



RESULTS FOR
DEVELOPMENT

**Strengthening
Mixed Health
Systems for
Maternal Health**
Evidence Review

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What does the evidence tell us about mixed health systems and public-private engagement in maternal health?

Authors: Results for Development's Emily Adams, Chloe Lanzara, Keith Mangam, Cicely Thomas, and Courtney Tolmie

Reviewers: Jaidev Anand, Senior Technical Specialist, ACCESS Health International; Dr. Cheryl Cashin, Managing Director, Results for Development; Dr. Mark Hellowell, Director, Global Health Policy Unit, University of Edinburgh; Scott Higgins, Director of Operations, *Merck for Mothers*; Dr. Nelson Gitonga, CEO Insight Health Advisors; Dr. Lyndon Marani, Consultant Insight Health Advisors; and Dr. Walter Obita, Consultant, Insight Health Advisors

Executive Summary

Many countries recognize the potential for harnessing the private sector to improve health outcomes and achieve universal health coverage (UHC), but they often struggle to effectively steward these mixed health systems. Despite a myriad of research on public-private engagements (PPE) in mixed health systems, there have been limited efforts to review existing evidence and synthesize actionable lessons that decision-makers and practitioners can use to strengthen mixed health systems.

With support from *Merck Mothers*, Results for Development (R4D) conducted a systematic review of published evidence to answer two questions:

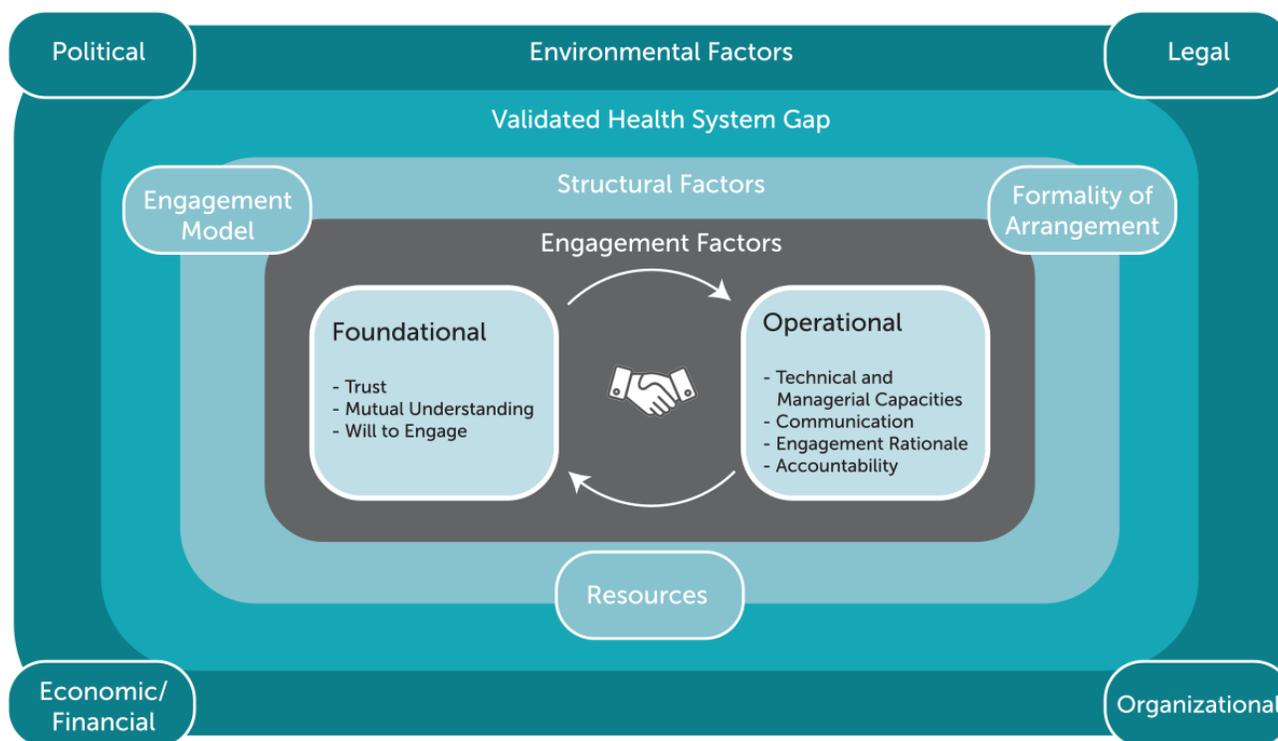
- What is the evidence that exists that supports or rejects the hypothesis that strengthening mixed health systems and public-private engagements can improve outcomes for maternal and newborn health and help achieve UHC?
- What evidence exists regarding *how* strengthening mixed health systems and public-private engagement are associated with stronger or weakened health outcomes, including the motivation for creating PPEs, the models and structures of PPEs, and the factors (both external and internal to the engagement) that are associated with outcomes?

We conducted a modified systematic review to map evidence on the effectiveness of health-related PPEs in published literature. We included published articles, representing theoretical literature on PPEs and studies focused on specific PPE experiences across diverse contexts.

Our findings suggest that while stewardship functions related to financing and regulation (environmental factors), and to some extent factors related to models of PPE (structural factors), are common in the literature, even more prevalent are factors related to the dynamics and interactions between engagement actors. These “engagement factors” – the relationship dynamics between actors such as trust, willingness to engage, and mutual understanding, as well as the actors’ capacities – may significantly influence PPE effectiveness.

Building on the findings of this review, and experience in the field, we brought together factors associated with public-private engagement effectiveness into a more holistic framework or “public-private engagement ecosystem” (Figure 1). This framework recognizes a complex network where interactions are happening between and amongst helping or hindering factors and multiple health system actors operating at various points in an engagement cycle.

Figure 1: Public-private sector ecosystem: factors for effective engagement



The ecosystem consists of 3 factor sets.

1. Environmental factors that shape the operating environment for a given public-private engagement. Individual actors in an engagement likely have indirect (if any) influence on these factors but the factors may impact the engagement’s effectiveness and should be considered. These include political, economic, legal, and organizational factors described in detail in work by Blanchet et al. (2019).

2. Structural factors that define the architecture of a given public-private engagement. This includes the type of partnership model (e.g. bi-lateral, inclusive of a neutral broker and others), formalities of the model arrangement (e.g. existence of a formal memorandum of understanding) and available resources (both financial and non-financial) to implement the engagement.

3. Engagement factors that relate to the actors implicated in the engagement. Generally, engagement actors have some control over these factors. Further, we categorized engagement factors into foundational and operational dimensions, which include both factors related to the relationship dynamics between engagement actors as well as their capacities and existing mechanisms that help shape an engagement. We posit that engagements must meet a minimum threshold of foundational factors — trust, mutual understanding, and willingness to engage – to be effective. That is to say that we think it is unlikely for an engagement to either get off the ground, operate effectively, or sustain itself at all without some combination of these three factors. Operational factors include managerial and technical capacities, communication, engagement rationale, and accountability, which are also critical to the successful operations of the engagement.

In addition to the factor sets, the framework references the validated health system gap. This gap refers to the health system problem or challenge identified by stakeholder(s), which the engagement is seeking to solve. This gap should be based on evidence, aligned with beneficiary demand, and validated by a critical mass of stakeholder(s) within the health system.

This work has important practical applications for helping health system stakeholders make more effective choices to strengthen mixed health systems. Taking a holistic system view of PPE and better understanding the factors and interactions of this complex ecosystem can help stakeholders prepare for and optimize their engagements, thus improving the effectiveness and sustainability of PPEs. This framework can help to identify and map the ecosystem of factors that should be considered in a PPEs. It may also help assess some of the critical barriers to successful implementation.

While there is no health system blueprint or ideal engagement arrangement of all the actors and factors in the ecosystem, this holistic ecosystem model suggests the importance of approaching PPE with a whole of health system approach to ensure it is more impactful and ultimately contributes to improved health outcomes. Based on the PPE ecosystem and a whole of health system approach, we highlight several principles below we believe may be important for PPE. Some of these principles are likely outside the direct control of PPE stakeholders, however, their consideration may help PPE stakeholders prepare necessary mitigation strategies or target advocacy for policy change. These include:

- ✓ Leveraging public-private engagement as a broader policy strategy with governments playing a more facilitative and stewardship role of both the public private sectors.
- ✓ Increasing fairness and access to public financing, ‘level the playing field’ between the public and private sector.

- ✓ Assessing the health system gap a PPE aims to address and ensuring actors' intervention or system change approach is fit-for-purpose and addresses the root cause of that challenge – rather than retroactively applying a private sector innovation or service to a presumed health system need.
- ✓ Considering the advantages and disadvantages to different PPE models or structures based on the needs of the specific engagement and the actors involved.
- ✓ Mobilizing financial and non-financial resources to support management of the engagement.
- ✓ Ensuring and engendering a minimum threshold of trust, mutual understanding, and willingness to engage amongst engagement stakeholders and committing to assessing and building on these factors throughout the engagement.
- ✓ Assessing the capacities of PPE stakeholders, clearly identifying stakeholder roles and ensuring representation of all parties and committing to a structure to hold stakeholders accountable throughout the engagement.
- ✓ Considering a role for an “honest broker” or neutral third-party to help facilitate the engagement.

While this review unearthed important lessons to inform the design (and testing) of future efforts to strengthen mixed health systems, the dearth of evidence also highlights the need for further research. Specifically, a research agenda focused on testing and understanding the factors that support or hinder success of PPEs (including those discussed above) and which expands our understanding of PPE's contribution to health system outcomes and, importantly, UHC.

