How to Scale-Down: Adapting a National Primary Health Care Measurement Tool to Subnational Governments

HOW TO SCALE-DOWN: ADAPTING A NATIONAL PRIMARY HEALTH CARE MEASUREMENT TOOL TO SUBNATIONAL GOVERNMENTS

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"If we are really serious about achieving universal health coverage and improving people's lives, we must get serious about primary health care."

- Dr Tedros Adhanom Ghebreyesus, Director General of the World Health Organization

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ABSTRACT

Nearly half of the world's population lacks access to essential primary health care, a problem that has negative cascading effects on population health. This is further exacerbated by a lack of adequate data that both describes countries' health systems and is required for effective health care reform. Access to clear, actionable data allows policymakers to better understand gaps in the system and make targeted improvements.

In light of this problem, in 2015, the Bill & Melinda Gates Foundation, World Bank, WHO, Ariadne Labs, and Results for Development founded the Primary Health Care Performance Initiative as a multi-year, multi-million-dollar investment in improving primary health care provision and measurement. One component of this initiative, and the focus of this research, is Ariadne Labs' Progression Model. The Model is a mixed methods tool for low-and-middle-income national governments that measures health governance, system inputs, and population health. The Progression Model has been utilized by 11 countries and is proving valuable in summarizing previously uncollected data and prompting conversations on primary health care reform. Yet, many large countries with diverse populations find that nationally aggregated data lacks the utility and granularity required to develop effective policies for the subnational level. Furthermore, little is known about subnational governments' authority over primary care provision and their ability to effect changes. These countries require an adapted version of the Progression Model based upon subnational data.

This DrPH dissertation attempts to address these gaps by:

1) Developing a subnational classification structure to understand which layers of government have authority over certain indicators.
2) Providing recommendations for improving the Progression Model at the subnational level.

This work was conducted remotely from Boston, Massachusetts, with stakeholders in 10 countries who implemented the Progression Model. I drew from qualitative research methods and realist evaluations to develop recommendations for adapting this work to the subnational level. I conducted Health System Assessments to understand authority dynamics in each country and created subnational classification structures. The two most significant subnational categories were classified as *Consulted* and *Directed*, terms that indicate the varying degrees of control that subnational governments exert over primary health care.

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narrative, embodying resilience while becoming seminal leaders of the American Muslim community. Finally, to my parents, who I have immeasurable gratitude for, gave me every opportunity, taught me how to be resilient, and fostered my curiosity with public health. My father, Dr. Zafar Khalid, who unintentionally inspired me to pursue public health – exposing me to disparities while he treated hundreds in his village on trips to Pakistan. To my mother, Kishwar Khalid, who has done everything for her children, taught me to be confident in who I am, and help me re-center myself during challenges – thank you for everything.

1. INTRODUCTION

At least half of the world's population lacks access to full coverage of essential primary health care services. Primary care is described as "a key process in the health system that supports first-contact, accessible, continued, comprehensive and coordinated patient-focused care (PHCPI, 2019b)." While countries strive for high performing primary health care systems, achieving this goal can be stymied by the lack of actionable data that can be used to inform policies and to set government priorities (Veillard et al., 2017). In an effort to identify and address gaps in fragmented health care systems, the Primary Health Care Performance Initiative (PHCPI) was created as a partnership between the Bill & Melinda Gates Foundation, World Bank, WHO, Ariadne Labs, and Results for Development for use in low- and middle-income countries (LMICs).

Primary health care (PHC) comprises the foundation of a country's health system. Accordingly, it needs to be well-equipped, as well as appropriately financed, serviced, and administered. Rarely do all these factors exist in LMICs. Understanding how each of these elements is faring, and where specific improvements are needed to provide a high-quality system, is primarily a political rather than a technical decision (Kruk et al., 2018). Therefore, an effective technical tool must include an assessment of the system's governance. It is from this perspective that Ariadne Labs, in collaboration with PHCPI, created the Progression Model. The Model is a mixed-methods, rubric-based tool with 33 metrics that examine governance, inputs into the primary health care system, and population health and facility management.

The Progression Model has been utilized by the national governments of more than 11 countries.[1] Multilateral organizations, national, and subnational governments have pointed to the need for an adapted

[1] Of the 11 National Progression Models, five have been published, six are nearly completed but awaiting finalization (Colombia, Mozambique, Malaysia, N. Macedonia, Papua New Guinea, and Punjab, Pakistan). There are eight in progress, in either the scoring and validation stage (Bangladesh, Cote d'Ivoire, Iran, Islamabad Capital Territory, Jordan, Morocco, Oman, and Guinea Bissau paused until politically feasible). There are nine in early

version of the Model that would enable analysis of the primary health care system and its gaps at the subnational level.[2] Having access to better subnational data allows for better-informed health care reform and more effective decision-making as sub-national governments account for 40 percent of worldwide public spending (Fung, 2019). Subnational implementation of the model would also allow countries to better understand disparities at and among subnational levels, since local health indicators carry greater significance to a local policy maker than the national averages that are typically collected.

Ariadne Labs is keen to expand the application of their Progression Model to the subnational level where decision-making impacts people's health more directly. Understanding how to adapt a national tool to subnational settings is the inverse of traditional global health work that often seeks to *scale-up* pilot projects. This novel work is an exploration of *"scaling down and throughout."* This approach refers to an alternative lens that incorporates the dimension of scale into the Progression Model, with a focus on scaling it down to the subnational level.

I was part of Ariadne Lab's Primary Health Care team for eight months, as technical lead, I worked to understand the applications of the Progression Model and the nuances of the challenges faced during implementation. In order to drive the work forward for Ariadne Lab's subnational adaptation, I identified the following research questions:

> ***1a)*** *How could the Progression Model be adapted to fit different types of subnational governance structures?*

stages (Bahrain, Burkina Faso, Egypt, Kenya, Malawi, Mauritania, Nigeria, Qatar, and United Arab Emirates (L. Hartshorn, personal communication, August 20, 2020).

[2] The province of Punjab conducted a Progression Model, to date it is the only subnational Progression Model, but the results have not yet been discussed with the provincial government. Although it was technically a subnational Progression Model, all measures remained the same and only language was changed from "national" to "subnational." Throughout this dissertation, 10 national Progression Models, includes this one subnational one from Pakistan.

1b) *What aspects of the current assessment process could be improved for a subnational assessment? What are the barriers to and facilitators of a successful subnational assessment?*

To address these research questions, I used a qualitative approach to understand how the Progression Model could be revised to correspond to the subnational governance structure of the implementing country and to identify barriers and facilitators to the current assessment process. In order to create a subnational classification structure that modifies the Progression Model based on governance structure and the degree of authority a subnational government has over primary health care entities, I conducted 16 in-depth interviews with key informants who were directly involved with the process in 10 countries. Respondents also completed a Health Systems Assessment, which is a short survey that allowed respondents to rank their national, subnational, and local government's authority over 14 primary health care indices. The assessment results informed authority dynamics, technical changes required for the subnational progression model, and a subnational typology classification structure.

As a doctoral candidate at Harvard and doctoral fellow at Ariadne Labs I attempted to sideline my own subjectivity, that I may have from previous work experiences and the classroom, and to provide insights that were rooted in the data which may not have been apparent to those involved in the work before me. As a temporary insider to the organization and new to the project I was able to think about the issues raised during interviews from a different perspective and without attachment to the potential implications. I evaluated the Progression Model's effectiveness when implemented at the national level, in order to draw lessons for improved implementation at the subnational level. While many interview respondents shared overall positive feedback on the Progression Model's effectiveness, this thesis focuses on mechanisms for improving the model for subnational settings.

My analysis examined subnational governance through the Realist Evaluation framework and Heifetz's work on adaptive and technical challenges to highlight the importance of governance, authority, and power

as they manifest within and between governance levels (Gilmore et al., 2019; Heifetz, 1988). I chose this analytical framework because Realist Evaluation explains that projects and programs work under certain conditions and are influenced differently and is thus a suitable lens for determining what works, for whom, in which circumstances, and why (Marchal et al., 2014). In addition to power, which is the ability to exert influence in different ways, authority is applied to this dissertation work, and is defined by Heifetz as being "conferred power to perform a service" (McCrimmon, 2020).

This project examined modifications that could be made to the Progression Model in order to adapt it as a relevant and useful tool for different governments. Actual implementation of the proposed subnational Progression Models was not within the scope of this dissertation. However, my research findings may help strengthen implementation of the Progression Model in multiple subnational settings, by informing technical and process changes. This revised tool will be carried out in five countries in 2021.

The subsequent sections of this dissertation include an analytical platform, results, and conclusion. The analytical platform includes a description of the problem, literature review, the theory of change and evaluation framework, and an explanation of the research methodology. The results section includes research findings and draws connections to the aforementioned sections. The conclusion consists of the discussion and develops some recommendations of technical and adaptive changes required to effectively implement the subnational Progression Model in multiple settings.

2. ANALYTICAL PLATFORM

The Global Public Health Problem

The fragmentation of primary health care systems is a global problem. This is particularly significant because primary health care is the cornerstone of universal health coverage (Marchal et al., 2014). At least half the world's population lacks access to essential primary health care services, and, at the current rate, the number of people without health care will grow to five billion by 2030 (WHO, 2019b, 2019a). The WHO reports that of the 30 countries that have available data, only eight annually spend at least $40 per person on primary health care (WHO, 2019b). Barriers that prevent people from utilizing the primary health care system include: cost, distance, lack of information, and poor quality (R4D, 2020). A strong primary health care system could address 90 percent of the population's health needs (R4D, 2020), and provide continuous and coordinated care to the population. Many low- and middle-income countries (LMICs) also suffer from an increasing burden of chronic diseases. In 2018, global public health and political leaders came together in Astana, Kazakhstan, to declare their commitment to primary health care to ensure that "everyone everywhere is able to enjoy the highest possible attainable standard of health"(WHO, 2018). Despite countries acknowledging the need to improve their primary health care system, their efforts are obstructed by competing priorities, inefficient organization, and inadequate financing. These challenges are further exacerbated during epidemics and pandemics.

As an additional obstacle to primary health care provision, many countries have unreliable performance-measurement systems and data, which prevent them from setting strategic priorities and devising effective steps to improvement (R4D, 2020). Countries and donors lack information on access to care, availability of services, whether or not care is "people-centered," and on the organization and management of care delivery. As an attempt to fill these gaps, the Primary Health Care Performance Initiative works with countries to track performance indicators, improve accountability, and guide decision-makers by providing

them with actionable data (Veillard et al., 2017). While LMIC governments sometimes track general indicators such as financing and mortality metrics, they usually do not address their own performance, the equity of their systems, or the capacity of their system to create and sustain change. Furthermore, primary health care data and tools such as the Vital Signs Profile and Progression Model, which can make data clearly actionable for subnational governments, are virtually non-existent.

2.1. Host Organization Profile

Ariadne Labs is an innovation and research center operated jointly by Brigham and Women's Hospital and the Harvard T.H. Chan School of Public Health. The center aims to improve health care delivery at critical points. It serves as an implementation science and research arm on many projects, and roots its work in scientific methodology, building programs off of informatics and measurement. Atul Gawande, the founder and chair, started Ariadne Labs by exploring mechanisms to improve healthcare through the utilization of checklists to advance healthcare accountability and quality of care. Some of the Lab's most notable contributions have been in the form of checklists for surgery or birth by enhancing health care provider accountability by having them work through standardized protocol in the form of checklists. However, the lab also invests in primary health care by developing mechanisms to improve service delivery. The aim is to improve key primary care functions by serving as the first point of contact for families needing care, providing continuity of care, addressing a comprehensive range of needs, coordinating care, and offering patient-centered support. (*Primary Health Care | Ariadne Labs*, n.d.) Ariadne Labs is a member of the Primary Health Care Performance Initiative (PHCPI), which serves to create, understand, and improve primary health care systems around the world. Additional partners of the PHCPI are country policy makers, health systems managers, advocates, the Bill & Melinda Gates Foundation, the World Bank Group, the World Health Organization, and Results for Development (Ratcliffe et al., 2019). Ariadne Labs created the Progression Model of the Vital Signs Profile, which is a dashboard of primary health care capacity that generates standardized, actionable data for countries. The center serves as the technical thought leader

within PHCPI and oversees external validation and scoring for countries as they complete the Progression Model.

2.2. Literature Review

The literature review provides a synthesis of the key substantive topics discussed in this thesis, including primary health care, the primary health care performance initiative, the Progression Model, the decentralization of health care systems and its different manifestations, potential analogues to the subnational Progression Model, power and authority among layers of governance, and the traditional conceptualization of scale in global health work.

2.2.1. Primary Health Care

PHPCPI consortium and additional thought leaders in primary health care believe strong primary health care is the foundation of a resilient health system and achieving universal health coverage requires moving beyond vertical programs and towards integrated systems through primary care (Bitton et al., 2017). Many in the international development community have focused on single diseases that plagued a country, thus resulting in a vertical approach to health systems. These vertical approaches have been contested by others who alternatively favor broader health systems approaches or social determinant approaches (Packard, 2016). Many sub-Saharan African countries provided treatment for single diseases that were overwhelming their populations, such as malaria or HIV/AIDS, highlighting the need for an overall more effective health systems (Veillard et al., 2017). The increased verticalization of health interventions resulted in a vision of comprehensive primary health care, which culminated in the Alma Ata Conference and Declaration in 1978, the first international declaration stating the importance of primary care (de Savigny et al., 2008). However, during the Millennium Development Goals era, from 2000 to 2015, donors, by funding a vertical approach to healthcare as they targeted single-diseases or conditions, ended up causing further fragmentation, inefficiencies, and parallel systems rather than supporting the development of broad robust health systems. Today, many countries have a double burden of both infectious and chronic diseases, thus making them

more reliant on a primary health care system. Sustainable Development Goal #3[3], also known as UHC2030 is defined as "financial risk protections, access to safe, effective, quality and affordable essential medicines and vaccines for all" (Bitton et al., 2017). Bitton, et al, argue that despite notable strides being made in primary health care there are significant gaps in community needs and effectiveness of care (Bitton et al., 2017).

Primary Health Care is a multi-stakeholder driven approach that aims to maximize the level and distribution of health and well-being via primary care and core public health functions, multisectoral policy, and empowered communities (PHCPI, 2019b). Primary care is described as "a key process in the health system that supports first-contact, accessible, continued, comprehensive and coordinated patient-focused care (PHCPI, 2019b)." The conceptualization of PHC has evolved, from being seen as a responsibility to provide the lowest-level basic needs, to the prevailing consensus today that characterizes it as an integrated, people-centered system of care (Bitton et al., 2017).[4]

In October 2018, to commemorate the anniversary of Alma Ata, the international community convened in Astana, Kazakhstan, to commit to strong primary health as the foundation for health for all (PHCPI, 2019b). Attendees declared their support for accelerated efforts and sustainable progress towards stronger systems for universal health coverage by 2030 (UHC2030) (UHC2030, 2019). UHC2030 promotes the strengthening of multi-stakeholder health systems and calls for more political commitment, accountability, and knowledge-sharing towards UHC (UHC2030, 2019). At the September 2019 UN General Assembly,

[3] Sustainable Development Goals (SDGs) are an extension of the Millennium Development Goals, that were adopted by all United Nations Member States in 2015 (UNDP, n.d.). SDGs consist of 17 integrated targets that aim to end poverty and protect the planet.

[4] There are notable distinctions between primary care and primary health care. Muldoon and colleagues describe primary care as 'family-doctor-type' services that is delivered to individuals. Primary health care is much broader, however, and encompasses "both services delivered to individuals (primary care services) and population-level 'public health-type' functions" (Bitton et al., 2017).

for only the third time in its history, the UN voted on, and ultimately passed, health legislation to support primary health care and financial risk protection among member nations (UNGA, 2019).

2.2.2. Primary Health Care Performance Initiative

There are multiple barriers to achieving UHC, key among them is the lack of actionable data that can be used to inform policies and create priorities for governments (Ratcliffe et al., 2019; Veillard et al., 2017). In an effort to address these gaps, the Primary Health Care Performance Initiative (PHCPI) was created to collect and present actionable data on primary health care in low- and middle-income countries (LMICs). PHCPI is a partnership between the Bill & Melinda Gates Foundation, the World Bank, the World Health Organization, Ariadne Labs, and Results for Development. Its primary aim is to improve the measurement of primary health care indicators in order to accelerate improvements.

PHCPI created a conceptual framework for analyzing primary health care systems that identifies its essential components with a focus on service delivery (Figure 1, Section C), and captures interactions of systems and supplies with providers and patients (Bitton et al., 2018). This framework focuses on people and community-centered care, supply and demand functions, and integrated service delivery through effective organization (Bitton et al., 2018). The first two subdomains of this model (A1. Governance & Leadership and A2. Health Financing) emphasize preconditions for patients who have meaningful financial and geographic access to timely care (subdomain 3) and determine whether effective providers are available (subdomain [4]). The final subdomain measures quality, as described by Barbara Starfield's 5Cs, by assessing first contact accessibility, continuity, comprehensiveness, coordination, and person-centered (Bitton et al., 2018).

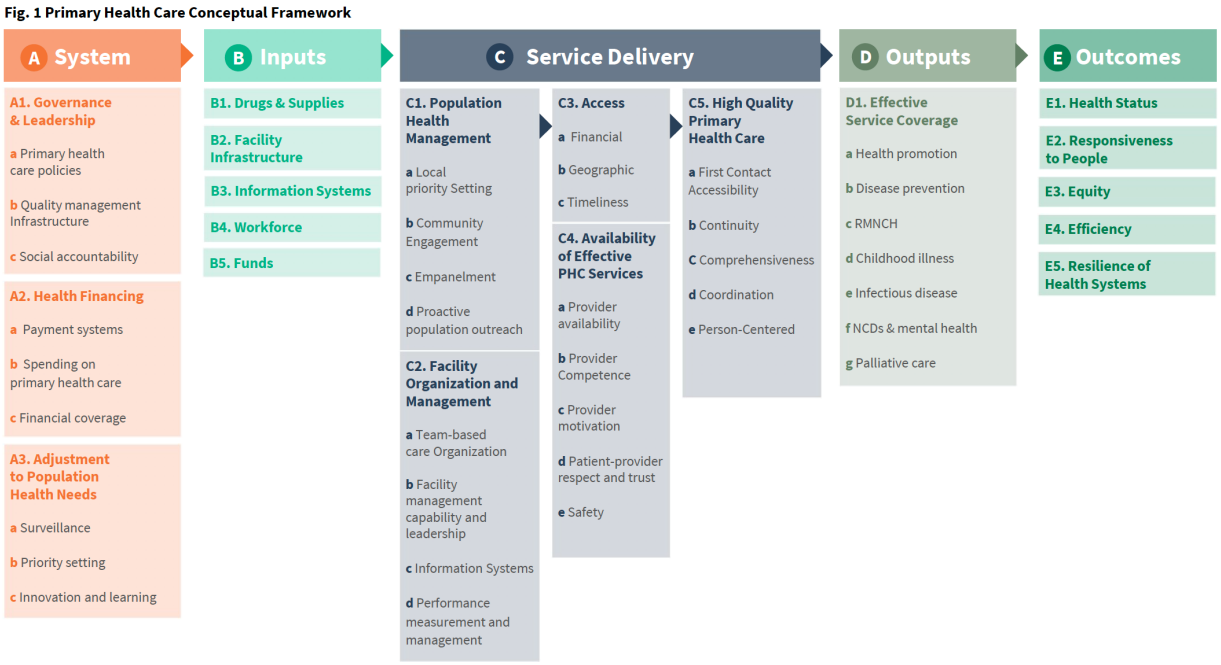


Figure 1. Primary Health Care Performance Initiative's Conceptual Framework

PHCPI identifies measures for primary health spending, access, quality, service coverage, health outcomes, and capacities (Ratcliffe et al., 2019). The VSP summarized priority areas and is populated through national or state-wide surveys, like the Demographic and Health Surveys (DHS), that cover finance, access, quality, coverage, and equity (see Figure 2). When standard indicators are unavailable or inadequate, alternative indicators are used instead (PHCPI, 2019b).

The 25 key performance indicators ("vital signs") were assembled from globally available data that can be used at the national level to assess the performance of PHC, and to identify gaps, thus allowing countries to compare themselves to their peers (Bitton et al., 2018). "Vital signs" were selected for their ability to assess the overall performance of a PHC system (Veillard et al., 2017). The 25 "vital signs" populate the Financing, Performance, and Equity pillars, while the Progression Model populates the Capacity pillar. PHCPI created a dashboard to produce a uniform set of visualizations across many LMICs that communicates summary performance information about their PHC systems (Veillard et al., 2017). The

dashboard is intended to emphasize the data a country needs to improve its PHC system, thus making it easier for countries to operationalize measurement agendas in order to improve performance (Veillard et al., 2017).

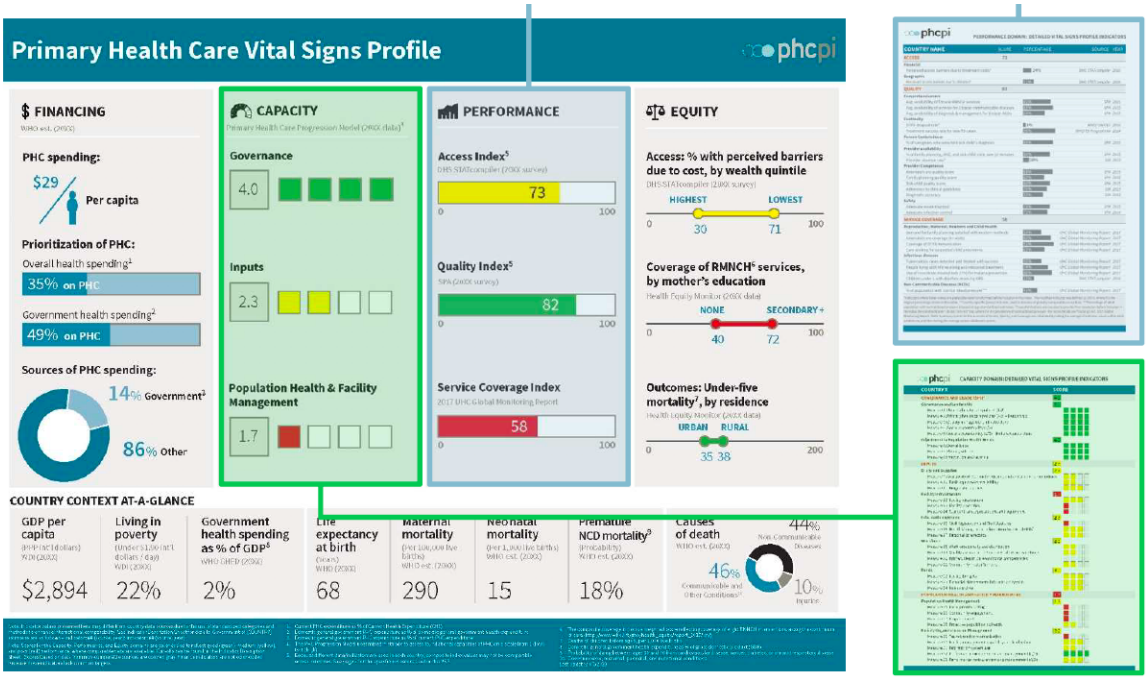


Figure 2. Primary Health Care Performance Initiative's Vital Signs Profile Dashboard - The Capacity pillar refers to the Progression Model

2.2.3. Progression model

The Progression Model, specifically the Capacity pillar of the VSP, aims to systematically assess the core PHC capacities—governance and leadership, inputs, and population health and management—which are often insufficiently measured using currently available global data sources (Ratcliffe et al., 2019). The Capacity Pillar of the VSP is comprised of 33 measures. The Progression Model utilizes a rubric in order to capture the reality that these elements of governance cannot be adequately captured with binary indicators (see Figure 3 as an example) (Ratcliffe & Hartshorn, 2019). The Progression Model is used to systematically assess PHC capacity at a national level by capturing less tangible indicators than the rest of the VSP. These less tangible indicators include an assessment of governance structures, the actual potential for change,

engagement with population, adjustment to the population's needs, and how providers work (Ratcliffe et al., 2019).

