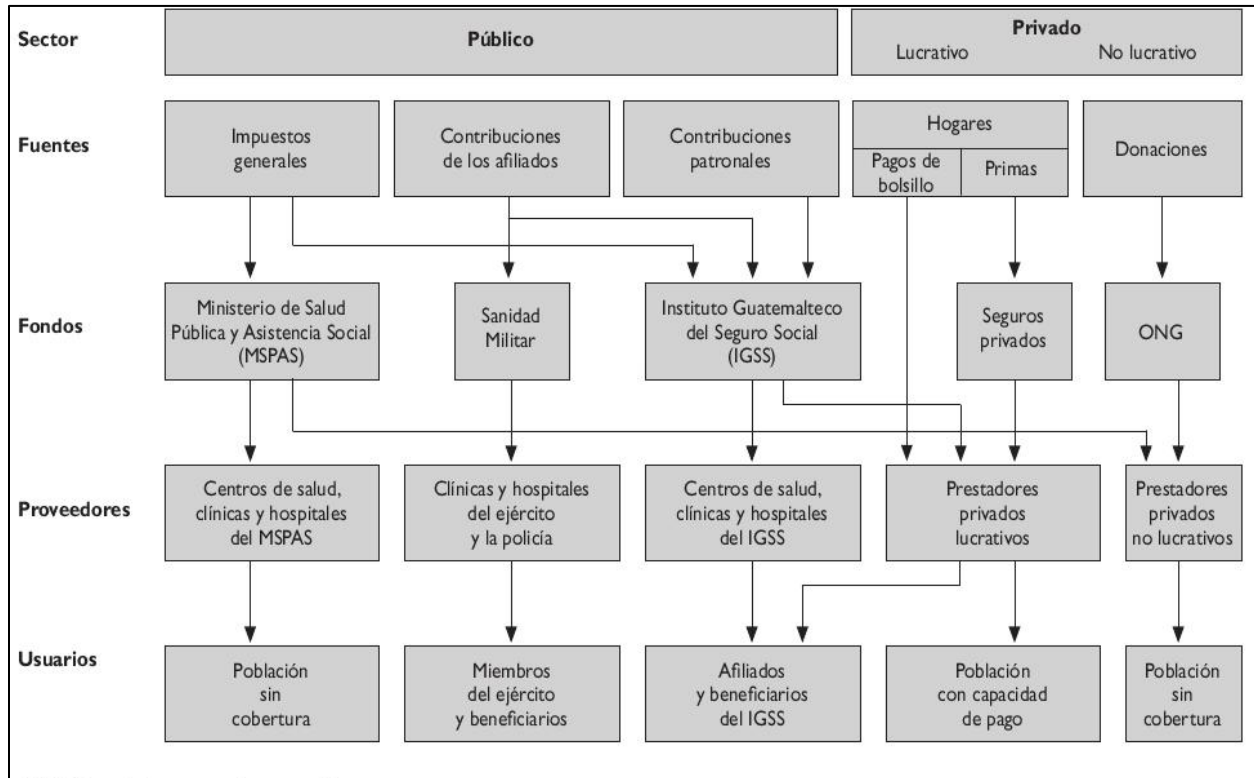
Service delivery is defined as “how inputs and services are organized and managed, to ensure access, quality, safety, and continuity of care across health conditions, across different locations and over time” (WHO 2007). First, this chapter provides an overview of Guatemala’s current health system infrastructure and how service delivery is organized among the main providers of health services – MSPAS, IGSS, and the private sector – with special attention to MSPAS’s service delivery network. The assessment addresses service delivery outcomes, highlighting gaps in access to health services and inequalities between rural, indigenous populations and their urban, non-indigenous counterparts, as well as other key aspects of service delivery such as utilization, demand, and quality of health care services. The chapter concludes with a summary of findings and recommendations. Ultimately, this assessment highlights that the existing service delivery networks do not provide adequate coverage of essential services, and that primary health care (PHC) in rural areas in particular must be strengthened in order to achieve better, more equitable health outcomes.

5.2 Organization of Health Service Delivery Networks

Health care services in Guatemala are delivered through both the private and public sector (Figure 5.1). MSPAS is the main public service provider, along with two public insurance systems: 1) IGSS, which covers the approximately 17.5 percent of the population working in the formal sector of the economy and their dependents; and 2) the Military Health Service (*Sanidad Militar*), which provides services to the roughly 0.5 percent of the population in the Armed Forces.

In the private sector, services are delivered by for-profit and nonprofit providers, including CSOs, FBOs, and local traditional providers (WHO 2014a). Despite high levels of utilization in the private sector, private health insurance covers less than 5 percent of the population (MSPAS 2010). While MSPAS is charged with providing services to the roughly 75 percent of the population that is not covered by any health insurance, and in fact is required by law to provide services free of charge to any citizen, the ministry’s health service delivery network is inadequate to effectively cover the population. This leads many to forego care or resort to out-of-pocket payments to purchase services in the private sector.

FIGURE 5.1. GUATEMALA HEALTH SYSTEM



Source: Becerril-Montekio 2011

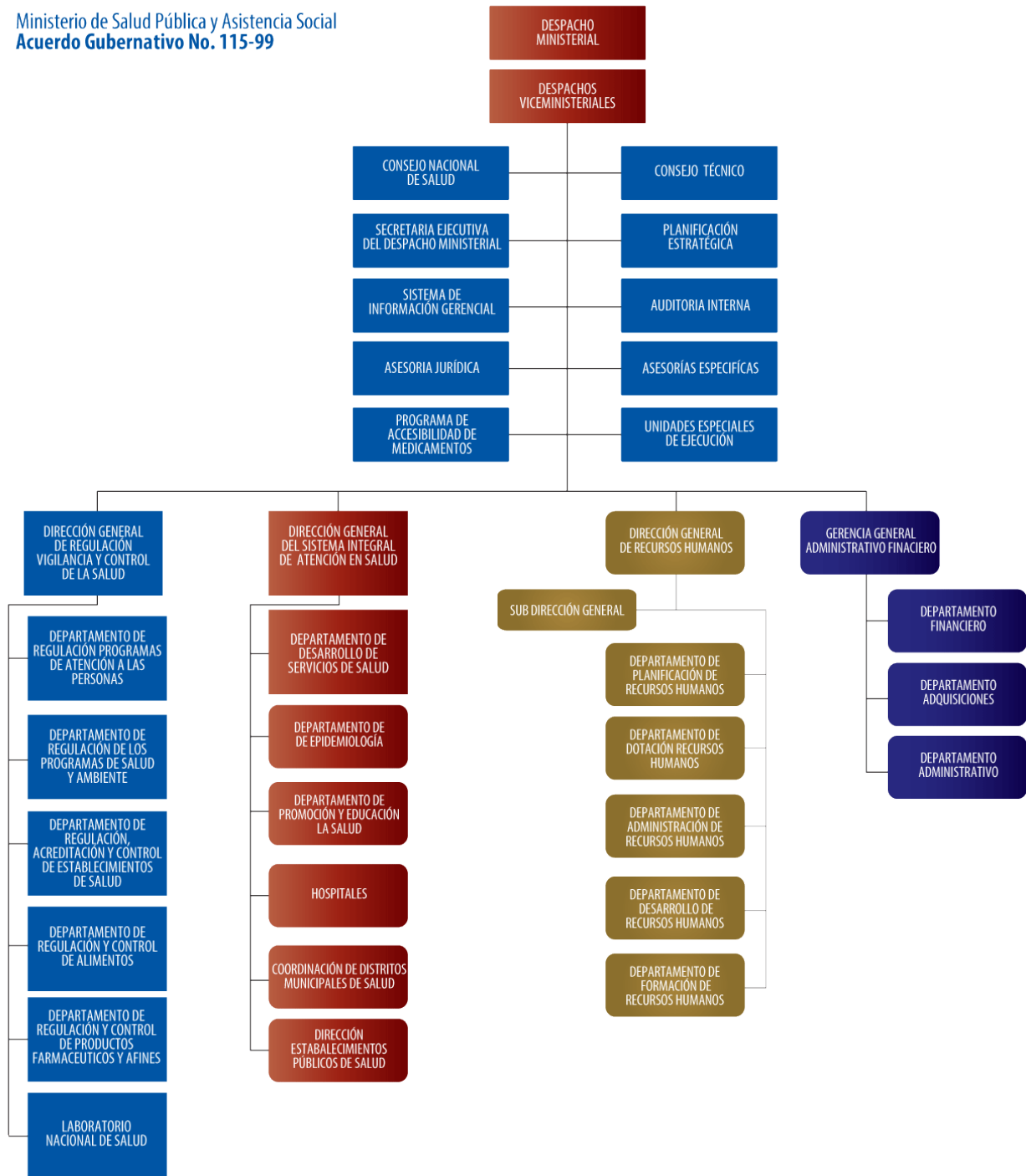
According to numerous stakeholders interviewed for the HSA, there is minimal coordination between MSPAS, IGSS, Sanidad Militar, and the private sector. Several interviewees and reports reviewed noted that the units within health institutions also are disjointed and function independently of each other; hospitals, for example, do not routinely communicate with other hospitals to coordinate patient care (Becerril-Montekio and López-Dávila 2011). While IGSS contracts out some services to the private sector, MSPAS has moved away from contracting NGOs with the cancellation of the Extension of Coverage Program (*Programa de Extensión de Cobertura, PEC*).

5.2.1 Ministry of Health and Social Welfare

In 1996, Guatemala began to make a series of health sector reforms that included decentralization of administrative and financial regulations of the health system to improve efficiency (PAHO 2012). At the central level, MSPAS leads all health care processes defined in Guatemala’s national health policies, regulates the health workforce, and monitors the finances of its health area offices (PAHO 2007a). The Directorate of Health Care Services oversees the health area offices and all public non-hospital facilities within the health areas, whereas the Directorate of Hospitals oversees all public hospitals. Both the Directorate of Hospitals and the Directorate of Health Care Services report to the Vice Minister of Service Delivery. Figure 5.2 provides the organizational structure for management of the health system as envisioned by the government.

FIGURE 5.2. MSPAS ORGANIZATIONAL CHART

Ministerio de Salud Pública y Asistencia Social
Acuerdo Gubernativo No. 115-99



There are 29 MSPAS health area offices that report to the central office. Each health area office is an administrative unit that serves as an intermediary between the central level and local health facilities. The offices are responsible for planning, execution, supervision, and evaluation of health services and programs in the public sector, and coordinate distribution of drugs and other health commodities to the district and subdistrict levels. Health area offices oversee the district health offices, which manage and supervise the health centers and health posts within their respective district (Bossert et al. 2003). While district hospitals within a health area’s catchment areas are charged with coordinating with the health area office, hospitals are typically their own “administrative unit” with budgetary autonomy and report directly to the central level instead of the health area.

The MSPAS Service Delivery Network can be divided into primary, secondary, and tertiary levels, as categorized in the 2014-2019 Strategic Plan and shown in Table 5.1. MSPAS has a network of 51 hospitals that provide a variety of specialty and outpatient services, 1,302 secondary care facilities, and 1,302 primary care facilities excluding Convergence Centers, which were closed by the cancellation of the PEC program.⁶ While the primary level of care is meant to be the point of entry into the health system, referral or counter-referral mechanisms are weak in practice, and patients can bypass health posts and even secondary facilities to seek services directly in hospitals.

**TABLE 5.1. MSPAS HEALTH INFRASTRUCTURE
BY LEVEL OF CARE AND TYPE OF INFRASTRUCTURE⁷**

Level of Care	Type of Establishment	Number of Establishments
First	Convergence Center	2,220
	Health Post	1,302
Second	Health center	902
	Health center with specialties	21
	Mobile clinic	379
Third	Hospital level 1	13
	Hospital level 2	32
	Hospital level 3	6

Source: MSPAS 2014b

Secondary care facilities are staffed by physicians, nurses, and, in some cases, specialists. Centers for Integral Attention of Maternal and Child Health (*Centro de Atención Integral Materno Infantil, CAIMIs*) provide comprehensive and maternal care 24 hours a day (PAHO 2007a). CAIMIs deliver a wide array of PHC services and attend both “normal” and uncomplicated births. They have the capacity for surgical interventions such as Caesarean sections and procedures for post-abortion care, but they lack access to more sophisticated technology and equipment such as blood banks; severe maternal and neonatal morbidity cases are referred to hospital. In addition to CAIMIs, Centers for Permanent Attention (CAPs) located in the municipalities are also open 24 hours a day. These provide PHC services, attend births, and have beds for short-term hospitalization of uncomplicated diseases. Also at the secondary level are mobile clinics, large vehicles that were intended to be positioned in areas with little accessibility to health units in order to extend general PHC and dental services to vulnerable populations. These mobile clinics are responsible for referring complicated cases to higher-level health facilities. However,

⁶ The informal and rudimentary facilities known as Convergence Centers, operated by NGOs, have closed with the cancellation of the PEC program, as described in the Governance section and the rest of this chapter. For an analysis of the effect of the close of this program on geographic access to health services, see Section 5.3.2.

⁷ The HSA team received conflicting numbers of facilities from different government sources. Numbers from the National Health Sector Strategic Plan 2014-2019 are depicted here.

stakeholders interviewed reported that they do not function well in providing services or referrals, and are not in fact mobile. In some instances, the mobile clinics are positioned too close to a health facility, in which case patients tend to bypass the mobile clinics to seek services at health facilities.

At the primary level, health post staff usually consist of one or two auxiliary nurses supported by a team of community volunteers including community facilitators and TBAs (*comadronas*) (Hernández et al. 2014). Stakeholder interviews and evaluation reports highlighted the central roles played by community facilitators, who provide basic health care in remote areas (e.g., providing oral rehydration therapy, administering intravenous medications, and suturing). They are trained to identify risk symptoms (e.g., high blood pressure in pregnancy, postpartum hemorrhage, and respiratory infections) and work in collaboration either with a national hospital, health center, health post, dispensary, or with an NGO. Community facilitators are residents of the communities that they serve and support the health system by monitoring health at the community level and referring complicated cases to health facilities.

FIGURE 5.3. HEALTH POST IN ALTA VERAPAZ



Source: Rhea Bright, USAID

Extension of Coverage Program

As part of the health sector reform initiated with the Peace Accords, MSPAS began contracting with NGOs under the PEC to extend basic preventive and curative services to underserved populations in remote, rural areas in 1997. The program grew rapidly, and at its peak in 2008 covered an estimated 4.5 million with a basic package of health services that included:

- ▶ Integrated care for women during pregnancy, birth, and postpartum; nutritional supplements; family planning; and cervical and breast cancer detection
- ▶ Infant and preschool care including immunization, control of diarrhea and respiratory infections, and nutrition and growth monitoring for children under two years of age
- ▶ Illness and emergency care, including malaria, cholera, TB, rabies, sexually transmitted infections, fractures, and burns
- ▶ Environmental care including vector control and promotion of waste disposal; hygiene education (Lao Pena et al. 2013).

Over the years, however, support for the program wavered. According to one assessment “*despite its contributions, the PEC has remained highly dependent on each administration’s priorities and the prevailing political economic context, particularly in terms of how contracting out services to nongovernment entities is viewed*” (Lao Pena et al. 2013). Others noted that Convergence Centers were not permanently staffed and that the benefits package included only basic services for women and children, considering it a contributing factor to the segmentation of the health system by creating inequality for different populations (Macq et al. 2008; Contreras and Estrada 2012). According to one figure often cited by MSPAS officials who decided to cut the program, the per capita costs of providing services through the PEC was three times higher than providing them through MSPAS facilities (Molina et al. 2015). Ultimately, amidst criticisms and accusations of inefficiencies and lack of accountability of PEC contracts, legislation was passed prohibiting the outsourcing of health care services to NGOs in 2013, and the cancellation of the program followed in 2014. Several interviewees indicated that, in addition to the above reasons, the PEC was dismantled in response to the severe financial debt accrued by MSPAS in paying for these contracts, compounded by even more limited financial resources than in prior years.

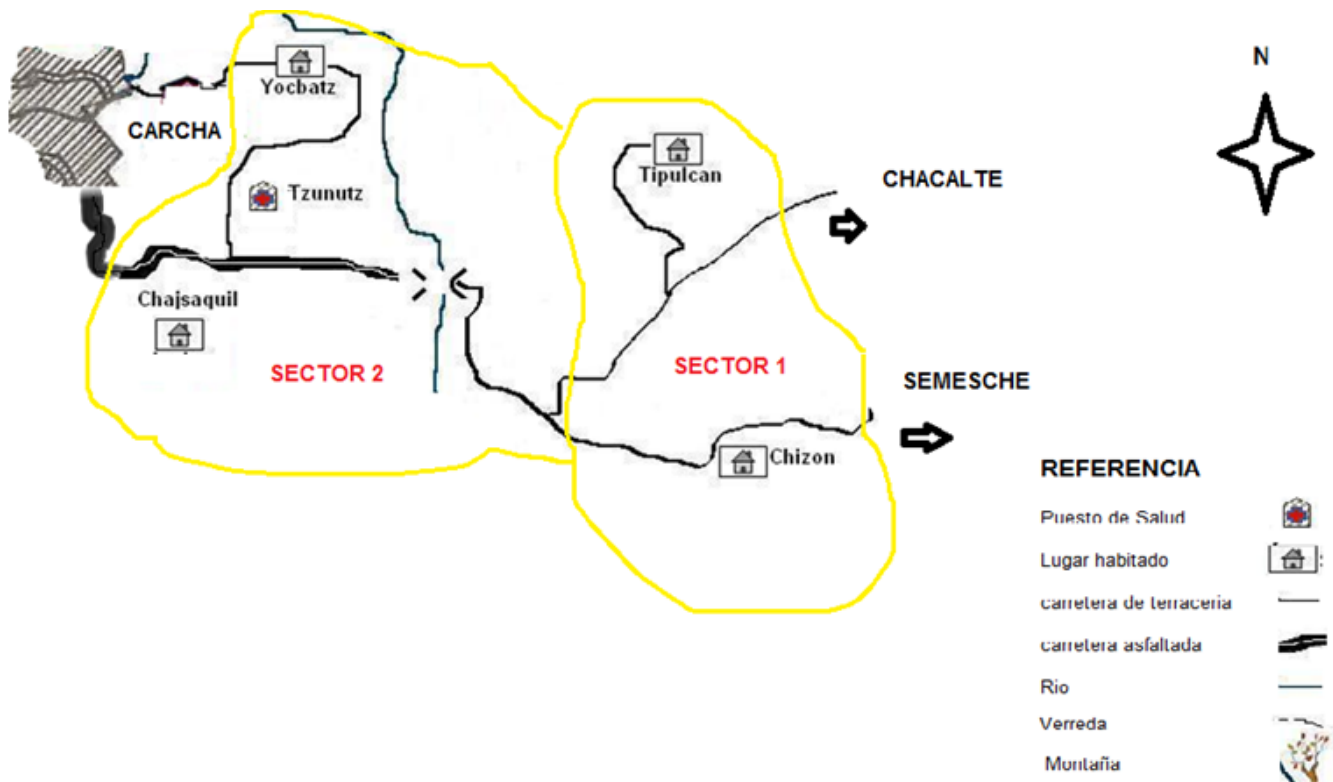
New primary health care strategy

In April 2015, the MSPAS central office called a meeting of all the health area directors to release a new PHC strategy. While it is still unclear how extensively it has been rolled out, the new PHC strategy is intended to replace PHC services at the community level that were previously implemented by NGOs through the PEC. This network is intended to strengthen and develop PHC services with a focus on promotion, prevention, epidemiological disease surveillance, nutritional deficiencies, prioritization of pregnant, lactating women, and children under two years, without neglecting the family or community environment (MSPAS 2015a). The new strategy adopts the goal of comprehensive PHC⁸ as called for in the 1978 Alma Ata Declaration and the Pan American Health Organization’s (PAHO’s) 2007 “Renewed Primary Health Care,” and borrows heavily from two successful community-based PHC strategies that have been implemented in Guatemala over the past decade: the Inclusive Health Model (*Modelo Incluyente de Salud* or MIS in Spanish) and the NGO TulaSalud’s public-private partnership and mHealth approach in Alta Verapaz. Both of these have contributed to improving access to services and improving health outcomes (Fort 2011; Aldana et al. 2014).

Under the new PHC strategy, health areas are undergoing a reorganization of territories to ensure that each health post has a catchment area of no more than 5,000 inhabitants (MSPAS 2015a). These territories are expected to be further divided into two sectors, each of approximately 2,500 inhabitants (sample shown in Figure 5.4). The sectors are intended to be directly supported by the community facilitators and TBAs.

⁸ Comprehensive PHC, as defined by PAHO, is a “*strategy for organizing healthcare systems and society to promote health.*” PHC is universally accessible and affordable; “*it is the first level of contact of individuals, the family and community... bringing health care as close as possible to where people live and work.*” Selective PHC, by contrast, emphasizes a specific set of health services geared towards the poor, “*a limited number of high-impact services to address some of the most prevalent health challenges in developing countries*” (PAHO 2007b).

FIGURE 5.4. TERRITORIAL RE-ORGANIZATION: ALTA VERAPAZ EXAMPLE



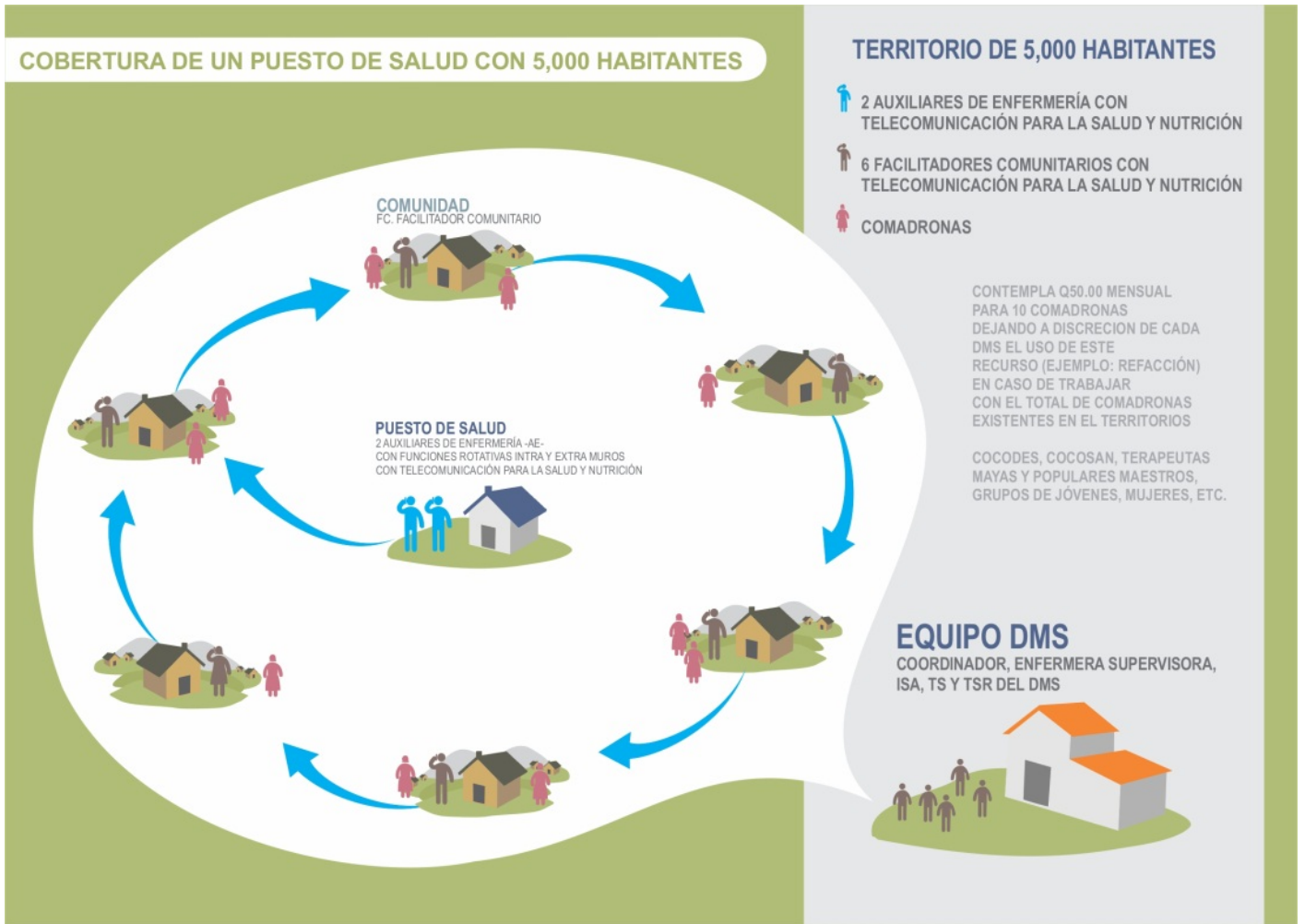
Source: MSPAS 2015a

The auxiliary nurses will be expected to rotate between working in a health facility and in the community conducting outreach visits in the two sectors. This new strategy, as presented to the HSA team, is expected to achieve coverage of more than 5 million people nationwide, especially in rural areas that were previously covered under the PEC. Each health post is expected to be supported by two auxiliary nurses, six community facilitators, and 10 TBAs – a far higher number of health workers than is currently supporting health posts under MSPAS (see Figure 5.5).

Telemedicine is also viewed as an integral part of the newly proposed MSPAS strategy. Auxiliary nurses and community facilitators will be equipped with mobile telephones with the Kawok information system platform including WhatsApp, video, photo, messaging, and Internet capabilities to improve the flow of information between the community facilitators and health workers based in the facilities.⁹ MSPAS will purchase the mobile phones through contracts with the Tigo Foundation. The use of mobile technology to identify, track, and refer patients to health facilities has contributed to a reduction in maternal deaths in communities in Alta Verapaz (Aldana et al. 2014).

⁹ Additional detail on Kawok is available in the Health Information Systems chapter.

FIGURE 5.5. DIAGRAM OF PROPOSED MSPAS FACILITY COVERAGE



Source: MSPAS 2015a

It is still too early to tell whether this new strategy will adequately replace the services formerly provided by the PEC in a timely fashion, or achieve the lofty goals of comprehensive PHC. As discussed in the Governance chapter, it is unclear whether it will even survive the change in administration in 2016. Ultimately, any shift in the organization of PHC services in rural areas must be accompanied by the financial, technical, and human resources necessary for effective implementation and service delivery.

Referral system

Key informants at all levels of the health system reported that there is no functional referral system between any of the levels, either in terms of tracking patients or transporting them. Interviewees reported that all health centers should have an ambulance, but some do not. Some that exist may not be functional due to mechanical issues or a lack of fuel – one interviewee explained that an inventory of 19 ambulances from former PEC sites in Alta Verapaz found only one in working order. There are no call centers or coordinated system for facilities that do not have an ambulance. Patients who need to be transported from a health center to a hospital are responsible for providing their own transport, regardless of their health condition.

There are no ambulances at health posts. Instead, community members work together to make arrangements with friends, community facilitators, or the community committee for emergency transportation in pickup trucks or any other vehicle available in their community. Key informants reported that community facilitators are integral to the referral process at the community level.

One interviewee shared a particularly telling anecdote that highlighted the challenges faced by the community facilitators: In an emergency, one community facilitator in Alta Verapaz travelled from a health center to a department hospital with a woman undergoing a complicated delivery.

The department hospital referred the case to a regional hospital and later to a national hospital in Guatemala City. The community facilitator accompanied her throughout the whole process, but, unfortunately, the newborn was pronounced dead at the national hospital eight days after the mother first sought care. After the infant died, the community facilitator went to MSPAS and the commissary, completed all of the paperwork to report the infant mortality case, and then bought a wooden box and thick white sheet in which to transport the infant's body home by public bus. In all, the community facilitator spent nine days travelling with this patient and the patient's husband from the department to the regional hospital to the national hospital and back home again.

The interviewee further discussed costs: As unpaid volunteers, community facilitators often do not have the financial means to pay for their transportation, accommodation, or meals when accompanying referrals across levels of care. In the above case, a community committee was able to give the community facilitator money to pay transportation and meals, from funds the committee had collected for emergency situations. The national hospital provided a place for the husband, wife, and community facilitator to sleep in the hospital's shelter.

Key informants noted that while health centers commonly refer patients with complications to a department hospital, they also noted that there is no systematic tracking of these referrals and no data to evaluate individual or patient population outcomes.

Outreach

The new PHC strategy states that health workers will conduct home visits to provide antenatal care services to pregnant women and nutrition checkups to malnourished children. Staff interviewed during site visits to health centers mentioned that they are currently instructed to conduct outreach visits to follow up with the community and provide preventive care, but that they do not have guidance on how frequently they are supposed to conduct these visits. Staff said they believe they should conduct outreach visits once a week. In fact, however, they only conduct outreach visits when there is an epidemiological outbreak in the community (e.g., dengue or cholera). Staff also explained that the administrative work burdens at the health facilities limit their ability to conduct outreach visits.