I. Introduction

More and more, the discussion about “mixed health systems”- a health system in which goods and services are provided by the public and private sectors and health consumers request these services from both sectors (Clarke et al., 2019) - and public-private engagement (PPE)¹ is being highlighted by the global health field as an important strategy for improving global health outcomes and achieving Universal Health Coverage (UHC). Specifically, there is recognition that public sector delivery systems and supply chains alone may lack the capacity to meet the demand in the system created by UHC commitments. Rather, stewarding a mixed health system that creates a level playing field for both public and private providers has the possibility to increase quality of services and products across both sectors and increase equity in access. Multilateral organizations, global initiatives, international donors and partners, and country policies and strategies call for strengthened mixed health systems as a means to achieve their goals for international public health. The Global Financing Facility for Women, Children and Adolescents (GFF), for example, seeks to leverage private sector “resources, capacity, and expertise” to improve health outcomes and achieve UHC across GFF countries, while the United States Agency for International Development (USAID) released a private sector engagement policy in 2019 to define and codify its strategic interest in PPE (Global Financing Facility, 2018; *Private Sector*, 2019). Despite the increased focus globally, few syntheses of the evidence on mixed health systems exist that can provide guidance for what works and what does not.

As part of the *Merck for Mothers*-funded Strengthening Mixed Health Systems project, led by Results for Development, we sought to better understand the evidence (and gaps in evidence) in the mixed health system space to both inform the design of our project’s work and to synthesize the existing evidence for use in global guidance we will develop as part of this project.

This review began with a primary research question - *what is the evidence that exists that supports or rejects the hypothesis that mixed health systems can improve outcomes for maternal and newborn health and help achieve UHC?* Specifically, we sought to assess the evidence for whether PPEs targeting the provision of maternal health services could improve outcomes. Building from the output of the search designed to identify articles that could answer this primary research question, we originally designed our analysis to provide further insight into four supplemental questions to the degree that the published literature that focused on evidence linking PPEs to health outcomes also addressed these questions: (1) what is the landscape of public-private sector engagements around maternal health; (2) what are the opportunities to strengthen mixed health systems for maternal health where they are currently ineffective; (3) what are factors that studies have shown to enable or hinder effective mixed health systems in maternal health; and (4) what approaches have been tested to provide third-party support to emerging public-private engagements.

¹ For the purposes of this document we discuss PPE as one of the deliberative processes in successfully evolving and strengthening a mixed health system.

However, upon completing an initial coding and analysis of the systematic review results, we identified that the output of this search could not adequately answer these supplementary questions as a whole. Rather, the literature that provided insight into the primary question of what evidence exists regarding whether mixed health systems can improve health outcomes provided an important set of evidence regarding how engagements between the public and private sector actors can influence (or fail to influence) these outcomes. Ultimately, this evidence review thus focuses on two key questions:

- What is the evidence that exists that supports or rejects the hypothesis that strengthening mixed health systems and public-private engagements can improve outcomes for maternal and newborn health and help achieve UHC?
- What evidence exists regarding *how* strengthening mixed health systems and public-private engagement are associated with stronger or weakened health outcomes, including the motivation for creating PPEs, the models and structures of PPEs, and the factors (both external and internal to the engagement) that are associated with outcomes?

The review aimed to identify and analyze the evidence that highlights the importance of mixed health systems in maternal health and UHC. We hoped to draw learnings from across the evidence about whether and how PPEs contribute to improved health outcomes, and to use these learnings to help inform assessments of countries' and stakeholders' readiness for pursuing PPEs. Through a focus on these specific questions we hoped to better understand the needs and opportunities related to PPEs globally to help guide the focus and technical assistance of the project. We also aimed to identify best practices for designing, implementing, and facilitating PPEs to ensure their effectiveness and sustainability for improving maternal health and ultimately achieving UHC. Using the supplementary questions, we conducted a systematic literature review using Google Scholar and PubMed to identify published literature between 2009-2019. Ultimately, the team identified 432 studies and conducted a deep analysis of 101 papers. We reviewed and coded this literature using a coding structure that reflected the research questions.

In this paper, we share the results of this analysis and discuss their implications. In the following section we describe the review methodology in more detail. Next, we describe the results organized around our two research questions. First, we present the evidence from a subset of the literature that presents rigorous results of the effect of PPEs on outcomes of interest. Second, we review the wider set of literature to present findings regarding how researchers and implementers experience the effectiveness of PPEs to be influenced by characteristics internal and external to those engagements, including: motivations for creating and entering into PPEs; the models and structure of PPEs; and success and hindrance factors for PPEs. Finally, we share the implications of the findings and propose a framework for PPE based on the evidence, as well as recommendations for additional research in this space and limitations of the review.

II. Methods

This systematic literature review was designed to understand the range of literature analyzing PPEs in global health systems, and specifically low- and middle-income country health systems,

that seek ultimately to improve maternal health. Within the broader goal of understanding the evidence regarding whether and how PPEs and health outcomes are linked, we analyzed the literature to help us build foundational evidence to answer the two primary research questions:

- What is the evidence that exists that supports or rejects the hypothesis that mixed health systems can improve outcomes for maternal and newborn health and help achieve UHC?
- What evidence exists regarding how mixed health systems are associated with stronger or weakened health outcomes, including the motivation for creating PPEs, the models and structures of PPEs, and the factors (both external and internal to the engagement) that are associated with outcomes?

Our methodological approach to narrowing the literature and analyzing highly relevant articles followed a standardized approach, based on a modified version of the three-step approach used by Bragge and colleagues for systematic evidence mapping with a small number of adaptations described below (Bragge, 2011).

As this review seeks to understand PPE in the context of maternal health, we first defined those terms. For our purposes, engagement between public and private health sectors is defined as “the deliberate, systematic collaboration of the government and the private health sector according to national health priorities, beyond individual interventions and programmes” (IFC, 2011). This review defines “private sector” to include private healthcare providers of goods and services (operating both for-profit and not-for-profit), local and international non-governmental organizations, and local and global partners, multilaterals and funders.

After developing and prioritizing the guiding questions for the review, the research team undertook a series of searches on Google Scholar and PubMed, ultimately utilizing a set of four search term combinations: (1) “public private engagement” and “maternal health,” (2) “public private engagement” and “maternal mortality,” (3) “mixed health systems” and “maternal health,” and (4) “mixed health systems” and “maternal mortality.” To augment the search, we conducted a second Google Scholar search that broadened search terms (“maternal” and “public private”) while restricting other components of the search (restricting results to PDFs and to those having these terms in the title)². In all cases, we removed articles that had been published more than ten years ago as well as duplicate articles. This ultimately resulted in 236 articles, which we accessed using a range of medical, public health, and academic databases.

We undertook a secondary review of the titles and abstracts for the 432 articles to decide if each was relevant enough to be included in the preliminary database. This first round filtration erred on the side of inclusion rather than exclusion to ensure we did not remove an article that could prove informative but did exclude articles that were either not focused on the health sector or that were solely focused on high-income country settings. This review resulted in 201 articles. We then undertook a secondary filtration process, whereby we did a review of the full article to

² This addition was made after identifying that the original Google Scholar search did not reveal any grey literature results and that several key articles were not returned based on our preliminary search. While the second search did not return a large number of grey literature entries, it did return missing articles and, as such, strengthened the overall pool of articles that were ultimately reviewed.

determine if it was relevant to the aims of our review. After this second round, we were left with 101 articles, which became our final set for this evidence review.

For each of the 101 articles that were included in the final set, we reviewed and conducted a structured coding of the article. The codes were designed by the research team based on a review of the information needed to answer each of the four questions presented above. The final list included both qualitative and quantitative codes as well as closed and open options.

Four researchers undertook this process after undergoing a shared coding training and intercoder reliability testing process. The codebook included codes designed to cover topics relevant to the four guiding questions, including: study type, geographic focus, universal health coverage focus, partner types, engagement types, and outcomes³. During the analysis of results (presented in the next section), additional open coding was conducted on relevant articles to surface trends across the set of articles.

III. Results

Within the final set of 101 articles, 53 (52%) were primary research. Twenty articles (20%) mentioned UHC anywhere in the article and 9 articles (9%) mentioned UHC in the abstract, which could be considered a proxy for the prioritization of UHC as a focus of the article. Forty-seven of the articles (47%) focused on a specific PPE. Factors for successful engagement were detailed in 57 articles (56%) and target outcomes/evidence on outcomes were discussed in 27 articles (27%).

Many articles (32) included in the review focus on India; this includes 30 articles written about India specifically and 2 that included India in a broader examination of regional PPEs. Many of these India-specific articles (15) were about a single public-private engagement, Chiranjeevi Yojana. After India, the highest number of articles focus on engagements in Uganda, Tanzania and South Africa (4 country-specific articles each); China, Brazil, Ghana, and Pakistan (3 articles each); Kenya, Namibia, Nigeria, Mexico, Papua New Guinea, Zambia and Russia (2 articles each); and Bangladesh, Cambodia, Colombia, Haiti, Indonesia, Iran, Lesotho, Philippines, Romania, Spain, Thailand, Turkey, and Turks and Caicos (one article each). Twelve of the articles analyze PPEs across many countries. Indonesia, Lesotho, Romania, Spain, Thailand, Turkey, and Turks and Caicos all appeared in the literature only once, and as a part of case studies that compare PPEs across several countries. We found that there were regional trends in research and documentation of PPEs; while this could be correlated with the occurrence of engagements by region or country, it may also be explained by where research opportunities occurred.

The subsequent sub-sections organize the results of the evidence review by the two research questions: a first section on the evidence linking PPEs to health and engagement outcomes and a second set of three sections that focus on how researchers and implementers experience the effectiveness of PPEs to be influenced by characteristics internal and external to those

³ Codebook can be provided upon request to the authors.

engagements, including: motivations for creating and entering into PPEs; the models and structure of PPEs; and success and hindrance factors for PPEs.

Outcomes

To better understand the evidence related to outcomes, we analyzed the articles in the review that took an empirical approach to assessing the effectiveness of PPEs. While the picture that emerges from this review is diverse, it is worth noting that one overarching finding is that a relatively small portion of the literature reviewed does attempt to measure outcomes (27 of 101 papers reviewed in depth). There are many reasons why we may see this trend, including the inherent challenges with measuring the effect of health systems strengthening of the type that many PPEs seek to influence. However, it is important to interpret these findings with the understanding that the trends are drawn from a relatively small sample size.

