HOW THE COVID PANDEMIC HAS INFLUENCED THE PROCESS OF PRIMARY HEALTH CARE REFORM PRIORITY SETTING: A CASE STUDY FROM PAKISTAN

by

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Abstract

Background: Primary health care is a critical component of health systems, but there is a relative paucity of information on the indirect impact the COVID pandemic may have on primary health care systems in low and low-middle income countries using a policy process lens.

Objective: This case study from Khyber Pakhtunkhwa in Pakistan is of a PHC reform agenda from 2020-2023 and aims to contribute to the understanding of the varying effects that the wide-ranging shock of COVID had on prioritization processes within primary healthcare reforms in the province, and early implementation of that reform.

Methods and conceptual framework: This analysis draws on 14 in-depth semi-structured interviews from key officials across the provincial government and the wider policy community, complemented with a document analysis. Results were analyzed using health systems themes drawing from a resilient health systems framework, coupled with a process tracing approach to describe the reform process. The outputs of reform analysis were then examined through a modified multiple streams framework/policy feedback theory framework to describe how well the framework could describe the drivers of the reform.

Results: The health systems analysis illustrates the breadth of health systems components relevant during the pandemic. Process tracing describes how a reactive public sector primary health care agenda pre-pandemic driven by external priorities evolved into a new reform agenda after the emergency phase of the COVID response. This evolution was contributed to by an increased ability to influence the allocation of resources due to increased political power from perceived successful management of the pandemic amongst health system leadership, a wider appreciation for gaps in health system performance, and sharing of learnings from the reform experience of the neighboring province of Punjab.
Conclusion: This case study illustrates the mechanics of how a ‘window of opportunity’ for reform in LMIC primary health care systems may have been opened due to the COVID pandemic, and how understanding the experience within the system of the pandemic could help inform a reform agenda using policy frameworks to help understand drivers of reform.

Keywords: COVID; resilient health systems; primary healthcare; Pakistan; policy analysis; multiple streams framework; policy feedback theory

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The planning for this research began in 2019 with a different research topic in mind, to be significantly delayed and radically altered by the pandemic. With such a significant shock to health systems, it seemed inappropriate not to pivot the topic of this research to reflect on the impact the pandemic may have on health systems going forward. I would like to thank all those who worked with me during the pandemic to support the global response in FIND, the ACT-Accelerator and all our partners.

I would like to thank all those who helped me in pivoting this research to focus on the effects of the pandemic. In particular, my advisor David Peters, who was willing to bear with me as my work intensified in the pandemic and the work on this dissertation slowed to a halt. I have also been lucky enough to draw on the guidance and insights of many including Caitlin Kennedy, Abdul Ghaffar, Abdulgafoor Bachani, Nukhba Zia, Duff Gillespie and Shannon Frattaroli.

I would like to express my deep thanks to the public sector health system team within the Department of Health in Khyber Pakhtunkhwa who were willing to work with me to develop a detailed understanding of what happened during the reform period. Their work in response to the pandemic and to pivot to a large-scale reform was immense and made a concrete difference to the lives of millions.
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<th>Description</th>
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<tbody>
<tr>
<td>BHU</td>
<td>Basic Health Unit</td>
</tr>
<tr>
<td>COVID</td>
<td>Global pandemic from the novel SARS-CoV-2 virus</td>
</tr>
<tr>
<td>DG</td>
<td>Director General of Health Services</td>
</tr>
<tr>
<td>DHO</td>
<td>District Health Officer</td>
</tr>
<tr>
<td>DOH</td>
<td>Khyber Pakhtunkhwa Provincial Department of Health</td>
</tr>
<tr>
<td>EPI</td>
<td>Expanded Program on Immunization</td>
</tr>
<tr>
<td>FY</td>
<td>Financial year</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GHS</td>
<td>Global Health Security</td>
</tr>
<tr>
<td>HIC</td>
<td>High income country</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resources</td>
</tr>
<tr>
<td>KP</td>
<td>Khyber Pakhtunkhwa province</td>
</tr>
<tr>
<td>LMIC</td>
<td>Low- and middle-income countries</td>
</tr>
<tr>
<td>MSF</td>
<td>Multiple Streams Framework</td>
</tr>
<tr>
<td>MTI</td>
<td>Medical Teaching Institutions</td>
</tr>
<tr>
<td>NHSP</td>
<td>World Bank National Health Support Program</td>
</tr>
<tr>
<td>PCMC</td>
<td>Primary Care Management Committees</td>
</tr>
<tr>
<td>PFT</td>
<td>Policy Feedback Theory</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary Healthcare</td>
</tr>
<tr>
<td>PTI</td>
<td>Pakistan Tehreek-e-Insaf Party</td>
</tr>
<tr>
<td>RHC</td>
<td>Rural Health Centre</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>UHC</td>
<td>Universal Health Coverage</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>US</td>
<td>United States of America</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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Reflections on study approach and reflexivity

This research draws heavily from a constructivist epistemology, and consequently acknowledging the background, experience, and perspectives of me as a researcher and its effects on the findings of this research is particularly important. While this is included in the methodology section of the manuscript, it is of such relevance in understanding this research that it was worthy of highlighting at the beginning of this manuscript. I have been active in the Pakistan health policy environment for many years through my roles in several organizations, including in technical leadership roles in major health reform efforts across multiple provinces of the country and enjoying a working relationship with many health stakeholders in country including several interview participants interviewed as part of this research. This included the Health Reforms Roadmaps initiatives in Punjab and Khyber Pakhtunkhwa provinces, as well as immunization reform efforts in Sindh and Baluchistan. These initiatives I have been part of have often been viewed as central to the health reform political agenda of provincial governments made up of several different political parties in Pakistan. My known association with these reform efforts could have influenced how interview participants emphasized certain topics or framed responses. For example, these reform efforts included a strong focus on performance management and facility input strengthening which was known to some respondents and could have impacted how strongly interview participants emphasized those elements. I was not directly involved in the COVID response in KP province beyond limited very early support in the first days of the response, nor was I involved in the formulation of the 2020 primary health care reform effort that is the focus of this case study. However, the engagement I’ve had in the province before this period and afterwards will potentially have impacted the results of this policy analysis, including my engagement in the Punjab primary health reforms which influenced the KP case study reform agenda. The depth and duration of my engagement in Pakistan has helped give me some cultural and contextual understanding in
which to understand these reforms. I am not fluent in Urdu and conducted these interviews in English, which is one of the official languages of Pakistan and is often the language of more formal communication at higher levels of government. If I were a researcher fluent in Urdu, however, it’s quite possible these interviews would have been more naturally conducted in a mix of Urdu and English, and this could have impacted the nature of the findings.

Because of this perspective, elements of this research may be challenging to assess through the traditional lens of reproducibility as having me as the researcher with my history of leading implementation in other reforms, and its consequent impact on my relationships with key interview participants would be a set of circumstances hard to replicate. Consequently, robustness of this kind of policy work needs to be viewed differently, using tools such as structured frameworks, rigorous qualitative analysis, and review by other authors. This engagement with the case study system under examination presented an opportunity to dive deep in frank discussion on system pressures and drivers with system leaders who may have not been so direct with a researcher considered more external or arms-length from the system. It also comes with a series of pre-conceived assumptions and impact from having me as a data collector, analyzer, and narrator of this policy research. Any limitations or incorrect assumptions made in this research are ultimately mine as a researcher also engaged in reform efforts in the country.
Chapter 1: Introduction and thesis overview

Introduction

The impact of the COVID pandemic has been profound. “COVID-19 has threatened the lives and livelihoods of everyone on the planet”, noted the Director General of the World Health Organization\(^1\). Within health systems, the impact of COVID has been significant, and there are signals that COVID may change the architecture and functioning of health systems for decades to come. Primary health care is a core component of resilient health systems\(^2,3\), and the indirect impact of COVID on the reform process within primary health care systems is important within the global health agenda.

Beyond the direct effects of the emergency response phases of the pandemic on PHC functions, there may be indirect effects on priorities within health systems driven by factors such as resource effects, changing perceptions on what’s important and new modes of operating. There are gaps in analysis of the impact of COVID on PHC in LMICs and the full implications of COVID on health systems may not be clear for some time, however the early steps in the policy process – namely prioritization of reform areas and actions – are amongst the first where the varying indirect effects of the pandemic may be visible.

This case study from the public sector primary health care system of the province of Khyber Pakhtunkhwa in Pakistan may contribute to addressing this knowledge gap on the impact of COVID on PHC in LMICs, and in advancing the use of policy frameworks to understand the agenda setting process in health systems. The KP case study has several useful paradigmatic elements which may be applicable to other LMIC health systems linked to its large size, gaps in performance and decentralized governance structure.

This case study has been developed through a primarily qualitative methods approach, drawing heavily from semi-structured interviews of key leaders within the provincial health
system, complemented with document analysis. The case study is organized using the resilient
health systems framework, complemented with a process tracing approach to describe the
evolution of priorities through the pandemic. Following this, the drivers of the phenomena seen
through the process tracing analysis are then examined through the lens of the hybrid policy
process framework to evaluate how effectively the framework describe the phenomena
observed. The implications of this work for health systems and for policy analysis in LMIC
health systems is then elaborated on, including the drivers of the reform effort and how these
may be present in other LMIC systems; as well as the value of a modified policy process
framework to conceptualize a primary healthcare reform effort.

**Study aims and significance**

The aim of this research is to contribute to understanding of the varying effects that the
wide-ranging shock of the COVID pandemic may have on prioritization processes and early
implementation within long-term primary healthcare reforms in low- and middle-income
countries (LMICs) as we enter a new era of the pandemic, and the WHO has ended the
designation of the COVID pandemic as a Public Health Emergency of International Concern. I
have defined this new era of the pandemic as the period moving beyond a purely emergency
response which characterized early 2020, to a period of transition following the first wave of
the response. This research was undertaken using a case study of a recent public sector health
systems reform process in the province of Khyber Pakhtunkhwa in Pakistan with comparisons
to historical priorities in the health system in the province prior to the pandemic to provide an
early inference on the likely effects of the COVID pandemic on the prioritization process in
primary health care policy making.

Understanding the varying effects of the COVID pandemic on long term policy making
processes within LMIC primary health care health systems is necessary to realizing global and
national aspirations for universal health coverage and may underpin strengthened global health
security. It may also help understand the impact of other shocks experienced by health systems,
including environmental disasters contributed to by climate change. Consequently, this case study from the province of Khyber Pakhtunkhwa in Pakistan aims to contribute to the understanding of the varying effects that the wide-ranging shock of COVID had on prioritization processes and early reform implementation within long-term primary healthcare reforms in the province.

For this research a narrow definition of primary healthcare was used, focused health services provision through public sector formal health facilities such as Basic Health Units (BHUs) in Pakistan, and community health workers such as Lady Health Workers. This is reduced in scope from typical expansive definitions of primary healthcare which include factors such as multisectoral policies impacting social determinants of health and wider aspects of social participation, as detailed in documents such as the Declaration of Astana. The reasons for this reduction in scope are two-fold. Firstly, it provides a more concrete environment to test public policy frameworks. Secondly, it is a sector of primary healthcare with clear policy responsibility in Pakistan within the provincial Department of Health which allows for clearer identification of policy stakeholders to interview.

This research focused on public sector policy within the primary health care system. While the private and informal sector play a critical role in the larger primary health care system in Pakistan, there is often limited engagement by policy makers and the role of the state vis-à-vis the private and informal sector in Pakistan is less well characterized.

This research focuses on the early stages of the policy development process where COVID’s impact on initial prioritization of focus areas and actions may be seen first, although includes a reflection on early implementation. Currently, the literature on the impact of COVID on PHC in LMICs focuses on the acute and direct impact on service delivery during the emergency response such reduction in routine service provision in areas such as childhood immunization coverage, or the scale up of emergency care. While research on the longer-
term direct and indirect impact of COVID on health systems has begun and complementary
research on public sector governance is fairly advanced, there is relatively limited research to-
date focused on PHC and LMICs using policy theories to guide analysis, and what research is
available to-date is described in subsequent sections of this chapter. Consequently, this research
will support deeper understanding of the longer-term health systems implications of COVID
in LMICs through improved conceptual understanding of the policy making process for PHC;
influencing policy guidance and support by country, regional and international organizations;
and identifying emerging trends in PHC and health systems reform for further study.