FIGURE 5.6. AMBULANCE IN ALTA VERAPAZ



Source: Rhea Bright, USAID

5.2.1 Guatemalan Social Security Institute

IGSS operates independently of MSPAS and is financed through mandatory employee and employer contributions (PAHO 2007a). It covers only 17 percent of the population (Becerril-Montekio and López-Dávila 2011). According to the latest figures available online, IGSS has a network of 117 facilities, 20 of which are hospitals. The remaining 97 facilities are primary- and second-level facilities located mainly in departmental capitals and other cities,¹⁰ limiting IGSS's reach in rural areas (IGSS 2015b).

According to statistics on the IGSS workforce, IGSS has a total of 16,404 health workers, 11,036 (67 percent) of whom are located in the Department of Guatemala (IGSS 2015a). The concentration of IGSS facilities and staff in urban areas such as Guatemala City reflects IGSS's mandate to cover the population working in the formal sector of the economy, which is overwhelmingly located in urban areas. Nonetheless, some IGSS beneficiaries live in rural areas. According to interviewees, IGSS beneficiaries in rural areas often resort to attending MSPAS or private health facilities given the distance to the IGSS network.

5.2.2 Private Sector

The Guatemalan private health sector plays an important role in the provision of services; though less than 5 percent of the population has access to health insurance, Guatemalans regularly access the private health sector, paying out of pocket. Utilization patterns discussed later in the chapter suggest that adults with chronic conditions are more likely to obtain treatment through the private sector. Table 5.2 lists the number of facilities in the private sector as reported by DRACES, which oversees the private sector. As explained by key informants, however, private sector providers remain largely unregulated. For a more detailed discussion of the private sector, refer to the Guatemala Private Health Sector Assessment (Cisek et al. 2015).

TABLE 5.2. PRIVATE HEALTH CENTER FACILITIES, JANUARY 2015

Facility type	Number
Health clinic	1,103
Specialized clinic	2,927
Dental clinic and laboratories	1,651
Alternative medicine center	241
Hospital (including outpatient only facilities)	135
Laboratories (various)	1,688
Other (including sports facilities and nursery homes)	1,808
Total	9,553

Source: DRACES 2015

¹⁰ It is unclear from the list which facilities are at the primary and secondary levels.

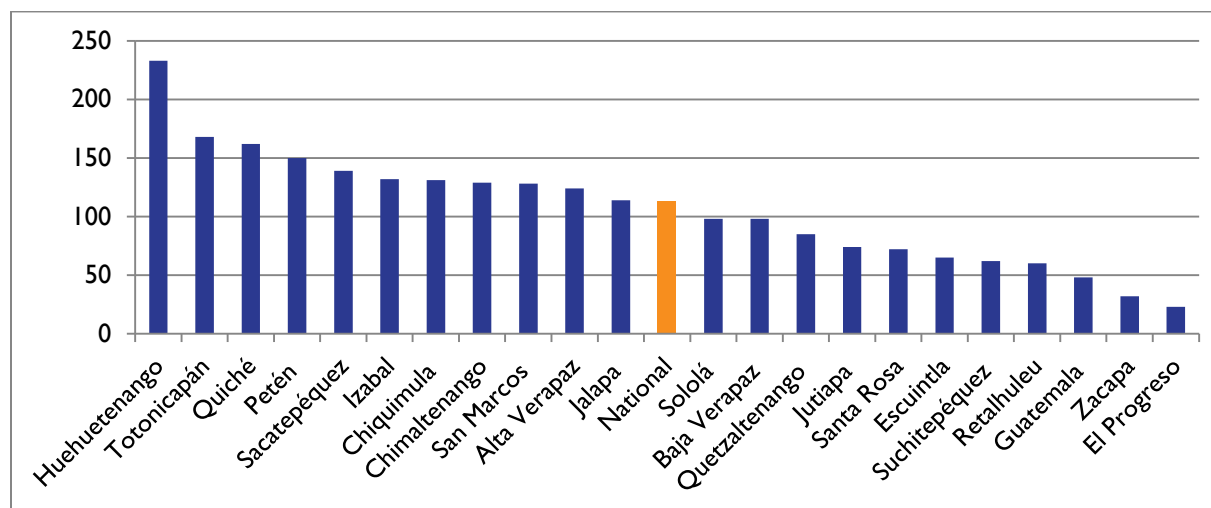
5.3 Access to Health Services

Over the years, Guatemala has improved access to priority health services. The percentage of children 12–23 months of age with a complete immunization schedule increased from 22 percent in 1987 to 71 percent in 2008, for example, while the percentage of mothers giving birth with a skilled birth attendant rose from 29 percent to 51 percent in the same time period. Increased investments in health resulting from the 1996 Peace Accords and the expansion of the PEC program are credited with contributing to these improvements. Further, the Health Code was amended in 2008 to abolish user fees in an attempt to reduce financial barriers to those seeking MSPAS services. Nonetheless, progress has not been rapid enough. As noted in the review of health outcomes in the Overview chapter, Guatemala will not achieve the MDGs for maternal or child mortality. The following sections assess access to health services through a review of indicators including outcomes, access, utilization, and geographic proximity to health facilities.

5.3.1 Health Outcomes

The poor performance of the Guatemalan health system and the lack of access to health services are reflected in dismal health outcomes and stark inequalities between different segments of the population. With 113 maternal deaths per 100,000 live births, compared to a regional average of 85, Guatemala has among the highest maternal mortality ratios in the LAC region. According to MSPAS's analysis of the 452 maternal deaths that occurred in 2013, 90 percent were preventable (2015d). As shown in Figure 5.7, disaggregation by department reveals vast inequalities between poorer, rural, and predominantly indigenous departments such as Huehuetenango, Totonicapán and Quiché in the Western Highlands as compared to urban departments such as Guatemala. A maternal mortality ratio of 159 deaths per 100,000 live births among indigenous women compared to 70 among non-indigenous women (MSPAS 2015d) highlights how the health system has failed to adequately care for the population, especially the poor and the 40 percent that identify as indigenous.

FIGURE 5.7. MATERNAL MORTALITY RATIO BY DEPARTMENT, 2013



Source: MSPAS 2015d

Similarly, mortality statistics among children reveal worse outcomes for children growing up in rural, indigenous, and poor households. Children growing up in a poor household are four times more likely to die before their fifth birthday than children in wealthier families (Table 5.3). For a more detailed discussion on health outcomes and statistics in Guatemala, see the Overview chapter of this report.

**TABLE 5.3. NEONATAL, INFANT, AND UNDER FIVE MORTALITY RATES
(DEATHS PER 10,000 LIVE BIRTHS)**

	Neonatal	Infant	Under 5
Area			
Urban	17	27	34
Rural	19	38	51
Ethnicity			
Indigenous	21	40	55
Non-indigenous	16	30	36
Socioeconomic status			
Poorest quintile	25	50	68
Wealthiest quintile	8	13	15
National	18	34	45

Source: MSPAS 2010

5.3.2 Access to Health Services

The poor health outcomes observed in the Guatemalan population reflect low and uneven access to health care services such as family planning and skilled attendance at birth. Further, low levels of utilization of preventive services among adults reflect the need for more proactive health promotion strategies to educate patients about the importance of prevention. An analysis of geographic proximity to health facilities further highlights the urgency to replace PHC services formerly provided by the PEC.

Skilled birth attendance

Nationwide, only 51 percent of Guatemalan women deliver in health facilities, compared to 48 percent who deliver in the home. There are significant disparities between the indigenous and non-indigenous populations: only 30 percent of indigenous women deliver in health facilities, compared to 71 percent of non-indigenous women. According to one cross-section study of 100 indigenous Mam mothers, 87 percent delivered at home compared to only 13 percent who delivered in a facility (Chomat et al. 2014). Similarly, 79 percent of women in the lower wealth quintile deliver at home, compared to only 5 percent among those in the wealthiest quintile (MSPAS 2010). This disparity in access to qualified health providers at birth explains the disparity in health outcomes such as maternal mortality.

Reproductive health and family planning unmet need

According to the ENSMI 2008-09 (MSPAS 2010), 44 percent of Guatemalan women of reproductive age and in a union use modern methods of contraception. Significant differences remain between utilization in urban areas (54 percent) and rural areas (36 percent), however, and this gap closely mirrors utilization among indigenous women (28 percent) and non-indigenous women (54 percent). Education also plays a major role; whereas 60 percent of women who have completed high school or college use modern methods of family planning, utilization is only 30 percent among those who did not attend finish primary school. It is important to note that these disparities reflect more than different preferences or attitudes towards family planning, but rather lack of access to contraceptive services. Using data from

the ENSMI 2008-09, Ishida et al. (2012) calculated that the met need for contraceptives was 72 percent among non-indigenous women, but only 49 percent among indigenous women.

Preventive services

Low utilization rates for preventive services might reflect a lack of access to services in addition to a lack of awareness of the importance of health promotion and preventive services. Sixty-two percent of Guatemalan women age 14-59 have never had a Pap smear to screen for cervical cancer. Among those who have never undergone screening, 34 percent reported no knowledge of the test (MSPAS 2010). This response was heavily correlated with ethnicity and wealth; 51 percent of indigenous women and 57 percent of women in the poorest wealth quintile reported not knowing about the test, versus 19 percent among non-indigenous women and 7 percent among the wealthy. The low levels of utilization of Pap smears highlight the need for the health system to take a more proactive approach to educating the population about critical preventive services.

The use of preventive services among men is also low. Only 8.7 percent of men who have heard of prostate exams (52 percent of the male population) have ever undergone a prostate exam to screen for cancer. Low utilization rates are consistent across a number of different tests: only 19 percent have been screened for diabetes, 13 percent for high cholesterol, and 22 percent hypertension (MSPAS 2010).

Medicines and supplies

In addition to gaps in access to services, access to medicines is also an obstacle. According to one study of access to medicines in Central America, only 60 percent of a sample of Guatemalans with acute illness acquired the medicines prescribed by a health provider, compared to 76 percent in Nicaragua and 87 percent in Honduras (Martins et al. 2013). According to interviews conducted for the HSA, there are frequent and consistent stockouts of essential drugs at health facilities. Facilities visited by the HSA team were missing medications and they were also in need of new surgical equipment. For a more detailed discussion, see the chapter on Medicines and Supply Chain.

Geographic Access to Health Services

Distance to health facilities and qualified service providers is a major barrier to accessing health services. As discussed more extensively in the Human Resources for Health section, there is a severe shortage of health workers in Guatemala, with only 12.5 health workers per 10,000 Guatemalans (PAHO 2013). This is far below the international recommended threshold density of 34.5 health workers per 10,000 population recommended by the International Labor Organization (Campbell et al. 2013b). Seventy-one percent of doctors and biomedical staff are concentrated in metropolitan areas with better access to economic resources and public infrastructure (Becerril-Montekio and López-Dávila 2011). Consequently, remote location, poor public transportation infrastructure, cost of travel, and frequent impassability of roads in inclement weather make distances to the closest public health center or public hospital major obstacles to the indigenous populations who live in remote areas without a motorized vehicle (Chomat et al. 2014). One analysis of the health facilities and road network in the department of Alta Verapaz, for example, determined that 23 percent of residents lived farther than an hour's travel time to a basic care facility (Owen et al. 2010).

Further, geographic access to health facilities across Guatemala looks very different when considering the MSPAS network during the PEC and after the program was suspended. There were, for example, approximately 4,875 public health facilities in MSPAS's network of care, according to their National Strategy 2014-2019 (MSPAS 2014b). To better understand geographic accessibility, the HSA team partnered with the USAID GeoCenter based in Washington D.C. to do a geographic information system analysis of the network of service delivery points in Guatemala. The HSA team used geocoded facility

data provided by the USAID Health Policy Project and geocoded facility data provided by the MSPAS SIAS. The HSA team then combined this with disaggregated population per square kilometer data. The HSA team analyzed the service delivery network that existed when the PEC was in operation, and the current network with the PEC sites eliminated. As shown in Figure 5.8 and Table 5.4, there is a significant reduction in the proximity of facilities to certain populations with the elimination of the PEC.

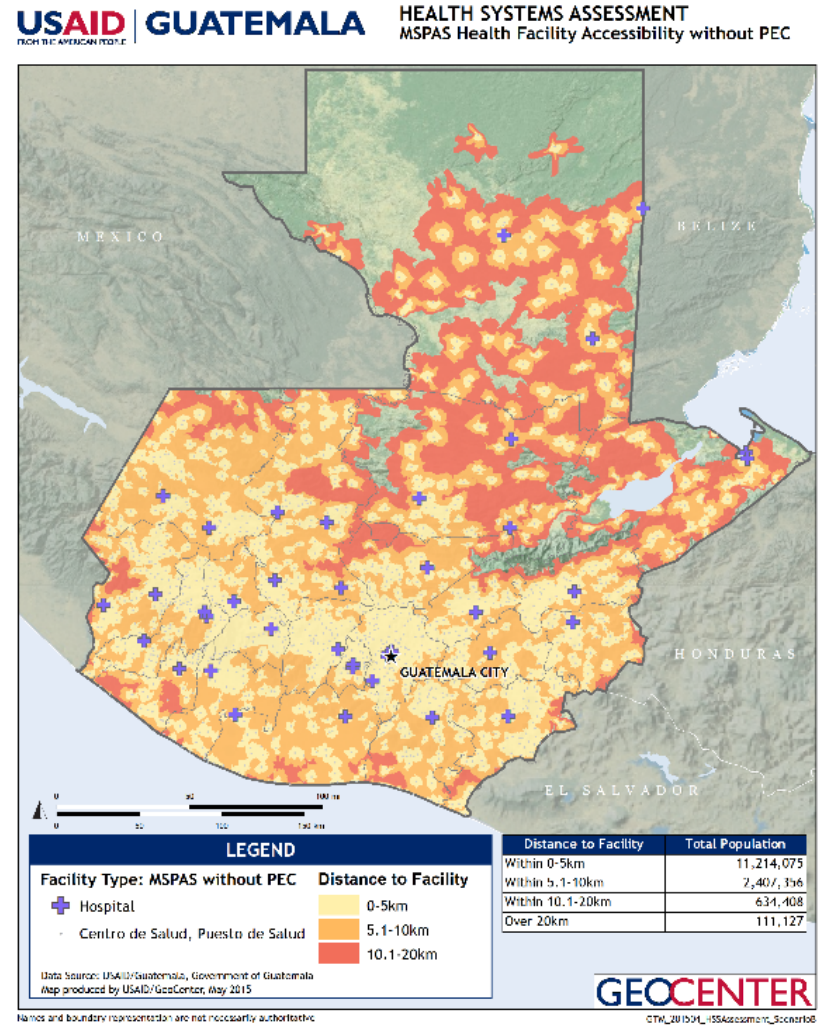
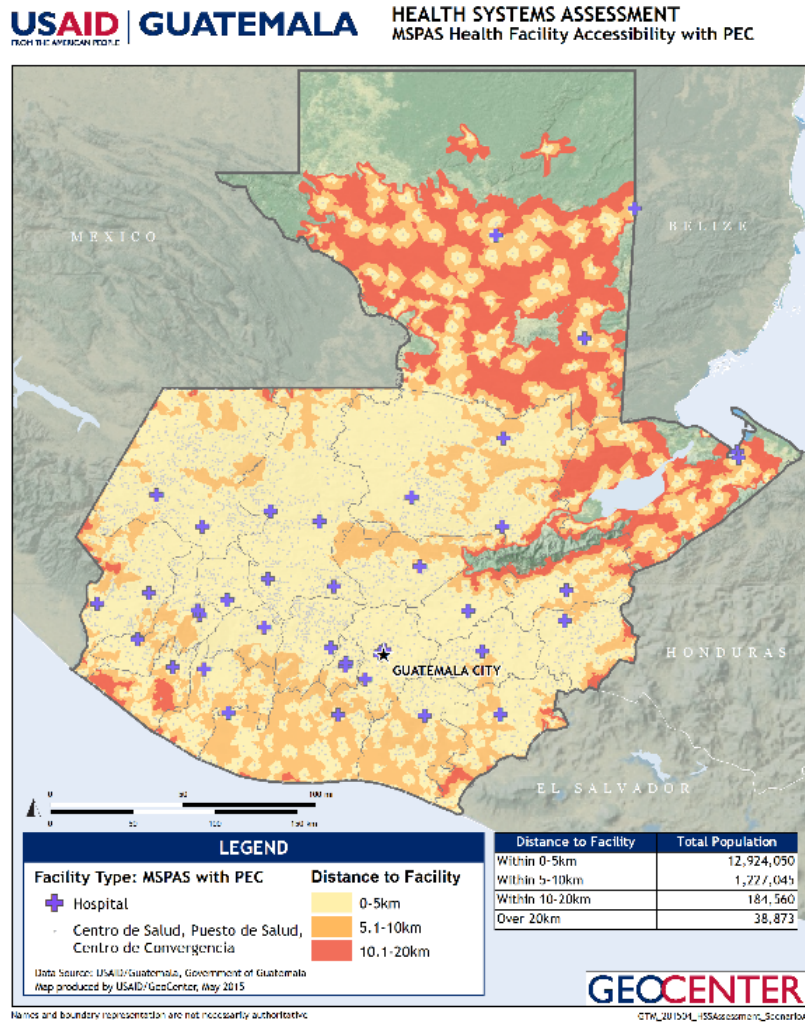
MSPAS is transitioning many of the approximately 2,200 closed PEC Convergence Centers to become new MSPAS health posts, but the HSA team was not able to review any MSPAS data that list the 800-900 proposed new health posts to run the accessibility analysis on the proposed MSPAS network. Table 5.4 shows the geographic accessibility to MSPAS services (measured in terms of population within a range of kilometers to a health facility) with the PEC facilities in place and without PEC facilities in place. The reduction in accessibility, with 1.7 million more Guatemalans now being more than five kilometers from a health facility, is most acutely felt in Alta Verapaz, Quiche, Petén, and Huehuetenango. Regardless of the issues that existed with the PEC network, the loss of over half of the service delivery points in the country will have an impact on access to health services.

TABLE 5.4. GUATEMALAN POPULATION'S ACCESSIBILITY TO MSPAS SERVICE DELIVERY POINTS

With PEC in Place			Without PEC in Place			Under New PHC Strategy		
Accessibility (kilometers)	Population with Access	%	Accessibility (kilometers)	Population with Access	%	Accessibility (kilometers)	Population with Access	%
0-5 km	12,924,050	85.5%	0-5 km	11,214,075	78.1%	<i>To be determined pending roll-out of program</i>		
5-10 km	1,227,045	8.5%	5-10 km	2,407,356	16.8%			
10-20 km	184,560	1.3%	10-20 km	634,408	4.4%			
> 20 km	38,873	0.3%	> 20 km	111,127	0.8%			

Source: USAID GeoCenter 2015

FIGURE 5.8. HEALTH FACILITY ACCESSIBILITY WITH AND WITHOUT PEC, GUATEMALA 2015



Source: USAID GeoCenter 2015

5.4 Utilization and Demand for Health Services

5.4.1 Utilization

Trends in utilization among men, women, and children highlight the fragmentation of the Guatemalan health system and reveal important nuances about provider preferences and access to health services. As shown in Table 2.4 in the Overview Chapter, publicly funded sources (MSPAS, IGSS, and Convergence Centers) account for 98 percent of immunizations among children under five. Notably, however, 28 percent of children received their immunizations at Convergence Centers that were part of the PEC.

On the other hand, utilization patterns among men reveal that the Guatemalan population regularly turns to the private sector for health services, particularly for the treatment of chronic conditions such as diabetes and hypertension (Table 5.5). The percentage of men accessing these services at IGSS facilities roughly mirrors the level of IGSS's coverage levels (17.5 percent), but the low rates of utilization of these services in MSPAS facilities likely indicates barriers to accessing these services in the MSPAS network. These barriers could include facility hours that do not accommodate men's work schedules, medicine stockouts, and the lower prioritization of NCDs as compared to maternal and child health and nutrition. The PEC benefits package did not include interventions for men, nor did it include treatment for NCDs such as diabetes, high cholesterol, or hypertension (Lao Peña 2013).

TABLE 5.5. SOURCE OF CARE FOR MALES AGES 30-59 (%)

	MSPAS	IGSS	Private	Other
Diabetes treatment	21	19	53	7
High cholesterol treatment	15	28	48	9
Hypertension treatment	21	16	54	9
Prostate exam	8	18	60	12

Source: MSPAS 2011

Women in Guatemala tend to access services related to family planning and maternal health, predominantly in the public sector and mostly from MSPAS facilities (Table 5.6). However, the private sector provides 38 percent of family planning commodities, 24 percent of C-sections, and 52 percent of Pap smears, which could indicate barriers to accessing these services at MSPAS facilities, where they are supposed to be provided free of cost. Further, the fact that 48 percent of Guatemalan women deliver in the home or with a TBA reflects not only barriers to care but also the preference of many women to deliver with the assistance of a TBA instead of in a health facility.

TABLE 5.6. SOURCE OF CARE FOR FEMALES AGES 15-49 (%)

	MSPAS	IGSS	Private Clinic or Hospital *	APROFAM	TBA/ Home	Other
Family planning	51	9	22	16	-	2
Antenatal care**	68	7	23	2	44	3
Place of delivery	35	8	7	1	48	-
C-section	59	17	21	3	-	-
Pap smear	39	6	32	20	-	3

* Excluding APROFAM, a major reproductive health NGO

** Row adds to more than 100% as women access services in multiple locations.

Source: MSPAS 2010

Childbearing is highly ritualized in many indigenous communities, and TBAs are viewed as integral part of the process, providing social and spiritual care for indigenous women (Ishida et al. 2012). In addition to their role at childbirth, TBAs provide antenatal care services; approximately 40 percent of pregnancies among indigenous women who received institutional prenatal care also received care from a TBA (Ishida et al. 2012).

Language barriers between indigenous women and predominantly Spanish-speaking health workers in the formal health sector help explain lower utilization rates among indigenous communities. Several studies found Spanish fluency to be the strongest determinant of health service utilization in Guatemala (Chomat et al. 2014; Ishida et al. 2012). In addition, interviewed stakeholders indicated that the indigenous population often lacks trust in public health facilities. According to one qualitative study, experiences of discrimination against indigenous groups at health care facilities, which are predominantly staffed by Ladino personnel, were cited as a contributing factor to the lack of trust. (Rohloff et al. 2011).

5.4.2 Intercultural services

Cultural factors in the utilization of health services hold important implications for increasing the use of health services and improving health outcomes in indigenous communities. Guatemala has passed laws recognizing the rights of indigenous peoples and communities to their cultural identity in accordance with their values, their language, and their customs (Decreto Número 19-2003). MSPAS has made some efforts to address the cultural and social factors that affect maternal health service utilization by offering intercultural services, reflecting agreements under the 1996 Peace Accord that recognized the importance of incorporating traditional medicine into the formal health system. As a result, health facilities began offering culturally appropriate services that included allowing indigenous women to be accompanied by a TBA or family member in the health facility or hospital, use of traditional teas, and choice of birthing position.

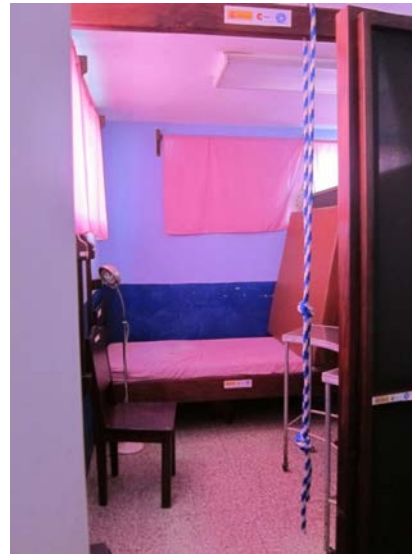
Nevertheless, major challenges to implementing effective intercultural services remain. One qualitative evaluation of the effectiveness of the intercultural services found that the facilities that offered culturally appropriate services lacked standardization; that TBAs generally felt excluded from the health system; and that most users wanted the option of culturally appropriate services but typically did not receive them. TBAs were viewed as assistants to the biomedical system (rather than PHC providers), and their skills were not always valued by biomedical providers, who displayed a sense of superiority based on their institutional knowledge. The study concluded that much work is still needed to change biomedical service provider attitudes toward indigenous people and their obstetric practices in Guatemala (van Dijk et al. 2013).

Stakeholder interviews confirmed that intercultural services have not been fully realized in practice. MSPAS's Intercultural Unit surveyed all health centers of the first and second level to assess how many health centers had improved or implemented national intercultural norms established by the Intercultural Unit. It found that only 50 percent of the health centers were implementing those norms. One interviewee at a health center visited during the HSA showed a room that had been built in the labor ward to accommodate the traditional vertical birthing position. However, the interviewee explained that none of the staff at the facility had been trained on how to conduct vertical deliveries using the equipment and therefore the room had never been used. Such incomplete application of intercultural norms and services highlights the need for training programs to build in more understanding of and engagement with the indigenous communities. In particular, it is necessary to engage TBAs to work with and strengthen referral systems with the formal health system (van Dijk et al. 2013).

FIGURE 5.9. HANDRAILS IN INTERCULTURAL VERTICAL BIRTHING ROOM



FIGURE 5.10. INTERCULTURAL VERTICAL BIRTHING ROOM



Source: Rhea Bright, USAID

5.4.3 Demand

Stakeholder interviewed for the HSA agreed that infrastructure, HRH, and health supplies (equipment, commodities, medications, etc.) are insufficient to meet the demand for services at public health facilities. At the health post level, interviewees explained that the stockouts of essential medicines prevent them from meeting the daily demand of patients; community members reported that as a result, they often bypass the health post and instead travel great distances to seek care at health centers and hospitals, which themselves can experience shortages.

Site visits by the HSA team to Roosevelt National Referral Hospital in Guatemala City indicated that the hospital did not have enough maternity ward beds for all of the women delivering in the facility. At the time of the HSA visit in April 2015, there were only 26 beds for 40 women in need of one. The HSA team observed women delivering on gurneys in the emergency room or on gurneys in hallways because of the bed shortage and lack of appropriate space for attending births. Additionally, the women who delivered on gurneys were not able to have their infants with them after birth. Consequently, those infants were fed formula because the mothers were unable to breastfeed on the gurneys. There were also reports that some patients have had to share beds in the maternity ward when there are not enough beds or gurneys. There also are not enough health workers to attend the births.

Interviewees at Roosevelt Hospital reported that the heavy patient load has also resulted in shorter inpatient time for births. Current inpatient time for a normal birth is one day for a woman delivering her first child. In some cases, if it is not a woman's first delivery or if she delivers early in the morning, she might be discharged that same day. According to hospital nursing staff, the protocol for discharging a complicated birth (e.g., Caesarean sections) previously was 72 hours, but with the shortages of beds, space, and staff, the protocol was changed to 36 hours. No written protocols or discharge statistics were available for review by the HSA team to confirm these practices.

5.5 Quality of Health Services

MSPAS has taken steps to improve quality and quality assurance mechanisms, but frequent turnover of management at the Quality Assurance Management Unit – indeed changes in the existence of the unit itself – has hampered efforts to institutionalize quality improvement processes.

In 2009, MSPAS began an accreditation process to receive a quality management certification from the International Organization for Standardization (ISO). Two years later, Guatemala passed an extensive corporate and financial audit to become the first Central American country to receive ISO 9001:2008 Certification for its central administrative and financial procedures. During the certification process, MSPAS trained its employees on situational analysis and documentation processes and created standardized approaches for administrative and financial aspects of five units: Budget, Accounting, Treasury, Costs, and Technical Assistance and Training Resources. To ensure that quality became a permanent and integral part of the health system, a new unit for Quality Assurance Management was created within MSPAS.

Efforts were also made to improve quality assurance in service delivery. In 2010, the San Pedro Sacatepéquez Health Center in San Marcos Department also received ISO 9001: 2008 Certification with a focus on maternal and neonatal health services. After receiving certification, the health center achieved significant improvements in maternal care. For example, compliance with guidelines for preventing postpartum hemorrhage using active management of the third stage of labor improved from 43 percent to 90 percent (Bustamante et al. 2012).

Despite the stated commitment to and ownership of quality improvement, however, its institutionalization has been uneven. According to the study, the central MSPAS voiced a high level of ownership for quality improvement, though officials expressed uncertainty about its continuation without external technical assistance. Health area offices expressed their own commitment to quality improvement but also expressed doubt about the central level's commitment.