Despite the small number of studies that could be reviewed for outcomes, the findings from this limited evidence base are still critical, and they demonstrate the enormous value that more empirical research seeking to link PPEs to outcomes would bring to the field. These studies provide us with evidence-based insights regarding whether PPEs can impact a myriad of different health systems changes and, as such, can also serve as a foundation for global advocacy for mixed health systems and further research on this topic. Growing the research on PPEs is also essential in that these initiatives often seek to influence many different outcomes (something that is discussed in more detail below), and more work is needed to parse out which of these outcomes can be tied to PPEs. While our work did not exclude randomized controlled trials (RCTs) explicitly from the review process, it is important to note that none of the articles that we reviewed utilize RCT methods; this is perhaps not surprising due to the challenges of randomizing many types of PPEs and evaluating systems changes associated with these interventions, but it is also an important reminder of the valuable insights we can ascertain from evaluations and studies that may not be traditional impact evaluations.

We organize the results of the review of outcome-focused PPE studies around two major categories of findings – (1) the types of outcomes on which the studies focus and (2) the findings of the studies on outcomes (and relatedly the methods used). While these two categories are intrinsically interlinked, they both tell us something distinct about what the field can already say about the effectiveness of PPEs and what gaps remain.

Outcome Types

One important finding from the review of outcomes in the 27 articles is that the outcomes themselves are extremely diverse. Rather than focusing on one specific health outcome or even category of health outcomes, the articles that we reviewed represent multiple types or layers of outcomes that one may seek to trigger through a PPE.

While interesting, this finding is not particularly surprising. Strengthening health systems has a challenging and complex set of goals, and there are multiple tiers of outcomes that need to be triggered to actualize improvements in systems. It follows that strengthening mixed health systems would take a similar path, one in which improvements in ultimate outcomes would

require improvements in system functioning and engagement quality, just to name a few intermediate outcomes. The literature that we reviewed as part of this research followed a similar pattern.

The outcomes that are analyzed in the 27 papers can be grouped into three broad categories: (1) beneficiary health outcomes, (2) health systems outcomes, and (3) engagement outcomes. We see these three categories as stages in one possible theory of change for improving health, starting with the support and strengthening of public-private engagements (3) designed to overcome gaps in the health system such as financial barriers and quality issues (2) and eventually triggering better health outcomes (1). In this sub-section, we review each of these categories in turn.

The plurality of the articles present evidence regarding the ultimate outcomes that these engagements seek to achieve – *beneficiary health outcomes*. These outcomes range from maternal mortality rates to utilization measures such as primary healthcare visits and institutional deliveries. The majority of these papers focus on objective changes in the outcomes of interest; however, one study does look at the perceptions of providers with regard to beneficiary-related outcomes. While findings regarding results are explored in the next sub-section, one trend that is worth noting is that the studies that explore the relationship between PPE(s) and beneficiary outcomes overwhelmingly do not also explore the intermediary outcomes that may be of interest, especially if ultimate outcomes do not show statistically significant changes. In cases in which an engagement does not have the intended effect of changing measures of health, exploring whether changes can be observed in measures like quality, system factors, or even engagement between the partners can help to highlight where changes to the engagement, and thus future engagements, may help to strengthen its effectiveness.

The second category of factors that we identify in the review – *system-related outcomes* – represents the smallest subset of the literature identified as part of this paper; only 4 of the studies reviewed analyzed health systems outcomes, which include operating cost per volume of services provided, healthcare access, knowledge of healthcare providers, and contracting policy and implementation. We might expect to see a larger proportion of the literature focusing on these health systems outcomes given their importance as well as the fact that they may be easier variables on which to collect data than ultimate outcomes; the unit of analysis for these measures is often the system or facility as opposed to the individual. However, given the complexities of analyzing systems change, it may be that measurement of these changes has lagged behind more traditional indicators.

The final category of outcomes – those related to *public-private engagement* itself – appear in 7 of the 27 studies. We know that the end goal of a PPE is not the quality of the engagement itself; these initiatives are instituted to achieve greater efficiency, strong quality of care, greater access, and ultimately better health outcomes. However, as will be discussed in a later section of the review on success and hindrance factors, we also know that these engagements come with a myriad of design choices and challenges. As such, assessing how well an engagement itself is functioning can help in understanding whether the engagement is functional enough to

have the potential to trigger these downstream outcomes. In other words, outcomes like the ones studied in these articles (including data sharing between the sectors, understanding and awareness factors, performance measures, and transitions into and out PPEs) should not be taken as a given in these sometimes-challenging engagements.

This widely-varied distribution of outcomes in the empirical studies highlights the many changes that need to occur – from functioning engagements to health systems improvements to ultimate beneficiary outcomes – for a PPE to actually be effective. The other trends that this review seeks to highlight are those related to the evidence and the results themselves.

Outcomes and Results

For this subsection, we again organize the trends by the category of outcome; while the sample size for each is relatively small, examining each category as a group reveals interesting trends regarding what we know about the effectiveness of PPEs with respect to different outcome types. Throughout this section, we also explore a final important question about this empirical work – how do we know what we know. As we share the results, we also explore the methodologies used to study these engagements.

Starting with the largest outcome category (*beneficiary health outcomes*), the story that this group of studies reveals is that there is strong and relatively consistent evidence from the papers reviewed that PPEs can be associated with improvements in health outcomes for individual beneficiaries. In the state of Gujarat in India, Acharya and McNacmee (2009) find evidence that Chiranjeevi Yojana, a scheme in which government contracts private providers to provide delivery services, demonstrated reductions in the reported maternal deaths based on estimates of the expected maternal mortality rate in Gujarat from past data. A different study (Ng et al., 2013) that analyzes the same program (Chiranjeevi Yojana) finds that, while results varied across districts in which the program was implemented, there is still an overall statistically significant improvement in institutional deliveries during the time period studied, as well as some evidence linking reductions in maternal mortality with increases in institutional deliveries. A third study of the program (Vora et al., 2015) finds that Chiranjeevi Yojana improves access to emergency obstetric care in each of the three districts in which the authors conduct their research. While much of the evidence regarding this Chiranjeevi Yojana PPE is positive, one exception (Mohanan et al., 2013) instead finds that the program is not correlated with a significant increase in facility-based delivery or birth complications.

A study from Greve and Coelho (2017) used a mixed-method impact evaluation to find that the contracting out of health services in São Paulo, Brazil, resulted in increases in primary healthcare appointments and, by extension, reduction in hospitalization for preventable diseases. In a study that focuses on maternal and child health services in Pakistan, Imtiaz et al. (2017) show a pre-post improvement in levels of vaccination and utilization of services in Pakistan in association with a new public-private partnership implemented in one district. With the exception of the first study noted, these all utilize rigorous quantitative or mixed evaluation methods, adding credence to their findings of positive results.

In addition to these articles that highlight almost universal improvements in health outcomes, several papers find mixed results, with statistically significant evidence in the case of at least some outcomes of interest. A study by Field et al. (2018) of a PPE seeking to improve access and health outcomes for remote areas of Papua New Guinea finds marked improvements in healthcare visits, antenatal care coverage, vaccinations, while outcomes such as family planning coverage and supervised delivery did not change or followed the previous trends observed before the start of the engagement; this evaluation was conducted as a midline study and, as such, may reveal further improvements when more time has passed. Sidney et al. (2014) study a PPE in Madhya Pradesh that worked with private transport agencies to provide emergency transportation services for childbirth; the authors find relatively high utilization that varies across districts. However, it is important to note that this is not compared to a baseline and so it is difficult to interpret whether this is an increase in access to transport. In Iran, Farahbakhsh et al. (2012) compare government-run primary healthcare facilities with cooperatives that were part of a PPE collaborative and find that, while some PPE facilities have better results in programs such as maternal health care, other programs such as child healthcare and school health perform equally in both types of facilities. Finally, Banerjee et al. (2014) reveal some positive findings related to beneficiary perceptions of a safe abortion program in India; however, additional evidence is required to assess whether beneficiary perception aligns with more objective quality indicators.

While the above findings paint a promising picture regarding the potential for PPEs to improve beneficiary health outcomes, it is worth noting that each of these articles was found through a search of the academic literature, and thus this trend toward positive outcomes may in part be due to publication bias. With that caveat, the fact that several of these studies were able to use rigorous evaluation methods to show evidence that engagements successfully traversed the complex causal chain to get to health outcomes is certainly a positive signal for the field.

Turning to the studies in this review that focused instead on *health systems-related outcomes*, the picture is less clear, at least in part because of the small number of studies from which to draw these conclusions. As noted in the previous subsection, only 4 of the papers reviewed provide empirical evidence that relates to changes in system outcomes and only 3 actually provide evidence on these specific outcomes as opposed to presenting factor that may stand in the way of accessing care. There are many potential reasons why this pool of articles may be so small, including a focus by those supporting engagements of this type on a narrower set of problems and needs than those that would constitute broader systems-focused outcomes.

Three of the articles show some positive evidence linking PPE(s) to improvements in health systems. Sekhri et al. (2011) undertake a comparative case study of 3 PPEs in Lesotho, Turks and Caicos, and Valencia, Spain, that all seek to expand the volume of service provision through partnerships with the private sector while keeping consistent operating costs; while the engagement in Lesotho is too early to draw results, the engagements in Turks and Caicos and Valencia both have positive results regarding their volume to operating costs outcomes. The second study (Zaidi et al. 2012), which analyzes a NGO-government contracting program in Pakistan, finds much more mixed results; at a high level, the program initiated successful contracting processes, but the degree to which the program continued operating successfully

varied greatly depending on factors such as political context and NGO capacity. The third study, focusing on a program seeking to improve provider skills to deliver emergency obstetric care, finds improvements in the knowledge and learning outcomes of those providers who receive PPE-led training (Siaulys et al., 2019).

All of these studies were built on qualitative approaches that can provide useful findings regarding policy, context and experiences of stakeholders involved in these programs; however, they are limited in terms of what they can say regarding definitive or likely impact of the programs on outcomes of interest.