While the purpose of this research is not to assess whether the policy reform of the case
study from KP is ‘good’ or ‘bad’, a conceptualization of what makes a ‘good’ health policy (or
a ‘bad’ health policy) may be useful to understand the implications of findings. Characteristics
of a ‘good’ health policy typically focus on the policymaking process and include many
dimensions, but a simplified set would include the extent to which a policy is based on objective
data on health outcomes and evidence of impact⁹, the extent of stakeholder engagement in
policy development¹⁰, and the alignment with internationally agreed priorities that were strong
national priorities (such as the Sustainable Development Goals).

It is likely that the knowledge base described in the latter part of this chapter will grow
rapidly in this space over next few years, however there is a need for timely insights on the
varying effects of COVID on long-term PHC reform to help guide reform efforts happening in
the short term. A wide-ranging shock such as the COVID pandemic has elevated the
importance of healthcare in the public consciousness and public debate which in turn may
heighten the focus on health reform efforts. Providing timely insights could be valuable in
informing this heightened policy making environment.

**Dissertation organization**
This case study draws heavily upon key informant interviews to provide a policy overview of a reform process, describe the impact on the process of the COVID pandemic and advance policy theory as it relates to this case study. Key informant interviews were analyzed in three ways. Firstly, an analysis of the frequency in references to health systems components against the Haldane et. al. resilient health systems framework\textsuperscript{11} to provide a perspective on which health system components were most relevant during the COVID pandemic response. Secondly, an inductive memo writing analysis to identify major qualitative themes were structured using a process tracing methodology to describe the evolution of primary care reforms in the province during the pandemic. These results of these first two analysis approaches are described in Chapter 4. Lastly, the memo writing analysis was used to identify drivers of the reform process described in the second analysis against a modified policy process framework to assess the fit of the case study policy process with the modified Multiple Streams Framework/Policy Feedback Theory (MSF/PFT framework) bringing temporal elements of policy feedback theory into the MSF framework as described by Spohr\textsuperscript{12} and modifications proposed to improve fit for use in analyzing health policy in LMICs. This analysis is included in Chapter 5. Discussion on the implications in public health and recommendations are covered in Chapter 6.

This research includes both a policy analysis section and theory development. The policy analysis section focuses on describing how PHC priorities evolved in Pakistan during the pandemic period. The theory development takes these findings to evolve and combine policy analysis frameworks to provide a perspective on why these changes seen in the policy analysis occurred and weighs up the role of concepts such as ‘focusing events’ and the role of timing and sequencing of the policy process on the evolution of priorities in health systems.
Research objectives and questions

This larger aim will be broken down into research objectives using a temporal lens on the case study. Consequently, the three research objectives, with their relevant research questions are:

1) Identify key priorities for primary health care and its public health functions in the immediate pre-COVID era, and subsequently identify new and emerging priorities prioritized in primary health care reform efforts in following the initial emergency COVID response in Khyber Pakhtunkhwa (KP).

   a. What were key priorities and themes identified by stakeholders and document analysis in health policy discussions for PHC in KP in the period immediately before January 2020?

   b. What were key priorities and themes identified by stakeholders and document analysis in health policy discussions for PHC in KP from mid 2020 onwards after the first wave of COVID? Why did stakeholders have these priorities, which stakeholders had greater power and which priorities did they feel had the best prospects of proceeding currently?

2) Describe drivers of the change in priorities identified through a policy process framework.

   a. What were the drivers of the changes in priorities identified in question (1)? Which stakeholders held the most power and how did this power and influence dynamic change over time?

   b. How effectively can the drivers identified in question (2a) fit within a hybrid Multiple Streams Framework (MSF) and Policy Feedback Theory (PFT) framework?
c. How can a hybrid MSF and PFT framework be modified to better fit the reasons identified in question (1c)?

3) Describe early indications of the consequences on primary health care from the COVID pandemic, and propose recommendations which may improve future reform efforts.

a. What are the implications of the findings of the drivers of health policy priority change identified in 2a?

b. What are the implications of the findings of the modified hybrid framework developed in questions (2b and 2c)?

c. What are recommendations arising from the implications of this case study (3a and 3b) for health policy researchers, or for those engaged in health reform in Pakistan?

**Pakistan and Khyber Pakhtunkhwa health systems and political context**

Pakistan was declared an independent country in 1947, after independence from Britain and the partition of India. Pakistan’s population of approximately 241 million people\(^{13}\) is spread across four provinces, the federal territory and two administrative territories. Pakistan is classified as a Lower Middle Income country by the World Bank with a gross domestic product of $1,505 USD per person\(^{14}\).

KP is Pakistan’s third largest province, with a population of 41 million people\(^{13}\). KP sits between the larger province of Punjab and Afghanistan and includes large urban centers such as the city of Peshawar as well as geographically remote areas with low population density. Parts of KP have suffered from security issues including terror attacks and internal population displacement. Additional external shocks to the wider Pakistan system effecting KP
include economic issues and financial challenges, which have escalated since 2022. Pakistan is currently engaged with the International Monetary Fund for support to avoid a debt default, which has fueled an inflation rate of more than 30%\textsuperscript{15}.

The KP provincial government was elected in 2018 with a majority of seats going to the ruling Pakistan Tehreek-e-Insaf (PTI) political party. In January 2023, towards the end of the data collection for this case study, the government dissolved, and a caretaker government was appointed ahead of expected elections\textsuperscript{16}. A new Secretary of Health, Director General of Health Services and Minister of Health were all appointed during or immediately before caretaker government assumed leadership.

Average life expectancy in Pakistan is now 65.9 years, having increased from 61.1 years in 1990. There is, however, notable inter-provincial variation with Khyber Pakhtunkhwa province (along with Baluchistan) having seen the most modest gains\textsuperscript{17}. The biggest cause of mortality is neonatal disorders, however non-communicable diseases play an increasingly prominent role as a cause of morbidity and mortality, with ischemic heart disease and stroke both being in the top five causes of mortality\textsuperscript{17}. Disasters – both natural and political – have impacted the health system in Pakistan, and in KP. Examples include the devastating floods of 2022 which destroyed health facilities, displaced populations and increased the transmission of waterborne diseases\textsuperscript{18}, or the displacement of the population during military operations against extremists in 2009 limiting access to health services and increasing the transmission of communicable diseases\textsuperscript{19}.

The health systems policy literature on Pakistan has been largely concerned at a macro level with the slow trajectory of improvement in key health indicators linked to Millennium Development Goals and other global commitments\textsuperscript{5,20–22}. Priorities focused at health financing reform to address out-of-pocket costs and issues of the health workforce structure are most predominant\textsuperscript{23}. There is limited academic literature exploring political priorities in health
reform in Pakistan, however prioritization of UHC and PHC reform in the 2018 election manifestos of political parties may indicate tangible priorities relating to PHC in areas such as upgradation of PHC facilities and improved delivery care.

The health system model for KP is mixed, with the public sector system funded through general taxation. A social health insurance scheme exists at the secondary care level, which was expanded during the COVID pandemic and a possible expansion into primary and preventive care is being explored. Currently, however, the public sector primary health care system is funded through general government health budgets. Following devolution of authority for managing the health system to the provinces in 2010, accountability and ownership of the public sector system health lies within the provincial Department of Health. KP has a primary health care facility network of 887 Basic Health Units (BHUs) and Rural Health Centers (RHCs) who are staffed with clinicians and allied health staff providing basic curative as well as preventive health services.

The government response to the COVID pandemic by Pakistan has been described by several authors as relatively effective, both globally and compared to its neighbors, although a province-by-province view is typically not disaggregated. The most rigorous quantitative analysis comes from a ‘mid pandemic’ response multi-country study in 2020 which placed Pakistan 8th out of 35 countries based on relative rates of death and COVID severity as a proxy for how effective the public health and social measures were in a particular country at mitigating the worst of the pandemic.

Policy analysis of the reasons for this effective response notes the importance of an effective multisectoral response, with an early and responsive focus on surge hospital capacity. Gaps are noted, however, which impacted later interventions such as vaccine roll-outs such as weak primary healthcare, particularly in urban centers, and a reliance on ad hoc systems. Leaders of the national response have also published their own perspectives on what worked...
well, noting the multi-sectoral response and successes in surge hospital capacity\textsuperscript{8}. Primary research on the direct impact of COVID on the Pakistan health system shows similar trends, with surveys of frontline healthcare workers showing early pandemic fears on the risk of infection as well as fatigue, largely noting contributory issues such as concerns on infrastructure and logistics as well as communications within levels of the health system\textsuperscript{31}.

**Policy analysis narrative literature overview**

This section presents a selective overview of areas of research relevant to the context of this case study and the research paradigms from which it draws. It aims to provide a wider context to the case study research findings in subsequent chapters and its importance comes through providing more details (including history, descriptions, interconnections, and critiques) on policy frameworks and contexts which are later used in reference to the KP case study. Sources were identified through review of policy theories based on foundational research and frameworks in the field, consultations with experts and targeted searching of the academic literature. The academic literature search focused on identifying papers in health systems which drew on specific policy frameworks or concepts to understand how these foundational frameworks and concepts had been used in health systems research. A narrative review was chosen as an approach to pragmatically understand concepts of interest to this research and build a picture of the wider research context in which this research was undertaken, rather than aiming to be a fully comprehensive and objectively systematic review of the literature.

Policy analysis in health systems in LMICs is a relatively new area of interest, following calls in the 1990s for policy analysis to move beyond a focus on technical content only to include a focus on “politics, process and power”, with an increasing rate of publications including the subject\textsuperscript{32}. In the findings of this 2008 literature analysis, the authors note that health sector reforms were one of the most common areas studied, however focus on the earlier stages of the policy process such as policy development was uncommon. The authors also
noted that awareness of policy frameworks from outside the health sector such as MSF were rarely included in papers included in this review.

Kingdon included application of the multiple streams framework in health settings in his landmark book, with case studies of Healthcare Maintenance Organizations and health insurance in the US included\textsuperscript{33}. Subsequently, in the LMIC health systems space, MSF has been used in a variety of settings to characterize the process of agenda setting. Examples include antibiotic policy in Mexico\textsuperscript{34} and safe motherhood policy in Vietnam\textsuperscript{35}. Concepts within MSF such as ‘focusing events’ which are triggers to opening a policy window have been further detailed by Birkland\textsuperscript{36} and expanded on in the specific context of COVID\textsuperscript{37}. In this paper, the authors raise questions on if COVID truly represents a ‘focusing event’ – at least in the US context - due to its global nature and the gap between knowledge of events in the policy elite compared to the public and ask whether framing as COVID opening ‘multiple windows of opportunity’ may be a more fitting. Other frameworks used in health at a global and regional level such as that by Smith and Shiffman share much in common with Kingdon’s MSF streams such as a focus on the actors, the narrative and the political context\textsuperscript{38}. This framework has been used within countries to examine the role of factors such as advocacy in agenda setting in Nigeria \textsuperscript{39}.

The concept of path dependency in policy analysis is where policy development is influenced or hindered by events that have come before it. It has been characterized in several works, notably by Paul Pierson in descriptions of policy making by governments over time\textsuperscript{40,41}. Policy feedback utilizing the concept of path dependency and building on approaches such as Historical Institutionalism has been used to characterize processes behind health policy phenomenon in LMICs, although possibly with slightly less frequency than MSF. One example is the complexities of an overhaul of health financing policy in Ghana, which framed challenges in the implementation of a new health financing policy around “self-undermining
policy feedbacks” from interaction with existing financing arrangements\textsuperscript{42}. Concepts of ‘punctuated equilibrium’ described by Baumgartner can help conceptualize the tension between long established priorities and focusing events as triggers of policy change\textsuperscript{43}, as can the role of Pierson’s “conjectures” (role of sequencing and timing) in understanding policy evolution, and in understanding the potential relevancy of findings from environment to another\textsuperscript{41}.

There have been some efforts to-date to use policy process frameworks to describe the impact of COVID. Amri et al. have used MSF to describe public health policy responses due to the COVID pandemic through case examples of Canada and the US, with a focus on the problem, policy and politics streams of MSF\textsuperscript{44}. Other examples have explored specific policy areas, for example describing the impact of the pandemic on telehealth \textsuperscript{45} or food policy in the US\textsuperscript{46}. There is limited literature to-date focused on LMICs, and on the impact of the COVID pandemic on the utility of individual policy process frameworks. There is, however, a larger body of work around the importance of primary care in emergency response in light of the pandemic\textsuperscript{47} and a call to action for further research on the topic\textsuperscript{48}.