Unlike other components of the VSP and similar tools measuring health systems status, the Progression Model uses a mixed methods approach, including nationally collected quantitative data as well as qualitative interviews with key stakeholders to address indicators which are not captured in routinely collected data and that can be used to inform health care reform. Each of the 33 measures are ranked on a scale of 1 (low) to 4 (high) based on performance (for an example with Measure 2 Primary Health Care Policies- Leadership, see Figure 3). An unweighted average is calculated as the summary statistic for categories as noted above. Data for each indicator comes from policy documents, reports, surveys, and key informant interviews (Ratcliffe et al., 2019).

The Progression Model is a tool that brings together a diverse set of stakeholders, such as government officials, NGOs, and private sector. This mixed group offers different perspectives on the subjective elements of PHC. For example, measure 4, Social Accountability "is a measure of whether a country is held accountable to existing and emerging social concerns and priorities based on need relevant to PHC of internal and external stakeholders (PHCPI, 2019a)." Different stakeholders – from the community, NGO, and government employees, to marginalized populations, and private sector will all most likely have different perceptions which need to be captured to score this measure (PHCPI, 2019a).

The assessment tool is implemented through a joint internal and external assessment process led by in-country teams. Teams document findings that determine scores, and are then externally evaluated to confirm that their findings are rooted in quality evidence and that their scoring is consistent with that of other countries (Ratcliffe et al., 2019). Scores are generated by a stakeholder working group which meets to assess the findings from qualitative key informant interviews. Figure 3 provides an example of the scoring rubric for Measure 2, which assesses primary health care policies and leadership. Interviews with key informants which address the nuances of this measure are discussed among the working group which

then agrees on a score. After that step, Ariadne Labs conducts an external scoring assessment to determine whether scores were inflated, too critical, or lacking in supporting documentation.

GOVERNANCE AND LEADERSHIP

This set of measures focuses on "ensuring strategic policy frameworks exist and are combined with effective oversight, coalition-building, regulation, attention to system-design and accountability."[1]

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

Measure 2: Primary health care policies (2/2) – Leadership

Policies are decisions and plans that are undertaken by governments with input from other stakeholders to achieve specific health care goals. PHC policies promote, support, or establish system orientation, financing, inputs, and service delivery mechanisms to ensure quality and improve and develop PHC function and outcomes.

This measure is about **leadership for the coordination, monitoring, integration, and implementation of PHC-related policies**. It refers to an identifiable national authority(ies) for primary health care within the government. This person or governmental entity provides stewardship of primary health care and should coordinate, monitor, integrate, and implement national policies related to PHC with defined authority, clear accountability, adequate budget, and sufficiently competent staff. The mandate of this authority should include the public sector as well as oversight and regulation of the private sector, where applicable. The national authority must have accountability for the entire range of comprehensive PHC services defined by national health policies, strategies, and/or plans. The authority must have oversight of all units that are relevant to PHC to ensure active alignment and coordination for the effective and efficient delivery of PHC services.

COMPONENTS	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
A national coordinating authority(ies) (whether an individual or other governmental organizational entity) exists that is accountable for coordinating, monitoring, integrating, and implementing national PHC strategies and policies.	No	Yes, with incomplete accountability	Yes, with clear and complete accountability	Yes, with clear and complete accountability
Sub-national/sub-regional operational capacity and reach of the national coordinating authority(ies)	N/A	Minimal (sub-national)	Moderate at the sub-national level and at least minimal at the sub-regional level	Sufficient (sub-national and sub-regional)
Proportion of time the national coordinating authority(ies) has adequate authority, budget and staff	N/A	Only sometimes	Some of the time, at least at a *national and regional* level	Most or all of the time at the *national, sub-national and regional* level

Figure 3. Excerpt from Progression Model Assessment - an example of what each measure looks like and the associated rubric for scoring

The goals of the Progression Model are: 1) to produce a national assessment of PHC capacity that is owned by in-country policymakers and used to drive reform and other improvements; and 2) to increase accountability internally and externally through the public release of VSPs that are standardized across countries (Ratcliffe et al., 2019).

To date, the Progression Model has been implemented in 11 countries for the national government and in one subnational assessment for Punjab, Pakistan. Countries have completed this process in a variety of ways. One approach centralizes the process with one or two individuals leading the work and then sharing the findings with an assessment team. Another approach is primarily led by consultants, or senior

government officials providing oversight, or a technical working group and steering committee. Additionally, ministry of health engagement varied among countries, with some ministries only providing sign off to completed work, while others actively engaged with the process throughout (Ratcliffe et al., 2019).

2.2.4. Decentralization

A key factor influencing the provision of primary health care is each country's government and health system's structure, and at which level of government power and responsibility for health care is situated. Understanding the extent and form of a country's decentralization or centralization could help to create a more effective adaptation of the Progression Model for various subnational governance structures. Decentralization is defined as the transfer of power and responsibility for policies from the national to subnational governments, and an re-allocation of authority and responsibility as power shifts away from the central government (De Vries, 2000; Terlizzi, 2015). It is imperative to understand *what* has been decentralized and *to which* level of government (Terlizzi, 2015). "*What"* refers to the tasks that are decentralized, this may be revenue raising, resource allocation, policy planning, and or funding of service provisions. "*To which"* refers to intergovernmental relations, either regional or local levels (Terlizzi, 2015). Decentralization is broken down into three key categories (see Table 1) (Rohrer, 2016; Terlizzi, 2015).[5]

Decentralization of healthcare systems takes many forms, with some decentralization processes focusing on political structures and power while others focus on administrative or fiscal roles and responsibilities. There are three intertwined dimensions of decentralization: political, administrative, and/or fiscal (Terlizzi, 2015). Different dimensions of decentralization may coexist and are not all mutually exclusive (Rohrer,

[5] Appendix B is a visual summary of health systems literature, distilling differences in types of health systems, including centralization and types of decentralization. The right side of the conceptual map includes hypothesis for how the Progression Model may be iterated upon if only based on the literature.

2016). There are also potential drawbacks to decentralization, such as its effect on distribution of equity, competitive regulation, and often reduced capacity at lower levels of administrative units.

Table 1. Dimensions of Decentralization

Dimension of Decentralization	**What it Means**
Political	Transfer of political control over health policy making to lower levels of government; the extent of power that lower levels have over planning and priority setting
Administrative	Decentralizing to lower levels of the organization and management of service delivery (while central government still controls policy making)
Fiscal	Decentralization of power to lower levels to raise health care funds

(Rohrer, 2016; Terlizzi, 2015)

Almost all countries have some form of subnational government. Most countries have a three-tier government system; the highest tier is at the national level and usually consists of a federal ministry of health; below is the regional (or state) level; and at the lowest tier, the district level or local health system (Rohrer, 2016). The national and subnational levels are typically connected through hierarchal and functional dynamics. However, the degree of involvement of the higher level in the lower level's operations is determined by the type and extent of decentralization, and the amount of autonomy given to each subnational level. In addition, the degree of power conferred on each level determines responsibility, influence, and accountability (Rohrer, 2016).

Health systems are sets of social, economic, and political processes that are concerned with finances, provisions, and regulations of medical care (Freeman & Frisina, 2010). The amount of decentralization that exists in a health system in a specific country is typically a result of historical, political, social, and/or geographical factors. In some cases it is a manifestation of a central government that is fragile and poorly functioning, resulting in subnational and local governance stepping in to fill the existing gaps (Rohrer, 2016). This may have some inherent benefits given the rationale that "smaller organizations, properly structured and steered, are inherently more agile and accountable than larger organizations" (Saltman et al.,

2007). Some health systems researchers argue that moving accountability down to the subnational level can improve equity and efficiency of a health system by bringing the government closer to the people (Charbit, 2011; De Vries, 2000; Ribot, 2002). By this logic, decentralization should improve responsiveness and quality and equity of health services through improved access and delivery (Arnguist & Weintraub, 2012; Frenk, 1994).

Decentralizing can be both a static or dynamic process, and while there are clear distinctions between a centralized and decentralized system, the difference is often a matter of degree (Terlizzi, 2015). Many LMICs have implemented health sector reform in the last 40 years—the majority including some decentralization (Cobos Muñoz et al., 2017). Cobos Munoz, et al, argue that the decentralization of governance, finance, and service delivery have proven positive, whereas decentralization of resource management has proven to be very challenging in many places (Cobos Muñoz et al., 2017).

Table 2. Types of Health Care Decentralization

Deconcentration	Shifts administrative authority or responsibility to subnational levels, and authorities at national level who are in charge would be transferred to sub-offices
Delegation	Transfer of managerial responsibility for specifically defined functions to organizations outside the central government such as an independent institution
Devolution	Creation or strengthening of subnational units which are independent from the central government and have defined functions.

Bossert's (1998) *decision space approach* refers to the range of effective choice that the central government delegates to the local level, which is defined for various activities and functions, service organizations, human resources, and access and government rules (Bossert, 1998). The degree of decentralization conferred informs planning and priority-setting for countries as they seek to answer the following questions: *Who makes decisions on the content of health policy in regards to priority setting – national, subnational?*

If subnational is there any coordination by the federal level? What discretion is there over funds? The range of decentralization can vary from a number of sectors or tiers to all sectors (Bossert, 1998; Mills, 1990).

Country Examples of Decentralized Health Care Systems

The following section provides examples of countries with decentralized health care systems, showcasing the variety of ways decentralization can be implemented. An example of a deconcentrated system is Portugal. During the country's 1990 reform process, the government created five regional health authorities with regional management teams who were all appointed by the minister of health (Ferrinho et al., 2006). The regions were created to deconcentrate managerial decisions to the regions from both the central and district levels. An example of a delegated healthcare system can be found in Ghana. In 1996, the country passed the Ghana Health Service and Teaching Hospital Act, which included fiscal decentralization, moving responsibility for spending from the national ministry to an autonomous public institution that assumes responsibility for implementing national health policies and appoints regional and district administrations (Rohrer, 2016). Although the GHS is an independent organization, it is required to report to the minister of health and implement policies created at the central level. By contrast, in devolved healthcare settings, like those found in Uganda, Kenya, Pakistan, and India, politicians are accountable to voters in their region and responsible for providing healthcare in the region (Greer, 2014).

These four countries demonstrate the various ways devolution has been implemented, and ways in which power and authority have been moved to the subnational level. Uganda is politically and administratively devolved: local authority has significant powers including taxation, but the majority of funds are provided by the central government. Elected government officials are in charge of managing health care within their territories, and sub-districts were created to distribute responsibilities even further down (Rohrer, 2016). In Kenya, the subnational level consists of 47 counties, and the healthcare system is broken down into four levels (MOH, 2014). Primary care is situated at level two where there are dispensaries, health centers, and

maternity homes; at level three are county referral services, and at level four a national referral service providing highly specialized services (MOH, 2014).

In Pakistan, with the passing of the 18th amendment to their constitution, healthcare was devolved and administrative and financial powers were given to the country's four provinces (Mazhar & Shaikh, 2012; UNICEF, 2009). Pakistan is a highly federalized country and its provinces now oversee policy-making, financing, regulation, service provision, administration, and governance of their health systems. The national level handles emergency responses and national budgets (Arnguist & Weintraub, 2012; UNICEF, 2009). In neighboring India, the state government is primarily responsible for providing health services. The national government created federal services, such as the National Rural Health Mission in order to help support states that are geographically isolated and marginalized populations. In this case, support is given to states to strengthen their health systems in order to set up public health activities, and to provide drugs, equipment, and other essentials for equitable, affordable healthcare to vulnerable populations (Business Standard, 2016). States are responsible for organizing and delivering health services to people, whereas the central government is responsible for international health treaties, medical education, quality control for drugs, national disease control, and family planning (Raut & Sekher, 2013). In India, states submit a detailed financial plan to the central government, which is then negotiated; amounts are distributed down based on states' utilization spending rates (Rohrer, 2016).

As indicated above, countries take different approaches to decentralization. Even among those that have devolved, the process is configured in different ways.

2.2.5. Governance and Power and Authority

Since this dissertation aims to provide recommendations for the adaptation of the Progression Model to subnational settings, and since much of the Progression Model measures governance and capacity over primary health care deliverables, it is instrumental to understand the role power has at each level of a country's governance system. Power has a multitude of dimensions, it is interwoven with agency and

structure– making power something which is actively utilized by actors and as a byproduct it involuntary shapes those it surrounds (Anthony, 1986; Sriram et al., 2018). Sriram, et al's, work highlights the lack of implementation science work and research on addressing power dynamics in health systems. Analyzing power and understanding its intricacies at different levels of government allows those working in that space to determine underlying inequities and pervasive issues that impact the system. (Sriram et al., 2018) In general, there is a dearth of research and action on power as it exists within health systems. Power has both implicit and explicit expressions throughout the system from the local to national level and it inevitably shapes heath policy and practice (Erasmus & Gilson, 2008; Sriram et al., 2018). Much of the existing work has also not looked at LMICs. In the rare cases that it has, it neglects to clarify the power among government levels in a county but rather looks at it from a global governance perspective.

A taxonomy developed in the field of international relations provides a useful approach in health policy and systems research (Shiffman, 2014). This taxonomy differentiates between different types of power, and in the context of primary health care reform all of these dimensions of power are relevant. This includes: "compulsory power" refers to the direct control of one over the other; "institutional power" refers to the indirect power over a socially distant other; "structural power" refers to the internal relations of power; and "productive power" refers to the social capacities of actors (Shiffman, 2014; Sriram et al., 2018). Shiffman also addresses epistemic and normative power within global health, which occurs when actors claim both expertise and moral authority; however, given that donors are often rooted in science and aiding development, the power they exert is often not considered an issue (Shiffman, 2014; Sriram et al., 2018). He also examines how power exercised by global philanthropies, multilaterals, and scientific journals may all have rational intent but inevitably elevate certain interests and agendas, thus driving agendas and priorities in recipient countries (Shiffman, 2014). Other relevant definitions of power as it pertains to governance include bureaucratic and financial power. Bureaucratic power can be defined as "power derived from the knowledge and authority of bureaucracies and administrative machinery through which formal policies are often designed, implemented, coordinated" (James, 2011; Sriram et al., 2018). Financial power

is defined as "power derived from accessibility to financial resources, such as money, assets, and property, and the use of that power in influencing decision-making" (Bourdieu, 2008; Sriram et al., 2018). In addition to power, which is the ability to exert influence in different ways, authority is another concept which is discussed in this dissertation work, and is defined by Heifetz as being "conferred power to perform a service" (McCrimmon, 2020). Understanding the elements of power and the different ways it is exerted both from outside and inside a country is crucial to this dissertation in order to ensure that the adapted Progression Model captures this information effectively.

As countries around the globe aim to achieve UHC, they have implemented a variety of reforms in their financing structures (Berman et al., 2019). The reforms tend to affect the role of the Ministry of Health in a traditional, centralized healthcare system. Despite healthcare systems being decentralized and powers moving down to other subnational units, ministries of health often retain influence in finance and service delivery (Berman et al., 2019). While countries create reform, they separate organizational structures for financing and delivery of healthcare, making it imperative to understand power and authority of central and subnational levels (Berman et al., 2019). According to Berman, et al, MOHs drive organizational change through the following mechanisms;

"*establishing a high-level interministerial team to provide political commitment and reduce institutional barriers; establishing an MOH 'change team' to lead implementation of organizational change; securing key components of systemic change through legislation; and leveraging emerging political change windows of opportunity for the introduction of health reforms" (Berman et al., 2019).*

Berman, et al's, work focuses on understanding organizational transformations and the extent to which health sector transformations are affected by organizational change, capacity to meet the changes, and accountability structures. They note that in each country, the control the MOH exerts over purchasers varied in both formal structure and in reality, responsibilities, authorities, accountabilities (Berman et al., 2019). For example, in Chile, new government organizations were created and, on paper, the MOH's roles narrowed giving it less vertical authority over entities within the health system but more power over the entire system. Funding was outsourced from the MOH to a new agency, whose director is appointed by the

president and MOH. In Chile's decentralized system, subnational entities were given managerial authority over organization, and the MOH became a guide and supervisor to enforce rules through a devolved system. In the case of Thailand, their reform gave the Ministry of Public Health three types of power – steward of the health system, managerial power over service delivery, and influence with government and schemes (Berman et al., 2019).

General conclusions that have direct bearing on this research include: that there is no single model for how responsibilities are distributed in health systems after decentralization reforms. Changes are complex and not a simple reduction or shifting of powers from a central MOH, and, in practice, responsibilities may differ substantially from what has been legally mandated. The central MOH usually still retains substantial power and influence over financing and delivery of health even when formal reforms dissolve said powers. Governance of health systems relies on power at the levels of institutions where rules are created and organizations where the work happens (Berman et al., 2019). The importance of power in guiding decisions and operations of the health care system directly correlates to this thesis which aims to understand where and how power differentiate among primary health care metrics in order to best iterate on the Progression Model.

2.2.6. Potential Analogues

This section aims to highlight two examples of large-scale measurement assessments that were conducted at a national level and then adapted down to a subnational level. The first of these is the National Health Accounts System Health Accounts, a framework which employs an active approach to collecting and synthesizing data to monitor health spending across multiple streams which can then inform policy-making (WHO, 2020). The second, the Institute for Health Metrics and Evaluation (IHME)'s Global Burden of Disease (GBD) utilizes standard indicator data which is collected at the national level to provide key

highlights; GBD data has recently been adjusted to represent local data. This is done via predictive modeling.

National Health Accounts

The National Health Accounts used the System of Health Accounts (SHA) 2011 framework to collect data on health spending in a given country over a defined period of time, ensuring comparability of health expenditures (WHO, 2008). SHA 2011 is supposed to generate consistent and comprehensive data that can be used for evidence-based policy-making in countries. Regardless of whether a country has a centralized or decentralized health care system, the first subaccounts data collected were structured based on geopolitical subdivisions of the country and public versus privately financed mechanisms (WHO, 2008).

As the tool was adapted from national to subnational levels in efforts to collect regional data, the framework itself was not changed, but there were changes in how it was applied (WHO, 2008). Trying to separate PHC expenditures from general government expenditures was extremely complex, particularly because expenditures are reported significantly differently by each country. Thus, different assumptions for interpreting the data need to be applied (P. Berman, personal communication, November 22, 2019). The same definitions, classifications, inclusions, and exclusions need to be applied across all regions throughout a country for strong NHA data (WHO, 2008). Additional challenges at the subnational level, for Regional Health Accounts (RHAs), include teasing out what is given to the subnational entity directly in the form of grants, goods, or services, and determining how that is accounted for (P. Berman, personal communication, November 22, 2019). For example, in Ethiopia, more than half of the healthcare funding comes from donors, and 60-70% of that covers their PHC system, and it is difficult to trace how much made it down to the provincial level (P. Berman, personal communication, November 22, 2019). Currently, this number is estimated via SHA 2011 assumptions. NHA has been adapted in India to state level accounts and in Indonesia to the provincial level.

The NHAs also aimed to understand if the system is equitable, if transfers from the central government to regions are consistent, and if residents in some regions are more burdened by out-of-pocket spending than others. The RHAs also inform how successful decentralization of healthcare financing has been, how financial patterns in devolved systems have evolved, and what is changing between regions (WHO, 2008). The adaptation of the NHA to a regional level allows those in-country to understand the effect the financing system has on outcomes. In addition, regional health accounts can examine the effect financing has on disparities across regions, and use this information to reduce disparities (WHO, 2008).

The experience of adapting the NHA to the regional level suggests that when partitioning a country into subnational sections for data collection, there are no specific rules for how to partition it down to regional level. In some cases it may be divided on health administrative regions, political units, administrative, economic, or geographic regions (WHO, 2008). These decisions are driven by the needs of the national and regional policy-makers, this demarcation is often influenced by which data already exists in countries. Regardless of how it is done, it needs to be consistent; for example, in many Latin American countries the ministry of health and social security define subnational differently, thus it is imperative to have consistent definitions of subnational throughout the country (WHO, 2008).

Global Burden of Disease

Another analogue of large-scale data collection and scaling-down is the Institute for Health Metrics and Evaluation (IHME)'s Global Burden of Disease (GBD) estimate at the national, regional, and subnational level (P. Berman, personal communication, November 22, 2019). When IHME made its first GBD estimate in the early 1990s, it segmented its findings into 107 disease groups and 438 sequalae, across eight regions and five age groups. More recently, by 2017, it includes data for 195 countries and territories with a standard and replicable approach, including data on 359 diseases and injuries, 85 risk factors, 80 risk-outcome pairs, 23 age groups (GBD History, 2014). More recent GBDs include subnational level information for many countries, including: Russia, Brazil, China, India, Indonesia, Japan, Kenya, Mexico,

South Africa, Sweden, the UK, and the US (GBD History, 2014). GBD data aims to identify health disparities and information for public health priority setting that can be used by health policy makers.

IHME also created the Local Burden of Disease, which provides estimates of health outcomes within a 5x5 kilometer range. "Zooming in" shows the degree of local geographic variance throughout the African continent and where there is significant variation (Mokdad et al., 2019). This data allows decision-makers to best utilize resources and policies for specific regions instead of the entire country (Mokdad et al., 2019).

Both of these measurement assessments are different from the Progression Model, but they highlight the ways that some have begun to think of focusing downward to the subnational and local levels to capture more useful data for countries.