The final set of articles, those focusing on *engagement outcomes*, represents a significant opportunity for growth in the literature on effective PPEs. While these 7 articles provide important foundational work regarding what makes an effective mixed health systems engagement, the studies focus almost exclusively on either landscaping of the types of PPEs that occur or the obstacles to setting up or implementing engagements. This includes case studies that sought to identify: how well stakeholders understand the concept of PPEs in Nigeria (Anyaehe et al., 2014), barriers to data sharing between the public and private sector in Uttar Pradesh (Gautham et al., 2016), barriers to transition between public and private sector management in Cambodia (Jacobs et al., 2009), the role of power dynamics (Kamugumya and Olivier, 2016) and synergy between the sectors (Mshana et al., 2018) in informal and formal mixed health initiatives in Tanzania, how to support stronger partnerships in Ghana (Adezei), and potential sustainability of a PPE in Mexico (El Bcheraoui et al., 2018).

Ultimately, the value of each of these studies is to identify potential factors that stakeholders associate with stronger engagements; however, none go so far as to analyze these engagements explicitly on the quality of factors that may constitute a successful engagement.

How public-private engagements lead (or fail to lead) to outcomes

As outlined in the previous section, the current academic research highlights the potential of PPEs to improve population health and health systems outcomes as well as outcomes related to cross-sectoral engagement itself. However, the limited sample from which this conclusion can be drawn is striking, as is the diversity of the studies analyzed. Recognizing that creating and maintaining successful engagements is challenging, this evidence review sought to understand not just the current evidence base can tell us about the impact of these engagements, but also the trends related to motivations, structure, and success and hindrance factors associated with PPEs.

One limitation of this review and the literature more broadly is that the evidence on motivation, structure, and factors associated with success and lack thereof of PPEs is largely based on theory or perceptions. The limited studies that undertook rigorous analyses of the impact of PPEs (those discussed in the previous section) largely did not include a parallel rigorous analysis of the underlying causes or contributing factors that could explain the links between engagements and outcomes. However, the experiences and perceptions of those designing,

implementing, and serving as beneficiaries of PPEs as well as the hypotheses of researchers studying these engagements provide an important set of insights into what may explain the readiness, best fit design, and/or factors associated with successful engagements. This is the set of evidence that we analyzed and present in the subsequent three sections.

Motivation for public-private engagement creation

The literature revealed interesting trends in the themes and health systems challenges addressed by PPEs – ultimately addressing issues of what motivates stakeholders to develop and participate in PPEs. Across the articles in the review, motivation for developing a PPE focused mainly on supplementing public provision of care, and specifically supplementing public provision of care for improving or expanding health service delivery. Thirty-five articles across geographies discussed this as a key motivation for PPE.

Twenty-five of the 35 articles described PPEs focused specifically on supplementing primary health care, including maternal and child health services and vaccination. For example, in India most PPEs in the literature operate at the primary health care level and are commonly created to improve access to maternal, child and neonatal health services (Acharya and McNamee, 2009; Ravindran, 2011); this includes private individual practitioners, clinics, small nursing homes, and community health organizations (Baru, 2017). The literature suggests that public sector actors in India often partner with the private sector to improve access to primary preventative healthcare, especially in rural areas. In several other countries, the evidence described PPEs that also focus on providing preventative care at the primary healthcare level focusing on maternal and child health. These countries include Brazil, Kenya, Pakistan, Papua New Guinea, Tanzania, Uganda, and Zambia (Imtiaz et al., 2017; Zaidi et al., 2012, Kruk et al., 2014; Thiessen et al., 2018, Kamugumya et al., 2016; Bakibinga et al., 2014; Siaulyis et al., 2019). Interestingly in China, however, Baru and Nundy (2017) share that the majority of public-private partnerships focus on tertiary multi-level specialty hospitals. This article notes that the Chinese government has a gap in healthcare specialists and leverages the private sector to fill that gap.

In addition to supplementing public provision of care, another key motivation for developing PPEs – specifically in India – is corporate social responsibility (CSR). India's 2013 Companies Act mandates that all for-profit companies earning over a certain threshold of revenue must allocate two percent of their annual profits to CSR activities (Ministry of Corporate Affairs, 2013). One way for private companies to fulfill this CSR requirement is to partner with the government to fund a health initiative under a PPE scheme, often to fund a specific clinic or piece of government work (Ranganadhan, 2018). CSR is also an important motivator for many individual private providers to become involved in specific PPE schemes like Chiranjeevi Yojana ; according to one analysis, many participating providers choose to become involved in Chiranjeevi Yojana because they are at the end of their career and wish to give back to the poor (Acharya and McNamee, 2009).

While we might expect that motivation for PPE creation would be consistent within a specific region, this is not the case. For example, India not only had many examples of PPEs but also

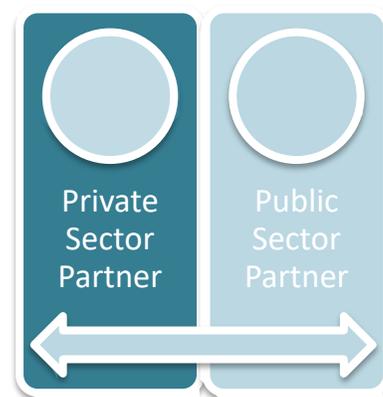
had the greatest breadth in the types of health system challenges addressed by PPEs. The reviewed articles include evidence from seven states in India about PPEs that tackle a variety of themes and challenges. These include many articles about Chiranjeevi Yojana performance-based financing scheme in the state of Gujarat (Acharya and McNamee, 2009; De Costa et al., 2014; Ganguly et al., 2014; Iyer et al., 2016; Mavalankar et al., 2009; Mohanan et al., 2013; Ng et al., 2013; Salazar et al., 2019; Sidney et al., 2016; Singh et al., 2009; Vora et al., 2015; Yasobant et al., 2016), emergency obstetric transportation PPEs (Sidney et al., 2014; Singh, 2018), primary health care PPEs (Joshi et al., 2017; Yadav et al., 2017), and several suggestions for how PPEs could work in the Indian context more generally, especially in aiding rural development efforts (Krupp and Madhivanan, 2009; Ravindran, 2011; Dawra and Jagtap, 2015).

Public-private engagement partner arrangements and agreements

A key aspect of PPE is *how* the actors involved structure their engagements. Forty seven articles in the sample focus on specific PPEs as opposed to wider theoretical concepts or policies. In this section, we analyze these 47⁴ articles to better understand how stakeholders structure these engagements including the types of models or arrangements they use as well as the formal or informal agreements used. In the examples from the evidence, the public sector partner was either a national level ministry unit, a national health insurance scheme, or a sub-national health management team. The private sector actors varied and included: small, individual private sector facilities (31 out of the 47 articles), larger or otherwise more organized private sector partners (11 out of 22 articles) like aggregated networks of smaller private facilities or private insurers, or international private sector partners like international NGOs, multilateral agencies and donors (8 out of 22 articles).

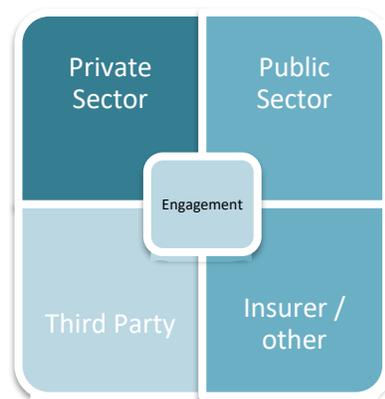
Engagement arrangements

Two main types of models emerged across the literature. The first and most straightforward model is a bilateral engagement. This is a direct engagement between a public sector agency, body, or team and a private sector body, association, or individual provider. For example, in South Africa during their transition to national health insurance, the government observed a shortage of doctors in the public sector and started an initiative to test different ways of directly contracting private sector general practitioners for provision of primary health care in public clinics (Mureithi et al., 2018). Similarly, in the state of Gujarat, India, in an effort to ensure free delivery and emergency obstetric services to poor mothers the state ministry of health empaneled private sector providers to compensate for insufficient public facilities (Acharya et al., 2009; Ng et al., 2013; Iyer et al., 2016). Finally, in Abbottabad, Pakistan, the



⁴ Though there are 47 different articles included in this section, it is important to note that of the 47 articles, 12 articles focus on the same PPE from India, Chiranjeevi Yojana, and 4 articles focus on Saving Mothers Giving Lives.

government piloted leasing out public facilities to an NGO, aiming to improve provision of maternal and child health services and management of public facilities (Imtiaz et al., 2017). The



bilateral arrangement was highlighted in 28 of the 47 articles. The most common public actor cited in these bilateral engagements was the sub-national team, with 23 of the 28 articles focusing on a sub-national public sector actor managing the engagement, with the private sector partner most frequently being represented through smaller, individual practitioners or facilities (24 of the 28 articles).

A second model includes the same two partner types but has an overall larger number of partners playing a variety of roles. This type of arrangement appears in 15 of the 47 articles⁵ and includes arrangements involving international development partners, local NGOs, or multilateral organizations. For example, the International Labor Organization has supported many public-private engagements (Papkalla and Kupfer, 2009) as well as the International Finance Corporation, the World Bank, and the United States Agency for International Development (Ravindran et al., 2011; Suchman et al., 2018). Within the multi-party arrangement model, the evidence references PPEs that often include a variety of actors and actor combinations including: engagement of community leaders within informal settlements in Kenya (Bakibinga et al., 2014), multiple levels of the public sector at national and local levels in Colombia (Vargas et al., 2010), and even non-health related private sector actors, such as partnering with small transportation companies to assist with emergency referrals and birth complications in India (Sidney et al., 2014; Singh, 2018).

When envisioning the types of evidence to solicit during this review, one key question centered on examples of third-party support to PPE as a neutral broker and facilitator and thus we tried to understand what type of support this third-party partner was providing within the arrangements cited. The examples demonstrated that this third-party role often provides support to the overall PPE through either facilitation as is the case with partners like PharmAccess in Ghana and Kenya (Suchman et al., 2018), technical assistance as is the case in Papua New Guinea provided by Abt Associates (Field et al., 2018), or contract management support to district health teams in South Africa (Mureithi et al., 2018). The third-party role can also be seen as a financing or infrastructure development partner as in the integrated partnership examples highlighted in Lesotho, the Turks and Caicos, and Spain (Sekhri et al., 2017). In other cases, this third-party role is held by a social franchiser whose main role is to assist in organizing and managing a subset of the smaller private providers and facilities within a specific geography (Suchman et al., 2018). Countries choosing to engage with a third-party partner for the provision of technical assistance is evident in many of the examples related to the HIV/AIDS epidemic, where third party partners support country decision-makers on how to properly address the epidemic within their particular circumstances while partnering with local private sector partners (Papkalla and Kupfer, 2009).