In fact, the fears of the health areas proved true. The MSPAS dismantled the original Quality Assurance Management Unit in 2012. The unit was replaced but was again disbanded in 2014. Key HSA informants explained that the unit was very small, lacked power to make decisions, and was perceived as unnecessary because its sole focus was PHC. They reported that the central MSPAS teams expressed their intention to establish a quality improvement unit for the entire health system, but at the time of writing there is no such unit. The failure to establish a stable body and institutionalized process reflects the discontinuity of personnel and priorities that plagues MSPAS management throughout the health system.

Quality Improvement Collaborative

An improvement collaborative is a shared learning system that brings together a large number of quality improvement teams from communities, facilities, or districts to work together to rapidly achieve significant improvements in processes, quality, and efficiency of a specific area of care, with the intention of spreading these achievements to other sites. Improvement collaboratives seek to adapt and spread existing knowledge to multiple sites. This existing knowledge may consist of clinical practices based on scientific evidence, proven practices that are widely considered as “good” or even “best”, or any other changes to the existing way of doing things that have been shown to result in better health care. Such knowledge is the collaborative’s “change package”: the changes in processes and organization of care that the collaborative seeks to introduce, refine, and spread.

5.6 Findings and Recommendations

Short-term

Poor health outcomes highlight the failure to effectively expand access to priority PHC services; providing access to PHC is the most pressing need for the Guatemalan health system. Whatever government is elected in late 2015, it should ensure that delivery of PHC services is not interrupted or compromised. The new administration will inherit the challenge – and opportunity – to implement lasting reforms that ensure access to PHC services. Additional service delivery issues are the lack of referral systems, which hinders the efficiency and effectiveness of the service delivery networks at all levels, and the need to immediately expand institutionalization of quality improvement and intercultural services.

Recommendations:

- I. Rapidly strengthen and expand comprehensive PHC, prioritizing rural underserved areas, to advance toward universal health coverage (UHC):** Regardless of the implementation strategy – whether through direct service provision by MSPAS or through contracting NGOs as was formerly done – ensuring the provision of PHC services in areas previously served by the PEC is unequivocally the most pressing challenge for the health system. Almost 20 years ago, the roll-out of the PEC enabled an unprecedented expansion in basic maternal and child health services. However, MSPAS should transition away from “selective PHC” benefits packages to provide more comprehensive services, again, irrespective of the implementation strategy. It is too early to tell if the new PHC strategy unveiled in April 2015 will achieve effective coverage in a timely manner, or even if it will survive the next change in administration, but any PHC strategy that seeks to fulfill the government’s constitutional obligation of enabling people’s right to health must seek to provide care for all its citizens. Universality implies just that: universal access to services – for all age groups, all genders, and all ethnicities (Kutzin 2013).

There is a wide array policy reforms that can move a country toward providing achieving UHC, and any country’s strategy to achieve UHC must take into account the challenges of its particular context and political economy. According to a recent review of UHC reforms in Latin America, strengthening PHC has been a common theme. Other themes include increased public financing and channeling resources to the poor, reforming the way providers are paid, pragmatic and contextual approaches to designing benefits packages, and tackling equity across subsystems (Dmytraczenko and Almeida 2015).

As envisioned by PAHO, the goals of “Renewed PHC” consist of equity, solidarity, and the right to the highest attainable level of health. Further, PHC-based health systems are composed of interconnected structural and functional elements including: universal coverage and access; first contact; comprehensive, integrated, and continuing care; a family and community base; and emphasis on promotion and prevention (PAHO 2007b). Two countries whose PHC systems have long served as models in the region illustrate the different paths a country can take to strengthen PHC and move toward UHC. In Costa Rica, *the Caja Costarricense de Seguridad Social*, is financed by payroll taxes, whereas the Brazilian Universal Health System is funded through general tax revenues (Dmytraczenko and Almeida 2015). In both countries, multidisciplinary health teams serve a specified population in their catchment area and perform considerable outreach and health promotion activities. In other countries, such as Peru and Mexico, UHC reforms have focused on expanding social health insurance schemes for populations previously not covered, such as those in the informal sector of the economy. Ultimately, the literature on PHC and UHC emphasizes that there is no single path to achieving UHC. Given the particular context of Guatemala and the recent

cancellation of the PEC, ensuring access to PHC services constitutes the most urgent step to move toward UHC.

- 2. Formalize, document, and institutionalize referral mechanisms to strengthen and integrate service delivery networks:** Priority areas include: a) implementing formal protocols for documenting, tracking, and following up with patients to ensure appropriate care; b) establishing procedures for and dedicating resources to repair non-functioning ambulances; c) strengthening monitoring and evaluation mechanisms to track clinical-level and population-level outcomes; and d) establishing an emergency transportation system to transport patients across difficult terrain, particularly in the rural areas of the country.
- 3. Effectively use intercultural equipment and materials approved by the MSPAS Intercultural Unit and expand the number of providers who speak indigenous languages:** Staff interviewed during the HSA reported that they had not been trained on how to use the intercultural birthing equipment installed in their facilities. It will be important to provide in-service training to properly demonstrate how to perform vertical deliveries using the MSPAS-provided equipment. Providers should also be sensitized on intercultural birthing practices (importance of colors, prayer, etc.) to improve cultural competence at the facility level. Further evaluations should be also conducted to identify and address the root causes of barriers of implementing national intercultural norms at the facility level. It is critical that MSPAS expand the number of health care providers with indigenous language skills to improve communication with key rural communities. This strategy will require recruiting health workers to be trained from indigenous communities, expanding the focus of training programs to include more culturally appropriate methods for indigenous communities, and leveraging community facilitators in a collaborative way.
- 4. Reinstitute the Quality Assurance Management Unit at MSPAS and enhance its authority:** This unit should develop national policies and strategies for implementing quality improvement programs at all levels of the health system for clinical and non-clinical services such as human resources management. Beyond ensuring access to required resources throughout the health system, provider compliance with evidence-based guidelines and standards should be continuously monitored and improved. Quality improvement teams should be formed at all facilities and frontline providers should be capacitated through programs to analyze their own performance by reviewing their facility data; identifying gaps; and conducting rapid tests of change to their care processes to determine whether the changes have led to improvements in compliance and health outcomes. Quality improvement collaboratives should be established to continuously improve service delivery, placing a strong focus on improving the quality of PHC. Lessons learned can be gleaned from the collaboratives that utilized community mobilization and facility-level quality improvement approaches in the San Marcos region to improve essential obstetric and newborn care throughout Guatemala. Improvements from the 22 health centers of San Marcos Department were spread to seven other highlands departments. In the scale-up departments, the proportion of newborns receiving essential care according to standards improved from 33 percent in January 2009 to 97 percent in May 2012 (Franco and Marquez 2014).

Medium- to long-term

Guatemala's double burden of disease and growing levels of NCDs demand a long-term strategic vision to continue progress against priority issues such as maternal mortality and malnutrition, while also reorienting the health system to fulfill the needs of an aging population and evolving epidemiological profile. It is critical that the health system engage in proactive health promotion activities to educate the population and encourage healthier behaviors and use of preventive services. In the long term, MSPAS must also update its infrastructure to ensure that it responds to the needs of a growing population.

Interviewed stakeholders indicated that investments in both PHC and hospital infrastructure have long stagnated.

Recommendations:

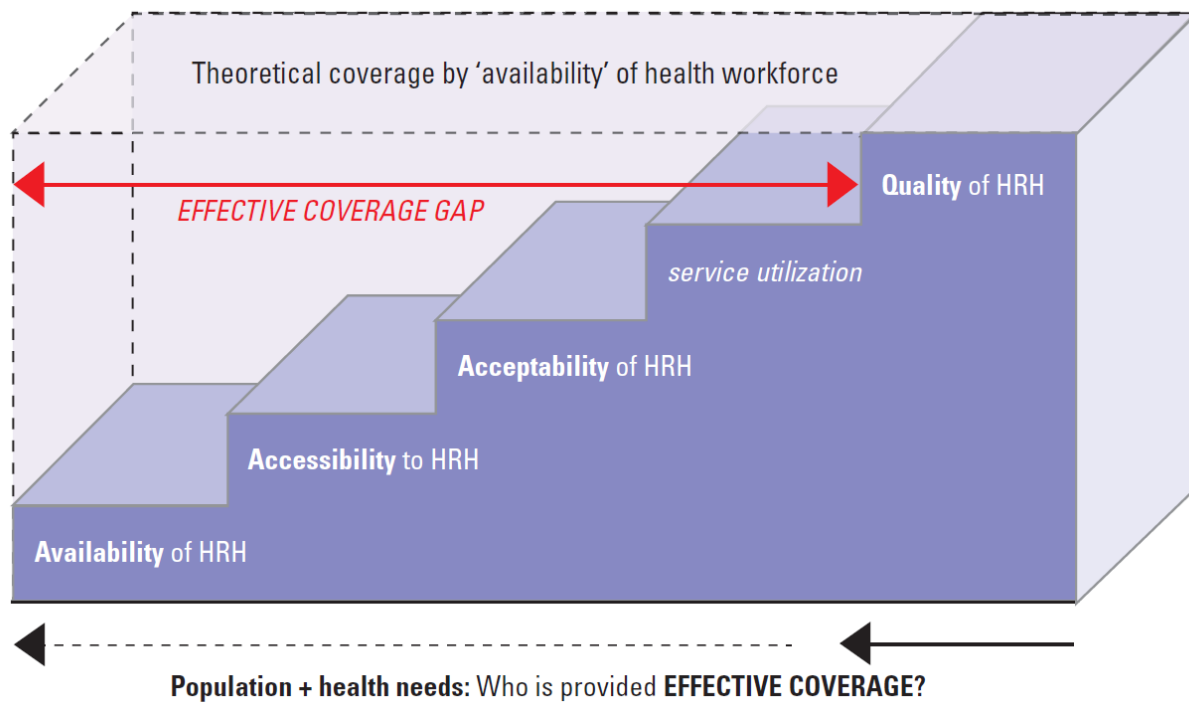
- 1. Reorient service delivery networks to address the growing burden of NCDs and proactively engage in health promotion and prevention activities:** While Guatemala's demographic and epidemiologic transitions are proceeding at a slower rate than in the rest of the LAC region, the country's epidemiologic profile will soon mirror the region's. The aging of the population will steadily increase the burden of noncommunicable and chronic diseases, which will put additional pressures on the health system's already stretched human and financial resources. In addition to pursuing the expansion of comprehensive PHC services that serve the population throughout the life cycle, including late in life, MSPAS must take steps toward health promotion and prevention and activities that reduce risk factors for NCDs. Further, MSPAS must develop more effective mechanisms to track patients, particularly those with chronic health issues, in order to strengthen the continuum of care and improve health outcomes.
- 2. Develop a long-term national infrastructure plan:** Laying the bricks and mortar of a health system is not an "innovative" recommendation, yet physical infrastructure is crucial to creating an enabling environment for the provision of quality services. As discussed in Chapter 4: Health Finance, investment in Guatemala's health infrastructure has long stagnated, and the HSA team witnessed first-hand the need for upgrades and improvements at the sprawling Roosevelt National Referral Hospital. A national infrastructure plan should incorporate a needs assessment prioritizing rural, underserved areas, and must consider in its costs projections the human resources and supplies needed to make facilities operational. An infrastructure plan would set measurable targets to hold leaders accountable for their achievement, and it would present an opportunity to mobilize support for health reform around tangible, easily communicated goals.

6. HUMAN RESOURCES

6.1 Overview of Human Resources for Health

As defined in the World Health Report 2006, the health workforce consists of “all people engaged in actions whose primary intent is to enhance health” (WHO 2006). This definition includes not only health service providers such as doctors and nurses, but also the health management and support workers that are critical to a well-functioning health system. This chapter of the HSA is divided into three main sections: the first summarizes the current human resources for health (HRH) situation in Guatemala through four dimensions critical to promoting universal health Coverage: availability, accessibility, acceptability and quality (Campbell et al. 2013a) (Figure 6.1).

FIGURE 6.1. CRITICAL HRH DIMENSIONS FOR PROMOTING UNIVERSAL HEALTH COVERAGE



Source: Campbell et al. 2013b

The second section follows the Global Health Workforce Alliance HRH Action Framework to assess the six “Action areas” of HRH: Leadership, Policy, Human Resources Management Systems, Education, Finance, and Partnership. An assessment of these six domains allows a deeper look into the causes behind the HRH crisis in Guatemala and lays the groundwork for the development of recommendations. The final section of the chapter provides both short-term and long-term recommendations to strengthen the health workforce in Guatemala.

6.2 Current HRH Situation

The HRH situation varies considerably across the main employers of health workers in Guatemala: MSPAS, IGSS, and the private sector. While detailed data on the number of HRH across sectors were not available for review by the HSA team, National Health Accounts data clearly identify MSPAS, IGSS, and the private sector as the key providers of health services in Guatemala. MSPAS's weak institutional structures for governance and stewardship in Guatemala are exemplified by the lack of unified information systems in HRH, which makes it difficult to measure the number, distribution and performance of health workers throughout the country. The HSA team used available data on HRH in Guatemala to summarize the availability, accessibility, acceptability, and quality of the health workforce.

Availability

According to the WHO, the availability of HRH is defined as “the sufficient supply, appropriate stock of health workers, with the relevant competencies and skill mix that corresponds to the health needs of the population” (Campbell et al. 2013b). The most commonly used indicator for HRH availability is health worker density – the ratio of physicians, nurses, and midwives to the general population. In Guatemala, this was last measured by MSPAS/PAHO in 2013. As shown in the table below, Guatemala has the lowest health worker density in Central America, 12.5 health workers per 10,000 population (MSPAS/PAHO 2013).

TABLE 6.1. HEALTH WORKER* DENSITY IN CENTRAL AMERICA, 2013

Country	Health Workers per 10,000 population
Guatemala	12.5
Honduras	13.6
Nicaragua	16.0
El Salvador	20.0
Belize	23.8
Panama	27.0
Costa Rica	33.8

*Health workers are doctors, nurses, and midwives. Note: Guatemala has few formally trained midwives. As discussed below, a new midwife training program in the Western Highlands seeks to address this shortfall.

Source: MSPAS/PAHO 2013

This health worker density is only about half of the 22.8 per 10,000 population ratio that the WHO recommends as the bare minimum for a functioning health system. It is much lower than both the 34.5 health workers per 10,000 population ratio recommended by the International Labor Organization in order to expand coverage of a comprehensive benefits package to the general population, and the estimated 59.4 per 10,000 required to reduce maternal deaths to less than 50 per 100,000 live births by 2035 under the Ending Preventable Maternal Deaths Initiative (Campbell et al. 2013b).

Accessibility

The accessibility to HRH incorporates aspects such as the equitable geographic distribution of health workers as well as the financial and non-financial costs for patients to access health services (Campbell et al. 2013b). While MSPAS has reduced financial barriers to care with the elimination of user fees, many communities are located far from any health centers and health posts. As many as three million Guatemalans, or 20 percent of the total population, live further than five kilometers from a health

facility¹¹ – a significant distance for families without access to motor vehicles or who live in mountainous regions with difficult terrain. Furthermore, stark inequalities in the accessibility to health workers exist between rural and urban areas. There are 25.7 health workers per 10,000 population in urban areas, compared to only 3.0 in rural areas (MSPAS/PAHO 2013). In other words, accessibility to health workers is more than eight times greater for patients in urban areas than in rural areas. This gap reflects the many challenges to attracting health professionals to rural areas, including difficult living and working conditions, distance to one’s family, and a lack of financial incentives to working in rural areas. Key informants also cited the greater opportunities for physicians in urban areas to supplement their incomes by working in the private sector (known as dual practice) as an additional factor limiting the number of physicians willing to work in the poorer, rural areas of Guatemala.

Acceptability

The WHO defines the acceptability of HRH as “*the characteristics and ability of the workforce to treat all patients with dignity, create trust and enable or promote demand for services; this may take different forms such as same-sex provider or provider who understands and speaks one’s language and behavior is respectful according to age religion, social and cultural values*” (Campbell et al. 2013b). This is a highly relevant topic in a country as diverse as Guatemala, where 40 percent of the population self-identifies as indigenous. According to the 2008-2009 Maternal and Child Health Survey, 20 percent of indigenous women of reproductive age do not speak Spanish (MSPAS 2010), and for those who do speak Spanish, it is often their second language. This language barrier holds important ramifications for the relationship between health workers, who are often monolingual in Spanish, and indigenous users of health services. According to one study using ENSMI data to analyze ethnic differences observed among family planning utilization and institutional delivery in Guatemala, the language barrier is the number one factor driving indigenous women’s lower utilization of health services, above other factors such as education and household wealth (Ishida et al. 2012).

In addition to linguistic and cultural acceptability, the skill mix of health service providers is also an important measure of the acceptability of HRH, and in the case of Guatemala, the skill mix of health service providers in Guatemala is highly imbalanced. While it is difficult to determine an ideal distribution of health worker cadres since the workforce must respond to a country’s specific needs and challenges, the nurse to physician ratio is one crude measure of this distribution. One benchmark of this indicator is the OECD country average of 2.8 nurses to 1 physician, and in resource-limited settings it is generally recommended that the nurse to physician ratio be higher still (Campbell et al. 2013b). In Guatemala, however, the ratio stands at 0.66 nurses per physician (MSPAS/ PAHO 2013). According to the MSPAS/PAHO measurement of HRH goals in 2013, this low density of health workers is compounded by such challenges as high dropout rates in Guatemalan nursing programs (69 percent of nursing students do not graduate [Comisión Inter-institucional 2014]), a lack of recognition for the profession, and low salaries (MSPAS/PAHO 2013).

Quality

The WHO defines quality of HRH as “*the competencies, skills, knowledge and behaviour of the health worker as assessed according to professional norms (or other guiding standards) and as perceived by users*” (Campbell et al. 2013b). Standard indicators for the quality of health workers, as described in the No Health without a Workforce Report, include mechanisms for the accreditation of training institutions and the regulation and licensing of health professionals (Campbell et al. 2013b). In the case of Guatemala, mechanisms exist to accredit medical schools, nursing schools, and training institutions for other health professionals such as auxiliary nurses. Registration with the Guatemala College of Physicians and

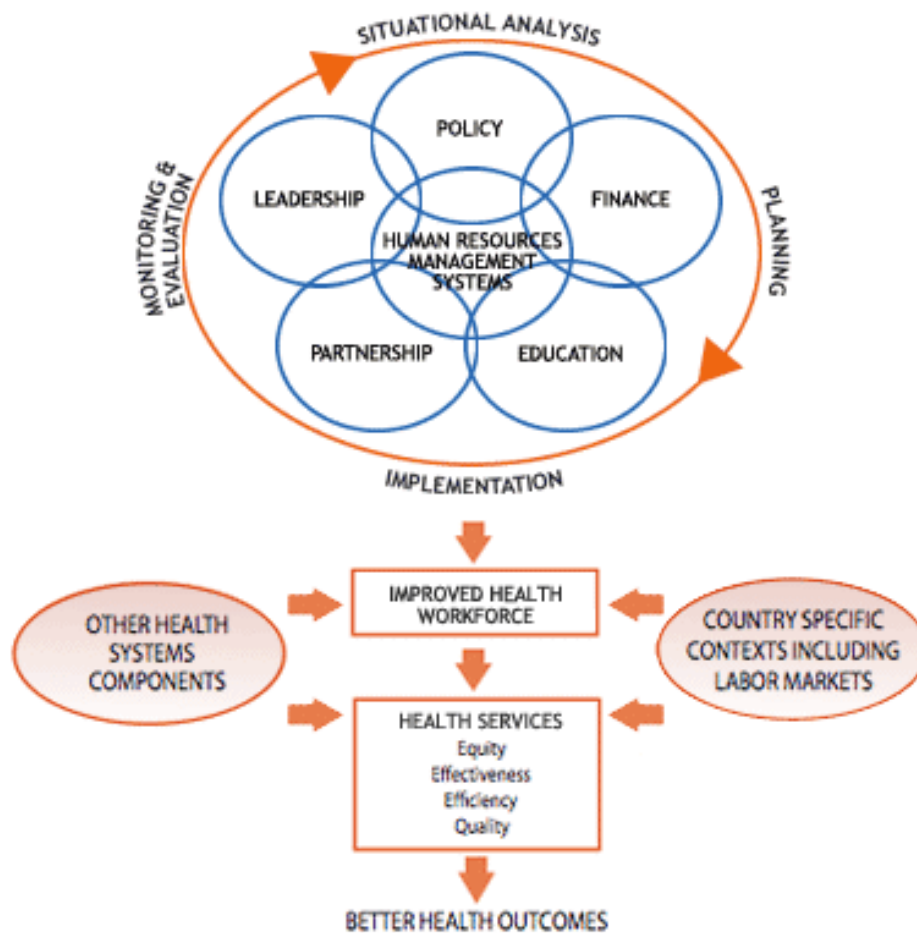
¹¹ See Chapter 5: Service Delivery, for a more detailed analysis on geographic access to health services.

Surgeons (*Colegio de Médicos y Cirujanos de Guatemala, CMCG*) is obligatory by law for all physicians to obtain their license. While the *Ley de Colegiación Profesional Obligatoria* and CMCG statutes stipulate that health workers should undergo periodic re-certification and accreditation procedures, the only requirement in practice is for active members to pay their monthly fees (Decreto 72-2001). Thus there is little regulation of health workers once they are graduated and licensed. According to a recent private sector health assessment conducted by the SHOPS project, there are also few barriers to the establishment of private sector health facilities and minimal regulation of health workers employed through the private sector (Cisek et al. 2015).

6.3 Action Areas

The following section analyzes HRH in the Guatemalan health system through the lens of the six Action Areas of the Global Health Workforce Alliance Action Framework depicted below. These six domains represent areas where governments and ministries of health can implement reforms to influence the performance of HRH. Addressing these six HRH action areas is the key to strengthening the health workforce and improving equity, effectiveness, efficiency, and quality in the provision of services – ultimately resulting in better health outcomes for the population.

FIGURE 6.2. GLOBAL HEALTH WORKFORCE ALLIANCE ACTION FRAMEWORK



Source: <http://www.capacityproject.org/framework/>

6.3.1 Leadership

According to Article 39 of the Executive Branch Law, MSPAS is the principal entity responsible for stewardship of HRH, but MSPAS faces major challenges in achieving more effective regulation of health workers outside MSPAS and of other actors in the HRH arena. As in the health sector at large, budgetary and jurisdictional limitations have precluded MSPAS from establishing serious regulatory capacity over other actors such as IGSS and private sector providers. Furthermore, MSPAS's HRH Directorate (*Dirección General de Recursos Humanos, DGRH*), directs its efforts mainly toward the management and administration (i.e., contracting, payroll, hiring) of MSPAS's workforce and less to the governance (i.e., policies, regulation, coordination) of HRH throughout the health sector. According to an evaluation of HRH processes among four MSPAS administrative units (including the DGRH), all four organizations received a score of 1 out of 4 (with 1 being the lowest score) in relation to management and development of leadership capabilities among personnel (Barrientos 2013). While other efforts have been made regarding the in-service training of personnel, the topic of leadership has simply not been a priority.

The lack of continuity among senior-level MSPAS staff along with high levels of staff rotation throughout the agency contribute to weak leadership in HRH. Statistics regarding health worker rotation were not available to the HSA team; however, HSA key informants confirmed that turnover is frequent throughout the Guatemalan health sector. In the four years of the Perez Molina presidency, for example, there have been three ministers of health. Staff turnover at the top impacts the morale of health workers at the lower levels. As Barrientos reports, the turnover and rotation of MSPAS is seen as normal in the organization's culture: *"it is well known that the arrival of new personnel in positions of authority implies changes in procedures and the way things are done, discouraging a sense of belonging and dedication from existing personnel, and given the lack of documented and institutional processes, resulting in a loss of institutional and organizational memory"* (2013).

This sentiment was shared among many of the stakeholders interviewed both inside and outside of MSPAS, who noted that the lack of merit-based criteria for the selection and appointment of personnel as another major challenge to strengthening HRH. Beyond the rotation of high-level administrators, political pressure from other actors such as unions and politicians also influences the selection process. A scandal broke in late 2014, for example, when an audio recording of a congresswoman instructing a health area director to hire and fire personnel surfaced on the Internet. The health area director was subsequently removed from his post by the Minister of Health, although the *Ministerio Público* dismissed the charges that were leveled against the congresswoman (http://www.elperiodico.com.gt/es/20141106/pais/4448/Ministro-identifica-a-diputada-y-jefe-de-Salud-en-grabaci_percentC3_percentB3n.htm).

In sum, weak governance and stewardship of HRH affects the health system on multiple levels, limiting MSPAS's capacity to effectively regulate health workers, to engage in long-term planning for the development of HRH, and to implement policy changes to improve the distribution, management, and performance of MSPAS's health personnel. In light of these challenges, the participation and partnership of other actors in the arena of HRH is critical to providing leadership, strengthening the capacity of MSPAS to govern HRH, and ultimately improving the condition of HRH and strengthening the health system.

6.3.2 Partnerships

The involvement of many diverse actors in HRH necessitates strong partnerships to develop and implement policies that effectively improve the health workforce. The Interinstitutional Commission for Joint Action between the Health and Academic Sectors (*Comisión Inter-institucional de Acciones Conjuntas del Sector Académico y del Sector Salud*, or Commission), is one such partnership that brings together representatives of MSPAS, IGSS, Sanidad Militar, PAHO, and the leading training institutions in Guatemala for physicians and health workers to contribute to stronger research in the health sector and to address challenges in the training and education of health workers. The Commission also created the National HRH Observatory (*Observatorio Nacional de Recursos Humanos en Salud*) to collect and share information on the state of the health workforce in Guatemala. While the Observatory's website contains data from the last measurement of Guatemala's progress toward PAHO's Regional HRH goals in 2013, it generally does not provide up-to-date information on the size or composition of the workforce. Health institutions are supposed to submit data to the Observatory every six months; however, key informants noted that this schedule is rarely followed, and institutions typically respond to ad hoc requests rather than complying with routine reporting.

The international community has played a major role in partnering with MSPAS and the Commission. In 2007, the 27th Pan American Sanitary Conference adopted Resolution CSP27.R7, "Regional Goals for Human Resources for Health 2007–2015." This resolution established 20 goals for addressing the region's HRH challenges, and PAHO's Regional Observatory of Human Resources in Health has supported countries to collect data on 20 indicators measuring progress toward these goals. After establishing a baseline in 2011, MSPAS/PAHO conducted a second measurement in 2013. The reports from these studies provide the latest comparable data on HRH throughout the region, and in Guatemala, these reports provide the latest combined indicators of the health workforce incorporating data from MSPAS, IGSS, *Sanidad Militar*, and the private sector.

In addition to academic institutions and international organizations, unions are a key player influencing the direction of HRH in Guatemala. After drawn out negotiations in 2013, MSPAS signed an agreement with the *Sindicato Nacional de Trabajadores de Salud de Guatemala* (SNTSG), the predominant union of MSPAS personnel. The agreement, known as the *Pacto Colectivo* in Spanish, commits MSPAS to, among other things, hiring more personnel as permanent staff instead of contractors. It was noted by the *Centro de Investigaciones Nacionales* (CIEN), that the agreement includes only concessions to SNTSG and adds benefits for the employees with no mechanisms and agreements to improve performance or accountability of health workers (Casasola 2014).

6.3.3 Policy and Planning

HRH policies and planning suffer from the same challenges to sustaining long-term plans throughout the health sector, as explored in further detail in Chapter 3: Governance. MSPAS developed the HRH Strategic Plan 2007-2015, for example, but this plan did not receive much traction. More recently, HRH was included as one of seven priorities outlined in MSPAS's 2014-2019 Strategic Plan. The five strategic objectives within the plan for HRH include: 1) provide continuing education to management and administrative personnel; 2) establish a public health administration career track for MSPAS personnel; 3) develop a human resource management plan; 4) establish PHC teams (*equipos básicos de salud*) to expand coverage and guarantee access; and 5) professionalize MSPAS's workforce. Much like earlier strategic plans, however, these goals have not achieved high levels of political commitment, in large part due to the continuous turnover of staff throughout MSPAS with each new political administration.

An outdated legal framework stands in the way of reforms to modernize and professionalize the health workforce. The current civil service law governing MSPAS's workforce policies dates to 1971, for example, and a proposed law seeking to create an administrative career track within MSPAS, the *Ley de Carrera Administrativa-Sanitaria*, has been stuck in Congress for years. Such a reform would contribute to improving the transparency, accountability, and development of MSPAS's administrative workforce. Many interviewees for this assessment noted that the outdated legal framework was one of the key barriers to reforming compensation policies and implementing incentives-based programs to recruit and retain health workers in rural areas, where there are critical shortages.

Despite the challenges to implementing long-term strategic plans, there are policies and mechanisms in place governing the accreditation, licensing, and regulation of health workers, as described above in the section on Quality of HRH. There are also policies in place to incorporate foreign health workers; the Universidad de San Carlos is responsible for their certification, though there is no international code of practice or regional agreement governing ethical recruitment and migration among health workers in the region. According to local HRH experts interviewed, in spite of the shortage of health workers in many parts of the country, Guatemala is not a net importer of health workers.

