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Un Federalismo Saludable?
Three Essays on Health System Decentralization and Performance in Mexico

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Un Federalismo Saludable?

Health System Decentralization and Performance in Mexico

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B.A., Stanford University, 2004

M.P.H, Yale University, 2011

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An abstract of

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ABSTRACT

This dissertation is prepared in light of ongoing debates on the merits of health system decentralization and its ties to universal access, quality, and equity. Across the world, low-and-middle income countries continue to enact reforms that transfer functions (fiscal, administrative, political, and regulatory) from national to subnational agents, and vice versa. This dissertation provides a nuanced understanding of decentralization from the standpoint of one middle income country, i.e., Mexico, and its complex, deeply-fragmented health system. The dissertation's initial chapters seek to conceptualize decentralization as a reform process. They provide a framework to better understand decentralization's specific links to quality measures. The dissertation then assesses the performance of Mexico's safety-net healthcare facilities in light of Donabedian measures of quality.

The first chapter of the dissertation explores key dimensions of Mexico's health system decentralization, specifically the actors, functions, and historical interactions that characterize the current system. Relying on a myriad of consultancy reports, peer-reviewed articles, and government documents, I account for the various actors and functions of Mexico's brand of health system decentralization. I then account for decision space of key actors in the areas of administration, financing, and policymaking. The second chapter focuses on the intermediary mechanisms that are involved in decentralized policies and quality measures. I provide a framework that highlights the specific dimensions of decentralization and quality. I contend that the proposed framework could benefit future scholars and policymakers who seek to identify policy levers that can reconcile local needs/preferences with improved service delivery.

The third chapter moves the literature beyond mere conceptualization of decentralization to actual uses of decentralization components towards health services utilization and health system performance. It reveals key findings on patients seeking care/treatment at centralized and decentralized healthcare facilities. It notes that while patients seeking care/treatment at decentralized facilities may find lower travel times and wait times, their counterparts at centralized facilities may benefit from a greater availability of medications and better explanations of medications and treatment plans. Combined, the three chapters provide a foundation by which future research can explore the impact of decentralization. The dissertation can guide scholars in assessing this impact as a collective of micro-dynamic processes that can ultimately affect overall health system performance. Moreover, it allows us to understand how decentralization efforts in a resource-limited setting can affect similar populations at the same time.

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This dissertation is dedicated to the many mentors, family, friends, colleagues, and peers who have supported me throughout this incredible journey. Upon earning this degree, I will become the first person in my entire family—both nuclear and extended—to have earned a PhD. Doing so entailed years of hard work, persistence, and a positive outlook. These attributes sustained me through the gauntlet of coursework and research, and through the successful completion of this dissertation. I also credit my success, thus far, to God and to the many persons who encouraged me along the way. May I repay their support by actively working in service to others--particularly those who strive to move beyond their circumstances and realize their potential to serve a greater societal good.

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INTRODUCTION

Policymakers across the world are under constant pressure to innovate their health systems in search of models that achieve universal access, contain costs, and ensure quality and equity. Doing so, however, is not without persistent and complex challenges. Among these challenges is the task of reconciling a system of health sector governance with demographic, economic, and epidemiologic transitions. This challenge is particularly true in middle-income countries like Mexico.

In recent decades, Mexico has struggled to innovate its healthcare system to ensure participatory and democratic mechanisms while addressing financial constraints and poor resource allocation. Throughout recent decades, the healthcare sector in Mexico has undergone multiple facelifts. It has swayed in political directions that favored more integrated--i.e., top-down--governance models and in directions that allow, if not require, more local control. Like many countries that have undergone periods of reform, the healthcare sector in Mexico continues to face budget shortfalls, fragmentation of delivery, planning, and financing, and weak monitoring systems.

While there is no panacea for a truly equitable and robust health system, it is important to raise questions on the nature and extent of reforms in middle-income countries like Mexico. Are policymakers in these countries serious about ensuring universal access, equity, and fair financing when they enact new health sector plans? Are trial-and-error tactics necessary to sustain dynamism and participation in healthcare planning, financing, and delivery? Or are Mexican policymakers ignoring socio-economic realities and merely trying—to cite a Mexican aphorism—block the sun with one finger? In short, are policymakers trying to force efficiency and squeeze pesos from a

healthcare sector that has been historically underfunded, deeply fragmented, and poorly managed?

The answers to these questions command rigorous examination and assessment of the nature of health systems in middle-income countries. It requires us to understand a series of health system models and then determine where Mexico's health sector reforms are best situated. From this examination, we can then shift our attention towards the structural elephant in the room, which is Mexico's decentralized system of public administration. Decentralization in Mexico presents an interesting area for examination not only because of its ties to health services, but because it suggests that reforms—how ever efficient and equitable—must ultimately be reconciled with a country's system of governance. As is often the case in current health systems literature, decentralization in Mexico can become a liquid noun, i.e., it takes the form of whatever author or agency is arguing for or against it. To fully examine the degree to which decentralization takes shape in Mexico, it is important to highlight the components of the country's health system decentralization. These components will offer a more nuanced definition of decentralization that will ultimately guide analyses in the chapters of this dissertation.

Gaps in Current Literature

To date, scholars have focused largely on assessing decentralization for what it is, often with little regard to how its dimensions affect specific aspects of health system performance.[1-6] In countless studies, scholars resort to varying definitions of decentralization that rely on dichotomous definitions (centralized vs. decentralized) rather than the degree to which decentralization affects components of a health system.[1-6] The assumption is that decentralization is an outcome of reform and not a prolonged

management or organizational approach to that aspires to enable performance improvements. Another challenge is the limited extent to which existing literature links nuanced definitions of decentralization to actual measures of performance. For policymakers, facing pressure to link good governance strategies with strategies that make health systems equitable, efficient, and responsive, there is little time to debate the nuances of which framework or which conceptualization of decentralization is most appropriate.[7] Performance is often measured using empirical data (e.g. patient records, household/individual surveys) and with little regard to a suitable—namely, nationally-focused--conceptualization of decentralization.[7]

Mexico presents a great case in point. Its reforms began in the mid-1980s and offer a natural experiment by which decentralization can be conceptualized, linked to quality metrics, and assessed for the same populations at the same time.[7, 8] Mexico's experience is a departure from previous examples that have assessed decentralized vs. centralized health providers pre-- and post- reforms (e.g., Indonesia, Brazil, Thailand).[7, 8] In Mexico's case, states throughout the country enacted decentralization reforms and were supplemented with centrally-controlled healthcare institutions (i.e., IMSS-Oportunidades) that rendered a patchwork of centralized and decentralized facilities—and in turn, an excellent opportunity to see how and where decentralization affects health system performance.

Dissertation Chapters

The proposed chapters of this dissertation address gaps in existing literature with respect to health system decentralization in Mexico. The three chapters provide a basis

of understanding for health systems researchers and assess patient perceptions of quality, a key performance area for health systems.

1. *Health System Decentralization: A Case Study of Mexico*

   This chapter examines how health systems--as a concept--has been framed in existing health systems literature. I present a few dominant models in health systems research that have guided health systems reforms and assessments. My assessment goes beyond existing literature and focuses on decision space within Mexican healthcare institutions. I cite historical, administrative, and political barriers that hamper health system decentralization. I then provide a framework by which we can understand decentralization in Mexico and better examine health system performance.

2. *Connecting Mexico's Health System Decentralization with Quality Assessment: A Conceptual Framework*

   This chapter provides a theoretical framework that assesses how the various dimensions of decentralization affect measures of quality. It specifically examines the intermediary mechanisms that improve or worsen quality. I highlight the policy levers that could be used to improve health system performance. The framework can be useful for policymakers seeking to reconcile decentralization reforms with efforts to improve quality metrics. Throughout this chapter, I integrate various components of Mexico's health system and note where and how these components can be affected by the decentralization reforms enacted in recent decades.

3. *Patient/Consumer Assessment of Quality for Centralized and Decentralized Providers in Mexico*

   This chapter focuses on patient/consumer assessments of quality and on expectations of service for centralized and decentralized healthcare providers. I assess the quality of healthcare services by using a Donabedian quality framework. I examine various dimensions of quality for decentralized and centralized health settings. My analyses largely rely on household survey data that reflect patient/consumer experiences in attaining healthcare services in decentralized and/or centralized healthcare settings.

To conclude, I offer a summary of the theoretical and empirical findings on chapters 2 and 3 and link these findings to ongoing problems with Mexico's health system decentralization reforms. This summary focuses on the pathways of decentralization in Mexico and notes persistent challenges such as layering, regulatory capture, and interest group demands on the system. It notes that while policymakers may seek improvements in social protection and health outcomes, health system decentralization—like decentralization of other social services—may render mixed results. This chapter ultimately raises key questions for policymakers seeking to reconcile governance reforms with improvements in health system performance.

The analyses captured in these chapters provide insight into health system decentralization in one middle-income country. It affords the reader an understanding of how decentralization—as a public administration concept--has been translated into practice in Mexico's health sector. It accounts for the vast literature on decentralization

as a tool for democratization and participatory governance and applies this literature towards healthcare services provision, utilization, and quality. It also provides insight on how healthcare reforms that target universal access, equity, and cost containment can be fully operationalized in federalist governance schemes. Lastly, this dissertation will serve as a point of departure for me as I engage in future research that will require more extensive examination of decentralization reforms within low- and middle-income countries seeking to achieve universal health access. The concepts and methods acquired to piece together these various chapters have, in many ways, allowed me to understand the mechanics of healthcare policy and its direct/indirect ties to health system performance.

CHAPTER 1

Health System Decentralization: A Case Study of Mexico

To fully examine a country's brand of health system decentralization, it is necessary to establish a framework by which we can understand the architecture and functions of each health system component. This framework allows us to assess how the nature of a health system can affect its overall performance. In this chapter, I pursue four objectives. First, I explain how health systems--as a concept--has been framed in existing health services literature. I then present a few dominant models in health systems research that have guided health systems reforms and assessments. For each model, I cite the positives and negatives to underscore the point that--despite repeated citations in *Lancet* articles or in World Health Organization (WHO) literature--there is no perfect model for understanding a country's health system. I also contend that the nature and history of Mexico's health system requires us to move beyond traditional models, which stress public sector efficiency and/or cost savings. I argue that there is a strong need to understand the nature of policymaking and implementation in Mexico—i.e., the governance side of health systems—and that by doing so, we are better able to assess the performance of a decentralized scheme.

The second section of this chapter discusses a framework initially offered by Cheema and Rondinelli in 1983 and advanced by Bossert in 1998.[9] I offer a brief history of public sector decentralization in Mexico to give context to what may otherwise appear to be a series of tables and organizational charts. This history reveals the untidiness of decentralization in a middle-income country. It also suggests that that "Big Bang" theories of decentralization, i.e., theories that maintain that distinct policy shifts

and intergovernmental transfers can capture decentralization, are flawed and that decentralization is more incremental than what may appear in black-and-white policies and laws.

The third section of this chapter focuses on the architecture of Mexico's health delivery systems and its ties to political and administrative decentralization. I highlight the financing, delivery, and administrative components of Mexico's various social security institutions in addition to underscoring the role that the Ministry of Health and State Health Service offices play in healthcare delivery. I also examine the nature of Mexico's Seguro Popular (Popular Health Insurance), which provides coverage for uninsured populations and relies extensively on healthcare facilities owned and administered by the Ministry of Health and in decentralized states, the State Health Service. I point out a duplication of healthcare services in Mexico's rural settings, which I contend, allows for a side-by-side comparison of decentralized and centralized healthcare providers.

From this review of health systems and decentralization literature, I then propose a new framework for understanding health system decentralization in Mexico. In this framework, I account for decision space in the areas of administration, financing, and policymaking. This framework allows for a better understanding of a brand of decentralization, which provides a background for understanding health system performance for rural healthcare facilities in Mexico.

Competing Models of Health Systems

In 2007, WHO defined a health system to mean "all organizations, people and actions whose primary intent is to promote, restore or maintain health."[10] This definition further notes that health systems are "more than the pyramid of publicly owned

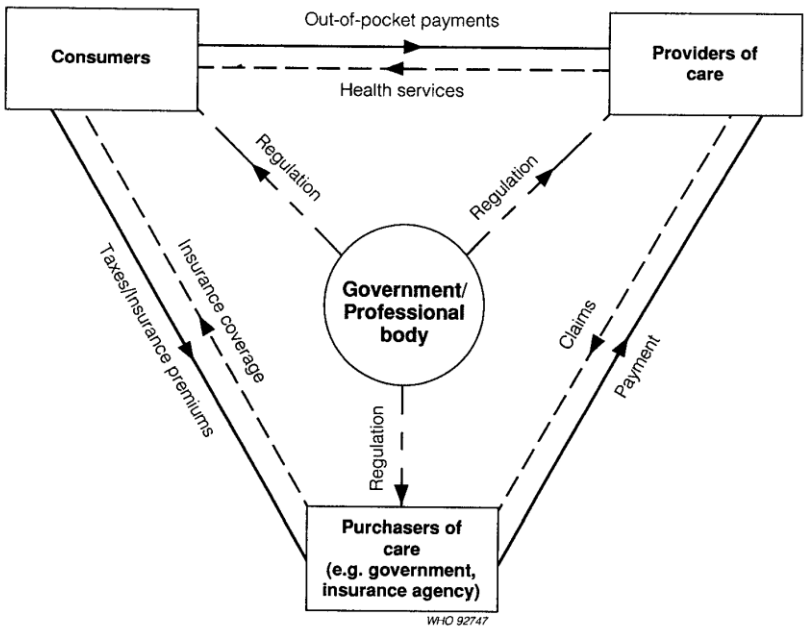
facilities that deliver personal health services."[10] While this definition appears clear and all encompassing, it says little about how actors within a system link—or do not link—together. Policymakers at all levels seek to modify the architecture of health systems to leverage influence and to articulate polices that will achieve specific performance outcomes (e.g., improvement of a population's health, responsiveness, and fairness). These policymakers realize that health systems are not a stagnant set of organizations awaiting cues from bold leaders, but rather a vast array of moving parts that follow—or could follow--a specific design and management strategy.

Throughout previous decades, several frameworks have tried to provide policymakers with convincing and operational approaches to designing and assessing health system performance. These frameworks vary extensively in their complexity and in their mission. They seek to be clear and thorough, but often they succumb to being either too focused on one goal or too complex to encompass everything and ultimately guide nothing. In the following sections, I guide the reader through a series of frameworks that have emerged throughout the past decades. I maintain that these frameworks have failed to consider the power dimensions and checks-and-balances for those tasked with planning, financing, providing, and regulating health services. Ultimately, I focus on the framework highlighted by Brinkerhoff and Bossert, which I contend is a better fit for a middle-income country like Mexico. I examine this framework beyond its primary focus on accountability and focus on the framework's various policy levers. I contend that by understanding health system decentralization within a governance and accountability framework, we can better understand how and why specific actors matter in overall health system performance.

WHO Agents in Healthcare Financing Framework (1993)

In 1993, WHO sought to provide a framework (Figure 1) that would address the changing role of governments in financing healthcare services.[11] The resulting framework largely follows reasoning that government intervention is justified—if not necessary---to address market failure. The framework underscores the role of government agencies—particularly in the role of financing—to effect systematic change through direct functions and via externalities (i.e., the spillover effectors of an individual's decision to seek healthcare services and/or take preventative actions). At the heart of this framework is money, specifically the power of governments to use money as an incentive or disincentive to achieve overall improvements in health and in fair financing.

Figure 1: WHO Agents in Healthcare Financing Framework (1993) [11]



Several benefits come with this framework. First, it examines actors and the relationships that link these actors. It considers factors that drive these relationships and moves us away from traditional tax-funded models where governments are the primary—if not—sole purchasers and providers of healthcare services. In this framework, governments provide an intermediary role between providers, purchasers, and consumers. A second benefit stems from the framework incorporation of specific actions that could be taken to ensure equity, efficiency, and improved population health. In this light, governments are not asked to allocate more resources into their health sector, but rather to act more strategically to effect change and manage resources.

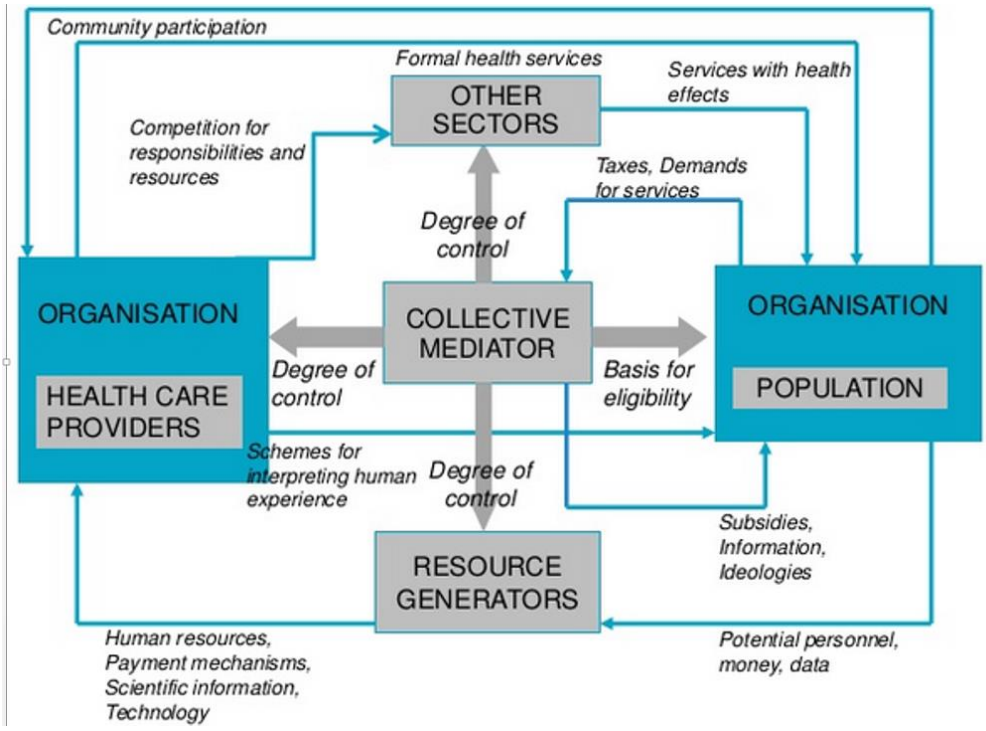
The framework, however, does fall into the trap of being so narrowly focused. By viewing a health system strictly through an economic lens, the framework assumes behaviors and incentives. The framework thus maintains that financial rewards and disincentives can modify organization behavior and ultimately break historic path-dependent cycles within the public sector. It also contends that externalities justify government involvement in healthcare financing, but at no point in the framework does one find non-consumers i.e., individuals not receiving healthcare services and who would ultimately benefit from externalities. Governments are not only in place to facilitate the purchasing and delivery of health care services, but also play a stewardship role in optimizing efficiency gains and contain costs.[12] A responsive government is subject to the demands of the public—which includes consumers and non-consumers. The 1993 WHO framework, unfortunately, ignores this point.

Frenk Framework (1994)

The following year, in 1994, Frenk argued that the architecture of a health system should include a system's building blocks and the structure of the relations between these blocks.[13] In contrast to WHO's framework from the year before, Frenk contended that the system must also include the ties between these blocks with their external environment. In Frenk's view, a healthcare system must include the principal actors, their exchanges, and the bases for their interrelationship.[13] In this light, principal actors, as a whole, are not only the vehicle for organized social response to a population's health conditions, but also a set of social instruments (e.g., legislation, organizations) that are sustained with population interaction and support.

Several strengths come with Frenk's 1994 framework. First, the framework affords a better sense of the range of actors within a system, namely members of the population. The framework stresses the population's key role and notes that state acts intermediaries for competing public demands. A second strength of the framework is the "public" is not seen as an amorphous group of like-minded individuals, but rather a heterogeneous group whose demands of a health system can—and often will--evolve over time. A third strength is that, contrary to 1993 WHO model, Frenk's framework goes beyond health services. It places the health sector squarely within the domain of the population and subjects it to democratic institutions.

Figure 2: Frenk Framework (1994) [13]



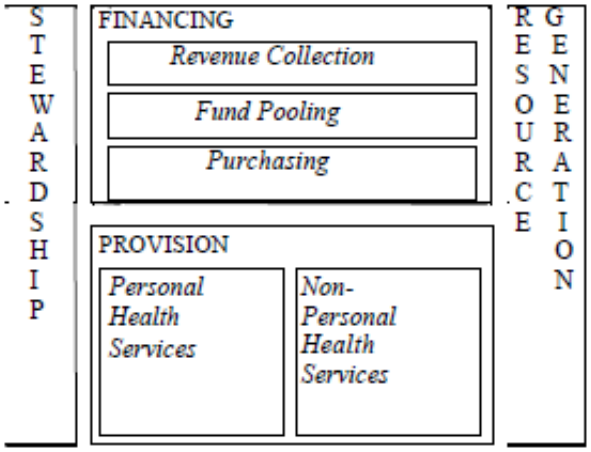
Despite its benefits, the Frenk framework fails to fully recognize the role of political institutions in effecting—if not determining—a government's role in the health sector. Whereas the public, in theory, has the capacity to have the final say in health sector decisions, they are not the primary agents in effecting change and often experience the benefits and failures of a system *ex post facto*. A second limitation of this framework is that it be boundless. By framing relationships within the health sector as being population-driven, the health sector seems to move away too far from the point of care and seems to suggest that the health sector is no different from other public sectors (e.g., education, roads). It shifts the focus from optimizing efficiency and equity *within* the

healthcare sector towards broad objectives of good governance and public sector effectiveness—a step beyond the pay grade of health systems analysts.