⁵ This reflects that some of the 47 articles appear in both the bilateral arrangement and multiple party arrangement count because some articles discussed examples of both arrangements.

Across these articles, the third party's main contribution to the partnership arrangement is as a technical assistance provider (12 out of the 15 articles referencing a specific third-party role), with financial assistance (ten articles) identified as the second most common category of third-party support either through international private sector support to facility upgrades or through donor support to projects aiming to improve the quality of care within a public-private engagement. In the set of articles reviewed, the third party as a facilitator and/or neutral broker role was only specifically mentioned in 3 articles, similar to the number of times that infrastructure development and contract management were mentioned. However, this could be related to the vague definition of facilitation and the various words that could describe a partner who provides facilitation support. These articles noted that the facilitator role was useful in catalyzing initial conversations, dispelling misconceptions, making the case for the "value add" of one sector's involvement to another and brokering relationships among the different actors to address an identified health system challenge (Papkalla and Kupfer, 2009; Suchman et al., 2018). Finally, the evidence shows that a third-party partner is also well positioned to ensure accountability between the partners (Sekhri et al., 2011), support a formalized form for continuous dialogue and iterative activity development (Suchman et al., 2018), and can also play the important role of performance management within a specific engagement (Mureithi et al., 2018).

Engagement agreements

Among the different arrangements that have been studied, we observe some common models of how actors formalized, or did not formalize, the structure of the engagements using various kinds of agreements or contracts. All of the 47 articles noted the use of a formalized agreement among the actors, with 5 articles specifically discussing a contracting-in model and 24 articles discussing a contracting-out model. Three articles additionally made reference to engagements that are less formal, including one that focused on defining memorandums of understanding (MOUs) for private providers receiving government commodities (Kamugumya et al., 2016). Additionally, 2 articles described a joint venture, wherein a new organization or board was created including representation from both the public and private sectors (Masaki, 2013; Ravindran, 2011).

Across these examples, the evidence described mixed experiences amongst the different types of agreements. One article noted that a form of contracting-out approach taken in Cambodia appeared to create a hybrid approach between the traditional contracting-in versus contracting-out approaches where private contractors operate within the public system but are given more autonomy to manage human resources, commodities, and other aspects of service delivery. In this case, the hybrid model demonstrated improved service delivery quality and cost-effectiveness (Jacobs et al., 2009). In addition, several articles mentioned how the agreement itself, either through its clear definition of roles and responsibilities (Suchman et al., 2018) or by their inclusion of performance requirements (Wang et al., 2013; Jacobs et al., 2009), helped to strengthen the PPE towards better health outcomes. The evidence shows that agreements do provide some level of structure to the arrangements. However, across the 47 articles the evidence also shows that regardless of agreement type, whether formal or informal, the contextual factors surrounding the engagement are also important. In the next section of this

paper, we will discuss the findings related to specific contextual, actor characteristic, and structural factors that can further support or hinder the success of a PPE, and how they can be applied and leveraged differently according to the arrangements and agreements outlined in this section.

Success and Hindrance Factors

Under the assumptions that not all PPEs are equally effective and that factors related to context, design, and implementation potentially influence the outcomes of PPEs, we sought to understand the key factors from the literature that may help or hinder PPE success as a major objective of this evidence review. The preceding sections on motivations and models for engagement identified a number of factors related to the structural arrangements of partners and motivation for their creation. To complement and add to these, we utilized an open coding approach to identify additional factors related to PPE effectiveness and to define and develop a factor typology. We used this approach with 52 articles that referenced specific PPE success factors, including both theoretical and experiential literature on PPE as well as empirical studies evaluating specific PPEs⁶.

We identify 4 factor categories in total. Two factor categories are contextual and include the enabling environment for PPEs and the characteristics and capacities of both the participating public and private sector actors and the intended beneficiaries of a given PPE. The third category focuses on partnership “hardware”: the technical structure, inputs, and implementation processes of a PPE, such as contracting mechanisms and financing. Strikingly, a fourth and final category is the most prevalent and frequently referenced category of factors – one that relates less to contextual or “hardware” factors and more to the relationship dynamics between the individuals and organizations making up the partners themselves (the “software” of PPEs).

Contextual Factors

Enabling Environment

Factors related to the enabling environment—contextual factors that shape the operating environment of PPEs and may determine whether PPEs occur and are effective, but which the actors involved in a PPE may not be able to directly influence—are referenced in 16 articles included in the review. These factors are largely related to the organizational, legal, political and economic context of a given PPE, especially the strength of the legal and regulatory environment.

The existing political and legal context is referenced in 8 of the 16 articles (Adzei, 2014; Gautham et al., 2016; Grazzini and Petretto, 2014; Jacobs et al., 2009; Masaki, 2013; Ojha, 2016; Raman and Bjorkman, 2015; Ranganadhan, 2018). Political support for health provision

⁶ Note that any reference by the authors regarding factors that may have been associated with success or harm to the engagement was included in our coding; this does not necessarily mean that all factors cited were identified through rigorous evaluation methods.

through PPE is critical to success (Jacobs et al., 2009); conversely, political interference can prove to be a constraint (Raman and Bjorkman, 2015). The existence of a strong legal framework for the private sector is also a commonly cited factor: for example, a review of case studies on public private partnerships in health and education across Australia, the Netherlands the UK, and the USA finds that a strong legal framework supporting an enabling policy and regulatory environment—underpinned by a monitoring system able to evaluate private sector performance and establish penalties and incentives—are critical for success (Grazzini and Petretto, 2014). Conversely, in Uttar Pradesh, India, the absence of a binding legal framework is seen as a key barrier to setting up compliance mechanisms and ensuring that the private sector shares data with the government (Gautham et al., 2016).

Multiple authors emphasize the importance of strong existing systems to enable PPE success. Health information and monitoring systems are particularly emphasized as key factors for effective government stewardship and PPE, citing the need for the government to have reliable data on the private sector to support engagement, planning, and use of effective accountability and incentive mechanisms in the regulatory system (Adzei, 2014; Chapman, 2014; Gautham et al., 2016; Nachtnebel et al., 2015). For example, inadequate regulatory and monitoring systems in the Asia Pacific region are cited as hindering factors preventing strong government stewardship of mixed health systems, including effective contracting with private providers (Nachtnebel et al., 2015). One systematic literature review (Adzei, 2014) also uncovers the importance of effective institutionalized policy instruments—including supply- and demand-side financing systems—as key factors in the enabling environment for PPE.

Finally, some enabling environment factors are related to the private sector market itself, such as the degree of privatization of the health sector and size of the private sector market and cost of private sector health services, influencing opportunities for the public sector to appropriately leverage private investment (Chapman, 2014; Ranganadhan, 2018; Whyte and Olivier, 2016).

Actor Characteristics & Capacities

While we discuss the potential models for partnership in the previous subsection, the capabilities and characteristics of the partners themselves also arises as a set of critical factors in understanding engagements, influencing partners' likelihood of entering into a new PPE or successfully engaging in an existing PPE. Beyond the partners themselves, additional factors related to the intended beneficiaries of an engagement—from the socioeconomic status of the community served to their access to and perception of health services—also emerge through the evidence review.

Public sector characteristics and capacities are most prevalent within this category, arising in 19 articles. One factor revealed by the review is government leadership for PPE, either through a prominent senior champion for engaging with the private sector or an institutionalized PPE agency or unit (Adzei, 2014; Makinen, 2011; Sekhri et al., 2011). For example, many countries have sought to establish agencies to support PPE and track performance, which can also help to build contracting capacity (Sekhri et al., 2011). Conversely, the lack of a high-level public champion for PPE and under-resourcing of the Ministry of Health's private sector unit was

deemed as an institutional failure in a World Bank-led assessment of Ghana's private health sector (Makinen, 2011).

However, most strongly emphasized across the literature—and related to the enabling environment—is the capacity of public sector actors to provide strong stewardship and regulation within PPEs and for mixed health systems more generally. The capacity of public sector partners to develop, execute, and manage contracts, including financial management, is found to be an important factor across multiple studies (Adzei, 2014; Chapman, 2014; Kula and Fryatt, 2014; Mureithi et al., 2018; Nachtnebel, 2015; Hort et al., 2014; Sekhri et al., 2011; Whyte and Olivier, 2016). Again, the public sector's capacity and will to implement and enforce systems to monitor and regulate the private sector and PPE emerges as a key success factor (Adzei, 2014; Makinen, 2011; Bloom et al., 2014; Chapman, 2014; Grazzini et al., 2014; Hort et al., 2014; Nachtnebel, 2015; Raman and Bjorkman, 2015; Ravindran, 2011; Schuftan & Unger, 2011; Sekhri et al., 2011; Sidney et al., 2014; Whyte and Olivier, 2016). For example, an evaluation of a public-private partnership for reproductive health training in Papua New Guinea found the lack of capacity of the National Department of Health to engage in the partnership, including challenging internal systems and processes that hindered decision-making, to be a major inhibiting factor (Thiessen et al., 2018).

On the side of the private sector (mentioned in 16 articles), key factors are related to the organization and capacities of private sector actors. The organization of the private sector, including the establishment of representative bodies for private sector actors that can act as key liaisons with the public sector, is found to be an important factor in improving the efficiency of cross-sector engagement, as heterogenous and disorganized private sector actors can be more costly and challenging for the public sector to engage with (Adzei, 2014; Makinen, 2011; Suchman et al., 2018). For example, a study on public-private partnership for social health insurance in Ghana and found that “clear organization among the partners representing private providers, with defined roles and lines of communication, will be key to increasing efficiency in cross-sector work” (Suchman et al., 2018). The capacity of the private sector to successfully engage in and fulfill defined roles or contracted responsibilities under PPEs—including managerial, financial, and technical capacity for service provision—is also emphasized as a key factor across the literature (Adzei, 2014; Makinen, 2011; Anyaehie et al., 2014; Barnes, 2011; Hort et al., 2014; Nachtnebel, 2015; Ojha, 2016; Ranganadhan, 2018; Ravindran, 2011).