There are few barriers to the establishment of private sector health services and the hiring of health workers in the private sector. The only certification required for physicians is the registration with the CMCG, which is obligatory for all physicians according to the *Ley Obligatoria de Colegiación*. Similarly, other health cadres are required to enroll with their respective associations (*colegios*), and according to interviews conducted, CMCG has registered more than 19,000 physicians and health workers. Unfortunately, it does not appear that CMCG maintains up-to-date records of where these health workers are employed, or whether they leave the workforce, according to many stakeholders interviewed.

Neither CMCG nor other institutions in Guatemala compile aggregate data on the number of physicians working in both the public and the private sector. Many of the interviewees noted, however, that many physicians employed by IGSS and MSPAS also work in the private sector, where compensation levels are higher. The absence of a reliable data set on HRH work locations in Guatemala makes analysis of the practice difficult and regulation of the practice impossible.

6.3.4 Human Resource Management Systems

Key challenges to improving the management of the MSPAS workforce include: 1) fragmented contracting mechanisms; 2) fragmented information systems; 3) variable application of hiring and recruitment norms; and 4) weak performance management systems. Together, these challenges inhibit development of long-term plans for HRH that have mechanisms for performance evaluation, transparency, and accountability.

One of the main challenges to improving human resources management systems in Guatemala is the growing number of personnel contracted via temporary contracts as opposed to permanent civil service staff positions. According to key stakeholders interviewed, this has been a growing trend since the signing of the Peace Accords in 1996 and the health reforms of the 1990s. According to the latest figures, more than half of MSPAS's workforce is contracted through temporary mechanisms (MSPAS 2014a). These contracts must be renewed every year and they typically entail lower salaries and do not include benefits. By contrast, civil service employees of MSPAS are covered under the medical aid plan operated by IGSS and are permanent employees of the government. According to stakeholders interviewed, there are much high rates of turnover among contracted employees than among those on staff with MSPAS.

The DGRH collects information on health workers in two separate systems – one for the permanent staff, and one for temporary staff. Both systems are primarily used for contracting and payment purposes. Neither system collects qualitative information, such as employee absenteeism or summaries of job performance reviews. There are also no statistics on staff turnover. GUATENOMINAS is the information system used for permanent MSPAS staff and serves as the payroll system for the entire public sector; it was not built as an HRH management tool to track performance indicators. The task of tracking HRH performance across the health system is further hampered by the fact that MSPAS has delegated administrative functions to 85 lower-level administrative units (mainly hospitals and health areas), each of which have different levels of management capacity. In effect, MSPAS has 85 human resources units managing 85 payrolls for permanent staff.

HRH data on staff contracted through temporary mechanisms, on the other hand, is entered in the iHRIS system, which was implemented recently with USAID support through Intrahealth's Capacity Project. iHRIS is an open-source software, and the system now houses information on over 19,000 health workers employed by MSPAS. The system boasts a broad range of functionality to track where people are deployed, salary history, promotions and transfers, educational qualifications, in-service training courses taken, reasons for attrition, and open job positions and applicants for those positions. Guatemala, however, has mainly used it as a system for entering contract data. HRH data in iHRIS incorporates data from the 85 administrative units, allowing the DGRH to consolidate the payroll and crosscheck the information on contracts for temporary workers and ensure that health workers with contracts at different hospitals cannot have two or more 40-hour work week contracts, for example. Thus, the system can be used to eliminate ghost workers from the payroll. The process for entering data into iHRIS is centralized in the DGRH, however, and interviewees indicated that the contracting process remains a constant flow of paperwork travelling back and forth between the health areas and the DGRH. In sum, while iHRIS has helped improve the transparency of contracting for HRH hired through temporary mechanisms, the information system is not being used to its full potential in facilitating the management of the health workforce, and this is complicated further by the disconnect between iHRIS and GUATENOMINAS systems.

MSPAS's HRH information systems do not incorporate data from the rest of the health sector. While IGSS employs an effective system and publishes annual statistical reports of its workforce, there is virtually no unified data on the health workforce in the private sector. The data reported through the National HRH observatory remains incomplete at best, and the lack of sector-wide data constitutes a significant challenge to developing long-term sector planning. Further, the fragmentation of MSPAS's own information systems contributes to poor management of the MSPAS workforce.

The management processes for recruitment, selection, and hiring of personnel could be improved to increase efficiency, transparency, and accountability. Despite clearly established processes for hiring personnel at the central level, studies have noted that there is a lack of transparency in recruitment and selection, and there is variable application of recruitment and selection norms and policies across the different administrative units (Barrientos 2013). MSPAS has established only limited onboarding and training processes for new hires.

Weak performance management processes throughout MSPAS are a major impediment to improving performance and staff morale. Key informants described weak supervision systems and reported that there is no systematic evaluation of performance of the health workforce; some stakeholders suggested that only medical interns and residents in training hospitals undergo formal performance evaluations. The criteria for salary increases established by the *Pacto Colectivo* with the predominant health worker union rewards permanent staff based on how many years they have worked in MSPAS, irrespective of performance. General disciplinary procedures are outlined in the Civil Service Law, although these are not uniformly applied across MSPAS (Barrientos 2013). Key informants indicated that even in cases of

egregious violations committed by MSPAS personnel, it is very difficult for DGRH to fire permanent staff members because of complex judicial processes demanding a high burden of proof justifying the termination of employment of civil servants. Regardless of whether there are actually formal performance review mechanisms in place for MSPAS employees, the prevailing sentiment found by the HSA team is that health workers feel that promotion and rewards are not based on objective performance measures such as the quality of the work being performed and feedback from communities being served. These feelings are likely to have a significant impact on health worker morale across the health system.

6.3.5 Financing

Health worker salaries and benefits make up major share of costs for the Guatemalan health system. In 2012, HRH comprised 48 percent of MSPAS's assigned budget, though recent statistics do not disaggregate general government expenditures on HRH between MSPAS and IGSS. MSPAS has set compensation and benefits plans for permanent employees based on the *Pacto Colectivo*. However, fewer than half (46 percent) of MSPAS's 49,074 workers are employed through such mechanisms (MSPAS 2014a). The remaining employees are hired on temporary contracts, which typically have few benefits and lower salaries, and must be renewed on an annual basis. In addition, there are no financial incentives for either type of employee to work in rural areas, further limiting MSPAS's ability to effectively deploy health workers to where they are needed most.

6.3.6 Education and Development

Education and development institutions training health professionals to address the health care needs of the population are critical players in the creation of a strong health workforce, and education is a prominent component in the MSPAS 2014-2019 Strategic Plan. Four of the five strategic objectives related to HRH are directly related to education: continuing education to management and administrative personnel; development of a career track; creation of multidisciplinary health teams with a PHC focus; and professionalization of MSPAS's workforce (MSPAS 2014b).

There are five universities that train physicians in Guatemala, with the national public university, the Universidad de San Carlos, training the greatest number. Most physicians are trained in the capital, where all of the medical schools are located, though the Universidad de San Carlos has three regional centers that also train smaller cohorts of medical students – Quetzaltenango in the west, Chiquimula in the east, and Escuintla in the south. Four of the eight universities and centers have only begun their medical programs within the past 10 years. Specialist training is also highly concentrated in the Department of Guatemala. According to MSPAS's latest statistics, 844 of the 1,525 residents working in MSPAS facilities work in just two hospitals in Guatemala City (ONHRS 2015).

While key informants agreed that Guatemala's medical schools are producing competent physicians, many expressed concern that the typical medical school student is more interested in specialization than in providing much needed PHC services in rural underserved communities. Some key informants argued that because of the strong biomedical and curative focus of medical schools, graduating physicians do not enter the workforce with an adequate preparation to address the country's basic PHC needs; interviewees noted that there was a lack of focus on social determinants of health and preventive and primary care among the medical curriculum currently in place. As noted in the Service Delivery discussion, the language barrier between indigenous women, who are not fluent in Spanish, and the Spanish-speaking staff at most health care facilities, continues to be an obstacle in service utilization among indigenous women. Medical schools have embarked on reforms to strengthen elements of PHC and add issues in social determinants of health to their curricula, but challenges remain to strengthening

the joint training of physicians with other cadres of health workers in order to prepare them to become members of cross-disciplinary health teams (Comisión Inter-institucional 2015).

Nursing schools are widespread throughout the country; the Universidad Panamericana has a nursing program available in 22 different centers, for example. Nonetheless, dropout rates are high among both physicians and nurses. According to MSPAS/PAHO 2013 data, 69 percent of medical and nursing students do not complete their degrees on time. Challenges to increasing the number of nurses in the workforce also include a lack of recognition for the profession and low salaries (MSPAS/PAHO 2013). According to one study of nursing students who dropped out of five major nursing programs between 2010 and 2012, 59 percent dropped out for academic reasons, such as failing a course. Other reasons for dropping out included dissatisfaction with professors (14 percent), dissatisfaction with the school's facilities (20 percent), and financial difficulty (35 percent) (De León and Solís 2013).

Given the challenges to increasing the numbers of professional nurses, MSPAS has increasingly relied on auxiliary nurses to staff health posts and centers throughout the health system. Auxiliary nurses in Guatemala receive 10-11 months of full-time training (as opposed to three years for registered nurses), which includes care and treatment for common childhood illnesses such as diarrhea and pneumonia. While they are trained to assist with uncomplicated deliveries, they are ill-prepared to handle obstetric emergencies, and yet they were described by key stakeholders as having “*become the backbone of the PHC system in rural areas*” because they can be quickly trained and deployed. Auxiliary nurses are educated in MSPAS training centers throughout the country as well as other training institutions accredited by MSPAS.

MSPAS and its partners have made important strides in developing other cadres of health workers to meet the country's HRH needs. Currently, Guatemala has few formally trained midwives, as no midwife training program has been available. To address this gap, MSPAS is partnering with the Guatemalan Universidad Da Vinci and the Peruvian Universidad de San Martín de Porras to implement a new midwife training program in the Western Highlands Department of Huehuetenango. Implemented by the Universidad Da Vinci, the program will receive funding from MSPAS to provide scholarships for students from local communities. The Universidad de San Martín de Porras will provide technical assistance, drawing from experience implementing a similar training program in Peru. A response to Guatemala's elevated maternal mortality ratio, this program intends to strengthen the supply of skilled birth attendants in rural areas by training students more closely to their communities in the expectation that these students are more likely to speak their local languages and return to serve their communities.

Finally, no discussion of the health workforce in Guatemala would be complete without mentioning the community members who participate in the health system. Guatemala has cadres of community health workers (*facilitadores comunitarios*), TBAs (*comadronas*) as well as other traditional healers. Community health workers played a critical role in the expansion of the PEC, as well as in other service delivery models such as TulaSalud's telemedicine approach. According to plans shared recently by MSPAS, they will continue to play a big role in MSPAS's new strategy for PHC. In addition to community health workers, Mayan TBAs, and traditional healers have long been the first source of care for much of Guatemala's indigenous population. The *Modelo Incluyente de Salud* (MIS) for example, has engaged with TBAs and traditional healers to assist in disease surveillance, and TBAs also play a major role in referring delivering mothers to health facilities.

The continued education and professional development of health workers is also key to their sustained performance. In MSPAS's DGRH, the Department of Training and Development (*Departamento de Capacitación y Desarrollo*, DECAP) oversees all aspects of in-service training and capacity building. DECAP develops annual in-service training plans in order to strengthen the capacity of the 85 administrative units.

6.4 Findings and Recommendations

Short-term

Inequalities in access to health service between urban and rural suggest that the government of Guatemala should prioritize the expansion of health services in rural areas. With a health worker density of 26 skilled workers per 10,000 population in urban areas as compared to three per 10,000 in rural areas, access to skilled providers is eight times greater in urban areas. The elimination of the PEC program in 2014 without a ready-made mechanism to replace it has exacerbated the challenges to accessing health services in rural areas, while the proliferation of temporary contracting mechanisms has taken a heavy toll on the health system and its workers. Temporary contracts create unstable working conditions for health personnel and contribute to high rates of staff turnover, which in turn perpetuates the influence of external actors in staffing decisions. As the evidence from Ishida et al. (2012) demonstrates, language barriers between health workers and marginalized, indigenous communities present a major obstacle to the utilization of health services among those populations.

Recommendations:

1. **Reduce reliance on temporary employees** and implement health worker performance monitoring and improvement. The *Pacto Colectivo* runs through 2015; it should be renegotiated to continue advocating for the transition of health workers to civil service provisions, while pushing for increased mechanisms for performance evaluation, transparency, and accountability. As an initial step, MSPAS should explore longer-term contracts that provide some (if not all) of the benefits afforded to permanent employees, while also initiating performance-based mechanisms within each contract type.
2. **Establish incentives for health workers to relocate to rural areas:** Increasing pay and benefits to physicians, nurses, and other cadres of skilled health workers is an effective strategy to redistribute health workers to rural areas (Maeda et al. 2014). These incentives could be tied to academic and/or social support programs and scholarships for nursing programs to reduce the extraordinarily high dropout rates.
3. **Recruit and train multi-lingual health workers from rural areas** who are more closely aligned to the communities they intend to serve. This strategy will require recruiting health workers to be trained from indigenous communities, expanding the focus of training programs to include more culturally appropriate methods for indigenous communities and leveraging community health workers in a collaborative way. At the same time, medical and nursing schools need to continue to reorient their curricula toward PHC in accordance with the needs of the population, as well as toward the training and development of multi-disciplinary health teams.
4. **Engage TBAs and practitioners of traditional medicine** to strengthen referral systems and surveillance mechanisms. The active participation of trusted community members such as TBAs and traditional healers in the “formal” health system would improve the trust of indigenous communities in health service providers and improve utilization of key health services, including delivery in a health facility.

Medium- to long-term

To enable an organizational culture that is based on accountability and merit, MSPAS must transition personnel to better-structured, civil servant positions. Permanent civil service hiring mechanisms entail their own challenges to improving performance and accountability – as well as increased financial costs – but reducing the number of personnel in temporary positions that lack benefits and stability is critical to enabling a better management and performance of the health workforce. Guatemala needs an updated legal framework in order to professionalize the workforce and establish clear and transparent mechanisms for hiring, compensation setting, and promotions. One major barrier to the establishment of performance evaluation systems, as well as to the general management and governance of HRH, is the lack of high-quality, comprehensive, up-to-date, and accessible information on HRH.

Recommendations:

- 1. Fast track the currently stalled *Ley de Carrera Administrativa-Sanitaria*** through the legislative process in order to create the appropriate framework for accountable, career-track position for MSPAS health workers.
- 2. Institutionalize the HRH planning process:** (i.e., identifying gaps in HRH needs, developing training, and recruitment and retention programs) and ensure that it is aligned with the broader MSPAS strategic planning efforts, thus aligning HRH development with achievement of health system strategic objectives that do not change with each new political administration. It is necessary to develop a national HRH strategy with clear, measurable targets that are used to guide the human resource decisions of the 85 lower-level administrative units for both permanent and contracted staff.
- 3. Implement the full spectrum of functionality for the iHRIS system** to all MSPAS personnel in order to more effectively track, monitor, and plan for the effective and efficient allocation of health workers across the system.
- 4. Sensitize health workers obstetric practices in indigenous communities:** Pre-service and in-service education for biomedical service providers needs to include materials to educate health workers on indigenous obstetric practices. Staff at facilities equipped to offer intercultural services should be properly trained on how to integrate and implement intercultural complementary practices in their health facilities. Further evaluations should be also conducted to identify and address the root causes of barriers for implementing national intercultural norms at the facility level.

7. HEALTH INFORMATION SYSTEMS

7.1 Overview of HIS in MSPAS

Guatemala's health services network is composed of primary-, secondary-, and tertiary-level health services. MSPAS had a network of over 2,200 service units as of April 2015 (SIGSA 2015a) and the network is being expanded. Historically in Guatemala, the tertiary service level, which comprises the hospitals, has been managed independently from the first and secondary level. From a broad range of interviews, the HSA team learned that the administrative, medical resources, and service delivery planning for hospitals and primary- and secondary-level units has limited space for integration of data; therefore, effective coordination relies on good relations between key health officials.

Most service delivery records are compiled and managed by the Office of Health Management Information Systems (SIGSA) using the SIGSA set of reporting tools.¹² The primary and secondary level health units report their statistics in a disaggregated way, while most hospitals report in an aggregated way; however, there are written templates (SIGSA 2013) and manuals (SIGSA 2015a) to include the hospital service delivery records in a disaggregated format. All levels of health service delivery in Guatemala use the same malnutrition and maternal mortality surveillance forms, epidemiological reporting forms, and reporting platform for epidemiological surveillance, called Epiweb.

In addition to SIGSA, Epiweb, and the epidemiological reporting forms, other information systems are managed or used in MSPAS, and MSPAS health facilities. For example, INFHOS is an information system for hospitals, Siviagua is the information system to report on water and sanitation, SIAF is the Ministry of Finance integrated system of financial information that MSPAS uses for resource management, and iHRIS has been implemented within the Office of Human Resources of MSPAS to manage health workforce information. The list of health information systems (HIS) and tools known by SIGSA includes more than 40 information systems; however, interviews with officials from MSPAS and external stakeholders indicates that there are likely many more than 40.

SIGSA is responsible for integrating all databases needed to make informed decisions at each level of MSPAS (SIGSA 2015b). It is also the single entity responsible for managing, leading, guarding and maintaining the information system platform of MSPAS and for improving the current information systems or creating new subsystems. From interviews the HSA team learned that SIGSA has prioritized integrating all MSPAS databases and information systems, and it has focused on improving the quality of data collected mainly through SIGSAweb, a web-based platform of most SIGSA tools. However, neither SIGSA nor other offices in MSPAS have strategically planned the integration of all the information systems needs within MSPAS considering the real use of the information and the burden that information system(s) put on local staff. Therefore, MSPAS's HIS tools have been developed and continue to be developed as a response to *ad hoc* decision-making requests from top officials and donors based on their dissatisfaction with existing information quality or accuracy for their particular needs.

¹² In this report, , as in MSPAS, "SIGSA" refers both to the MSPAS Health Management Information Systems coordinating office and to the information management system itself.

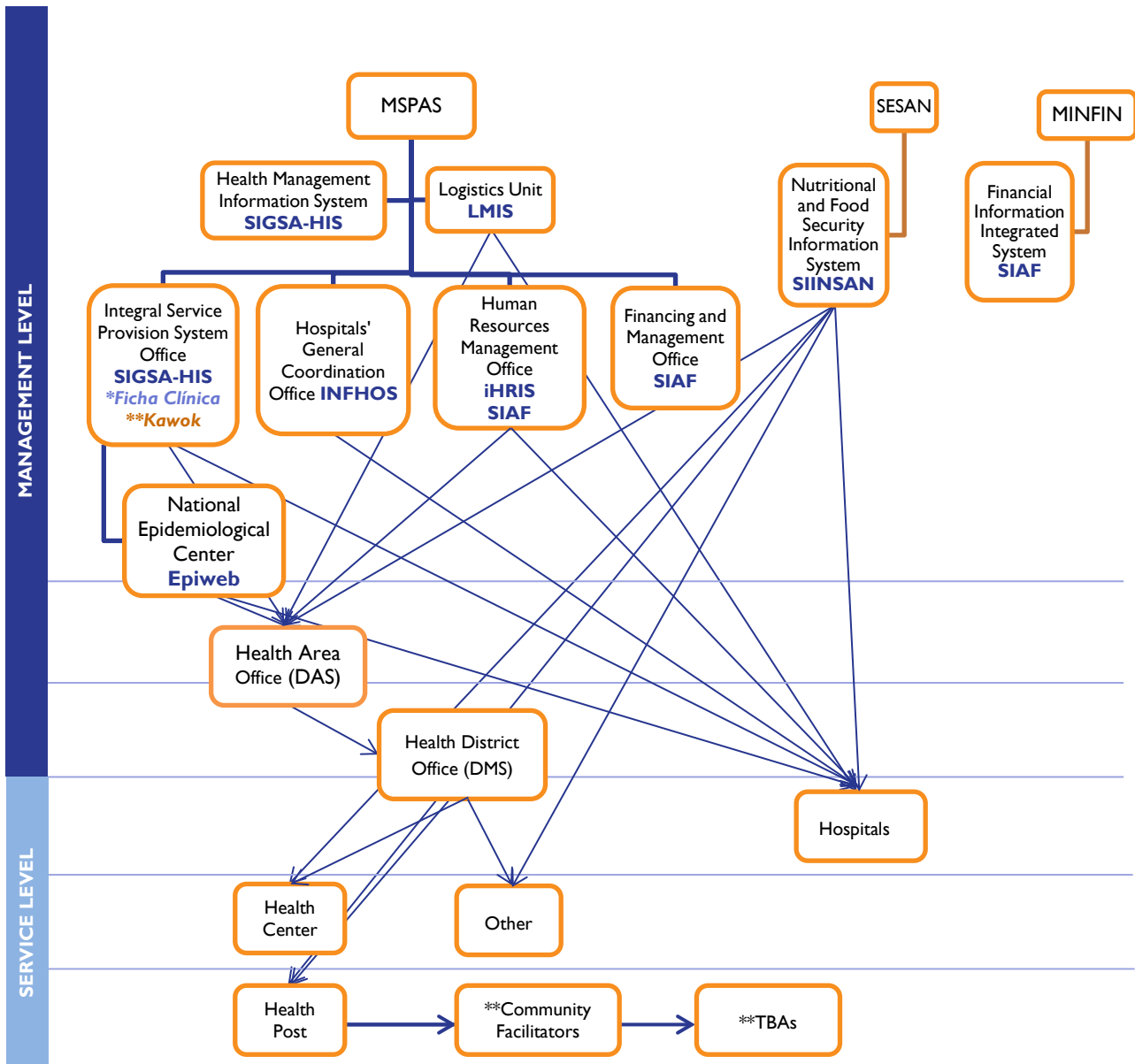
Assessment interviews confirmed that MSPAS's HIS is only capable of providing information from MSPAS service centers and with a few exceptions some information from IGSS. Aggregated health data from IGSS and MSPAS have been published for 2007-2009 by the National Health Sector Statistics Coordination Office, (known as OCSES) within the National Institute for Statistics (*Instituto Nacional de Estadística*, INE) (MSPAS/PAHO 2007-2009). From interviews, the HSA team learned that the OCSES is currently working on the 2010-2012 report but at the time of this assessment, data were not yet available. The interviewees also noted that epidemiological information is only shared across private and public sector in cases of emergency.

7.2 Information Platforms

Two weeks of in-country information gathering was too short a time for the HSA team to compile a complete inventory of all the existing platforms and record keeping in Guatemala's health sector. Therefore, this section will primarily focus on the health applications that SIGSA manages and on platforms that interviewees identified as the most important pieces of the overall HIS within Guatemala. Figure 7.1 shows offices in central MSPAS and other national ministries and secretaries with key roles in information system platform design, management, and use. This figure also shows the relations across management, implementation, and service delivery entities developed to fulfil the reporting needs of the information systems platforms in the health sector identified during this assessment. Finally, the figure includes important information platforms that are under development or in scaling-up planning stages.

This inventory does not include information on private sector, IGSS, and numerous health projects' information systems not managed by MSPAS.

FIGURE 7.1. MANAGEMENT AND SERVICE LEVELS IN MSPAS AND INFORMATION SYSTEM PLATFORM RELATIONS



*The Ficha Clinica has not been implemented but it would follow the same reporting structure as SIGSA and would replace its current information collection forms.
 **Kawok is a mobile phone technology developed by TulaSalud included in MSPAS's new PHC strengthening strategy.

7.2.1 Individual and Service Information Platforms

7.2.1.1 SIGSA

SIGSA is the Guatemalan health management information system. It was created to generate quality, timely, comprehensive, useful, and precise information about the health sector and focus areas for MSPAS so that they and other decision makers in the health sector can make the best decisions. In recent years, SIGSA has focused on making the information useful and easy to use, and on having a well-regulated information system, managed by trained staff and supported by the appropriate technology (SIGSA 2015a).

Table 7.1 lists SIGSA's main information collection and reporting tools. Most of these are available and can be accessed via SIGSAweb; however, some are reported in Excel spreadsheets that are consolidated at different levels.

TABLE 7.1. MAIN INFORMATION TOOLS MANAGED BY SIGSA

Name	Form
Monthly births registration	SIGSA 1
Monthly deaths registration	SIGSA 2
Daily record of medical consultations, health center	SIGSA 3CS
Daily record of medical consultations and post-consultations, health post	SIGSA 3PS
Daily record of medical consultations, hospitals	SIGSA 3H
Daily record of medical post-consultations, health centers and hospitals	SIGSA 4CS
Health record of children younger than 5 years old	SIGSA 5A
Immunization record for women 15 to 49 years of age	SIGSA 5B
Immunization, food security and nutrition monthly report	SIGSA 5C
Supplementation with vitamins monthly report	SIGSA 5C Annex VME
Follow-up of acute malnutrition	SIGSA 5DA Follow-up
Monthly report of acute malnutrition with no complications	SIGSA 5DA
Service output monthly report	SIGSA 6M
Service output and training by medical staff quarterly report	SIGSA 6T
Health promotion and education by medical staff quarterly report	SIGSA 6T
Service output annual report	SIGSA 6A
Monthly morbidity report	SIGSA 7
Service output monthly report by service unit	SIGSA 8
Health record of children younger than 5 years old, to be kept by guardian	SIGSA 15
Epidemiological surveillance weekly report	SIGSA 18
Epidemiological surveillance weekly report, hospitals	SIGSA 18H
Odontological consultation daily record	SIGSA 22
Report forms during emergencies	SIGSA E, E1, E2, E3, E4
Record of sexually transmitted diseases and HIV/AIDS prevention activities	SIGSA SIDA Annex A. I
Condoms distribution and sexual behavior counselling	SIGSA SIDA Annex A
Monthly report of patients STDs and HIV/AIDS consultations disaggregated by diagnosis	SIGSA SIDA Annex B

Name	Form
Monthly report of vulnerable patients receiving counseling and screening	SIGSA SIDA Annex C
Monthly report of STDs and HIV/AIDS consultations	SIGSA SIDA 1.2
Set of forms and reports on water quality	SIVIAGUA

SIGSA 1 and 2 are electronically captured at the health district level (DMS) with information from the National Registry of Persons (*Registro Nacional de las Personas*, RENAP), the agency responsible for maintaining records of people's identity and other records from birth to death.

From interviews and visits to the local offices and health units of MSPAS the HSA team learned that the SIGSA 3PS and 3CS are institutionalized forms in use across all MSPAS health centers and posts. Information from these forms is the basis of the information managed by SIGSA. SIGSA 3H is used primarily in district hospitals and occasionally in larger hospitals. SIGSA 4CS is mainly used to keep track of medicines provided to patients. The HSA team learned from interviews that its use is not as institutionalized as the SIGSA 3 series. Except for SIGSA 5B, all SIGSA 5 forms are used to track children's health. The HSA team saw strong evidence of use and ownership of these in all the health units visited during the assessment.

SIGSA 18 is the epidemiological surveillance weekly report, which is generated after consolidating all the SIGSA 3PS, 3CS, 3H, and 18H in MSPAS. Interviewees indicated that SIGSA 18 is used at the national and local level to generate service reports across all dependencies of MSPAS for the Situation Rooms, visual displays in all health facilities of various vital health indicators (*Salas Situacionales*, SS). Interviewees at the local level reported using the reports from SIGSA; however, the HSA team was not able to verify the effective use of the information system and its reporting and visualization options based on the limited time available for field visits.

7.2.1.2 Hospitals

The budget and organizational structure of MSPAS and hospitals indicate that hospitals function with some degree of independence from the rest of the MSPAS health services network. This was confirmed from interviews. Therefore, the primary and secondary levels of health care are managed without coordinating with the tertiary level and this situation is evident in Guatemala's HIS. SIGSA's data collection mechanisms are mostly designed to report on information from primary and secondary health care units. There are some forms that have been designed to include information from hospitals; however, SIGSA does not provide a comprehensive information system package that collects the information from all the hospital services and that solves information management challenges for hospitals.

Information systems in hospitals vary, based on interviews and site visits conducted by the HSA team. According to information collected during the assessment interviews, 10 MSPAS hospitals (other information resources indicate the number is greater) use INFHOS, a comprehensive information system for hospitals. INFHOS keeps records of individuals, the treatment received, operations, human resources, and other resources management. The HSA team did not visit a hospital currently using INFHOS to review the information available first hand. Interviews indicated that 22 hospitals report disaggregated information to SIGSA (using the SIGSA 3H form) and 22 report on a compiled form (SIGSA 18) or report a mix of compiled and disaggregated data to SIGSA.

