A Scoping Review of the Uses and Institutionalization of Knowledge for Health Policy in Low- and Middle-Income Countries

November 2017

Marshalling the Evidence for Health Governance

Thematic Working Group Report

ACKNOWLEDGMENTS

Adam Koon[1], Lauren Windmeyer[2], Maryam Bigdelli[3], Jodi Charles[4], Fadi El Jardali[5], Walter Flores[6], Jesse Uneke[7], Sara Bennett[8]

[1]Health Finance and Governance Project, Abt Associates
[2]John F Kennedy School of Government, Harvard University
[3]World Health Organization
[4]Office of Health Systems, United State Agency for International Development
[5]American University of Beirut
[6]Centro de Estudios para la Equidad y Gobernanza en los Sistemas de Salud
[7]Ebonyi State University
[8]Johns Hopkins University

CONTENTS

List of Figures

ACRONYMS

HFG	Health Finance and Governance Project
HPSR	Health Policy and Systems Research
HSS	Health System Strengthening
LMIC	Low and Middle-Income Country
MOH	Ministry of Health
MtE	Marshalling the Evidence Initiative
UHC	Universal Health Coverage
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

There is growing interest in the ways different forms of knowledge can be used to strengthen policymaking in low- and middle-income country (LMIC) health systems. Additionally, health policy and systems researchers are increasingly aware of the need to design effective institutions for supporting knowledge utilization in LMICs. In order to clarify the use and institutionalization of knowledge as well as effects on health systems, a scoping review was conducted using the Arksey and O'Malley framework. The following research question guided our analysis: "What is known from the existing health literature about how actors use and incorporate knowledge into health system policymaking and what sorts of institutional arrangements facilitate this process in LMICs?" The literature on knowledge utilization in LMIC health systems was reviewed using six public health and social science databases. Articles were included that described the process for how knowledge was used in policymaking, specified the type of knowledge used, identified actors involved, (individual, organization, or professional), and were set in specific LMICs. A total of 53 articles, from 1999-2016, and representing 56 countries, were identified. The majority of articles in this review presented knowledge utilization as utilization of research findings, and to a lesser extent routine health system data, survey data, and technical advice. Most of the articles in this review centered on domestic public sector employees and their interactions with civil society representatives, international stakeholders, or academics in utilizing epistemic knowledge for policymaking in LMICs. Furthermore, nearly all of the articles identified normative dimensions of institutionalization. While there is some evidence of how different uses and institutionalization of knowledge can strengthen health systems, the evidence on how these processes can ultimately improve health outcomes remains unclear. Further research on the ways in which knowledge can be effectively utilized and institutionalized is needed to advance collective understanding of the governance dimensions of health systems strengthening and enhance appropriate policy formulation.

INTRODUCTION

While the importance of governance in a health system is well recognized, there is an overall lack of evidence and understanding of the dynamics of how improved governance can influence health system performance and health outcomes. There is still considerable debate on which governance interventions are appropriate for different contexts. This lack of evidence can result in avoidance of health governance efforts or an over-reliance on a limited set of governance interventions. As development partners and governments are increasing their emphasis on improving accountability and transparency of health systems and strengthening country policies and institutions to move towards universal health coverage (UHC), the need for this evidence is ever rising.

To address this evidence gap, the USAID's Office of Health Systems (USAID/GH/OHS), the World Health Organization (WHO), and the Health Finance and Governance (HFG) Project launched an initiative in September 2016 to 'Marshall the Evidence' on how governance contributes to health system performance and improves health outcomes. The overall objective of the initiative was to increase awareness and understanding of the evidence of what works, why, and how governance contributes to health system performance, and how the field of health governance is evolving at the country level.

Four thematic working groups (TWG) were formed to consolidate evidence by conducting literature reviews from low- and middle-income countries (LMICs) in selected areas: Accountability, Policy and Regulation, Public Financial Management (PFM), and the Use of Knowledge in Health Systems (UKHS). These areas were chosen because of their comprehensive nature and importance in all health systems and because of the lack of an international consensus on priority interventions. The TWGs consisted of a small group of experts from various organizations and academic institutions from different parts of the world. They consulted with policymakers and experts globally. Each TWG was led by two co-chairs from different organizations and included a member from WHO and the HFG Project.

This report is one of five—one for each TWG output—and provides a rational for the work and a synthesis of the findings. This report presents the findings of the Uses of Knowledge TWG that speak across, as well as contrast with, the four other reports.