Finally, factors related to the intended beneficiaries of a PPE were mentioned in 17 articles. Especially for PPEs focused on health service provision, factors such as the beneficiary population's access to the provided health services can impact whether they are utilized and whether a PPE is ultimately successful in achieving its intended outcomes (Acharya and McNacmee, 2009; Ranganadhan, 2018; Ravindran, 2011; Vargas et al., 2010; Hort et al., 2014). Evidence also showed utilization is influenced by beneficiary awareness and demand for services (Chapman, 2014; Fabre and Straub, 2019; Jacobs et al., 2009; Ojha, 2016; Ranganadhan, 2018; Ravindran, 2011; Hort et al., 2014). For example, a literature review on purchasing arrangements with the private sector to provide services for underserved populations finds that patients' awareness and willingness to utilize services determines

demand, and that purchased services must be appropriately designed to overcome access barriers and translate demand into utilization (Hort et al., 2014).

Beneficiary demand and utilization can also be driven by their health knowledge and behavior, as well as their trust (or lack thereof) in the health system and available services. A study on public-private partnerships for referral systems and transport in India found that pregnant women's own perceptions of high-risk conditions in labor contributes to their limited utilization of '108' ambulances provided through the private sector (Singh, 2018). An assessment of the Chiranjeevi Yojana in Gujarat, India, through which public funding is used to support poor women's delivery in empaneled private facilities, finds that a lack of trust between patients and providers was a restricting factor on the success of the scheme (Acharya and McNacmee, 2009).

The “Hardware” of PPEs: Technical Structure and Inputs

Beyond contextual factors that may influence the success of PPEs—and even determine whether they occur at all—the review identifies a category of factors related to the technical inputs and structure that shape established PPEs. Building on the factors identified in the preceding partnership arrangements section, these PPE “hardware” factors are discussed in 34 of the articles reviewed and focus on factors that may be important regardless of engagement model, including financing, factors related to contracting, and other technical factors related to appropriate intervention design and monitoring, adaptation, and learning.

Unsurprisingly, factors related to resource sufficiency for PPE come up often in the literature, particularly the availability of public or private financial resources to support engagement (Ojha, 2016). Engagements should be financially workable, as constrained resources can undermine partnerships (Dawra and Jagtap, 2015); the success of contracting between government and the private sector can be dependent on the government's ability to meet its financial commitments (Jacobs et al., 2009). Some studies emphasize the duration of investments in PPEs as a success factor, as long-term investments can increase the dedication of partners to producing successful outcomes (Banzon et al., 2013). Non-financial resource sufficiency is also mentioned in the literature, including the presence of adequate, competent, and appropriately supervised human resources (both managerial and clinical and across both sectors) to support an engagement, as well as access to any physical inputs required for implementation (Adzei, 2014; Krupp and Madhivanan, 2009; Masaki, 2013).

Factors related to contracting are also frequently referenced, beyond the specific models of contracting or agreement discussed in the previous section. It is worth highlighting evidence from the literature that specifically addresses the potential role of the contracting origin, contracting design expertise and experience of public and private sector partners, the length of time of contracts (i.e., long term rather than short term contracting), and periodic review of contracts throughout the life of an engagement in supporting and hindering success (Grazzini and Petretto, 2014; Greve et al., 2017; Jacobs et al., 2009; Kula and Fryatt, 2014; Sekhri et al., 2011; Zaidi et al., 2012). For example, inexperience in long-term contracting in both sectors—resulting in unsustainable contracts with too much risk being transferred to private actors—

contributed to the failure of a series of integrated public-private partnerships in Australia in the 1990s as part of a multisectoral effort to improve public services within severely constrained budgets (Sekhri et al., 2011). While contract structures and payment mechanisms can vary widely, the selection and use of appropriate and timely remuneration and payment mechanisms, including performance-based payments, that can appropriately motivate and incentivize actors within a PPE may also be an important factor in effectiveness (Makinen, 2011; Jacobs et al., 2009; Nachtnebel et al., 2015; Raman and Bjorkman, 2015; Ravindran, 2011). Conversely, complicated or delayed reimbursement or payment mechanisms can become barriers to effective implementation, as occurred in the Yukti Yojana program in Bihar, India, which sought to increase access to safe abortion services through private sector accreditation (Banerjee, 2014).

An additional contracting factor relates to private partner selection, including through competitive bidding, which can impact the success of an engagement by determining whether the “right” partner with appropriate capacity is engaged (Grazzini and Petretto, 2014; Iyer et al., 2016; Hort et al., 2014; Ranganadhan, 2018; Sekhri et al., 2011). One literature review, for example, finds that transparent selection of an appropriate mix of public or private providers or actors is an important factor in successful PPE schemes (Hort et al., 2014); some studies find that tying contracting with private providers to defined quality or accreditation standards is an important engagement success factor (Sekhri et al., 2011; Hort et al., 2014). However, a review of 3 case studies on integrated partnerships finds that “selection of the right private partner requires greater interaction and discussion with potential bidders during the precontracting phases and a more flexible approach to procurement than traditional public processes often allow” (Sekhri et al., 2011). While the article does not define what constitutes the “right private partner” it points to the need to assess a partner across more dimensions that are usually considered in public sector procurement, for example, assessing the partner’s cultural compatibility to ensure better alignment with the need and the engagement.

Finally, monitoring, learning, and adaptation are also frequently cited as factors in PPE effectiveness, as close monitoring of PPEs is necessary to understand performance and outcomes (Adzei, 2014; Banzon et al., 2013; Grazzini and Petretto, 2014; Iyer et al., 2016; Nachtnebel et al., 2015; Ojha, 2016; Papkalla and Kupfer, 2009; Raman and Bjorkman, 2015; Ranganadhan, 2018). Especially in longer-term partnerships, the ability of partners to monitor and adapt to inevitable changes can be an important factor for success (Sekhri et al., 2011). For example, a literature on public-private interactions in South Africa found that innovation and learning, pilot testing, and building a knowledge base of what works were important factors that increase the likelihood of interactions being successful (Kula and Fryatt, 2014).

The “Software” of PPEs: Relationship Dynamics

A noteworthy result of the review is that, while factors related to context and partnership “hardware” come up frequently across the literature, by far the most prevalent of the four factor categories—appearing in 40 articles—focuses on the relationship dynamics between public and private sector partners themselves, or the “software” of PPEs. Some articles went so far as to compare PPEs more to long-term relationships or marriages than technical interventions, stating

that “long-term partnership is like a marriage—requiring continuous discourse, compromises at times and always the good will to stay together in a project” (Papkalla and Kupfer, 2009) and that “partnerships are not arm’s-length contractual agreements but are more like marriages, requiring a high degree of trust and an appreciation for the incentives and motivations of the other party” (Sekhri et al., 2011).

Trust (or mistrust) between the public and private sector partners was frequently referenced as a key factor in the success of PPEs across diverse contexts. Trust is often cited as an enabler of effective relationships and partnership arrangements; however, a lack of trust or mutual mistrust is often cited as a factor in the prevention of open information sharing and communication (Adzei, 2014; Diwan et al., 2019; Gautham et al., 2016; Nachtnebel et al., 2015; Raman and Bjorkman, 2015; Schuftan and Unger, 2011; Suchman et al., 2018). For example, a study on data sharing between the public and private sectors in Uttar Pradesh, India found that mutual mistrust between public and private actors inhibited data sharing and drove a lack of engagement across sectors (Gautham et al., 2016). Similarly, a qualitative study on a public private partnership to promote facility births in Madhya Pradesh, India also identified trust deficits to be a hindering factor (Diwan et al., 2019).

Mutual understanding across parties is referenced as an important factor in the implementation of effective partnerships (Papkalla and Kupfer, 2009); however, a lack of engagement can inhibit this understanding, especially private providers’ understanding of government policies and procedures (Suchman et al., 2018). Further, perceptions or misconceptions of the opposite sector—such as private stakeholders’ fears of harassment by public actors following information disclosure (Gautham et al., 2016)—can inhibit effectiveness. Notably, one study cites “insufficient understanding of the incentives and needs of the other party” as a common factor in the failure of a series of integrated public-private partnerships in Australia in the 1990s (Sekhri et al., 2011).

The review also reveals communication and dialogue across sectors to be a critical factor in PPE success. Effective communication and fair dialogue are frequently cited as essential in overcoming mistrust, promoting transparency, defining roles, ensuring that the needs of different parties are met, and implementing joint planning (Diwan et al., 2019; Ojha, 2016; Papkalla and Kupfer, 2009; Suchman et al., 2018; Thiessen et al., 2018). For example, an evaluation of a public-private engagement in Papua New Guinea finds that “regular partnership meetings for annual planning and quarterly reviews of progress assisted with creating shared understanding of health service delivery in the area” (Field et al., 2018). Another case study in Tanzania finds that strategic communication between sectors was a key factor promoting partnership effectiveness (Mshana et al., 2018). Some, however, point out that this communication and coordination can be challenging, especially in developing contexts (Adzei, 2014). For example, a qualitative study on engaging the private sector in sharing health-related data in Uttar Pradesh, India finds that a lack of official communication from the public sector to the private sector impeded efforts to improve data sharing (Gautham et al., 2016).