During this assessment, the HSA team visited Roosevelt National Referral Hospital, which does not have INFHOS. This hospital uses an admissions information system called SIADPA. This system collects the patient background information; the patient's medical information is collected and compiled in the patient's paper file. Once the patient is released, the file is taken to the statistics office where some of the information is digitized. Roosevelt Hospital shares its compiled information using SIGSA 18 and the disaggregated information of the pediatric unit is compiled using SIGSA 3H. In interviews, the HSA team learned that Roosevelt Hospital has expressed a desire to start using SIGSA's platform. Additionally, Roosevelt Hospital uses other resources of information to manage and improve its operations. For example, each service unit within the hospital has to complete a daily census of the unit's services, and the pharmacy has a well-defined logistics and quality control system in place.

7.2.1.3 Epidemiological Information (Epifichas, Epiuario, and Epiweb)

Interviewees reported that the National Epidemiological Center (*Centro Nacional de Epidemiología, CNE*) has constant communication with SIGSA members at the central and local levels. In the national offices, CNE is part of the board that reviews the quality of data produced by SIGSA 18 (the weekly epidemiology surveillance report) in every DAS and/or hospital. Regardless of the coordination with CNE, SIGSA information does not reach the central MSPAS in the time desired for epidemiological surveillance. Therefore, CNE also has a combination of tools to fulfill the epidemiological surveillance needs in MSPAS. Epifichas are epidemiological forms available at all levels of MSPAS for epidemiological surveillance. The forms are taken to the respective health areas where information of all reported cases is aggregated. In the visits for this assessment, the HSA team was able to collect Epifichas to report on malnutrition, influenza, foodborne diseases, HIV/AIDS, dengue, and hemorrhagic fever.

Epiweb is the online platform that hosts the Epiuario. Epiuario is a reporting and visualization tool in which cases must be recorded on a daily basis from DMS, the DAS and hospitals (CNE 2014). In interviews, the HSA team noticed that there is often confusion when information from SIGSA 18 is cross-referenced with information from the Epiuario. It was clear that hospitals do not report their cases to DAS. Therefore, DAS do not review hospital cases before the information is sent to them from the central MSPAS offices in an effort to match the reports from Epiuario and SIGSA 18.

7.2.1.4 SIINSAN

The Secretariat of Food and Nutritional Security of the Presidency of the Republic (*Secretaría de Seguridad Alimentaria y Nutricional de la Presidencia de la República, SESAN*) was created in 2005 to coordinate the national system of food and nutritional security (*Sistema Nacional de Seguridad Alimentaria y Nutricional, SINASAN*). SESAN follows and executes the plan of the National Council for Food and Nutritional Security (*Comisión Nacional de Seguridad Alimentaria y Nutricional, CONASAN*); CONASAN is composed of representatives from different ministries, civil society, and private sector organizations, including the Public Health and Social Assistance Minister (SESAN 2008). The most recent strategic plan is known as the Zero Hunger Pact (*Pacto Hambre Cero*) and has two main goals: reduce chronic malnutrition by 10 percent between 2012 and 2015, and prevent deaths caused by acute malnutrition, especially during the most critical months of the year when people are more susceptible to seasonal hunger. MSPAS has a key role in achieving these two goals (Gobierno de Guatemala 2012).

The Food and Nutritional Information, Monitoring and Alert System (*Sistema de Información, Monitoreo y Alerta de la Inseguridad Alimentaria y Nutricional, SIINSAN*) is the electronic information system developed by SESAN for monitoring and evaluating the implementation and impact of policies designed to achieve the goals in SESAN's Strategic Plans. SIMON is the electronic compilation of tools designed to monitor and evaluate SESAN's goals. Four tools in SIINSAN are important to mention because of their relationship to MSPAS's role.

- ▶ MONI1,000 is a monitoring system of the PHC facilities; it tracks the availability of resources in these facilities to provide preventive care for the Thousand Days Movement.¹³
- ▶ MODA is the acute malnutrition monitoring system. It monitors whether children suffering from acute malnutrition identified by health services are receiving adequate and timely treatment. This system is also used to understand the constraints in service coverage and provide feedback to the responsible units. MODA includes data from visits by monitoring staff hired by SESAN to the health facility to analyze the records of children with acute malnutrition and in some cases a visit to the children's houses and families to monitor the care received. All the information collected is uploaded electronically to SIINSAN (SIINSAN 2015a).
- ▶ MONIMEFI is the municipalities' physical goals monitoring system from 14 different government institutions. This includes specific coverage goals from MSPAS service delivery units.
- ▶ EDI (*Evaluación de impacto*) is the annual impact evaluation tool; it is based on a survey conducted by SESAN of population socioeconomic and nutrition status.

In different interviews, the HSA team received positive comments on the quality of the information currently collected by SESAN and of its positive interaction with communities.

Some of the information that SESAN collects is focused on monitoring the work that MSPAS is doing for treating and preventing children's malnutrition. The HSA team learned from interviews that there is information that SESAN currently collects that could be reported from SIGSA; however SIGSA is not yet capable of providing the information with the disaggregation required by SESAN.

7.2.1.5 Ficha Clinica

Assessment interviewees indicated that *Ficha Clinica* is an individual health reporting mechanism that is being developed by a joint effort of the SIAS and SIGSA offices with external technical support. *Ficha Clinica* was designed to replace SIGSA 1, 2, 3, 22, the set of SIGSA 5, and other reporting mechanisms from each health program in MSPAS. It grew out of an effort to have a unified reporting mechanism for MSPAS and all the NGOs providing extended health care under the PEC. The previous mechanism was better known as *Ficha Única*. (See DERCAS document published in 2013 (PAHO/WHO 2014) for further information about *Ficha Unica*).

The *Ficha Clinica* information platform is organized based on four formats of patient files that should compile all information – including preventive care and service output information – on each patient. The patient's information is updated in follow-up consultations or other interactions between the health care providers and the patient. There are specific formats for children, pregnant women, women of reproductive age, and the rest of population. At the moment, *Fichas Clinicas* are designed for primary- and secondary-level health facilities; they do not include reporting mechanisms for tertiary-level facilities.

Assessment interviews indicated that the electronic platform will be ready this year. Parallel to the development of the platform, there are currently meetings of key stakeholders in MSPAS engaged in the final approval of the platform and in planning its strategic implementation to assure its sustainability.

¹³ See <http://www.thousanddays.org/> for a description of this nutrition promotion program.

7.2.1.6 Kawok

Kawok (Kawok 2015) is an information system built on the CommcareHQ software, a mobile health (mHealth) platform for data collection and health behavior communication. Kawok was developed by TulaSalud to support the community facilitators' part of the health service system in some districts of Alta Verapaz. Kawok is mentioned in the new national strategy for strengthening and developing the primary care level in Guatemala (MSPAS 2015). TulaSalud and the Alta Verapaz DAS are mentioned in the new MSPAS strategy as key parties providing technical support to implement the new strategy and the use of this mHealth platform. However, it is not clear what the implementation process will be, or what the source of funding will be for its implementation at the national level.

Under TulaSalud's model, community facilitators and staff at health posts and DMS have a cellphone with prepaid telecommunication services (Fernandez 2014). Cellphones are the means of communication to support the community health workers and to coordinate for emergency care when needed. From interviews, the HSA team learned that TulaSalud and Alta Verapaz DAS consider strengthening the communication network of community facilitators, auxiliary nurses, and health care providers to be a priority for the success of this strategy. This communication network relies on the trust among the care providers and the system's capacity to mobilize the required resources to provide the support that health care extension workers might need.

From interviews, the HSA team learned that some community facilitators also have access to a smartphone with a Kawok application through which the patient information is collected. As this information is entered, the Kawok information system provides important advice to the facilitator and the patient for preventive care. The information system is built in three local languages and includes videos and recordings on preventive care. The patient information that is captured in the system also becomes part of a database monitored in TulaSalud for epidemiological surveillance so the system can identify, mitigate and be prepared for possible health emergencies. In the original versions of Kawok, patient information was entered on a consultation basis and not integrated to create a comprehensive patient file. In newer versions the patient can be uniquely identified.

TulaSalud developed a mobile version of the Ficha Unica on Kawok. This electronic version was tested at health posts and the PEC in San Cristobal, Alta Verapaz (TulaSalud ONG 2013). This can be an opportunity for information integration in MSPAS if the Ficha Clinica and Kawok are implemented at the national level since both information systems could be designed to collect the same information. However, the HSA team learned from interviews that there are also budget and technological constraints that can make the implementation of Kawok in support of the national PHC strategy unfeasible.

7.2.1 Resources Management Platforms

7.2.1.1 SIAF

SIAF, the Ministry of Finance's integrated system of financial information, has four main applications of importance in MSPAS: SICOIN, the accounting system, SIGES, the management information system, GUATENOMINAS, the staff registration and payroll system, and GUATECOMPRAS, the contracts and acquisition systems. MSPAS central staff members use SIAF for health budgeting and planning purposes. Furthermore, GUATENOMINAS and SICOIN were the main source of information on MSPAS human resources prior to the implementation of iHRIS (see the Human Resources for Health section for additional detail). GUATENOMINAS is the main database of all MSPAS payroll staff, and SICOIN has the information of all the temporary staff, which is denoted as service items for accounting purposes.

SIGSA provides visualization of budget allocations. However, based on interviews with MSPAS staff, it does not appear that SIGSA has a systematized process to analyze financial information combined with health service output information, which could facilitate analyses such as health cost-effectiveness reviews.

7.2.1.2 iHRIS

iHRIS is an open source human resources management information system. From interviews conducted during the HSA, the team learned that in 2011, with external technical support, MSPAS started its implementation of iHRIS. All of MSPAS personnel's contracts have been uploaded to the iHRIS platform. iHRIS was customized by the MSPAS Office of Human Resources within its own Office of Information Technology. At the time of this assessment, the information in iHRIS was only being used for contract management and was not integrated with other information in MSPAS.

7.2.1.3 Medical Products Information System

The information systems used for medicines and medical products supply chain management are further explained in the next chapter of this report, on Medical Products and Supply Chain. This section reviews the medicine tracking tools used in hospital pharmacies, DAS, DMS, and health posts. From the interviews at the health facilities and DAS, the HSA team was able to identify at least three mechanisms for recording/providing information for the supply of medicines and resource controls.

- ▶ All units keep records of medicine inventories on the supplies control form, Kardex from the Auditor General of Guatemala.
- ▶ The Requisitions, Shipping and Supplies (BRES) form is a monthly reporting form to monitor the supply of required medicines and minimize stockouts. This is an Excel-based tool that is completed at health posts and health centers to request medicines for the DAS and for medicines inventory management at hospitals. The broader Logistics Management Information System is discussed more in the next chapter.
- ▶ Health posts keep control of medicines supplied to patients using the SIGSA 3PS form. Health centers use SIGSA 4CS (or post-consultation form) for this purpose.

From interviews the HSA team learned that at the health post level, SIGSA 3PS is used to complete the Kardex and the BRES. This is showing evidence that there is some level of redundancy of supplies control mechanisms that are clearly generating extra work for service delivery staff.

7.2.2 Vital Statistics

The INE is a decentralized and semi-autonomous entity attached to the Ministry of Economy. Its objective is to formulate and implement national statistical policy and planning, and coordinate and supervise the activities of the national statistical system (SEN). The SEN integrates all public entities involved in the preparation, collection, analysis, and publication of statistical information (*Decreto Número 3-85*).

Vital statistics have been reported on an annual basis by INE with information from RENAP since 2005. As noted earlier, RENAP is the public entity responsible for organizing and keeping records of people's identity, their civil status, civil capacity and any other identity records from their birth to their deaths (*Decreto Número 90-2005*).

From interviews, the HSA team learned that RENAP has 338 registration offices including 42 in public and private hospitals. These offices have been established to facilitate the registration of births and death. Currently birth and death registration is reported using a single form. Death registration includes cause of death with specific information provided in the case of deaths of neonates or of women of reproductive age.

In 2010, RENAP began expediting the use of the new personal identification document (DPI), which replaced the neighborhood identification document that had been used since 1931; the neighborhood identification document could not be trusted because it was easily falsified and not durable (RENAP 2015). The DPI includes a unique identification code (CUI). RENAP is in the process of institutionalizing the CUI as the unique identification number for all social services. However, Guatemalans often do not have or carry their DPI, especially in rural areas. As a result, one of the major challenges for the SIGSA and for the hospital information systems is to minimize duplication of an individual’s record. From conversations with SIGSA, the HSA team learned that less than 3 percent of patients are registered with a CUI and that SIGSA is working with RENAP to update patients’ information in SIGSA with a CUI; this process is using the background information of the patient that SIGSA and RENAP collect to match across databases.

7.2.3 Surveys, Census, Surveillance

As the public entity responsible for national statistics, INE analyses and publishes extensive information on Guatemala. The main health information sources of relevance to the health sector are listed in Table 7.2.

TABLE 7.2. SURVEYS, CENSUS, AND SURVEILLANCE

Name	Latest	Next
National Census	2002	Unknown
ENSMI- National Survey of Maternal and Child Health Information	2008-2009	2013-2014
ENCOVI- National Survey of Quality of Life	2011	2015
ENIGFAM- National Survey of Household Income and Expenses	2009-2010	2019-2020
EDI/SIINSAN- SESAN’s Impact Evaluation. Volume I: Nutritional Status of Children and Women of Reproductive Age; Volume II: Socioeconomic Status of Households	2013	2014

The latest National Census is from 2002. From interviews, the HSA team learned INE is preparing pre-census information hoping that a census could be conducted in 2017; this would be a census with a single ballot and combined with the agricultural census.

The ENSMI has been conducted every five years since 1987. The current ENSMI is being revised and its publication is expected in 2015, although the exact timing is unknown, according to interviewees. The ENSMI is being completed under a memorandum of understanding between MSPAS, INE, the Institute of Nutrition of Central America and Panama (INCAP), USAID, and the Embassy of Sweden in Guatemala (MSPAS/INE/INCAP/USAID/Embajada de Suecia en Guatemala 2014).

Ever since the Zero Hunger Pact was initiated, SESAN, INE and the Ministry of Finance have published an annual EDI with the external advisory help of the International Food Policy Research Institute (SIINSAN 2015b). The EDI includes a volume on the nutritional status of children and women of reproductive age and a volume on household socioeconomic status.

Table 7.3 provides an overview of key indicators, their sources, and the date on which the most recent update to that data (as of May 8, 2015) was made by INE and MSPAS. From interviews, the HSA team learned this information, in particular information reported by MSPAS, have quality problems such as incompleteness.

TABLE 7.3. OVERVIEW OF SAMPLE HIS INDICATORS AVAILABLE AND TIMELINESS

Indicator	Most Recent Data*	Data Coverage	Source	Frequency
Maternal mortality ratio reported by national authorities (per 100,000 live births)	85.5 (2013)	National	INE	Annual
Mortality rate under-5 (per 1,000 live births)	25.6 (2013)*	National	INE (INE 2013a)	Annual
HIV prevalence in total population aged 15-49 (estimates)	0.93 percent (2013)	National	CNE/MSPAS, USAID, ONUSIDA**	Unknown
Low birth weight newborns	11.7 (2013)	National	INE (INE 2013a)	Annual
Number of hospitals beds per 1,000 ben.-IGSS	0.9 (2009)	IGSS	OCSES-Health (MSPAS/PAHO 2007-2009)	Annual
Number of hospitals beds per 1,000 ben -MSPAS	0.5 (2009)	MSPAS	OCSES-Health (MSPAS/PAHO 2007-2009)	Annual
Percentage of surveillance reports received at the national level from DAS compared to number of reports expected	93 percent (Week 16-2015)	National-MSPAS	SIGSA***	Weekly

*As of May 8, 2015

**http://www.osarguatemala.org/userfiles/EstimacionesVIHGuatemala_percent202012.pdf. Accessed May 8, 2015.

***<http://sigsamspas.wix.com/notificacion>. Accessed May 8, 2015.

7.3 Regulation and Resources

7.3.1 Policies and Regulations

The Guatemalan Health Code, Legislative Decree 90-97 of the Congress, defines the health sector as “all centralized and decentralized, autonomous and semi-autonomous public institutions, municipalities, private institutions, non-governmental and community organizations whose competence or purpose is the management of health actions, including those engaged in research, education and training of human resources in health and health education at the community level” (SIGSA 2015a, HSA team translation). MSPAS is responsible for regulating, leading, monitoring, coordinating, and evaluating all the actions and health institutions in the health sector at the national level. Article 10 of Legislative decree 90-97 identifies two mechanisms for MSPAS to use in coordinating the health sector. First, MSPAS and IGSS must coordinate their strategies and health prevention, promotion, recovery, and rehabilitation programs, as well as the distribution and use of their human resources and equipment to expand the coverage of health services minimizing the duplicity of services. Second, MSPAS can use agreements at the local, national and international level to fulfill its intra- and intersectoral coordination responsibilities (SIGSA 2015a).

From interviews, the HSA team learned that MSPAS in practice has limited coordination with IGSS and health sector stakeholders outside of MSPAS. With few exceptions, IGSS does not regularly share its information with MSPAS; furthermore, IGSS and MSPAS do not coordinate to optimize health service coverage in Guatemala. In its role of compiler of national statistics, INE created the OCSES, with members from INE, RENAP, SEGEPLAN, IGSS, MSPAS, and PAHO. The OCSES coordinated the publication of the first compilation of health indicators from RENAP, INE, MSPAS, and IGSS databases for the years 2007-2009. The same publication for years 2010-2012 is expected to be published soon.

SIGSA is the sole information system of MSPAS according to the Ministerial Resolution No. 5095 of 1997. SIGSA was created with four information modules: health statistics, resources for health, service output, and planning. SIGSA is responsible for providing good quality, valid, timely, and useful information to support decision-making at the local and central level. SIGSA's responsibilities were better defined in three MSPAS regulations (SIGSA 2015a):

- ▶ Organic Law of MSPAS 115-99, which makes SIGSA responsible of identifying information needs, and developing and implementing subsystems of information to respond to those needs.
- ▶ Ministerial Agreement SP-M-1560-2006, which expands the responsibilities of SIGSA.
- ▶ Ministerial Agreement 1671-2009, which assigns to SIGSA the responsibility of integrating MSPAS's databases, managing the integrated information system platform, and regulating the development of new information subsystem and maintenance of existing information systems.

7.3.2 Responsibilities

SIGSA is responsible for integrating all the databases needed to make informed decisions at the different levels of MSPAS. It is also the single entity responsible for managing, leading, guarding, and maintaining the information system platform of MSPAS and for improving the current information system or creating new subsystems (SIGSA 2015a). However, the HSA team learned that other offices in MSPAS have created their own informatics offices and have developed applications without coordinating with SIGSA.

Each office (*dirección*) at the central level of MSPAS has roles that require health information.

- ▶ The financing and management office in MSPAS is responsible for implementing the accounting system of MSPAS and all the financial and management regulations that apply to MSPAS.
- ▶ The human resources management office is responsible for the professional development, training, and human resources management operations needed to fulfill the integral health services delivery goals of MSPAS.
- ▶ The integrated service delivery system (*Sistema Integrado de Atención a la Salud* or SIAS) office is responsible for coordinating and leading the network of public and private health service delivery unit in Guatemala. The SIAS office has an institutionalized role in the information analysis and flow of SIGSA.
- ▶ The regulatory, vigilance, and control office (DGRVCS) is responsible for programs across human resources, facilities, medicines, and medical supplies monitoring and control.

Each DAS coordinates, plans, monitors, and evaluates health policy implementation in its own jurisdiction. Therefore, DASs have a key responsibility in data integration and analysis. In theory, DAS should coordinate with all health posts and health centers in their jurisdiction for planning and policy implementation. However, interviews and field visits showed the HSA team that the communication between DAS and hospitals is not optimal.

Each DMS includes a statistics office responsible for digitizing the information generated at the corresponding health center and any health post under its jurisdiction. DMS are responsible for sending service output information on a weekly basis to their DAS. Epidemiological information is sent on a daily basis as cases are reported. Other information such as BRES is reported to the DAS on a monthly basis.

7.3.3 Finances

Resources for SIGSA are exclusively for central-level functions and equipment. According to interviews, SIGSA's budget is not sufficient to provide in-person support and monitoring of the data collection and analysis operations. Therefore, SIGSA uses virtual aids to support statistics offices in DMS, DAS, and hospitals. Interviewees noted that the support that central SIGSA provides has helped field offices feel confident with their use of the SIGSA system.

SIGSA also determines the equipment, office supply resources, and human resources needed to complete the reporting responsibilities in each health center, DMS, and DAS. However, SIGSA does not provide the monetary resources and cannot control the available resources in each location. Resources for health centers, DMS, and DAS are allocated by the DAS and resources for hospitals by the hospital itself.

In visits to the field, the HSA team heard of scarcities of paper, space, and new equipment that constrain reporting. A recent report of the HIV/AIDS epidemiological surveillance system (MSPAS/SE-COMISCA/CDC 2013) highlights these physical constraints and notes that there is no plan to mitigate or resolve the issues.

7.3.4 Human Resources

Assessment interviews confirmed that there is high staff turnover in SIGSA. The central and local levels are mostly hired through temporary contracts, which in 2013 resulted in a drastic change in most personnel in SIGSA. According to some interviewees, this change has had a negative impact on SIGSA's capacity and interrupted the ongoing initiative to strengthen the SIGSA system and the SIGSA office.

SIGSA staff at the central level carry out a range in functions, according to the SIGSA organigram. They are responsible not only for maintaining the HIS platform and database but also for providing support to field staff who are responsible for the collection and compilation of health information. From interviews, it was clear that SIGSA has limited budgetary capacity to routinely visit the reporting facilities either for quality monitoring or for providing support and training. Most of the technical support is done virtually and quality monitoring is not done with much frequency. There are annual trainings on how to elaborate the SS, on the flow of information on outbreaks and emergencies, and on changes in the structure of the HIS.

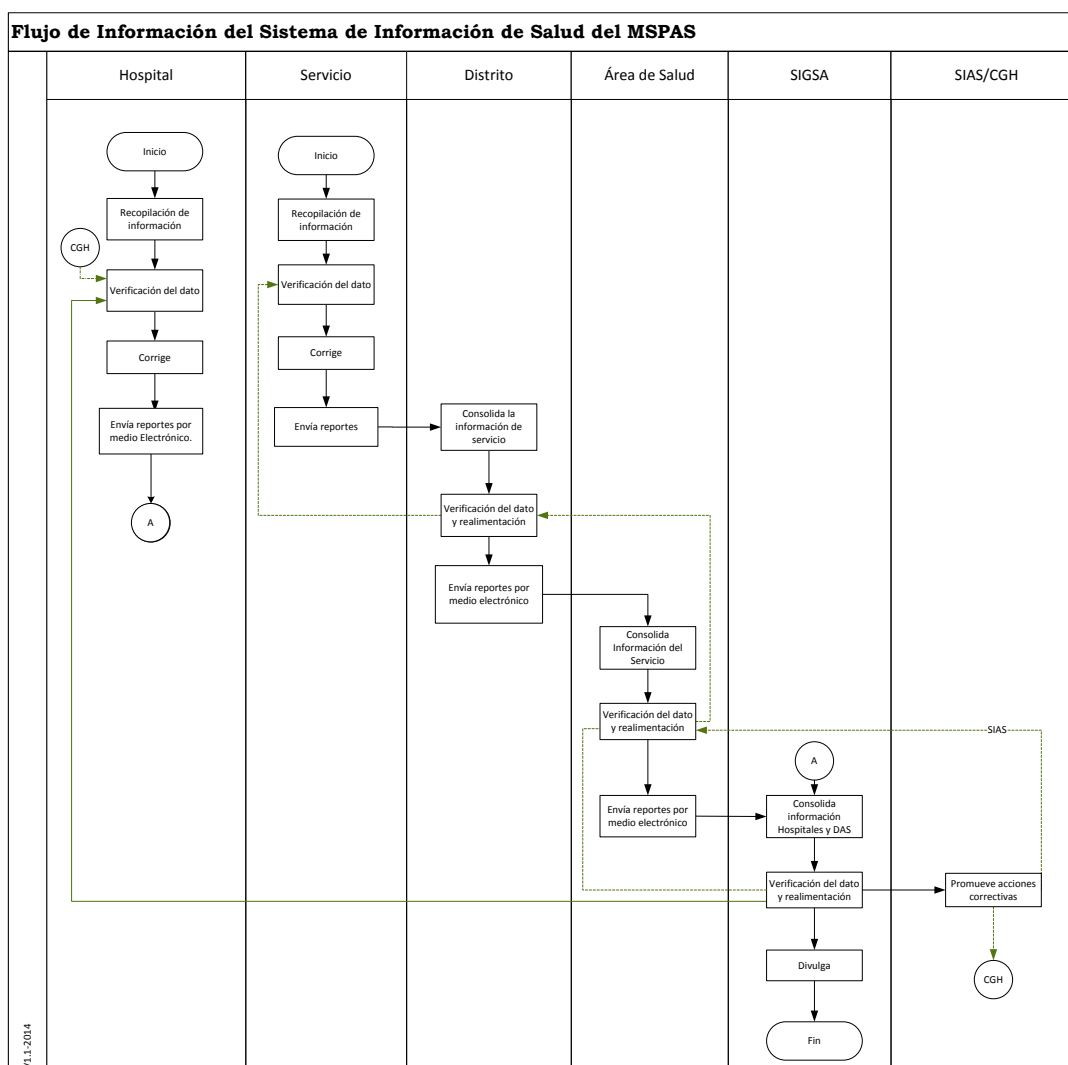
The HSA team also learned that SIGSA's efforts to support typing and statistics staff at the local level has been positive regardless of the budget limitations. The staff in the field expressed satisfaction with this support. They also expressed a strong level of confidence in their knowledge of the system. In field visits the HSA team had the opportunity to meet with statistics staff who had a high level of comfort with the HIS and with troubleshooting skills to complete their work.

7.4 Data Collection and Analysis

7.4.1 Data Flow

Information collected and compiled in SIGSA flows from points of service in health posts and health centers to the DMS. The information is first input on paper forms from which staff in the statistics office of each DMS transfer it to the electronic system. Health posts can be located geographically far from the respective DMS to which they report data; this is one of the factors that interfere with the flow of information. The weekly information in SIGSA 3 is supposed to be sent from the health facility on the following Wednesday from each DMS. The DAS then sends the compiled information from its jurisdiction to SIGSA. This information is verified and compiled by SIGSA, and on the following Monday SIGSA, CNE and SIAS meet to verify the information.

FIGURE 7.2. FLOW OF INFORMATION IN SIGSA



SIGSA = Sistema de Información Gerencial de Salud
 SIAS = Sistema Integral de Atención en Salud
 CGH = Coordinación General de Hospitales

Source: Diagram provided by SIGSA during interviews

Information from hospital statistics offices flows directly to SIGSA, which compiles the hospital information with DAS's information. SIGSA central meets with SIAS and CNE to verify the completeness of the epidemiological information and approve the data that will be visualized using the open source Tableaus software.

The data revision loops happen at two main points: first when data are received for the first time either for digitalization or regional compilation, and second, information found inconsistent in the meetings at the central level with CNE is sent back to their jurisdiction for revision. Each jurisdiction can try to resolve the inconsistency or discuss it with the next level, as necessary. Timeliness of data came out in the interviews at the central level as the main issue for SIGSA. The HSA team understood that information takes 15–20 days to be available for decision-making. SIGSA is updated with weekly information from DAS on two different platforms, an online and an offline system. Offline updates require that local levels send their information to the next level, where it is compiled and then sent to the next level as previously described. This offline process significantly delays the flow of information and is a potential source of duplicate data entry.

These observations indicate that with common and clear data quality framework, SIGSA could potentially report on the quality of its data. This could have a positive impact on the perception of data quality and on the use of the information; furthermore, it could provide the information that SIGSA needs to systematically improve the HIS.

Most information internal to MSPAS flows in a similar way as presented in Figure 7.2, from hospitals, directly to the central level and from health posts and health centers, to DMS; then it goes to DAS and the central level.

7.4.2 Quality

Assessment interviews indicated that national-level health information in Guatemala is perceived as low quality in general. This perception covers vital statistics collected by RENAP and reported by INE as well as information from MSPAS. However, data from the ENSMI and data reported by SIISAN are considered to be of good quality by stakeholders interviewed.

In interviews at the central-level MSPAS, the HSA team heard different perceptions of the quality of the information in SIGSA. The Roadmap and Recommendations for Guatemala's HIS (PAHO/WHO 2014) notes that the lack of a data quality framework in MSPAS keeps SIGSA from demonstrating the quality of its information. From interviews at the local level, the HSA team saw a high level of confidence in the processes followed to verify the data and also confidence that the data that they were reporting was a good representation of the health situation. The local level is aware of the sub-jurisdictions with poor reporting and the sources of errors in their data. However, the team conducting the HIS assessment for the Roadmap and Recommendations for Guatemala HIS observed a *“high level of variation between local health facilities in terms of the specific processes for data entry and data quality assurance”* (PAHO/WHO 2014).