Londono and Frenk 1997

The Londono and Frenk framework emphasizes four basic functions: financing, provision, stewardship and resource generation (human, physical and knowledge) as illustrated in Figure 3. The framework posits that specific operational attributes--namely strategic design, structural arrangements and implementation management--can render solutions in design, implementation, evaluation, and reform. The framework shifts from primary actors towards set functions that Londono and Frenk contend are most critical in achieving systematic objectives. The framework simplifies Frenk's 1994 model to core functions and in turn, fails to address the role of the public to hold key actors accountable. In addition, the framework appears to be too focused on central/national polities and does not refer to the possibility of local and non-state actors. Indeed, at the time that the framework made its debut, many countries were in the well-engaged in decentralization reforms and also experimenting with New Public Management approaches. [14] In this light, a framework primarily focused on functions ignores the role of accountability and the role of the public to ensure that the health sector reflects popular norms, values, and beliefs.

Figure 3: Londono and Frenk 1997 [15]

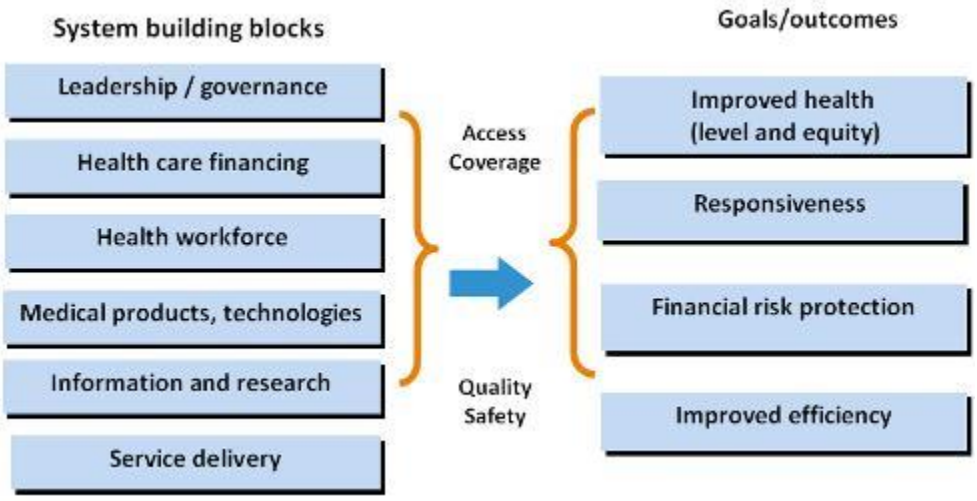


WHO v2 (Building Blocks Framework) 2007

In 2007, WHO provided a new framework (Figure 4) that somewhat integrated ideas and approaches of previous frameworks. Specifically, the 2007 WHO framework aimed at fusing six primary components of a country's health system with overall system goals. The figure below links these blocks with goals noting that the mechanisms for reaching these goals are access, coverage, quality, and safety. [10] In many ways, the framework is easy to understand and continues to provide a useful tool for students of health systems. It focuses not on specific actors or functions but on broad domains of a healthcare sector that the framework playfully labels "building blocks." These blocks are not placed in a hierarchical pattern suggesting that they are somehow interlinked. In many ways, the framework makes a concerted appeal for horizontal management of healthcare services that in many low- and middle-income countries took the form of disease/illness-specific, vertical programs. The framework also acknowledges that health

systems could have multiple goals (e.g., improved health, responsiveness) and that these goals could be achieved at the same time.

Figure 4: WHO v2 (Building Blocks Framework) 2007 [10]



Like its predecessors, the 2007 WHO framework does not come without flaws. Most prominent, what specifically is the interaction between the blocks? The framework does not make any explicit recognition of the people and relationships within and across the blocks nor does it mention what motivates individuals within them to work together. In this light, there is no incentive for a policymaker dealing with one block (e.g., health workforce) to see the ties of this block with another block (e.g., information and research). Also excluded are citizens/consumers. In their place, the framework notes "leadership/governance", essentially placing the stewardship of health systems into the hands of providers and policy elites. In recent years, there has been a concerted movement to elevate the status of citizens/users and place the citizen/consumer is at the center of the health system.[16] It remains unclear as to whether new "people-centered"

models will displace this framework, but there is no denying that the framework has been used extensively in health systems literature and in policy circles.

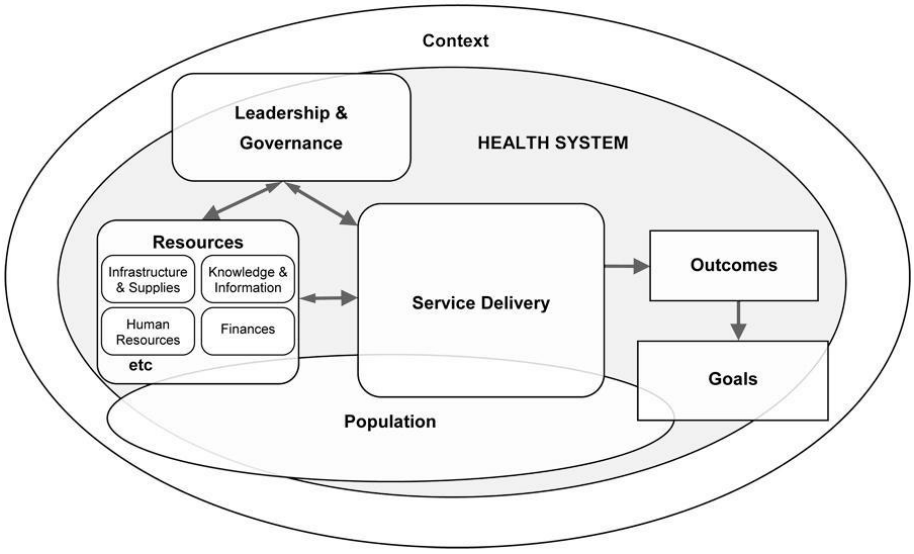
Health Systems Dynamics Framework 2012

The Health Systems Dynamics Framework (Figure 5) incorporates elements from the WHO Building Blocks framework, namely the blocks themselves, and emphasizes that outcomes and goals are made based on explicit values and principles.[17] These values and principles form the *dynamic* dimension of the framework, namely that health systems are social systems that are composed of various actors and organizations and their interrelations.[18] Most importantly, the framework shows a non-linear relationship between the various actors suggesting that responses to specific policy stimuli are difficult, if not impossible, to predict.

In this light, the framework is, at best, a realist description of social systems and at worst, a defeatist view of the potential for health system reforms. The framework holds that any innovation must undergo a gauntlet of central/national actors and their interrelation, coordination strategies, and regulatory schemes before it can take full effect. By doing so, the framework holds that an innovative reform will ultimately lose its potential to affect a system. As such, policymakers seeking major reforms are left to operate on the margins for incremental gains. The framework seems realistic in that it acknowledges the role of values and societal preferences in sustaining health system reforms. However, it assumes that these preferences and values are stable or permanent. The framework thereby ignores the possibility that the same path dependency that makes health system reforms so difficult can also be shattered and reconfigured with reforms

that seek to target values and re-arrange constituency groups.[19] These new policy constituencies will in turn, establish and help sustain a new set of values.[19]

Figure 5: Health Systems Dynamics Framework 2012 [17]



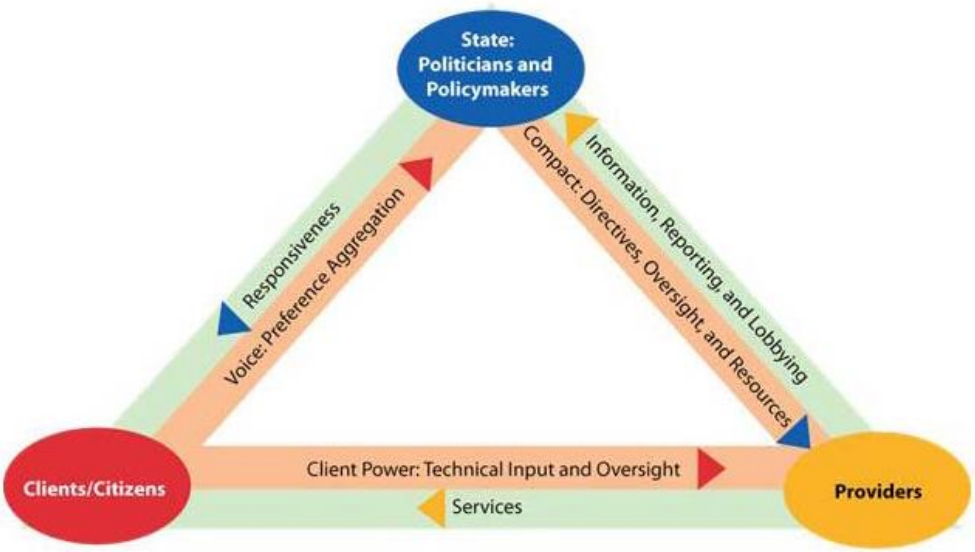
Brinkerhoff and Bossert 2013

The Brinkerhoff and Bossert framework accounts for the dearth in existing models with respect to accountability (Figure 6). Their framework highlights the checks-and-balances functions between governments, citizens/consumers, and providers.[20] Figure 6 provides a shorthand account for the highly complex set of interactions that exist within and among the key players of a health system, which Brinkerhoff and Bossert argue are critical to sustaining reforms. At the heart of their framework is accountability. Within the "state" domain, for example, citizens can pursue accountability via legislative bodies

that pressure health ministry officials on a set of actions. Accountability can also be leveraged with decentralized and federalist system with central/national ministry officials leveraging policies over local entities, and vice versa.

The main point of this model is that institutions matter. These institutions determine who does what, who gets what, who monitors what, and ultimately how it is all done. The framework also affords us a view of health systems from the standpoint of governance and accountability,

Figure 6: Brinkerhoff and Bossert 2013 [20]



which allows us to probe deeper into the political side of the health sector. It also requires us to examine the interests of citizens not only as third parties in negotiations between providers, governments, and insurance firms, but as key players in ensuring responsiveness.

Decentralization and Health Systems Frameworks

Each of the health systems frameworks of the past three decades demonstrate the complexity that exists within the health sector of any country. These models stem from rich foundations of ideas, approaches, and experiences that structure and direct them in distinct directions. Often, these directions are clear. Some frameworks stress the *functions* and relationships that govern central/national actors within health systems, while others focus on the *actors* themselves and their interactions with other actors within or outside the health system. Still yet, a few frameworks shift the focus away from policy elites and towards the interests of the citizen/consumer. Obtaining the full picture of a health system is difficult to discern largely because most systems, including health systems, are constantly changing, tightly linked, remain a part of larger systems, and nest sub-systems within them.

Future chapters assess the governance-side of health systems—particularly the relationship between national and subnational actors. At its core is the nature of policymaking and the mechanisms that ensure accountability and allow policy discretion. In this light, Brinkerhoff and Bossert's framework should guide our understanding on what a health system really means. This framework affords us a glimpse of the structure of health system governance albeit from a shorthand illustration of the multitude of actors and the highly complex interactions that exist between these actors. The framework also allows us to see a country's health system as a part of a broader governance scheme that seeks to optimize government performance and uphold key objectives such as accountability and citizen participation.

With respect to Mexico, several factors require us to focus on the governance/accountability nature of its system. First, Mexico is a middle-income country with disparities in resources that vary extensively by geography. In many cases, healthcare services are purchased, provided, and regulated by the state. The functional capacity of Mexico's public health sector is thereby often tied to the overall capacity of the state—namely the central/national government--in a particular region of the country. At the heart of this functioning are the actors themselves, i.e., the policymakers (both national and subnational), the providers, and the patients/consumers. These actors voice demands that—depending on their power—can shift a health system towards greater responsiveness, dynamism, and/or cost-efficiency.

A second factor is the changing and increasingly decentralized and/or private face of healthcare provision in middle-income countries like Mexico. Privatization and decentralization matter greatly in our understanding of health systems because they change they significantly change the role of the state. National and subnational governments are now tasked with working with one another in direct public management of health services, but also in a regulatory role of state and non-state actors. The arrangements that form between central, local, and non-governmental actors thus should guide our understanding of how a health system can set and achieve overarching goals like universal access, equity, and efficiency.

A Framework for Understanding Health System Decentralization

Decentralization in its most basic form is the "shifting of power from centralized, national political structures to institutions that are operated at regional, state, or municipal levels."[21, 22] In the context of health services planning and development, decentralization suggests a transfer of power and responsibility for implementing health

plans and delivering healthcare services. The challenge faced by policymakers—specifically those tasked with ensuring optimal health outcomes at minimal cost—is whether decentralization of healthcare delivery improves the performance of a health system. Of interest is the effect that decentralization has on cost, health outcomes, and access.

The extent to which these countries decentralize follows pathways that are often guided by political, economic, and administrative functions.[9, 21] One pathway is through political decentralization, which empowers subnational representatives and citizens with a greater ability to set policies at local levels.[9, 21] A second pathway is fiscal decentralization, which equips subnational entities with the power to collect and utilize revenues within their specified areas.[9, 21] A third pathway is administrative decentralization, which allows for a more pronounced role of subnational entities in the delivery of health services.[9, 21]

The experience of decentralization in country after country suggests that these three functions follow theoretical ideal types that are far different in practice. Often, these functions comprise a more continuous gradation than a set of sharply defined contrasts. This is clearly evident with devolved functions, which are often implemented in light of subnational constraints (e.g., budgetary shortfalls) and bureaucratic or regulatory constraints at the national level [23]

A useful framework for understanding health system decentralization is a framework developed by Cheema and Rondinelli in the early 1980s.[21, 24] This framework (Table 1) distinguishes decentralization along political, fiscal, and administrative functions. The framework also notes the various actors tasked with

transferring responsibilities to sub-national and at times, private-sector units. With respect to policy-making functions (i.e., political decentralization), the framework conceptualizes decentralization to mean the localized "organization, articulation, participation, contestation, and aggregation of interests." [25] Under politically decentralized systems, citizens—not national representatives or central bureaucrats—define interests and form identities based on sub-national concerns. Consequently, political organizations such as political parties and social movements operate sub-nationally and compete over local issues and in local elections.[25]

Table 1: Health System Decentralization through a Functional Lens [9, 21]

Function	Types of Actors	Characteristics[24]
Policy-making	National level of government	Redistributes decision making authority responsibilities among different levels of the ***central*/national** government [political deconcentration]
	• Ministry of Health • Ministry of Education (for teaching hospitals) • Ministry of Finance (for national funding) • National credentialing/regulatory agencies	
	Regional and Municipal levels of government	Transfer responsibility for decision-making of public functions to semi-autonomous organizations not wholly controlled by the central/national government, but ultimately accountable to it [political delegation]
		Regional and local governments have clear and legally recognized geographical boundaries over which they exercise authority and within which they perform public functions [political devolution]
Fiscal controls	Regional and Municipal levels of government	Self-financing or cost recovery through user fees
		Co-financing and co-production arrangements through which the users participate in providing services and infrastructure through monetary or labor contributions

Function	Types of Actors	Characteristics[24]
		Expansion of local revenues through property or sales taxes, or indirect charges
		Intergovernmental transfers that shift general revenues from taxes collected by the central/national government to local governments for general or specific uses
		Authorization of municipal borrowing and the mobilization of either national or local government resources through loan guarantees
Administrative controls/Active management	Regional and Municipal levels of government	Transfer responsibility for administration of public functions to semi-autonomous organizations not wholly controlled by the central/national government, but ultimately accountable to it [administrative delegation]
		Regional and local governments have clear and legally recognized geographical boundaries within which they perform public functions [administrative devolution]
	Private sector actors	Allowing private enterprises to perform functions that had previously been monopolized by government [privatization]
	• Private not-for-profit health facility owners/boards	
	• Private for-profit health facility owners/boards	Reducing legal constraints on private participation in service provision or allowing competition among private suppliers for services that in the past had been provided by the government or by regulated monopolies [deregulation]

In a similar light, administrative decentralization focuses on the administrative effects of granting sub-national jurisdictions autonomy from central/national control. This autonomy translates into general personnel control and discretion over public finances. Throughout my analyses, I refrain from using specific terms cited in Cheema and Rondinelli's framework with respect to political and administrative decentralization, namely delegation, deconcentration, and devolution. In efforts to not confuse the reader with the nuances of each category, my approach to decentralization views these categories as nothing more than points along a continuum of political and administrative autonomy. This conceptualization corresponds to previous assessments that have relied on the World Bank's Database of Political Institutions.[26-28]

The Cheema and Rondinelli framework defines fiscal decentralization as transferring control of fiscal activities, namely expenditures and revenues, from central/national governments to sub-national governments. Combined, these two activities reflect the "total amount of money that central/national governments put into or take out of an economy as well as where governments put the money and where they take it from."[25] The Cheema and Rondinelli framework maintain that fiscal decentralization can be best measured as sub-national expenditures and revenues as a percentage of total expenditures and revenues.[21] Given the varying extent of intergovernmental transfers from sub-national to central/national governments and vice versa, this examination of health system decentralization focuses on the administrative and policy-making functions within decentralized states.

The overall aim of this review is to examine the impact of political and administrative decentralization on health services delivery. In this light, Bossert's

conceptualization of "decision space" helps to guide our understanding of decentralization along the three dimensions highlighted by Cheema and Rondinelli.[9] For my analyses, I view policies pertaining to administrative decentralization (largely via personnel control) and political decentralization (measured by statewide elections) to be equal across decentralized states. The creation of the State Health Service in each decentralized state following the 1983 decentralization reforms indicates that the reforms—on an equal basis--ended the central/national government's direct administration of health resources.[29] As a result, state representatives were tasked with the responsibility of their respective State Health Service and ultimately accountable to their constituents.[30] In a later section, I discuss the nature of Mexico's decentralization reforms with respect to policy-making functions and administrative controls.

The Benefits and Challenges of Health System Decentralization in Low- and Middle-Income Countries: A Review of the Literature

In recent decades, health system decentralization has become a popular reform in low- and middle-income countries.[31] In many upper middle-income countries like Mexico and Argentina, decentralization often follows periods of economic crises and consequently, is largely driven by government pursuits of reducing bureaucratic inefficiencies and curbing administrative costs.[32] [9] In other cases, decentralization is driven by donor countries and international development agencies who have regarded decentralization to be an important and complementary element to democratization and good governance.[31] From 1993 to 1997, for example, the World Bank financed projects in low- and middle-income countries where nearly 12 percent of funds were directed at decentralizing responsibilities to lower levels of government.[8] A 2008

evaluation revealed that from 1990 to 2006, the World Bank spent nearly 22 billion U.S. dollars in the 20 selected, low-income countries, of which 7.4 billion dollars were specifically aimed at decentralization-related activities.[33] The evaluation further noted that 47 percent—yes, 47 percent!—of the 203 World Bank commitments made with the 20 recipient nations contained clauses that stimulated some form of decentralization.[33]

Still yet, in some countries, subnational politicians and civil society actors actively seeking authority and autonomy from central/national governments fueled decentralization efforts. In return, national leaders often acted strategically in granting access to central/national power and resources as a way of obtaining support from local allies or meeting demands for democratization.[25] Their willingness to hand over power stood in contrast to what occurred in the 1950s and 1960s when centralization was promoted to deal with increasing demands and mass mobilization unleashed by decolonization and industrialization.[34]

While it is often difficult to determine whether a set of outcomes is the result of pure decentralization policies or merely the result of economic changes during the period of study, many researchers have sought to assess the benefits of decentralization schemes, particularly with respect to health.[9] Decentralization is rarely an endpoint characterized by a set of defined set of indicators.[9] Rather, decentralization is a continuous process shaped by competing interests of national and subnational government actors.[9] It is important that researchers and evaluators consider the nature and extent to which decentralization schemes are enacted and implemented in each country. By examining the context by which decentralization reforms were enacted, we are better able to assess the success and failures of such reforms.

In the following sections, I review the evidence that supports—or rejects—arguments in favor decentralization. I try to explain the reasoning behind these assessments. I particularly focus on the role of decentralization reforms in enhancing political participation, accountability, and bureaucratic efficiency and ultimately contend that evidence supporting health system decentralization is mixed with respect to improved health outcomes, bureaucratic efficiency, and accountability.