2.2.7. Scaling Up versus Down and Throughout

"Scaling up" tends to focus on adapting an innovation from one setting, perhaps a successful pilot, to its use in a multitude of other contexts (Dede, 2005). Much of the literature on scaling-up focuses on specific health interventions, while the purpose of this dissertation is to determine how to scale down to the subnational level with an analytic tool that was originally designed for use at a national level . Lessons may be gleaned in the current literature, though this also indicates gaps in the current research.

Scale is a term used interchangeably—often with different meanings—with "scale up," "scaling," "spread," and "at scale" (Morel et al., 2019). Morel, et al, argue that these differences are not insignificant, and that a lack of consensus on what the word means inhibits scholarly work, and that lessons from one setting on scale are not necessarily transferrable. Thus, he refers to being "at scale" as *conceptualizations, adoption, replication, adaptations, and reinvention* (Morel et al., 2019). The literature presents scale as both a process and outcome.

Traditionally, scaling up of solutions is complex and varies across diverse systems and geographical contexts, and needs to be adapted to the target population (Castro et al., 2004; Power et al., 2019). A realistic review of scaling up in the British Medical Journal (BMJ) highlights how challenging scaling-up is and how one approach cannot be applied in all cases (Power et al., 2019). Typically, scaling-up of a health intervention takes 15 years from pilot to national scale; it is time consuming, requires great financial resources, and varies depending on the population. Scaling-up is typically the expansion of an intervention geographically and requires adapting to local contexts and populations. Common characteristics of scaling-up include the following: "understanding the attributes of the intervention being scaled up (effectiveness, potential reach, acceptability, etc.); identifying and supporting implementers; an appropriate delivery strategy; understanding and accommodating the characteristics of the adopting community, taking into account the broader socio-political context; [and using] research, evaluation and monitoring data to inform the scale-up process" (Milat et al., 2015).

There are three primary models of scaling: The ExpandNet Model, Conceptual Model, and Space to Grow Model (Gravesen, 2016). The Space to Grow Model highlights the need for various types of space in order for scale-up to occur successfully. This includes fiscal, political, policy, organization, cultural, partnership, and learning spaces (Gravesen, 2016). Research on 23 scaled projects in 10 WHO Member States throughout Europe indicated that personal commitment of partners and benefits for population were the primary success factors. Other key factors were the support at regional level, public knowledge of the project, and political support; primary prohibitive factors were financial and administrative. [6]

[6] Scaling out of evidence-based interventions to new populations or new health care delivery systems is a slight variation of scaling-up. "Scaling-out" occurs when an evidence-based intervention (EBI) is adapted either to a new population or new delivery system, or in some cases both (Aarons et al., 2017). Scaling-out means there are some specific variants, be it that the population is fixed and the delivery system is different, or the delivery system remains fixed but the population is different, or both population and delivery system changes (Aarons et al., 2017).

Given the current state of the literature, this doctoral work most closely aligns with the Space to Grow Model and focuses on the need to address the system and policy context in order to develop a successful implementation and scale plan. In order to be successful in scaling-out, Ariadne Labs and the PHCPI need to address the policy and system context, internal organizational context, and characteristics of the evidence-based intervention.

3. METHODS

This doctoral research employed a qualitative approach to understand how the Progression Model could be adapted depending on the type of subnational governance structure of the implementing country, and to identify the barriers and facilitators to the current assessment process. The Human Research Administration in the Office of Regulatory Affairs and Research Compliance and the Harvard T.H. Chan School of Public Health approved the research protocol as exempt since does not qualify as human subject research defined by the U.S. Department of Health and Human and Services.[7] Instead, this project aims to develop and contribute to generalizable knowledge and inform the basis of future contributions.

3.1. Literature Review, Expert Consultation, and Conceptual Map

A literature review was completed in order to understand the landscape of relevant health systems work and to derive lessons learned, with specific focus on how to take a model used only at the national level and adapt it down, the inverse of typical interventions which are designed to be scaled up Simultaneously, I also had informative conversations with expert informants, such as Dr. Peter Berman to further understand the work he led around the National Health Accounts, and Dr. Salimah Samji to understand practical barriers to the work in-country and with governments. I then combined the literature review and expert feedback to create a conceptual map (see Appendix B) of all the materials and then used that as the foundation of both the health systems assessment and in-depth interview guides. The conceptual map outlines initial findings and includes my hypothesis for how the Progression Model could be adapted to be used at the subnational level.

[7] IRB Exemption paperwork is included in Appendix J.

3.2. Health Systems Assessment

Prior to conducting in-depth interviews, I requested that each respondent complete a survey focused on power and authority of the different levels of the health system. This assessment included 14 key metrics of a primary health care system ranging from policy creation to financing to service delivery (Appendix C). Respondents then ranked the national, subnational, sub-regional, and local governance levels as having high, medium, and low levels of authority over the specific domains. The survey data was used to help guide interview questions exploring the differentiation of power and authority at the subnational level and was used to inform changes that could be made to the Progression Model as it is adapted for various subnational governance structures. Not all countries have four levels of governance structures, so the sub-regional category was dropped during data analysis. This data was compiled into Python and used to generate heatmap visualizations in order to better understand the gradient of power.

3.3. Qualitative Interviews

I used the literature and conceptual map to develop interview guides. From January – April 2020, I conducted 16 in-depth interviews with the following groups in 10 different countries.

Table 3. Interviewee Categorizations

Interviewee	Description	N=16
Country Engagement Leads	Representatives from the World Bank and R4D who served as technical experts overseeing the entire VSP and Progression Model process from a high-level advisory role	4
In-country Consultants	Consultants who oversaw the day-to-day work of the VSP and entire Progression Model from start to finish	7
Government Representative	A government representative, often from the ministry of health	5

Interviews were conducted with those who were involved in the national Progression Model process.[8] The in-depth interviews focused on how power and authority were delineated between central and subnational

[8] One set of interviews was with those in Punjab, Pakistan, who led the only subnational Progression Model work to date. They used the current Progression Model without any changes to the measures or process, except a minor change in language to say "subnational" instead of "national."

government entities in providing PHC, on content changes needed to adapt the tool, and on process changes with conducting the Progression Model which addressed some of the technical and adaptive challenges interviewees had with administering it. Respondents were from the following countries: Argentina, Colombia, Ghana, Guinea Bissau, North Macedonia, Papa New Guinea, Pakistan, Rwanda, Senegal, and Tanzania. This was a convenience sample, as only countries which had completed the Progression Model were contacted for this study. All interviews were conducted via Zoom or phone and were audio-recorded with verbal consent. All interviews were transcribed by Otter.ai a voice recognition service. The service has a bias for American accents and only transcribed those accents well; for all interviewees with other accents I transcribed their parts of the interview.

I used Dedoose, a web application software for mixed methods research and data analysis, to analyze the 700+ pages of text. I used the software to assign codes, which are "tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study."(Miles & Huberman, 1994) There were 30 codes and 24 sub-codes applied to the data. Codes were developed both a priori, from the research question and interview guides and were data driven from the raw data; additionally, codes were both semantic – capturing obvious surface meanings in the data – and latent – capturing implicit meaning from the respondents (Braun & Clarke, 2018). I used qualitative thematic analysis in order to derive the most significant themes. Thematic analysis is both inductive and deductive, and uses a recursive approach as codes are clustered together to extract themes (Braun & Clarke, 2018).

3.4. Framework for Change: Realist Evaluation

For my analysis I applied Realist Evaluation to address my research questions. A Realist Evaluation is a theory-driven evaluation used to identify "What works, for whom, in what respects, to what extent, in what contexts, and how?" (Marchal et al., 2014). In order to answer my first research question, I used this

approach to identify the underlying causes of specific outcomes, and how these were influenced by various subnational contexts (Marchal et al., 2014).

Realist evaluation serves as a methodology in implementation science to explore generative causation in complex health interventions to unpack 'how, why, and for whom' interventions work (Gilmore, 2019). This methodology aims to understand how a program is expected to work within specific contexts, and which conditions will serve as barriers or facilitators to success that can then be applied to other settings (Gilmore, 2019, 2019). Realist evaluation requires identifying Context-Mechanism-Outcome Configurations (CMOCs) (Gilmore et al., 2019). Data analysis helps to highlight hidden causal links behind the identified patterns, and aims to extract generative causality (Gilmore, 2019).

A realist evaluation begins by developing program theory, and then ends with theory that can be iterated on by all of the interim steps (see Figure 5). Ariadne Labs did not have a theory of change for the Progression Model, thus I created an implicit theory of change for it based on one that was created for the entire PHCPI initiative. Realist evaluations are method neutral, often using both quantitative and qualitative data. The quantitative data hones in on the context of the situation and the qualitative focuses on the generative themes in the data (Marchal et al., 2014). This was done via the Health Systems Assessment, which provided some quantitative data, while the in-depth interviews covered the qualitative data. Typically, a realist evaluation assessment and conclusions will be drawn based on if the program outcomes were met and how they were. However, in my case, the subnational Progression Model is being created through this feedback and I use the feedback from all the stakeholder to determine how to move forward.

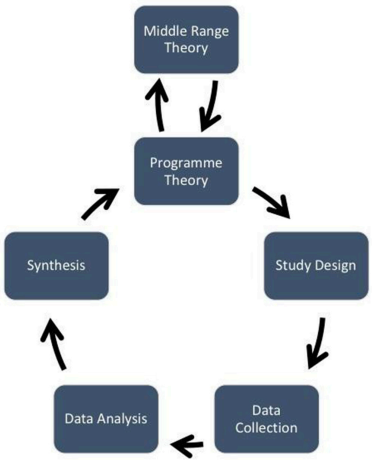


Figure 4. Realist Evaluation Cycle. Source Mukumbang et al (2016) (Marchal et al., 2014)

I applied the Heifetz Adaptive Change Framework as a lens to analyze research question 1b, identifying barriers and facilitators to the assessment process, which pointed to the importance of governance, authority, and power. The framework conceptualizes that one of the reasons for leadership failures is treating adaptive challenges as if they are technical challenges. A technical challenge may be complex, but may be solved using expertise and in some cases authority. Adaptive challenges require learning new ways, building new capacity, and bearing some losses (Heifetz, 1988). An adaptive challenge requires flexibility and "consists of the learning required to address conflicts in the values people hold, or to diminish the gap between the values people stand for and the reality they face" (Heifetz, 1988). Adaptive work necessitates a change in behavior; this may arise from conflict or internal contradictions between individuals and constituencies, and provides the space to mobilize people to learn to do things in new ways. The primary goal of adaptive change is to get clarity and identify what the trade-offs are in doing so.

Adaptive challenges are usually addressed during what is called the "productive zone of disequilibrium" where there is an optimal range of distress which causes those in the system to engage in adaptive work. Stress on the system can beget creativity and adaptability. While this thesis does not explicitly focus on the "productive zone of disequilibrium" it does aim to identify what enabled or inhibited productivity for

interview respondents, in order to provide recommendations on how to improve Progression Model processes.

Distinguishing technical problems and adaptive challenges

Kind of challenge	Problem definition	Solution	Locus of work
Technical	Clear	Clear	Authority
Technical and adaptive	Clear	Requires learning	Authority and stakeholders
Adaptive	Requires learning	Requires learning	Stakeholders

Figure 5. Heifetz Adaptive vs Technical Challenges

3.4.1. Theory of Change

A theory of change (TOC) is a description and illustration of "how and why a desired change is expected to happen in a particular context" (*What Is Theory of Change?*, n.d.). The TOC is tangential to my thesis, but not my work, thus is not included in the analysis but was necessary to distill as it is the first step in a realist evaluation. It provides a backwards mapping through a "pathway of change" that links the steps of, planning, intervention, and evaluation, to the outcomes desired. The process of developing a TOC consists of stakeholders stating desired outcomes, identifying early and intermediate goals, defining activities and outputs, and identifying the necessary conditions to achieve those long-term outcomes (*How Does Theory of Change Work?*, n.d.).

Although there is not an explicit TOC for the Progression Model work, there is a TOC for the Primary Health Care Performance Initiative. Primary Health Care Performance Initiative's TOC is: "more and better measurement of PHC helps to increase knowledge about health care systems, increase and improve allocation of funding, and strengthen policy – all toward improving health systems and health outcomes for

all" (PHCPI, 2017). An implicit TOC for the Progression Model mirrors that of the PHCPI: "mixed methods data can be used to better inform the actual state of the primary health care system and inform reform."

The TOC below is for Ariadne Labs and the Primary Health Care Performance Initiative only. My doctoral project focuses on adapting the Progression Model, a tool used for national healthcare systems, to be used at the subnational level. Thus, a theory of change for the subnational Progression Model would build upon the Progression Model's TOC with a number of adaptations that enable it to apply to the different governance structures of various subnational typologies. Below I have broken down the steps necessary for developing this implicit TOC.

Step 1: Identify long-term outcomes and goals

Ariadne Labs, as the technical thought leader in the PHCPI partnership with the World Bank, WHO, R4D, and UNICEF, remains in a key position to devise and re-work tools for PHC measurement. Their primary goal is to have a functional mixed methods tool that can be used by subnational governments to assess their primary healthcare system status and direct necessary PHC reforms. More specifically, the goals include developing primary health care measurement tools that are fully integrated into the country's data systems; leading to improved knowledge and uptake of strategies that strengthen primary health care systems and support the development of high-quality primary care services based on improved data. Overall according to the TOC this will result in increased investments in PHC systems both from countries themselves and donor aid which translates to strengthened policies providing sustained change, commitment to PHC by governments as part of Universal Health Care agendas, and the adaptation and regular application of tools created for multiple subnational typologies – such as the subnational VSP and Progression Model.

Step 2: Backwards mapping of preconditions and long-term goals

Sustained up-take of a subnational Progression Model in countries with various governance structures depends on a few key factors, the most important being government buy-in. Governments need to be open

to using the Progression Model in their subnational governments and to leveraging the data to guide change. Additional preconditions for success include that subnational governments have data and the ability to collect necessary information to measure PHC; that decision-makers who are both local and national ministry of health officials have the ability and authority to interpret and operationalize findings; and that leadership has increased accountability for producing a high quality PHC system. Specifically, the modified Progression Model must be piloted, iterated and adapted as it is used in a variety of subnational settings.

Step 3: Identify basic assumptions about the context

The primary assumptions underlying the success of a subnational Progression Model are: (1) there must be capacity at the subnational level in countries to complete a Progression Model and carry out change; and (2) the national and subnational governments must endorse and support the model and its findings, and use it to create changes in the PHC system. Additionally, this TOC assumes that a broad sample of voices from those who work at the front line of the system are also equally captured at the subnational level and are included in calibrating scores in the Progression Model. Progression Model scores are calibrated based on an advance scoring system that ranges from 0-4 – countries or subnational governments score themselves first and then and external validation occurs. These voices include those from the national and subnational governments, NGOs, iNGOs, all the way down to community health workers. This model also assumes that national governments are both able and willing to support subnational governments as needed. Furthermore, this assumes that the quantitative data exists or can somehow be extrapolated in-country; this is an inherent issue in many countries, particularly at the subnational level where a lot of data does not exist or is very limited.

Step 4: Identify the interventions

The PHCPI partnership will provide technical, advisory, and political support to countries where the Progression Model will be implemented. Technical advisors, working with those in-country who pilot the first versions of the tool, will be instrumental in facilitating and supporting the process in each subnational

setting. Consultants and in-country government stakeholders will implement the Progression Model, and eventually the measurement tool will be used by governments to inform policy reforms. The first few subnational settings where this tool is rolled out will play a critical role in further adapting it. The subnational Progression Model will require a dedicated team which has the capacity and competency to oversee the process from start to finish. Additionally, it will require financial resources to complete it, either from donor funds or funded by the country.

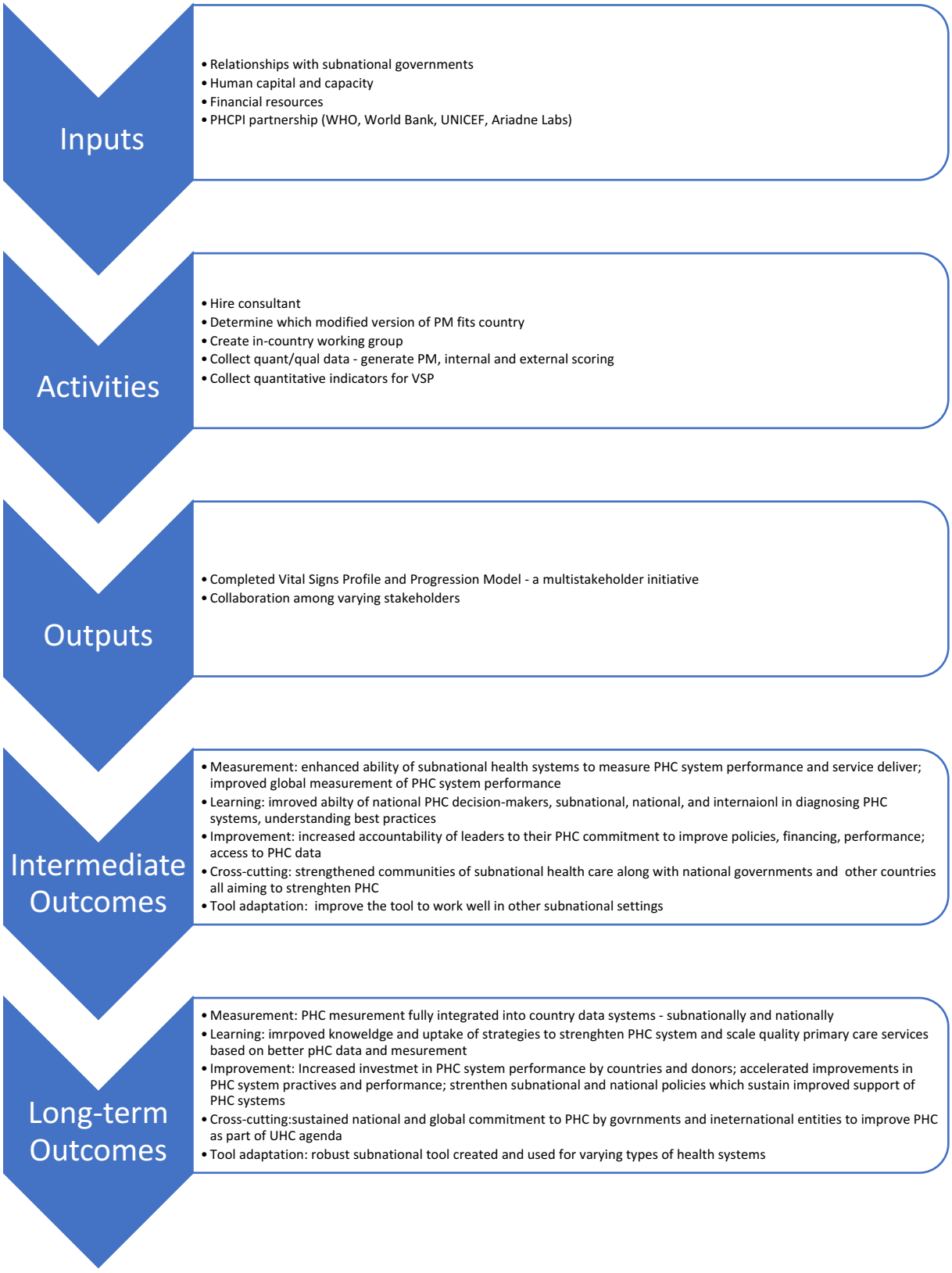
Step 5: Develop performance indicators for the initiative

Presently, only vague performance metrics are defined for collection during the implementation of the subnational Progression Model, and these have been further affected by COVID-19. The original plan was to pilot the subnational Progression Model in five countries this year, but timelines have been pushed out, probably until summer 2021. At that point, Ariadne Labs, in partnership with the PHCPI Initiative, will roll out the subnational Progression Model in a number of countries with varied governance structures in order to test the measurement tool sufficiently. In order to be effective, the data collected by the tool will need to inform learning and improvement of PHC policies in-country.

Step 6: Write a narrative to explain the logic of the initiative

Ariadne Labs is committed to designing and leading the efforts with the implementation of a novel technical measurement tool for PHC. They are keen to expand to the subnational level where decision-making is closer to directly impacting people's health. Additionally, through this implementation they will enable countries to better understand disparities at the subnational level, where health indicators mean more to a local policy maker than national averages which are typically collected, enabling them to use better data to create policy change and PHC reform.

Figure 6. Theory of Change



4. RESULTS

4.1. Results Statement/Framing Results

Ariadne Labs, the entire Primary Health Care Performance Initiative, and participating countries seek to roll out a Progression Model in subnational settings in order to better understand these countries' primary health care systems and to improve governance and leadership, inputs into the system, and population health and facility management. The literature and implementation indicate that data at the national level are of little significance to those working at subnational levels (AbouZahr et al., 2017). Thus, adapting the tool for subnational officials and determining how to best implement it, is of utmost importance for Ariadne Labs, multilaterals, and governments. This thesis also focuses on defining various subnational typologies of governance. Given the strategic importance of determining how to change the Progression Model, iterating on both the technical tool and its process are equally important for success at the subnational level.

In order to identify the subnational typologies and develop recommendations for success, I utilized realist evaluation and the Heifetz Adaptive Change Model to guide my exploration of the research questions. Realist evaluation provided a mental model for how the Progression Model worked, in which contexts, and for whom at the national level. I then used this theory to project forward how it could work in subnational settings of the 10 participating countries. This methodology aims to understand how a program is expected to work within specifics contexts and which conditions will serve as barriers or facilitators to success. These findings can then be applied to other settings (Gilmore, 2019; Gilmore et al., 2019). By distilling these factors I am able to develop a approach on how the Progression Model could be adapted for four varying country governance settings. This means that in 2021 (post Covid-19), Ariadne Labs will be able to roll out an adapted a subnational Progression Model in these five pilot countries that will help to streamline programmatic rollouts, identify issues in the primary health care system, and allow subnational governments to create structured primary healthcare reform. While these recommendations are specific to

the Progression Model, similar lessons pertaining to the necessary process changes can be applied to the entire Vital Signs Profile.

The results chapter covers the context of the situation in countries, findings regarding the Health Systems Assessment, and those from the qualitative interviews which guided the subnational typologies and changes to the Progression Model.