Background to TWG

Within health policy and systems research (HPSR), a growing body of literature assesses the multiple ways in which actors, particularly health system stewards, use various types of knowledge to inform the health policy process in LMICs [1]. Different forms of knowledge and the processes by which these are utilized are central to achieving universal health coverage (UHC) [2]. Work in this area likely originated from the evidence-based policy movement, but there is a growing recognition that evidence can inform, but not determine, political decision making [3,4]. Much of the work in HPSR is associated with the overlapping concepts of "knowledge management," "knowledge utilization", and "knowledge translation," which have been criticized as being overly rational and technocratic [5]. Terminological debates aside, there remains a need to understand more about how different forms of knowledge are used, via formal and informal channels to shape policy in ways that align with social values and societal preferences [6]. In this way, the growing body of scholarship on the use of knowledge transcends divisive strategic debates in global health [7] and focuses instead on a foundational element of health system strengthening.

Despite much attention in the academic literature, gaps persist in the knowledge requirements of government officials in fulfilling their roles as health system stewards [8]. Further, it is not well understood how different forms of knowledge are used in the health policy process [9]. Little is known about how to develop institutions and processes in LMICs to support evidence use in policy and decision making and how such institutional arrangements can support the exchange of knowledge for health sector stewards [10]. Finally, as an aspect of health system governance, it is unclear how evidence-use contributes to health system performance or health outcomes [11].

Types of Knowledge

There is an extensive body of work seeking to define the core routine indicators that health systems should seek to collect and analyze [12]. Yet, such information helps to describe the current situation and health and health system trends, rather than provide information that may be relevant to strategic decision making concerning health systems [6]. Some researchers have proposed further investigation into three types of "intelligence" for health systems: 1) health systems performance, 2) context and actors, and 3) policy options [13]. The existing literature on informational requirements typically focuses on empirical measures of a country's health systems (likely focused on the national level), rather than broader global evidence addressing the effectiveness of alternative health system strengthening strategies [14]. For this reason, the research presented here identifies different types of knowledge that are useful for policymaking in LMICs health systems.

Several models have been proposed to characterize the flow of knowledge between knowledge producers (researchers) and users (policymakers). This includes "researcher push" models whereby researchers are responsible for packaging empirical research in ways that are intelligible to policymakers [15]. By contrast, "user pull" models focus on generating demand for high quality, policy-relevant research among policymakers [16,17]. Another way that knowledge flows in the policymaking process is through exchange efforts, such as "linkages and exchanges" [18]. A fourth model brings together elements of each of the previous models through large-scale knowledge translation platforms [14]. Despite research on these linkages between researchers and policymakers, much remains unknown about how these relationships are structured [19] and the extent to which experience is transferable across contexts [20]. As a result, this paper harnesses a body of work on the various ways in which knowledge is used in the policy process in an attempt to further clarify constructive engagement between researchers and policymakers.

Researchers working in a political science tradition often argue that knowledge in its various forms serves a range of political purposes and is seen to mean different things in different contexts [21]. Research outside of HPSR suggests that policymakers value expert knowledge because it can lend authority to their predetermined policy positions and signal to others their capacity for sound decision-making, particularly in risky areas of policy [22]. Research in HPSR has further demonstrated the symbolic value of knowledge utilization in the policy process [23], but to a limited extent in LMICs [24]. There remains a need to consider the political dimensions of knowledge utilization, particularly in LMIC health systems where the literature seems less developed.

Actors, Organizations, and Institutions

A knowledge gap also exists with regard to alternative institutional modalities for generating policy-relevant knowledge and applying this to policymaking in LMICs health systems. Some research has attempted to classify these types of institutions and the qualities that facilitate knowledge sharing [25].

Yet, research is patchy, disorganized, and tends to focus more narrowly upon institutions specific to knowledge translation [26]. Moreover, little is known about how existing institutions, including think tanks, health policy and planning units, advocacy groups, and the media currently fulfill this role [6,27]. For these institutional structures to be effective, they entail the involvement of civil society organizations and non-state actors in supporting socially-constructed stewardship functions. This is akin to what Parkhurst calls the "evidence advisory system" which promotes the good governance of evidence [28]. Still, much remains unknown about the character of these institutions, their arrangement in health systems, and the process by which knowledge is institutionalized. This report explores these themes and how they relate to the various uses of knowledge highlighted above.