There have been limited efforts to-date to integrate path dependence or other policy frameworks with a wider temporal or institutional lens into MSF, which is where this research may add to the existing academic literature. One example that has been explored is the work of Spohr in employment markets which is elaborated in the framework discussion in Chapter \textsuperscript{2}\textsuperscript{12}. Consequently, this pre-existing example in the space serves as the basis from which this research will build.
Chapter 2: Conceptual framework

This dissertation draws on two different sets of conceptual frameworks to help answer the research questions posed. For research objective one focused on describing the reform elements, a resilient health system framework is used for part of the analysis drawing from health systems and health policy traditions using a framework familiar to many interview participants to help organize a shared understanding of the health system’s structure. Research objective two, focused on the policy process, draws on policy theory frameworks developed from the wider policy space outside of health policy around agenda setting. These frameworks lend themselves to understanding the drivers of the phenomenon seen in this case study.

**Health systems framework**

This case study uses a recently modified health systems framework, built of a widely understood base framework to describe priorities within the health system. It is a descriptive framework\(^49\), and critical questions focused on causal mechanisms are not included and will need to come from other sources, such as the inductive process tracing analysis in Chapter 4. This modified the well-known health systems building blocks framework with a resilient lens applied by Haldane et al.\(^11\) The process of linking these priorities to a policy process was then undertaken using an inductive approach as the Haldane framework is primarily descriptive that groups elements of the health system considered by the researchers to be of primary importance for resilient health systems. The purpose of the Haldane framework is to provide a structure to identify the elements of the health system that were most prominent in the policy making process in the discussions with interview participants, and to organize early parts of the analysis.

In this modified Haldane framework, the authors extended on the World Health Organization Building Blocks framework\(^50\). The original building blocks framework is structured into a series of six interrelated components: service delivery, health workforce,
information systems, access to essential medicines, health financing, leadership and governance. It has the advantage of being widely recognized in health policy, being relatively simple and generalizable across different parts of the health system. It does suffer from shortcomings well documented in the literature, and authors have pointed to a lack of community health components and unsuitability to analyze dynamic interlinked phenomenon as two of these shortcomings.

Haldane et al. extended on the building blocks framework specifically with a health systems resilience lens and considering the COVID pandemic. This analysis focused on the health systems components part of their framework, rather than the accompanying four resilience areas. They maintain some of the original building block framework elements with some new groupings: health service delivery, health workforce, governance and financing, medical products and technologies; and in addition, they add public health functions. Community engagement is an additional new element in the center of the model. Around the exterior of these elements, they have added two new themes: collaboration across sectors, and health equity and outcomes.

Figure 1: Modified Haldane Framework for resilient health systems
This work will draw on two frameworks from public policy to conceptualize the impact of COVID on the evolution of primary health care priorities as well as to extend key concepts relating to the frameworks. The first framework is the Multiple Streams Framework (MSF) by Kingdon which is framed around agenda setting in public policy to help in describing how priorities arose. The second framework is Policy Feedback Theory (PFT) which brings a temporal lens to public policy analysis, laying out a case for path dependence where priorities identified now are influenced by the history of health policy decisions and outcomes that came before.

The Multiple Streams Framework is one of the most established frameworks in public policy analysis and was developed from earlier frameworks to help describe phenomena seen in US federal domestic policy. It has subsequently been used in several settings beyond the US, including in describing health systems and health policy issues in LMICs. The framework conceptualizes the agenda setting process in public policy through several elements. The first three elements are streams inputting into a policy window, the problem stream that describes how the problem is widely conceptualized by stakeholders; the political stream which is described by Kingdon as consisting of the national mood, interest groups and government; and the policy stream where policy options are developed by a ‘policy community’. The policy window itself is where the three streams interact to result in a policy priority output and includes several relevant elements for this work including the concept of ‘policy entrepreneurs’ who advocate for specific policies within the negotiations happening within the policy window. MSF is a framework developed for circumstances of ambiguity which suits the issue of...
COVID’s impact on primary health care reform. In the context of Pakistan PHC reforms, the problem stream will focus on how challenges of the PHC system are perceived by stakeholders with a large influence on provincial policy making. The political stream will include the power dynamics between different parts of the provincial government as well as wider interest groups such as international organizations (funders, UN groups and others), national advocacy groups and academics. The policy stream will focus on the policy making environment in which key policy initiatives such as the 2020 PHC reforms were conceived. One key concept first described by Kingdon and then expanded by Birkland is the role of a ‘focusing event’ in triggering a policy window. Important aspects from Birkland’s work include the role of focusing events triggering increasing critical voices on policy causing a policy window to open. There is not consensus on whether COVID can be conceptualized as a ‘focusing event’, as authors including Birkland have highlighted deviations for the COVID pandemic from the typical definition of a ‘focusing event’ including the global nature of the pandemic, and the gap between when policy elites became aware of the issue and the general public. They do agree, however, that the COVID pandemic may “facilitate multiple windows of opportunity”. Because of this lack of clarity, it is even more important in the analysis process to distinguish the impact of ‘focusing events’ from other effect modifiers such as Pierson’s “conjectures” (the impact of timing and sequencing of events on path dependence).

While the MSF framework is useful for describing complicated policy making environments such as in health systems reform, it does suffer from the shortcoming of not being able to directly conceptualize the impact of external or wide-ranging shocks to the system and resulting policy change over time. Consequently, this work to bring MSF together with Policy Feedback Theory (PFT). PFT builds on the principle that policy decisions are based on the evolution of historical policy decisions and outcomes that have come before it, rather than a blank slate policy environment. In the context of this research, for example, PHC reform
priorities identified through this work will be influenced by the experience in Pakistan of prior PHC reforms. In Pierson’s work on policy feedback, he lays out two routes that link the evolution of policies together over time – resource effects and interpretative effects. Resource effects relate to the relative extent and form of resource allocation and its impact on future resource allocation options. Pierson takes an expansive view of resources to include both financial allocation as well as other resources such as access to decision makers. He also included incentives as a broad category under resource effects. Interpretative effects refer to the effect that policies have in providing meaning to key actors, and creating a shared narrative amongst actors40. The framing provided from the work of Kingdon, Birkland, and Pierson to describe MSF and PFT may be complemented by other concepts from policy theory where required to assist with explanations on where policy change is observed as part of this research, including those around the institutional reinforcement of policy monopolies as part of punctuated equilibrium and the impact of shocks to move policy making out of the sphere of specialized policy elites – framed by Baumgartner as “policy monopolies” - and into a more general political sphere43.

There has been limited work to link MSF and PFT frameworks to-date, despite their complementary focus on the interplay between policy and politics. One of the most developed is by Spohr et. al. using European labor market policies as a case example to highlight areas where the two frameworks can be combined12. Spohr’s integration of MSF and PHC frameworks is shown in Figure 2.
He notes that the original MSF was developed against a default lens of US federal institutions, and by expanding MSF to incorporate principles such as path dependency provides a more explicit institutional context for analysis. This could be a valuable expansion when considering MSF principles in a very different environment than that in which they were first developed, such as the Pakistan health policy making environment. Spohr incorporated PFT principals into the MSF framework by interpreting the MSF framework components from a both an MSF and PFT lens. For example, by incorporating institutional needs and restrictions into the policy stream, or by highlighting how deviations from path dependency often open policy windows such as that opened through an unemployment insurance scandal in Germany. Both MSF and elements of PFT have been used to analyze health policy. They have often been used as two complementary lenses, such as by Haeder on US health reform, but typically not brought together as a hybrid framework. Consequently, this analysis provides an opportunity to test and build upon Spohr’s hybrid framework and offer considerations for application of the framework in the context of health systems and COVID related policy shocks.
**Linking frameworks with research objectives**

The health systems and policy process frameworks can be linked to the research objectives identified in Chapter 1, as shown visually in Figure 3. The health systems framework is used to describe the pre-COVID priorities, and peri-COVID priorities (following the first wave of the pandemic) which links to Research Objective 1. The reasons for this evolution link to Research Objective 2 on the drivers, which also covers fit with the policy process framework. The implications of these are covered in Research Objective 3.

*Figure 3: Visual linking research frameworks with the research questions*
Chapter 3: Methods

Study design and approach

This research takes a case study approach on primary health care reform in Pakistan. This single case study is centered on the experience of the public sector health system in managing the acute COVID response in early 2020, and its resultant impact on long-term health reforms developed immediately after the acute response phase. Using a case study approach allowed for deeper examination of the evolution of priorities from multiple perspectives of different stakeholders, akin to Yin’s description of the best fit of a case study being when the need arises to study “complex social phenomena”\textsuperscript{56}. Ideally, this reform in Pakistan will provide a paradigmatic case study as some features of the primary health care system in Pakistan such as chronically low performance and lagging health indicators in a large country with a devolved government are features of other LMIC countries.

This study used a primarily qualitative design, drawing heavily from key informant interviews of key senior government officials and external experts directly involved in the COVID public sector response within the government at the top decision-making levels. The findings of these interviews were then complemented with analysis of supporting documents. There are semi-quantitative elements in the analysis of Haldane framework components, however this represents a small part of the research.

The nature of this research required a highly iterative design, as preliminary findings were likely to alter the direction of this work considerably, and unknowns such as the type of feedback provided by interview participants could impact direction of the research. Consequently, the research protocol laid out a general approach to study design. The three main areas where the research evolved as a result of this iterative design: a pivot to a provincial focus only, an evolution from a hypothesis focused on programmatic elements to one focused on policy processes, and a smaller number of interviews of leaders in the policy community. The original research plan had a focus on provincial stakeholders with supporting interviews at a
federal level. This evolved to a sole focus on the provincial level as scoping conversations highlighted how concentrated the ownership of the agenda was provincial leaders, and the resultant limited role of the federal level in setting priorities for the province. This also reduced the size of the policy community involved and reduced the number of interviews needed. The research plan hypothesized on the strong role for vertical programmatic elements in the agenda. However, interview participants focused service delivery elements and reform tools such as financial devolution. Despite the smaller interview participants, saturation was reached as key themes were repeatedly described by interview participants.

**Methods**

This study used a primarily qualitative methods design, drawing heavily from key informant interviews of key senior government officials and external experts directly involved in the COVID public sector response within the government at the top decision-making levels. The findings of these interviews were then complemented with analysis of supporting documents.

**Key informant interview and memo writing methodology**

Interview participants were identified through a stratified purposive sampling method, building from key stakeholders in health policy in Pakistan through which the lead author has an existing professional connection. Further interview participants identified through snowball sampling from the recommendation of interview participants. The stratified groups of stakeholders included provincial Department of Health leaders; provincial political leadership and their advisors; representatives of national and international organizations; and international funders of health programs. The sampling aimed to reach saturation of key decision makers from within and around the provincial Department of Health who were most actively engaged in steering the provincial COVID response and in the prioritization and goal setting process for PHC priorities in the August 2020 reform. Stakeholders outside the DOH were prioritized based on proximity to the COVID response.
identified, the guide then asked deeper question on why this priority became important. The interview guide asked interview participants to identify key priorities and themes in the PHC system prior to March 2020, during the early COVID response from March 2020-August 2020 when the new reform agenda was formulated, and during the period following August 2020. For each priority and theme identified, the guide then asked deeper question on why this priority became important. The

Key informant interviews were conducted both in-person and remotely via video call between December 2022 and April 2023. The interviews were conducted in both an abridged and longer format depending on interview participant time availability, and interview durations varied from as short as 23” to as long as 1’17”, although were typically 45” to 60”. Interviews were conducted in English, largely in the offices of interview participants, and so consequently were subject to the usual demands of a busy job such as interrupting phone calls and messages. The semi-structured interviews were conducted based on the interview guide developed from the conceptual framework described above, and the guide was used as a basis for structuring a more free-flowing discussion based on responses, allowing participants to guide the focus of conversation with minimal prompts from the interviewer. As a result, some interviews focused more than others on specific topics or periods of time. The interview guide asked interview participants to identify key priorities and themes in the PHC system prior to March 2020, during the early COVID response from March 2020-August 2020 when the new reform agenda was formulated, and during the period following August 2020. For each priority and theme identified, the guide then asked deeper question on why this priority became important. The