4.2. Realist Evaluation - Context

4.2.1. Current Landscape of Power and Authority of Subnational Governments for Primary Health Care

Realist evaluation requires identifying Context-Mechanism-Outcome Configurations (CMOCs). (Gilmore, 2019) This evaluation framework "describes how specific contextual factors (C) work to trigger particular mechanisms (M), and how this combination generates outcomes (O)" resulting in generative causality. (Gilmore, 2019) (Gilmore et al., 2019) Data analysis is retroductive – meaning it aims to discover underlying mechanisms in contexts - to identify generative causality. Through identifying the current landscape of primary health care as it pertains to authority and power, I was able to identify the context in which these subnational governments can enact changes in their PHC systems; this is important because having authority translates to having the positional power to move situations in a certain direction. (Rubenstein, n.d.)

In this case, it is important to note, that the *Context* can be assessed, and the *Mechanism* can partially be understood since many of the countries completed the Progression Model but have not acted on the results yet, and finally intended *Outcomes* can be explained. Only a few countries have started to implement findings from the Progression Model, and the *Outcomes* are not central to the thesis so they will not be

discussed. Instead, I apply realist evaluation of the national level program to foreshadow how it can be best created and implemented for subnational settings.

Health System Assessments (HSAs) provide insight into each of the country's health system's power and authority at varying governance levels. Fourteen of the respondents completed the HSAs prior to the in-depth interviews. They indicated if each of the entities - local, subnational, and national - have high, medium, or low levels of power over 14 components of PHC. Data was provided for each of the 10 countries in the study; some countries had one respondent while others had two to three, the imbalance is a limitation in this work. In order to understand trends in the raw data, heatmaps were generated to illustrate the gradient of authority in each of the countries and to identify patterns throughout the data sample. This section examines the outputs of the assessments.

This data enables visualization of differences within and between countries, specifically differences between the subnational and national levels. It also addresses how to adapt the first section of the Progression Model which focuses on Governance and Leadership. Unpacking which subnational governments have authority over laws or finances allows the technical team to select a certain version of the subnational Progression Model. Characterizing subnational typologies avoids developing unique Progression Models for each country, and instead informs a general subnational classification structure.

Figure 7. Health Systems Assessment Average of all 10 Countries

The heatmaps of the Health Systems Assessments (HSAs) are a visual interpretation of the differences between levels of governments and their power and autonomy as it pertains to Primary Health Care. The heatmaps are broken down into national, sub-national, and local. Countries define each of those categories themselves, knowing that sub-national is sometimes the first step below the central government and in other cases it is two steps down. The sub-national in this case is the government authority involved in health care service delivery as defined by the country completing the assessment. In the heat maps, a score of 0 [Tan] is equal to low power, .5 [Green] is equal to medium power, and 1 [Blue] is equal to high power.[9] The score

[9] Scores are points, not percentages, and are not intended to sum to 1 in either columns or rows since each level of governance may have equal or greater authority.

in each box corresponds to an average response for that dimension of the health system.[10] As a guide for interpreting the heatmap data in Figure 1, I want to point to the following examples to assist the reader:

- In the "Creating Policies" category, respondents gave the national government a *high* .96 rating and the subnational government a *medium* .54 score, thus indicating that respondents believe that policy creation occurs primarily at the national level;
- Conversely, the highest average score given to the local government was .79 for "Delivering PHC services," which indicates that regardless of how the health system is structures, there is congruence that local governments have *high* authority in delivering PHC services;
- Governments had an average score of .75; while subnational governments may have far less authority over "Strategy creation" (.96), they have much more power in implementation.

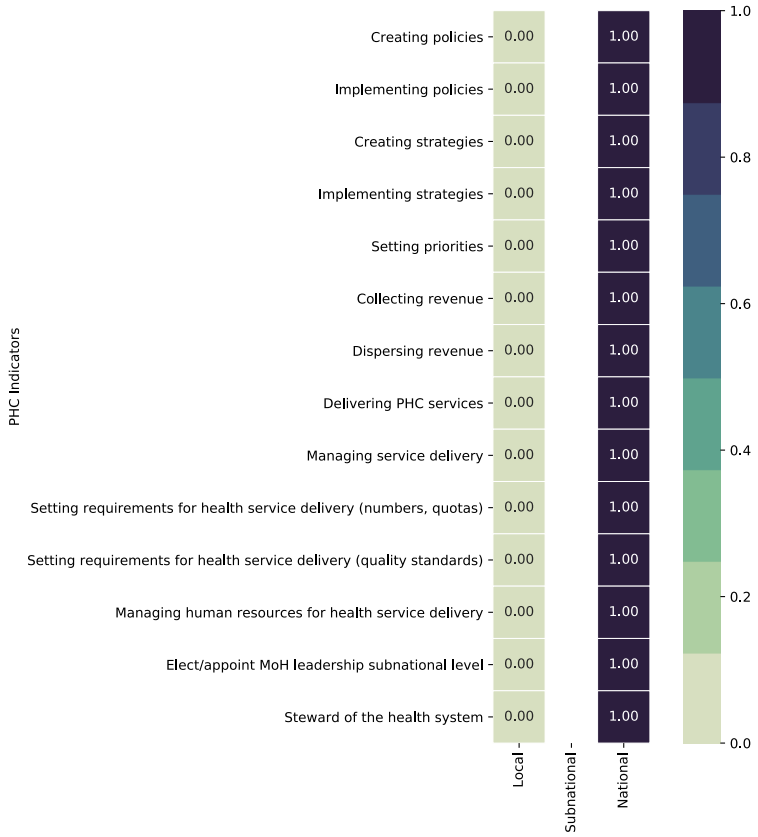
In order to extract more nuanced information from the data, an individual heat map was created for each country. The heat maps of North Macedonia (Fig 9) and Pakistan (Fig 10) data are quite interesting and illustrate vastly different health systems, as noted below:[11]

North Macedonia (Fig 9) is a highly centralized country and does not have a subnational government, so the respondent actually chose that option from the survey; the local government has no authority over any of the PHC services. While North Macedonia's results are drastically different from any of the other countries, as demonstrated below, they mirror how the health systems of most of the former Soviet countries are structured. For countries like Macedonia with such heavy centralization, there is no benefit in conducting a subnational Progression Model.

[10] Note, a Country Engagement Lead struggled with classifying each of the levels as "high," "medium," "low" – since there is shared authority over many of the indicators and indicated that each subsequent level had less power than the first.

[11] A Progression Model has been completed in Punjab, Pakistan, not the entire country yet, it is the only data source that was completed at the subnational level. Given how devolved Pakistan's health care system is the national tool was used as is for the province. For the purposes of consistency, throughout this thesis, Punjab is referred to as Pakistan.

Figure 8. North Macedonia's Health System Assessment



Pakistan, on the other hand, has an extremely devolved health care system. Looking at Figure 10 one can see that the subnational government has nearly all authority over PHC services. For some PHC system indices there is shared authority with the national level, such as with “Policy Creation” and “Strategy creation” (1.0 and .75 respectively), but there is a score of 1.0 only at the national level for revenue dispersal. Within this cohort of countries, Argentina’s (Fig 11) HSA was most similar to Pakistan’s, with a great deal of authority delegated to the subnational level.

Figure 9. Pakistan's Health Systems Assessment

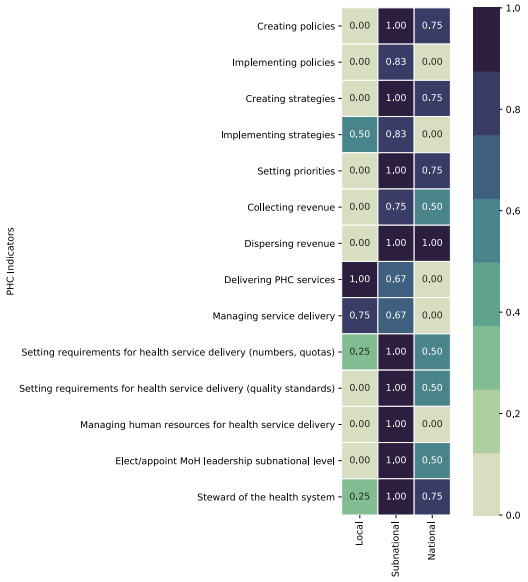


Figure 10. Argentina's Health Systems Assessment

The remainder of the countries studied are not nearly as extreme as the examples of North Macedonia, Pakistan, and Argentina; the national governments instead have a mixed degree of authority over the subnational governments. In terms of understanding some of the more subtle differences, I want to point out the following examples to illustrate some key features among countries:

- In Ghana (Fig 12) there is more evenly dispersed authority between the subnational and national governments;
- Senegal (see Appendix D) is similar to Ghana and has a great deal of shared and more equitable autonomy between the national and subnational governments.
- In Tanzania (Fig 13), the central government has greater authority than the subnational government, and there is a clear distinction where the local government has a strong prerogative on how to administer services.

- In Guinea Bissau (see Appendix D) and Rwanda (see Appendix D), the HSAs most closely resemble Tanzania's in that the national government has the most decision-making power over PHC services.
- Colombia's HSA (see Appendix D) had sections left blank by the respondent since they felt it was not applicable to their health system. Columbia has a dominant private insurance company structure which manages much of the primary health care system thus explaining why much of the indicators are scored 0.
- Papua New Guinea's HSA (see Appendix D) shows that the national and subnational government both have a significant amount of autonomy. It is interesting to note that in this case, the qualitative interviews revealed that authority was lesser and different than what the national government has.

In summary, these examples illustrate that there are key distinctions of power and authority among subnational government's decision-making, at the subnational and over the local level. Additionally, we see the strong authority which the national government has in many cases, and that in some cases it is shared with the sub-national level.

Figure 11. Ghana's Health Systems Assessment

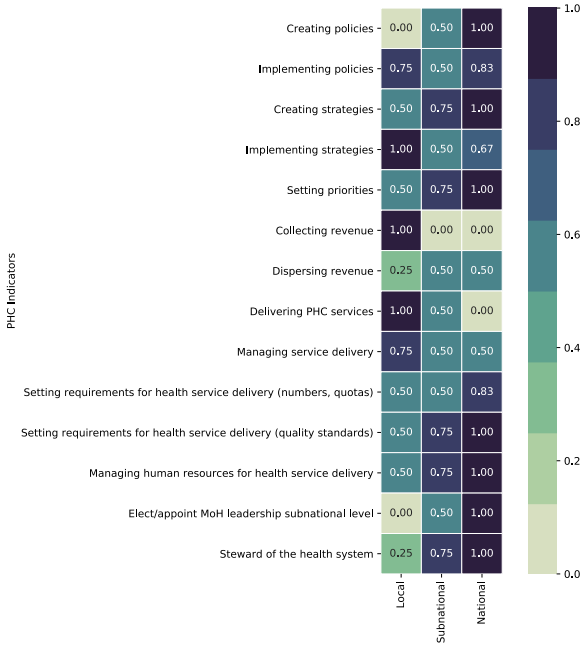
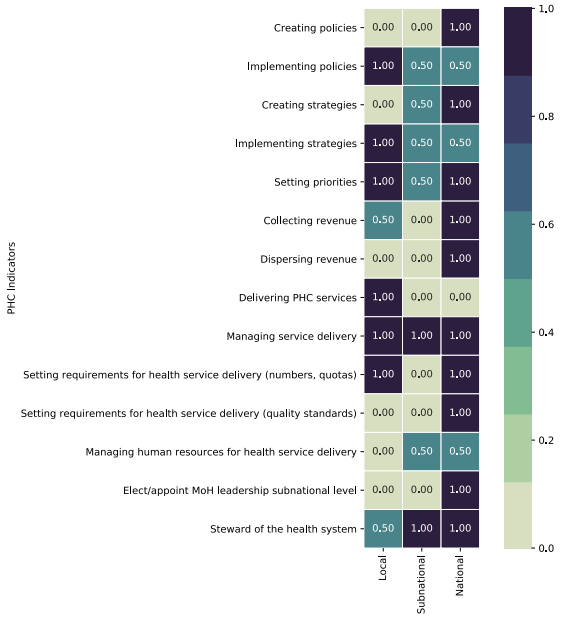


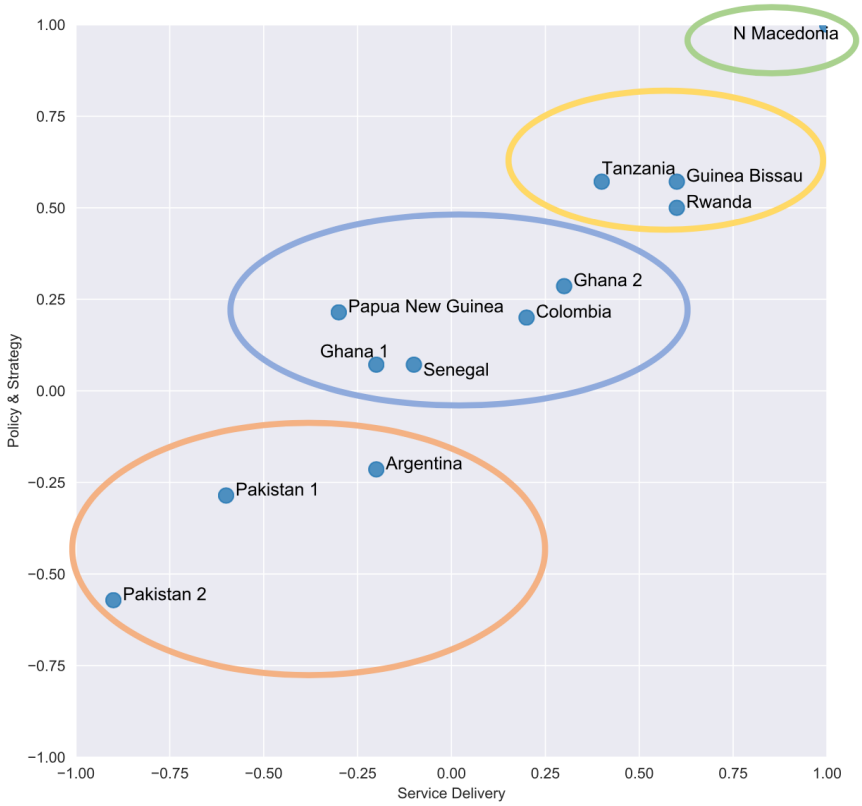
Figure 12. Tanzania's Health Systems Assessment



To better understand variability between countries, the heat maps data was summarized into a two-dimensional plot by taking the average difference between national and subnational indicators. A positive value means higher national power, whereas negative values indicate the subnational government has greatest authority, local levels were not considered relevant and not incorporated for this comparison.

As indicated in Figure 14 below, the countries that have the strongest national authority (+1) are in the upper right quadrant and have greater centralization of power at the national level. Regressions were not conducted to create Figure 14, yet it appears the two values are correlated. Wherever there is a higher positive number, the federal government has greater involvement in each indicator; where it is negative the subnational government has more authority. This analysis was done by taking the average difference between national and subnational indicators. This graph can be used by technical advisors at Ariadne Labs, the World Bank and the WHO in order to get a sense of where the county they are overseeing fits along these two dimensions. By understanding where a country fits, it will help identify the existing subnational typology and which version of the subnational Progression Model is most applicable. Implications for this are presented in the discussion chapter. The three distinct groups in Figure 14 correspond to the subnational typology groups in Table 4 below.

Figure 13. Gradation of Authority over PHC Indicators



**The first 5 indicators from the heatmaps are represented on the x-axis, while the next 7 are represented on the y-axis; the final 2 were dropped as they are least relevant specifically to PHC.*

4.2.2. Qualitative Interviews and Characterization of Subnational Typologies

This section presents the proposed subnational typologies based on the Health Systems Assessments and the 16 in-depth interviews which resulted in 700 pages of transcripts.[12] Instead of creating a Progression Model for every country, this classification structure allows technical advisors to work with a modified version of the tool for countries once they are classified. Typologies are summarized in the table below:

[12] For additional illustrative quotes from interview respondents see Appendix I.

Table 4. Subnational Typology Classification

Categorization	Description	Countries
Category 1: Extremely Centralized	Extreme centralization, no benefit in conducting a subnational Progression Model since authority is only held at federal level	North Macedonia
Category 2: Extremely Devolved	Heavily decentralized health care systems, subnational holds authority over decision-making	Argentina, Pakistan
Category 3: Subnational Consulted	Subnational governments have authority and decision-making power on some PHC, but are also consulted by the federal level when determining strategies (and included in conversations)	Ghana, Senegal, Papua New Guinea
Category 4: Subnational Directed	Subnational governments have some but less authority than in Category 3 countries; they are not part of federal conversations as much and are told what to do	Guinea Bissau, Rwanda, Tanzania

Category 1: Extremely Centralized, indicated that it would be futile to try to conduct a subnational Progression Model. There is not a clear subnational government which has any authority over primary healthcare and while there is a local government they do not have control over decision-making. The central government manages every aspect of primary health care, all the way down to determining the number and types of clinicians at local health centers.

For countries in **Category 2: Extremely Devolved**, the subnational units manage all the entities on their own except for some finances that are directed from the federal level. For this version of a subnational Progression Model, much of the current national tool is applicable to the subnational since the decision-making power is at the lower level.

For all subnational typologies, the Governance and Leadership section of the Progression model (in the orange box below in Figure 15, measures 1-8) requires the most adaptation. This section needs to capture the relationship the subnational entity has with the national government, its responsibilities over primary health care, and how it is or is not tied to federal strategies. As for the Inputs section (in the green box

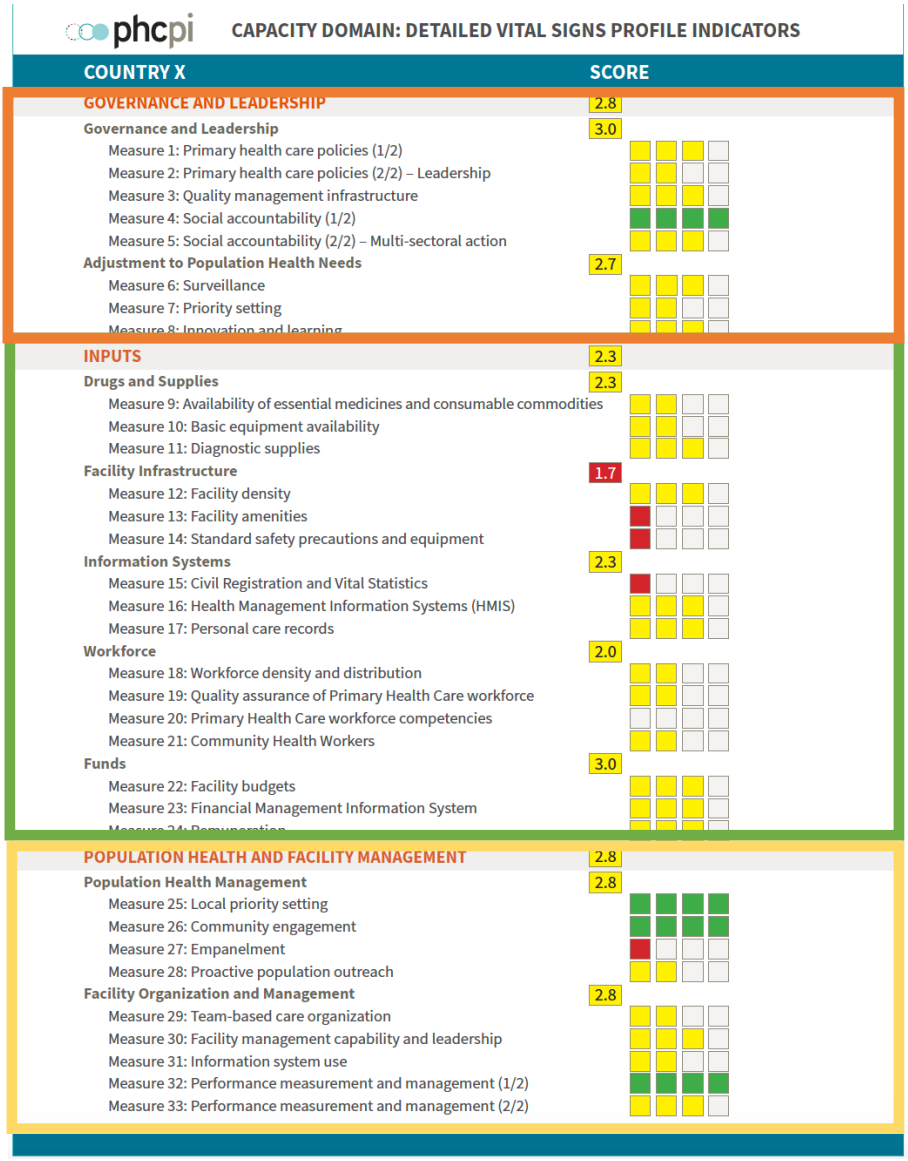
below, measures 9-24), there needs to be clarity in understanding how the central budget is allocated to the subnational government; additionally, many measures can be merged or dropped completely. Respondents addressed making the tool leaner by consolidating measures in the Inputs section.

"And I also feel that for example, measure 23 Financial Management Information - can easily be merged into 22 or 24. Or the whole finance [Funds measure 22-24] thing [measures] can just be made in one measure."

-Government Consultant from Category #2 Extremely Devolved

Finally, for the Population Health and Facility Management portion (yellow box, measures 25- 33), the only addition needed is to capture the lowest levels of the healthcare system which are currently not considered. For example, measure 25 Local Priority Setting, captures the translation of national or subnational policies into local strategic action plans for disease burden, and respondents advised going a level further for the subnational Progression Model by capturing the lowest and local level of the primary health care system. Respondents felt that in addition to adjusting measures in this section to capture levels and voices from those lower than the subnational - the national Progression Model may have aimed to do this, but there was often deference to national stakeholders. Reference Figure 15 to see the Progression Model and all of its measures.

Figure 14. PHCPI's Progression Model



In **the Category 3: Subnational Consulted** typology, the key distinguishing feature is that leadership for the subnational and local levels is appointed by the subnational government. In regard to finances, taxes and out-of-pocket payments are collected and sent to the national level government to redistribute down through national insurance funds; the federal government also manages salary payments. Service delivery strategies and Standards are designed at the federal level but implemented with some flexibility at the subnational level. Policies are the most distinguishing factor as they are set by the MoH with consultation of subnational entities, and the local level of government determines priorities and vertical health programs;

each subnational government can determine its own priorities and how much it will choose to influence and address federal policies.

Given these characteristics, for the Governance and Leadership section of the Progression Model, it is important to know how *policy* and *priority setting* affect different levels of government and how *multi-sectoral stakeholders* interact among each other. As for the Inputs section, there was consensus to remove measures from the model.

"The training institutions [from the national level] set them [competencies for CHWs], so it wouldn't be the region that is setting it…same for remuneration; that standard is determined at the central level."
-Government Representative Category #3 Subnational Consulted

Respondents from Senegal and Ghana stressed the importance of collaboration throughout their health systems.