Beyond trust, mutual understanding, and communication, the existence of a shared vision or common goal across sectors is a frequently cited software factor; when objectives across the

public and private sectors are aligned, partners can become motivated when realizing they can have greater impact by working together (Adzei, 2014; Bloom et al., 2014; Jenson 2015; Papkalla and Kupfer, 2009; Raman and Bjorkman, 2015; Thiessen et al., 2018). In the Papua New Guinea public-private partnership for reproductive health training, for example, the use of national policy documents around public-private partnership and maternal health were fundamental to the establishment of the engagement so that all partners were aligned around achievement of the same outcomes in line with the national health agenda (Thiessen et al., 2018). However, the effectiveness of PPE implementation can be hindered when common goals are not clearly understood or when partner interests, motives, or objectives are misaligned (Adzei, 2014; Acharya and McNacmee, 2009; Bloom et al., 2014; Gautham et al., 2016; Kostyak et al., 2018; Ojha, 2016; Raman and Bjorkman, 2015; Sekhri et al., 2011). Multiple and conflicting objectives across partners are found to be a key hindering factor in the Australian integrated public-private partnerships (Sekhri et al., 2011); in Uttar Pradesh, India, mismatched interests and a lack of motivation by private hospitals to align with public reporting requirements hinders efforts to improve data sharing (Gautham et al., 2016). Such conflicts of interest among partners—including when private sector partners may have a profit or market orientation—can lead to debate and delays in making important decisions (Kostyak et al., 2018).

Further, factors related to joint planning emerge from the review. A UNAIDS review of twelve HIV-related public-private partnerships finds that strong PPEs require joint planning from the earliest stages of engagement, including for sustainability, follow up, and monitoring (Papkalla and Kupfer, 2009). Joint planning should include the articulation of an agreement on clear roles and responsibilities across partners. While clear roles and responsibilities can remove friction and reduce confusion in implementation, a lack of clear roles and responsibilities is cited as hindering the effectiveness of PPEs by limiting ownership and accountability (Mshana et al., 2018; Papkalla and Kupfer, 2009; Jenson, 2015; Ojha, 2016; Thiessen et al., 2018). Clear roles and responsibilities—along with other related factors such as mutual trust and understanding—may promote teamwork, collaboration, and strong interpersonal relationships among sector partners in a PPE, which were also found to be critical factors for success (Mshana et al., 2018; Adzei, 2014).

Finally, the review also uncovers several factors related to negotiation and conflict resolution. Some studies acknowledge the potentially opposing cultures or operating environments that may be found across public and private sectors, which may need to be reconciled through negotiation (Papkalla and Kupfer, 2009). In some PPEs, inadequate negotiation and conflict resolution procedures are found to be hindering factors. For example, the integrated PPEs in Australia were found to be hampered when parties were unable to agree on methods for negotiating annual operating budgets (Sekhri et al., 2011); inadequate processes for conflict negotiation and joint decision-making are also found to be a hindering factor in GAVI's overall strategy for PPP (Jensen, 2015).

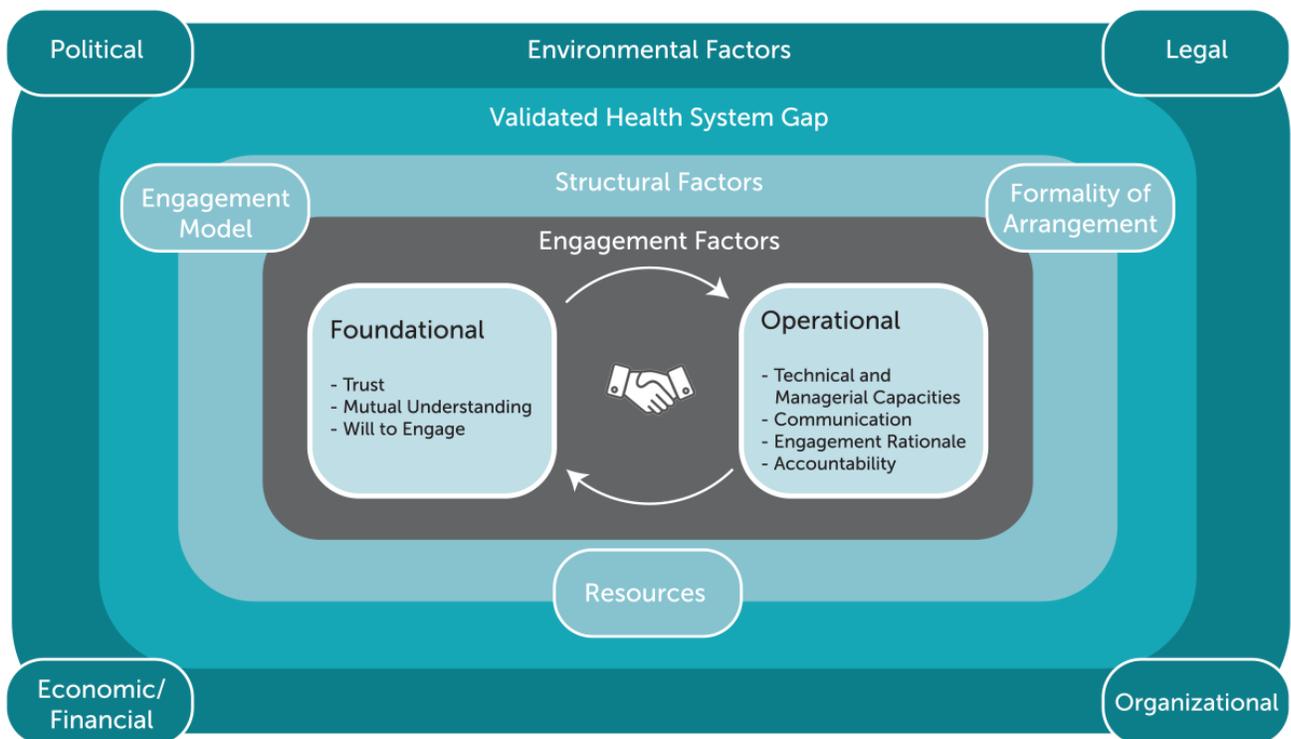
IV. Discussion and learnings

The emerging themes and learnings identified and synthesized in this review can be used to inform good practices in PPE design, implementation, and sustainability and to inform hypotheses for mixed health system and PPE success. At the same time, the review represents a call to action for more extensive research in this space. In this section we first discuss the ecosystem for PPE based on findings from the research and our own tacit knowledge. Next, we describe how learnings from the review can be applied to design and improve mixed health systems and PPE. We then suggest a research agenda that can help to build the evidence for the field. Finally, we share limitations of the research, as well as plans for how this evidence will inform the next steps of our project work.

The public-private engagement ecosystem

Building on the findings from this review and our own tacit knowledge, we put forward a framing of PPEs as an ecosystem in Figure 2. This framework recognizes a complex network where interactions are happening between and amongst helping or hindering factors and multiple health system actors operating at various points in an engagement cycle. The ecosystem consists of three factor “sets”. The factor sets draw from groupings described earlier in the results section related to engagement motivations, models for engagement, environmental factors and those related more to “soft” factors, all of which may influence the effectiveness of PPEs. Some of these factors are more contextual and take place “outside” the engagement itself, while others are specific to the engagement actors and processes.

Figure 2: Public-private sector ecosystem: factors for effective engagement



These factor sets include:

1) **Environmental factors** that shape the operating environment for a given public-private engagement. Individual actors in an engagement likely have indirect (if any) influence on these factors but the factors may impact the engagement’s effectiveness and should be considered. These include political, economic, legal, and organizational factors described in detail in work by Blanchet et al. (2019) and are briefly describe in Table 1.

Table 1: Public-private sector ecosystem: environmental factors

Factor	Description
Financial	Public financial management systems, provider payment mechanisms, incentives, access to capital
Legal	Laws and regulations that govern the behavior of healthcare providers and organizations and partnerships or engagements between government and private sector actors
Political	Political and cultural ideology current narrative; process for adoption and execution of health policies including the distribution of resources for health
Organizational	How public and private health care delivery is organized across the health system (e.g. decentralized management of public health system, individual or networked private providers)

These factors can present significant challenges for the actors engaged in PPEs. For example, a country’s regulatory environment may include a variety of overlapping regulations that can be challenging for the public sector to enforce due to limitations in time and budget. These regulations can also be time consuming and costly for the private sector if they are required to undergo multiple inspections from a variety of actors. Similarly, a country’s public financial management system may or may not allow for mechanisms to fairly purchase services from the private sector with public money – limiting the public sector’s ability to incentivize quality and efficiently and equitably increase access to services and limiting the private sector’s access to the publicly-funded market.

2) **Structural factors** that define the architecture of a given public-private engagement include the type of partnership model (e.g. bi-lateral, inclusive of a neutral broker and others), formalities of the model arrangement (e.g. existence of a formal memorandum of understanding or contract) and available resources (both financial and non-financial) to implement the engagement.

3) **Engagement factors** that relate to the actors implicated in the engagement – the “software”. Interestingly, our review exposed the prevalence and importance of these factors, which are often ignored or considered less important or less complicated in discussions about PPE. These factors relate to the way that the actors in the engagement work together (or do not work together as the case may be). Generally, engagement actors

have some control over these factors. We categorized engagement factors into foundational and operational dimensions, which include both factors related to the relationship dynamics between engagement actors as well as their capacities and existing mechanisms that help shape an engagement.

We posit that engagements must meet a minimum threshold of foundational factors — trust, mutual understanding, and willingness to engage - to be effective. Operational factors include managerial and technical capacities, communication, engagement rationale, and accountability, which are also critical to the successful operations of the engagement. Unlike environmental and structural factors, for which we can consider the advantages and disadvantages of different characteristics of these factors, with engagement factors we can suppose that advancement of foundational and operational engagement factors towards, for example, *improved* trust *improved* willingness to engage *improved* accountability will predict and lead to more successful PPE.

In addition to the factor sets, the framework references the **validated health system gap**. This gap refers to the health system problem or challenge identified by stakeholder(s) in the health system for which they are trying to find a solution. This gap should be based on evidence, aligned with beneficiary demand, and validated by a critical mass of stakeholder(s) within the health system. We believe that PPEs that ensure they are responding to a validated health system gap will be more likely to succeed. In other words, though it may seem obvious, it is important that the PPE design consider the needs of the population it is serving and be sure it is addressing the root cause of the challenge it aims to solve to add value to the health system.

Taken together, we hypothesize that this range of factors (environmental, structural and engagement) along with the validated health system gap play a role in increasing or decreasing the success of a given PPE, as well as the likelihood of the PPE leading to improvement in health system and ultimately population health outcomes.