Assessing the Benefits of Decentralization

In countries where health and social services have traditionally been financed and provided through public sector agencies, decentralization—namely delegation of decision-making functions--can seem appealing. The argument holds that by delegating authority to subnational stakeholders, central/national bureaucrats will afford local actors more capacity to innovate and design programs and policies that are suitable for their areas.[35] The argument assumes that subnational authorities better informed regarding local needs, and thus can provide the economically efficient quantity and quality of local public goods.[36] In federated states like Mexico, socio-economic differences across regions and states make it difficult for central/national bureaucrats to meet local demands suggesting that local actors would know their areas better and thus create more responsive policies and programs.[36]

Another line of argument in support of decentralization—namely fiscal decentralization—is the role of subnational governments in preserving markets. The argument maintains that by decentralizing the authority to make economic policies to sub-national units (i.e., states or provinces), central/national administrators reduce their ability to act arbitrarily, particularly with respect to markets.[37] Also, central/national

governments often act as monopolists and have the power to exploit the private sector by extracting rents.[38] In decentralized setting, subnational governments are forced to compete with one another for scarce capital and labor thus creating what one author calls "market federalism."[37] This fiscal and institutional competition limits the government's ability to extract rents, enhancing economic efficiency and improving economic growth.[37-40] The argument further posits that fiscal decentralization further pushes subnational governments to fulfill their functions of protecting property rights and enforcing contracts, which in turn ensures a higher level of good governance.[37]

The main question is how decentralization—namely political and administrative decentralization--affects the healthcare sector. Efficiency arguments from proponents like Weingast[37], Oates[36], and Sheifer and Vishny[38] can also be used in this context. Specifically, locally-managed healthcare facilities may be better informed regarding local demands and are therefore in a stronger position to allocate resources to the most useful projects—such as primary care services and health promotion initiatives—compared to the central/national government.[36, 37] The competition argument is also relevant in light of the limited amount of available resources in low- and middle-income countries. Sub-national jurisdictions have an incentive to perform well in exchange for increased economic growth and reduced economic inequality, which may improve overall health.[41]

One empirical study examined the impact that political decentralization had on child immunizations programs. The study used time-series data set of 140 low- and middle-income countries from 1980 to 1997 and found positive results for low-income countries, but not for middle-income countries.[28] The authors present several explanations for

their findings and note that the difference in the effect of decentralization between low- and middle-income countries could be mediated by a country's decision to decentralize and its real capacity to obtain high levels of immunization coverage.[28] If immunization is accepted as a proxy for other health services, then this study's findings could suggest that for low-income countries, political decentralization could serve as a significant—if not, determinant—factor in improving health system performance.

Arguments against Political Decentralization

Several health systems researchers dismiss the positive effects of decentralization on improving health services delivery and financing. Their arguments fall into four broad categories: economies of scale, quality of bureaucracy, local government capture by local elites, and failures of policy coordination. With respect to economies of scale, decentralization may be linked with a loss in purchasing power.[42] In a centrally-governed polity, the federal/national government may have more capacity than subnational governments to negotiate prices of pharmaceuticals, bargain with health industry labor unions, and reinforce healthcare infrastructure through a national government procurement mechanisms.[42] By delegating authority to sub-national polities, the federal/national government may be trading off efficiency gains rendered from identifying local needs with an overall loss in sourcing drugs, negotiating with labor, and maintaining infrastructure.[42]

Secondly, administrative decentralization assumes that the quality of bureaucrats at subnational levels is equal to, if not better than, that at federal/national levels. With limited resources, it is difficult to imagine that subnational polities may have the technical capacity that mirrors their national counterparts. Central/national governmental

institutions can attract people who are more qualified because they offer better career opportunities and higher salaries.[43-45] In low- and middle-income countries, qualified human capital is scarce and thus decentralizing would afford more authority to sub-national government officials who may be less qualified than central/national bureaucrats. In this light, management of decentralized public sectors agencies may be less efficient than top-heavy strategies favoring central/national bureaucrats.

Thirdly, political decentralization entails devolving power to subnational institutions, which may be operated by local elites. These elites may have their ears closer to the ground than national bureaucrats, but they are also more likely to be subject to the pressing demands of local interest groups.[45] This influence could also present more opportunities for corruption at the local level. Consequently, there may be a tendency for the subnational government to provide excessive services to the local elite at the expense of marginalized populations.[43] This is particularly true when there are weak monitoring and accountability systems at national and subnational levels.[7] Also, there may be a tendency to redirect priorities so that they cohere with their own interests and not national priorities.[43]

Lastly, there is always the problem of equity and policy coordination. In countries with great geographic, socio-economic disparities, central/national government oversight of local government operations is critical to ensuring a coordinated health system response. Unfortunately, these monitoring system remain weak and further hampered by limits to taxing authority and/or budgetary constraints imposed by central/national governments on lower levels.[23] Decentralization may exacerbate vast

interregional disparities and make it difficult to coordinate a national response towards a particular health issue or set of health issues.[23]

The Architecture of Mexico's Healthcare Delivery Systems

Mexico is currently one of the largest and highest-income countries in Latin America and the Caribbean. With a population of 113 million and a per-capita GDP of US$10,064 (current U.S. dollars),[46] Mexico has benefited from sustained economic growth throughout the past two decades. Despite this growth, poverty remains high and scattered across states and across urban and rural areas. Moreover, nearly half of the population living below the national poverty; however, in 2008, the percentage of Mexicans living under the World Bank threshold of 2 USD per day (Purchasing Power Parity) was only 5 percent.[47] This variation is evident in national statistics on education services, housing conditions, and access to health services.[48] In 2010, for example, the extreme poverty ratio in the Federal District and the states of Colima and Nuevo León was below 3 percent. At the same time, southern states like Chiapas, Guerrero, and Oaxaca reported figures that were 25 percent or higher.[48]

Social Security Institutions

Over 100 million Mexicans receive health care services via one of three healthcare delivery arenas. In the first arena are Mexico's five major social security institutes. Traditionally, Mexico's system of healthcare delivery is publicly financed and administered via federally-operated social security institutes. These institutes include the Mexican Social Security Institute (IMSS), the Institute for Social Security and Services for State Workers (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, or ISSSTE), the Social Security Institute for Petroleum Workers (Petróleos

Mexicanos or PEMEX), Social Security Institute for the Department of National Defense (Secretaría de la Defensa Nacional or SEDENA), and the Social Security Institute for the Navy (Secretaría de Marina or SEMAR). Traditionally, these institutes were managed, staffed, and monitored at the federal/national level. They were traditionally financed from general tax revenue suggesting that they are largely tax-funded systems with no purchaser/provider split.

IMSS is, by far, the largest of these social security institutions and serves salaried employees, i.e., formal sector workers, and their dependents through nationally administered clinics and hospitals. These benefactors are often urban dwellers and are employed in the formal job sector (i.e., small-scale farmers, the unemployed, and merchants would not be targeted).[49] IMSS directly administers clinics and hospitals and does not charge user fees or deductibles for services. [47] Mexicans who are affiliated with IMSS are covered through mandatory government, employer, and employee payroll contributions. [47] At present, approximately 38 million Mexican citizens receive their healthcare services via IMSS clinics and hospitals.[50]

In a similar light, ISSTE covers approximately 10 million Mexicans encompassed by workers who are employed in the public sector and their dependents. Both IMSS and ISSTE are financed by earmarked employee and employer payroll taxes *and* legally mandated government contributions. For armed forces and workers at Petróleos Mexicanos (PEMEX; the Mexican parastatal oil company), social security institutions, i.e., PEMEX, SEMAR, and SEDENA, provide health care services for approximately 1.5 million individuals.[51]

Ministry of Health (SSA) and the State Health Service (SESA)

The second arena of Mexico's health delivery system consists of the Ministry of Health (Secretaria de Salud y Asistencia or SSA). SSA provides coverage for those not affiliated with a social security institution, i.e., residents who are not employed in the formal sector. Health services are provided through government-owned healthcare facilities, i.e., clinics and hospitals, and are financed through general tax revenues.[47] In some states, health services are delivered directly via decentralized state-level health providers. In these states, healthcare facilities are owned and operated by the State Health Service (Secretaria Estatal de Salud y Asistencia or SESA).

A large proportion of the primary and in-patient care services for the rural poor is delivered by an IMSS-administered, federally/nationally-operated government program called IMSS-Oportunidades.[51] Like health services provided by SSA and SESAs in decentralized states, IMSS-Oportunidades provides health services that are almost entirely financed by general tax revenues, with a small proportion (3.4 percent) financed by user fees.[51] At present, approximately 52 million people receive health care services through SSA while 6 million obtain health care services through IMSS-Oportunidades.[51]

Seguro Popular (Popular Health Insurance)

Since 2002, Mexico has rolled out a social health insurance scheme for uninsured populations called Seguro Popular, i.e., Popular Health Insurance. Seguro Popular provides a voluntary insurance for people who are not covered by employment-related social security institution and does away with user fees in return for a subsidized-prepayment.[47] It does not directly finance or manage healthcare facilities.[47] In 2012, Seguro Popular offered an explicit service package, CAUSES (Catálogo Universal

de Servicios de Salud), of 284 interventions, including drugs and nine "catastrophic cost" diseases in adults and six groups of catastrophic diseases for children and young adults.[51] Unfortunately, frequent high-cost diseases are excluded and patients/consumers have to pay for their care and treatment. The Seguro Popular package corresponds to 11 percent of what public social security insurance provides for free.[52]

Seguro Popular has largely been administered through the Ministry of Health healthcare facilities though in recent years, it has been changed to include private providers.[53] In less than a decade, Seguro Popular tripled the Ministry of Health's budget and because Seguro Popular had to be approved in every state legislature, it afforded states—particularly decentralized states—more autonomy and discretion in the use of resources.[53] At the same time, the ability of the federal/national government to shape state decisions was significantly limited.[53]

Private Providers

The final arena of Mexico's healthcare delivery system is private medical care. Health services administered via private providers are increasingly becoming widely available but at the same time, they remain very heterogeneous in terms of quality and the level of services provided (e.g., primary, secondary, etc.).[50] Approximately 6.7 percent of the population receives its healthcare coverage through private health insurance[48] while expenses for healthcare services rendered by private providers account for more than half of overall health expenditures since the early 2000s. [49] Although there is a small nonprofit sector that provides some free healthcare services, most private care is for-profit.[54] Costs associated with private medical care are almost always out-of-

pocket and thus inherently regressive leaving the poor to pay more as a percentage than the wealthy.[49]

A major driving factor for people turning to private providers is their preference for "responsive" care. A National Health Survey in 2000 noted that "twenty-one percent of social security beneficiaries and 28 percent of the uninsured population reported having had their last outpatient visits delivered privately."[55] Another study found that better-quality care in public healthcare facilities can translate into reduced out-of-pocket expenditures because utilization declines among private providers.[56] These figures suggest that at almost all levels of socioeconomic status, people will turn to the private sector if they are not satisfied with the health care benefits provided by the social security institutions (e.g., IMSS, ISSTE, etc.) or with services provided by the Ministry of Health.[50] The supply of private providers continues to grow as large numbers of unregulated private physicians deliver their services in individual "clinics" mostly to the uninsured who can afford them.[54] Indeed, many physicians combine private—often individual--practice with public work at an IMSS or Ministry of Health facility.

A History of Health System Decentralization in Mexico

Throughout much of the 1980s and 1990s, decentralization reforms were in vogue throughout Latin America. In country after country, central/national governments democratized and strengthened the autonomy of subnational governments in terms of authority—both political and administrative.[20, 57] Bossert et al note, "A variety of convergent factors in the 1980s motivated the current use of decentralization as a means to improve state-society relations and advance socio-economic development."[9] The decline of authoritarian regimes in the late 1980s and 1980s throughout Latin America

and Central/Eastern Europe provided an avenue for a new form of governance and a new conception of a "modern state."[9, 42, 58] This process of political modernization fused efforts to democratize with efforts to promote accountability in the public sector.[9, 58] Combined, the two efforts provided the basis for legitimacy.[9, 58] This legitimacy favored local preferences, representation, and cost-consciousness.[9, 58] The federal/national government thus took on a different role during these waves of reforms. Instead of directly providing health services through bureaucratic channels, the central/national government enabled and regulated subnational agents to carry out responsibilities. Multinational aid agencies like the World Bank and the International Monetary Fund made decentralization a condition of structural adjustment policies.[39, 59] Their reasoning was that locally governed and accountable regimes would restore markets and encourage economic growth. In the 1993 World Development Report titled "Investing in Health", the World Bank included an emphasis on decentralization.[39, 59, 60] A similar approach was adopted by bilateral aid agencies like the U.S. Agency for International Development.[42]

Mexico was not spared in the decentralization reform wave of the 1980s and 1990s. By the early 1980s, "Mexico-- at least in formal terms--had been one of the most centralized countries in Latin America. From the 1930s to the early 1980s, a single party dominated almost all aspects of political life, including holding most elected positions. Between 80 and 90 percent of all public resources in the early 1980s were spent through national government agencies despite the nominal existence of a federalist system."[49]

The rise of decentralized governance in the 1980s, however, was not driven by the central/national government's relinquishing of power, but rather a formalization of power

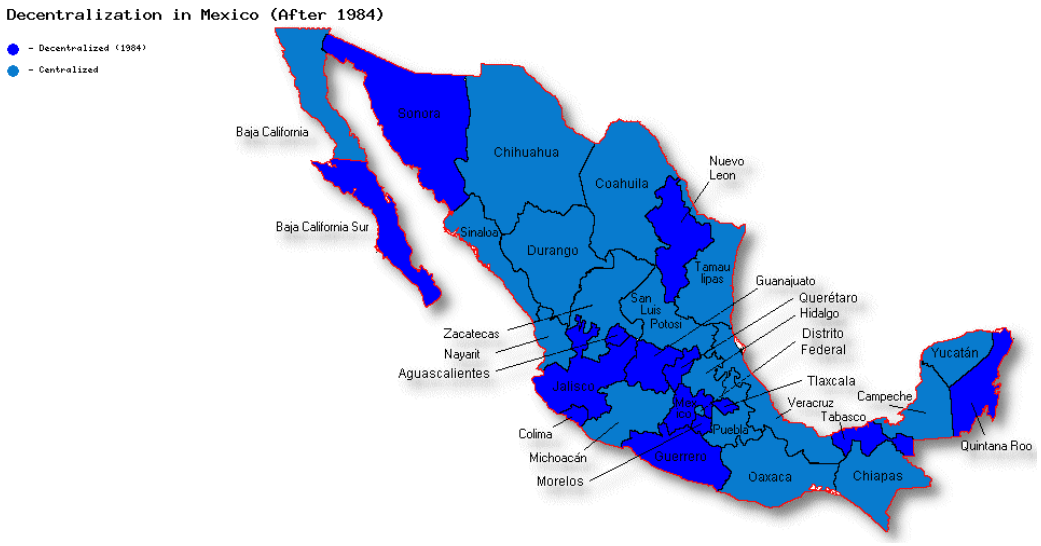
networks that were already informally established.[61] The Partido Revolucionario Institucional (PRI) in the 1920s provided an avenue to address conflict within the auspices of one political party that was closely tied with the state.[61] The PRI was formed as being a *pact among* and not a *unified party of* revolutionary leaders in various parts of the country.[61] The pact was largely based on reconciling a centralized state inherently tied to one political party with the persistent influence of local and regional leaders. The central/national government would use the PRI to mediate between citizens and the PRI would use the government to deter political competitors. Consequently, from its founding in 1929 to 2000, the PRI was in the eyes of most Mexicans, synonymous with the state.[61] At the same time, however, the PRI's hierarchical, largely clientelist system served the state well in its ability to consolidate power. Through a set of broadly understood informal rules for settling differences among political leaders, the PRI afforded subnational leaders a significant amount of autonomy and authority.[61] Dissenting views were addressed through intermediaries, often supporters of top political leaders, but rarely, if ever, was the PRI challenged as the established mechanism of governance.[61]

In the mid-1940s, Mexico instituted a public safety net program for residents that were not covered by its social security institutions. Authority of this program was reserved to the federal/national government, but in 1982 following a severe debt crisis, the Mexican government began an ambitious decentralization program that formally established subnational authority and autonomy (i.e., political and administrative decentralization).[61, 62] These 14 newly decentralized state health systems also control of several federal/national clinics and hospitals.[61, 62]

Decentralized states were also afforded administrative autonomy, but during this period, permanent health workers were largely unionized by the Ministry of Health National Workers' Union (SNTSA). The SNTSA was reluctant to decentralize, based on its corporatist arrangement at the national level. Consequently, union members within states were protected against structural changes affecting public institutions.[63] The 1982-83 economic crisis severely restricted the creation of new permanent positions and as a result, expansion in human resources occurred mostly through fixed-term contracts paid for by decentralized states.[29]

In 1989, the newly-elected administration of President Carlos Salinas de Gortari interrupted—and effectively halted---the decentralization process in Mexico at least with respect to health services.[62] The 14 states that were previously afforded significant administrative autonomy and authority were allowed to retain such power, but the future of the remaining 17 states remained unclear (see *Figure 7*). For how long, would these states accept their limited control of healthcare policy setting, financing, and administration? Would the central/national government ever devolve more power to subnational levels? These two questions persisted throughout the presidency of Salinas de Gortari, which began in 1988 and ended in 1994.[61]

Figure 7: Decentralization in Mexico after 1984



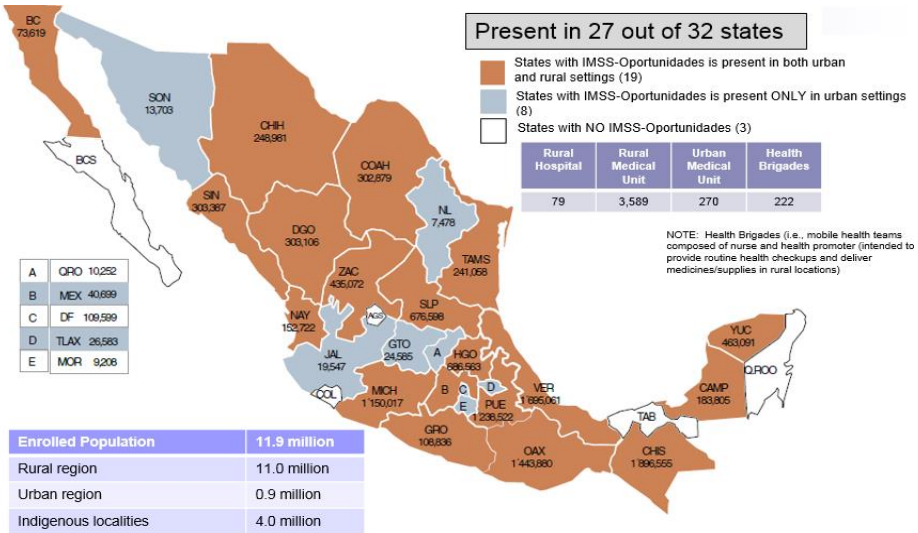
From 1994-1995, Mexico experienced one of its worst economic crisis that resulted in the devaluation of the peso and a massive U.S. economic bailout.[62] The new presidency of Ernesto Zedillo sought to stabilize the peso and promote decentralization as a way to alleviate the economic burden on the state.[62] Zedillo's administration followed a more ambitious decentralization program than what was instituted in 1982. The program was first introduced in 1995 and had two key effects and sought to decentralize health care centers in the remaining 17 states.[62] This reform met quick political opposition at state levels. State policymakers—fearful that the transfer would increase their financial burden—blocked the transfer of federal/national healthcare facilities leaving only 14 states with a semi-decentralized healthcare delivery structure.[62]

Healthcare Delivery: Centralized vs. Decentralized Providers

The Mexican Social Security Institute (IMSS) administers clinics and hospitals at the federal/national level suggesting that nearly all major decisions in policy, payroll, and financing are made in Mexico City and not the states in which IMSS operates.[49, 64] The decentralization reforms of 1982 and 1995 did not change the vertically integrated organization of the IMSS.[49, 64]

In 1979, the Mexican federal/national government established the IMSS-Oportunidades Program as a federal/national executive program, administered by the Mexican Social Security Institute (i.e., federally-operated).[49, 64] IMSS-Oportunidades sought to provide healthcare services for Mexican residents who did not have access to social security services. Unlike IMSS which covers comprehensive health services, IMSS-Oportunidades only covers primary care, preventative services, and basic hospitalization.[49, 64] By 2006, approximately six million poor residents receive a large proportion of the primary care services via healthcare centers administrated by IMSS-Oportunidades.[51, 65] At present, IMSS-Oportunidades spans—in both urban and rural areas—27 of Mexico's 32 states. New facilities for IMSS-Oportunidades are largely established based on negotiations between state and national stakeholders—namely representatives from State Health Service Departments, the Ministry of Health, and IMSS.[66]

Figure 8: 2016 Coverage for IMSS-Oportunidades



The most consistent criteria that guided the placement of new healthcare facilities after the second decentralization wave in the mid-90s was to build IMSS-Oportunidades health centers in the poorest rural regions following submissions by state governments on their target areas.[66] The factors determining the exactly location of Ministry of Health or State Health Service clinics/hospitals varies across states, but somewhat suggests—at least for rural populations a quasi-random distribution of healthcare providers."[6]

The 1982 decentralization reforms triggered a transfer of autonomy and authority of all federal/national clinics/hospitals (excluding IMSS-Oportunidades clinics/hospitals) from the national Ministry of Health (SSA) to state ministries of health (SESAs) in 14 states.[42, 49] The result was that in the 14 "decentralized" Mexican states—nearly half the country—there are two tiers of healthcare facilities. In the first tier, there are decentralized (i.e., state operated) clinics and hospitals owned and administered through