"For Population Health and Facility Management, nuance needs to be added to some measures— such as measure 27—which addresses empanelment but rather a focus on collaboration. Focus on the effectiveness of service delivery models, modalities of coordination among stakeholders, and information system specifics."
-Government Representative Category #3 Subnational Consulted

The Category 4: Subnational Directed typology can be described as more centralized than the Subnational Consulted. Leadership is appointed from the federal level all the way down to the local level. The central government determines finances for lower levels via taxes and donor aid. As for service delivery of Primary Health Care services, the subnational government has no decision-making power but is responsible for executing on mandates from the central government. Policy creation is owned and overseen by the national government, in some cases subnational officials may participate in workshops but this is not the norm, and these countries need to create strategies which adhere to the national policies. PHC standards are determined by the central government and donors who contribute significantly to these countries' health budgets.

As for specific Progression Model, the Governance and Leadership section either needs to remove all *policy* measures or ask how they are relevant to the subnational government; given the strong donor presence in this cohort of countries it would be important to identify the role of different multi-sectoral stakeholders and faith-based organizations. As for the Inputs category, respondents highlighted that the data is not always there, making it hard to complete this section of the PM at the national level let alone the challenges that will occur at lower levels. For Inputs measures, much of the information is determined at the central level and is standardized throughout and subnational governments lack authority over them so they should be removed. Finally, for Population Health and Facility Management, some measures can be merged. This typology warrants the most significant adaptation of the current progression model, both because questions cannot be answered by lower levels and because many standards and strategies are determined centrally.

For this subnational typology, respondents stressed removing measures since the subnational has no authority in determining how they are decided. This was applicable to many measures, including workforce, remuneration, facility infrastructure, and supplies. They also mentioned that a lot of data will not exist at the lower levels and to consider removing those measures since they will not be able to respond in an informed way.

> *"This is the one [measure] about a cadre of health workers involved in providing services, you know, Population Outreach, because the policy is [determined] national for community health workers, you're going to get the same answer, you're going to [get] the same crap. If there isn't variation across the different regions, it's just copyrighting [from one subnational to the other based on national standards]. That question wouldn't be very helpful. Because the policy is set nationally about the cadre of community health workers. So every region is going to tell you the same thing."*
>
> – *Country Engagement Lead Category #4 Subnational Directed*

4.2.3. Realist Evaluation: Context and Mechanism

<u>Qualitative Interviews – Progression Model Adaptations</u>

Realist evaluations are typically supported by both quantitative and qualitative analyses. The findings from the quantitative analyses, shared above, guide the typological classification structure, while the qualitative

data reveals layers of nuance for both Context and Mechanism. A thematic analysis was conducted to inform the Context and Mechanism and was examined through the Heifetz Adaptive Change Model.

The Adaptive Change model provides a lens through which to examine the interview data for adaptive and technical challenges in implementing the Progression Model, and simultaneously addresses the conditions which will facilitate and or hinder successful outcomes. Respondents shared their opinions about the many technical and adaptive challenges, and the changes necessary to support the successful uptake and implementation of a subnational Progression Model.

This section examines the proposed changes required of the Progression Model which might enable it to be more useful at the subnational level. While some of the suggestions are applicable for all subnational settings, others are specifically tied to a specific governance structure. The interview respondents consisted of consultants and government officials who were on the ground overseeing the entire VSP process as well as technical advisors from donor agencies in multiple countries.

Proposed Technical and Adaptive Process Changes based on the National Progression Model

Based on the analysis of in-depth interviews, the following general modifications to the Progression Model can be divided into four thematic categories:

1. General process
2. Data collection
3. Scoring
4. Stakeholder changes

One of the general process changes mentioned by all respondents was to reduce the number of measures in the Progression Model. In conjunction with creating a leaner subnational Progression Model, interviewees also suggested allowing for more time with the process. Nearly all respondents also advised creating a

longer sensitization process through which they could build support. By spending more time at the beginning garnering buy-in from the government and other stakeholders it would make the Progression Model data collection process smoother. For example, instead of having to re-explain the tool every time they tried to engage with someone for an interview, one could instead spend the time gaining valuable insights for the Progression Model.

Thematic Area 1: General Process Changes

In addition to general process changes as indicted above, there are also general changes which need to be made to some of the 33 measures of the Progression Model, which are applicable to all countries regardless of their governance structure. This includes the following: editing the language of the measures by changing it from a "national" to "subnational" tool; capturing information about referral systems in-country to understand where breakdowns may be occurring; including more information on the maturity and capacity of service delivery models and multidisciplinary teams versus only documenting their existence; specifics regarding use of information systems; capacity of human resources; how federal laws translate down the subnational level; insurance and the private sector; and donors and faith-based organizations which guide strategies. Based on the findings from the interviews, the Governance and Leadership section of the Progression Model needs to be overhauled for subnational adaptation and, in some cases depending on the subnational typology, indicators will need to be removed. As for the Inputs section, many respondents suggested to remove indicators or to collect them via quantitative data in-country or via surveys, rather than through interviews.[13] It is important to note that surveys may have additional cost implications, which in this case may be worthwhile relative to the costs and time involved with interviewing stakeholders.

[13] Note: The Progression Model is a mixed methods tool, but due to confusion with how it was explained, the lead in-country people felt obliged to interview stakeholders for each measure, despite instructions saying that quantitative data is sufficient, if it meets criteria.

Selected comments from interviews illustrate their critique of the model, and how technical changes will support the subnational adaptation and uptake of the tool:

On making measures easier to understand: Respondents shared that in order for the tool to have uptake at the subnational level where there is lower capacity, the language would need to be simplified and provide more explanations.

> *"Yes, reframing it or thinking of back-up questions with which you can probe. Making the concepts essentially as concrete and down to earth as possible. Like not sticking with the word "quality" because that's a very abstract concept, but more like going through a checklist of things that asks whether things are done or not."*
> *-Consultant, Category #4 Subnational Directed*

Another opinion which was shared, expresses the need to clarify concepts among the 33 measures of the Progression Model.

> *"It's not easy to understand the concepts. I think we need a guide that explains each concept very deeply. Because it's not easy to understand the measures, and if you are in the subnational level and you want to complete it, then maybe it should be more easy to understand with examples or questions - not in this format."*
> - *Government Representative, Category #2 Extremely Devolved*

On time: Interview respondents spoke to the significant time investment of the Progression Model, it usually being many months, and that it needed to be made leaner and be less time intensive. A less time intensive tool could produce results faster and potentially lead to primary health care reform.

> *"The Progression Model because it's very large. Very big. And the information is not centralized. So if you want to implement it, you have to collect information all over. And because you don't have all the answers in one person or in one area, it's a lot of work to complete it and not all the people have the time [to do so]."*
> - *Government Representative Category #2 Extremely Devolved*

<u>Thematic Area 2: Data Collection Changes:</u>

While most suggestions for process changes consisted of shortening the tool in order to complete it, garner buy-in, and create change, there were many suggestions for the technical challenges. Technical recommendations included devising mechanisms to streamline all the documents for data collection for the

model. Currently, there are 16 different appendices which all need to be completed. There is general confusion with the abundance of documents and version control. Others suggested changes to data collection, such as making some of the 33 indicators into survey questions to avoid interviewing many people. Additionally, respondents advised providing more guidance – such as sharing best practices from other countries and advice on who were helpful interviewees. Two countries, Tanzania and Senegal mentioned that there were significant delays in starting data collection for the national Progression Model because there was not an agreed upon definition of PHC at the national level.

On creating an agreed upon definition: They advised starting the Progression Model by having an agreed upon definition of what primary health care is at the subnational level before proceeding, in order to be aligned when answering questions for data collection. This was brought up as an issue at the national level where there was a lack of consensus and misnomers with what primary health care is, which leads to a different interpretation during data collection and challenges during the scoring process.

"Basically, I think [country] hasn't really defined Primary Health Care and use the words primary health care to describe a level of the health system. So it needs quite a bit of progress around understanding Primary Health Care before you could do any more work on the Progression Model."
- *Country Engagement Lead, Category #4 Subnational Directed*

On interview saturation: Interviews reached saturation quickly, and no new useful information was derived additional interviews. The interviews need to be reduced to only the most relevant stakeholders.

"So I think the data collection process took quite long because we interviewed for each measure, we interviewed a couple of different people who then didn't end up giving very different answers. So we had a lot of repetitive data. So I definitely think that you don't need to interview every single person who is involved in that measure or has anything to do with that measure. It's just helpful to find the one or two people who really have the best sense about that topic. Yeah, so that will be helpful. And in general, as a general principle, do not have such a focus on looking at every single opinion and every single aspect of the picture, but on really getting the components answered and getting answers to the components because that makes it faster."
- *Consultant, Category #4 Subnational Directed*

On focus group discussions: All but one respondent suggested conducting focus group discussions instead of solely relying on one-on-one key informant interviews. They also suggested conducting focus group discussions in order to save time and also to extract themes collectively.

"I think the advantage of focus groups is that that's where differences of opinion get highlighted…even if it's not explicitly stated. So, like, someone who's good at analysis, or someone who's just good at observations can take on those differences, then you write them down. That's what we did for this other project…and I thought discussion there was a lot more fruitful compared to some of the interviews that I did, which were very superficial."

- *Consultant, Category #1 Extremely Devolved*

"And we felt that those were actually bringing much better input than what we had seen in a lot of the interviews. So perhaps focus groups in the future would be okay."

-Government Representative, Category #2 Extremely Devolved

Thematic Area 3: Scoring Changes

Respondents provided insight into mechanisms to improve the scoring processes. Scoring of each measure in the Progression Model is rubric-based, meaning each measure had four categories and could receive a score of 0-4 depending on how members of the in-country working group evaluated it based on findings from their data collection (see Literature Review for an example of the scoring matrix). Typically, this process includes stakeholders from different parts of the primary healthcare system and it often results in disagreement over scores. While the scoring workshop usually takes a few days to arrive at a consensus, unilaterally respondents said that the scoring workshop was the most fruitful part of the Progression Model since it brought together many stakeholders of the PHC system who do not typically engage with each other. Some mentioned using a moderator for the scoring workshop in order to balance out voices, from senior government officials to those who were representing lower levels of government. Additionally, instead of relying on Ariadne Labs for external validation of scores as it currently happens for national Progression models, respondents advised having the national government serve as a validator for subnational units. However, some said there were issues with the scores themselves, since scores are assigned to the country based on the lowest performer which fails to reflect both the reality and diversity of the situation.

On scoring: There was general consensus among respondents that a great deal of time was required to explain and re-explain to stakeholders during the scoring workshop how to accurately score their country, and to clarify that the scores were not a grade for donors, but were supposed to be used internally to determine gaps and weaknesses in the system and areas of potential growth. Additional recommendations were to provide a gradation of results throughout a region or country, showing a distribution curve and standard deviation which captures the variance in a setting since summary data will be useful for policy makers.

"I think the internal and external validation is great. The real problems we got into is really the fact that it's hard, and there's unclear guidance about how we address variation as part of the scoring methodology. And so, if you ask the question very directly to [Ariadne], they will tell you, well, that we should be scoring at the level of the lowest performer in the country. But that's not a satisfying answer either, because that is not what people are saying. People can have a sense that overall the situation is within a certain range, but they are frustrated by the fact that these ranges also do not reflect the diversity of situations that you find in-country."
-Country Engagement Lead, Category #3 Subnational Consulted (also oversaw Category #3 Subnational Directed countries)

On taking scoring a step further:

"I think it would resolve a lot of our problems today, which are the fact that VSPs are useful to the sense of how the country is doing overall, but if you want to make it actionable, the only way is to understand variability. Because variability helps you do two things. First, prioritize those areas which have lower performance where you might want to put more efforts, but also identify outliers where there is something to learn. So that creates a very dynamic conversation around performance."
-Country Engagement Lead, Category #3 Subnational Consulted (also oversaw Category #3 Subnational Directed countries)

<u>Thematic Area 4: Stakeholder Changes</u>

In order to thoroughly capture the PHC system at the subnational level, it is imperative to engage with the equivalent stakeholders at the subnational unit, such as relevant government, regional, medical officers, subnational multilateral and NGO officers. Process changes included conducting a rapid stakeholder analysis to determine who is most important to interview and to include in working groups, so as to filter through and engage with those who will provide valuable input. Stakeholders who were not thoroughly consulted during the national Progression Models, but should be going forward, for both the national and subnational level, include: donors, faith-based organizations, private sector, and insurance agencies.

Additionally, in order to fully capture the narrative, it was important to capture voices from marginalized communities. In countries where there is more than one federal entity in charge of healthcare it is imperative to include both of them as they oversee different components of PHC. For example, in Tanzania, the MoH and the president's office both manage two different components of the PHC system; similarly, in Ghana, the MoH and Ghana Health Services both manage aspects of PHC, but when it came to completing the Progression Model only one of these entities was engaged with the process. In Ghana's case, they were able to engage with some of the private sector, but other countries mentioned the lack of engagement the tool currently has with the private sector; this is especially problematic in countries like Colombia where the PHC system is heavily privatized.

4.2.4. Adaptive Challenges and Changes

The Adaptive Leadership Framework highlights the importance of power and authority and their complexities as they exist among varying levels of government. Utilizing the Adaptive Change Model as a lens on the data is a mechanism to understand why some things worked or hindered success. Technical challenges and solutions were shared above. In terms of some key adaptive challenges that emerged from the interviews, respondents shared that having leaders who are politically well-connected is a reality that should not be underrated; they also noted the importance of consultants to the entire process.

Repeatedly, respondents shared that the Progression Model interviews would have never happened had they not had political support or been well-connected, and that it would be important at the subnational level to make sure the "right" people lead the work in order to complete the Progression Model. In addition to having access to the right people, they also mentioned the importance of agile and flexible leadership – from themselves, those they worked with on a team, and those they interviewed.

The Progression Model processes, expansive as it is, required consultants to have creative approaches with stakeholders, and to learn new tactics for explaining it along the way. There were also logistical issues with engaging with many stakeholders. Respondents in all countries also said that navigating the lack of capacity would be an adaptive challenge at the subnational level. While the national level often lacked good data, those challenges would be coupled with the limited capacity of those at the subnational level to actually do the work. In regard to scoring, respondents from each category said that a lot of time was spent explaining scoring so as to prevent in-country scoring groups from inflating data to look good externally.

A Country Engagement Lead shared that there were adaptive challenges with the implementation of the tool. Each of the 33 measures in the Progression Model has a definition, and four key defining characteristics in the rubric. When stakeholders she spoke with were confused by the interview questions, she had to get creative. She instead flipped the processes and share the rubric with them and had them identify where they thought they were.

> *"I think the adaptive challenges were the Progression Model itself - we were piloting and so there were definitely some questions and things that we did not need. [And with regards to the process] it was actually helpful for people to see the different levels for each measure [instead of just asking them the questions] That was actually something I was routinely doing was showing people the different measures and the definition, then they could pick and select. You know, we would have a conversation first and then we would do that.*
> *You know, so there were some challenges related to the tool that requires, you know, assistance in my mind, and then the technical ones, I think I just spoke to like, yeah, just logistics and timing and, you know, that kind of stuff, which at sub national level or like, you know, does the data exist?"*
>
> - Country Engagement Lead, Category #4 Subnational Consulted

A government representative emphasized the importance of teamwork, leadership, and being well-connected in order to address all the components of the Progression Model. She stated that with strong leadership and political buy-in it would facilitate multiple stakeholder interviews and encourage other parties to engage with those conducting the Progression Model.

> *"Yes, I had a team with representatives from several areas [getting] information. It's a lot of work to do the Progression Model - you have to find a way to motivate people to complete it. It's not so easy. Only one person can't complete it because it's a lot of information and the Progression Model needs strong*

leadership and I think that the government should define a leader to encourage the instrument. I don't know if I'm clear… it's a thought because there are some questions[measures] that involves other areas, not only the national health ministry, because when you talk about health, sometimes you talk about education, you talk about another area so the leadership should be present…maybe the provincial health ministry, maybe they governor because there are some strategies that are interministerial, such as the economy."

- Government Representative, Category #2 Extremely Devolved

Interview respondents from all countries addressed the challenges with the internal scoring workshop. In general, there was consensus that it the scoring workshop was a productive exercise since it brought together many different primary health care stakeholders who never communicate, and usually resulted in healthy discourse. However, they also mentioned the adaptive challenges that occurred when managing tensions in the room among a variety of stakeholders ranging from government bureaucrats, NGOs, and those representing marginalized communities. In addition to balancing different personalities, there was also a lot of time spent explaining the value of scoring judiciously and honestly. On multiple occasions, interview respondents shared that during scoring workshops stakeholders wanted to inflate scores given their concern for how their country would look, and that they spent a lot of time explaining why not to do this.

"There was a little bit of tension that I had to manage in the process by saying "It's okay if something is not as good as you want it to appear." Yeah, but it is good, because then we'll be able to say we are trying, and you want to improve that. This process, the project was very tiresome for me, because [they felt we were] ranking [country]. It was showing the performance of [country], and we didn't want to show it has bad performance. I would like the process to be more educational than it was. Give more time than what I got. I remember I was working like crazy and I was sleeping very few hours. It's good to give enough time to educate both the government and the civic society on the reasons behind this. It's not to give you grade, it's to see how well you can improve and or collaborate with potential donors, who would have a clear vision of what is missing to support…I'm not praising myself, but it required a lot diplomatic skills."

- Government consultant, Category #4 Subnational Directed

5. DISCUSSION & RECOMMENDATIONS

5.1. Discussion

Global health programs typically begin with a successful, small pilot and then scale-up. It is rare for the inverse to happen. This thesis aims to understand mechanisms for "scaling-down and throughout." This approach refers to adapting a national program and implementing it at a lower governmental unit. There are only a few analogues to the subnational Progression Model and both are strictly quantitative, i.e. the National Health Accounts model and some of the Global Burden of Disease data.

At this point the Progression Model has been rolled out in 10+ countries at the national level; this thesis provides a roadmap for these countries to scale down to the subnational level. This work aims to better understand the subnational governmental units and adapt a technical solution to be used and applied at this level. While we are still in a nascent phase of understanding the complexity of subnational units as they exist in varying health systems, future health systems research on scale should explore a) governmental relationships and Primary Health Care programs, b) facilitators and limitations to authority delegated downwards for PHC, c) what role the subnational government has in negotiating with the national level.

Discerning the issues in a primary health care system through improved measurement is the first step in refining fractured health systems. In-depth qualitative interviews guided the subnational typology classification structure while also elucidating many other relevant themes which built upon the literature review. This chapter highlights the broadest themes and then focuses on more specific ones.

Importance of Subnational Data

The role of the subnational Progression Model is important as countries and donors strive to improve Primary Health Care. Country-level data for global health estimates serves a mechanism for donors and multilaterals to understand cross-country comparability and progress, but these national aggregates lack

utility for those in-country (AbouZahr et al., 2017). Measures that attempt to capture governance are not done often or well, and the Progression Model is a detailed attempt to do so.

The Progression Model is a mixed-methods instrument that allows countries to understand the strengths and weaknesses of their health care systems. Traditionally, data about the performance of a health care system is aggregated and reported as a national average. For example, if one were to take national averages from the US and use them for improving one state, the data would be irrelevant. Outcomes and disease prevalence differ greatly between states like Massachusetts and Mississippi and the state healthcare systems are quite different. A decision-maker in either state would not be able to make well-informed decisions by looking only at national averages versus looking only at state data. The same can be translated to other countries: national averages do not appropriately capture issues in each subnational unit; hence countries are keen to conduct it at the subnational level to better understand where there are issues in the PHC system. This will provide detailed information from one region to another, and unlike most global health data dashboards this does not solely rely on quantitative results. Interviewees said that the qualitative portion of the tool and scoring workshops were the greatest strength of the tool and its distinguishing factor. By creating a version for countries to use at the subnational level, the tool will be able to better help target PHC strategies for improvement.

While decentralization of health care systems in itself can be thought of as scaling down, this notion of scaling down and throughout is a new way of looking at programmatic interventions. Typically, a country is the unit of analysis for research and knowledge products and analytical work does not home into the subnational level.

Understanding a country's governance structure at a national and subnational level allows governmental health authorities and donors to have a more targeted systemic approach to health programs; having a tool that clearly depicts governance of the health system will enable countries to develop more focused and

refined policies, empower donors to optimize their impact, maximize impact of health care reform and ultimately improve the health of populations.

Realist Evaluation

The framework for analysis used in this project was a realist evaluation using the lens of thematic analysis and the Heifetz Adaptive Change Model. The evaluative process breaks down the landscape and context of how subnational and national governments work together in a variety of settings to tease out authority dynamics. In addition to better understanding the layers of the system, to create a contextual foundation and subnational typologies, the Health Systems Assessments (HSAs) and 16 qualitative interviews provided the nuance necessary to rework the Progression Model for various subnational settings.

Unlike traditional realist evaluation which addresses the Context, Mechanism, and Outcomes of *why, how, and for whom* a program may or may not have worked, this evaluation addresses the same questions as they pertain to the national setting in order to foreshadow what it will look like in the subnational setting. Since the Progression Model results have not been used for PHC reform in most settings so far, Outcomes were not analyzed. This section aims to extract further insights from the data, and presents them as high-level themes.

Delays with Utilizing Progression Model for PHC Reform at the National Level

The intended outcomes, as indicated in the Theory of Change, are that Progression Model findings, will guide primary health care reform. To date most countries in this cohort have not had the opportunity to implement findings from the Progression Model into any reform. This lack of implementation is due to a number of factors, e.g. in Argentina the government changed hands and the new president was less interested in this initiative; in Guinea Bissau there was a coup; Pakistan experienced a "revolving door" of ministers of health; in Tanzania there was a lack of government interest as other donor-driven projects took priority. Situations like these result in a lag-time with gaining buy-in to the PHCPI consortium from new

leadership. Understanding what the delays were at the national level are important, when planning and devising strategies for implementation at the subnational.

While countries are encumbered by delays, some have begun to act on the findings, including Ghana and Senegal. In both settings results are premature. Government entities in these two countries, however, have thought through how to make changes, improve PHC quality, and potentially how to adapt the tool to subnational settings.

Donor Influence

For countries in both the Subnational Directed and Subnational Consulted categories, respondents highlighted the strong presence of donors. The Directed group mentioned that the Progression Model needed to include more measures that capture donor impact on PHC strategies. Donors have the ability to drive a country's strategy, but in settings where there are many donor-driven programs it is important to understand if it is viewed as "just another donor project" versus one which a country will use and implement. While this may seem particularly relevant for the national level, there are many subnational entities throughout countries which are massively targeted by donor agencies – be it specific northern states in India and parts of sub-Saharan African countries.