Institutionalization

A particularly salient gap in HPSR is not just the location or identity of institutions that produce and share knowledge, but the process by which knowledge is institutionalized for policymaking purposes. According to Scott [31], *"Institutions are comprised of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life."* Thus institutions are characterized by a multidimensional basis of compliance, order, and indicators of their presence and are largely resistant to change [29]. Institutionalization is a process that emphasizes this affinity for stability and can be simply understood as, *"to infuse with value beyond the technical requirements of the task at hand."* [30]. Regulative dimensions of institutionalization highlight the role of incentives for motivating efficient behavior. Normative dimensions of institutionalization occur by increasing commitments of individuals to behave according to established order (identity). Cultural-cognitive dimensions of institutionalization entail the conversion of shared beliefs into routines, protocols, language, and other artifacts [31]. Thus these three elements of institutionalization reflect the multifaceted nature of institutions, elements of which are emphasized and explored by different disciplines. It is unclear to what extent the health system literature on institutionalization accommodates different forms of knowledge for policymaking purposes, other than through the creation of formal semi-autonomous government agencies such as the UK's National Institute for Clinical Excellence (NICE) [32]. For this reason, this research seeks to analyze all three dimensions of institutionalization in the HPSR literature.

Health System Performance and Health Outcomes

This report assesses the scope of HPSR scholarship on the uses and institutionalization of knowledge for policymaking in LMICs. This review is an attempt to identify a coherent corpus of work that describes the types of knowledge and the ways they are used to inform policy. In the following section, the methods for our scoping review are presented using a well-established framework by Arksey and O'Malley [33]. This literature is then collated, characterized, and critically appraised, highlighting the insight gained through research on knowledge and institutionalization and its relative merits/shortcomings. Potential lines of inquiry are suggested to help further this important dimension of HPSR, especially as it relates to health system governance.

CONCEPTUAL FRAMEWORK

This report makes use of the Marshalling the Evidence conceptual framework to broadly orient understandings of how governance might contribute to health system outcomes and health impacts (Figure 1, below). In this way, we understood research related to uses of knowledge to directly impact health system performance and for this to result in health impacts. Our findings, as we discuss below, are somewhat inconclusive as there were few studies that explicitly identify health system outcomes and even fewer that convincingly link uses of knowledge and institutionalization to health impacts.

Figure 1: The Marshalling the Evidence Framework
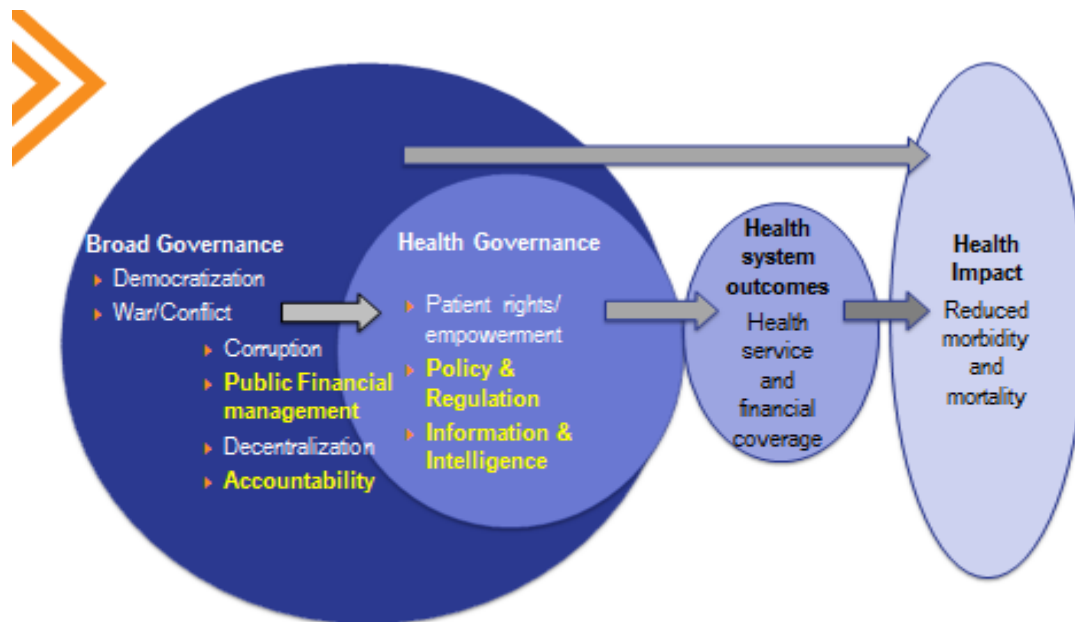
Multiple channels through which governance may affect health – both direct and indirect

The TWG discussed an inductive approach, whereby a framework will be developed as a result of this work, through discussions at a global dissemination event with participants and members of other TWGs. At this time, our understanding of the subject matter is not sufficient to adequately develop, test, or validate a preconceived conceptual framework for knowledge use and institutionalization in LMIC health systems.