<table>
<thead>
<tr>
<th>Participant</th>
<th>Date &amp; place interview conducted</th>
<th>Level of seniority</th>
<th>Organization type</th>
<th>Engagement in COVID response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Director</td>
<td>Provincial government</td>
<td>Led COVID response for DOH at district level, moving to director level during pandemic and part of PHC reform design</td>
</tr>
<tr>
<td>2</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Director</td>
<td>Provincial government</td>
<td>Part of team leading COVID response for DOH at provincial level, and part of PHC reform design</td>
</tr>
<tr>
<td>3</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Executive director</td>
<td>Provincial government</td>
<td>Led DOH response for part of COVID pandemic, and part of PHC reform design</td>
</tr>
<tr>
<td>4</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Deputy Director</td>
<td>Provincial government</td>
<td>Part of team leading COVID response for DOH at provincial level, and part of PHC reform design</td>
</tr>
<tr>
<td>5</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Director</td>
<td>Provincial government</td>
<td>Part of team leading COVID response for DOH at provincial level</td>
</tr>
<tr>
<td>6</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Leader</td>
<td>Provincial government</td>
<td>Political leader for the COVID response within the provincial government</td>
</tr>
<tr>
<td>7</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Advisor</td>
<td>Provincial government</td>
<td>Advisor to political leader for the COVID response within the provincial government</td>
</tr>
<tr>
<td>8</td>
<td>December 2022 Peshawar, Pakistan</td>
<td>Director</td>
<td>Provincial government</td>
<td>Led COVID response for DOH at district level</td>
</tr>
<tr>
<td>9</td>
<td>December 2022 Remote via Zoom</td>
<td>Executive director</td>
<td>Provincial government</td>
<td>Led DOH response for part of COVID pandemic, and part of PHC reform design</td>
</tr>
<tr>
<td>10</td>
<td>December 2022 Remote via Zoom</td>
<td>Advisor</td>
<td>Provincial government</td>
<td>Advisor to political leader for the COVID response within the provincial government</td>
</tr>
<tr>
<td>11</td>
<td>March 2023 Remote via Zoom</td>
<td>Advisor</td>
<td>International organization</td>
<td>Advisor to provincial government COVID response</td>
</tr>
<tr>
<td>12</td>
<td>March 2023 Remote via Zoom</td>
<td>Advisor</td>
<td>National organization</td>
<td>Advisor to provincial government COVID response</td>
</tr>
<tr>
<td>13</td>
<td>March 2023 Remote via Zoom</td>
<td>Advisor</td>
<td>International organization</td>
<td>Advisor to provincial government COVID response and PHC reform design</td>
</tr>
<tr>
<td>14</td>
<td>April 2023 Remote via Zoom</td>
<td>Advisor</td>
<td>International organization</td>
<td>Consultant to PHC reform design</td>
</tr>
</tbody>
</table>
The interview guide is appended as Appendix 1. The interviews were conducted by the lead author and then transcribed using the otter.ai transcription service, with quality assurance on transcription undertaken by the lead author with the two most insight rich interview manuscripts being reviewed by a second author to confirm robustness of interpretation. Qualitative themes were identified through an iterative memo writing process for each interview as conducted by the lead author from the interview transcripts in addition to field notes taken during interviews, with supporting quotes extracted and grouped around emerging themes. The inductive coding exercise provided the basis for these memos, which were developed, reviewed and expanded as recurrent themes emerged. As part of the memo writing process, triangulation points were identified between different interview participants and discordant or contradictory observations were highlighted. For the final five interviews as a hypothesis on the conclusions of this research had emerged, this hypothesis was shared with interview participants for comment and refinement.

The reflexivity of myself as lead author and its impact on the research process is relevant to note. I have been engaged in health reform efforts in Pakistan and am known to many of the stakeholders to be interviewed, however I was not heavily engaged in the country during the COVID pandemic nor the conceptualization of the reform agenda described in this case study. My engagement in the country in COVID was limited to the creation of epidemiological models early in the pandemic to assist the provincial government. I was also part of the design and execution of the Punjab reforms which were a source of inspiration to the KP reform agenda. While this pre-existing engagement with interview participants’ aids in access and the frankness of conversation, it comes with possible expectations on priorities, approach, and mindset.

Trustworthiness of this study can be considered using various dimensions from the literature on naturalistic inquiry. The confirmability of this research comes through the
appreciation of reflexivity in study design, triangulation of interview material and document analysis. Credibility comes through the review by a second researcher as well as interview participant selection where participant selection validation of the choice of interview participant with other interview participants to confirm their relevance and role in the case study reform process, the consistency of the events and outcomes described in interviews and the formal role and centrality of the role the interview participant played in the provincial COVID response. Transferability of findings to other settings is covered in Chapter 6 of this document.

**Document analysis methodology**

Document analysis was conducted to complement the insights gained from interviews. While some insights are drawn from the published peer-reviewed academic literature, most insights came through grey literature analysis and documents shared which are not part of public domain. The sampling frame for documents was focused on those related to wider PHC reform generated by or identified by interview participants during interviews. As a standard part of the interview process, each interview participant was asked what other sources of information such as documents and presentations would be useful in forming an understanding of the primary health care policy environment around the pandemic. Documents not in the public domain shared as part of this process were complemented with a search of documents in the public domain. This search was conducted via a search engine using targeted search terms and guided by interview participant responses where during interviews participants identified a certain report or source of data, as the documents were largely in the form of reports and analysis rather than academic publications. Nine documents were identified and reviewed, five were non-public and four were in the public domain. All documents were in English, as is common for government documents, presentation and reports in Pakistan.

Documents and supporting timelines from interview transcripts were reviewed by the lead author using a process tracing methodology\(^6\) with data extracted using the READ
approach\textsuperscript{61}, aligned with the temporal focus of the research questions. Memos written during the interview process were combined with field notes to look for patterns or “traces”\textsuperscript{62} to provide evidence of underlying mechanisms that were then tested and refined in latter interviews with interview participants whose role was more as an observer of the system. This was then summarized in a figure illustrating the reform causal mechanisms included in chapter 4. This ‘explaining-outcome’ process-tracing approach\textsuperscript{62} which draws some parallels with Yin’s focus on describing ‘decisions’ in case study research\textsuperscript{56} aimed to better describe the phenomena observed in the interviews by establishing recurring patterns throughout interviews to link causal mechanisms identified, and not to build or test a theory as this is done in at a later stage.

\textit{Health systems data analysis}\n
Coding was completed by the lead author using a codebook linked to the Haldane health systems frameworks to identify major themes using a deductive coding approach. Coding used the transcripts generated from Otter.ai\textsuperscript{57} and was completed using ATLAS.ti Mac (Version 23.1.1 (4239))\textsuperscript{63} undertaken by the lead author with the codebook used is included as Appendix 2. The inductive codes were identified by reviewing the three most information rich manuscripts to identify repeating themes. Based on these findings, then developing and editing a preliminary codebook and applying to the most information rich manuscripts to refine the inductive code book. The inductive coding then provided the basis for the construction of memos for each of the interviews undertaken. All interviews fed into the memo writing process, 13 of the interviews fed in substantially with the fourteenth having fed in only partial as the interview participant had a more limited perspective of the reform process.

\textit{Policy process data analysis}\n
Findings from the health systems analysis were then interpreted through the lens of the modified MSF/PFT framework. An assessment was then undertaken by the lead author on how well the framework helped interpret the phenomena observed in chapter four, and how
effectively it supported an understanding of the drivers of the phenomena. Based on this analysis, areas for further framework modification were identified.

**Ethical approval**

This research was self-funded by the author, and received ethical approval from the Johns Hopkins Bloomberg School of Public Health Institutional Review Board in June 2022 who determined that this research did not qualify as human research subjects research as defined by DHHS regulations 45 CFR 46.102.
Chapter 4: Case study health systems analysis

Results of the interview and document analysis are presented first through an analysis of the frequency of mentions of components of the Haldane framework during interviews, followed by through a deeper inductive qualitative analysis of themes using a process tracing approach to describe the evolution of the reform effort and influences on the reform development and approval process.

Analysis of Haldane framework components throughout interviews

The analysis against the Haldane et. al. framework components can help to describe which health system components were most and least central to the agenda of key policy makers within KPs public sector health care system. Components of the Haldane framework and the frequency of mentions of these components are detailed in Table 2 in Appendix 3. Mentions of framework components were recorded where responses from interview participants directly related to the framework component in response to interview questions or spontaneously raised by interview participants. These mentions were spread across framework components. However, some sections of the framework were notably rare or missing from how interview participants described the public sector primary health care system. The most frequent components referenced were Governance and Financing. Notably, rare components that were not referenced by interview participants included Community Engagement and Equity with the former mentioned once and the latter never mentioned. From 2020 onwards, Haldane framework components were more frequently mentioned. These themes continued the focus on Financing and Governance with an increase in the reference to Service Delivery and Medical Products and Technologies.

Process tracing of the reform effort

Pre-COVID priorities in the public sector primary health care system
A further perspective on agenda setting in PHC through the COVID pandemic comes from the deeper analysis of interviews with supporting document analysis using memo writing. In the period immediately prior to the COVID pandemic, stakeholders reported two different perspectives on priorities within the public sector primary health care system in KP – that of participants from a technical background and those of a more political orientated background. Interview participants from a clinical or public health background, largely from the Department of Health, framed pre-COVID priorities as largely being driven from two sources: priorities identified by groups external to the provincial Department of Health (either donor driven priorities or those arising from international obligations); or reactive priorities driven by emergencies receiving heightened negative press coverage generating high public awareness, such as localized outbreaks of diseases such as Dengue. An example of which can be found in a 2017 press article referring to a meeting between community and political leaders on the government’s “failure” to respond to a Dengue outbreak.

If you go to TB, HIV, so this is now like a global commitment. So, the Global Fund, it's putting their resources there. So, to match with those resources, the provincial government is compelled to put resources there. (Provincial DoH official)

The continuous outbreak of Dengue..., every year we have taken a lot of deaths are happening. So here basically the mortality and the community pressure [made Dengue a top priority] (Provincial DOH official)

In contrast, politically orientated interview participants described a focus within the public sector health system on “new builds” or the construction of new health facilities, largely within the electorates of key politicians, or on addition of new HR posts.

So I think that if you look at .... what people ... effectively put political equity [i.e. political capital into] was one: expanding the health system. So new builds [of health
facilities], across primary across secondary across tertiary, .... And [two:] addition of HR. More doctors, primarily. (Provincial political leader)

Both this technical and political stakeholder conceptualization of pre-COVID priorities were driven heavily by the influence of three sources. Perceptions of donors and the international community such as UN specialized agencies, negative media coverage, and what local constituencies valued.

That's why they are putting resources and investment to the areas where they can satisfy their community, especially the civilian news channels. (Provincial DoH official)

Early COVID priorities in the public sector primary health care system

The period when the COVID pandemic became increasingly dominant in the national and international agenda in March 2020 coincided with the appointment of a new Minister of Health in Khyber Pakhtunkhwa province. The early COVID response was marked by a focus on themes largely outside the primary health care service provision such as secondary care service provision, public health responses such as creation of rapid response teams for track-and-trace systems, and data systems to monitor the spread of cases and the secondary health system response. The role of the primary health care system was described in interviews in two domains. Firstly, as source of human resources to address staffing gaps in hospitals where primary health care doctors were seconded to hospitals where beds were being scaled up to cope with early waves of COVID. These human resources were available as all public sector primary care facilities were fully closed from early in the COVID response until mid 2020. Secondly, the PHC system was viewed as a source of staffing for rapid response teams who were central to KP’s test and trace system for COVID where Lady Health Workers were highlighted as a key source of community engagement.

Emergence of a new primary health care reform agenda
Following the first emergency period in the COVID pandemic around August 2020, interview participants report that attention pivoted to the creation of a new primary health care reform agenda. This timeline is shown in Appendix 4.

*Whenever the wave was on a rise, nothing else was discussed. And whenever there was a kind of decline in the number of cases, there was a discussion around the potential areas of primary and secondary healthcare reform, not from the COVID learning or COVID compliance experience, but rather from a general desire of provincial government to improve the primary healthcare and secondary healthcare.* (Provincial political advisor)

While interview participants report that the inspiration or conceptualization of the main pieces of this reform agenda pre-date COVID, they broadly agree that the COVID pandemic assisted in realizing the reform agenda for primary health care by strengthening the sense of urgency in addressing gaps in primary health care system performance, strengthening the political standing of key advocates for reform (both of which will be discussed in more detail in subsequent analyses) and providing a vehicle to test various reforms in secondary care and other parts of the health system as part of the emergency response. The main priorities of the primary health care reform agenda described by interview participants were those that required additional financial allocation: devolving some financial control to the primary health care facility level for Basic Health Units (BHUs) and Rural Health Centers (RHCs) with the establishment of Primary Care Management Committees (PCMCs) with community and facility representatives to steward funds for facility upgradation; additional budgetary allocation for procurement of essential medicines; additional recruitment of human resources for front-line clinical staff including the use of contract hiring for primary care doctors; and contracting out of some services (although this reform element was in an earlier stage at the time of interviews). In addition, interview participants from outside government and
descriptions of the current operating norms from Department of Health interview participants also highlighted changes in the use of performance management routines and routine performance indicators to manage the system, with a switch to intensified operational and performance management routine meetings using performance indicator data led by more senior members of the Department of Health, and aided through the use of online communication tools such as Zoom.