While this doctoral project aimed to identify the power between layers of government, the strength and power of donors needs to be added as a measure in the Progression Model. There is some health policy and systems research which addresses the role of power among donors; Rushton and Williams presented factors which drive global health governance (Rushton & Williams, 2012; Sriram et al., 2018). Their work shows how those with power and perceived authority framed issues, and promoted some causes over others and that it is typically left out when exploring the impact it may have on policy-making. We see this often with donor aide funding certain projects, and interview respondents mentioned the importance of understanding donor roles and presence in-countries as it pertains to PHC strategy and policy development. Shiffman

(2014) highlights that power is 'exercised everywhere' in global health, and says that even though power employed by global philanthropies and multilaterals may be rational and neutral – they inherently raise agendas (Shiffman, 2014; Sriram et al., 2018).

A Diagnostic Tool: Health Systems Assessment

The Progression Model itself is a novel innovation in that it looks at government capacity to create change, in contrast to most assessments that solely capture quantitative statistics. The HSAs serve as a power and authority diagnosis of health systems. In efforts to adapt the tool to the subnational level it was essential to understand power and authority dynamics at the subnational level and the national level's authority relationship. "Power is central to understand and transform health systems" yet it is seldom disentangled in LMICs (Sriram et al., 2018). By analyzing and engaging with power dynamics at the system level we will be able to create fairer primary health care systems. The HSA serves as a power and authority diagnostic tool to understand where the subnational government has the authority to make decisions. When designing sustainable tools or programs it is critical to design solutions based on the context in which one is working. The HSA allows for just that. As a quick survey assessment that anyone working in the health system, directly or adjacent to it can complete; the information can then be triangulated to understand where power and authority within the healthcare system is deferred to inform tool programmatic development. If countries cannot complete the HSA or feel that their health system does not fit it, such as in Colombia's case where many boxes were left blank, further inquiry might be necessary – in Colombia's case it is due a strong insurance company presence in the system. The HSA is a quick, efficient diagnostic tool, and when applied can inform any public health and development work aimed to happen with the subnational government. A possible area for future work consists of exploring the extent to which the HSA uncovers dynamics which are not explicit in national policies.

Understanding the Governance Structure

Geography has little to do with how a country sets up its health system. Of the 10 countries included in this study, with their vast geographic spread from South America to the South Pacific, there was great variance regarding which subnational typology classification they fit. Drawing a complete picture of the governance structure, beyond just labeling it for its governance level, proves vital to do effective work at the subnational level. Understanding the layers of nuance of the subnational government is imperative to health systems strengthening. Subnational governments can be equated with "middle managers" who are a crucial link to the system. When the subnational or middle managers' roles are not clearly understood or defined their liaising power between layers of the system is one reason it falls apart. Learning where and in which settings authority is delegated downwards can yield more useful tools.

Health systems literature has clear definitions regarding decentralized heath systems – they are delegated, devolved, or deconcentrated and are often characterized in the literature as being one or the other. In reality, most countries have different components of decentralization. Creating a tool just based solely on decentralized definitions would likely prove futile. The rich in-depth qualitative interviews resulted in the subnational typology – which captures where subnational governments sit in if they are engaged with or not from the top. This is significant because outsiders may classify a country only based on the literature – a country like Ghana is deconcentrated since it has a separate entity managing PHC service delivery – but that is the only element that is significantly decentralized. Thus, we see that while Ghana has some decentralized elements, it is characterized as a Subnational Consulted country. The qualitative interviews, with key stakeholders who are fully entrenched with the work in-country are an asset to understanding how to scale throughout. Experts and consultants in-country were able to provide depth and understanding of the system in ways that external multilaterals are not able to do so.

Leadership and government typologies as they pertain to Adaptive/Technical challenges

Going forward, the subnational typologies inform how to engage more effectively with different authority dynamics. For example, devolved countries are less inclined to engage with the central government on issues beyond finances, and they have the authority to manage service delivery and strategies on their own. On the other hand, in Subnational Consulted countries the subnational government has greater authority. It is interesting to note that, there were more informal authorities tied to government offices, meaning those at the subnational level had more authority with the national government and at their level over decision-making. Subnational Directed have less authority- in these countries subnational and local health officers are appointed by the central government, this is determined each time the central government has a change in power, and results in less decision-making authority.

Limitations

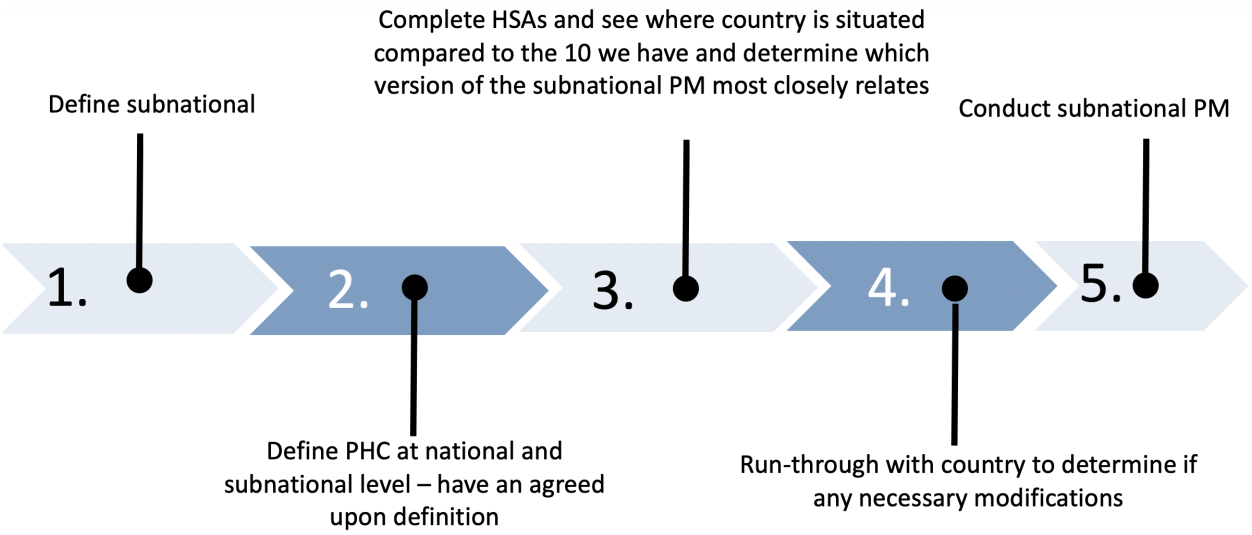
A few methodological limitations of this study include the sample size, and that it did not include an equal number of interviewees from each country. This was due to people's availabilities and willingness to speak. In countries where country engagement leads, consultants, and government representatives were all interviewed, a cohesive narrative was able to be woven. Additionally, as I was interviewing on behalf of Ariadne Labs and the Primary Health Care Performance Initiative PHCPI, inherently this may lead to an inherent power imbalance between myself and respondents and some may have been less likely to be completely candid. I did my best to build rapport and separate myself as a Harvard doctoral student. Some respondents from certain countries may have advocated for more multilateral engagement because that works well in their specific country but may not be as transferable and their own work experience and success has been with those organizations. Other limitations included a significant change in the scope of which led to delays as well as having to do the entire project remotely via Zoom versus doing any in-country interviews.

5.2. Recommendations

1) Revised Progression Model Process

Given the detailed and extensive interview data gathered and the HSAs, I propose the following subnational Progression Model process, which begins with countries first defining what "subnational" means in their respective contexts and which subnational level is best suited to apply the Progression Model. Then at the national and subnational levels there needs to be an agreed upon definition of what primary health care is (not having this defined in countries for the national Progression Model was a roadblock. Consequently, it is critically important for countries to complete the Health Systems Assessment, as a quick way to understand power and authority dynamics as they exist among and between governmental levels. Based on the assessment results, technical advisors can determine which subnational typology applies most to the country and have the country complete that version of the subnational Progression Model.

Figure 15. Proposed Subnational Progression Model Process



2) Devise a leaner Progression Model and pilot in multiple settings

By incorporating changes to the measures and process – explained in the Results and Appendix G, H, and I – modifying the tool will make it more relevant to each subnational group. Changes consist of editing and removing some of the 33 measures depending on the subnational typology, making the tool leaner, simplifying the process, and expanding stakeholders. For example, the Subnational Directed countries do not have authority over most of the Inputs section of the Progression Model, so removing most of the measures will make it a tool that can be completed by this group. Alternatively, if those measures are going to remain, the national government needs to be responsible for completing them as it has the greatest exposure to elements of the primary health care system. Upon the uptake of the revised tool, it should be piloted in multiple settings, at least two to three settings per category, before settling on a new subnational Progression Model.

3) Stakeholder Analysis

Conduct a rapid stakeholder analysis in each country in which the subnational Progression Model will be rolled out. This should be done at the national and subnational levels in order to determine which actors will be the most critical and useful during the process. Typically, the process to date has relied on convenience sampling, from the donor and who they hire, but utilizing those people to conduct a rapid stakeholder analysis can speed up the sensitization process of the Progression Model and make the interview process easier. This step will be useful given that some components may need to be answered by two layers of the government. Respondents all indicated that consultants were important to the Progression Model process: they noted that in the absence of a reliable consultant, the process would drag out much longer. Investing the time and resources to hire an effective consultant early on will facilitate the overall process.

4) **Conduct Health System Assessment**

In each participating country, key stakeholders including a government representative from the national and subnational levels, NGOs, multilateral organizations, and consultants should complete the HSA. By having diverse yet key stakeholders complete the assessment, and triangulating their responses, the HSA will determine which subnational typology applies to the country. Teasing out authority and which layers of government have jurisdiction over certain PHC indicators will inform which version of the subnational Progression Model should be used.

5) Dialogue and exchange among countries

Many respondents expressed curiosity concerning data from and experiences of other countries, yet to date there has been minimal exchange among countries regarding their results. Countries undergoing the process or those who have already done so could serve as a resource in order to take some of the burden off of Ariadne Labs and PHCPI staff. Countries can also share lessons-learned, best practices, and mentorship with each other. This forum could be convened in-person, but a virtual program would be more cost-effective given the geographic spread of PHCPI countries.

6) User-friendly platform

The Progression Model is currently a cumbersome tool, with multiple manuals, 16 appendices, and spreadsheets which need to be completed. While the Progression Model is a component of the Vital Signs Profile, due to how the project has been managed respondents of all varieties view it as a completely separate assessment tool. There are issues with version control and reference documents, the process itself is confusing. Ariadne Labs, in conjunction with PHCPI, is working on a mechanism to integrate the Progression Model into the entire VSP process and recently created an online portal to streamline documents. This needs to be taken a step further, either it could be an online platform or an interactive application which is more than a document repository. While documents are useful to track components of the process - the scoring process itself is a complicated

dashboard with multiple documents and analyses - this can be streamlined into an online application that includes definitions of measures, is easier to use, and is centralized.

PHCPI's Progression Model has enormous potential to help countries asses their governance capacity and ultimately improve primary health care for subnational populations. "Scaling down and throughout," and utilizing a more streamlined version of the Progression Model will help national and subnational governments, donors, and technical program managers reach consensus on the status of primary health care faster. Additionally, the Progression Model highlights gaps in the system and will assist in developing more targeted and effective primary health care reform. Which can thereby, contribute to improved primary health care across the world.

6. CONCLUSION

This thesis aimed to understand the various ways governments, particularly those in LMICs, are structured and operate in order to develop a Progression Model adapted for use in different types of subnational settings. First, it assessed the literature and expert opinions to generate hypotheses regarding a potential subnational classification system for use in the Progression Model. It proceeded to explore the nuances of power and authority dynamics at and between subnational and national levels of government through Health System Assessments and qualitative interviews. Understanding power and authority dynamics was integral to this work since the Progression Model focuses on measuring a government's capacity to build and maintain a robust primary health care system, but 33 of its constituent metrics cannot be answered at the subnational level and do not fall within the authority of subnational health entities. Delving into differences in authority and governance and creating a subnational governance classification system revealed more than traditional health systems literature definitions. There are countries whose subnational governments have a consulting role with their central government and have some decision-making authority, while other subnational governments are instead told what to do by their central government. This layer of nuance regarding authority of subnational governments is not apparent in health systems definitions.

The analyses conducted during this study also identified how the components of the Progression Model need to be adapted in order to implement the model effectively at the subnational level. Some of the revisions needed include removing measures—such as those in the Progression Model's Inputs section—that are not significant at the subnational level, while adding others—such as information about referral systems and service delivery models' capacities—that are critical to the functioning of a health system at the subnational level. These modifications would also better enable us to understand which stakeholders have a role in primary health care delivery and strategy, and the relationship between national and subnational authorities.

In this study, I used the Health Systems Assessment as a diagnostic tool to understand the dynamics of power and authority between the levels of government responsible for administering primary health care. Understanding these dynamics, particularly within various government classification structures, will help in determining how to implement or improve primary health care services at the subnational level. In this context, scale is not thought of in the traditional sense of "scaling-up" but rather as "scaling-down and throughout." The classification structure of subnational typologies and methodologies developed here can be applied to future programmatic work for the entire PHCPI Consortium and in other development work.

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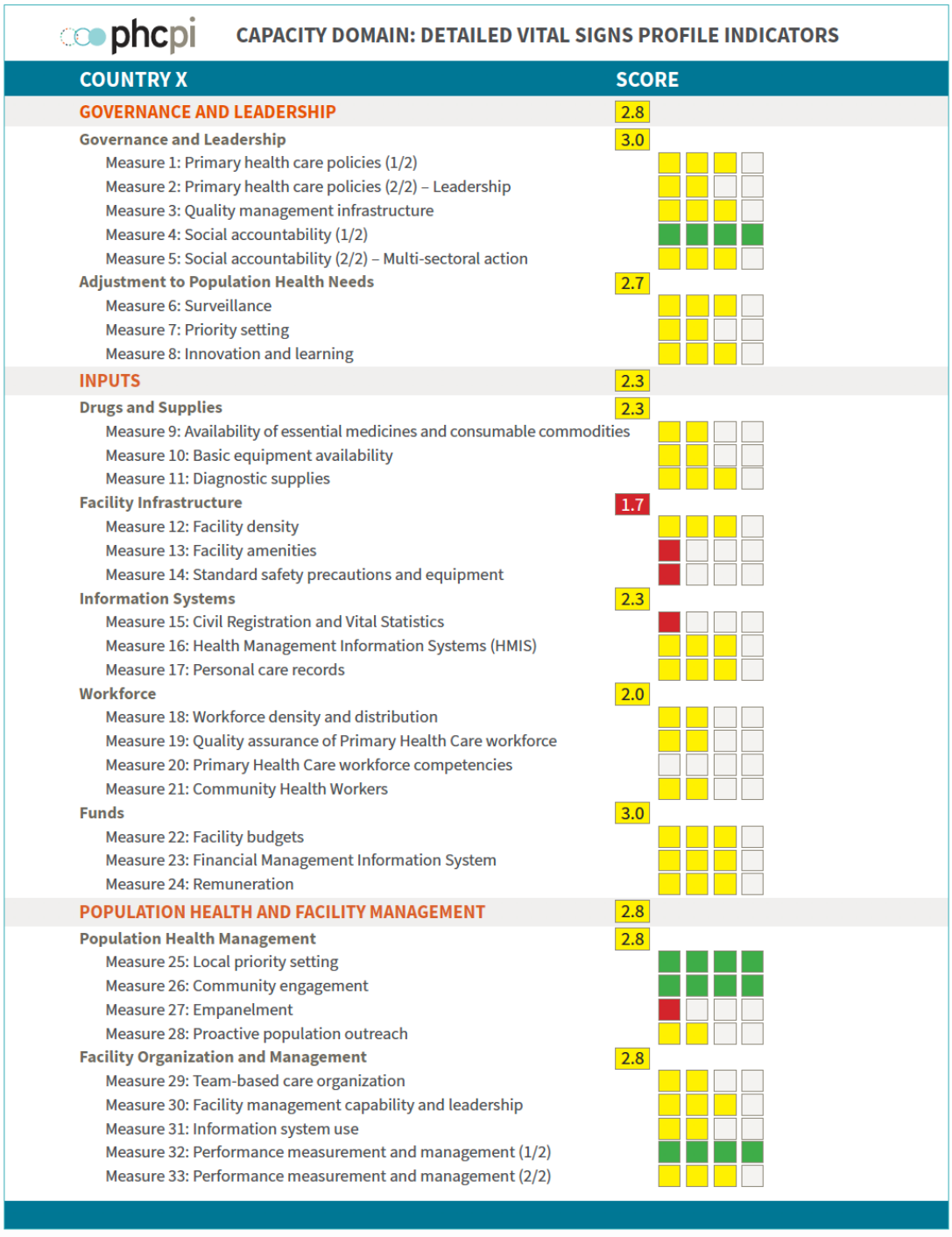
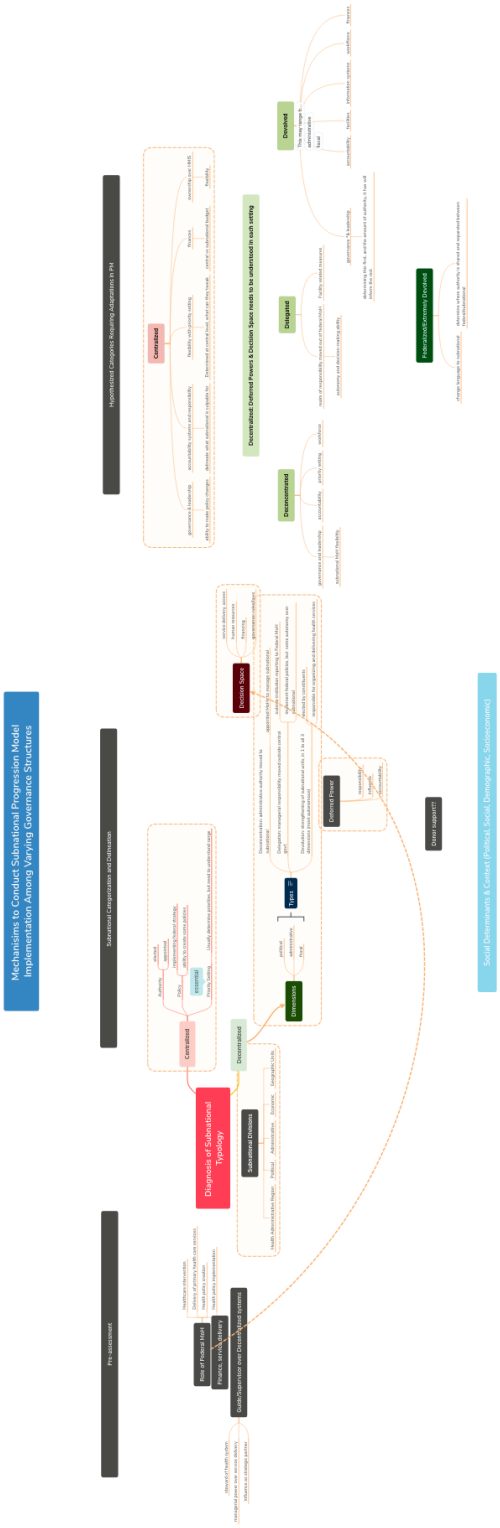
8. APPENDICES

8.1. Appendix A: Progression Model (Capacity Pillar of Vital Signs Profile)

Example



8.2. Appendix B. Health Systems Centralization & Decentralization Characteristics Distilled



8.3. Appendix C: Health System Assessments Template

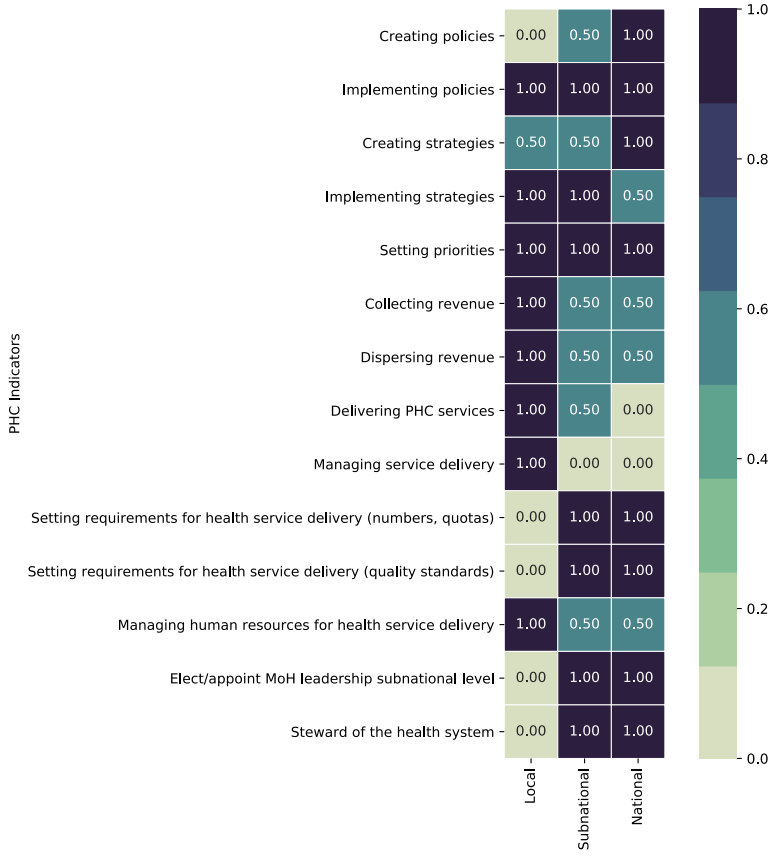
Please complete the below table and send it back to me, this should only take a few minutes but will be used during our interview. The table will help me understand where the subnational government has authority to make decisions and on what, which will inform how we restructure the subnational PM and guide the interview questions.