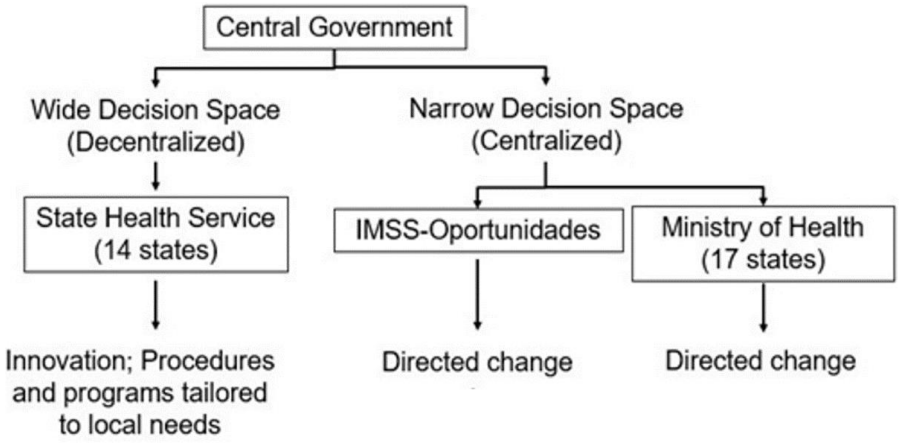
state ministries of health (SESAs). In the second tier, there are IMSS-Oportunidades healthcare facilities, which are centralized (i.e., federally/nationally operated).[42] These two sets of healthcare facilities provide a unique opportunity to see centralized and decentralized health care providers operate side-by-side in the same area. To ensure that there is limited duplication of services, the Mexican government also sought to ensure that IMSS-Oportunidades healthcare facilities and state healthcare facilities were placed far enough from each other so that they were not in competition.[42] At the same time, however, federal/national guidelines required that both state and federally operated healthcare facilities abide by a cost-effective criteria, which meant that the types of services offered by both sets of healthcare facilities were, in principle, the same.[42]

Conceptualizing Mexico's Health System Decentralization

A core problem in assessing decentralization is the task of defining the dimensions that make up the concept. It is one thing for politicians and bureaucrats to pursue "decentralization" as a goal, but it is another to see how their goals really manifest themselves in a real-world setting.[67] Key questions arise: What does decentralization mean? Who does it target? Who benefits? Who suffers? How can it be best tailored to respond to local demands for autonomy? In this light, it is important to assess decentralization from a functional standpoint, specifically as a set of policies about local choice and the incentives that reinforce local autonomy. This is particularly true for central/national policy-makers and administrators who may shirk their responsibilities to devolve power to local authorities. Choice is thereby afforded to them through policies and regulations that are enacted and implemented along a continuum.[68-70]

To understand decision space in Mexico, it is best to shift our attention towards the publicly financed health facilities operated by State Health Service (decentralized states), Ministry of Health (centralized states), and IMSS-Oportunidades (nearly all states). Figure 9 describes these institutions in terms of the amount of authority and responsibility that the Ministries of Health (centralized states), and IMSS-Oportunidades (nearly all states). Figure 9 describes these institutions in terms of the amount of authority and responsibility that subnational managers have. Narrow decision space thereby becomes synonymous with centralization where of Health (centralized states), and IMSS-Oportunidades (nearly all states). Figure 9 describes these institutions in terms of the amount of authority and responsibility that subnational managers have. Narrow decision space thereby becomes synonymous with centralization where IMSS-Oportunidades and the Ministry of Health are directed by central/national managers.[6]

Figure 9: Decision Space for Rural Health Facilities [9, 21]



Conversely, in decentralized states, central/national managers devolve authority to state governments and in turn, afford wide decision space to peripheral managers (i.e., the State Health Service). The central/national government still plays a role in decentralized states, but it is largely in the capacity as a balancing agent to guide and evaluate the delivery of healthcare services.[6] In a few circumstances, central/national managers can take on a more proactive role such as procurement and logistics. In this capacity, central/national managers can encourage states to take part in national programs aimed at enhancing regional economies of scale and in turn, bid for better prices with suppliers.[42]

Assessing the Dimensions of Mexico's Health System Decentralization

A core problem in assessing decentralization is the task of defining the dimensions that make up the concept. It is one thing for politicians and bureaucrats to pursue "decentralization" as a goal, but it is another to see how their goals really manifest

themselves in a real-world setting.[67] Key questions arise: What does decentralization really mean? Who does it target? Who benefits? Who suffers? How can it be best tailored to respond to local demands for autonomy and authority? In this light, it is important to assess decentralization from a functional standpoint, specifically as a set of policies about local choice and the incentives that reinforce subnational autonomy. This is particularly true for central/national policy-makers and administrators who may shirk their responsibilities to devolve power to subnational authorities and instead diminish gains that could be made through decentralization processes.

Bossert defines this formal process as the establishment of "decision space" by which local discretion is permitted by central/national authorities. [1] In turn, subnational administrators and policy-makers are empowered to make core decisions about financing, service delivery, human resources, and governance.[71] Bossert's conceptualization of decision-space moves us beyond the dichotomous centralized-decentralized outcomes.[68-70] His framework defines the actors and institutions by their roles and responsibilities within an organizational structure and notes notes the degree to which decision space is actually available.[1]

To understand decision space in Mexico, it is best to shift our attention towards the publicly-financed health facilities operated by State Health Service (decentralized states), Ministry of Health (centralized states), and IMSS-Oportunidades (nearly all states). Figure 9 describes these institutions in terms of the amount of authority and responsibility that subnational managers have. Narrow decision space thereby becomes synonymous with centralization where IMSS-Oportunidades and the Ministry of Health are directed by central/national managers.[6]

Conversely, in decentralized states, central/national managers devolve authority to state governments and in turn, afford wide decision space to peripheral managers (i.e., the State Health Service). The central/national government still plays a role in decentralized states, but it does so as a balancing agent that ensures a minimum standard of healthcare services.[6] Central/national managers, for example, can take on proactive roles and financially incentivize State Health Service managers to cooperate in centrally-managed areas where they can take advantage of some economies of scale, e.g., bidding for better prices with suppliers.[42] Central/national managers can also guide state managers by evaluating their performance and later assisting in filling financial gaps in service delivery.[42]

Nevertheless, there is a clear distinction in the amount of discretion and information that is afforded to subnational entities in Mexico's brand of decentralization. In centralized institutions like the Ministry of Health and IMSS-Oportunidades, the national government has the authority and responsibility of providing a public service to the population. Facility managers in centralized institutions thereby coordinate healthcare provision through regional or central/national managers and information for decision-making always flows from the periphery to the center. In decentralized systems like the State Health Service, the central Ministry of Health devolved the authority and responsibility for providing a public services to state governments. These state governments thus rely on their own regulatory mechanisms to ensure that they provide a minimum standard of primary and preventive health services.[42]

Table 2: Health System Decentralization through a Functional Lens

Function	**Indictor**	**Decentralized States (State Health Service)**	**Centralized States (Ministry of Health and IMSS-Oportunidades)**
Finance			
Sources of revenue	*Intergovernmental transfers as % of total subnational health spending*	*Funding from the central/national government is allocated based on fixed formulae*	*Funding from the central/national government is allocated based on fixed formulae*
Allocation of expenditures	*% of subnational spending that is explicitly earmarked by higher authorities*	*Based on fixed formulae from central/national government*	*Based on fixed formulae from central/national government*
Policy-making/Governance			
Facility boards	Size and composition of boards	Defined by state government	Defined by central/national government
Community participation	Size, number, composition, and role of community participation	No limits (defined by states)	Defined by central/national government
Discretion over spending	Range of prices subnational authorities can choose	Moderate range	No choice/Narrow range
Required programs	Specificity of norms for subnational programs	Flexible norms	Rigid norms set by central/national government
Access rules	*Defining priority regions*	*Defined by state government*	*Defined by state government*
Administration			
Salaries	Choice of salary range	No limits (defined by states)	Defined by central/national government

Contract	Contracting non-permanent staff	No limits (defined by states)	Defined by central/national government
Civil service	Hiring and firing permanent staff	Local civil service (states)	Defined by central/national government
Payment mechanisms	Choice of how providers will be paid (incentives and non-salaried)	Several models for local choice (defined by states)	Defined by central/national government

Table 2 identifies the three functions—finance, policy-making, and administration—that characterize Mexico's brand of health system decentralization. With respect to financing, decentralization may be characterized by the ability of subnational governments to generate revenue and decide on how to spend that revenue. Access to financial resources translates into greater responsibility and in turn, wider decision space. In Mexico, most healthcare revenue is sourced via general taxes and is pooled nationally.[54] Funding for healthcare services is subsequently reallocated by central/national managers at the Ministry of Finance and assigned to states based on fixed national formulae.[54] This formulae accounts for inter-state disparities—namely, population, per-capita income, and economic structure. While, in theory, state policy-makers can appeal to the central Ministry of Finance for revisions to their assign formulae, these appeals rarely occur.[72] The Ministry of Finance largely rejects these appeals because of the extreme difficulties to reach alternative equilibrium distribution and consensus among all states and the central/national government.[72]

Because there is little difference between centralized and decentralized actors, it is difficult to examine the impact that Mexico's decentralization reforms—which are largely focused on policymaking and administrative functions—could have on healthcare

utilization, quality, and health outcomes. In principle, subnational health managers have the authority to mobilize resources, which are largely generated through providing additional services. In practice, however, these managers remain dependent of central/national government financing.[54]

Decentralized authority to State Health Service managers could empower these managers to make choices that are suitable for the subnational context. This aim, however, is reliant on the capacity of State Health Service managers to have the knowledge and skills to develop and implement comprehensive plans. The engagement of locally-based facility boards and community stakeholders could help decentralized actors, but it could also mean plans are ill-designed or poorly monitored. In many resource limited settings---particularly those that have recently undergone decentralization reforms--there is a need to develop management capacity in terms of leadership, planning, and resource allocation.[73] If a system is plagued with poor human resource management, limited health information management, and poor leadership, it is difficult to imagine that it a decentralized setting would be better off than a centralized setting. Nevertheless, it is also possible that facilty managers who have greater autonomy (i.e., State Health Service managers) may also develop a greater organizational commitment and in turn, have a stronger desire for continued learning of leadership and effective policymaking.[5]

Lastly, administrative functions are significantly affected by Mexico's decentralization reforms. In decentralized states, there is wider discretion in the areas of salary ranges, the contracting of non-permanent staff, and the hiring and firing of permanent staff. In this light, it is important to note the potential differences that

decentralization reforms can create in terms of recruitment of qualified human resources. For decentralized states, recruitment can become a lengthy process due to the lack of qualified applicants.[4] For centralized states, facilities may need to follow centrally-controlled procured that, while ensuring fairness, also delay the recruitment process.[74]

Retention of healthcare workers is another factor to consider. Recent literature underscores the view that maintaining a consistent team can improve employee morale, increase institutional knowledge, and build trust between the community and their service providers.[74, 75] The ability to maintain a consistent team, however, may vary between centralized and decentralized states in Mexico. In decentralized states, the ability to contract non-permanent staff in addition to determine salaries may be an added plus for states with higher-than-average resources. But, in poorer decetnralized states, the ability to recruit a qualified workforce and maintain a consistent team may face serious challenges, particularly for rural—often underserved—communities. If State Health Service managers do not have the capacity to lead or to manage limited resources in a way that makes them effective, they may face more challenges in ensuring organizational commitment among employees and retaining a consistent team.

Conclusion

Understanding Mexico's complex patchwork of healthcare institutions is not an easy task. Each institution within Mexico's health system is distinct and it maintains a relationship with other institutions that requires a solid understanding of overall system architecture. It is not enough to see Mexico's health system as a mere organizational chart. Instead, we should focus on the functions of each institution and of the system itself. We should guide our assessment of Mexico's health system by reviewing

frameworks that characterize the interactions that exist both between and within system institutions. These frameworks provide a solid foundation by which one can examine Mexico's decentralization and its links to healthcare service delivery. It is also important to arrive at a more concrete understanding of decentralization that is beyond a dichotomous label.

This review examines Mexico's health system decentralization through a functional lens. It identifies the system actors that were most affected by decentralization reforms and underscores the view that decentralization in Mexico focused primarily on policymaking and administrative functions, not on fiscal ones. The review notes that for decentralized states, system managers were afforded the ability to innovate, but were also faced with budgetary constraints and limited human resource capacity. For centralized states, managers faced top-heavy bureaucracy and red tape. Recent changes in health system governance may affect the ability of decentralized states to independently innovate and at the same time, meet national standards. Assessing the potential impact of recentralization or decentralization efforts requires a more solid understanding of system actors, functions, and relationships. This review helps guide our understanding by allowing us to identify the policy levers that can improve policy implementation and system performance.

CHAPTER 2

Connecting Mexico's Health System Decentralization with Quality Assessment: A Conceptual Framework

Decentralization——as a reform process that transfers power from national to subnational managers—can play a key role in improving health outcomes and overall system performance. Scholars have varying approaches to decentralization, but often maintain that its various dimensions—political, administrative, and fiscal---can provide key opportunities to enhance quality.[59, 76, 77] They contend that desirable health outcomes are a function of the width and depth of "decision space" at the local level.[1, 2] In this light, decentralization--as an input to healthcare provision—is tied to a system's structure and processes.

The Institute of Medicine defines healthcare quality as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[78] In short, healthcare quality is a dynamic goal that relies on the "desired" outcomes sought by healthcare consumers and "current professional knowledge" that is constantly changing based on ever-evolving standards of care. To achieve an improved quality of health services, healthcare systems must be robust, i.e., accommodate redesigns that will correct deficiencies in addition to being accountable and adherent to performance monitoring.

Throughout low-and-middle income countries, decentralization—as a set of reforms---can devolve into a liquid noun, i.e., it takes the form of whatever national and subnational policymakers consider appropriate.[79, 80] This variation thereby shifts our focus away from decentralization as a one-time shock to a health system and more towards the need to understand how decentralization can affect healthcare quality.

Through deeper analysis, we can better identify the pressure points, i.e., the dimensions of health system decentralization that bear a significant impact on various elements of healthcare quality. By doing so, we can better understand how decentralization policies may positively affect healthcare quality in one state or in one dimension and negatively in another. In the following sections, I highlight the dimensions of decentralization that affect healthcare quality. I draw largely from Donabedian conceptions of quality and integrate aspects of Mexico's decentralization policies. Throughout each section, I maintain that the extent to which decentralization results in better or poorer quality depends significantly on the intermediary mechanisms housed at the facility level.

Health System Decentralization in Mexico

Mexico's publicly-financed health system is primarily manifested in centralized and decentralized facilities owned and operated by the Ministry of Health (centralized states), State Health Services (decentralized states), and in nearly all states, particularly underserved areas, IMSS-Oportunidades.[81, 82] In decentralized states, the State Health Service is responsible for policy-making and administrative functions largely pertaining to staffing, the composition of facility boards, discretion over spending, and contracts with non-permanent staff.[2] In centralized states, supervision, funding, and staffing is largely controlled by the Ministry of Health and IMSS-Oportunidades headquarters in Mexico City.[83] These healthcare facilities provide services, but have limited autonomy over work procedures, the range of services provided, and the hiring/firing of staff.[2, 46] Central/national managers are largely responsible for ensuring quality and improving health outcomes.[2, 46] At the same time, healthcare managers in decentralized states face a range of challenges to ensure quality. These challenges largely stem from limited

economies of scale, bargaining power, and the ability to attract qualified human capital.[2, 46]

In Table 3, the dimensions of Mexico's brand of health system decentralization are illustrated. These dimensions are largely manifested in policy-making and administrative functions of a health system.[2] With respect to policy-making functions, decentralization can be described as a delegation of decision-making authority to State Health Service managers.[80] There are several key elements to point out. First, decentralized states afford clinics and hospitals the ability to appoint facility boards—a benefit that can also be a disadvantage.[2, 46] In a positive light, states where healthcare facilities serve underserved, often indigenous groups, localized facility boards can accommodate for vast socio-economic and cultural differences between national and subnational managers. Decentralization could potentially draw a closer connection between healthcare staff and the communities in which they serve. Conversely, facility boards could also be dominated by local elites thus further marginalizing groups that have been historically disenfranchised.

A second element of Mexican decentralization is the discretion that State Health Service managers have over the range of prices that can be charged for medications. Prior to 2008, each public healthcare institutions (e.g. Ministry of Health, State Health Services) individually negotiated prices for medicines with drug manufacturers.[84] As a result, institutions, particularly State Health Service institutions in decentralized states, had limited bargaining power. The result was heterogeneous pricing, purchasing processes and payment conditions.[83-85] The establishment of the national Coordinating Commission for Negotiating the Price of Medicines sought to reduce

variation across public healthcare institutions and across centralized and decentralized states.[86] Nevertheless, there is a need for improved communication between the Commission's negotiating committees and various institutions.

Lastly, administrative functions, namely the hiring and firing of permanent and non-permanent staff, varies greatly between facilities managed by the central Ministry of Health and decentralized State Health Service. These variations matter in the manner that salaries are determined and incentives that are provided for healthcare providers. For employees operating in facilities managed by the central Ministry of Health, the Sindicato Nacional de Trabajadores del Seguro Social (SNTSS), the second largest worker union in Mexico, plays a major role. By membership numbers alone, the SNTSS has more leverage in negotiating higher salaries for centrally hired/managed employees than do unions consisting exclusively of State Health Service employees.[87-89] The limited range of financial incentives for providers employed by State Health Service institutions could thereby offset gains made in recruiting providers who may be more familiar with their local communities.

Table 3: Mexico's Health System Decentralization

Function	Indictor	Decentralized States (State Health Service)	Centralized States (Ministry of Health and IMSS-Oportunidades)
Finance			
Sources of revenue	Intergovernmental transfers as % of total local health spending	Funding from the central/national government is allocated based on fixed formulae	Funding from the central/national government is allocated based on fixed formulae

Allocation of expenditures	% of local spending that is explicitly earmarked by higher authorities	Based on fixed formulae from central/national government	Based on fixed formulae from central/national government
Policy-Making/Governance			
Facility boards	Size and composition of boards	Defined by state government	Defined by central/national government
Community participation	Size, number, composition, and role of community participation	No limits (defined by states)	Defined by central/national government
Discretion over spending	Range of prices local authorities can choose	Moderate range	No choice/Narrow range
Required programs	Specificity of norms for local programs	Flexible norms	Rigid norms set by central/national government
Access rules	*Defining priority regions*	*Defined by state government*	*Defined by state government*
Administration			
Salaries	Choice of salary range	No limits (defined by states)	Defined by central/national government
Contract	Contracting non-permanent staff	No limits (defined by states)	Defined by central/national government
Civil service	Hiring and firing permanent staff	Local civil service (states)	Defined by central/national government
Payment mechanisms	Choice of how providers will be paid (incentives and non-salaried)	Several models for subnational choice (defined by states)	Defined by central/national government

Dimensions for Assessing Healthcare Quality

Through his framework on quality of care, Donabedian posits that healthcare quality is "that kind of care which is expected to maximize an inclusive measure of

patient welfare, after one has taken account of the balance of expected gains and losses that attend the process of care in all its parts."[90, 91] In his assessment, Donabedian included a combined assessment of structure, process, and outcome dimensions. His framework is helpful as it allows us to visually see the links between the technical aspects of healthcare (i.e., structure), inter-personal relationships, and amenities of care such as convenience and comfort.[92]

With respect to structure, Donabedian noted measures that included staffing of facilities and the capabilities of staff. Surrounding these measures were the policy environments in which care was delivered and the availability of non-staff resources.[91] Without doubt, structure measures matter greatly in improving healthcare quality. If providers are not sufficiently trained or equipped to render services to healthcare consumers, the quality of these services will likely be negatively affected. At the same time, however, structure measures provide just one piece of the bigger picture. How providers make use of their skills and resources is also important. Ensuring that certain procedures are carried out fully and whether patients/consumers are satisfied to the point of returning to the facility can affect safety and quality of care.[93]

In a similar light, process measures can be used to determine the extent to which providers consistently render specific services that are in line with current standards of care. Since 1999, these standards have been increasingly defined by the General Health Council (GHC), which create national certification standards with international standards as the benchmark for healthcare facilities.[84, 94, 95] However, the certification process was merely voluntary and thus many facilities, public and private, opted to not undergo the certification process.[84, 94] In 2007, GHC established criteria for medical

institutions and organizations and, in 2008, created the National Certification System for Medical Care Organizations (Sistema Nacional de Certificación de Establecimientos de Atención Medica.[84, 94, 96] Certification requires healthcare organizations comply with the necessary standards to provide quality medical care, patient safety and continuous improvement.[96] To date, harmonization of the technical and personal quality of health services is one of the objectives that Mexico continues to address in national health plans (plans that cover healthcare facilities in both centralized and decentralized states).[96]

Lastly, outcome measures are often used to evaluate patients/consumers because of the care that they receive. More specifically, these measures assess the effects that care has had on a patient's health.[91, 97] These measures are perhaps the most crucial in assessing quality: patients/consumers are interested in improving their health more so than in ensuring that the care that they received is in line with current standards. These measures also include patient-reported information such as patient satisfaction.[91, 97] The challenge for any health systems researcher is to obtain records of patients/consumers pre- and post-treatment—a hard task in geographically varied settings like Mexico. Similarly, patients/consumers may be subject to social determinants of health that may exacerbate conditions that would have otherwise improved from their visit(s) to a healthcare facility. Lastly, it is difficult to determine quality improvements based on outcomes in Mexico given the country's patchwork of healthcare institutions (e.g. IMSS, Ministry of Health, private sector) and the various, often incompatible, data records that are housed at each institution.

Nevertheless, the Donabedian framework allows us to understand the links between structure, process inputs, and overall improvements in a patient's health status. To date, various health services researchers have adopted Donabedian's approach.[97-102] The recurring dimensions of their work are highlighted in Figure 2.