METHODOLOGY

This research used scoping review methods to characterize the range of research on knowledge utilization processes, the institutionalization of these processes, and the effects of these processes within health systems. This includes the content of the literature and any potential gaps that require further exploration. The scoping review methodology [33] has been discussed in key methodological texts [34–37] and is increasingly used in HPSR [38–41].

This approach was selected because of its emphasis on flexibility and its affinity for narrative driven summation. Like all qualitative research, this approach involves some degree of interpretation. Quality parameters are not typically present in scoping reviews. The Arksey and O'Malley framework [33] is presented as an iterative, qualitative review with five distinct stages: 1) identifying the research question, 2) identifying relevant studies, 3) study selection, 4) charting the data, and 5) collating, summarizing and reporting the results.

The following research question was developed collectively based on our experience and understanding of HPSR: 'What is known from the existing health literature about how actors use and incorporate knowledge into health systems policymaking and what sorts of institutional arrangements facilitate this process in LMICs?' This question drew important distinctions related to knowledge utilization and its institutional basis within health systems. In the context of the Marshalling the Evidence Initiative described above, the researchers also sought to assess how these social phenomena are transformed into health system outcomes and health impacts.

A search of the peer-reviewed literature was conducted for original research articles that described in detail the uses of knowledge and/or their institutionalization in health systems. Eight different social science and health databases (PubMed, Web of Science, PsychInfo, CINAHL, JSTOR, ProQuest, EBSCO, EMBASE) were searched in February and March 2017. A basic search criteria incorporated the terms (knowledge OR Evidence OR Information) AND ("Health Policy" OR "Health Systems") and ("low or middle income country" OR list of relevant country names OR list of relevant country regions). This search strategy was executed in tandem by two researchers (ADK and LW). The only difference between the two search strategies was that one reviewer included "institutional*" as an additional search criteria to narrow the search results. Articles were screened separately by both researchers based on title, abstract, and then full-text. Upon full-text review, both researchers read all articles, discussed each one, and came to a joint determination about which articles to include in the final review. Articles were included that describe a process for how knowledge was used in policymaking, specified the type of knowledge used, identified actors involved, (individual, organization, or professional), and were set in LMICs.

Articles were excluded by ADK and LW based on their title, abstract and full-text. Articles were excluded that were published in a language other than English, Spanish, or French and published before 1995. Articles were also excluded if they focused on uses of knowledge outside of the health sector, focused above the nation-state or in high-income countries, and focused largely on clinical interventions, service management, or procurement. In addition, all comments, editorials, and advocacy outputs were excluded. Co-authors MB, SB, and JC were consulted initially for questionable exclusions and strategies for handling articles other than original research, such as review articles. See Figure 2 for an overview of the review process.

Akin to data extraction, data 'charting' was initiated by LW, consistent with the Arksey and O'Malley framework [33]. The charting fields were developed in consultation with all co-authors, and ADK provided support throughout the process. A master database was created that included article details, geographic location, level of analysis (national, state, district, community), urban/rural designation, actors involved, legislation, process of institutionalization, type of knowledge used, and links to the MtE Framework on how governance affects health system outcomes and health impact. This process was systematic. Yet, charting involved a degree of interpretation, appraisal, and assessment on the part of the data charting researcher (LW) to classify ambiguous fields such as the process of institutionalization and linkages to the MtE framework. ADK provided consistent advice throughout the charting process. This included clarifying the charting fields, capturing information in adequate detail, and determining how to assess otherwise problematic entries.

Many research studies were initially screened based on inclusion/exclusion criteria. The results of both researcher search strategies are presented before the common pool of final research articles are characterized. A total of 673 and 836 articles were returned from the

Figure 2: Scoping Review Flow Diagram

initial search by each researcher (ADK and LW), respectively. From these, a title review, supplemented with cursory abstract review, further narrowed the number of articles to 130 and 355. The exclusion/inclusion criteria were applied in the next round of review to all abstracts and when necessary, a cursory full-text review. This reduced the total number of remaining entries to 50 and 89. The combined pool of articles was closely reviewed by AK and LW, and each article was discussed at length between the researchers. Finally, following this review of all full-text articles, 53 articles were determined to adequately include all of the study research criteria and remain in this study. See Additional file 2 for an overview of all 54 articles, which are characterized in greater detail below.