Using the definitions which were used during the national VSP process, can you please provide names and definitions of each of the categories in the boxes below (I've tried to get it started in red, but please finish and correct if there are errors). Can you also please complete the table by indicating who (national, sub-national, and/or local) has **high/medium/low** power and decision-making authority over the following topics:

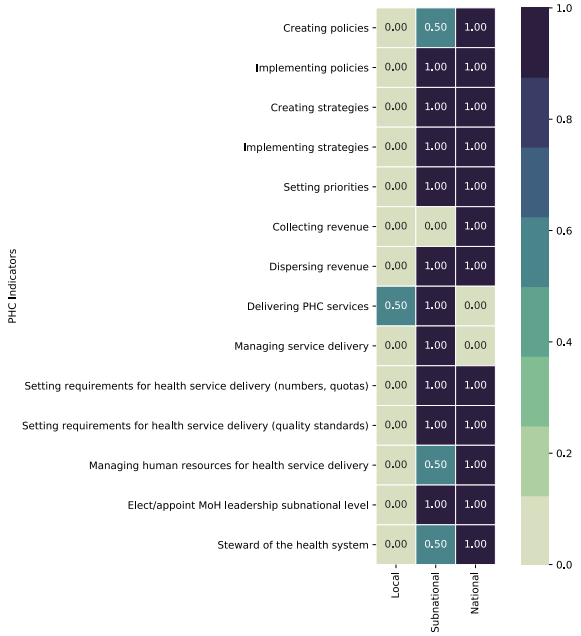
	National	**Sub-national**	**Sub-regional**	**Local**
Creating policies				
Implementing policies				
Creating strategies				
Implementing strategies				
Setting priorities				
Collecting revenue				
Dispersing revenue				
Delivering PHC services				
Managing service delivery				
Setting requirements for health service delivery (numbers, quotas)				
Setting requirements for health service delivery (quality standards)				
Managing human resources for health service delivery				
Elect/appoint MoH leadership subnational level				
Steward of the health system				

8.4. Appendix D: Health System Assessment Results for Countries

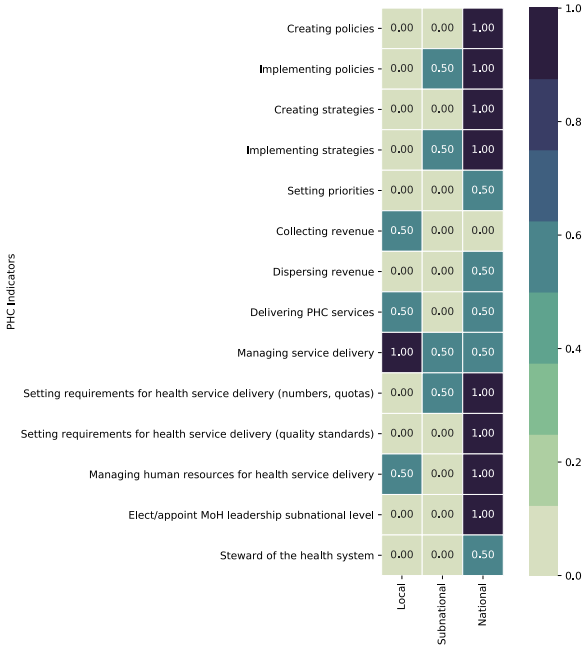
Senegal's Health Systems Assessment



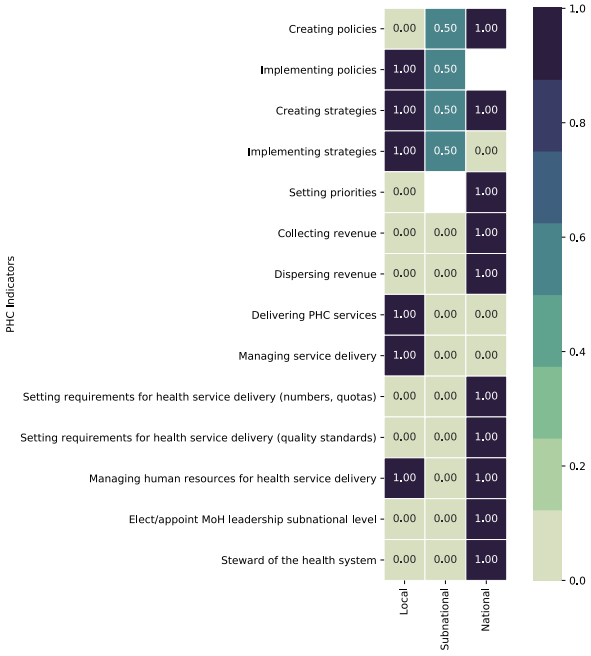
Papa New Guinea's Health Systems Assessment



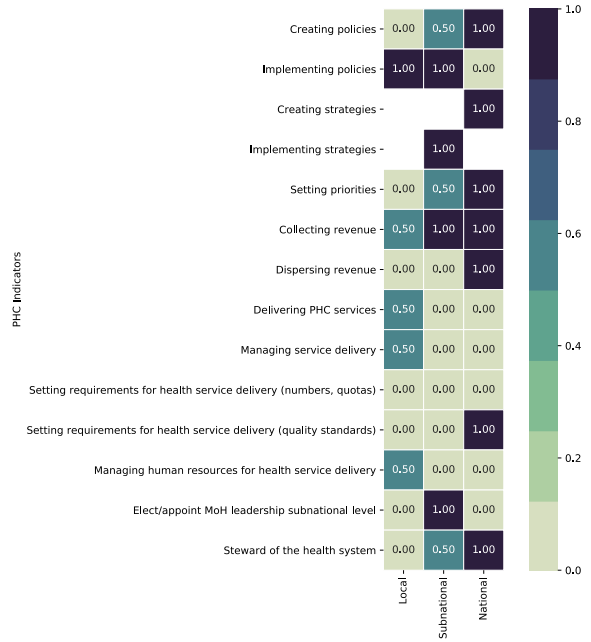
Guinea Bissau's Health Systems Assessment



Rwanda's Health Systems Assessment



Colombia's Health Systems Assessment



8.5. Appendix E. Interview Guides

8.5.1. Qualitative Interview Guide for two stakeholder groups

Semi-structured Interview Guide for Country Engagement Leads and in-country leads/consultants:

Provide background context:

- ***Purpose:*** *My objective is to understand how the process and content of the Progression Model assessment could be adapted and used at the subnational level based on the organization of the health system.*
- ***What will happen:*** *If decide to volunteer, you'll be asked to participate in this 1 interview, which includes questions regarding subnational governance and authority structures and adapting the PM in different contexts*
- ***Time required*** *~45 minutes*
- ***Confidentiality:*** *Your responses to interview questions will be kept confidential, I will not be sharing name, but will be identifiable by role and country.*
- **Ask to record**

Intro questions

1. (CEs) Can you tell me, which countries you oversaw the national VSP process in?
2. Was your role the same for all countries? Were levels of engagement different among the countries, if so can you tell me a bit about how it varied?

For the purposes of this interview let's just focus on 1 of those countries which you oversaw the VSP in, which one will you be referring to throughout the interview?

National Level Questions

3. Can you tell me what the purpose of doing the national level VSP/PM was?

4. What, if anything, do you think changed or happened as a result of conducting a VSP?

5. How, if at all, do you think a sub-national VSP could be used in [country]?
    a. *Probe:* What are specific needs? What would the purpose of a subnational VSP be?

6. To what extent, if any, do you think there is interest in conducting a subnational VSP?
7. How, if at all, does interest in a subnational VSP differ from interest in a subnational Progression Model?

Subnational power and decision-making

8. Would you describe [country's] health system as centralized, decentralized, or something else?
9. In general, can you define the decision-making relationship between the subnational and national government?
    a. *Probe:* If any, that power is deferred to the subnational?

Follow-up questions to table exercise:

10. Depending on how things are answered for subnational, probe **WHO** is doing it and **HOW** to understand the delineation in authority.

11. *See how this goes w/first CE interview:* (Only for CEs) Before we continue with discuss the nuance around subnational content and process, I want you to tell me from a more general perspective…thinking about the other countries you oversaw the VSP process in, do you think some of these breakdowns you mentioned about the governance structure and subnational authority would be similar?
    Probe: Can you tell me in which ways it would and wouldn't be?

Subnational content

12. Based on how power and decision-making is allocated to the subnational level, how, if at all, do you think the content of the Progression Model would need to change in order to do it at the subnational level?
    a. Are there any measures or topic areas that would no longer be relevant?
    b. Are there any measures or topic areas that would need to be significantly reframed—ie, not just changing "national" to "subnational"—to be relevant?
        1. *Probe: An example of a significant reframe – Are we asking the right questions to get an accurate understanding of governance? Inputs? And population Health and facility management? Does the language need to be changed or questions and topics completely reframed in order to make sense at the subnational level?*
        2. *Probe:* For example, are we asking the right questions to get an accurate understanding of PHC subnational capacity, Measure 1(Primary Health care policies) Measure 2 (Leadership) Measure 7 (Priority setting), inputs/funds/workforce, surveillance?
        3. *Probe:* What do we need to know to make these changes?
    c. Are there any topic areas that you think would be essential to a valuable subnational PM that would need to be added to the assessment?

Subnational Process *(understand how it was rolled out in different countries to understand adaptation to subnational)*
***Aim: to understand what worked well (or not well), how did this relate to contextual circumstances, and what are the implications for the different contextual circumstances of the new type of assessment?*

13. Can you tell me about the government's level of involvement and engagement with the national VSP?
    a. What should government engagement look like for a subnational PM?

Now I want to discuss, based on your experiences with the national PM, what changes, if any, would need to be made to effectively do this at the sub-national level. ***(For CEs)*** *if they can highlight if they think some of these suggested changes are unique to this country. Were there unique implementation strategies at the national level?*

14. What changes, if any, do you think would need to be made to who is engaged in the process and why?
    a. *Probe:* government, INGOs, local NGOs, etc
    b. *Probe:* Are there any essential people who would have to be involved? When should they be engaged? Why? And to what level should they be engaged?
    c. *Probe:* Whose sign-off would be critical for success?
    d. *Probe:* Level of central govt involvement in the subnational?
15. What changes, if any, do you think would need to be made to how engagement occurs and why? For example, via consultants, working groups, steering committee, etc.

16. What changes, if any, do you think would need to be made to the data collection process and why?
    a. *If interviewee is stuck:* This could be anything from interviews, PM process itself, initial stages of getting people on board and sensitization, and info available – and pulling in information to make it relevant and scorable
17. What changes, if any, do you think would need to be made to the scoring process and why?
18. (adaptive/technical to understand contextual circumstances) What if any were any key enablers of success at the national level that you think need to be replicated at the subnational level?
19. (adaptive/technical to understand contextual circumstances) What, if any, challenges did you face at the national level that you think might impact the success of a sub-national assessment?
    a. *Probe:* How could these challenges be addressed?

Wrap-up

20. PHCPI hasn't yet taken a position on whether it will conduct external validations and officially sign-off on and post sub-national VSPs. In [country] context, do you think external validation and PHCPI endorsement are important? Why or why not?
21. PHCPI designed the PM assessment tool and process so that results across countries could be comparable. How important or unimportant do you think comparability across sub-national areas in [country] would be?
22. How important or unimportant do you think it would be for sub-national PM results to be comparable to national results from this country? From other countries?

Is there anyone else that I should speak with that you worked on the national VSP with who can inform our adaptation process?

8.5.2. Qualitative Interview Guide for Government Representations

Semi-structured Interview Guide for in-country working group representatives:

Provide background context:

- ***Purpose:*** *My objective is to understand how the process and content of the Progression Model assessment could be adapted and used at the subnational level based on the organization of the health system.*
- ***What will happen:*** *If decide to volunteer, you'll be asked to participate in this 1 interview, which includes questions regarding subnational governance and authority structures and adapting the PM in different contexts*
- ***Time required*** *~45 minutes*
- ***Confidentiality:*** *Your responses to interview questions will be kept confidential, I will not be sharing name, but will be identifiable by role and country.*
- **Ask to record**

Intro question:

1. Can you tell me what your specific role was while completing the national level VSP?

National level questions:

2. Can you tell me what the purpose of doing the national level VSP/PM was?

3. What, if anything, do you think changed or happened as a result of conducting a VSP?

4. How, if at all, do you think a sub-national VSP could be used in [country]?
    a. *Probe:* What are specific needs? What would the purpose of a subnational VSP be?
5. To what extent, if any, do you think there is interest in conducting a subnational VSP?
6. How, if at all, does interest in a subnational VSP differ from interest in a subnational Progression Model?

Subnational power and decision-making

7. Would you describe [country's] health system as centralized, decentralized, or something else?
8. In general, can you define the decision-making relationship between the subnational and national government?
    Probe: If any, that power is deferred to the subnational?

Follow-up questions to table exercise:

9. Depending on how things are answered for subnational, probe **WHO** is doing it and **HOW** to understand the delineation in authority.
    Probe: My understanding from the table exercise is that in your country, the central govt has responsibility for XX in the health sector, but subnational (districts/regions/provinces) are responsible for XYZ. Can you explain WHO is doing what at these levels and HOW so I can better understand the amount of authority and autonomy at each level.

Subnational content

10. Based on how power and decision-making is allocated to the subnational level, how, if at all, do you think the content of the Progression Model would need to change?
    a. Are there any measures or topic areas that would no longer be relevant?
    b. Are there any measures or topic areas that would need to be significantly reframed—ie, not just changing "national" to "subnational"—to be relevant?
        1. *Probe: An example of a significant reframe – Are we asking the right questions to get an accurate understanding of governance? Inputs? And population Health and facility management? Does the language need to be changed or questions and topics completely reframed in order to make sense at the subnational level?*
        2. *Probe:* For example, are we asking the right questions to get an accurate understanding of PHC subnational capacity, Measure 1(Primary Health care policies) Measure 2 (Leadership) Measure 7 (Priority setting), inputs/funds/workforce, surveillance?
    c. Are there any topic areas that you think would be essential to a valuable subnational PM that would need to be added to the assessment?

Subnational Process

***Aim: to understand what worked well (or not well), how did this relate to contextual circumstances, and what are the implications for the different contextual circumstances of the new type of assessment?*

11. Can you tell me about the government's level of involvement and engagement with the national VSP?
    a. What should government engagement look like for a subnational PM?

Now I want to discuss, based on your experiences with the national PM, what changes, if any, would need to be made to effectively do this at the sub-national level

12. What changes, if any, do you think would need to be made to who is engaged in the process and why?
    a. *Probe:* government, INGOs, local NGOs, etc
    b. *Probe:* Are there any essential people who would have to be involved?
    c. *Probe:* Whose sign-off would be critical for success?
    d. *Probe:* Level of central govt involvement in the subnational?

13. What changes, if any, do you think would need to be made to how engagement occurs and why? For example, via consultants, working groups, steering committee, etc.

14. What changes, if any, do you think would need to be made to the data collection process and why?
    a. *If interviewee is stuck*: This could be anything from interviews, PM process itself, initial stages of getting people on board and sensitization, and info available – and pulling in information to make it relevant and scorable

15. What changes, if any, do you think would need to be made to the scoring process and why?

16. (adaptive/technical to understand contextual circumstances) What if any were any key enablers of success at the national level that you think need to be replicated at the subnational level?
17. (adaptive/technical to understand contextual circumstances) What, if any, challenges did you face at the national level that you think might impact the success of a sub-national assessment?
    a. *Probe:* How could these challenges be addressed?

Wrap-up

18. PHCPI hasn't yet taken a position on whether it will conduct external validations and officially sign-off on and post sub-national VSPs. In [country] context, do you think external validation and PHCPI endorsement are important? Why or why not?

19. How important or unimportant do you think it would be for sub-national PM results to be comparable to national results from this country? From other countries?

8.5.3. Qualitative Interview Guide for Ghana, separate since the country already gave preliminary thoughts to the subnational adaptation of Progression Model

Semi-structured Interview Guide for Ghana

Provide background context:

- ***Purpose:*** *My objective is to understand how the process and content of the Progression Model assessment could be adapted and used at the subnational level based on the organization of the health system.*
- ***What will happen:*** *If decide to volunteer, you'll be asked to participate in this 1 interview, which includes questions regarding subnational governance and authority structures and adapting the PM in different contexts*
- ***Time required*** *~45 minutes*

- ***Confidentiality:*** *Your responses to interview questions will be kept confidential, I will not be sharing name, but will be identifiable by role and country.*
- **Ask to record**

Intro question:

1. Can you tell me what your specific role was while completing the national VSP?
2. What do you expect your role will be for the subnational PM being planned?

National Level Questions

3. Can you tell me what the purpose of doing the national level VSP/PM was?

4. What, if anything, do you think changed or happened as a result of conducting the national VSP?

5. Seeing that planning is underway for a subnational PM, can you tell me what prompted the interest in applying the PM to the subnational level?

    a. *Probe:* What are specific needs for the subnational PM?

    b. How did you decide which level to apply the tool at? And to how many subnational units?

Subnational power and decision-making

6. Would you describe Ghana's health system as centralized, decentralized, or something else?
7. In general, can you define the decision-making relationship between the subnational and national government?
    Probe: If any power is deferred, what is deferred to the subnational?

I'd like to spend some time talking through the table you completed. …

8. Depending on how things are answered for subnational, probe **<u>WHO</u>** is doing it and **<u>HOW</u>** to understand the delineation in authority.

Subnational content

9. Based on how power and decision-making is allocated to the subnational level, how have you been thinking that the content of the PM needs to change in order to be most useful at the subnational level?

Probes:

a. What are the measures or topic areas which are no longer relevant at the subnational?
b. Are there any measures or topic areas that need to be significantly reframed—ie, not just changing "national" to "subnational"—to be relevant?
    i. *Probe: An example of a significant reframe – Are we asking the right questions to get an accurate understanding of governance? Inputs? And population Health and facility management? Does the language need to be*

changed or questions and topics completely reframed in order to make sense at the subnational level?

ii. *Probe:* For example, are we asking the right questions to get an accurate understanding of PHC subnational capacity, Measure 1(Primary Health care policies) Measure 2 (Leadership) Measure 7 (Priority setting), inputs/funds/workforce, surveillance?

iii. *Probe:* What do we need to know to make these changes?

c. Are there any topic areas that you think would be essential to a valuable subnational PM that need to be added to the assessment?

Subnational Process

***Aim: to understand what worked well (or not well), how did this relate to contextual circumstances, and what are the implications for the different contextual circumstances of the new type of assessment?*

10. Can you tell me about the government's level of involvement and engagement with the national VSP?
    a. What should government engagement look like for a subnational PM?

Now I want to discuss, based on your experiences with the national PM, what changes, if any, would need to be made to effectively do this at the sub-national level

11. What changes, if any, do you think need to be made to who is engaged in the process and why?
    a. *Probe:* government, INGOs, local NGOs, etc
    b. *Probe:* Are there any essential people who would have to be involved?
    c. *Probe:* Whose sign-off would be critical for success?
    d. *Probe:* Level of central govt involvement in the subnational?

12. What changes, if any, do you think need to be made to how engagement occurs and why? For example, via consultants, working groups, steering committee, etc.

13. What changes, if any, do you think need to be made to the data collection process and why?
    a. *If interviewee is stuck*: This could be anything from interviews, PM process itself, initial stages of getting people on board and sensitization, and info available – and pulling in information to make it relevant and scorable

14. What changes, if any, do you think would need to be made to the scoring process and why?

15. (adaptive/technical to understand contextual circumstances) What if any were any key enablers of success at the national level that you plan to replicate at the subnational level?

16. (adaptive/technical to understand contextual circumstances) What, if any, challenges did you face at the national level that you think might impact the success of a sub-national assessment?
    a. *Probe:* How will these challenges be addressed?
    b. *Probe:* What do you anticipate being major challenges with the subnational implementation?

Use

17. How do you expect subnational units to use their PM assessment?

18. PHCPI hasn't yet taken a position on whether it will conduct external validations and officially sign-off on and post sub-national VSPs. In [country] context, do you think external validation and PHCPI endorsement are important at the subnational level? Why or why not?

19. How important or unimportant do you think it would be for sub-national PM results to be comparable other subnational units? To national results from this country? To national results from other countries?

8.5.4. Qualitative Interview guide for Punjab, Pakistan, respondents – different since this is the only subnational adaptation

Semi-structured Interview Guide for Pakistan

Provide background context:

- ***Purpose:*** *My objective is to understand how the process and content of the Progression Model assessment could be adapted and used at the subnational level based on the organization of the health system.*
- ***What will happen:*** *If decide to volunteer, you'll be asked to participate in this 1 interview, which includes questions regarding subnational governance and authority structures and adapting the PM in different contexts*
- ***Time required*** *~45 minutes*
- ***Confidentiality:*** *Your responses to interview questions will be kept confidential, I will not be sharing name, but will be identifiable by role and country.*
- **Ask to record**

Intro question:

1. Can you tell me what your specific role was while completing the subnational level VSP?

Sub-national level questions:

2. Can you tell me what the purpose of doing the sub-national level VSP/PM was?

3. What, if anything, do you think changed or happened as a result of conducting a VSP?

Subnational power and decision-making

4. Would you describe [country's] health system as centralized, decentralized, or something else?
5. In general, can you define the decision-making relationship between the subnational and national government?
    a. *Probe:* If any, that power is deferred to the subnational?

Follow-up questions to table exercise:

6. Depending on how things are answered for subnational, probe **WHO** is doing it and **HOW** to understand the delineation in authority.
   Probe: My understanding from the table exercise is that in your country, the central govt has responsibility for XX in the health sector, but subnational (districts/regions/provinces) are responsible for XYZ. Can you explain WHO is doing what at these levels and HOW so I can better understand the amount of authority and autonomy at each level.

Subnational content

7. PHCPI is now considering making a sub-national specific progression model. My understanding, though, is that you used the national-level tool in Punjab. Overall, how well or poorly do you think the national-level tool worked for Punjab?
8. If PHCPI were to make a subnational tool for use in other countries, or even other provinces of Pakistan, how, if at all, do you think the content of the Progression Model would need to change?
    a. Are there any measures or topic areas that you did not find to be relevant?
    b. Are there any measures or topic areas that would need to be significantly reframed—ie, not just changing the language to "subnational" as we did—to be relevant? Governance?
    c. Are there any topic areas that you think would be essential to a valuable subnational PM that would need to be added to the assessment?

Subnational Process

***Aim: to understand what worked well (or not well), how did this relate to contextual circumstances, and what are the implications for the different contextual circumstances of the new type of assessment?*

9. Can you tell me about the government's level of involvement and engagement with the VSP?
    a. In your opinion, what would ideal government engagement need to look like for a subnational PM? Both from the subnational and central government.

10. In order to strengthen a subnational PM, what changes, if any, do you think would need to be made to who is engaged in the process and why?
    a. *Probe:* government, INGOs, local NGOs, etc
    b. *Probe:* Are there any essential people who would have to be involved?
    c. *Probe:* Whose sign-off would be critical for success?
    d. *Probe:* Level of central govt involvement in the subnational?

11. In an ideal sub-national PM assessment, what changes, if any, do you think would need to be made to how engagement occurs and why? For example, via consultants, working groups, steering committee, etc.

12. In an ideal sub-national PM assessment, what changes, if any, do you think would need to be made to the data collection process and why?

13. What changes, if any, do you think would need to be made to the data collection process and why?
    a. *If interviewee is stuck*: This could be anything from interviews, PM process itself, initial stages of getting people on board and sensitization, and info available – and pulling in information to make it relevant and scorable

14. In an ideal sub-national PM assessment, what changes, if any, do you think would need to be made to the scoring process and why?

15. What if any key enablers of success were there in completing the provincial PM that you would want to share with other subnational PMs?