*The EPI program used to have quarterly review chaired by Director EPI and being done, but to the level of [district] EPI Coordinators... but now we make sure that the DG chairs it and DHOs are present.* (Provincial DOH leader)

*One important thing in pre COVID and post COVID is the development of technology. Now, we have more opportunity of interacting through zoom or teams or XYZ apps or software. So we get reviews done more frequently without disturbing [DHOs] for a day or two.* (Provincial DOH leader)

These reform components are included in the conceptual overview of the reform process in Figure 3.

**Drivers of evolution in primary health care priorities**

Almost all interview participants point to the source of ideas for the 2020 reform agenda having been from the experience in neighboring Punjab province, which had undertaken a reform process under the previous provincial government from 2016.

*So KP followed the pursuit of Punjab on those reforms, so that the same upgradation, the same parameters happen there.* (International Donor)

This is supported by document analysis of presentations summarizing the Punjab reform experience which were presented to KP political and Department of Health leadership in 2020 by senior leaders of the Punjab reform effort and were shared by interview participants. The reform experience of Punjab province was presented as a ‘menu’ of options, from which
elements were identified and modified for the KP environment, reportedly driven heavily by the preferences of system leaders. “Punjab presented a sort of set of menus, or I’ll say, our physical embodiment of a reform program” said one political advisor. They contain many of the elements that later became part of the KP reform agenda such as financial devolution to facility level committees, and additional funds to address gaps in basic facility inputs. Many interview participants pointed to the role that former Punjab Department of Health officials had played in transferring ideas, after undertaking consulting and advisory support as part of the Minister of Health’s reform team in KP during the period of reform design and early implementation, a mechanism which will be explored in more detail in other analyses.

[A former Punjab health department official was] advising him [Minister of Health] throughout ...and he had fresh in his mind, what did we do in Punjab, and what would I do differently. (External technical expert)

In addition to transfer of reform ideas from Punjab, some drew a link between the experience of COVID and being able to realize the reform priorities in KP. For example, the experience of devolving financial management for hospitals was a central part of the early COVID response, coupled with the experience of KP’s existing Medical Teaching Institution (MTI) initiative at the tertiary care level which devolves financial management and governance of tertiary hospitals to a separate board, provided the basis for the PCMC reform at the primary health care level.

That’s where the MTI reform taught us, made visible, that devolution and autonomy works. ... and that is what made our tertiary hospital stand up in COVID. They had the autonomy and flexibility of action.” (Provincial political leader)

Interview participants also emphasized that COVID provided clarity and a sense of urgency that was shared amongst decision makers on the gaps in health system performance.
“COVID was a disease in which we came to know our weaknesses at the health system” said one provincial DOH official.

While this research focuses on the policy drivers behind the reform agenda rather than an analysis of reform effectiveness, early implementation signs are visible in the system. Examples include more than 600m Pakistani Rupees (approximately 2-3mn US dollars, depending on exchange rate date due to currency fluctuation) transferred to PCMCs for facility improvements in 550 BHUs by mid 2022; or more than 120 Medical Officers hired under contract to fill BHU vacancies. The period of 2019-2022 also saw a considerable increase in public sector investments in the health sector. While financial analysis was not the focus of this research, analysis by others such as the Asian Development Bank describes how the overall health budget increased by almost 40% between FY 2019/20 and FY 2022/23. Interview participants commented that an increase in government health expenditure was made possible through two mechanisms, the dual portfolio of the Minister of Health with Finance aiding resource allocation, and the experience of COVID providing higher support across government towards health investments.

And luckily, we had an opportunity of having a finance minister as health minister as well. So, once he was convinced that health issues are important, we were able to get the resources comparatively easily than we used to get previously. (Provincial DOH official)

Since the public perception is much more important for health, that's why the government also, you know, sort of give much more importance to help than to many other government subjects. (Its) true that importance has increased even further after COVID, because people saw the effects of it, people saw, you know, their relatives dying. ” (Provincial political advisor)
While the focus of this research was on primary health care, some stakeholders highlighted the difficulty of separating a PHC agenda from the wider health system.

*I do think that there's a certain amount of if you want to improve the health system, you have to actually juggle many, many balls. And the health system is interconnected, both within and outside also. Right. And I don't think you can escape that.* (Provincial political leader)

The process tracing of the reform effort described in this chapter can be summarized in the conceptual overview figure 3. This figure describes the pre-COVID state, the drivers of reform influenced by the pandemic, and the resulting reform agenda.

**Figure 4: Conceptual overview of PHC reform agenda and drivers**

<table>
<thead>
<tr>
<th>Pre-COVID PHC priorities</th>
<th>Drivers of reform agenda development &amp; approval</th>
<th>2020 PHC reform agenda</th>
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<tbody>
<tr>
<td>Drivers of pre-COVID priorities in public sector primary care:</td>
<td></td>
<td></td>
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<tr>
<td>• External priorities - donor driven or due to international obligations</td>
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<tr>
<td>• Reactive priorities from negative press coverage</td>
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<tr>
<td>Heightened understanding of the gaps in the primary care system from the emergency COVID response</td>
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<tr>
<td>Increased political standing of reform advocates following perception of successfully managing COVID response</td>
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<tr>
<td>COVID emergency response providing a vehicle to test and refine reform agenda elements within KP context</td>
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<tr>
<td>• Devolved financial management for basic repairs/upgrades to clinic through PCMC</td>
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<tr>
<td>• Additional resources for medicines &amp; equipment gaps</td>
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<tr>
<td>• Recruitment of front-line clinical staff gaps, incl. some through contract hiring</td>
<td></td>
<td></td>
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<tr>
<td>• Heightened use of performance management routines</td>
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</tbody>
</table>

Component selection influenced by experience of Punjab province reforms

**Expected future path of reform efforts**

Interviews conducted in late 2022 with Department of Health interview participants expressed a general positive sentiment in the long-term impact and survival of reform efforts, even when pressed on the possible implications of the wider economic and financial situation of the country which was a source of widespread concern at the time.
You closed any hospital for a week, you will listen to the crying of the community. Yeah. So it's the health (budget) that’s out of danger that they will not put resources - they'll put resources. (Provincial DOH official)

Department interview participants felt that budget for reforms focused on financial devolution and additional financial support for HR and medicines would be preserved despite these external financial pressures. The perspective from political interview participants over the same period was more mixed, with a strong sense of concern on the future of reforms should the Minister of Health change or leave this ministerial portfolio, as subsequently occurred. This was particularly true where reforms were newer, and less embedded in the functioning of the Department of Health.

One of the greatest fears of (political leadership) at this time is the sustainability of those reforms because as we speak now, I don't think there is any entity in the health department as of this very moment, which can be trusted, you know, to sort of take ownership of the reforms and drive it drive the process forward. (Provincial political advisor)

In January 2023 the dissolution of the provincial government triggered the removal of the Minister of Health from this portfolio and widespread changes across Departmental leadership as a caretaker administration took over leadership of the system ahead of new provincial elections. Interviews conducted later in Q1 2023, largely with donors and international development partners, revealed a higher concern on the impact of external financial pressures coupled with changes in leadership on the future of the 2020 reform efforts. These included risk of budgetary reductions and changes in performance management practices under caretaker leadership.

Already what has happened is smaller, small issues such as procedures of tax deduction, and procedures of value added tax deductions or income tax deductions.
These are landing people into trouble, people who made those expenditures into trouble. (Provincial technical advisor)

Protective factors for the reform described by interview participants include the continuing presence of technical leaders who were part of the reform within the Department of Health to act as advocates, and difficulty of reversing more mature parts of the reform agenda which were already contracted, or budget already released.

The good thing, however, is that there are people within the department who feel positively about all these things, .. who are convinced by the value that they [the reform agenda] bring to the system, especially on financial devolution and outsourcing.... they carry a lot of institutional memory. In them, there is some hope that they will be able to fight back and preserve at least some of the things that have already been put in place but otherwise the fate of this is very much dependent on the next elections.

(Provincial technical advisor)

The role of vertical programs and technical priorities

Vertical programs focused on specific priorities such as maternal and child health, tuberculosis or EPI were prominent themes during interviews on the public sector primary health care system. When asked about the future of the programs after the experience of COVID, 2020 primary health reforms and wider financial pressures, there was mixed opinion on continuing prioritization of vertical programs. Several technical stakeholders pointed to concerns that a move to a short-term agenda focused on facilities and the attention taken by the COVID pandemic had reduced focus on long term and preventive programs that were not considered to be priorities of electorates in assessing political performance. In particular, the nutrition and health promotion programs were identified as most at risk.

The political leadership go according to the public demand. When they go in their constituency (the community members come to complain) there is no doctor and no
medicine in the facility. Nobody (in constituencies) is asking that there is no vaccinators, there is no antenatal care, there is no nutritional services, there is no surveillance of epidemic diseases, no preventive services of the vaccine preventable diseases. (former Provincial DOH official)

Probably there are a few interventions like nutrition, some little expenditures on tobacco, some expenditures on breastfeeding, like promotive things. So probably, that will be the first to stop. (Provincial DOH official)

Discussions on the technical priority areas going forward included an increased focus on non-communicable diseases and their requirements for greater resources to the health system to provide chronic care. In this context, stakeholders pointed towards the important role of the Sehat Sahulat social health insurance program as a route to resourcing this expansion, with a primary health care expansion pilot planned for this program which otherwise exclusively operates at the secondary care level and above.

Discussion

The case study from the primary care reform experience of KP during the COVID pandemic describes the evolution of the system and the emergence of a new reform agenda influenced by the reform experience of a neighboring system as well as changes influenced by the pandemic.

The results of the analysis of frequency of mentions of Haldane framework components reveal that almost all framework components were part of how health systems leaders in KP conceptualize their health system during the emergency response phase of the pandemic. Governance and financing components were frequently discussed, but equity and community engagement were not. The gaps in references to equity and community engagement may indicate one of several things. Firstly, this finding may have been limited by the approach this research has taken focusing on leaders within the health system, and those elements may have
been referenced more frequently by managers at lower levels of the system who engaged more closely with communities as part of their daily work, this gap in engaging communities in health policy at higher levels of the system is also seen across other countries. Secondly, the lack of mentions of community engagement may have been due to taking a narrow definition of community engagement because while it was rarely explicitly mentioned as an action in the COVID response, public perception was frequently referenced as a factor contributing to the political health reform agenda. This was not classified as community engagement as it was not framed as policy makers seeking community engagement but framed more remotely, modulated through political perceptions of public feedback that politicians had received. Thirdly these references may have been more aspirational than part of the typical conceptualization of the health system by system leaders, at least in the Khyber Pakhtunkhwa case study. In the early COVID response in 2020, attention focused on issues around service delivery and medical products, consistent with the qualitative process tracing, where scaling up the number of testing facilities and availability of hospital beds were top priorities over routine primary health care service delivery.

The KP public PHC system pre-COVID was characterized in interviews as a reactive system heavily influenced by external agendas, whether they be that of donors, the international global health community, or political perceptions on community demand for new health facilities. The outsize influence of the global health community and donors on Pakistan health priorities has also been explored by other authors in the past, such as Shehla Zaidi’s examination of health sector planning vested interests. As the pandemic began which coincided with the appointment of new political leadership who took on management of both the pandemic and the public sector health system at-large, a new reform agenda emerged once the emergency response phase of the pandemic subsided. This reform agenda had four key elements summarized in Figure 3 around financial devolution, resources for medicines &
supplies gaps, recruitment of front-line staff gaps and heightened use of performance management routines using digital tools. This new primary health care reform agenda from 2020 was part of a larger reform agenda across the health system driven from the office of the Minister of Health, and heavily influenced by the recent reform experience of the neighboring province of Punjab where former leaders of the Punjab reform effort advised political leadership in KP. The role of donors and international organizations was much less prominent in this reform than in the way that stakeholders framed the pre-COVID era. While the ideas central to the reform effort pre-dated the pandemic, they were facilitated in implementation by the experience of the pandemic in several ways described in the process tracing. Firstly, the pandemic helped illustrate the extent of gaps within both the public primary health care system and the health system at large. These gaps became clear both to leaders within the health system as well as others within government who would help enable reform. Secondly, the perceived success of management of the pandemic strengthened the standing of health leaders on both the political and public service sides, with interview participants noting their greater ability to advocate for resources within government and overcome administrative obstacles to reforms. Lastly, the pandemic provided an opportunity to ‘field test’ elements of the reform such as financial devolution in other parts of the health system, largely within hospitals. This experience helped inform design of the primary health care reform which drew on the same ‘tool kit’ of interventions applied in the emergency response phase. While the counterfactual of what would have happened absent the pandemic is hard to prove, it is clear that the pandemic contributed to a heightened period of new policy making following the acute phase of the pandemic resulting in a new reform agenda. The reporting on the impact of COVID on health systems has illustrated in some cases the enduring damage the pandemic has had on the effectiveness of the health system. This case study may point to an alternative narrative in
some cases where positive perceptions of management of the pandemic may help contribute to increased attention and resources to health systems.