As mentioned above, reporting units are connected to either online and offline platforms. Offline reporting has an impact on data quality and delays the reporting process. In addition, SIGSA software is installed on local computers (rather than on a web-accessible platform), which makes updating the system difficult (PAHO/WHO 2014). Interviewees informed the HSA team that SIGSA has an ongoing project to have more reporting units connected by an optical fiber network to improve the timeliness of some of the information in SIGSA. This project will bring more reporting units onto the online reporting platforms directly connected to the central database.

Data collected in SIGSA include a high level of precision in design, to the extent that this can be interfering with other measurements of data quality. Assessment interviews indicated that the data of town or community and linguistic community are not always included on the printed forms by the health care providers. This information is a requirement in SIGSAweb; however, if it is not included, it is information that, according to some interviewees, can be inferred from the location and name of the person. Therefore, statisticians sometimes supply the information based on their inference. This can affect the accuracy of information collected. One way to address this issue could be to include a data field that indicates whether the data reported came from the health provider or were inferred by the statistician.

Interviews told the HSA team that the transition to the new MPSAS strategy to provide primary and secondary health care has been implemented in coordination with SIGSA but that SIGSAweb does not have the option to input information from jurisdictions that were created to implement the strategy (discussed in the Service Delivery section). The interviewees indicated that this prevented some information that had been collected on paper from the jurisdictions from being typed into SIGSAweb.

Integrity of the information and confidentiality of the patient information were not seen as data quality issues in information from SIGSA. Interviewees indicated that SIGSA has specific protocols of who can and cannot have access to the information in the database to protect confidentiality. The HSA team also learned from interviews that with external support, SIGSA recently invested in improving the security of the HIS.

Quality of information starts from the input of information and it is easier to improve when the key HIS stakeholders have a sense of ownership of the system. Assessment interviews did not provide evidence that service care providers and local-level statisticians were routinely involved in the design of information collection tools.

7.4.3 Consolidated Reporting and Analysis

In the past year, SIGSA with external technical and financial assistance has developed visualization of its information on online open sources resources. In interviews, the HSA team learned that the visualization is presented at the level that information is made available and that the goal is for this to be used by local staff for reporting responsibilities, analysis, and decision support.

Currently, consolidated information from SIGSA is generated by SIGSAweb and this information is used to develop the SS (Figure 7.3). The SS are used for sharing service outputs, health status, demographics, and resource management. Each level of service delivery (DAS, DMS, health posts, and hospitals) is responsible for extracting the information from SIGSA and other resources and using it to present it in the SS. Each health service delivery unit follows guidelines from the central level in the preparation of the SSs, which are meant to be used at the local and national levels for health planning.

FIGURE 7.3. SALA SITUACIONAL IN A HEALTH POST



Information outside of MSPAS is normally not shared with SIGSA; however, from interviews, the HSA team learned that there are some areas of the country where IGSS shares the report form SIGSA 18 (weekly epidemiology report) with the DAS. The HSA team also learned that in the past, even some private health providers have shared their SIGSA 18 with the respective health area. One of the areas where IGSS shares its information with MSPAS is Escuintla. The information exchange got started in Escuintla because of good relations between the IGSS area manager and the DAS manager. Both directors valued the benefit of compiling their epidemiological information and throughout the years this relationship and coordination has been preserved.

Assessment interviews also indicated that some NGOs providing health services share their information with SIGSA. However, this is not the case with all NGOs, even those financed by international donors that provide support to SIGSA. Some interviews pointed out that SIGSA has no clear protocols for information sharing, which is one of the reasons for this lack of cooperation. With the exception of vital statistics and information that can be extracted from national surveys, health information is not regularly integrated into a single database. To do this would require accessing information systems of private sector providers, IGSS, Sanidad Militar, NGOs, and for MSPAS to have truly nationally aggregated indicators.

7.5 Use of Information for Decision-Making

Assessment interviews indicated that information is being used for epidemiological surveillance and that it is used in particular for preventive care by service providers caring for children and pregnant women. The HSA team also noted that within MSPAS, information from different sources is regularly shared and presented in the SS. However, the HSA team saw no evidence of the use of the SS for management and operations decisions to improve health services. In visits to the field, the HSA team noted that health service quality improvement and resources planning are decided based on facilities supervision, and that these mechanisms are not well integrated with the analysis involved in the SS. From the interviews conducted by the HSA team, there was no evidence of service output and epidemiological information being used in combination with human resources and logistics data for planning and budgeting.

7.6 Findings and Recommendations

MSPAS and SIGSA have invested in improving their HIS platforms, reporting capacity, and health data reliability and quality in Guatemala. However, the HIS overall is still quite fragmented; additionally, SIGSA has a long way to go to become the designated and recognized HIS coordinating office within MSPAS. There are still multiple information systems capturing duplicate information while not being consolidated in a single location for review by a central team.

The following are the recommendations for strengthening SIGSA's capacity to serve as a leader for HIS within MSPAS considering the ongoing initiatives in MSPAS, the documents reviewed, the stakeholders interviewed, and the field visits conducted by the HSA team.

Short-term

1. Begin documenting the different information systems and information collection forms currently being used across MSPAS for health statistics, resources for health, service output, and planning. This process will allow an effective mapping of duplicate data capture and later elimination of these redundancies across the HIS.
2. For the *Ficha Clinica* and other information platforms, it is important that SIGSA and MSPAS institutionalize processes to engage the service providers and local reporting staff in their design and maintenance. Having system users involved in the design of the system will promote buy-in to the final system design and increase the likelihood of the system being used by the key stakeholders.
3. Provide the support and resources to each DAS to scale up the new PHC strengthening strategy to the entire territory and adjust it to different environments and cultures across Guatemala. As was done by TulaSalud, adjusting the model to these diverse communities will be important for promoting positive outcomes at the national level. In the documented lessons learned from TulaSalud's project in Alta Verapaz (Aldana et al. 2014), it is evident that this health care model has been improved over the years by working very closely with the community health workers, facilitators, and the communities. The applications and solutions have been designed and redesigned to be scaled up in Alta Verapaz responding to the specificities of each community.

Medium-term

1. Identify an effective institutional mechanism or combination of mechanisms that can strengthen SIGSA's ability to coordinate and enhance MSPAS's HIS. The current institutional structure of MSPAS does not provide the *de facto* authority, or the resources to integrate all the information systems in MSPAS or to become the leading organism for the HIS as established by law.
2. Develop a comprehensive strategy to implement the new information platform *Ficha Clinica* with particular emphasis on fostering the local ownership that the current information collection tools have. The *Ficha Clinica* initiative is designed to minimize the reporting burden on service providers and it organizes information based on the patient (in contrast to the current order that is based on health facilities and their service output). It is also important that this platform builds on the roll-out of the CUI and on the current technology investments in SIGSA to reduce offline reporting and minimize duplication.
3. As noted in the report "MSPAS-HIS, Recommendations and Roadmap for Implementation" (PAHO/WHO 2014), it is very important for SIGSA to have a data quality framework. This framework will allow for the systematic evaluation of data quality and help system users promote the use of information from the SIGSA.

4. As MSPAS roles out its new PHC strategy, it will be important to optimize the effective use of technology to engage communities, coordinate care, and monitor health outcomes. Mobile technology is an enabler for better communication that requires clear points of contact, documented and operational referral systems, and a solid foundation of social trust. It can also be leveraged as a two-way platform to provide preventive care to rural communities and minimize emergencies that can be hard to address in remote locations with only basic health care services. Furthermore, Kawok's platform has the potential to become an important resource to develop the capacity of the community facilitators and extend quality PHC services to the rural communities.

Long Term

1. Identify the different information systems and information collection forms used *outside* of MSPAS that will serve as references for developing a plan for integrating MSPAS's information with other health sector stakeholders such as IGSS and strengthen MSPAS's capacity as the leading coordinating entity in the health sector.
2. Assessment interviews indicated that MSPAS has been developing a new strategic framework for the HIS. The HSA team believes that the HIS of MSPAS would benefit from development of a long-term HIS strategic plan that supports the key Guatemalan health objectives through a broad and inclusive stakeholder process. As part of this process, designate and empower a central, multi-stakeholder organization to oversee all HIS platforms and tools developed across Guatemala using an agreed upon set of standards for data collection, storage, and transmission.

8. MEDICAL PRODUCTS AND SUPPLY CHAIN

8.1 Overview of Medical Products

Careful management of pharmaceuticals and other medical products is essential to meeting health system goals. Even so, many health systems and programs run into difficulty achieving their goals because they have not addressed how the medicines essential to saving lives and improving health will be procured, supplied, and used. Pharmaceuticals can be expensive to purchase and distribute, but shortages of essential medicines, improper use of medicines, and spending on unnecessary or low-quality medicines also have a high cost – wasted resources and preventable illness and death. Pharmaceutical management represents the whole set of activities aimed at ensuring the timely availability and appropriate use of safe, effective quality medicines and related products and services in any health care setting. In Guatemala, there is a growing need for efficient procurement, management, and distribution of medicines to the people who need them.

Effective management of medicines and medical products (MMP) is essential to a high-quality health system. MMP management represents the whole set of activities aimed at ensuring the timely availability and appropriate use of safe, effective quality medicines and related products – vaccines, test kits, related commodities and equipment – and services in any health care setting. MMP management activities include the selection, procurement, distribution, and use of products that flow through the supply system. Each component of the framework is linked and contributes to the viability of the next. The monetary value of MMP is generally substantial and the systems for managing these products often face political and managerial challenges.

This section assesses the management of MMP in Guatemala. The analysis uses the MMP framework as a guide, and uses the performance criteria of access, quality, equity, efficiency, and the sustainability of the health system to judge impact. The HSA team reviewed a broad range of background material and interviewed key stakeholders involved in management of health commodities and conducted field visits to get an understanding of Guatemala’s health supply chain structure. The team was also able to gather a number of datasets from multiple groups within and outside of MSPAS and performed various primary analyses to assess the medical products and supplies processes in Guatemala.

The Guatemalan public health system is divided between MSPAS, IGSS, and the Sanidad Militar. As MSPAS is responsible for serving the whole country, its supply chain must ensure that products reach all of its 2,000-plus health facilities spread across the country. The MSPAS supply chain is divided into the following tiers:

- ▶ Central level – In the capital city, health commodities for targeted health programs (e.g., HIV/AIDS, vaccines, family planning, micronutrients) are purchased and stored in central facilities. Both international and national suppliers feed into MSPAS’s three central facilities. These commodities are then passed downstream to health areas and hospitals.
- ▶ Administrative Unit – There are 29 health areas and 43 hospitals throughout the country. Apart from health program commodities that are purchased and pass through the central level, the administrative units represent the head of the MSPAS supply chain, as they actually do most of the purchasing in Guatemala. Primarily national suppliers feed into these facilities. Guatemala has a decentralized budget and procurement system, and MSPAS procurement is essentially decentralized at the administrative unit level. It should be noted that the health areas serve as the management

and administrative structures, but do not provide health services to patients. Health areas do, however, buy and store an inventory of health commodities to supply health facilities under their jurisdiction, as described below.

- ▶ District – The next tier below the health area is the health district, of which there are 333. Health district storage sites are typically co-located with health centers, but also serve as intermediate stocking points for lower level tiers. Districts are responsible for stocking product to supply health centers and health posts, described below. They receive health products from the health area.
- ▶ Lower-level service delivery points – According to interviews conducted by the HSA supply chain team, there are approximately 1,400 health centers and more remote health posts providing basic level care to Guatemalans across the country.¹⁴

There are exceptions to this system, but the supply chain described above represents the vast majority of volume of health commodities that flows through the MSPAS system according to the stakeholders interviewed. Figure 8.1 shows a map of the central to health area to health district supply chain, with their corresponding demand points (health centers and health posts). Note that hospitals are not shown on this map, as they do not provide supplies to lower-level facilities.

Details on how procurement, storage, distribution, and the other health components of health commodities are given throughout the next section.

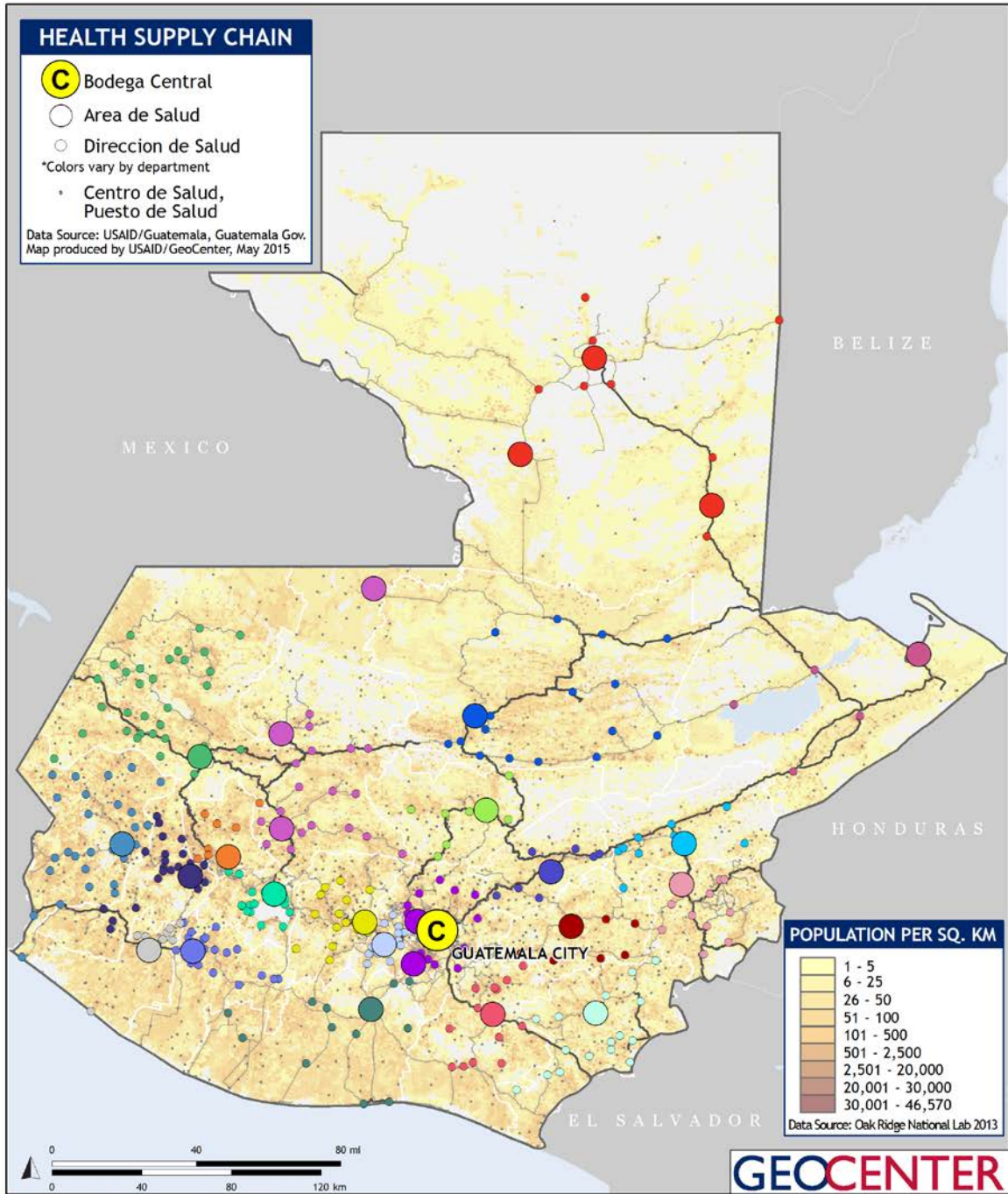
¹⁴ Numbers of facilities from government sources reviewed by the HSA team conflicted with each other and there was no master facility list available for review by the team.

**FIGURE 8.1. GUATEMALA SUPPLY CHAIN MAP
(HEALTH AREA TO DISTRICT TO HEALTH CENTERS/POSTS)**



GUATEMALA

**HEALTH SYSTEMS ASSESSMENT
Health Area Supply Chain**



Names and boundary representation are not necessarily authoritative

Source: USAID GeoCenter 2015



8.2 Pharmaceutical Policy, Laws, and Regulations

Guatemala's Health Code, Articles 172 to 177, is the law by which pharmaceutical products are governed. The Health Code contains a general framework for pharmaceuticals, but it does not provide specific guidelines on topics such as principles of selecting pharmaceuticals, control of pharmaceutical manufacturing and distribution, and rational use. The MSPAS Department of Regulation and Control of Pharmaceutical and Related Products (*Departamento de Regulación y Control de Productos Farmacéuticos y Afines* - DRCPFA) is the national drug regulatory agency. Its sole purpose is drug regulation – it carries out no other functions. It not only proposes technical norms but also is responsible for the registration of pharmaceuticals, and inspection of pharmaceutical manufacturers, distributors, and private sector dispensing facilities across the country. As a part of MSPAS, the department is not autonomous.

The DRCPFA has used the Model System for Computer-assisted Drug Registration (SIAMED) since 2008 for tracking and managing registration. SIAMED is a free software tool for national drug regulatory agencies jointly developed by WHO and PAHO with technical and financial support from various partner organizations and donors. Both computer-based and web-based versions of the software are available for use by countries (WHO 1998). In early 2015, the DRCPFA installed the web-based SIAMED system for registration. Stakeholders indicated to the HSA team that this upgrade has made the registration process clearer to pharmaceutical companies and has resulted in a smoother overall operation. Based on the interviews it conducted, the HSA team compiled a summary of key metrics related to the registration process in Guatemala.

TABLE 8.1. PHARMACEUTICAL REGISTRATION METRICS

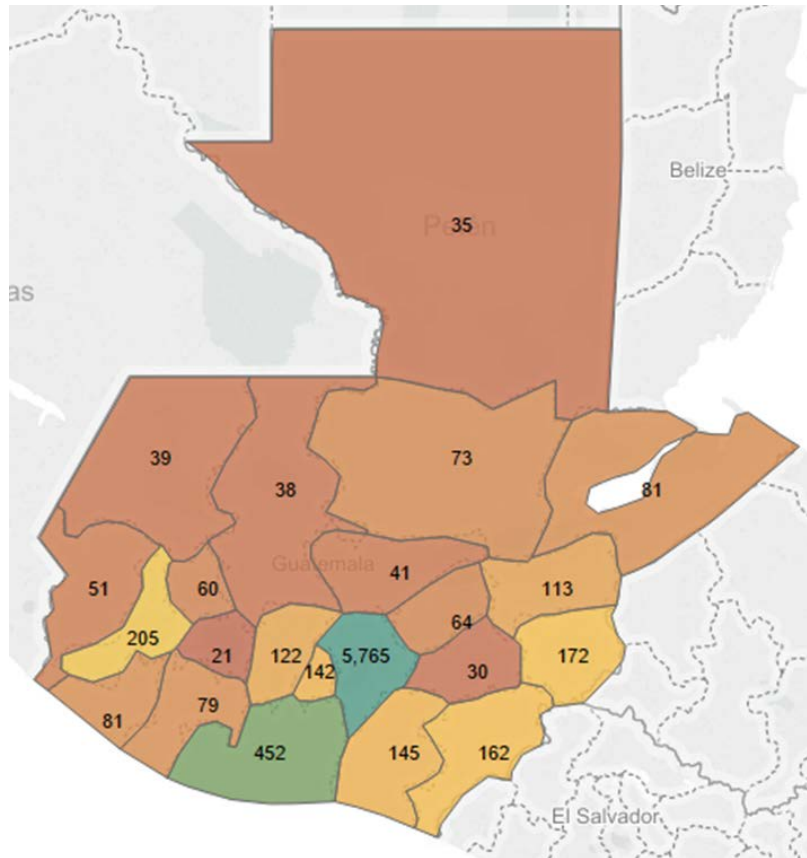
Value	Metric Definition
17,000+	Estimated number of products registered
Q2,100	Cost of registration to company (<i>quetzals</i>)
5 years	Registration duration
6 to 12 months	Time it takes DRCPFA to perform initial registration
20 days	Time it takes DRCPFA to renew registration if there ARE changes to product or packaging
48 hours	Time it takes DRCPFA to renew registration if there ARE NO changes to product or packaging
80 percent	Estimated percentage of applications requiring some type of correction after initial submission
< 1 percent	Estimated percentage of companies that abandon the registration process after starting an initial application

Source: HSA interviews

In addition to technical norms and pharmaceutical registration, the DRCPFA is also responsible for monitoring and enforcement of pharmaceutical and food-related regulations in the country. Guatemala has a process for accepting and following up on consumer complaints related to pharmaceutical products and/or pharmaceutical-dispensing facilities. Hard-copy files are established for all pharmaceutical-related complaints and all cases are followed up on, according to interviewees. From January 1, 2013 to April 30, 2015, 197 complaints were registered (Figure 8.2). According to key stakeholders, there is a national inspection team of 20 professional and technical staff based in Guatemala City that licenses and inspects the approximately 10,000 pharmaceutical-related establishments across the country, such as pharmacies, pharmaceutical distributors, and manufacturers of medical products and drugs. While it was possible for the HSA team to review data on the number of

inspections by department and the types of facilities inspected for a 28-month period, it was not possible to evaluate the correlation between number of inspections and the types of facilities by department because that level of detail was not available to the team.

FIGURE 8.2. INSPECTION COUNT BY DEPARTMENT, JANUARY 1, 2013–APRIL 30, 2015



Source: MSPAS, Departamento de Regulación y Control de Productos Farmacéuticos y Afines

Based on the data available to the HSA team, it is clear that inspections take place near the capital much more often than in other parts of the country. However, the team could not determine if levels of coverage were uniformly dispersed across the country nor if some facilities received multiple inspections, since there is no master list of pharmaceutical facilities with unique identifiers to uniformly track these entities. Table 8.2 summarizes inspections that took place over a 28-month period by type of facility inspected.

TABLE 8.2. NUMBER OF INSPECTIONS BY TYPE OF FACILITY, JANUARY 1, 2013–APRIL 30, 2015

Facility Type Inspected	Number	Percentage
Pharmacy/druggists	7,339	88.4
Distributors	570	6.9
Natural medicine sales locations	372	4.5
Other types of facilities	25	0.3
Total	8,306	100

Source: MSPAS, Departamento de Regulación y Control de Productos Farmacéuticos y Afines

8.3 Selection of Pharmaceuticals

MSPAS and IGSS maintain separate Essential Medicines Lists (EMLs). This prevents their collaborating on procurement as the baskets of medicines overlap only partially. Further, the number of medicines included for each level of health care (primary, secondary and tertiary) in the MSPAS EML is much higher than what is actually stocked at health areas and hospitals based on a review of available data by the HSA team. For the primary level, the MSPAS EML contains almost three times the average actually carried by primary-level facilities in Guatemala. The secondary-level MSPAS EML contains almost four times the number of commodities actually carried by secondary-level facilities in Guatemala. The EML includes morbidity-specific medicines that may not be needed by all regions. This may appear to account for the discrepancy between the number of products that health areas purchase and the “union” total amount of recommended medicines on the EML. It might be that while individual health areas are purchasing only a handful of items, the “union” of these items is approaching the number of recommended items on the EML. However, the data show that only a subset of the EML, even when looking at the union of all items purchased by all health areas, is actually purchased, as seen in Figure 8.3.

FIGURE 8.3. MSPAS ESSENTIAL MEDICINES LIST, BY CARE LEVEL



Source: MSPAS

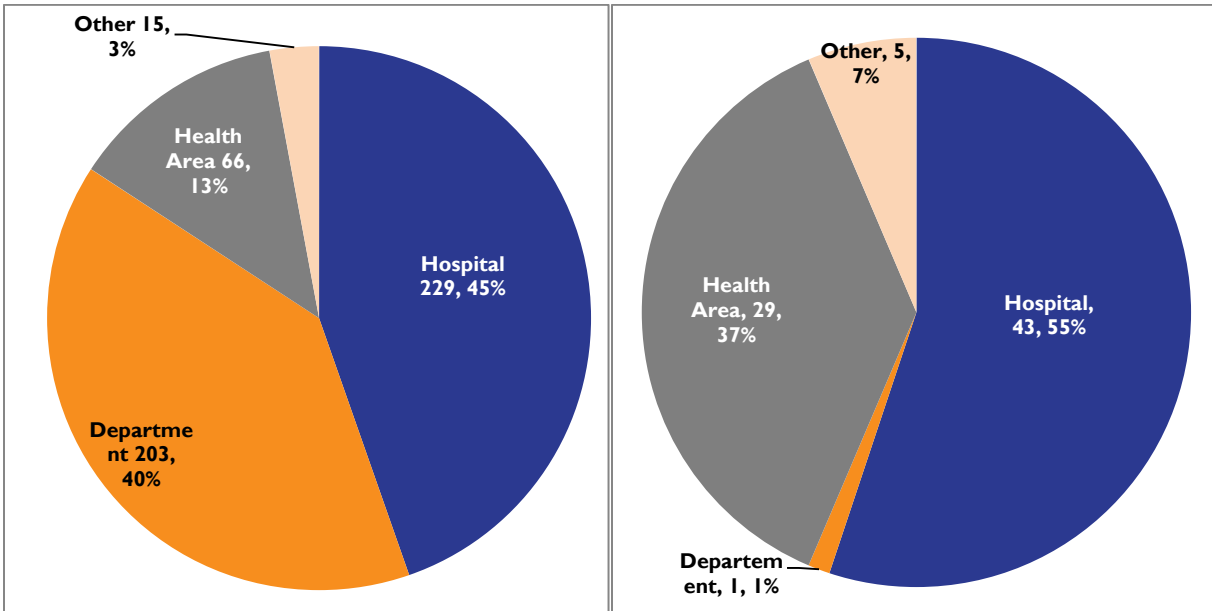
As discussed in the Health Finance section, health areas and hospitals have budget autonomy and make their own purchases of medicines. During the time period for which data are available from SIGSA for review (October 1, 2014 to April 30, 2015), health areas, the entities responsible for buying medicines for the primary- and secondary-level health facilities, were only buying between 22 and 50 distinct pharmaceuticals (SIGSA 2015). This is far fewer than the 150-200 distinct pharmaceuticals that are suggested by the MSPAS EML as needed by secondary-level health facilities. Similarly, hospitals (tertiary level health facilities) were buying between 66 and 318 distinct pharmaceuticals, far fewer than the 569 distinct pharmaceuticals suggested by the MSPAS EML (SIGSA 2015). This disparity is problematic because there are already significant stockouts throughout the current system across a much smaller basket of items than recommended by the EML. By having an EML that recommends spreading limited procurement dollars across three to four times the current basket of products – *which are already not in full supply* – increases the risk of stockouts and uneven care and treatment. This poses a risk that the MSPAS EML, as currently developed, cannot be implemented in the short term and is not helpful in focusing treatment medicines in an environment of tight funding.

8.4 Procurement

Public procurement of health commodities in Guatemala is budgeted and executed across three public entities: MSPAS, IGSS, and the *Sanidad Militar* system. As discussed in the Health Finance section, MSPAS and IGSS make up the overwhelming majority of public procurement with a smaller portion managed by *Sanidad Militar*, which serves less than 10 percent of the Guatemalan population. IGSS is the largest procurer of health commodities with three times the purchasing volume of MSPAS though it serves only 23 percent of the MSPAS service population.

MSPAS procurement is decentralized across 78 administrative units, mostly hospitals and health areas, as shown in Figure 8.4. Note that administrative department represents medicines included in the health programs in the country (HIV/AIDS, family planning, etc.). The graph on the left shows the distribution of the *count* of administrative units. The graph on the right shows the distribution of the *budget* of administrative units. Note that medicines procured by the administrative department are purchased and passed down the supply chain to hospitals and health areas.