Table 4: Dimensions for Assessing Healthcare Quality

Dimension	*Elements defining dimension*
Structure	
• Facility (overall)	• Cleanliness, appearance, space
• Equipment	• Availability of equipment, maintenance
• Staff Credentials	• Level of credentials
• Accountability	• Institutionalized monitoring procedures
Process	
• Access to Services	• Length of waiting time, hours of reception, referrals to other sites of care
• Comprehensiveness	• Range of services provided
• Coordination	• Between-service providers
• Continuity	• Receiving care from same physician, documentation in medical file
• Appropriateness	• State-of-the-art care is given
• Staff/Patient Interpersonal Relations	• Communication, respect, patience
Outcome	
• Patient/Consumer Satisfaction with Care	
• Resolution/relief of symptoms	
• Health Status	

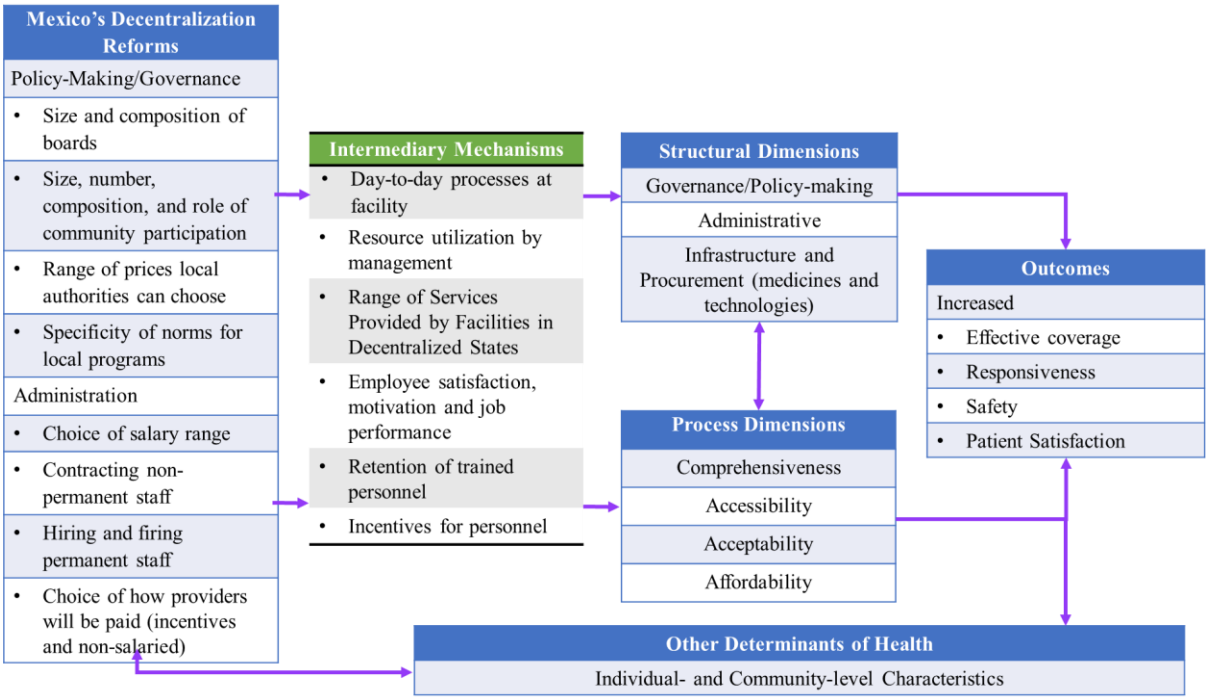
The Relationship between Decentralization and Healthcare Quality

To date, there is a dearth of literature that examines the theoretical relationships between health system decentralization and quality dimensions.[76] To this point, there is no study that examines the impact of Mexico's decentralization reforms in light of

healthcare quality.[84] Assessments of quality in Mexico are often done by institution and by geographic region, but rarely by centralized and decentralized facilities.[82, 103]

In the following paragraphs, I present a model by which we can identify the specific dimensions of healthcare quality that are affected by key elements of Mexico's decentralization reforms. This model integrates aspects of Mexico's decentralization scheme with similar elements of change in related clinical settings, namely hospital departments or health maintenance organizations (HMOs).[83, 99] Figure 10 is a schematic representation of the various dimensions that, while more complicated and interlinked in practice, provides a useful way to understand how elements of both decentralization and healthcare quality are connected. In the sections below, I first highlight the intermediary changes that take place considering the various dimensions of Mexico's health system decentralization. I then examine each type of change in light of the components of healthcare quality.

Figure 10: Framework Linking Mexico's Health System Decentralization with Healthcare Quality



Intermediary Mechanisms

Day-to-Day Processes at Facility

In the mid-1980s, Mexico's decentralization reforms transferred policy-making and administrative functions from the central Ministry of Health to newly-formed State Health Service departments in decentralized states. Facilities controlled by these departments were afforded greater autonomy in administration and policy-making yet at the same time, faced persistent budgetary constraints.[46, 104] A source of budgetary constraints for these systems were the salaries of clinicians.[99, 104, 105] In efforts to consolidate services and ensure a basic package of primary care and preventative services, decentralized healthcare facilities in Mexico were forced to screen out

unnecessary treatments and bolster referral networks to specialists, hospitals, and laboratory diagnostic units.[84] As such the function of providers in these facilities shifted increasingly towards the role of gatekeeping. In this light, decentralized facilities mimicked the experience of health maintenance organizations (HMOs) in the U.S. who placed higher barriers on access to health services.[106, 107]

It is important to note that both centralized and decentralized providers have waived user fees for a package of primary and preventative health services in rural facilities.[64] Patients/consumers are assigned to healthcare facilities based on a geographic determination that links them to facilities operated by the State Health Service (decentralized states), Ministry of Health (centralized states), and IMSS-Oportunidades (nearly all states).[108] A key challenge lies in the ability of these facilities to treat patients/consumers and not merely "refer out" patients/consumers to hospitals and specialists.[46, 85, 109] Moreover, unlike HMOs, decentralized health facilities in Mexico are funded based on assigned patients/consumers, and not by voluntary enrollment. As such, there remains a perverse incentive for providers at decentralized health facilities to turn away patients/consumers, particularly patients/consumers with complicated or chronic conditions, that were assigned to their healthcare facility.[46]

Resource Utilization by Management

In theory, the delegation of authority to subnational providers is expected to result in more efficient utilization of available resources and increased responsiveness to subnational needs. This view echoes the justification for decentralization reforms, i.e., decision-makers in decentralized states can respond more quickly and more effectively to changing conditions than central management, because they operate within a smaller

organizational unit. More specifically, as a smaller unit, facilities in decentralized states are closer to the events and more familiar with the circumstances and the needs of local populations.[80, 82] Measures can be taken promptly, particularly in light of equipment that is need of procurement or repair. They may provide higher quality healthcare services through improved coordination with other community actors. This presents an opportunity to improve quality as facilities in decentralized states can offer more continuous service delivery and thereby reduce unnecessary care and inefficient care.[99, 110]

Conversely, delegated authority may also lead to disparate priorities among decentralized states. Whereas facilities operating under the centrally-operated Ministry of Health may share a common set of nationally-defined priorities, decentralized states may rely on self-determined priorities that could delay or avoid action on improving structure and process aspects of quality. For example, a decentralized state facing budget constraints may see the need to economize and thus neglect needed repairs to its healthcare facilities, thus diminishing the quality of healthcare services.

Range of Services Provided by Facilities in Decentralized States

Mexico's decentralization reforms did afford facilities in decentralized states some discretion in the services that they could provide. In both central and decentralized health facilities, a basic package of preventative and primary care services was mandated, particularly for rural populations. Nevertheless, State Health Service managers were permitted to sell services that were beyond the scope of the basic service package.[111] A healthcare facility or set of healthcare facilities could thus offer screening tests or other diagnostics that could reinforce their budgets.[111] The result could be a wider range of

services provided by decentralized facilities, which could, in theory, improve patient satisfaction and increase utilization of preventative care services that could contain future costs. Thus, decentralized facilities would follow the model set by health maintenance organizations, which when compared to fee-for-service health services, provided more comprehensive care, particularly in the areas of prevention and screening.[107, 112]

The range of services and its ties to user fees was substantially changed with the 2002 to 2009 rollout of Seguro Popular, a voluntary insurance for people who are not covered by employment-related social security institutions. Because previously-uninsured persons now paid a subsidized-prepayment to become affiliated with Seguro Popular, State Health Service managers were severely limited in their ability to offer new services or services that were not covered throughout Seguro Popular's wide-ranging service package.[82]

Employee Satisfaction, Motivation and Job Performance

Decentralization's impact on the employees of a health system is an area that remains under-examined. Factors such as employee satisfaction, motivation, and overall job performance can vary particularly between facility managers and providers, namely physicians and nurses.[113, 114] In decentralized states, facility managers can be empowered through enhanced autonomy and improved feedback on specific priorities. The proximity of these managers to the facilities that they either directly or indirectly serve can lead to higher satisfaction levels and improved morale. Goals—set by these managers—can be defined more precisely and achieved with limited control from central/national agents. Consequently, a facility's aims could take into account the

satisfaction of employees, which can lead to higher retention and better employee/management relations.[113, 114]

Conversely, decentralization can present an entirely new set of challenges for facility managers. Additional stress due to budgetary constraints in addition to nationally-ordered regulation could hamper their autonomy leaving them to do more with less. To date, there have been no studies that examine the relationships between Mexico's brand of decentralization and the concerns of facility managers.[84, 115] Factors of turnover and absenteeism may ultimately diminish gains made in localizing treatment as management performance can be contingent to the manner that managers respond contextual circumstances and manage their initial job expectations.[114]

In a similar light, clinical staff, namely physicians and nurses, may benefit from the information channels that can generated by consistently serving a community. Patients/consumers may be seen by the same team of physicians and nurses, which will allow them to know their patients/consumers better and understand the environmental factors that could be exacerbating their health conditions.[116] Nevertheless, Mexico's brand of health system decentralization primarily focused on shifting functions from the central/national government to state governments. It did not account for a shift of management functions from facility managers to nurses and physicians thus it is possible that clinical staff could still feel alienated from management decisions at the facility level and ultimately disempowered in a decentralized setting. Moreover, Mexico's decentralization reforms occurred during periods of economic crises in the 1980s and 1990s suggesting that their primary aims were not subnational empowerment, but rather economic efficiency.[117] With the rollout of more elements of decentralization comes

the concerns that clinical staff—physicians in particular—must compromise their roles as patient advocates with that of gatekeeper and fiscal manager. [106, 118] Clinical staff may thus feel that the need to economize dominates their need to practice "good medicine."[106, 118]

The key focus on job performance and employee satisfaction thus lies not in the perceptions of managers and non-mangers, but in the dynamic relationship that both have with one another. The internal relations between management and clinical staff matters. So too does the management style by which managers engage clinical staff and community leaders. If neglected, decentralization can appear as a mere cover for a set of reforms aimed at burdening clinical staff with greater responsibility and limited resources. If, however, managers make use of cooperative mechanism (e.g., appointing clinical staff with leadership roles, providing feedback where necessary) then staff motivation may improve and job performance will render an overall higher quality of healthcare services.[114, 119]

Retention of Trained Personnel

An ongoing challenge in Mexico's decentralization processes has been a fragmented labor policy, which has created a difficulty to recruit and retain trained personnel in underserved—largely rural—areas. While theorists contend that decentralized decision making plays a key role in healthcare staff recruitment and retention, there is little evidence to show that that is the case in Mexico.[87, 120-122] Theorists, nevertheless, contend that the shift from centrally-appointed facility managers to a locally-governed facility board consisting of staff and community members could still render positive results.[123] Recent literature suggests that decentralized policy-

making can lead to flexible personnel policies and programs that will ultimately improve staff recruitment and retention.[124, 125]

While the dynamics of decentralized healthcare facilities can enable a more rapid, effective, and efficient response to change, most health workers are still reluctant to accept postings in rural, underserved areas. Recent evidence notes that working conditions and quality of life compare unfavorably for clinical staff who are often accustomed to urban areas.[84, 85, 115, 126] To meet the needs of underserved rural areas, the centrally-operated Ministry of Health provides scholarships to recent graduates in nursing, medicine and social work who agree to do their "Social Service" time in such areas. These efforts have, however, failed because of limited funding at the federal/national level.[84, 85, 115, 126]

In decentralized states, the problem is even more challenging. This is because clinical staff can be hired through either federal/national contracts via IMSS-Oportunidades or through state contracts via State Health Service departments.[117, 122] These contracts result in very different labor benefits and working conditions.[117, 122] Consider the case of two health workers who hold the same post and perform similar tasks. Despite their skills and duties, these workers may have radically different earnings based on whether they have a federal/national or a state contract or based whether they work in a rural or urban setting. To make matters worse, the State Health Service has consistently concentrated available personnel in urban state capitals. [89, 117, 122] This act mirrors centralized institutions whose employees also tend to be concentrated in large metropolitan areas. The results is that small, often rural, municipalities are faced with

few-to-no trained personnel.[81, 83] As such, decentralization has, in many ways, resulted in a new centralization of personnel at the state level.

Linking Mexico's Health System Decentralization to Quality of Care

Donabedian's framework for healthcare quality rely on the interlinking of structure, process, and outcome measures. In this section, I connect these measures with aspects of Mexico's decentralization reforms. I note, where possible, how the dimensions of these reforms could affect quality. The section thereby builds from the preceding section where I noted the intermediary mechanisms that have followed Mexico's decentralization reforms.

Structure

Structure refers to the setting in which care is delivered, which would include adequate facilities and equipment and qualified personnel. In Mexico, structure can be defined along several dimensions but for purposes of this paper, I focus on access and availability. Access—as a geographic measure—can be measured in one's travel time to a healthcare facility. In theory, patients/consumers are assigned to healthcare facilities based on their residence suggesting that travel time should not vary from decentralized to centralized healthcare facilities. The challenge lies in centralized states where health managers may assign patients/consumers to healthcare facilities with little regard to their mobile status or to their family ties. A patient may be assigned a healthcare facility in that area and have limited options to change his/her assignment based on family or employment factors. As such, his/her travel time to a healthcare facility may be far greater than a patient in a decentralized state where State Health Service managers may be more accommodating to change the patient's assignment status.

Another dimension of structure is the availability of medications and equipment. Here, State Health Service facilities may be more likely to face stockouts and inadequate equipment. Whereas federal/national facilities benefit from a largely economy of scale and core priorities, State Health Service managers may face budget shortfalls or limited bargaining power that would entail having less availability of essential medications and equipment.[84, 94] Patients/consumers thus may be less likely to have their prescriptions filled at the facility where they were diagnoses and/or have their lab tests conducted at the same facility.

Lastly, State Health Service managers may face a more difficult task in recruiting and retaining qualified health staff. While the healthcare sector in decentralized states remains under the domain of state governments, centralized states may benefit from other national ministries—namely, education—which can further incentivize--either through scholarships or in-school trainings---physicians and nurses to pursue positions in centrally-operated facilities.[85, 87, 104] In recent years, state governments have attempted and have failed to persuade local universities and health institutes to provide post-graduate training and continuing education for these key personnel.[122] Because Mexico's public health and management training remain centralized in the nationally-run academic centers, the challenge to recruit and retain qualified healthcare workers in decentralized settings persists.[85, 87, 104]

Process

Process measures examine how care has been provided in terms of appropriateness, completeness, or competency. These measures are typically less precise than structure or outcome measures, but nevertheless play a key part in the patient experience and patient

perceptions of quality. Consider wait times at a particular facility. Wait times are measured through the time that number of minutes that elapsed between a patient's arrival at a facility and the time in which they were attended. Here, the concept of "opportunity cost" matters. For patients who consider a loss of wage income and the costs involved in alternative—largely privately-run—facilities. Decentralization shifts the management of facilities to State Health Service managers who may be have a greater capacity to address overcrowding in their respective healthcare facilities. Similarly, centralized facilities may have larger budgetary lines by which they can expand services at a facility to accommodate overcrowding and reduce wait times at the facility itself.

With respect to comprehensiveness, it is unclear as to whether decentralized or centralized facilities offer a wider range of services. The rollout of Seguro Popular increased the number of services that are purchased via pooled resources, but it did not ensure that the services were actually available at each facility.[127] As noted above, decentralized facilities may offer a wider range of services to generate increased revenues, but at the same time, centrally-operated facilities may benefit from a stronger network of procurement that can allow them to expand services. In Mexico's household surveys, comprehensiveness is often asked via questions on whether patients felt that they had reasonable options for care.[127] These questions, when combined with questions on equipment and medicine availability, could shed light on whether decentralization boosts or diminishes comprehensiveness.

Interpersonal relations also matter in linking quality with decentralization. To date, there is limited evidence that decentralization affects staff patient relations.[110] One could speculate that dissatisfied or overworked clinical staff members transfer their

frustration to their relations with patients. Consequently, patients/consumers may report poor conduct—either via explanations or diagnoses—at their last visit. This hypothesis, however, may involve psychological investigation that is beyond the scope of this section. Nevertheless, one study found that "primary care physicians who might experience some strain due to their gatekeeper role, reported no significant difference in satisfaction in their patient relationships with HMO patients/consumers versus fee-for-service patients/consumers."[119] It remains to be seen whether decentralization reforms in Mexico caused clinical personnel to project their frustration or satisfaction in their day-to-day care/treatment or whether there is a difference in patient experiences in centralized and decentralized facilities.

Outcome

Outcomes address the end points of care, such as improvement in function, recovery or survival. In settings where health records can effectively capture improvements in health status, outcomes can be concrete and precisely measured. In Mexico, the growing private sector makes it very difficult to monitor a patient's progress over time.[84] Household surveys where patients/consumers are asked if their health improved after the consultation are helpful, but they lack a clear determination of the appropriateness of care. Decentralized states face a more difficult challenge in that in underserved areas, the poor often tend to rely on a mix of private and public healthcare services.[84] With the rollout of wide-ranging public insurance schemes like Seguro Popular, however, improvements in health outcomes may increasingly be captured by household surveys. If decentralization changes the scope and focus of these services, e.g., increased preventive measures or screening, less unnecessary medications, or less

necessary care/treatment, then decentralized health facilities may see improvements in outcomes because of more localized provision that more precisely addresses their healthcare needs.

Outcomes like attitudes and satisfaction may also be impacted by decentralization. Patients/consumers may positively report overall satisfaction with their experience at the healthcare facility or note that they would return to the same facility. To date, there is ample evidence that when patient expectations are met through healthcare delivery models that are responsive and sensitive to their needs, they are more likely return to the same facility.[128-131] There is, however, some uncertainty that state-managed healthcare facilities in Mexico may be more responsive to patient needs than nationally-operated facilities.[83] Patients/consumers may also respond positively in surveys due to factors that pertain more to the availability of medication and equipment, which may diminish gains made in having personnel and facility boards that are more closely tied to their communities.

Conclusion

The theoretical framework noted above seeks to examine the impacts of decentralization on Donabedian quality measures. It goes further than previous frameworks in that it highlights the specific dimensions of decentralization and quality and posits a set of intermediary mechanisms that can improve or diminish quality. These mechanisms play a key role in the manner that healthcare quality can be improved in Mexico's patchwork of centralized and decentralized health facilities. The framework can be also useful for policymakers and policy analysts keen on addressing system

deficiencies and ultimately reducing disparities between centralized and decentralized states.

The framework could particularly be useful for advocates of local governance. These advocates often contend that when decentralization is examined as a set of policy levers and accompanied by adequate mechanisms of accountability—namely, those mechanisms that address local needs and preferences--improved service delivery can result. This argument shifts our attention away from the humdrum question of whether decentralization—as a holistic set of reforms--is good or bad, and instead move us towards identifying a balance where health system objectives can be achieved by centralizing *some* functions while decentralizing others. In turn, a detailed understanding of what works and what doesn't work with decentralization can lead to more sustainable policy designs that can identify aspects of high-performing subnational governments and challenges routinely faced by low-performing administrations.

CHAPTER 3

Patient Assessment of Quality for Centralized and Decentralized Healthcare Providers in Mexico

Introduction

Like many middle-income countries, Mexico faces significant challenges to provide high quality care and treatment that meets patient/consumer demands. The perceptions of these patients/consumers matter, particularly in middle income countries where private healthcare providers are increasingly becoming sources of care for their poorest residents.[132, 133] In Mexico, many patients/consumers have turned to private providers for outpatient medical care, which is often billed as fee-for-service and leaves patients/consumers with high out-of-pocket expenditures.[134] Every year, there are approximately 200 million outpatient medical consultations that are provided in Mexico, of which nearly 40 percent is provided in the private sector.[135] For policymakers, the exit from publicly financed, often free, health services is perplexing. On the one hand, Mexico's various subsystems of healthcare delivery have sought to increase their provision of services and improve the quality of healthcare delivery in its various facilities. On the other, patients/consumers have turned to private sources at alarming rates.[135] Moreover, there is some evidence to suggest that those opting for private providers are not necessarily being seen by the most qualified of healthcare providers. One author highlights the challenge in stark terms:

> *[L]arge numbers of unregulated and unsupervised private physicians, often without residency training, work out of individual "clinics" to deliver health care mostly to the uninsured, who can afford to not use the underequipped and*

understaffed Ministry of Health facilities. Serving the same population, and often owned by the same physicians, are scores of private pharmacies that freely dispense prescription drugs (with the exception of narcotics and a small number of other controlled substances). Many physicians combine private (often solo) practice with public work at an IMSS or Ministry of Health facility. [54]

Our focus should thereby shift towards an assessment of health services quality not from the standpoint of facility managers or accrediting/regulatory bodies, but from the perspective of individual patients/consumers. Patients/consumers may rate and assign value to their experiences in the public sector, which could affect their willingness to return to public facilities or seek care from a provider. Recent literature suggests that it is important to analyze the experiences and ratings that patients/consumers assign matters in determining their willingness to return to a particular facility.[136-138]

As countries like Mexico increasingly recognize that people-centered healthcare requires serious assessment of patient/consumer preferences, needs and values, it is important to identify ways to enhance and integrate patient/provider feedback on their experiences. This two-way communication commands greater responsiveness to public needs and expectations of their respective healthcare systems. Because their perceptions can be associated with the quality of healthcare services,[139] it is important that policymakers consider their perceptions as guidance on how to improve overall health system performance.