Implications for stewarding mixed health systems and designing, implementing and sustaining PPEs

But why is framing PPEs as an ecosystem important? Better understanding the factors and interactions of this complex ecosystem can help stakeholders prepare for and optimize their engagements, thus improving the effectiveness and sustainability of PPEs, strengthening the mixed health system, and ultimately contributing to improved health outcomes. The PPE ecosystem brings together an important practical evidence base for actors seeking to improve mixed health systems and make more informed choices regarding why and how to design and undertake PPEs. Importantly, it suggests that a whole of health system or holistic approach to PPE is needed. While environmental factors may be outside the direct sphere of influence of individual actors in an engagement, understanding how these factors may help or hinder an engagement can help countries and actors assess their readiness for PPEs and plan mitigation techniques. Similarly, understanding of the health system gap a PPE aims to address will ensure actors' intervention or system change approach is fit-for-purpose and addresses the root

cause of the validated health system challenge – rather than retroactively applying a private sector innovation or service to a presumed health system need – which is often the case. Additionally, trade-offs of different structural factors, which may be more under the direct control of actors in an engagement, will need to be considered. Finally, engagement factors, which are also more directly controlled by actors in an engagement, may help ensure PPEs are effective and sustainable. We discuss these opportunities here.

For some stakeholders – including some government and private sector actors, as well as development partners and donors – there may be limited space to help influence the environmental factors to move the system toward one that is more accommodating to a successful PPE. For the majority of stakeholders – those that seek to support or engage with PPEs but that cannot directly influence the enabling environment – there is still value in understanding how elements of the context can help or hinder an existing engagement and explore how the actors may, in some way, help to “evolve” the health system to be more conducive to PPEs. Understanding the role of these factors may either help the actors select engagement contexts that may be more “ready” for PPEs, better understand potential challenges and prepare necessary mitigation strategies, or target advocacy for policy change.

While there is no health system blueprint or ideal arrangement of environmental factors in a health system that will ensure successful PPE, there are indications that some health systems create more conducive environments for PPE that aims to achieve UHC. For example, work by Kutzin et al. (2016) and Montagu and Goodman (2016) point to the power of encouraging and incentivizing the private sector through public financing – and specifically strategic purchasing. While some of the literature in the review touched on contracting specifically, historically governments award contracts to the lowest bidder rather than assessing and requiring performance by tying outcomes to payment. Indeed, this review surfaced limited examples describing how government can strategically purchase from both the public and private sectors to achieve UHC and thus level the playing field and optimize the mixed health systems. Health systems that employ PPE as a broader policy strategy, rather than a tactic to engage with a small number of providers, leveraging accreditation and empanelment instruments and matching them with appropriate payments and incentives, may be more likely to successfully support PPEs at scale, improve quality of care and ultimately strengthen mixed health systems and health outcomes.

Further, the Managing Markets for Health course (2020) describes how more “inclusive” styles of government – governments that take a holistic view of the health system and play a facilitative rather than “command and control” role – fostering relationships and negotiating with health system stakeholders – may be more successful in supporting PPEs and strong mixed health systems. Similarly, a country’s level of openness and political will for engaging with the private sector may improve the country’s readiness for PPE. Still, country context and dynamics will vary widely. Stakeholders should consider these factors, as they will undoubtedly affect successful integration and sustainability of a given PPE within the health system.

While it may be difficult to robustly influence these environmental factors, we hypothesize that to some extent the structural, and with more likelihood, the engagement factors provide more fertile ground for stakeholders that engage in or support PPEs to influence themselves. Like

environmental factors, there is no ideal blueprint of structural factors of a PPE. However, we can consider some of the pros and cons to different PPE models or structures, recognize the importance of financial and non-financial resources, and understand the types of roles and functions stakeholders in a PPE may play. Using this information, it may be possible for stakeholders to select more conducive structural models for their engagements.

Some guidance exists – mostly across the grey literature (JLN, 2018; Managing Markets for Health, 2020) to describe advantages and disadvantages of different types of PPE structures. For example, the Managing Markets for Health course (2020) describes principles for PPE “architecture” including proposed PPE models structures. Table 2 from Managing Markets for Health describes the advantages and disadvantages of models for PPE from an informal structure where all partners govern in a decentralized model to a platform model where partners create an independent entity to manage the collaboration.

Table 2: PPE models and structures

Design Characteristic	TYPE OF STRUCTURE		
	Informal/self-governance	Lead organization	Administration organization
Organizational form	No administrative entity. All partners manage governance	Health ministry or equivalent health authority	Partners create a distinct, independent entity to manage collaboration. Hire a secretariat
Optimal # of partners	Few	Many	Many
Locus of decision-making	Decentralized	Centralized	Shared
Advantages	Large number of diverse partners Strong commitment level Easy to form	Clear lines of accountability Highly efficient Clear direction	Strategic involvement of key stakeholders Efficient day-to-day management Likely to be sustainable over time
Disadvantages	Can be unwieldy to manage Difficult to establish consensus Hard to establish ownership of process	Excludes many partners May be dominated by lead organization May fail to create shared commitment	More complex and rigid May result in perceptions of unjust hierarchy High admin costs

Source: Managing Markets for Health Course, 2020

Guidance also points to the importance of balanced and complete representation in PPEs – including representatives from all parties and joint leadership of the engagement. Stakeholders in an engagement will likely include representatives from government and the private sector. It can be particularly challenging to identify a representative group of private sector actors, who are often fragmented. In some examples a private sector representative body (a federation or association) can be a useful entity to represent private sector “at the table”. Other stakeholders in a PPE might also include community service organizations and/or development and implementing partners. Importantly, it may be useful to consider an “honest broker” or neutral third-party to help facilitate the engagement between public and private actors. Often this role is played by an academic institution or local implementing partner. Stakeholders must consider carefully whether this actor can play a fully neutral role in the engagement, putting aside any specific agenda. Finally, guidance, and indeed this evidence review, points to the importance and need for financial and non-financial resources to facilitate day-to-day functioning of PPE structures and ultimately successful PPE.

Findings on the engagement factors of PPE from this review may provide the greatest opportunity for improving the design, implementation and sustainability of PPEs. The review—across both theoretical literature and studies evaluating specific PPE experiences—reveals that these factors, such as trust, mutual understanding, communication, and technical and managerial capacities can facilitate more effective engagements between public and private partners and the effectiveness of the PPE. When ignored, they may also inhibit engagement success. The prevalence of these factors in the evidence suggests the importance of not only focusing on the more commonly considered technical design of contracts or payment mechanisms when developing PPEs, but also facilitating the development of strong, long-term relationships between the actors. However, there is still more work to be done to codify and better understand how to assess and improve these types of factors as they relate to PPEs in health. The Strengthening Mixed Health Systems project is focusing on studying and developing measurement tools and associated guidance for PPE engagement factors, including development of a PPE engagement factor maturity model.

Implications for research

An analysis of the findings from articles in the review that discussed outcomes is important in revealing both what the field knows, and perhaps more importantly the gaps that remain. A review of the evaluations that analyze the role of public-private engagements in improving beneficiary health outcomes highlights the strong promise of these engagements; at the same time, a greater inquiry into engagements that do not move the needle on health outcomes is warranted to see if we can better identify trends of both the successful and the unsuccessful programs. From this review, we conclude that systems-related outcomes are under-researched. While these outcomes may be the most challenging to analyze in a rigorous way, they remain a critical intermediate step in the chain between PPEs and beneficiary health outcomes and, as such, are worthy of much greater investment in the research. Further, the question of what makes a successful engagement itself is a critical one, and while the literature is growing in

terms of factors that may be correlated with success or hindrance, a more comprehensive review of these questions is needed to support the work of policymakers, private sector actors, and those seeking to support mixed health systems in complex and challenging settings to achieve the promise that the literature highlights that they have.

While this review unearthed important lessons to inform the design (and testing) of future efforts to strengthen mixed health systems, the dearth of evidence also highlights the need for further research. Specifically, a research agenda focused on further testing and understanding the factors that support or hinder success of PPEs (discussed above) and which expands our understanding of PPE's contribution to health system outcomes and, importantly, UHC. Some of this will not be easy – measuring health system change and linking that change to improvements is challenging. This is partly due to the longer-term movement in these types of indicators but also due to difficulty in proving causality with so many actors, processes, and pathways to consider. To realize this research agenda, it will be important to consider designing studies to focus on some of the intermediate outcomes and systems outcomes that may lead to population health outcomes – such as access and quality of care. It will also be necessary to better integrate research methods, such as implementation research and adaptive learning approaches, which can be produced more rapidly to minimize lag time between action and research, and help policymakers and practitioners understand factors that influence implementation.

Limitations

This review has some limitations. Because of the focus on journals and published literature, the review does not dive deeply into the grey literature. However, the team acknowledges the many experiences of practitioners and implementers in this field who have reported on work and have identified and documented important learnings. Additionally, the review search focused specifically on mixed health systems and PPE as it relates to maternal health. We recognize that there are other subsectors of health including disease-specific areas that have included work related to mixed health systems and PPE but which are not included in this study. For example, significant research exists in the area of tuberculosis and PPE. The review also did not focus on mixed health systems and PPE as it relates specifically to UHC and/or PPE as a broader policy strategy, though just under a quarter of the literature included in the review did reference UHC and we note important related learnings throughout the document.

What's next?

As part of the Strengthening Mixed Health Systems project, our team is working to contribute to this existing body of knowledge and address some of the implications to the field discussed in this section. The project is supporting demonstrations of strengthening mixed health systems in two countries – Kenya and India. Learnings on the factors that help or hinder PPE success are informing the approach to support PPE in both of these countries. Additionally, using a case study methodology, the project will also conduct process evaluations and collect primary

qualitative data to answer learning questions for the two countries. In addition, we will analyze a set of secondary cases identified in part from the evidence review to complement the primary data collection. We hope to better understand and contribute to the evidence on what factors are associated with successful and unsuccessful PPEs to help policymakers and practitioners make better decisions around PPEs. This includes understanding factors that may make some health systems and some specific PPEs more “ready” or conducive to stewarding and integrating private health care services.

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