FIGURE 8.4. ADMINISTRATIVE UNITS BY COUNT (LEFT) AND BY TOTAL 2014 MEDICINES BUDGET (RIGHT)



Source: MSPAS, Departamento de Finanzas

Currently, procurement can only be carried out by the administrative units and not at the lower levels (i.e., not directly by health posts, health centers, or districts). The administrative units engage in four types of procurement, which vary in process, requirements, and lead time depending on the size of the procurement. Regulations shaping public procurement of medicines are based on the broader Guatemalan laws established for public procurement. The relevant procurement modalities for health commodities established by the regulations in Guatemala are as follows:

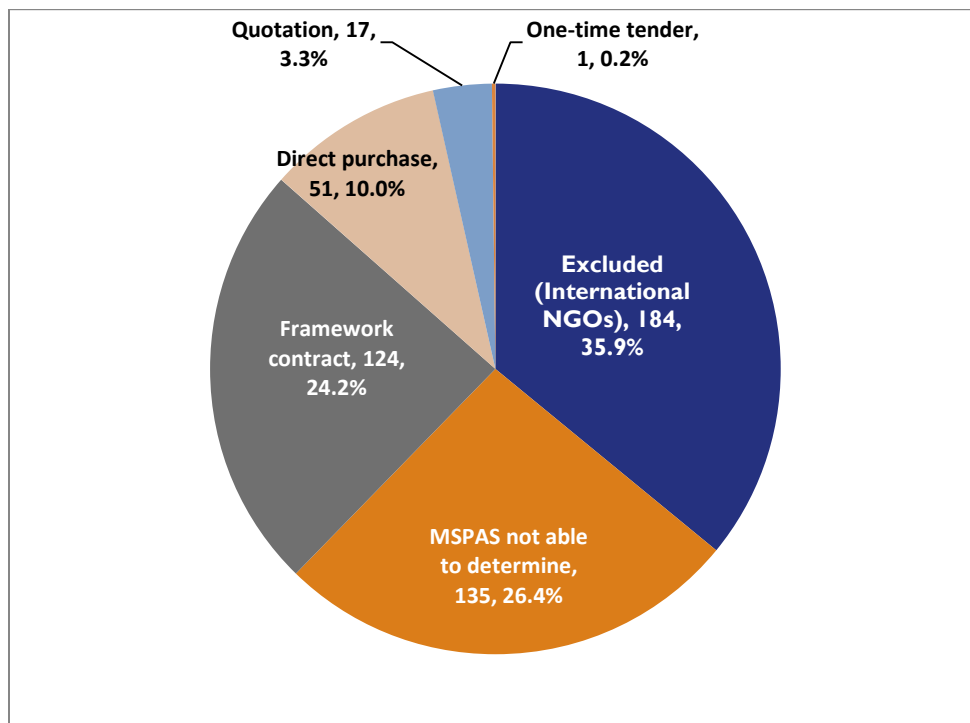
1. **Direct Purchase** – For purchases under 90,000 quetzals, administrative units are permitted to buy health commodities directly from the supplier of their choice. Typical lead times are 1–2 months to execute a direct purchase.
2. **Quotation** – For purchases of 90,001–900,000 quetzals, administrative units are required to obtain quotes from at least three providers. Typical lead times are 4–6 months to complete the procurement.
3. **One-time Tender** – For purchases of 900,001 quetzals and above, a full RFP competitive tender is required, and the lead time is on the order of a year.
4. **Framework contract** – This type of contract refers to purchases against multi-year contracts that are established at the national level and against which multiple purchase orders can be made by the administrative units. As mentioned above, public procurement of health commodities is done by MSPAS, IGSS, and *Sanidad Militar*. Where two of these three entities establish a common framework contract, this contract becomes binding on all three entities, meaning all three are then *required* to issue purchase orders against the contract when purchasing those particular items – they can no longer use the other three procurement forms mentioned above. Lead times for establishing framework contracts are a year or more, but once established, administrative units can place purchase orders against them with a 1–2-month lead times.

5. Excluded from requirements – For purchases from international NGOs (e.g., PAHO, Global Fund), MSPAS is exempt from the procurement requirements above and is allowed to purchase directly from such suppliers. For example, Global Fund provides HIV/AIDS pharmaceuticals to the HIV/AIDS program (part of the administrative department seen in Figure 8.4).

Because of the long lead times associated with single event procurement modalities of quotation and one-time tender, these modalities are only minimally used by the administrative units. Much more common is the scenario in which the units either buy small amounts of what they need via direct purchase or place purchases orders via framework contract, both with shorter lead times. Commodities associated with health programs such as HIV/AIDS and nutrition are purchased centrally and sent down to the units and are excluded from the procurement requirements.

As seen in Figure 8.5, MSPAS was not able to provide detailed data relating to 24 percent of the purchase volume, making it difficult to say with confidence what the breakdown is for the total 2014 procurement spend via the five modalities listed above. This is a result of a discrepancy between the transactional procurement data in SIGES, which manages purchases and purchase orders across the public sector, and the Ministry of Finance’s accruals-based SICOIN, which is the top-level system of record against which SIGES reconciles (SIAF IGSS 2009). However, the HSA team can say that, based on the data reviewed, procurement via framework contracts and exempted procurements from international NGOs is a *much larger portion of MSPAS procurement than is commonly understood and was communicated to the HSA team in multiple interviews*. This highlights a broad misconception among key stakeholders as to the extent of framework contract’s current implementation versus direct purchase contracts.

FIGURE 8.5. BREAKDOWN OF MEDICINE PROCUREMENTS BY CONTRACT TYPE, 2014 (Q MILLIONS)



Source: MSPAS, Departamento de Finanzas

Generally speaking, purchasers can achieve lower pricing and access to more established, often high-quality suppliers, when buying via pooled procurement mechanisms (framework contracts and bulk procurement that has been exempted) because it is one way to extend the purchasing power through pooling of purchasing volume. However, Guatemalan-specific challenges were identified over the course of this assessment by the HSA team:

1. Framework contracts in Guatemala require the active collaboration of MSPAS, IGSS, and *Sanidad Militar*, separate procuring entities with processes that do not overlap to any significant degree.
2. The MSPAS procurement department (DAM) indicated during interviews that some items are *more expensive* purchased via framework contracts, so these items will not be candidates for bulk procurement. As seen in the recommendations below, an analysis must be performed to identify and prioritize candidates for bulk procurement.
3. If the entities do not maintain sufficient liquidity to pay suppliers on time, any unit cost savings can be eaten up by late payment penalties. This issue was identified as a risk by multiple stakeholders interviewed.
4. If not careful when setting up terms, framework contracts could disallow the units to take procurement actions that might be more rational in some instances, and it could place some limits on the selection that administrative units can make regarding suppliers.
5. If the procurement process for setting up framework contracts is flawed (poor advertising, improperly negotiated terms, corruption, etc.), this would essentially require administrative units to purchase from suboptimal suppliers, making the overall system worse.

Despite these challenges, the opportunity represented by buying more health commodities via bulk contracts is significant. In a parallel study of “Experiences and Opportunities for Joint Purchases in Guatemala” undertaken at the time of the HSA, a number of modifications to current purchasing procedures are recommended in order to significantly reduce the costs of medical supplies (Perez 2015).

8.5 Storage and Distribution

The HSA team visited all types of storage facilities in the MSPAS supply chain – warehouses holding program commodities at the central level as well as multiple store rooms at the hospitals, health areas, districts, centers, posts, and former PEC facilities in Guatemala City and the three regions of the country the team visited.

The facilities and conditions themselves were not particularly notable and are similar to those in public health systems in many countries at a similar level of economic development as Guatemala. No egregious capacity concerns were observed during field visits, and none was reported during interviews. While the health area store rooms might have to increase in utilization because of the need to manage commodities for the PEC-turned-MSPAS facilities that are being launched, capacity issues can probably be handled on an ad hoc basis.

During field visits, the HSA team observed basic stock management processes taking place and forms being used at MSPAS facilities. While the HSA team did not formally evaluate inventory loss, the HSA team observed only unexpired products during field visits.

Based on the information reviewed and site visits conducted, the two main areas of concern in storage and distribution were (a) central-level distribution and (b) the logistics management information systems (LMIS). Currently commodities are warehoused at the central level for multiple vertical health programs (e.g., HIV/AIDS, family planning, etc.), representing almost 40 percent of MSPAS’ procurement (MSPAS

2015). The health areas and hospitals then manage their own transport and pick up from the central level between six and 12 times each year. However, despite having the same source point (the central warehouses) and the same destination points (health areas and hospitals), each program maintains completely independent distribution systems and frequencies to each destination point. Multiple program commodities are not transported on a single vehicle nor are multiple destinations of a single commodity combined into a single route. This inefficiency further erodes MSPAS' ability to purchase commodities to help prevent stockouts. This fragmentation and lack of coordination between the vertical programs affects many of Guatemala's health system domains.

Currently MSPAS manages multiple LMIS that do not allow for the analysis necessary to appropriately manage the stock supply or develop solutions to the key drivers of stockouts across multiple products and sites. The systems are fragmented with multiple paper- and spreadsheet-based components that do not aggregate to form an overarching LMIS. This problem is most acute at the lower-level facilities, where the LMIS used to capture key logistics data is most fragmented. MSPAS has taken a huge step forward with the reporting of health area and hospital stock balances to SIGSA. As described in detail in the Health Information Systems section of this report, a multitude of information systems are used by MSPAS, IGSS, and the Ministry of Finance. Unfortunately, the data in these systems are extremely difficult to consolidate to give a broader, more strategic picture of what is happening because of the absence of unique identification codes; health facility sites, for example, are not standardized, which means data referencing them can only be merged manually. Stock management, procurement, distribution, and other related functions are particularly hampered by this problem.

The BRES form is a paper-based stock reporting and order requisition method used by health posts, health centers, and districts to order supplies from the next level up in the supply chain (Figure 8.6). The BRES form facilitates a "pull-based" distribution system where the lower level decides what it needs and orders (pulls) it from the upper level. In contrast, a "push-based" distribution system involves the supplying level making the decision for how much to supply (push) to the lower level. The challenge with this approach is that pure requisition (pull) systems fundamentally do not work when the supplies are not available to distribute to the lower levels, which appears to be the case with MSPAS. The BRES system in Guatemala involves health posts and health centers filling out pages of information, performing calculations by hand, transferring data from one source to another, and doing a host of other redundant administrative tasks. After all of these tasks are performed, if the upper level does not have the item needed in sufficient quantity for the lower level, all of that effort is wasted as the lower level gets what the warehouse manager at the supplying level arbitrarily decides is appropriate. The HSA team observed a number of challenges with the BRES forms when visiting sites.

FIGURE 8.6. A BRES FORM ILLUSTRATING THE CALCULATIONS REQUIRED TO COMPUTE A RATIONAL ORDER

14 columns x 80 items = 1,120 data elements each month

Stock balance: most critical piece of information

No standardized codes limits value of data when digitized

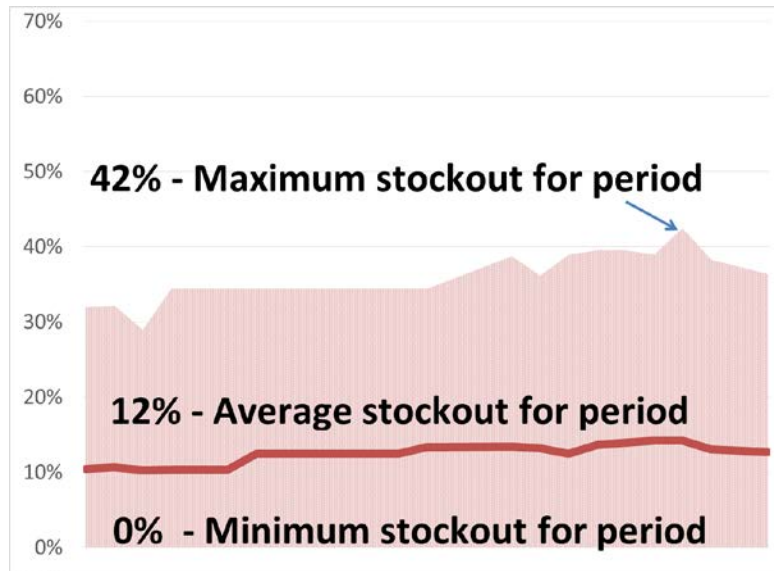
Unfulfilled orders after all the effort

Source: MSPAS, Puesto de Salud

8.6 Availability and Access to Quality Products

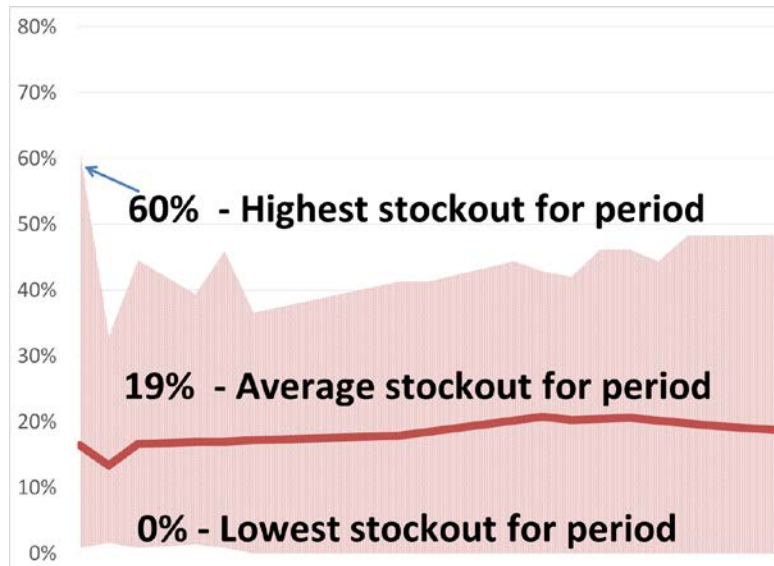
Since October 2014, health area and hospital stockout data have been electronically reported, aggregated, and shared with the public through SIGSA. As discussed in the Health Information Systems section, the SIGSA data are reported weekly and refreshed via a publicly accessible online dashboard. Making such data widely available is a positive step taken by MSPAS to ensure transparency and improve the availability of medicines and medical supplies. The HSA team was able to evaluate stockouts at the health area level and the hospital level for the seven-month period October 1, 2014–April 30, 2015. As seen in Figures 8.7 and 8.8, stockouts existed across almost all health areas and hospitals. The SIGSA data showed an average stockout rate of 12 percent for health areas over the seven-month period, while hospitals showed an average stockout rate of 19 percent. It should be noted, however, that health areas are an intermediate level of the supply chain (there are two additional levels below the health areas, specifically the health districts and health posts/centers), meaning that the stockout rate at the lower levels is likely much higher than the average at the health area level.

FIGURE 8.7. PERCENT OF COMMODITIES STOCKED OUT ACROSS AL HEALTH AREAS, OCTOBER 1, 2014–APRIL 30, 2015



Source: MSPAS, SIGSA

FIGURE 8.8. PERCENT OF COMMODITIES STOCKED OUT ACROSS ALL HOSPITALS, OCTOBER 1, 2014–APRIL 30, 2015



Source: MSPAS, SIGSA

While no aggregated data were available to review for stockouts at the lower levels of the supply chain, stockouts were observed by the HSA teams during site visits to health posts, health centers, and the district level in Alta Verapaz, Chiquimula, and Quetzaltenango. Figure 8.9 provides an example from one HSA site visit, which was consistent with interviews across stakeholder groups.

FIGURE 8.9. PICTURE FROM STOREROOM SHOWING STOCKOUTS AT A HEALTH POST



Source: HSA Team, Puesto de Salud

Given the extent of reported stockouts in the country, the HSA team analyzed which products were driving these stockout rates. A lack of standardized codes for stock items made some analyses challenging, but the HSA team was able to do this analysis for the health areas, which are the sole suppliers of health posts and health centers. Thus, it can thus be reasonably inferred that these are the items likely driving stockouts at the lower levels of the MSPAS system as well. Table 8.3 shows the top 10 stockouts for health commodities measured in cumulative weeks for all 29 health areas. It appears that addressing the stockout situation for the top 10 most stocked-out items could address the vast majority of the stocking problems at health areas, health districts, health centers, and health posts.

TABLE 8.3. TOP 10 MEDICINES AND MEDICAL SUPPLIES STOCKED OUT IN HEALTH AREAS, OCTOBER 1, 2014–APRIL 30, 2015

Medicine Name	Combined Weeks Stocked Out	Percentage of Total	Cumulative Percentage
Acetamenophen	346	12 percent	12 percent
Chlorpheniramine	238	9 percent	21 percent
Vitamin A	210	8 percent	29 percent
Vitacereal	190	7 percent	35 percent
Saline solution	187	7 percent	42 percent
Clotrimazole	168	6 percent	48 percent
Fumaric acid/sulfate	153	6 percent	54 percent
Sulfamethoxazole/Trimethoprim	138	5 percent	59 percent
Albendazole	137	5 percent	64 percent
Metronidazole	105	4 percent	67 percent

Medical Supply Name	Combined Weeks Stocked Out	Percentage of Total	Cumulative Percentage
Gloves	275	14 percent	14 percent
Scalpel blades	208	10 percent	24 percent
Nylon sutures	205	10 percent	34 percent
Chromic catgut sutures	184	9 percent	43 percent
Hypodermic needles	159	8 percent	51 percent
Black silk sutures	156	8 percent	59 percent
Intravenous catheter (angiocath)	152	8 percent	66 percent
Syringe	132	7 percent	73 percent
Adhesive tape	131	7 percent	80 percent
Witness tape (reels)	81	4 percent	84 percent

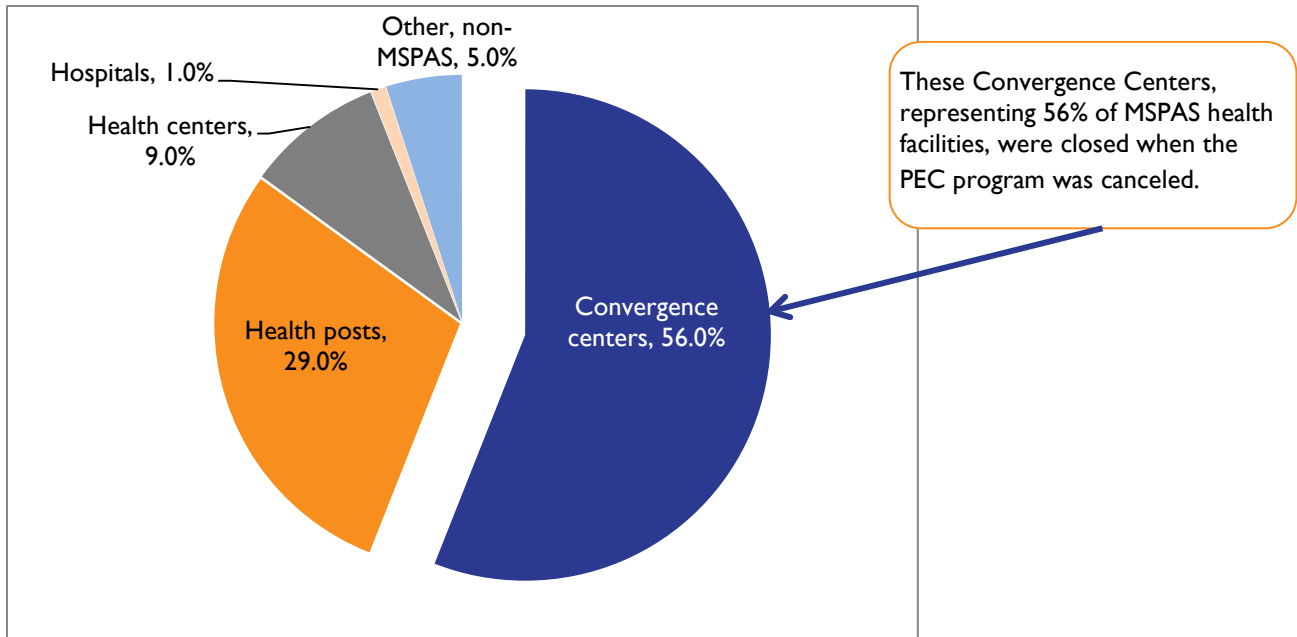
Source: MSPAS, SIGSA

The health area and hospital directors interviewed by the HSA team during field visits indicated that a lack of funding was the main (and only identified) driver of stockouts. Health post and health center interviewees indicated that what drove this was not receiving a sufficient quantity from the supplying facility, but they could not suggest underlying reasons for the systemic stockouts that they experience daily.

For the purposes of this assessment, *accessibility* to health commodities refers to the geographical proximity of service delivery points that make the commodities available to the end users. *Availability* indicates that these service delivery points actually have quality medicines on the shelves and available to the patients that need them. As noted above, availability of quality medicines is an ongoing issue. As discussed in the Service Delivery section and elsewhere in the report, accessibility to medicines via the primary-level health facilities has been severely hampered in the north and northwest regions of Guatemala by the suspension of the PEC.

As can be seen in Figure 8.10, the loss of the PEC-sponsored convergence centers – regardless of any deficiencies that may have existed in the former PEC system – has had a major impact on the level of geographic accessibility of the government’s reach to provide basic health services. The country is at a critical juncture, as the health posts called for in the new PHC strategy have not yet been funded and rolled out. This gap represents a real threat to the health of some of Guatemala’s most vulnerable populations.

FIGURE 8.10. VARIETY OF HEALTH FACILITIES OPERATING WITH PEC IN PLACE (PRE-2015)



Source: USAID HPP Project, MSPAS, SIAS

8.7 Financing of Health Commodities

It was difficult to estimate with precision the level of underfunding of medicines in Guatemala based on the data available to the HSA team. Using the 2014 medicines budgets for the administrative units provided to the HSA team by the MSPAS Finance Department, however, there was significant variation between the budget assigned (*Presupuesto Asignado*) by the Strategic Planning Unit (*Unidad de Planeación Estratégica* - UPE and the actual amount that was received (*Presupuesto Devengado*) for each administrative unit. For hospitals, the actual was 14 percent lower than budgeted; for health areas actual was 34 percent lower than budgeted; and for health programs (*Departamento Administrativo*) actual was 42 percent below budgeted (MSPAS 2015e). The HSA team was told by interviewees that the actual shortfalls were even higher than this. Stakeholder interviews also indicated that the medicines budget developed by UPE is based on health targets (e.g., goal of 1,000 vaccinations in health area X) rather than on exercises to quantify the supplies needed using historical consumption data from the health facilities. Consumption data from lower-level health facilities are not available to facilitate such quantification exercises. Stakeholder interviews indicated that the UPE assigned budget is significantly less than the actual need for most units. In one case, according to interviews, the assigned medicines budget was estimated to be 40% of what was needed.

In addition to *financing the purchase* of health commodities themselves, an important point to consider is the *cost of distributing* health commodities across the Guatemalan supply chain. In 2014, the USAID | DELIVER project conducted a costing study to evaluate the efficiency of Guatemala’s supply chain in distributing 17 vaccines, 11 contraceptives, 5 PROSAN products, and a sample of 26 medicines from the EML. The study found that the cost of the drugs distributed (the commodities) was 459.8 million quetzals for the period under review. The cost of the logistics (i.e., the cost of getting the commodities from point A to point B), was 155.5 million quetzals, or 34 percent of the value of the drugs. The USAID | DELIVER study concluded that “*the cost of logistics can be reduced...by exploring outsourcing some functions of logistics, automating the management of inventories, analyzing distribution levels, the frequency of replenishment, and providing training in order to reduce staff turnover*” (Agudelo, Juan et. al. 2014).

8.8 Findings and Recommendations

Short-term

MSPAS and IGSS maintain separate EMLs. The MSPAS’s list contains more than 500 different medicines. At the same time, MSPAS struggles to with extensive shortages across the levels of care where the top 10 medicines routinely stocked out account for 67 percent of stockouts and the top 10 medical supplies account for 84 percent of stockouts. These inefficiencies have a major impact on the quality of care provided to patients, and they drive patients away from health facilities that patients know are routinely unable to provide the medicines they need. As noted above, USAID | DELIVER found the cost of logistics across the Guatemalan supply chain can be reduced through a variety of mechanisms.

Recommendations:

1. MSPAS should pursue the strategy of fully stocking a smaller, core basket of commodities for each level of attention *before* expanding to a broader, more aspirational array of commodities. MSPAS should also reduce its EML to an item count more aligned with current budgetary realities. As stock levels begin to rise for the core commodities, MSPAS should then expand medicines over time as it secures a larger budget for pharmaceuticals. To generate some organizational momentum around the stockouts issue, MSPAS could consider launching a zero stockouts campaign for the top 10 most stocked-out items.
2. MSPAS and IGSS should align their hospital EML to better enable bulk procurement opportunities and to better align medicines-dispensing protocols between the two entities. MSPAS and IGSS should have a unified model of services from which to develop this unified EML. The list should be prioritized so that when pharmaceuticals are not fully funded, which is most of the time in Guatemala, health areas and hospitals have the guidance they need to help make critical tradeoff decisions when carrying all recommended EML items is not feasible.
3. MSPAS, IGSS, and *Sanidad Militar* should form a procurement task force to develop a detailed plan to shift to more bulk procurement (open contracts and exemption purchasing) and to improve/shift from existing framework contract agreements as necessary. The procurement planning process should include the following:
 - a. Determine the cost-savings opportunity represented by changes in procurement contracts for biggest items. A cost-savings opportunity is represented by re-competing existing framework contracts based on global market and pricing knowledge. Determine working capital required to realize savings for each organization.
 - b. Identify prioritized items representing biggest opportunity for improvement. Identify items recommended for contract consolidation.

- c. Based on savings opportunities identified, establish recommended MSPAS/IGSS/SM team structure and composition, meeting frequency, standard operating procedures, decision protocols, conflict of interest safeguards, sample best practice requests for proposals and contracts for public procurement of pharmaceuticals, and any other supporting tools/forms.
 - d. Evaluate market health of current and potential supplier base of key health commodities driving majority of spending.
4. Stock an emergency supply of the health area core basket of commodities at the central level to relieve non-chronic stockout pressures at health area level.
 5. Standardize item and location roll-up coding *across all sites and facilities within MSPAS's system* as soon as possible. In addition, standardize codes for *all items* in the MSPAS system. Site codes and item codes should follow a uniform standard in order uniquely identify sites and commodities.
 6. Facilitate central-level visibility of stock availability at all levels of the MSPAS supply chain using health post and health center data captured at districts. These data can be directly uploaded to SIGSA just as health areas and hospitals do now.

Longer-term

The key metrics of a supply chain revolve around such items as stockout rates, the percentage at which orders from lower levels (in a pull system) are filled, percentage of international reference price paid for commodities, and product adherence to the national EMLs. As noted above, the stockout rates in Guatemala have only recently begun to be routinely monitored, many framework contracts have continuing price escalations built in, and the percentage of orders filled is routinely low. Consumption data from health facilities are not being compiled, which would allow for forecasting and quantification of needs across the health system. The recent introduction of a Logistics Management Unit at MSPAS central is a positive step, but the group is only in its infancy and will need ongoing resources. The following are longer-term recommendations organized across the medical products and supply chain components reviewed.

Recommendations:

Pharmaceutical policy, laws, and regulations

1. Guatemala should establish a specific, comprehensive, overarching law to provide a legal basis and more specifics on pharmaceutical control, product selection, rational use, and topics related to pharmaceutical regulation.
2. Expand the MSPAS pharmaceutical inspection unit and consider dispersing them geographically throughout the country according to the location of pharmaceutical establishments.
3. Post key, current registration and inspection statistics on www.medicamentos.com.gt to increase transparency and accountability. Include all registered pharmaceutical establishments, including such details as inspection history and findings.
4. Encourage anonymous submittal of complaints via www.medicamentos.com.gt website to improve identification of potential problems in pharmaceutical quality and establishments.

Procurement

1. The Guatemalan procurement law, *Ley de Compras y Contrataciones del Estado*, should be revised to enable recommended processes and interagency collaboration in bulk procurement. Appropriate anti-corruption and transparency safeguards should be put in place to further improve accountability. Revisions to the law should be scrutinized by procurement technicians to ensure no unintended negative consequences on rational procurement take place.
2. MINFIN should enable bulk data download from www.guatecompras.gt to allow for deeper analysis by the public to identify trends, patterns, and strategic implications represented in the millions of transactions of procurement, including medicines procurement. Currently these transactions are only available via the interface on a piecemeal basis.

Storage and distribution

1. Consolidate central-to-area/hospital distribution across health programs and across destinations with standardized delivery schedule.
2. Improve the paper-based BRES requisition process for health posts, health centers, and districts by reducing the amount of information collected and standardizing item and location codes. In the short term, implement a spreadsheet-based system at *supplying* tier. For example, a health post would complete a simplified BRES each month that includes only ending stock balance by item. The *bodeguero* at the supplying tier would then quickly key in these balances, producing the recommended allocation based on the lower-level site's need and the upper-level site's supply. This simplified approach reduces the administrative burden at the lower level and enables higher-level tracking of availability.
3. Perform network optimization and transportation optimization analyses to determine a central-to-area/hospital distribution plan and to evaluate the desirability of eliminating the district tier of the MSPAS supply chain. Key variables such as longer-term forecasts of population growth and the volume growth of pharmaceuticals and medical supplies should be factored into such design efforts.

Availability and access to quality products

1. For health areas, and where rational and appropriate, shift procurement of the core basket to framework contracts to extend purchasing power of health areas.

Financing pharmaceuticals

1. Base UPE health commodity budgets (Renglón 266 and 295) off logistics-based quantifications led by newly formed Logistics Management Unit.