The views of patients/consumers on quality have been examined through national health surveys,[50, 133] regional surveys of healthcare facilities,[140] and specific program evaluations. [140, 141] In spite of the many evaluations of quality that

have emerged in Mexico, few researchers—if any--have examined the ties between patients/consumers perceptions of quality and health system decentralization. Decentralization can play a critical role in assessing quality dimensions of Mexico's publicly-financed health system. First, Mexico's decentralization policies could, in some areas, seem truncated by historical factors and differing political power that favors nationally-focused corporatist and union forces. Secondly, decentralization reforms largely targeted institutions—namely the Ministry of Health--serving uninsured population and not the social security institutions for formal sector employees (e.g., IMSS, ISSTE, etc.). Consequently, eliminating inequities of quality, spending, and infrastructure *between* healthcare institutions (e.g., the Ministry of Health, IMSS-Oportunidades) was not even considered by decentralization advocates.[111] Instead, advocates focused on the rewards that a central-to-peripheral transfer could offer to state leaders. For northern states, the promise was greater authority and autonomy while for southern states it was equity. Erasing the quality divide became an afterthought, but more recently, this afterthought has become a critical point of inquiry for policymakers seeking to reduce fragmentation and enhance equity and quality across all healthcare institutions.[111]

Does decentralization improve or worsen healthcare quality?

Health system decentralization—more specifically, political and administrative decentralization—can negatively affect patient/consumer perceptions of quality in two pathways. First, administrative decentralization could overlook the possibility that central/national governmental institutions can attract people who are more qualified because they offer better career opportunities and higher salaries.[4, 43, 44, 142] In low-

and-middle income countries, qualified human capital is scarce and thus decentralizing would afford more autonomy to state government officials who may be less qualified than central/national bureaucrats in monitoring health service workers who may also be less qualified. In this light, management of decentralized public sectors agencies may provide lower quality health services than those provided in federal/national facilities. Unfortunately, to date, there has been limited emphasis placed on assessing the impact of decentralization policies on recruitment of healthcare workers in middle-income countries like Mexico.[42] In a few studies, decentralization reforms have created or exacerbated internal labor market competition, which has resulted in uneven distribution of health workers across local administrative units.[4, 42, 143] The result could be that decentralized states are plagued with challenges of recruiting trained personnel who can effectively respond to the healthcare needs of underserved—often rural—populations.

Secondly, delays in planning and executing plans may be impeded through overload and congestion in bureaucratic channels, particularly when there is a reluctance from central/national bureaucrats to cede authority to local managers. Effective communication and an overall simplification of bureaucratic procedures could improve the quality of health services, but identifying who is responsible for monitoring the quality of services hampers such communication.[144, 145] Moreover, because staff in decentralized facilities may consider the role of monitoring and evaluation to be the task of offices in state capitals or in Mexico City, they may be reluctant to enact changes—even those that are locally-designed—that could improve quality.[42]

In contrast, it is also possible that given the vast socio-economic and cultural differences that exist within Mexico, health system decentralization could give rise to

higher patient/consumer perceptions. Patients may respond better to health service employees who come from their communities and in indigenous areas, know their culture and speak their language. Whereas federal/national facilities may attract employees from outside a particular area or state, locally-hired healthcare workers—recruited and paid by states—could offer non-medical benefits to improving patient/consumer perceptions of quality. This could result in allowing decentralized facilities to benefit from better information regarding local preferences and conditions. Lastly, decentralization reforms may make the government more responsive to local needs through accountability systems and better utilization of grassroots information.

The aims of this chapter are simple: to compare patient/consumer perceptions of quality at health facilities operated by decentralized Mexican states and by the federal/national government. Mexico's unique case of having both centralized and decentralized providers co-exist in some states provides a unique opportunity to use matched samples to better understand the connection between decentralization and healthcare quality. My analysis specifically examines patient perceptions of quality via Donabedian measures of quality that can be loosely categorized by structure, process, and outcome.[91, 146] To date, no study in Mexico has examined the ties between patient/consumer perceptions of quality and health system decentralization.[147] This study assesses quality measures between centralized and decentralized facilities across 16 years. It largely relies on data from patient/consumer surveys that were taken every five years, which could show the trajectory of quality measures between centralized and decentralized states over time.

Methods and Data

Study Population

This chapter specifically focuses on individuals residing in rural households (i.e., households in localities with less than 2,500 residents). There are three reasons for this. First, in Mexico, centralized (IMSS-Oportunidades) and decentralized providers (State Health Service) offer free healthcare for individuals registered with rural facilities.[64] This provision provides a distinct opportunity to assess performance of decentralized and centralized providers in the same area. Secondly, both centralized and decentralized providers operate under the same guidelines and offer services that are free of charge.[148] I specifically focus on individuals who are not affiliated with social security institutions (i.e., unemployed or employed in the informal sector). Thirdly, rural areas tend to "have a higher percentage of the population in poverty, lower availability of health and educational services and less social infrastructure of roads, water systems, telephone services as well as other services."[149] Combined, patients/consumers residing in rural areas present a key view of Mexico's social protection programs and the association they may have with decentralization reforms.

Datasets: ENSA & ENSANUT

Since 2000, Mexico has conducted four national surveys that focus on healthcare utilization, health, and nutrition. These surveys include the National Health Survey (ENSA 2000) and the National Health and Nutrition Surveys (ENSANUT) of 2006, 2012, and 2016. Datasets from these surveys includes individual-level data where at least one member was reported to have used outpatient health services in the previous two weeks.[147]

The sampling framework for ENSA/ENSANUT is drawn from the decennial population census and the Conteo de Población y Vivienda (Count of Population and Housing), which is conducted the years ending in "5" midway between two successive censuses. The sample is disaggregated by primary sampling units and incorporates localities based on data that is no more than 5 years old. Figure 11 notes the selection process and sample sizes that were used for this study.[147]

The sampling unit is the property where the selected household resides and the sampling frame is based on the Population and Housing Census, which is conducted every 10 years. Random selection of residences process (including the temporary use and uninhabited houses) is conducted to ensure generalizability of the data. Data were also obtained from within selected households. Informants were asked about recent utilization of outpatient health services by all household members. In those households where at least one member was reported to have used outpatient health services in the previous two weeks, a user was selected for direct interview. From all the surveyed households, use of recent health services was indicated, and data were collected (see Figure 11).[147]

Dataset: SICUENTAS

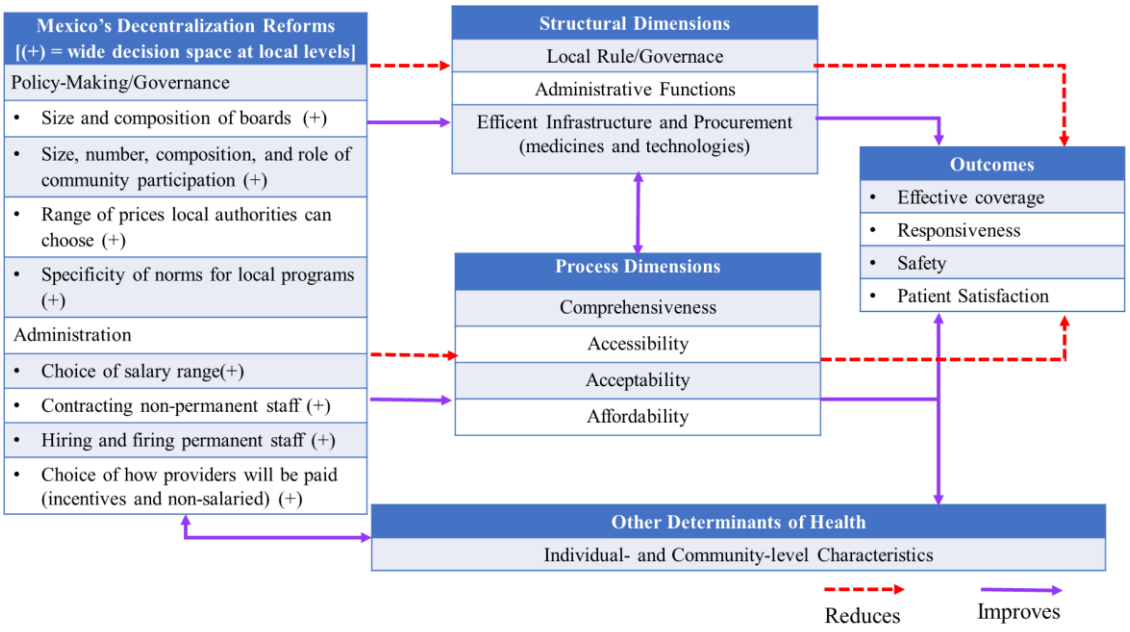
SICUENTAS is a database of health accounts at federal/national and state levels that monitors public and private resources that are invested and consumed in health production. SICUENTAS, as a financial information system, assesses health system performance and contributes to resource accountability.[51, 150] More specifically, SICUENTAS allows us to view the distribution of the financial resources towards services and programs at state levels. Unfortunately, because SICUENTAS does not

provide information at the facility level, it is difficult to discern need at the most local level of healthcare provision.[51, 150]

Theoretical Framework

The focal relationship for this study is on the decentralized/centralized nature of a healthcare facility and its ties with quality dimensions. I rely on Donabedian's framework on healthcare quality to examine patient experiences through structure, process, and outcome indicators.[91, 146] This framework allows an analysis of the factors that relate to facilities or the aims of decentralization policies in Mexico. The blue arrows between the various dimensions note the reasoning that health system decentralization can improve quality measures while the red line suggests that decentralization can actually impede quality improvement—if not exacerbate current conditions.

Figure 11: Health System Decentralization and Quality Metrics



Independent Variables

This study focuses on the comparison of two key independent variables, namely centralized providers (i.e., IMSS-Oportunidades and the Ministry of Health) and decentralized providers (i.e. state health services). Both IMSS-Oportunidades and the Ministry of Health are headquartered in Mexico City where decisions on financial flows, procurement, distribution and evaluation are made centrally. The IMSS-Oportunidades network of health centers is distributed in 27 of the 31 states where each of the IMSS-Oportunidades' 45 districts has one or two rural hospitals and three to four basic health units.[151] Each health unit is staffed with a rotating physician and an auxiliary nurse.[151]

In contrast, State Health Services (i.e., decentralized providers) are controlled in the 14 decentralized states. Decentralized states are tasked with developing the entire production and service delivery process, with similar tasks being performed in each state. Similarly, state governments are free to choose how to spend federal/national grants and their own resources. Management autonomy allows for variation on how state facilities spend resources, organize services and distribute inputs and personnel. Figure 11 highlights the specific dimensions of decentralization that were enacted in Mexico's decentralization reforms. When combined, these dimensions can improve—or worsen—quality measures for patients/consumers seeking care/treatment at facilities operated by the State Health Service.

Dependent Variables

In the previous chapter, I noted the various dimensions of decentralization and link these dimensions to key quality measures. In Table 5, I note the specific variables

that provide insight into the dimensions for centralized and decentralized healthcare facilities.

Table 5: Healthcare Quality in Mexico through a Donabedian Framework[90, 91, 146]

Dimension	Variable
Structure	1. Travel time to healthcare facility 2. Availability of Medications (i.e., Patients/consumers with prescription filled at facility) 3. Availability of Equipment (i.e., Patients/consumers who reported inadequate equipment such as lab equipment and x-rays)
Process	1. Comprehensiveness (i.e., Patients/consumers who reported that they had reasonable options for care) 2. Appropriateness 1. Wait times at facility o Patients/consumers who reported that facilities were family-friendly o Patients/consumers who reported that they were content with treatment plans 3. Staff/Patient Interpersonal Relations o Patients/consumers who reported that they received good explanations for their diagnosis o Patients/consumers who reported that they received good explanations for their medications and treatment plan
Outcome	1. Patients/consumers who reported improved health status after their consultation 2. Patients/consumers who perceived the overall healthcare quality to be low

Covariates

To control for confounding factors, I include covariates such as socio-demographic characteristics (age, sex, socio-economic status), affiliation with Seguro Popular, reason for service use (acute disease, chronic disease, prevention), and self-reported health at the time of the survey. With respect to socio-economic status, an index has been previously constructed and validated by the Center of Survey Research at the Mexican National Institute of Public Health.[152] The index combines eight variables that assess household properties and available services including: construction materials of the floor, ceiling, and walls; sleeping rooms; water accessibility; vehicle ownership; household

goods (refrigerator, washing machine, microwave, stove, boiler); and electrical goods (television, radio, telephone, and computer).[152]

Research Question

Theoretical approaches to decentralization equate subnational autonomy and authority with better information, enhanced communication, and stronger accountability.[153] In practice, decentralized states may operate far different than this. To date, there are hundreds of studies that have sought to assess whether decentralization reach actually reach these goals.[153] Their results have been mixed. Perhaps, the simplest way of examining decentralization's impact is to ask if decentralization improves healthcare quality and if so, do patients/consumers have a more positive view of their experience at decentralized facilities than patients/consumers seeking care at centralized facilities?. The answer to this question will favor either centralized or decentralized facilities. Still yet, there is another option that maintains that services rendered at decentralized and centralized facilities will not significantly differ and thus decentralization had little impact. This option is difficult to prove because decentralization reforms—while homogenous across decentralized states—may lead to subnational outcomes that are driven more by the interactions of the underlying actors and characteristics of each locale. Two questions then arise. First, does decentralization significantly impact healthcare provision in facilities that traditionally served Mexico's uninsured? Secondly, is decentralization "good" or "bad" for a particular dimension of quality?

In Mexico, decentralized states may be less likely than the central/national government to invest in human resources for health and thus have less qualified staff

and/or higher staff turnover. As such, state-operated healthcare providers may offer services that are of lesser value for persons seeking care. Also, managers who are granted greater discretion over delivery of services are expected to have the competencies to make informed decisions and implement these decisions—a challenge that is difficult to overcome in resource-limited settings. This leads to my core hypothesis that state operated clinics (i.e., decentralized clinics) in rural areas will have lower quality measures than federally operated clinics (i.e., centralized clinics). In the following sections, I show how I test this hypothesis using data from national surveys.

Statistical Analyses

A database was developed using ENSA/ENSANUT figures, Census data, and SICUENTAS data and the information was processed using a statistical analysis program (SAS 9.3). The sample design characteristics (weights, cluster and strata variables) were considered for all analyses. A p value <0.01 was considered statistically significant. Kruskal-Wallis and Chi-square tests were used to evaluate the magnitude of the differences in quality measures between decentralized and centralized facilities. For continuous variables such as waiting time and travel time to a facility, averages and standard deviations were estimated. A separate analyses used linear regression models for continuous variables, and for dichotomous variables, I used logistic regression models. To account for clustering by practices, I performed generalized linear mixed models (PROC GLIMMIX in SAS version 9.3; SAS Institute Inc., Cary, North Carolina). All adjusted models included covariates such as socio-demographic characteristics (age, sex, socio-economic status), affiliation with Seguro Popular, reason for service use (acute disease, chronic disease, prevention), and self-reported health.

Analyses specifically sought to detect differences between centralized and decentralized providers. The key question for this study was as follows:

Hypothesis: State-operated clinics → lower quality measures

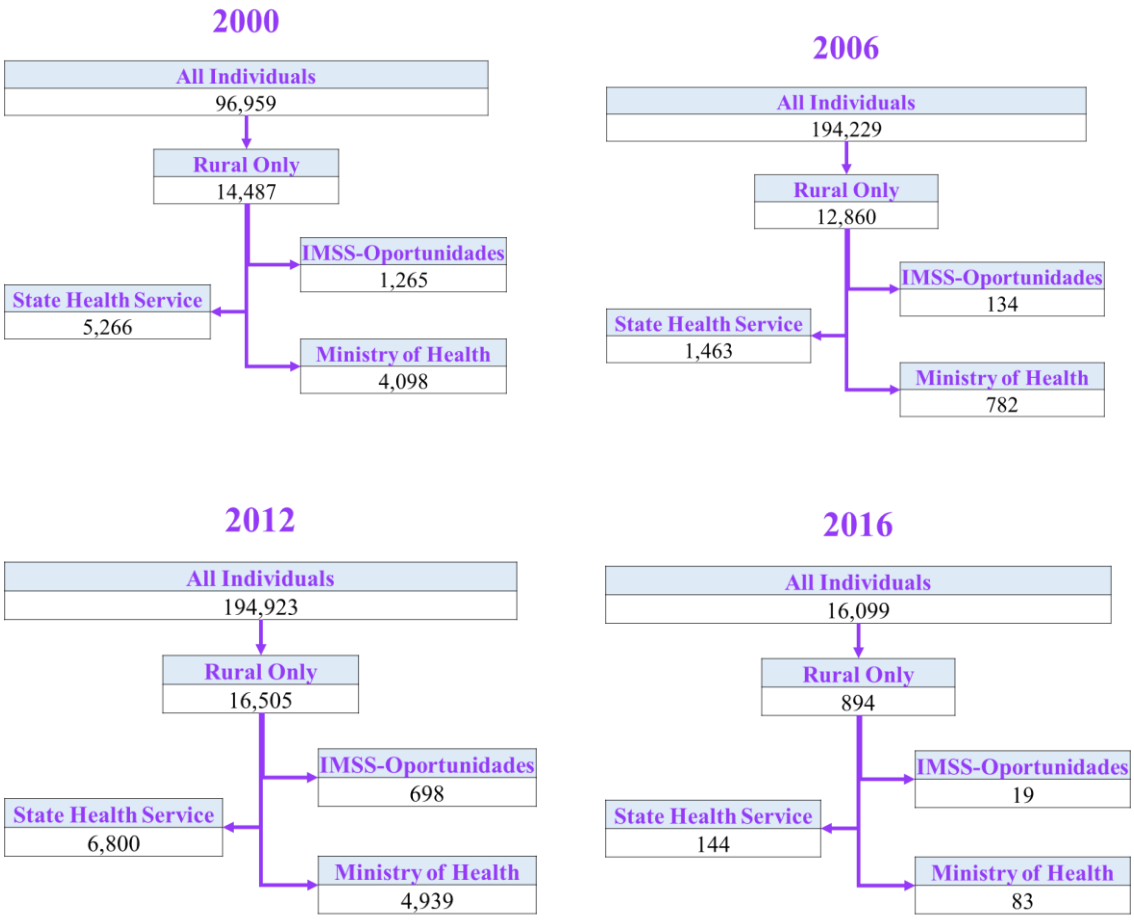
$$Y_{1\text{-}3} = \beta 0 + \beta 1 \text{ Decentralized} + \beta 2 \text{ X} + \epsilon$$

- Y_1: Structure-related Quality Measures
- Y_2: Process-related Quality Measures
- Y_3: Quality Measures (Perceived Improvements in Outcomes; patient satisfaction)
- X: State-level, household-level, and individual-level covariates
- Decentralized: State-operated health system

Results

Representative samples adults (aged 20 to 69 years) who participated in the National Health Survey (ENSA 2000) and National Health and Nutrition Surveys (ENSANUT) in 2006, 2012 and 2016 are shown in Figure 12. The figure reveals that, in some years, the sample groups (by type of institution) were too small to merit comparison.