While the implementation of this reform is still in a relatively early stage, there was a reported sense of confidence in the reform agenda and probability of success amongst health system leaders interviewed in this research. The relative short-term orientation of this reform agenda, and prioritization of service delivery may have long term impact on other health priorities such as nutrition which had less relevance to the acute COVID response and do not feature as priorities in this reform agenda.

There are limitations in the interpretation of this case study. The first area to highlight are those related to the methodology used in this research, such as the reflexivity of the lead author when taking a constructivist approach\textsuperscript{71}. In addition, because of the small number of policy community members and relative paucity of external data sources and additional analysis, the description of phenomena described in Chapter 4 is derived from interviews of a relatively small number of individuals. There are also limitations related to the context in which this work was undertaken. The highly political environment of Pakistan during a period of political unrest and change could impact the nature, quality and applicability of findings. This could be through several routes. A highly political environment could impact the frankness of interview participants and consequently the nature and quality of findings. An alternative route could be that rapid changes in the political environment could alter the landscape such that this case study is less applicable to policy reform in the province going forward.

While not a limitation per-se but rather a characteristic of the methodology chosen, the interviews were conducted about events that had occurred up to 36 months prior, there may have been changes in interview participant perceptions and recollections. On the other hand, the external changes that had occurred in KP around the time of these interviews may hint at a
long-term return to the system drivers which characterized the KP system pre-COVID, however insufficient time has passed to draw definitive conclusions.

Each system is unique, and the KP reform experience had specific features including the entry of a new leader of the health system at the beginning of the pandemic. That said, there may be aspects of this reform experience that are relevant to other health systems where shared characteristics such as a change in political leadership and the experience of COVID may create an opportunity for an expanded primary health care reform agenda. Searching for health systems which share some similar characteristics as these may help increase the chances of new policy or reform efforts being successful. The depth of this case study helps illustrate the complexity of policy setting in primary health care, and the range of factors impacting agenda setting within that system. It helps describe how elements such as a change in political leadership can help create a climate for reform, and how learning from nearby health systems can be central to informing a reform agenda. Organizations interested in supporting primary health care reform within a health system may benefit from first understanding the experience of the acute COVID response, the nature of the ‘toolkit’ developed by leaders responsible for pandemic response and how the political climate may have changed when supporting a reform process to help inform their engagement.
Chapter 5: Case study policy theory analysis

This chapter explores in more detail the three drivers of the reform effort in KP described Chapter 4 and illustrated in Figure 3 using the modified MSF/PFT framework to understand how effectively and comprehensively the framework can be used to organize, describe and deepen the causal inference around the drivers of the reform agenda. Those three drivers were increased recognition within government on the nature and extent of gaps in health system performance; increased political influence within the system from the Minister of Health’s office to support overcoming obstacles and increasing resource allocation; and a set of reforms identified from the experience of Punjab which were ‘pressure tested’ and refined in secondary care during the emergency response phase of the pandemic to then be applied to primary health care.

Changes in the problem stream

In the analysis presented in Chapter 4 interview participants described how COVID had made visible gaps in health system performance. This clarity in the gaps of the health system that needed to be addressed within the system was also visible to governmental stakeholders outside of health and to communities, reported interview participants. “(Its) true that importance (of the health system) increased even further after COVID, because people saw the effects of it, you know, their relatives dying” said one official. The community feedback loop appeared not to be direct between technical leaders of the health system and communities, but rather modulated by the perception of politicians on what communities were reporting back to them. This is consistent with the work of other authors pointing to the role of factors such as power as a supporting or dampening effect on the role of community feedback with health system management, such as Kagwanja et al’s review and synthesis of power dynamics in district health management teams. This elevation of the problem, along with reported clarity of the nature of the problem amongst stakeholders was a contributor to changes in the reform
agenda according to those interviewed. While some authors studying HIC systems have claimed that COVID does not meet all of the criteria of a ‘focusing event’ impacting the problem stream by virtue of being slower onset and global rather than localized in nature, they do agree that it revealed harms to the system. In the case of KP, its possible that this was a satisfactory trigger for change alone. In addition to revealing gaps in health system performance, there may have been elements of the perception of the health system as having successfully managed COVID that increased confidence that change was possible by stakeholders within the system, a change in narrative described by other authors such as Shehla Zaidi and Syed Shujaat Hussain in their report on behalf of WHO.

**Changes in the political stream**

The analysis in Chapter 4 refers to the strengthening in the political standing of health political leaders influencing the creation of the 2020 PHC reform agenda. This links to the political stream of MSF. In KP, stakeholders described how perceived ‘success’ of the COVID response of the health system strengthened two parts of the health system in particular, the Minister of Health’s office and the Office of the Director General of Health Services (DG). The Minister of Health’s office reportedly became the nexus of the early government COVID health response, with increased engagement with provincial leadership. “(the Minister) wouldn’t have had the allocation of (political) leadership time to focus on these things (absent the pandemic)” said one interview participants. This increased political power was noted as a factor supporting the Minister to increase resource allocation and overcome administrative obstacles effecting planning of the reform agenda. “Some of the resistance that (the minister) might have faced otherwise was smoothened by COVID pandemic. Others were in a weaker position in resisting any reform related to health” said one political advisor. Evidence that interview respondents pointed to included increased financial resource allocation to health, the increased exposure that health leaders had to senior provincial and national political leaders.
through the pandemic response. The heightened influence also reportedly also allowed the Minister to actively advocate for the appointment of officials in leadership positions within in the health system who would support his agenda, and power became more concentrated in those offices “The driving force got pulled into the minister – his office and his team and the DGs office, which is like a very explicit thing” said one interview participant. Whether (if at all) there was a reduction in power by other leader was less clearly described by interview participants, however some did point to a reduction in the leadership from the Secretary of Health’s Office. Leaders from the system report that they did not view the PHC reform in isolation, but as part of a wider reform effort driven by the minister that encompassed secondary care also. “(it) would be a mistake to say that in fixing the health system, focus on the primary, or focus on preventive, or focus on secondary, I think you need to have priorities within these and see what you’re going to improve in the next wave of reform” said one provincial political leader. This description of the mechanics driving the reform effort fits well within the MSF framework, where changes in government political power (supported by changes in the national mood) are an influencing factor on agenda setting. Without a change in the political stream through the increasing influence of the Minister of Health, stakeholders report it would have been difficult to champion the reform vision. While it is too early to definitively conclude, the change in Minister in early 2023 was linked by some stakeholders with increasing implementation barriers seen to be negatively affecting the 2020 reform agenda. For example, one interview participant reported that common implementation issues related to implementation of the PCMC program that would normally have been addressed by system leaders prior to the change in government were currently being left unresolved and may hamper ongoing implementation. “Already what has happened is smaller, small issues such as procedures of tax deduction. These are landing people into trouble, people who made those expenditures into trouble.” Said one external expert. This could be interpreted as an example
of path dependence – and a possible return to the policy pathways and priorities which would have been dominant in the absence of the pandemic and its influence on the political stream.

**Changes in the policy stream**

Elements of Kingdon’s policy stream are discussed in detail in Chapter 4 which highlighted the role that the health reform experience of neighboring Punjab province had on determining the PHC reform agenda for KP. This is highly interlinked to the role of policy entrepreneurs who were former senior health officials from Punjab who served as consultants to the Minister of Health team in KP early in the reform design process in 2020. The Punjab reform experience had been presented to leaders within the small policy community as somewhat of a ‘menu’ of options, from which elements were identified and modified for the KP environment. This ‘menu’ served as the basis of Kingdon’s ‘primeval soup’ of policy options from which specifics of the KP environment and elements of the experience from earlier KP reform efforts were applied to develop a more tailored set of solutions. This learning process was made easier by the small size and interconnected nature of the policy community within the DOH and minister’s team at the decision-making level, and the ability of this community to have a unified view a relatively autonomous ability to set the agenda, as consistent with effective policy communities described by Baumgartner\(^43\). Spohr described the role of competitive pressure in determining outputs of the policy stream in his hybrid model. The competition element most apparent from interview participants was the desire of political leadership to design a ‘legacy’ reform effort rather than competitive pressure from the reform effort in neighboring Punjab which more provided inspiration for learning. As one political advisor noted, “(the minister) was more driven by sort of leaving a legacy in the system, sort of a person who was finally able to jolt the health system of KP, that perhaps has never happened before”. In addition to the constitution of the policy community and role of competitive pressure, a third concept relevant in understanding the role of the Punjab reform
idea transfer is the concept of ‘conjectures’ which focuses on the role of sequencing and timing in policy processes. The Punjab ‘menu’ was presented early in the tenure of the new Minister of Health at a time when a new reform agenda was sought by the Minister. If this had been presented at an earlier or later stage in the pandemic, it is less clear if it would have made such a substantial contribution to the reform agenda as it would not have been at the forefront of policymakers minds at a time when the ‘policy window’ was opened.

These three streams all influence what Kingdon refers to as the ‘policy window’, which he describes as the “opportunity for advocates to push their pet solutions” 33. Policy windows are described as rare, and opening is connected to the three streams in MSF via the ‘coupling’ of problems and solutions. In the case of the 2020 PHC reform agenda, this ‘policy window’ opened as the early waves of COVID subsided and was driven by changes in both the problem stream (through how clearly gaps in the health system were viewed by stakeholders) and the political stream (through heightened political influence of both the health system and Minister of Health). The rare opportunity for reform presented by COVID was clear from interview participants from the policy community – “COVID highlighted how important it was for the health system to function. And so we basically used COVID as an opportunity to build the narrative, that business as usual change journeys weren't going to be good enough. I think we fought that battle pretty well over two years” said one political leader.

Beyond the fit within the MSF framework, additional questions on role of wider institutional arrangements and influence of path dependency, as described by Spohr. It could be argued in the case of the 2020 PHC reform agenda in KP, the changes described above in the problem, political and policy streams were required to both open a policy window and to allow for path deviation. There may be early signs of a return to the pre-agenda path dependency with the increasing obstacles seen in the reform agenda with reduction in the influence of the Minister following the appointment of a caretaker government in the political
stream as well as change in the constitution of the policy community most influential in setting
the reform agenda with removal of the Minister and his team, as well as changes in key DOH
leadership. This will become clearer, however, with time and further research.

**Relevance of findings for the modified MSF/PF framework**

The phenomena observed in Chapter 4 fits well within Kingdon’s MSF framework, and
the modifications proposed by Spohr focusing on the impact of changes in the problem,
political and policy streams providing an opportunity for path deviance and a new set of
priorities to emerge. Based on this analysis, there may be a few modifications on the framing
provided by Spohr that increase the utility of this framework for describing the varying effects
of COVID on health policy.

The first modification is around the role of feedback cycles between a new policy
agenda and various components of the MSF framework. In the case study from KP of a reform
showing early promise for public health impact, policy success in the creation of new priorities
within the health system (and new allocation of resources to these priorities) may have created
a positive feedback cycle within the system. Despite significant external pressures on budgets,
key stakeholders within the system remained positively inclined towards the prospects for
further resource allocation and continuation of the reform agenda. It appears that the success
of the uptake of a new policy agenda created a sense of increased ability to influence the
political agenda and resource allocation. This links to Pierson’s concept of the influence of
resource allocation as a reinforcer of policy development over time\(^{41}\). “(the pandemic) helped
prove the investment (in health reform)” said one provincial official.

The second modification would be to increase emphasis on the interaction between the
components of the MSF framework. The three ‘streams’ of MSF are heavily driven in this
case study in KP by a very small policy community of less than a dozen individuals during the
period described, and so consequently the elements of that community influence each other’s
perception of problems, reinforce or weaken influence and impact understanding of policy alternatives. This policy community drew heavily from senior Department of Health officials under the DGHS, the Minister of Health’s team of advisors, and a sub-set of donor-funded technical support leads who had been co-opted into supporting the pandemic.