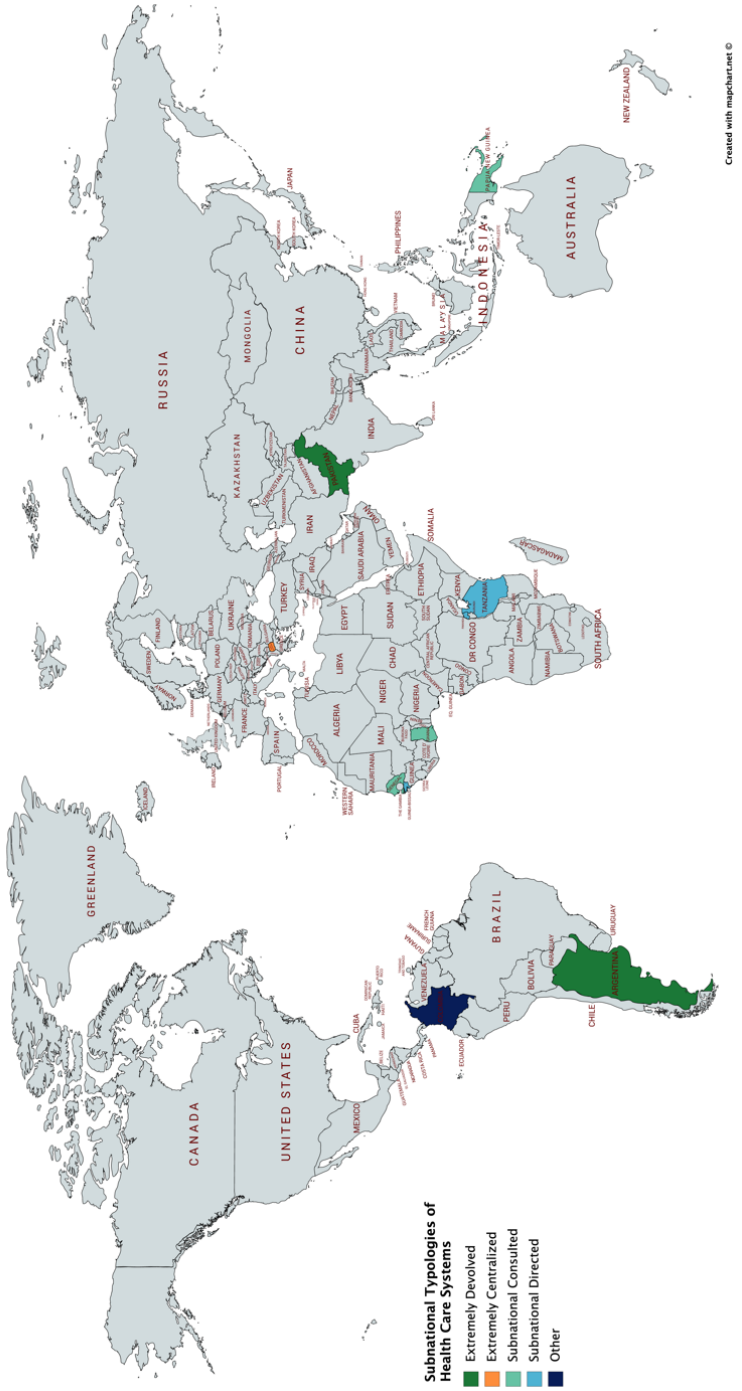
16. What were challenges or detractors that you faced while competing the PM at the provincial level, and how could those challenges be addressed in future subnational PMs?

Wrap-up

17. PHCPI designed the PM assessment tool and process so that results across countries could be comparable. How important or unimportant do you think comparability across sub-national areas in [country] would be?
18. How important or unimportant do you think it would be for sub-national PM results to be comparable to national results from this country? From other countries?

Is there anyone else that I should speak with that you worked on the national VSP with who can inform our adaptation process?

8.6. Appendix F. Countries Included in Study and their Classification based on the Created Classification Structure



8.7. Appendix G. Changes required for Adaptation of Subnational Progression Model

General Modifications to the Progression Model Processes

Process Changes
• Shorten tool and make leaner • Allow for more time to work through it • Better sensitization process garnering buy-in • Better explanation of measures, include examples • Structured advice on how to proceed once country has data • Streamline the process, too many excel files • Change some measures to just be survey questions • Allocate appropriate resources – financial and labor – for data collection • Identify strong stakeholders to accelerate process
Data Collection Changes
• Include examples of best practices from other countries – ie. most informative interview stakeholders • Conduct focus group discussions instead of 1:1 interviews • Collect some measures via a survey instead of interviews • Create only 1 working group in-country to streamline efforts • Determine methods for how to address lack of data in countries • Begin process by having an agreed upon definition of primary health care at federal and subnational levels
Scoring Process Changes
• Rework scoring processes so that it is not based on the lowest performer in-country/subnational unit to reflect reality and diversity of situation • Scoring workshop needs an external moderator in order to keep process moving and person is not attached to outcomes • Provide gradation of results throughout subnational setting showing distribution curve to capture variance – helpful for policy makers • Improve system regarding revisiting scores after scoring workshop to work through discrepancies
Stakeholder Changes
• Subnational government, regional director, and chief medical officers • Conduct rapid stakeholder analysis to determine who is most important to interview and include in working group • International Agencies • Donors • Faith-based organizations • Private sector • Actively engage MoH and other critical agencies leading PHC – equally • Capture voices at the bottom from marginalized communities

Measure Additions
• General language adaptations to make it from National to a Subnational tool • Create more subcomponents among measures • Referral systems • Service delivery systems – capture specifics on *how much, maturity, and capacity* of the service delivery models • Specifics of information systems • Capacity of human resources • Translation of how federal laws are (not) applied to subnational levels • Donors and faith-based organizations • Insurance and private sector

8.8. Appendix H. Key Features and Specific Subnational Typology Modifications

Extremely Centralized

- Not applicable, a subnational Progression Model for this set is not relevant since the federal government manages all of the primary health care system and a subnational government is irrelevant and has no authority over it.

Extremely Devolved

Key features:

- Subnational government manages all entities except for finances

Changes:

- Governance and Leadership Measures: adapt to understand how subnational strategy is tied to federal; how leadership reports to federal
- Inputs Measures: understand how central budget is allocated to subnational
- Population Health and Facility Management: capture lowest levels opinions

Subnational Consulted

Key features:

- **Leadership:** central government selects subnational leadership
- **Finances:** OOP and taxes collected and fed up to the national level and then redistributed down through national insurance funds ; manage salary payments
- **Service Delivery:** designed at national level, implemented at subnational
- **Policies:** MOH sets policies and strategies with consultation of subnational, local level determines priorities and some vertical health programs; each subnational unit determines priorities and how much it will influence and address federal policies
- **Standards:** set at central level and some flexibility with how to adapt

Changes:

- **Governance & Leadership:**
  - Understand how policy and priority setting triangulates among different levels of government; how different multi-sectoral stakeholders interact
- **Inputs:** remove
  - Financial mgmt systems (m23) most likely aren't systemized and remuneration (m24) - remove
  - Competencies (m20) and CHWs (m21) set at central – remove
- **Population Health & Facility Management:**
  - Collaboration vs empanelment (m27)
  - Additions: Effectiveness of service delivery models, modalities of coordination among stakeholders, information system specifics

Subnational Directed

Key Features

- More centralized than 'Consulted' countries
- **Leadership**: Central government appoints leadership to all subnational units – all the way down
- **Finances:** Central government collects taxes, sends budget down, and is determined from budget and donor aide
- **Service delivery:** no decision-making power over it, but responsible for executing

- **Policies:** fully owned and implementation oversight by central government (some invited to participate in workshops but not all); create strategies to execute on national plans
- **Standards:** established by central and donors

Changes

- **Governance & Leadership:**
  - Can remove policy measures - or change to see how they're relevant to subnational
  - Given donor presence – need to unpack how different multi-sectoral stakeholders interact (m5) donors and faith-based organizations
- **Inputs:** data isn't always there
  - Better definition of basic equipment m10
  - Drugs and supplies (m9-11) – data won't exist
  - Facility Infrastructure (m13 distribution determined at Central so remove 14)
  - Workforce (m18-21), remuneration (m24) all determined at Central level - remove
- **Population Health & Facility Management**:
  - Merge m32 and m33

8.9. Appendix I. Illustrative Quotes

Progression Model Strengths

So when we found out a few things, actually, the top leaders in the ministry were not necessarily aware of. So it is provoked a shock, sometimes a denial, sometimes discussions. But eventually we had the minister who was open to seeing what, what does not go well, also, I think so as a result, it's good several questioning and the issue improvements.

- *Consultant, Category 4: Subnational Directed*

It showed us, our people can get organized and share things coherently and systematically.

-Government Representative, Category 2: Extremely Devolved

It was so obvious the excitement was for the progression model [over the rest of the VSP]. You know, you could say the Progression Model is, pardon my choice of words, but it is the sext part of the VSP.

-Government Representative, Category3: Subnational Consulted

The dialogue [scoring workshop] is the only part [of the Progression Model] that is helpful.

- *Country Engagement Lead, Category Other*

-

What I really liked about the PHCPI approach is that it somehow disentangled a little bit the concept of primary healthcare into 33 indicators that bring the attention to areas of, of primary health care that sometimes go a little bit unnoticed. For example, no one had an idea what empanelment was. And that's partly because there is no empanelment but Also initiate a discussion on should we be doing something like this? It also, I think that while the actual tool would be useful for management meetings for more strategic discussions when they plan the annual work plans and things like that, the development of the tool, feeling these and going through the different dimensions, I think would be very useful for the teams to conceptualize primary healthcare in a broader, more comprehensive way that is currently not there.

-Consultant, Category 3, Subnational Consulted

Modifications for Subnational

But I do remember there was some questions that I feel like we're more about, like setting policies, which I feel like may not be as relevant for the subnational level, although it might be interesting to still ask those questions to be able to triangulate like future national level Vital Signs Profiles.

-Country Engagement Lead, Category 3: Subnational Consulted

Definitely reframe [the measures]. The measures are super important. These are some of my favorite measures, because this is where the kind of like we're terrible as well, the world are trying to conceal it. But I think the way like they're awarding points there is slightly problematic. It shouldn't be like in terms of percentages, I think it has to be in terms of questions, the way like first few measures are organized. Is this condition being met, is this

condition being met is you know, XYZ. Do they have this to that and then we can go ask them to arrange group of people starting from the leadership at the top going to the district level folks as well. And then also going to rural health centers and basic health units to ask the same kind of questions from people at different levels and different job descriptions. I think those kind of questions offered clarity to the interviewee as well.

-Consultant, Category 2: Extremely Devolved

Like, you can have a different methodology to assess the level of maturity of the primary healthcare system at the sub national level, or you can have one unified methodology that is sensitive enough that it can reflect the diversity of situations that you would find across the country.

-Country Engagement Lead, Category 3: Subnational Consulted

Another thing where I believe there's potential to explore a little bit further in the Progression Model, if we take it to the subnational level is on service delivery strategies and mechanisms for example for planning of health services, micro planning supervision schedules for health facilities. I think the progression model was useful in kind of giving a taste of that. But because it was at the central level, there wasn't really a need to go too much in depth in this in this regard. But I do think that it would be interesting to explore, for example, in terms of where are the strategies to ensure coverage of the last mile? How do you organize your mobile clinics to ensure that service that needs to be delivered with a certain frequency? How do you integrate different services that are verticalized? I don't know. I think that these are elements where the progression model already has some aspects that were the subnational level, at least in [country] so heavily involved. that there might be potential to unpack that even further.

- Consultant, Category 3, Subnational Consulted

Oh, making leaner and faster, I wish we had done that, okay. For the actual data collection, having less people involved like making it more like a consulting contract, rather than like a government initiative project. So I think that you have to distinguish between collecting the data and then in the second step, getting everyone on board on the same scoring and on what the implications of those are for health service delivery. In the first place, which is what the progression model I think is mostly about the data collection, or what most workers have often, the data collection that I would really just give to one or two external consultants, tell them get us this data and work together with the government if necessary, get the sign off from them. But then it's your responsibility to get that data and have them do what whatever they do to get the data and to get interviews. Instead of waiting for like for a long sign off from government and thinking about who's involved in the validation process and working together with WHO hnd I don't know who else. So there, I would just try to get the data in a faster way.

- Consultant, Category 4, Subnational Directed

For the sub national level, it would be absolutely insane to do it unless it was just for a few of the department. I think I'd be totally unreasonable like it might be useful for a few of the places that are doing interesting thing. And that have a large population. And in that case, it

would require Yes, that adaptation of the governance leadership measures, okay, primarily, and a better adaptation for [country] specifically more for the facility management.

- Country Engagement Lead, Category Other

So I think it's kind of ridiculous to spend so much time on the triangulation of the inputs when you have hard data to tell you the answers. But for many of those things, and [country] was a little bit harder, but in general, I think it's just ridiculous. Not such a waste of time. When you also have information on the facility management that is available in surveys then why waste your time and try doing interviews so much on that, okay.

- Country Engagement Lead, Category Other

So I think that's a that's a very good question. I think that focus groups in the future is the way we so the way we did it was so that environment during the screening, so a lot of things are being re-discussed. And we felt that one way of taking this forward eventually could also be that you make focus groups of senior people like a 5-6 people, and especially on the government level. We felt that because of course, I mean, very senior people, they some title football people think that junior people say, they actually then started having their own discussions. So we felt that that that discussion very critical as well to the actual output of the of the of the rubric. Because, now that they were there, they were actually discussing it and they were building some pretty constructive arguments against each other. And we felt that those were actually bringing much better input than we had what we had seen in a lot of the interviews. So perhaps focus groups in the future would be away.

- Government Representative, Category 2: Extremely Devolved

But once we decide to implement, we definitely need to constitute the rights group is to oversee the work. And with regards to how much government is involved, in [Country], the Ministry of Health is devolved from the health service. So the health service we oversee over 70% of service delivery in the country. But of course, the other 30% which is being provided for by the religious Association. So that we call them Christian Health Associations of [Country]. And also the Islamic health facilities etc.. quasi government, they are in the private sector. They report to the Ministry of Health. So you can't say you won't change and lead a change with the institution that governs 70% of the health service delivery in [Country]. It means that you can only have changing 70% maximum. And that may not be enough. So, I think that yes, the [Health Service] can continue leading the process, but it will need also to have the active involvement of the Ministry of Health so that it makes it more nationalistic than it currently is.

-Government Representative, Category 3: Subnational Consulted

Anxiety and changes to scoring

They're not fully aware of the full picture, nor do they want to hear what the full picture is? There multiple reasons, some of them are aware of the full picture, but they don't want their country to get a bad score as if it's like a competition. So we had to read over and over again, that this is, I mean, this is where all that money from the World Bank that loan that are [country] is taken, you should be thinking about what's the right way to use it. This way, we'll

be able to identify what are the weak areas? So let's be honest about those weaknesses. Right. But I mean, of course, there were big shorts as well, there were, there's only so much that we could do. And we were told that we need to have very, like, you know, good working relationships with them. So we had to like go with what they were saying. So I think that the wanted to ensure that we don't get like a very bad score. Then in addition to it, I think some of them also to get as like an attack on their performance. So for instance, if it's about communicable disease or something that director kind of at One point got a bit like, you know, they started taking it personally Then why have you guys given it like a score of 1 and 2 and not 3 and 4? Right. So in terms of that as well, we wanted to make sure that it doesn't go out at a certain specific department is underperforming. So I think we can do that scoring at different levels that might give us a more accurate depiction of how things are. But ultimately, the problem is that you still have to get that approval from the secretary.

- Consultant, Category 2: Extremely Devolved

-

[We] need fair assessments of the regions. For me [inaudible] end up with some biases. Like I said earlier, people don't just see this as assessment of PHC in their region it has an implication on the performance of the leaders of PHC in their region. If we allow people whose salary and livelihood depends on the assessment, are they going to tell us the truth on what exactly happening in PHC at that level? Yes, an independent consultant would still be useful at that level to check what is happening and to see if people respond to questions the way they should be responding. And there should be 1 technical working group.

- Consultant, Category 3: Subnational Consulted

For me, that will be less confusion or tension at subnational level because they will give the data they have, if they don't have data that's components will stay empty. Subnational is less political really, okay? But subnational not actually you will be more willing to show. If educate them. Remember, we have also every scoring process of this. So all of them in front of the president they want to be well seen. But if you educate them and say, you know what we really want to know how well you are doing whether you have enough input to produce the outputs required, if you have the right processes, so that people can understand where you need help. They are less political and they will cooperate fully. They will be more willing to show what is not going on so well. So for me, I think oh having a competent external organization that oversees it and expand knowledge organization.

- Consultant, Category 4: Subnational Directed

I've seen it like very clearly in [country], where if I ask the question to your colleagues, how do we reflect the diversity of maturity in the country? The answer I get is that you have actually to score at the level of the lowest performing unit in a country which then I think defeats the purpose of the instrument because it means that every country should be scored one on everything. Basically the balancing exercise we've done is try to find the scoring that reflects the situation, which is a sort of average of how the country's doing ,which really doesn't exist, which is a bit a fiction. So I think that, to me, the bigger question for the progression model is, how can we both give a sense of how mature the country is on various elements of its performance and its capacity, while at the same time reflecting the diversity

that is observed within the country. And so, in some countries where there are few standards implemented, you will see a lot of variability, in some others very low variability.

-Country Engagement Lead, Category 3: Subnational Consulted

Capacity at the Subnational

But if you wanted to do a progression model at sub national level, that would take a lot more effort. That being said, what I would argue is that among the 32 standards of the progression model, some of them should not be calculated at sub national levels. So, policies and governance mechanisms are typically national level decisions that will not change at sub national level. And for some indicators where we try and to get quantitative and qualitative indictors, for example human resources, you would have in the national level already the regional result. So, I think that (inaudible) already give us a lot of hints about variation between sub national jurisdictions and so we could actually repurpose a lot of the content of the progression model to enrich the analysis that is done at sub national level without much additional effort. And of course, it depends on what data is available.

-Country Engagement Lead, Category 3: Subnational Consulted

I mean in terms of ownership, it would be easier, it is easier to develop the tool at the sub national level, as I said, in terms of administrative path, the governor is holding the issue. If we stay a long time, people they can go in the routine as well. At the district level, as well, we see the same, we have what we call the "prefet" on the administrative path. But so far what we have seen with the technical path, people were very much interested in measuring themselves their state of health and I'm very optimistic for the sub national and local level, even in admin like the national level now, if you had some things about that you want to be too visible because of coronavirus. We have some big in parity we don't care about. But at the national level, the commitment is very high.

- Government Representative, Category 3,:Subnational consulted

Well, they were interested in conducting it. That's a different question whether they would take it upon themselves. One very common complaint that you hear from people in the government is always, we don't have any data. Even though there's some data, and it's often a question of working with the data. But yeah, so then in general, though, they would express interest. Let's put it that way. And then the next thing what they take it upon themselves to conduct it? No, because they don't have the capacity.

- Consultant, Category 4: Subnational Directed

If they think it's relevant to them, then they'll make it a priority. I think that's a it's probably how we package it, make sure that we find relevance, but sometimes trying to cater for every need, you may lose the essence of what you're actually doing. So I think that if as a country, or as a region, if it is to measure primary health care system performance, it's a regional task, your aim is to ensure that you're measuring that performance as objectively as you can, is to ensure that whatever assessment you're using, it's valid, it's reliable, and that you can compare with other regions and then is reflective of whatever is happening there. And more importantly, that you can use it to inform progress.

- Government Representative, Category 3: Subnational consulted

The issue that must be improved significantly, because people are not really held accountable for what they do and what they're supposed to do. So here he it's not all really respected and followed through [on]. In terms of how it operates right now. Then at the subnational level, when I went to speak when I have I can contact it many people at the municipality level at different municipalities, so to schedule an interview, and I was told, like we have nothing to talk about, we are not responsible for healthcare. So you know, I don't know how to measure what's happening at the local level, when things are not organized at the local level…..

Well, the way things are here the how everything works. If there is some message from the national level that we are doing this then everybody cooperates. And people usually do not do anything on their own unless it's approved or not approved, but permission given from above. For this country, that's how it works.

- Consultant, Category 1: Extremely Centralized

National Government's Role with Subnational Progression Model

I think that's what happened in [country], that there are people who have more analytical capacity, who can actually help the regional level to be more methodologically sound and really help them carry out their analysis with greater accuracy or consistency in application of the methods. So people who have done it in other regions, can share experiences, as I think that there's a need to ensure consistency in the approach and the central government can play a role in that. And then, of course, the central government can also provide the data when there is data that's nationally and sub nationally available. They can do a lot of the heavy lifting. So that the sub national level can really focus on some diagnosis, but more importantly, on what they can do to improve the performance of services. Because it's really their job.

-Country Engagement Lead, Category 3, Subnational Consulted

The central government engagements, [the subnational is employed by the national level] so if they come up with something and it's not accepted by the national level, then we're at square one. My thinking is that the national level should play an oversight role.

- Consultant, Category 3, Subnational Consulted

8.10. Appendix J: Harvard University IRB Exemption

Thank you for using the HLC IRB Decision Tool!

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If you have questions or need assistance:

1. Consult the Investigator Manual
2. Contact your department-assigned IRB Review Specialist
3. Contact the Quality Improvement Program (QIP)

Check all of the items below that apply to your project:

☐ My activities are a *systematic investigation*.

Systematic: Having or involving a system, method, or plan
Investigation: A searching inquiry for facts; detailed or careful examination.

☑ My activities are designed to *develop* or *contribute* to *generalizable knowledge*.

Develop: To form the basis for a future contribution.
Contribute: To result in.
Generalizable: Universally or widely applicable.
Knowledge: Truths, facts, information.

☐ Neither statement is true of my project.

Based on your responses, your project does not meet the federal definition of research and **an IRB application is not required**.

Please click the link above to review the federal definition of research and verify this information is accurate in relation to your project.

This decision was made based on the responses provided. Changes to your project could alter the outcome. For an accurate result, you may need to complete the decision tool again.

Please note that, although an IRB application is not required at this time, other requirements may still be necessary before these activities commence.

If you need documentation of this decision (e.g. for a publication), your options are as follows:

- The IRB can provide a formal Not Research determination as a courtesy for investigators who may want one for their files, but it is not required. If this is something you are interested in, you would need to:
  1. Submit an application using the Not Human Subjects Determination Form, *AND*
  2. Submit prior to beginning the project; the IRB cannot provide any retrospective determinations.
- As an alternative, click the red arrow below to advance to the next page where you will be able to download/print a copy of the summary of your responses. You can use that summary as documentation of your self-determination that your activities do not meet the definition of research.