Figure 12: Sample Selection by Year



Federal/National and State Financing

Table 6: State and Federal Expenditures per Resident

	2000		2012	
	Centralized States	Decentralized States	Centralized States	Decentralized States
Non-Health Federal Transfers to State per Resident	6,035.80	9,359.66	8,043.59	8,551.87
Ministry of Health/State Health Service Expenditures per Resident	9,809.29	2,752.06	7,982.75	8638.71
State Expenditures on Health per Resident	6,173.55	9,118.40	6,842.52	10,266.05

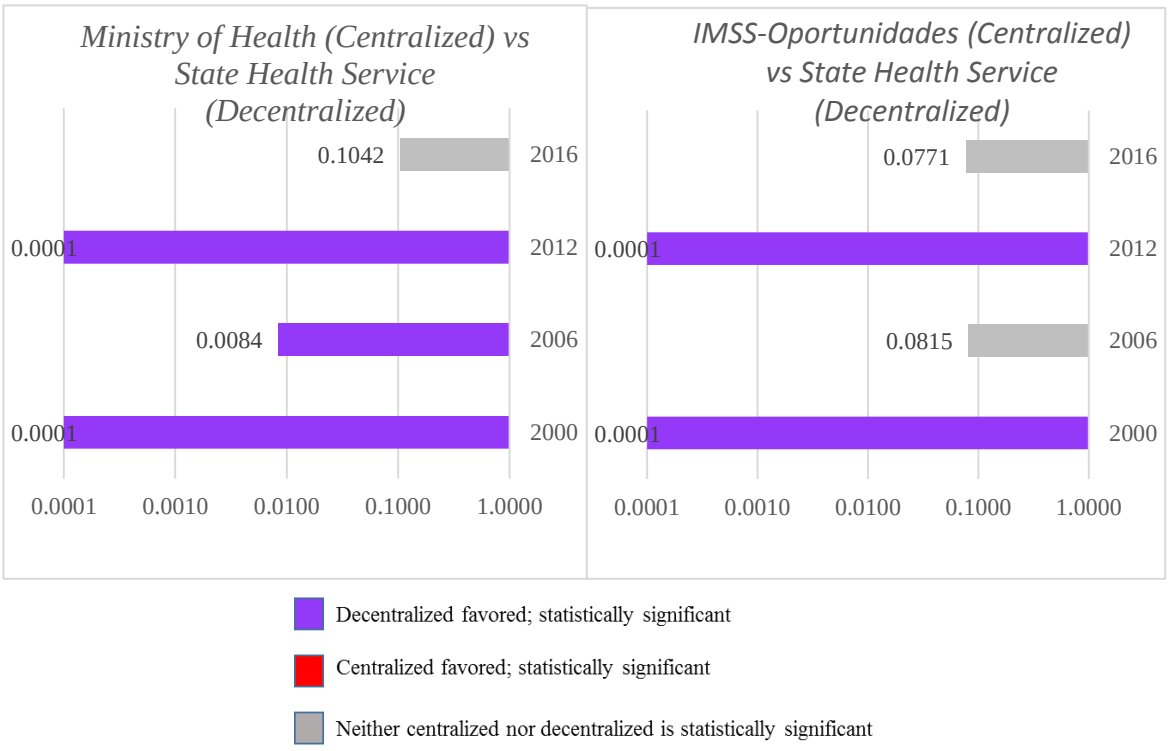
As noted in Table 6, federal/national and state financing varied significantly between centralized and decentralized states at the end of the 1990s and beginning of the 2000s. Non-health federal/national transfers per resident were nearly one-third higher for decentralized states than for centralized states in spite of government formula that accounted for wealth and health needs. After the rollout of Seguro Popular from 2003 to 2009, the differences were far less. Another item to note is the differences in state health expenditures by centralized and decentralized states. In decentralized states, expenditures were nearly one third higher than in centralized states. The differences matter because most taxes in Mexico are federal/national. Decentralized states have sought levy higher states, mainly on tax-based incomes, which has helped, but it remains unclear as to whether poorer decentralized states—which have traditionally depended on federal/national government tax transfers—could find new ways to mobilize additional money.[154]

Table 7: P-Values for Affected Quality Measures

	Ministry of Health (Centralized) vs State Health Service (Decentralized)				IMSS-Oportunidades (Centralized) vs State Health Service (Decentralized)			
Affected Quality Measures	2000	2006	2012	2016	2000	2006	2012	2016
Structure								
1. Travel time to healthcare facility	0.0001	0.0084	0.0001	0.1042	0.0001	0.0815	0.0001	0.0771
2. Availability of Medications								
o Patients/consumers with prescription filled at facility	0.0013	0.7637	0.0580	0.2005	0.1160	0.0002	0.0001	0.1186
3. Availability of Equipment								
o Patients/consumers who reported inadequate equipment (lab equipment, x-rays, etc.)	0.0248	0.1983	0.0001		0.0310	0.6223	0.1487	
Process								
1. Comprehensiveness								
o Patients/consumers who reported that they had reasonable options for care			0.5489	0.1448			0.0021	0.3385
2. Appropriateness								
1. Wait times at facility	0.0200	0.4092	0.0001	0.3207	0.0001	0.9732	0.0001	0.1250
o Patients/consumers who reported that facilities were family-friendly	0.0404				0.0312			
o Patients/consumers who reported that they were content with treatment plans	0.1245	0.8693	0.0001		0.1571	0.8741		
3. Staff/Patient Interpersonal Relations								
o Patients/consumers who reported that they received good explanations for their diagnosis	0.7151	0.4008	0.0003	0.2192	0.1208	0.2642	0.0165	0.2582
o Patients/consumers who reported that they received good explanations for their medications and treatment plan	0.0043		0.0005	0.4584	0.5436	0.0002	0.7317	0.9238

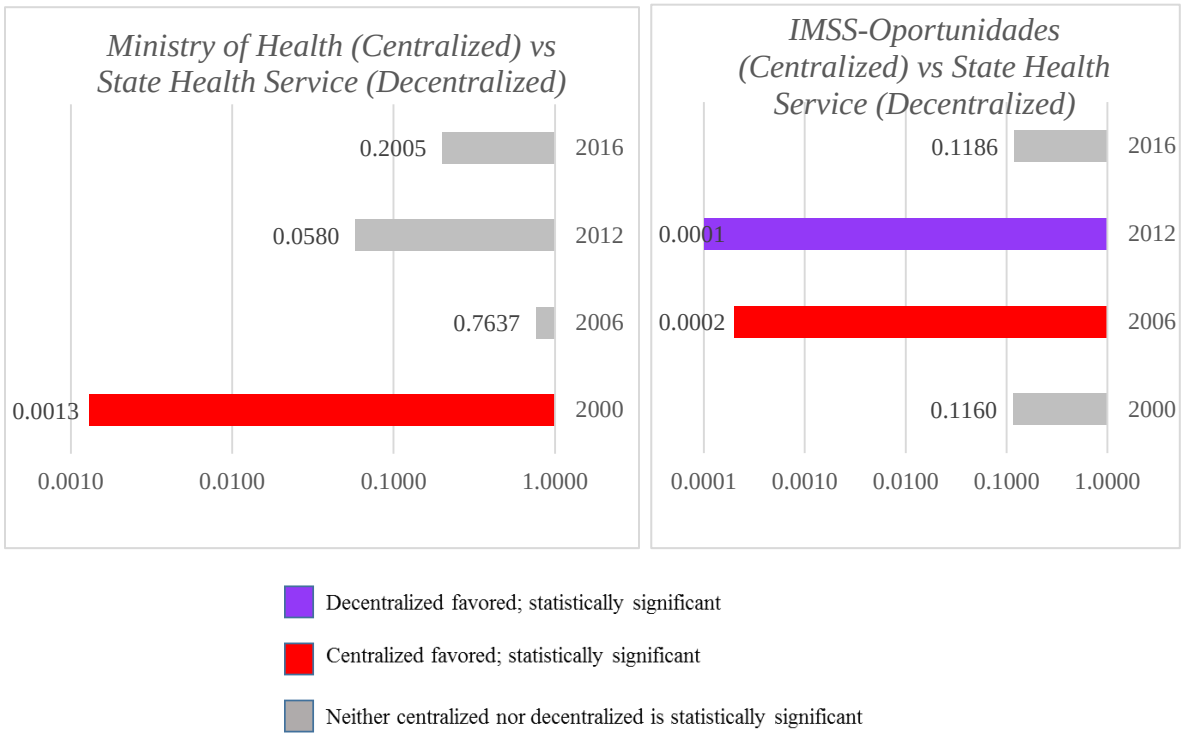
Outcome								
1. Patients/consumers who reported improved health status after their consultation	0.0550	0.4171	0.0002	0.9124	0.9726	0.571	0.0001	0.3832
2. Patients/consumers who perceived the overall healthcare quality to be low	0.9699	0.6519	0.0001	0.1656	0.0023	0.7931	0.0039	0.8480

Figure 13: Lower Travel Time to Healthcare Facilities



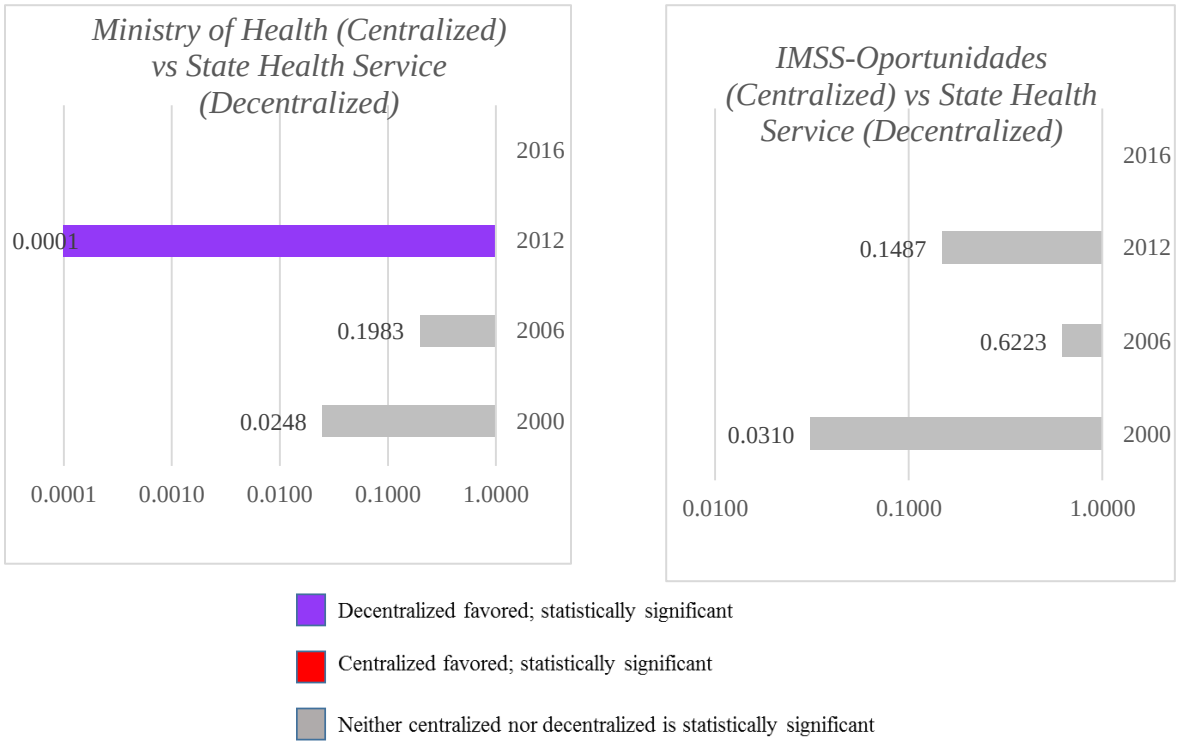
Across all four sampled years, patients/consumers seeking care at decentralized facilities reported lower travel time to healthcare facilities than patients/consumers seeking are at centralized facilities. In 2016, there was no statistical difference between decentralized and centralized facilities, but this may be largely due to a limited sample size.

Figure 14: Availability of Medications



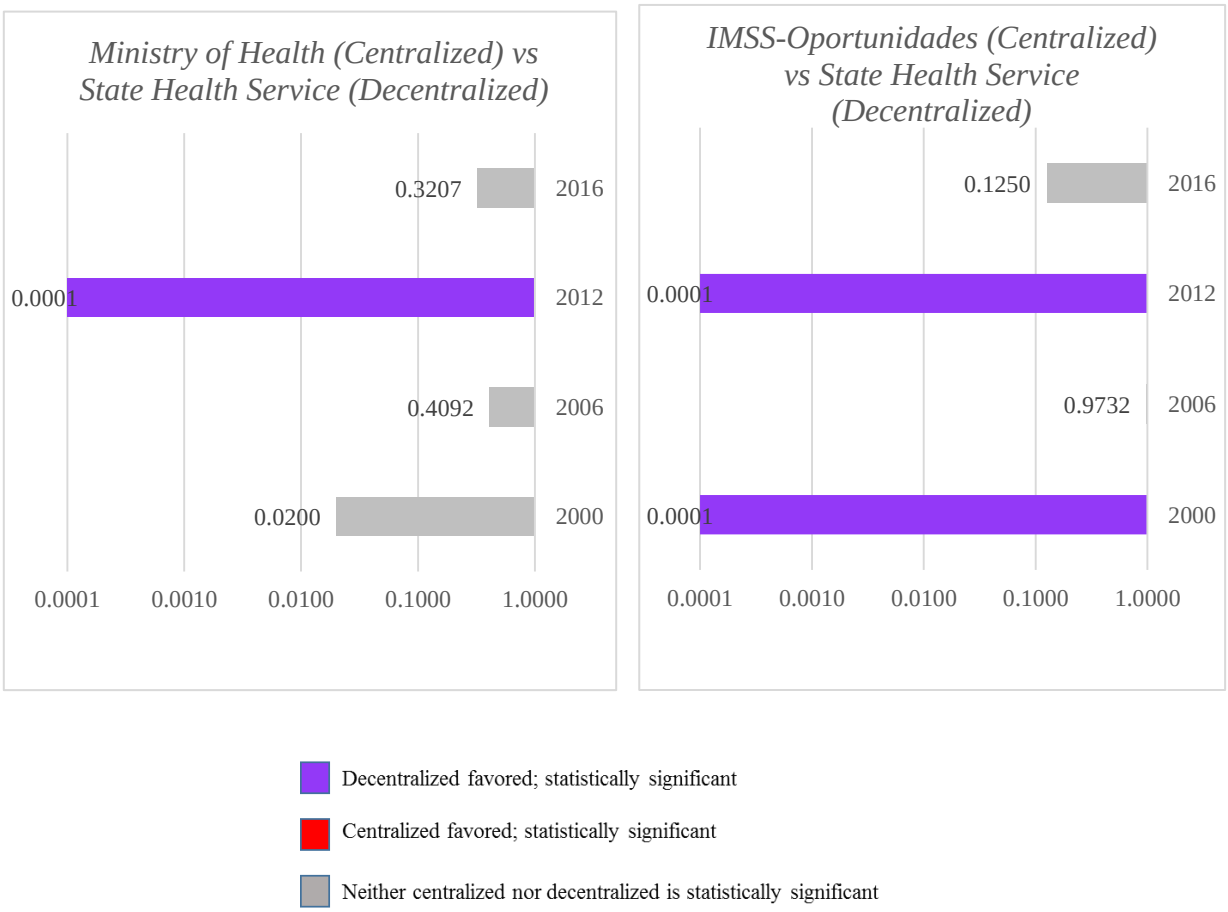
Overall, there were few statistical differences between at decentralized facilities—namely State Health Service and the centrally operated Ministry of Health. Significant differences were noted for 2006 and 2012 with 2012 favoring available medications in the State Health Service and 2006 favoring IMSS-Oportunidades. Again, in 2016, there was no statistical difference between decentralized and centralized facilities, which was largely due to a limited sample size.

Figure 15: Patients/Consumers Reporting Inadequate Equipment



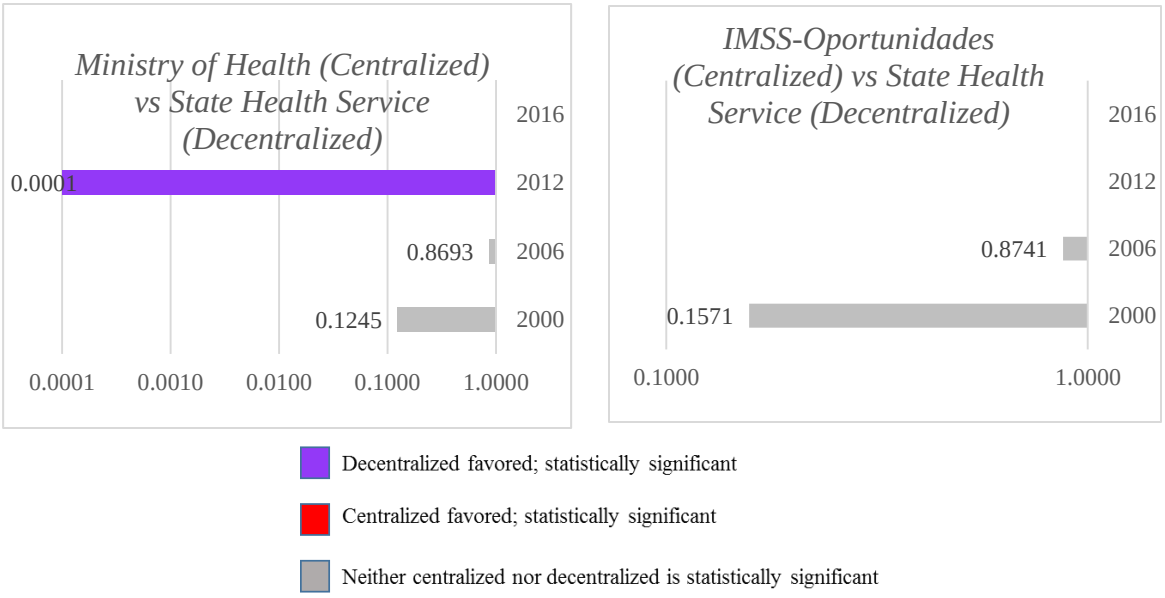
There was no statistical difference between patients/consumers reporting inadequate equipment (lab equipment, x-rays, etc.) between IMSS-Oportunidades and the State Health Service facilities across all four sampled years. In 2012, patients/consumers seeking care at the Ministry of Health facilities reported inadequate equipment.

Figure 16: Lower Wait Times at Facilities



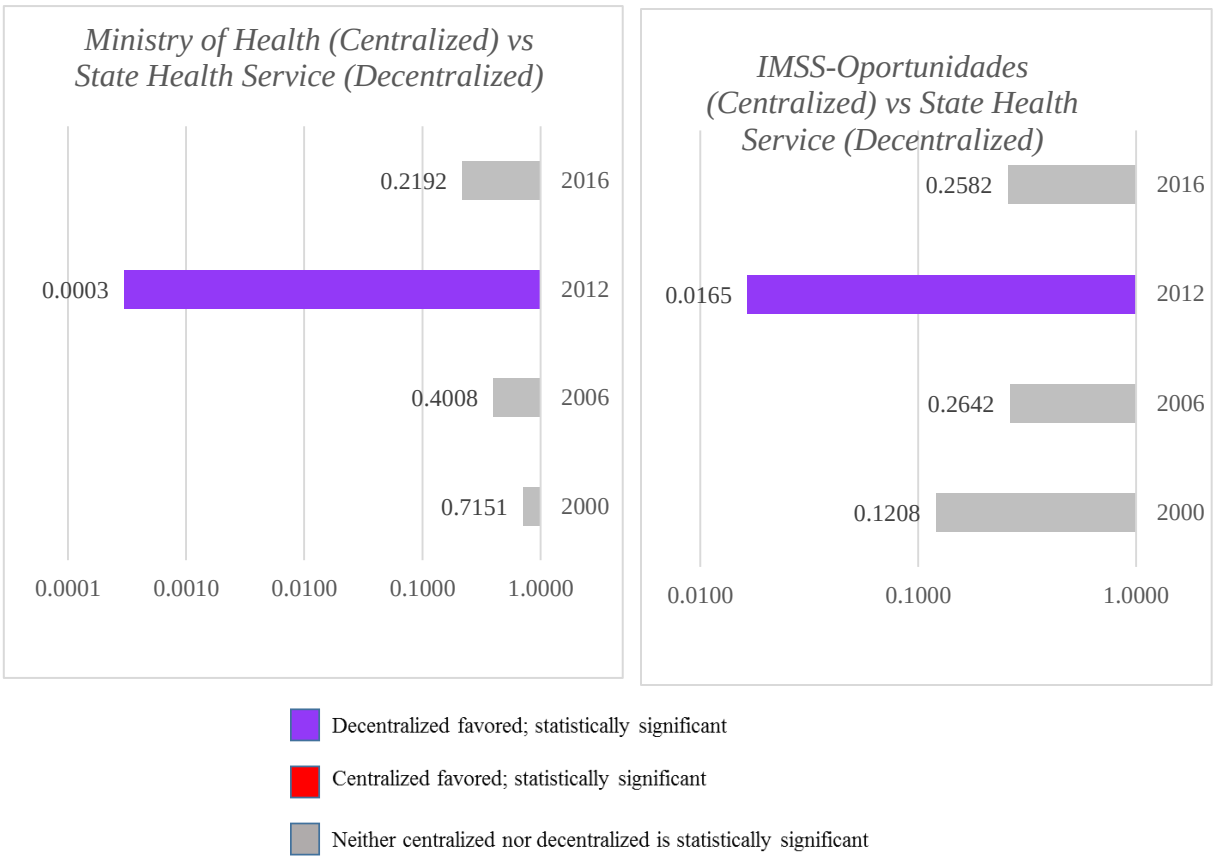
In 2012, patients/consumers seeking care at IMSS-Oportunidades facilities reported lower wait times than patients/consumers seeking are at State Health Service facilities. There were mostly insignificant differences between the Ministry of Health and the State Health Service facilities in 2000, 2006, and 2016. In 2012, patients/consumers seeking care at State Health Service facilities reported lower wait times than their counterparts in centralized states.