REFERENCES

- Agudelo, Juan, James Rosen, Cecilia Novoa, Anabella Sánchez. 2014. *Estudio de Costos de la Cadena de Suministros del Ministerio de Salud Pública y Asistencia Social de Guatemala*. Guatemala: USAID | PROYECTO DELIVER, Orden de Trabajo 4.
- Aldana, María José, Elman, Vix, Aldana, Roberto 2014. Sistematización lecciones aprendidas, Proyecto de Telemedicina en Alta Verapaz. Guatemala.
- ALIANMISAR (*Alianza Nacional de Organizaciones de Mujeres Indígenas por la Salud Reproductiva*). 2015. www.alianmisar.org, Accessed May 9, 2015.
- Barrientos, Néstor. 2013. Diagnóstico de situación del sistema y subsistemas en Recursos Humanos. Realizado en la Dirección de Recursos Humanos, Dirección de Área de Salud de Chimaltenango, Hospital Nacional Pedro de Bethancourt y Programa Nacional de VIH/SIDA.
- Becerril-Montekio V, López-Dávila L. 2011. The health system of Guatemala. *Salud Pública De México* [serial online] 53 (Suppl 2):s197-s208. Accessed March 22, 2015.
- Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R. 2013. “Maternal and child undernutrition and overweight in low-income and middle-income countries.” *The Lancet*. 382(9890):427-51.
- BMC. 2013. *BMC Pregnancy and Childbirth* 2013, 13:73, doi:10.1186/1471-2393-13-73 <http://www.biomedcentral.com/1471-2393/13/73>.
- Bossert T, Bowser D, Amenyah J and Copeland R. 2003. Guatemala: Decentralization and Integration in the Health Logistics System. Arlington, Va.: John Snow, Inc./DELIVER for USAID. <http://www.hsph.harvard.edu/ihs/publications/pdf/GuatemalaReportR9.Final.senttoprinters.pdf>. Accessed Feb. 2, 2015.
- Bossert T, Mitchell A, Valladares R, Bowser D. 2009. USAID/Dialogue for Social Investment in Guatemala, Resource Allocation Options for Financing in the Health Sector: International Experience and Lessons for Guatemala. http://pdf.usaid.gov/pdf_docs/PNADQ555.pdf
- Bowser DM, and Mahal A. 2011. Guatemala: the economic burden of illness and health system implications. *Health Policy* 100:159–166.
- Brinkerhoff, Derick, Bossert, Thomas J. 2008. Health Governance Concepts, Experience, and Programming Options. Washington, DC: USAID and Health Systems 20/20.
- Bustamante R, Hurtado E, Zeribi KA. 2012. Improving the Quality of Guatemala’s Public Health System: A View to Institutionalization. *Research and Evaluation Report*. Bethesda, MD: USAID Health Care Improvement Project, University Research Co., LLC (URC)
- Campbell J, Buchan J, Cometto G, David B, Dussault G, Fogstadt H, Fronteira I, Lozano R, Nyonator F, Pablos-Méndez A, Quain E, Starrs A, and Tangcharoensathienk T. 2013a. Human resources for health and universal health coverage: fostering equity and effective coverage. *World Health Bulletin* 91:853-863. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3853950/pdf/BLT.13.118729.pdf>. Accessed May 4, 2015.

- Campbell J, Dussault G, Buchan J, Pozo-Martin F, Guerra Arias M, Leone C, Siyam A, Cometto G. 2013b. A universal truth: no health without a workforce. Forum Report, Third Global Forum on Human Resources for Health, Recife, Brazil. Geneva: Global Health Workforce Alliance and World Health Organization. http://www.who.int/workforcealliance/knowledge/resources/GHWA-a_universal_truth_report.pdf?ua=1. Accessed May 4, 2015.
- Casasola, David. 2014. La Amenaza de los Pactos Colectivos en el Sector Público. Centro de Investigaciones Económicas Nacionales (CIEN). <http://www.cien.org.gt/index.php/la-amenaza-de-los-pactos-colectivos-en-el-sector-publico/>. Accessed May 31, 2015.
- CEGSS (Centro de Estudios para la Equidad y Gobernanza en los Sistemas de Salud). 2015. www.cegss.org.gt Accessed May 9, 2015.
- CNE (Centro Nacional de Epidemiología). 2014: http://epidemiologia.mspas.gob.gt/files/inicio_percent20de_percent20sesion/GUIA_EPIDIARIO_FINAL.pdf. Accessed May 8, 2015.
- Chomat AM, Solomons NW, Montenegro G, Crowley C, Bermudez OI. 2014. Maternal health and healthseeking behaviors among indigenous Mam mothers from Quetzaltenango, Guatemala. *Rev Panam Salud Pública* 35(2):113–20.
- Cisek C, Revuz C, and Kramer C. 2015. Guatemala Private Sector Assessment for Family Planning, Antenatal Care, and Delivery. Bethesda, MD: Strengthening Health Outcomes through the Private Sector Project, Abt Associates Inc.
- CNS (Consejo Nacional de Salud). 2012. Informe Trimestral. Ministerio de Salud Pública y Asistencia Social, Guatemala. January.
- Comisión Inter-institucional de Acciones Conjuntas del Sector Académico y el Sector Salud. 2014. Informe Metas Regionales de Recursos Humanos en Salud (RHUS) Guatemala. Subcomisión de Integración Docente-Asistencial. http://www.observatoriorh.org/guatemala/sites/observatoriorh.org.guatemala/files/webfiles/publicaciones/Subcomisiones/INFORME_SOBRE_METAS_REGIONALES_DE_RHUS_No_17_y_No_19.pdf. Accessed May 10, 2015.
- Consejo Nacional de Desarrollo Urbano y Rural. 2014. Plan Nacional de Desarrollo K'atun: nuestra Guatemala 2032. Secretaría de Planificación y Programación de la Presidencia de Guatemala. Guatemala. ISBN: 978-9929-618-82-4.
- Constitución de la República de Guatemala 1945, decretada por la Asamblea Constituyente en 11 de marzo de 1945. Guatemala. (Translation by Abt Associates.)
- Constitución de la República de Guatemala 1985, National Constituent Assembly, Political Constitution of the Republic of Guatemala, May 31, 1985, as amended by Legislative decree No 18-93 of 17 November 1993, Guatemala, 1993. http://www.right2info.org/resources/publications/laws-1/guatemala_constitution_eng. Accessed March 19, 2015.
- Contreras A, and Estrada G. 2012. Estudio sobre los mecanismos, costos y formas de financiamiento para disminuir la mortalidad materna en Guatemala, 2013-2022. Boletín No 9. ICEFI (Instituto Centroamericano de Estudios Fiscales)/UNICEF. 2012.
- Decreto No. 295. 1946. Congreso de la Republica, 30 Octubre de 1946.
- Decreto 114-97. 1997. Congreso de la República de Guatemala. Ley del Organismo Ejecutivo. http://www.wipo.int/wipolex/en/text.jsp?file_id=333358. Accessed May 31, 2015.

- Decreto 72-2001. 2001. Congreso de la República de Guatemala. Ley de Colegiación Profesional Obligatoria. <http://www.colmedegua.org/files/LeydeColegiacionProfesionalObligatoria.pdf>. Accessed Mar. 23, 2015.
- Decreto 31-2002. 2002. Congreso de la República de Guatemala. Ley Orgánica de la Controlaría General de Cuentas.
- Decreto 13-2013. 2013. Congreso de Guatemala, Decreto Número 13-2013, Diario de Centro América, Guatemala, November 12.
- Decreto 52-87. 1987. Congreso de Guatemala, Decreto Número 52-87: Ley de Consejos de Desarrollo Urbano y Rural, Guatemala. http://www.fiic.la/biblioteca/Ley_percent20de_percent20los_percent20Consejos_percent20de_percent20Desarrollo_percent20Urbano_percent20y_percent20Rural_Guatemala.pdf. Accessed March 19, 2015.
- Decreto 90-97. 1997. Congress of Guatemala, Decree Number 90-97, Guatemala City, Guatemala. Unofficial translation, Environmental and Social Legal Action center of Guatemala (CALAS), http://www.tobaccocontrollaws.org/files/live/Guatemala/Guatemala_percent20- percent20Decree_percent20No. percent2090-97_percent20.pdf, accessed March 19, 2015.
- Decreto 69-98. 1998. Congress of Guatemala, Decree Number 69-98, Guatemala City, Guatemala, (Translation by Abt Associates)
- Decreto 295-1946. 1946. Congreso de Guatemala, Ley Orgánico del Instituto Guatemalteco de Seguridad Social Decreto 295, Guatemala. (Translation by Abt Associates)
- De León RO, and Solís E. 2013. Informe Final del Estudio de Investigación: “Factores que incidieron en la deserción de estudiantes de la Carrera Técnica Universitaria de Enfermería, de la cohorte 2010-2012, en las Universidades: San Carlos, Mariano Gálvez, Panamericana, Galileo y Rafael Landívar de Guatemala”.
- DGRVCS 2015. Dirección General de Regulación, Vigilancia y Control de la Salud), Ministerio de Salud Pública y Asistencia Social, personal interview. April 16, 2015.
- Dmytraczenko T and Almeida G (ed.). 2015. Toward Universal Health Coverage and Equity in Latin America and the Caribbean Evidence from Selected Countries. World Bank/PAHO: Washington, DC. <https://openknowledge.worldbank.org/bitstream/handle/10986/22026/9781464804540.pdf?sequence=2>. Accessed July 20, 2015.
- DRACES 2015. Departamento de Regulación, Acreditación y Control de Establecimientos de Salud), Ministerio de Salud Pública y Asistencia Social, SHOPS interview, 2015.
- Fernández, Andrés Martínez. 2014. e-Salud en el ámbito rural. Guatemala: Centro de Innovación en Tecnología para el Desarrollo Humano (utdUPM); Fondo Multilateral de Inversiones (FOMIN).
- Flores, Walter. El Sistema de Salud en Guatemala, 4: ¿Así funcionamos? Programa de las Naciones Unidas para el Desarrollo.
- Fort MP, Grembowski DE, Verdugo JC, Morales LC, Arriaga CA, Mercer MA, and Lim SS. 2011. Implementation and progress of an inclusive primary health care model in Guatemala: coverage, quality, and utilization. *Rev Panam Salud Publica* 30(3):217–24.
- Franco LM and Marquez L. 2014. Effectiveness of collaborative improvement: evidence from 27 applications in 12 less-developed and middle-income countries. *BMJ Quality and Safety* 2011;20:658-665.

- Gobierno de Guatemala. 2012. El Plan del Pacto Hambre Cero. Guatemala.
http://www.sesan.gob.gt/pdfs/documentos/PLAN_percent20HAMBRE_percent20CERO_percent202012.pdf. Accessed May 8, 2015.
- Gómez, Ismael. 2015. Secretario Ejecutivo, Consejo de Comunidades de Guatemala por la Salud – CCGS, personal interview, April 17.
- Gómez Sabaini, Juan. 2005: Guatemala: Fortalecimiento de las Finanzas Municipales para el Combate a la Pobreza. CEPAL.
- Haub, Carl, and Gribble, James. 2011. The World at 7 Billion. *Population Bulletin* 66(2). Population Reference Bureau.
- Health Systems 20/20. 2012. The Health System Assessment Approach: A How-To Manual. Version 2.0. Bethesda, MD: Abt Associates. www.healthsystemassessment.org
- Health Finance and Governance Project. 2015. *Paving the way for universal health coverage in Peru*. Bethesda, MD: Abt Associates. www.hfgproject.org/paving-the-way-for-universal-health-coverage-in-peru/
- Hernández AR, Hurtig A, Dahlblom K and San Sebastian M. 2014. More than a checklist: a realist evaluation of supervision of mid-level health workers in rural Guatemala. *BMS Health Services Research* 14:112.
- IGSS (Instituto Guatemalteco de Seguridad Social). 2015a. Boletín Estadístico: Recursos Humanos 2014. http://www.igssgt.org/images/informes/subgerencias/boletin_rrhh2014.pdf. Accessed Aug. 2, 2015.
- . Listado de Unidades Médicas del Instituto Guatemalteco de Seguridad Social. http://www.igssgt.org/images/faq/unidades_medicas.pdf. Accessed Aug. 4, 2015.
- IHME (Institute for Health Metrics and Evaluation). 2013. “GBD Compare.” <http://vizhub.healthdata.org/gbd-compare/>. Accessed Aug. 8, 2015.
- INE (Instituto Nacional de Estadística). 2011. Encuesta Nacional de Condiciones 2011. Pobreza en Guatemala. <http://www.ine.gob.gt/sistema/uploads/2014/12/03/qINtWPkxWyp463fpJgnPOQrjox4JdRBO.pdf>. Accessed Feb. 26, 2015.
- . 2014a. República de Guatemala: Estadísticas Vitales 2013. Guatemala.
- . 2014b. Encuesta Nacional de Empleo e Ingresos I-2014. Guatemala. <http://www.ine.gob.gt/sistema/uploads/2014/11/19/L2DEWN0Bo9ArIcqCpcFPSVOzoeFKfIME.pdf>. Accessed Feb. 25, 2015.
- INEI (Instituto Nacional de Estadística e Informática). 2010. *Informe de la pobreza al 2010*. Lima, Perú.
- Ishida K, Stupp P, Turcios-Ruiz R, Williams D, Espinoza E. 2012. Ethnic Inequality in Guatemalan Women's Use of Modern Reproductive Health Care. *International Perspectives on Sexual and Reproductive Health* [serial online] 38(2, June):99-108. Available from: Academic Search Complete, Ipswich, MA. Accessed March 20, 2015.
- Kawok. 2015. <http://www.kawok.net/home>. Accessed May 10, 2015.
- Kutzin J. 2008. Health financing policy: a guide for decision-makers. World Health Organization.
- . 2013. Health financing for universal coverage and health system performance: concepts and implications for policy. *Bull World Health Organ* 91:602–611.

- La Forgia, Gerard (ed.). 2006. *Innovaciones en el sistema de salud de América Central: lecciones e impactos de nuevos enfoques*. Washington, DC: World Bank.
- Lao Pena, Christine. 2013. *Improving Access to Health Care services through the Expansion of Coverage Program (PED): The Case of Guatemala*. Washington, DC: World Bank.
- Lopez Rodas, Gerson, Executive Secretary, Asociación Nacional de Municipalidades. 2015. Personal interview, Guatemala City, Guatemala, April 17.
- Macq J, Martiny P, Villalobos LB, Solis A, Miranda J, Mendez HC, et al. 2008. Public purchasers contracting external primary care providers in Central America for better responsiveness, efficiency of health care and public governance: issues and challenges. *Health Policy* 87: 37788.
- Maeda A, Araujo E, Cashin C, Harris J, Ikegami N and Reich MR. 2014. *Universal Health Coverage for Inclusive and Sustainable Development: A Synthesis of 11 Country Case Studies*. The World Bank: Washington, DC.
<https://openknowledge.worldbank.org/bitstream/handle/10986/18867/888620PUB0REPL00Box385245B00PUBLIC0.pdf?sequence=1>
- Martins IC, Luiza VL, Bastos LA, and Ross-Degnan D. Access to medicines for acute illness in middle income countries in Central America. *Rev Saúde Pública* 47(6):1069-79.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4206104/>. Accessed Aug. 4, 2015.
- Martorell, Reynaldo. 2012. *Interventions and Policy Options for Combating Malnutrition in Guatemala*. Washington, DC: InterAmerican Development Bank.
<http://publications.iadb.org/handle/11319/2914?locale-attribute=en>. Accessed Feb 5, 2015.
- Maupin, Jonathan Nathaniel. 2009. "Fruit of the accords": Healthcare reform and civil participation in Highland Guatemala. *Social Science and Medicine* 68: 1456-1463, Elsevier Ltd.
- MINFIN (Ministerio de Finanzas Públicas de Guatemala). 2015. *Gasto Público de la Administración Central 1995-2014. Gasto/ Ejecución Presupuestaria por Entidad*.
<http://www.minfin.gob.gt/index.php/component/content/article/15-estadisticas-e-indicadores/577-gastos-ejecucion-presupuestaria-por-entidad>
- Molina, Gustavo, Contreras A, Monzón JR, Villatoro P. 2015. *Análisis de costos de funcionamiento del Modelo Incluyente de Salud (MIS) y del Programa de Extensión de Cobertura (PEC) en el Distrito municipal de Cuilco, Huehuetenango, versus beneficios esperados en materia de salud y de fortalecimiento institucional*. Unpublished report. Instituto Centroamericano de Estudios Fiscales (ICEFI).
- MSPAS (Ministerio de Salud Pública y Asistencia Social). 2010. *Encuesta Nacional de Salud Materno Infantil 2008 (ENSMI-2008/09). Informe Final: Mujeres*. Ministerio de Salud Pública y Asistencia Social (MSPAS)/Instituto Nacional de Estadística (INE)/Centros de Control y Prevención de Enfermedades (CDC). Guatemala.
- . 2011. *Encuesta Nacional de Salud Materno Infantil 2008 (ENSMI-2008/09). Informe Final: Hombres*. Ministerio de Salud Pública y Asistencia Social (MSPAS)/Instituto Nacional de Estadística (INE)/Centros de Control y Prevención de Enfermedades (CDC). Guatemala.
- . 2012a. *Estimaciones y Proyecciones del VIH y VIH avanzado*. Guatemala.
http://www.osarguatemala.org/userfiles/EstimacionesVIHGuatemala_percent202012.pdf. Accessed May 8, 2015.
- . 2012b. *Diagnóstico Nacional de Salud*. Guatemala, 2012. (Translation by Abt Associates)

- . 2014a. Memoria de Labores 2014.
<http://www.mspas.gob.gt/files/Descargas/MemoriaLabores/MemorialaboresMSPASpercent202014.pdf>. Accessed Mar. 20, 2015.
- . 2014b. Plan Estratégico MSPAS 2014-2019. Guatemala City, Guatemala.
- . 2014c. Informe Nacional sobre los Progresos Realizados en la Lucha Contra El VIH y el sida. MSPAS Programa Nacional de Prevención y Control de ITS/VIH/SIDA. Guatemala City, Guatemala.
- . 2015a. Ministerio de Salud Pública y Asistencia Social, Guatemala City, Guatemala, personal interviews, April, 2015.
- . 2015b. Estrategia de Fortalecimiento y Desarrollo Institucional del Primer Nivel de Atención. Guatemala: Ministerio de Salud Pública y Asistencia Social. April 16.
- . 2015c. Cuentas Nacionales de Salud, Reporte de Guatemala al Informe de Estadísticas Sanitarias Mundiales. Ministerio de Salud Pública Asistencia Social (MSPAS), Organización Panamericana de la Salud (OPS), Organización Mundial de la Salud (OMS).
- . 2015d. Situación de la mortalidad materna: Informe de País 2013. Guatemala.
<http://www.osarguatemala.org/userfiles/Informe%20MM%202013%20final-2.pdf>. Accessed Aug. 10, 2015.
- . 2015e. Departamento de Finanzas, Ministerio de Salud Pública y Asistencia Social, Guatemala City, Guatemala, personal interviews, April, 2015.
- MSPAS/INE/INCAP/USAID/Embajada de Suecia en Guatemala. 2014. Memorandum of Understanding for Completing the 2013-2014 Encuesta Nacional de Salud Materno-Infantil. Guatemala MSPAS/PAHO 2007-2008-2009. Indicadores Básicos de Salud. Guatemala.
- MSPAS/PAHO. 2013. Segunda Medición de Metas Regionales de Recursos Humanos para la Salud: Informe Final, Guatemala.
http://www.observatoriorh.org/sites/default/files/webfiles/fulltext/2013/informe_metas_2013_gua.pdf Accessed Mar. 7, 2015.
- MSPAS/SE-COMISCA/CDC. 2013. Informe Final de la Evaluación de Sistema de Vigilancia Epidemiológica del VIH en Guatemala. Guatemala.
- ONHRS (Observatorio Nacional de Recursos Humanos en Salud). 2015. Programa de Residencias Médicas del Ministerio de Salud Pública y Asistencia Social.
<http://www.observatoriorh.org/guatemala/?q=node/82>. Accessed May 25, 2015.
- . 2015. <http://www.observatoriorh.org/?q=node/242>. Accessed Mar. 19, 2015.
- OECD (Organisation for Economic Co-operation and Development). 2015. Revenue Statistics in Latin America and the Caribbean.
- Owen KK, Obregón EJ, and Jacobsen KH. 2010. A geographic analysis of access to health services in rural Guatemala. *International Health* 2:143-149.
- Oxford Poverty and Human Development Initiative. 2011. Multidimensional Poverty Index.
www.ophi.org.uk
- PAHO (Pan American Health Organization). 2007a. Health Systems Profile Guatemala, February 2007 (third edition). Washington, DC: PAHO.
http://new.paho.org/hq/dmdocuments/2010/Health_System_Profile-Guatemala_2007.pdf

- . 2007b. Renewed PHC. Renewing Primary Health Care in the Americas: A Position Paper of the Pan American Health Organization/World Health Organization (PAHO/WHO). Washington, DC: PAHO. <http://apps.who.int/medicinedocs/en/d/js19055en/>. Accessed Aug. 6, 2015.
- . 2012. Health in the Americas: 2012 Edition. Washington, DC: PAHO, 2012. http://www.paho.org/saludenlasamericas/index.php?option=com_content&view=article&id=9&Itemid=14&lang=en. Accessed Mar. 7, 2015.
- . 2015. *Mapa de densidad de recursos humanos en salud por cada 10 mil habitantes*. PAHO/WHO. 2014. Ministry of Public Health and Social Assistance Health Information System, Recommendations and Roadmap for Implementation. Guatemala.
- Perez, Luis Miguel. 2015. Experiencias y oportunidades de compras conjuntas en Guatemala. Bethesda, MD, USA: Strengthening Health Outcomes through the Private Sector Project, Abt Associates Inc.
- Presidente de la República. 2001. “Acuerdo Gubernativo No. 68-2001, Reglamento General del Consejo Nacional de Salud.” http://www.mspas.gob.gt/files/Descargas/DGRVCS/Salud_publica/Acuerdos_percent202/AG_percent2068-2001_percent20.pdf. Accessed March 19, 2015.
- Ramos Muñoz Belinda, Sosa Velásquez, Mario. 2010. Consejos de desarrollo y participación ciudadana en Guatemala (1985-2009). Guatemala, United Nations Development Program.
- Red Humanitaria. 2009. Resultados de la valoración de inseguridad alimentaria y nutricional en los departamentos del Corredor Seco del oriente de Guatemala, Quiché e Izabal.
- RENAP (Registro Nacional de las Personas). 2015. http://www.renap.gob.gt/percentC2_percentBFques-el-dpi. Accessed May 10, 2015.
- Rohloff P, Díaz AK and Dasgupta S. 2011. “Beyond development”: A critical appraisal of the emergence of small health care nongovernmental organizations in rural Guatemala, *Human Organization* 70(4):427–437.
- SEGEPLAN (Secretaría de Planificación y Programación). 2011. Estudio Nacional de Mortalidad Materna 2007. http://www.segeplan.gob.gt/2.0/index.php?option=com_content&view=article&id=766:presentan-estudio-nacional-de-mortalidad-materna&catid=25:ultima&Itemid=115. Accessed March 19, 2015.
- . 2014. Cálculo matemático para la distribución de la asignación Constitucional para las 334 Municipalidades del País para el año 2014. Presidencia de la República de Guatemala.
- SESAN (Secretaría de Seguridad Alimentaria y Nutricional). 2008. Ley de Seguridad Alimentaria y Nutricional. Guatemala. http://www.sesan.gob.gt/pdfs/sesan/marco-legal/Ley_de-SAN.pdf. Accessed May 8, 2015.
- SIAF (Sistema Administrativo y Financiero) IGSS. 2009. Guía de usuario Sistema Informático de Gestión: SIGES. Guatemala.
- SIAS (Sistema Integrado de Atención a la Salud). 1999. Guatemala: La Experiencia Exitosa del a Extensión de Cobertura. In *Avances: Extension de Cobertura Primer Nivel de Atención en Salud*, Ministerio de Salud Pública y Asistencia Social. Guatemala.
- SIGSA 2013. Documento de Especificaciones, Requerimientos y Criterios de Aceptación de Software para el “Sistema Integrado de Información para el Primer y Segundo Nivel de Atención en Salud Basado en la Ficha Única” Versión 1.0. Guatemala.
- . 2015a. Manual de Organización, Puestos y Funciones, Versión 1.0-3-2015. Guatemala. <http://sigsa.mspas.gob.gt/uno/2013-08-22-21-18-41/sigsa-web.html?start=20>. Accessed May 8, 2015.

- . 2015b. http://sigsa.mspas.gob.gt/tablero_informativo/index.php/uno/balances-de-ejecucion-financiera. Accessed May 8, 2015.
- . 2015c. Morbilidad por VIH-SIDA años 2009 al 2015. Datos preliminares acumulados hasta la semana 16 (04/01/2015 al 25/04/2015). MSPAS.
- SIINSAN 2015a (Sistema de Información, Monitoreo y Alerta de la Inseguridad Alimentaria y Nutricional). 2015a. <http://www.siinsan.gob.gt/MODA>. Accessed May 10, 2015.
- . 2015b. http://www.siinsan.gob.gt/Evaluacion_De_Impacto. Accessed May 10, 2015.
- TulaSalud. 2013. Informe Proyecto Piloto Fase I, Ficha Única Digital. Guatemala.
- United Nations. 2011. Informe del relator especial sobre el derecho de toda persona al disfrute al más alto nivel posible de salud física y mental. New York, NY.
- UNDP (United Nations Development Programme). 2011. Human Development Report 2011. Human Development Report 2011 Sustainability and Equity: A Better Future for All. New York, NY. http://hdr.undp.org/sites/default/files/reports/271/hdr_2011_en_complete.pdf. Accessed Aug. 10, 2015.
- . 2014. Human Development Report 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience: New York, NY. <http://hdr.undp.org/en/content/human-development-report-2014>. Accessed Mar. 4, 2015.
- UNICEF/ IOM (International Organization on Migration). 2011. Encuesta sobre Remesas 2010, Protección de la Niñez y Adolescencia Guatemala. <https://www.iom.int/jahia/webdav/shared/shared/mainsite/media/docs/reports/Guatemala-2010-migrant-remittance-survey.pdf>. Accessed Aug. 8, 2015.
- USAID (United States Agency for International Development) GeoCenter. 2015. Geographic analysis of MSPAS infrastructure and supply chains. With inputs from: USAID HPP Project, MSPAS, SIAS, Oak Ridge National Lab.
- USAID/Office of the Representative to Barbados, MEASURE Evaluation, AID Inc., University of North Carolina Chapel Hill, Macro International Inc. and St. Georges University. 2006. St. Vincent and the Grenadines Caribbean Region HIV and AIDS Service Provision Assessment Survey 2005. Chapel Hill: MEASURE Evaluation.
- USIP (United States Institute of Peace). 1998. Acuerdo de Paz Firme y Duradera. USIP Peace Agreements Digital Collection.
- Van Dijk M, Ruiz MJ, Letona D and García SG. 2013. Ensuring intercultural maternal health care for Mayan women in Guatemala: a qualitative assessment. *Culture, Health & Sexuality: An International Journal for Research, Intervention and Care* 15:sup3, S365-S382. <http://dx.doi.org/10.1080/13691058.2013.779026>. Accessed Aug. 6, 2015.
- WHO (World Health Organization). 1998. Model System for Computer-Assisted Drug Registration: SIAMED User Manual. Geneva: WHO.
- . 2006. The World Health Report 2006 – Working together for health. Geneva: WHO. http://www.who.int/whr/2006/whr06_en.pdf?ua=1. Accessed Mar. 19, 2015.
- . 2007. Everybody business: strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: WHO. 2007.
- . 2010. The World Health Report 2010 – Health Financing: the path to universal coverage. Geneva: WHO. <http://www.who.int/whr/2010/en/>. Accessed Mar. 19, 2015.

- . 2014a. Country Cooperation Strategy, Guatemala. Global Health Observatory, WHO. April. Accessed March 19, 2015.
http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_gtm_en.pdf?ua=1
- . 2014b. Making fair choices on the path to universal health coverage: Final report of the WHO Consultative Group on Equity and Universal Health Coverage. Geneva: WHO.
www.apps.who.int/iris/bitstream/10665/112671/1/9789241507158_eng.pdf?ua=1
- . 2014c. World Health Statistics 2014. Geneva: WHO. 2014.
- . 2015. Global Health Expenditure Database. <http://apps.who.int/nha/database>. Accessed June 11, 2015.
- World Bank. 2015. World Bank, World Development Indicators,
<http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators>. Accessed May 9, 2015.
- WGI 2014: World Bank Worldwide Governance Indicators,
<http://info.worldbank.org/governance/wgi/index.aspx#reports>, accessed March 17, 2015.



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