The third modification would be to include references to the role of timing and ordering and its influence on path dependence. As described above, the Punjab reform example was distilled into a digestible form and presented to key decision makers at the time when a new reform agenda was explored. If this timing had been different – for example, if this agenda had been presented six months earlier or six months later, it’s possible that the 2020 KP PHC reform agenda would have taken a different path.

**Discussion**

The KP case study describes a health reform process with promising early successes conceived and executed during the COVID pandemic, after the first emergency response period. The case study describes the evolution of a pre-pandemic public sector PHC system which was best characterized as reactive and driven by external factors to a system focused on a new reform agenda developed by health system leaders. This PHC reform agenda created after the initial early pandemic response was anchored on three interventions: devolving financial management to local management committees for basic facility repairs for primary health centers; targeted support to address key gaps in service provision such as availability of essential medicines; and initiatives including outsourcing of support services and use of contracting hiring to address HR gaps at the service delivery level. These three initiatives were underpinned with strengthened performance management routines using digital communication tools and expansion of data collection systems targeting routine management data indicators.
The analysis of drivers of this reform points to three factors contributing to the dominance of this new reform agenda. The first was a heightened sense of clarity and urgency to address gaps in primary health care health systems performance. The second was reported strengthening in the political standing of key reform advocates from within the system, contributed to by perceptions of their effective management of the acute phases of the pandemic. The third was that the COVID pandemic presented an opportunity to test and refine various reform elements in secondary care as part of the emergency response such as devolved financing and contract hiring, with elements then transferred to primary health care once the acute phase subsided.

The three ‘streams’ of MSF – problem, political, and policy– provide a useful framework for understanding the drivers of the reform process in KP during COVID through an increasing appreciation of gaps in health system performance as the problem stream, heightened political influence of a new leader within the health system as the political stream, and learnings from the reform process in a neighboring province being transferred and modified for the KP environment as the policy stream. Modifications of the hybrid framework to emphasize the role of feedback cycles, strengthen the interconnections between streams and elevate the role of timing and ordering in contributing to a reform agenda could help improve its relevance for describing health systems reforms in LMICs.

Despite the role that this reform agenda had in dominating discourse within the province on primary health care, it is unclear what the long-term future may be with external factors such as a financial crisis and changes in the political landscape including the dissolution of the provincial government. Some early signs of the return to the pre-COVID system dynamics under the current caretaker government may highlight the role of path dependency in returning to the long-term set of priorities characteristic of the health system prior to 2020. It is early to
make this prediction, however, and further research which would help illustrate how effectively
the reform agenda continues or returns to the pre-pandemic set of priorities.
Chapter 6: Implications and recommendations

This research sought to describe the varying effects of the COVID pandemic on priority setting in a primary health care reform case study in KP province, Pakistan. The case study described of the intensified reform process in the public sector primary health care system in KP from early 2020 – early 2023 was undertaken using a primarily qualitative methods design, drawing heavily from key informant interviews of provincial health leaders. The findings from this case study have implications for reform within the province, Pakistan and other LMIC health systems. In this chapter, I will elaborate on implications of the findings in Chapter 4 and 5 and offer recommendations for stakeholders engaged in reform in KP, Pakistan and other health systems on how the findings could impact approaches to reform efforts in PHC.

While the case study captures a time limited period of intensive reform activity in the province of KP, it generates several implications relevant for the province, for wider health priorities and for the study of the policy process in primary health care health systems in LMICs.

Implications of the case study on primary health care systems in KP

The case study of KP from early 2020 to early 2023 describes an intensive period of reform within the public sector PHC system, including the allocation of substantial additional financial resources to health. While it is too soon to observe the reform agenda is sustained, there are both positive signs of continuance and signals of a return to baseline for the system. On balance, while it is early to conclusively interpret implications on the primary health care system, there is a positive increase in service availability within the primary health care facilities, with a possible cost to vertical disease program and health promotion agendas. The implication may be increased financial resources allocated to primary health service availability and improved services to communities for routine clinical care. This cost to other agendas may have occurred regardless of the presence or not of the 2020 reform agenda as it
could have occurred due to the switch in focus on the pandemic, and subsequent larger financial and political challenges within the government. This is despite the almost 40% increase in health budget seen in the three years beginning in 2019/20 during the pandemic and subsequent reform period.

**Implications of the case study on reaching specific disease targets in KP**

The PHC reform agenda that arose in 2020 had limited focus on the vertical programs such as routine childhood immunization, nutrition, or tuberculosis control, which had been the focus of the externally influenced agenda prior to 2020. Interview participants described the current health agenda from a relatively more short-term politically driven lens on constituency perceptions of the health system. This may mean that longer-term priorities or priorities which are less visible to constituencies do not hold the same prominence as they may have in the period prior to 2020. Nutrition programs and health promotion activities were particularly highlighted by stakeholders as lower on the health agenda in 2022/23 than prior to the pandemic. This may be of high relevance for the success of programs with high public health relevance or a long time to impact, but less issue visibility or saliency with the voting public.

**Implications for understanding the mechanics of the policy processes in primary health care systems in LMICs**

On the question of transferability of findings to other LMIC health systems, the COVID pandemic had global impact within health systems, although the specific outcomes in KP were influenced by other factors which are not universal, such as the appointment of a new health system leader. Consequently, the major observations on the role a reframing of the weakness within the health system, the role of transferability of learning from the COVID response and changing dynamics of political influence may be relevant in other LMIC health systems. This may be particularly true in systems where the policy community is also small.

This case study has several relevant implications for those supporting PHC reform efforts in LMICs. A small and harmonious policy community – in the case of KP concentrated
within the Minister of Health and DGs office - which presented a reportedly consistent vision of the reform effort was supportive to the development and approval of this reform agenda. Where these communities have been forged as part of the acute COVID response, as in KP, there may be a time-limited opportunity to support reform before parts of this community move roles or in other ways exit this reform environment. Along the same vein, the KP case study illustrates how the pandemic may have led to shifts in political power of the groups engaged in the reform effort at the Department of Health. Understanding how power dynamics may have shifted due to the pandemic will be important in understanding reform efforts in other health systems.

The impact of the pandemic on health system priorities cannot be viewed in isolation without understanding the policies, priorities and reform efforts that came before it within the same system. The KP case study highlights the role of resource effects in impacting path dependency or deviation, and early hints at a return to pre-pandemic priorities with the change in government may emphasize the importance of understanding these long-term trends.

**Role and relevancy of policy process frameworks to support health systems policy analysis**

The KP case study fits well within Spohr’s modified MSF/PF framework in describing the changes in the relative power of different elite groups, changes through learning processes and changes in the conceptualization of harms all helped open a policy window for reform. In addition, the KP case study may point towards proposals for modifications to this framework to improve fit. These include highlighting the role of policy feedback loops in strengthening or dampening the effects of opening a policy window; the second is on highlighting the interaction and connectivity between streams with the political and policy stream in particular interacting with each other to open a policy window; and the third modification being to highlight the role of timing and ordering in opening of a policy window where in the KP example, the timing of the dissemination of the reform experience of neighboring Punjab at a time when a new reform
agenda was being sought helped make concrete the priorities for this reform effort. These
modifications and refinements to the hybrid framework would help increase the relevance of
the framework for the KP example and may be of assistance in using this framework in
understanding the varied effects of the COVID pandemic on priorities in PHC reform in
LMICs.

Relevancy of using a policy process framework for understanding health systems in
Pakistan and other LMICs

This analysis of the case study of the KP reform effort in PHC through a modified
MSF/PF theory lens has implications for health reform in Pakistan. Elements of the changes
seen in the framework ‘streams’ such as the sharpened perception on gaps in the health system,
increase political standing by health system leaders and refinement of a new toolkit through
the pandemic response may be generalizable to other provinces within Pakistan and suggest
the possibility of a policy window having been opened to support increased resource allocation
and a new set of reform activities targeting PHC. Similarly, the presence of these same drivers
driven by the experience of COVID may be present in other LMIC health systems, suggesting
a broader window for change in the wider PHC agenda. In addition, the process of mapping
these drivers in other LMIC health systems may help understand where a policy window has
opened and where new priorities within the health system may arise. For stakeholders engaged
in PHC reform and realizing national, regional and global health targets related to PHC, this
case study and refinement of the drivers of change may help identify environments where a
‘policy window’ is most likely to be opened to support reform. Realizing global ambitions
around PHC have proved elusive and so understanding some of these drivers of change within
health systems may be useful contributor to the global effort to increase access to primary
healthcare.

This work fills a needed gap in understanding the impact of a wide-ranging shock such
as COVID on an LMIC health system. Areas for further research could include those focused
on refining an understanding of the reform policy process in KP, as well as refinement and validation of the MSF/PF framework within health systems more broadly. Within KP, further analysis of this case example using additional data sources including health financing and health outcomes analysis could provide useful additional perspectives on this reform effort, in addition to expanding the time series of this case study to monitor the reform effort as its implemented over time. The MSF/PF hybrid framework could be expanded on through further refinement in additional LMIC health systems case studies. It may be particularly valuable where a wide-ranging shock is seen, and examples of these may include a financial crisis affecting health budgets, a public scandal garnering media attention, an outbreak, or a natural disaster disrupting health service delivery.

**Recommendations arising from this research**

There are four recommendations for stakeholders engaged in PHC reform at every level of the system that emerge from this case study. Those recommendations link to the drivers of reform described in Chapters 4 and 5 and the value of the overall policy framework used to conceptualize the reform effort. The drivers of the KP reform may not be unique to that system and are phenomena that the author has observed in other health systems she has interacted with.

The first recommendation is to appreciate that the conceptualization of system weaknesses within health systems may have changed due to the pandemic from the pre-pandemic norms, which may affect the validity of any pre-pandemic analysis or conceptualization of health system problems. In the case of KP, the pandemic created a consensus amongst key decision makers on the main areas of weakness in the system which, in a small policy community, created a shared understanding of the key problem to be addressed.

The second recommendation for stakeholders engaged in health reform is to first look to understand what where the tools used by the system to manage the emergency phase of the
COVID response, and what the system’s perception of those tools effectiveness is. For a reform effort to develop widespread buy-in across the system, it may be valuable to link to or utilize the same toolkit in designing a reform effort. For example, if during COVID a new financing system, data system or set of operating principles was developed then utilizing these for long-term reform efforts may increase the system buy-in to the reform proposed. This is predicated on the assumption that these tools were perceived as effective.

The third recommendation would be to highlight the urgency of action for those who are interested in reform of health systems generated from the pandemic, and that this opportunity may close over time. That is, that there may be a time-limited ‘window of opportunity’ for reform efforts that has arisen in health systems where the response to COVID is perceived as successful. This window is time limited in that changes in leadership of the system may dilute this institutional memory of reform and time may reduce the political influence of system leaders during COVID.

The last recommendation is to strengthen the use of policy frameworks and concepts to inform PHC reform efforts in LMICs to deepen our understanding of the “complex social phenomena” behind health systems policy and build this into our common training of health leaders and health researchers. In the KP case study, the modified MSF/PFT framework provided an additional depth in understanding of the drivers of reform. Use of policy process frameworks such as MSF/PFT can help bring a richer understanding of the drivers of reform and causal mechanisms, and consequently improve the effectiveness of strategic advice and technical assistance provided in health systems.

**Conclusion**

This case study illustrates the evolution of primary care reform priorities within a large public sector system in Pakistan. The relative absence of some Haldane framework components such as equity may speak to a need for the need for continued efforts amongst the policy making
community elevate the importance of this component in dialogue around health reform in national health systems, or reframe it in a way that is more relevant for health system leaders. COVID appears to have played a critical role in driving a new reform agenda indirectly, by changing the wider environment for reform and providing an environment to test and refine reform components. That said, the counterfactual may be difficult to prove on the expected reform pathway absent the pandemic.

Taken together, these analyses describe a case study of a primary care reform process in Khyber Pakhtunkhwa province affected by the COVID pandemic. Whilst the experience of Punjab province and its former health officials serving as ‘policy entrepreneurs’ to share reform elements with KP was critical, the experience of the COVID pandemic had profound indirect impact on this reform agenda. The modes for this were by increasing the political power of reform advocates, and the emergency response to COVID providing a testing ground for similar reform elements to be applied in secondary care, refined and subsequently incorporated into primary care reform. Viewed through a policy process lens, a modified MSF/PFT framework helped described the drivers of these supporting factors for the reform. Further modification of this framework to reflect on ideas around the role of feedback cycles; the interaction between stream components, especially where a policy community is small; and the role of timing and sequencing in drivers can help improve the utility of this framework.