Figure 17: Patient Satisfaction with Treatment Plan



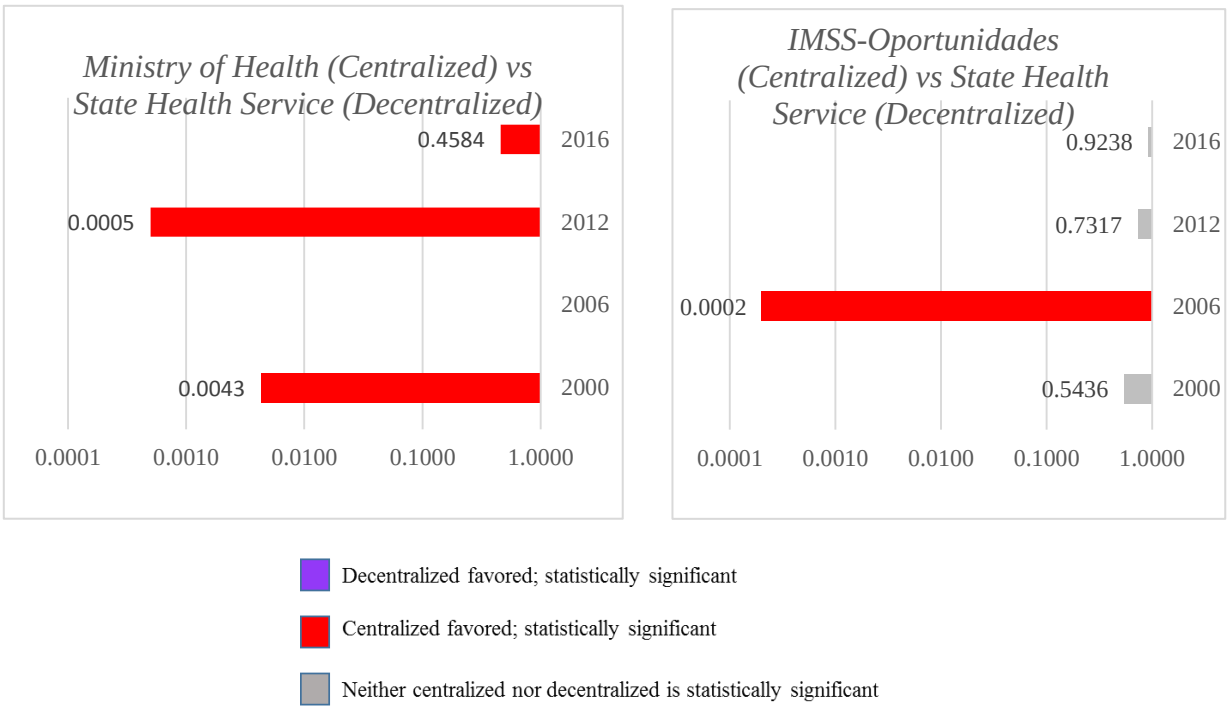
In 2012, patients/consumers noted higher positive ratings with their treatment plan at State Health Service facilities than at the Ministry of Health. There was no statistical difference between patient/consumer reports at IMSS-Oportunidades and the State Health Service facilities across all four sampled years.

Figure 18: Patient Satisfaction with Explanations of Diagnoses



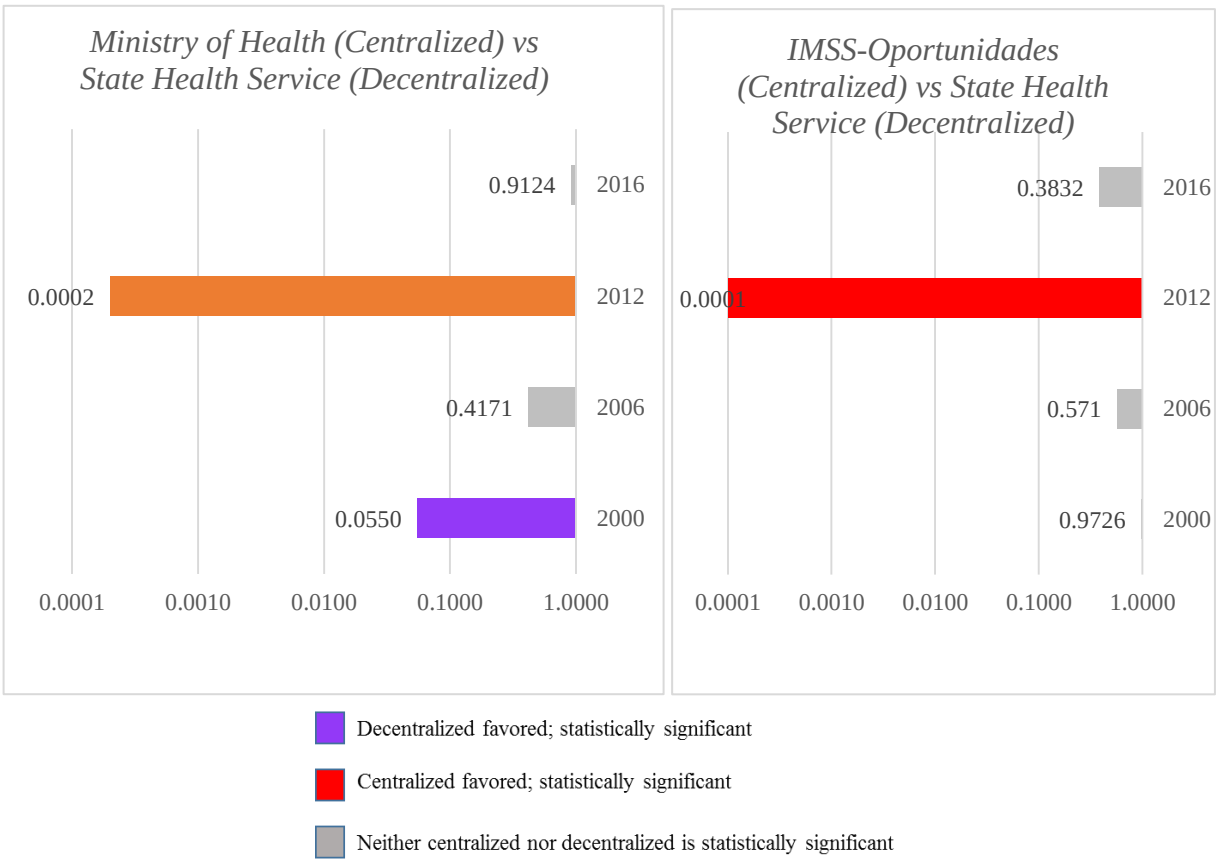
In 2012, patients/consumers noted higher positive ratings with their explanations of diagnosis at State Health Service facilities when compared to the Ministry of Health and IMSS-Oportunidades. There was no statistical difference between patient/consumer reports in 2000, 2006, and 2016.

Figure 19: Patient Satisfaction with Explanations of Medications



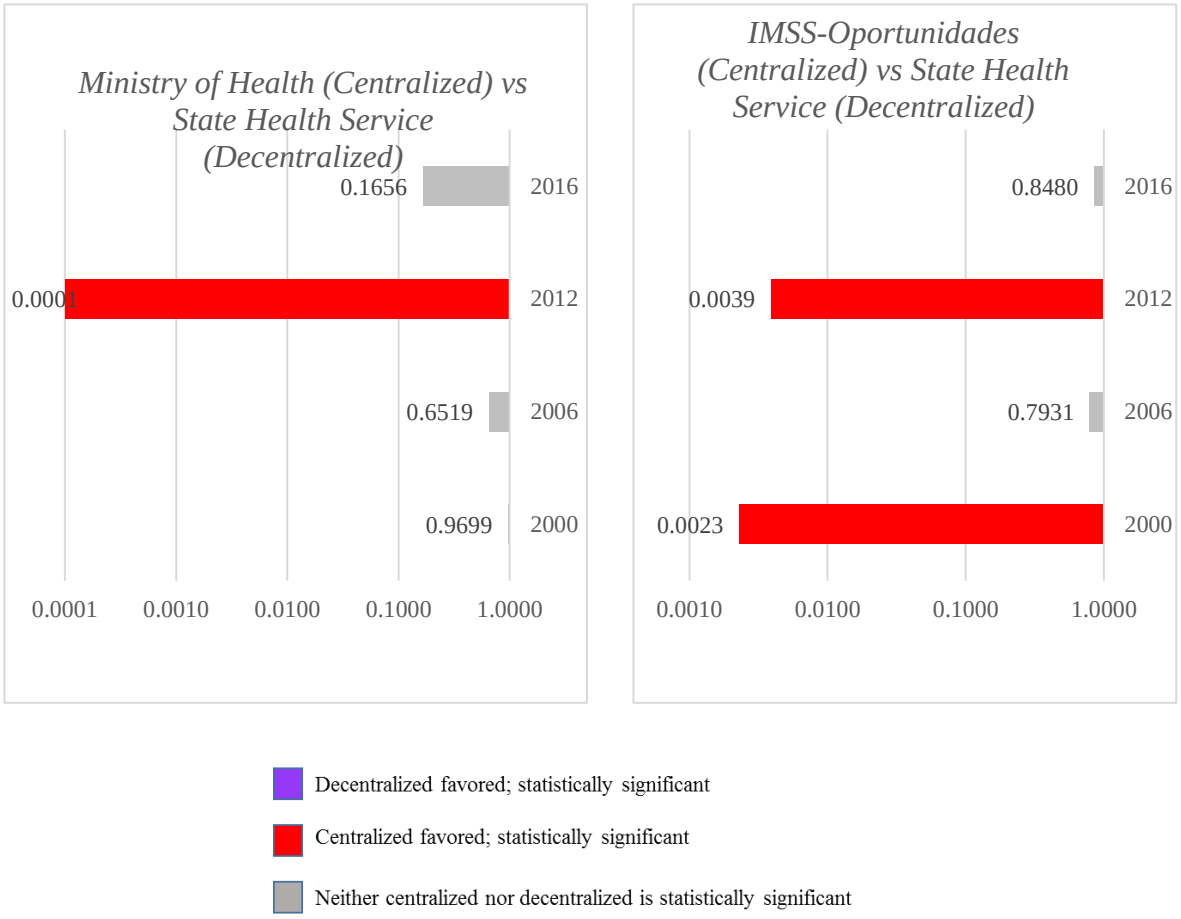
Patients/consumers noted higher positive ratings with their explanations of medications at IMSS-Oportunidades (2006) and the Ministry of Health (2000 and 2012). There were no statistical differences between patient/consumer reports in 2016, which could be due to a limited sample size.

Figure 20: Patients Noting Improved Health Status after Consultation



In 2012, patients/consumers noted improved health status after their consultation at centralized facilities (IMSS-Oportunidades and the Ministry of Health) than their counterparts seeking care at State Health Service facilities. Only in 2000 did patients/consumers note an improved health status at the State Health Service over the Ministry of Health.

Figure 21: Overall Patient Satisfaction



In 2012, patients/consumers noted higher overall satisfaction at IMSS-Oportunidades (2006) and the Ministry of Health (2000 and 2012) than the State Health Service. There was no statistical difference in 2000 and 2006 between the State Health Service and the Ministry of Health. In 2000, patients/consumers noted higher overall satisfaction with IMSS-Oportunidades than their counterparts at the State Health Service.

Discussion

Current literature on quality improvement has circumvented the role that decentralization plays. Literature on health system decentralization has largely focused on resource management in general, but falls short of fully assessing quality outcomes. This study highlights the ways that decentralization may affect quality measures. The study adds to the current literature by delineating the dimensions of decentralization and examining decentralization's potential impact on healthcare quality. The sample—rural populations seeking care at IMSS-Oportunidades, the State Health Service, or the Ministry of Health—allows us to see how similar populations can differ in their responses towards quality-directed questions.

The results have indicated that while decentralized clinics may render lower travel times, lower wait times, and better explanations of medications and treatment plans, patients/consumers were generally displeased with process-related aspects of their care/treatment (e.g., availability of medications, etc.) and overall dissatisfied with their experience. These findings suggest that the theoretical aims of decentralization, i.e., local ownership, fairness, and democratic deliberation, either remain obscure to patients/consumers or are overshadowed by negative public perceptions of decentralized healthcare facilities.

There is some evidence to suggest that the policy-setting functions of decentralization remain hidden to most patients/consumers. The decentralization reforms of the 1980s pursued a strategy for encouraging community participation was to engage different participation mechanisms. Health committees were established in each health unit, with community representatives being tasked with linking health administrators to

patients/consumers. Similarly, municipal committees were established to include representatives from local authorities, the community, and organization providing the services. Another form of engagement was the establishment of *patronatos* (boards of trustees for hospital units) who supported administrative efforts.[30, 111, 155]

But efforts to enact locally-designed policies were under constant threat from labor unions and plagued with limited managerial support for new services. Limited fiscal decentralization also meant delays in the transfer of financial resources. Local committees thereby formed and designed plans that were largely underfunded, poorly staffed, and lacked human resource capacity.[30, 111, 155] The success of local committees varied greatly. In some states, political willingness at state and municipal levels was reinforced through local resources and the availability of technical and managerial capacities. In other states, the delegation of authority meant a shift in blame, but not a shift in resources.

Over time, both rich and poor decentralized states felt the challenges that came with accepting responsibility—namely a growing negative public perception and a diminished willingness by the public to participate in facility boards.[30, 111, 155] This finding could also be reinforced by the fact that when quality decreases, patients/consumers with higher consumer surplus are more likely to exit, i.e., seek care at private facilities. The exit of quality-conscious patients/clients could mean a diminished willingness to participate in community boards and thus deprive those patients/clients who have no other option of its most motivated and active individuals.[156] Hirschman summed it up best when he noted, "since … resistance to deterioration requires voice and since voice will be forthcoming more readily at the upper than at the lower quality ranges, the

cleavage between the quality of life at the top and at the middle or lower levels will tend to become more marked."[157]

It is also important to note that the negative perception of the State Health Service in light of positive measures of quality is largely rooted in the nature of the decentralization reforms themselves. In truth, decentralized states did not gain significant control over health services delivery at the time that the reforms were initially enacted. Most of the few newfound powers states did have were slowly removed. As one author frankly notes, "the 1980s decentralization was ultimately not designed for decentralization, but rather as a vehicle to obfuscate drastic reductions-in the order of 50-60% of spending-for public health services. This was achieved by passing responsibility to states for health without financing this responsibility."[111]

There are two other interesting points from these findings. Among them is the consistency in the differences between centralized and decentralized facilities over time. The rollout of Seguro Popular did come with substantial increases in funding, but at the same time, it is unclear as to whether this increase in funding translated into empowering localized healthcare delivery mechanisms. One study found that the proportion of Seguro Popular beneficiaries in extreme poverty was far less than expected suggesting that inequities between rural healthcare facilities persisted in spite of enhanced financial flows.[158]

Another factor to be considered is that the study did not reveal substantial differences between centralized and decentralized facilities during several years. In some cases, this lack of differences may have just been due to a limited sample size. In others, the findings stand in contrast to theoretical arguments captured in current literature.[4, 42, 69,

159] Theorists maintain that because centralized providers have been associated with more expertise and higher-quality personnel, they are most likely to benefit from economies of scale, particularly in the areas of technical and managerial expertise.[4, 42, 69, 159] This would mean that the primary advantage that state health service providers have over centralized providers was local knowledge. The findings of this study show that even if local authorities are closer to their communities and are more familiar with their taste and limitations, they may still be plagued with a negative public perception combined with a need for technical and managerial skills. It is also important to note that the healthcare facilities in rural areas often provide only a handful of cost-effective interventions, which often do not require a high degree of specialization. As such, the possible gains from flexibility and local experimentation may be understated.

Strengths and Limitations

There are three key limitations for this study. First, non-users of health care were omitted leaving the possibility that only patients with negative experiences may have reported their measures. Secondly, quality measures are entirely reliant on the subjective opinion of patients/consumers who obtained care at these institutions. Thirdly, the study relied on cross-sectional survey data which threatens external validity to the entire Mexican population. Moreover, the analyses were cross sectional and thereby do not provide a basis for establishing causality. Lastly, the focus of this analysis was on rural facilities which offered preventative services, primary care, and basic hospitalization free of charge, but the rural sector is only one portion of the overall population. As Mexico follows the path of other middle-income countries and becomes more urbanized, the

proximity of healthcare providers could become less of an issue, but the issues surrounding consumer preference still matter.

Nevertheless, the study does come with several strengths. First, the study analyzes the natural experiment that lies within 14 states of a middle-income country. Often, comparisons of decentralized and centralized health systems are made before and after a set of reforms. These studies encounter difficulties in controlling for confounding variables that may pertain to specific time periods. This study examines co-existing health systems in the same regions and controls for household characteristics. A second strength of this analysis is its sample of 14 states that consist of nearly half of the country. These 14 states are scattered around Mexico allowing for generalizability of the study results. Lastly, the study also examines the role of decentralization in achieving equity in healthcare provision. Few studies to date have examined the political determinants of quality, particularly for middle-income countries like Mexico.

Conclusion

Throughout the past two decades, Mexico has made important strides to increase access to comprehensive health care services for its most vulnerable populations, namely the rural poor. The challenge to achieve universal access does not come without the challenges that stem from the country's fragmented system of healthcare delivery and its decentralization scheme enacted in the 1980s and 1990s. Understanding the dimensions of Mexico's decentralization reforms allows us to examine the role that decentralization might play in quality measures.

This study reveals that while centralized and decentralized healthcare facilities provide care/treatment for rural, uninsured populations, they differ along several quality

dimensions. Patients/consumers seeking care at decentralized facilities have lower wait times and travel times, but at the same time, they are more likely to remain unsatisfied than patients/consumers seeking care at centralized facilities. Further analyses could probe deeper into the intermediary mechanisms (e.g., staff turnover, delays in funding and recruitment, patient/consumer trust, etc.) that are most associated with decentralized/centralized facilities and lower quality measures. Improving our understanding of the vital components of decentralization and its ties to quality measures has the potential to improve health system performance across healthcare institutions (e.g., IMSS-Oportunidades, the State Health Service) and erase gaps between centralized and decentralized states. This study contributes to this understanding by assessing health system performance by providing a nuanced understanding of decentralization and healthcare quality in addition to examining their potential links.

POLICY IMPLICATONS

Mexico's brand of decentralization has rendered a patchwork of healthcare subsystems that are plagued with structural constraints and implementation barriers. The decentralization reforms of the mid-1980s have withered with time—with national parties advocating for further decentralization or, at times, recentralization. The launch of Seguro Popular exacerbated previous challenges largely because it further fragmented the regulatory and financing systems that were in place. In particular, decentralized states—through their management of State Health Service facilities—are not required to adhere to mandates from the centrally-controlled Ministry of Health. Recently-enrolled members of Seguro Popular could, in theory, seek care at their assigned facilities and be assured coverage for a variety of health conditions, few actually have sought to do so.[160] Many opted to pay copayments at state health facilities or out-of-pocket at private facilities.[50] The root of the problem could lie in financing mechanisms that were largely left out of the decentralization reforms, i.e., they remained largely centralized. In particular, the management of funding mechanisms—like the delivery of healthcare services—is delegated to a mix of state and federal departments and units. These agencies operate with limited oversight and coordination and are often plagued with limited managerial capacity. [160]

At the heart of Mexico's decentralization reforms are policy-making and administrative functions. There are several key implementation challenges that arise. First, the expansion of personnel across both decentralized and centralized states did alleviate the burdens faced with new financing mechanisms like Seguro Popular. At the same time, however, decentralized states faced the challenge that with more personnel

came increased state healthcare expenses. Prior to the introduction of Seguro Popular, state health service managers could rely on federal transfers—largely allocated via the Ministry of Health. Seguro Popular changed the federal transfer functions of the Ministry of Health meaning that state health service managers needed to seek funds—within their states—to offset personnel costs and the possibility of that Seguro Popular would lead to an increase of health service utilization.[53] As one author notes, "Between 1980 and 2003, funds to hire new workers were mainly coming from state financing sources. With decentralization, payroll was transferred to each state where permanent workers originally paid by federal and state financial resources were integrated."[53]

Secondly, efforts by the national government to "regularize" healthcare staff was met active resistance by Ministry of Health National Workers' Union (SNTSA). The SNTSA relied on a corporatist arrangement that favored centralized models of health service delivery[161] Decentralization efforts in the 1980s, in theory, transferred administrative functions to state health service managers, but in the decades that followed, many new employees were hired through fixed-term contracts that were largely negotiated by the SNTSA. This meant that decentralized states still had to negotiate with national union leaders who often negotiated wages, hours, and tasks to favor workers in centralized facilities.[53] With the expansion of healthcare personnel under Seguro Popular, many state health service managers have sought non-fixed term contracts that afford them more discretion in hiring practices—not to mention less negotiations with the SNTSA.

The findings of this dissertation underscore criticisms of Mexico's health system decentralization reforms. The findings specifically highlight the shortfalls of

decentralization in Mexico by detailing the nature of decentralization itself. It reveals a fragmented, loosely coordinated national system that seeks to provide a safety-net for the uninsured and/or rural poor. In many ways, Mexico has a long ways to go to reach the status of other middle-income or formerly middle-income countries. In Brazil, Columbia, Thailand, and Turkey, extensive efforts were undertaken to fuse various subsystems into one nationally-integrated health system.[162-166] The rollout of Seguro Popular unleashed decentralization's latent tensions, most of which were centered on financing. National authorities have sought to recentralize functions that were initially transferred to decentralized states, and these states, in turn, have resisted. A similar challenge has been found in a variety of European cases.[167] In these cases—as in Mexico—national authorities have sought to re-assume functions such as the purchasing of medicines and to budgetary allocations. These challenges point towards a revitalized effort to expand regulatory functions at national levels, which could help enforce accountability of expenditures. At the same time, however, it is important to note that increased bureaucratic accountability could mean reduced decision space for state health service managers that could in turn, eliminate a key cornerstone of Mexican health system decentralization.

Mexico, at present, seeks to balance its commitment to decentralization, albeit in 14 states, with a strengthened reporting and monitoring mechanisms. Unclear definitions of roles and responsibilities have created a fragmented system that has also fragmented levels of authority. A quick fix would favor recentralization of accountability functions, but these functions are simultaneously strengthened by decentralized governance and local feedback loops.

Further investigation is thereby needed to identify the connection between decentralized governance, accountability, and the capacity of healthcare facilities. It is particularly important to address the structurally-induced constraints on state health service managers who often face nationally-imposed directives and yet have to rely on limited financial resources. Future research could address the causal relationships between national and subnational actors in light of local capacity. These relationships could be explored from a variety of perspectives (e.g., providers, patients, managers, community members) because these actors can either sustain these reforms or subject them to a vicious cycle of decentralization and recentralization. Ultimately, improving our understanding of the perspectives of these actors—noting their interconnectedness—has the potential to improve policy sustainability and render a robust, equitable, and efficient health system.

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