Primary care is an essential component of universal health coverage, which in turn is expected to be high on the global political agenda with a second High Level Meeting on UHC of the United Nations due to be held later in 2023. This case study of a PHC reform effort in Pakistan could provide useful insights to national and global policy makers who are looking for practical tools to help realize the longer-term goals around PHC and UHC. It provides details of possible drivers for reform efforts that have been altered by the experience of the COVID pandemic. Whilst there are many unique features of each health system, there are
useful paradigmatic elements from KP and Pakistan – such as the size of the system, gaps in performance and decentralized governance structure – that may be relevant for other health systems.

There are notable limitations to this work, including those related to the methodology chosen, as well as those related to the highly political context in which this work was undertaken. This case study also focuses on a relatively early phase of the reform effort and further research over time will help correct or clarify many of the features and drivers of this reform described in this research.

Further research in this space would be of high utility. Research priorities focused on the KP health system could include those related to policy implementation research, health financing analysis and an analysis of policy evolution over time. At a policy process level, further refinements of the modified MSF/PFT framework could help improve its utility in different policy environments and test its relevance to LMIC health systems.
## Appendix 1: Interview guide

<table>
<thead>
<tr>
<th>Theme</th>
<th>Main question</th>
<th>Sub topics/probes - depending on informant background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-COVID public primary health care (PHC) priorities &amp; goals</td>
<td>Can you describe the PHC reform priorities and goals present in the 2 years before the start of the pandemic?</td>
<td>How did priorities and goals differ between the federal level and Khyber Pakhtunkhwa (KP) province? How did priorities and goals differ for different parts of the public sector primary care system? (specific probe on Basic Health Units and the Lady Health Worker program)</td>
</tr>
<tr>
<td></td>
<td>How did these priorities and goals become important?</td>
<td>Which stakeholders championed these goals? What was the relative power of these stakeholders and routes of influence? How did stakeholders outside the health system differ from those inside the health system with respect to what priorities and goals they felt were important? What was the process by which these goals came to prominence? Which priorities and goals were identified and discarded earlier in the process? And why? What role did discussion on resources and resource allocation have on the process? What learnings from outside the Pakistan PHC system were brought in to inform priorities and goals?</td>
</tr>
<tr>
<td>Post-COVID PHC priorities &amp; goals</td>
<td>Can you describe the PHC reform priorities and goals currently predominant?</td>
<td>How did priorities and goals differ between the federal level and Khyber Pakhtunkhwa (KP) province? How did priorities and goals differ for different parts of the public sector primary care system? (specific probe on Basic Health Units and the Lady Health Worker program)</td>
</tr>
<tr>
<td></td>
<td>How did these priorities and goals become important?</td>
<td>Which stakeholders championed these goals? What was the relative power of these stakeholders and routes of influence? How did stakeholders outside the health system differ from those inside the health system with respect to what priorities and goals they felt were important? What was the process by which these goals came to prominence? Which priorities and goals were identified and discarded earlier in the process? And why? What role did discussion on resources and resource allocation have on the process? What learnings from outside the Pakistan PHC system were brought in to inform priorities and goals? And how did this evolve?</td>
</tr>
<tr>
<td>Impact of path dependence</td>
<td></td>
<td>What would PHC reform priorities likely be if we were to start from a blank slate today without the history of work prior to COVID? What are the causes of any difference? Do you recall other times where there was a pivot in the priorities and goals in PHC reform in Pakistan? What were the drivers of this pivot and its impact?</td>
</tr>
<tr>
<td>Additional sources of insight</td>
<td>What other people do you think should interview to add insights to this research?</td>
<td>What other sources of information (documents, meeting minutes etc.) would be helpful in forming a picture of this process?</td>
</tr>
</tbody>
</table>
## Appendix 2: Codebook

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code group</th>
</tr>
</thead>
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<tr>
<td>2019 and earlier</td>
<td>Reference to an event occurring in 2019 or before</td>
<td>Timeline</td>
</tr>
<tr>
<td>2020 unspecified</td>
<td>Reference to an event occurring in 2020, but where the quarter or specific date is not described</td>
<td>Timeline</td>
</tr>
<tr>
<td>2021 unspecified</td>
<td>Reference to an event occurring in 2021, but where the quarter or specific date is not described</td>
<td>Timeline</td>
</tr>
<tr>
<td>2022 unspecified</td>
<td>Reference to an event occurring in 2022, but where the quarter or specific date is not described</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q1 2020</td>
<td>Reference to an event occurring in the first quarter of 2020</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q1 2021</td>
<td>Reference to an event occurring in the first quarter of 2021</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q1 2022</td>
<td>Reference to an event occurring in the first quarter of 2022</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q2 2020</td>
<td>Reference to an event occurring in the second quarter of 2020</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q2 2021</td>
<td>Reference to an event occurring in the second quarter of 2021</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q2 2022</td>
<td>Reference to an event occurring in the second quarter of 2022</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q3 2020</td>
<td>Reference to an event occurring in the third quarter of 2020</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q3 2021</td>
<td>Reference to an event occurring in the third quarter of 2021</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q3 2022</td>
<td>Reference to an event occurring in the third quarter of 2022</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q4 2020</td>
<td>Reference to an event occurring in the fourth quarter of 2020</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q4 2021</td>
<td>Reference to an event occurring in the fourth quarter of 2021</td>
<td>Timeline</td>
</tr>
<tr>
<td>Q4 2022</td>
<td>Reference to an event occurring in the fourth quarter of 2022</td>
<td>Timeline</td>
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<tr>
<td>Collaboration across sectors</td>
<td>Reference to collaboration occurring between provincial gov’t departments; or between federal and provincial level of government</td>
<td>Haldane</td>
</tr>
<tr>
<td>Community engagement</td>
<td>Reference to engaging communities in communication or decision making</td>
<td>Haldane</td>
</tr>
<tr>
<td>Equity</td>
<td>References to issues of inequity in access to health care, or actions aimed at addressing inequity</td>
<td>Haldane</td>
</tr>
<tr>
<td>Financing</td>
<td>References to issue related to the financing of health systems</td>
<td>Haldane</td>
</tr>
<tr>
<td>Governance</td>
<td>References to issues related to the governance of the health system</td>
<td>Haldane</td>
</tr>
<tr>
<td>Medical products &amp; technologies</td>
<td>References to issues related to medical products (such as medicines, diagnostic tests) or technologies (including data systems)</td>
<td>Haldane</td>
</tr>
<tr>
<td>Outcomes</td>
<td>References to health outcomes, such as deaths or disease prevalence</td>
<td>Haldane</td>
</tr>
<tr>
<td>Public health functions</td>
<td>Reference to the public health functions of health systems such as surveillance and disease control</td>
<td>Haldane</td>
</tr>
<tr>
<td>Service delivery</td>
<td>Reference to the delivery of health services and health facilities</td>
<td>Haldane</td>
</tr>
<tr>
<td>Workforce</td>
<td>Reference to the health workforce, in particular frontline health workers</td>
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</tr>
<tr>
<td>Expanding successful interventions</td>
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<tr>
<td>Issue severity</td>
<td>References to how severe a challenge or issue was within the health system (or its impact on policy)</td>
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<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Leadership change</td>
<td>References to changes in leadership in the health system, whether they be political leaders or senior members of the Department of Health</td>
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<tr>
<td>Outside examples</td>
<td>References to examples from outside the KP health system (including elsewhere in Pakistan) used as a lesson or comparator</td>
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<td>Problem confusion</td>
<td>References to a lack of clarity or consistent understanding of an issue</td>
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<tr>
<td>Public narrative</td>
<td>References to what the public perception was around a particular issue</td>
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</tr>
<tr>
<td>Stakeholder influence</td>
<td>References to the role and importance of certain stakeholder groups in policy making</td>
<td>Inductive</td>
</tr>
<tr>
<td>Successful interventions</td>
<td>Reference to what interventions in the health system seen as successful</td>
<td>Inductive</td>
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</table>
### Appendix 3: Summary of Haldane framework component mentions in interviews

*Table 2: Summary of Haldane framework component references in interviews*

<table>
<thead>
<tr>
<th>Haldane framework component</th>
<th>References at any time (n)</th>
<th>References at any time (graphically represented)</th>
<th>2019 or earlier references (n)</th>
<th>2020 onward references (n)</th>
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<tr>
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<td>1</td>
<td>2</td>
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<tr>
<td>Medical products &amp; technologies</td>
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<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Collaboration across sectors</td>
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</tr>
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<td>Outcomes</td>
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<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Community engagement</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Equity</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* The two most and least frequently referenced components highlighted in yellow

*Note: The definition of ‘community engagement’ focused on the meaning used by Haldane et. al. which was of a direct connection between communities and health leaders. This direct connection was seldom referenced by interview subjects, however there were indirect references to the opinions and preferences of communities typically through the lens of a third party such as the officials opinion of what politicians would report on what their electorates preferences were*
Appendix 4: Timeline overview of the COVID pandemic and reform development

Timeline overview of the COVID pandemic and the 2020 KP PHC reform agenda

National COVID case load

Pakistan daily new COVID cases

Process tracing period

New Minister of Health appointed

First COVID emergency response period

PHC reform development period

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Appendix 5: Curriculum vitae of author

Professional experience

CHIEF ACCESS OFFICER
FIND || Geneva, Switzerland || 2020 – present

Developing and executing on FIND’s market shaping and access activities, including impacting the wider health systems ecosystem to increase access to diagnostics testing. Oversaw FIND’s country programs & offices, and helped forge new senior government engagement with key countries such as India and Indonesia

Lead FIND’s engagement in the global COVID response, including managing the ACT-Accelerator Diagnostics Pillar on behalf of FIND and The Global Fund, a global collaboration aimed at accelerating access to the diagnostics tools needed in the COVID response.

HEAD OF HEALTH
Acasus || Global (Pakistan, DRC, Mozambique) || 2014 – 2020

Built Acasus’ work with governments to transform performance in key health indicators. Been a thought leader in performance management in global health and helped build a team that works in five countries to improve health systems. Specifics include

- Leading the Pakistan Health Reforms Roadmap project which focuses on transforming immunization coverage, skilled birth attendance and primary care functioning for more than 150 million people
- Expanding Acasus work on immunization coverage to Africa with Gavi, including the DRC and Mozambique. This included building strong stakeholder relationships with political leadership, analyzing the health system and building teams to deliver on high profile
- Helping develop key global health strategies, including how Gavi can approach reaching its next Gavi 5.0 strategy goals and new approaches to Hepatitis C for the Foundation for Innovative New Diagnostics (FIND)

MANAGER, MARKET DYNAMICS
Unitaid/WHO || Geneva, Switzerland || 2011 – 2013

Played a critical role in developing UNITAID’s market-based approach to increase access to medicines and diagnostics for HIV, TB and malaria, including:

- Leading work to develop opportunities for potential investments
• Building strong collaborative relationships with funders, implementers, UN partners and other global health stakeholders
• Supporting development of more than 30 new proposals, resulting in more than $400m of new innovative global health projects

ENGAGEMENT MANAGER
Developing strong problem solving, leadership and business skills across the health systems, pharmaceutical and public sectors in the Middle East, Africa, Pakistan and the US.

REFUGEE DOCTOR
International Rescue Committee || Tanzania || 2008
Managing delivery of comprehensive medical care to a refugee population of 25,000, including immunization campaigns, maternal & child health, health promotion and emergency care. Collaborating with the UN and NGOs in the provision of refugee health services

MEDICAL DOCTOR
Various Hospitals || New Zealand & Australia || 2005 – 2007
Clinical work in a number of urban and rural settings. Predominantly in Emergency Medicine.

Education
DOCTOR OF PUBLIC HEALTH
Johns Hopkins University || Baltimore, USA || 2018 – current

MASTER OF PUBLIC HEALTH || INTERNATIONAL HEALTH
Harvard University || Boston, USA || 2007 – 2008

BACHELOR OF MEDICINE, BACHELOR OF SURGERY (equiv. US MD) AND BACHELOR OF HUMAN BIOLOGY
University of Auckland || NZ || 2000 – 2005

Selected recent publications

Ruhwald M, Hannay E, Sarin S, Kao K, Sen R, Chadha S. Considerations for simultaneous testing of COVID-19 and tuberculosis in high-burden countries. Lancet Glob Health 2022; published online Feb 2. DOI:10.1016/S2214-109X(22)00002-X.


Hannay E. We don’t have more time to wait to measure how well our healthcare system is doing. N Z Med J 2019; 132: 77–8.
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https://www.who.int/activities/preparing-for-the-un-high-level-meeting-2023-and-achieving-health-for-all