The final stage of the scoping review process involved collating, summarizing and reporting the findings. Collated articles were characterized by charting field, with emerging trends identified for multiple variables. The scope of existing knowledge was emphasized in characterizing the pool of collated articles as were gaps in the literature. Key considerations for further research on knowledge utilization and
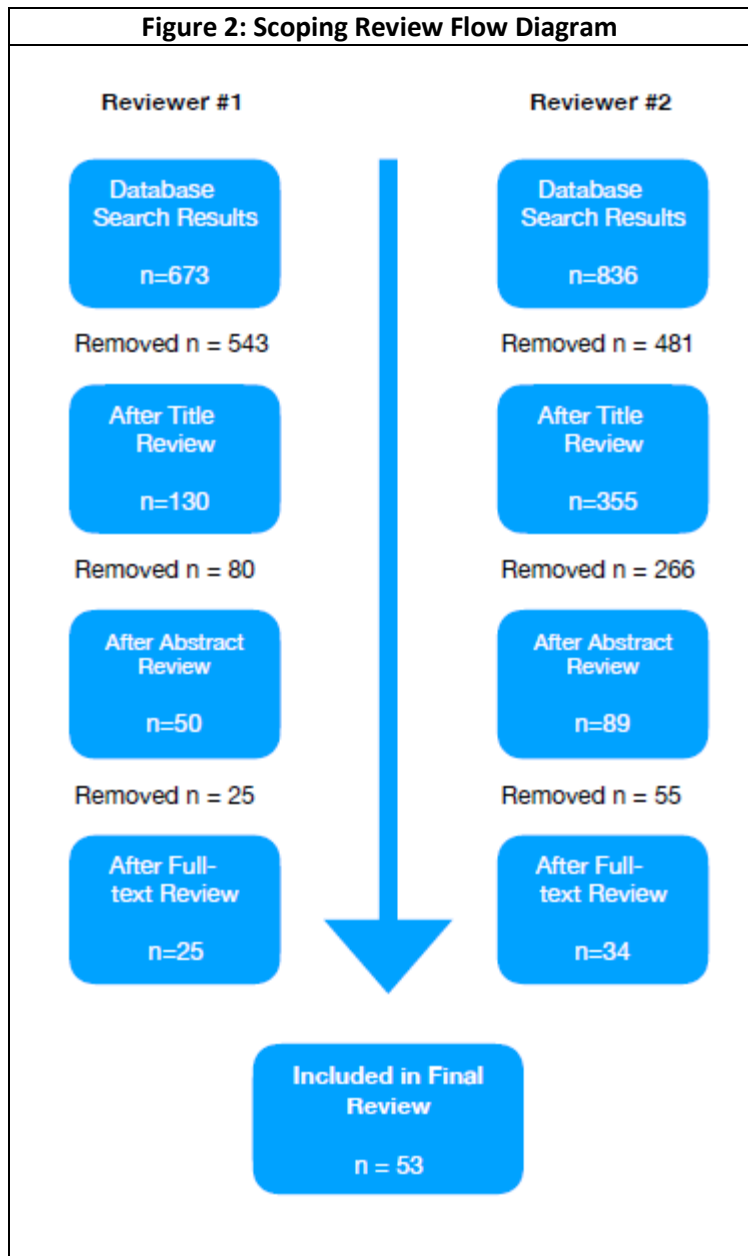
institutionalization are discussed in detail below. Finally, the limitations of the study design, review process, and interpretations are presented.

Author reflexivity is important because interpretation and narrative summation are central to the Arksey and O'Malley scoping review framework [33]. The authors of this manuscript represent a variety of geographical locations and come from different disciplines. They are united by a common focus on HPSR as an applied problem-solving area of inquiry in global health. The study design and review process operates under the assumption that this HPSR can contribute to strengthening the basis for policymaking in LMICs in addition to pooling a unique body of research to advance scientific inquiry in the field. Though we make no claims to objectivity, we have attempted to provide a fair and balanced account of the various strands of research and their representation in the health literature. Thus, the work bridges and embodies a plurality of ontological and epistemological positions on knowledge and research, consistent with moves towards analytical eclecticism in policy studies [42].

MAJOR FINDINGS

Relevant research articles are increasing rapidly in volume and geographic coverage over time, from 1999 to 2016: 1995–1999, n = 1 article / 53 total articles; 2000s, n = 13 articles / 53 total articles; 2010s, n = 40 articles / 53 total articles. Studies were reported from several LMICs (n = 56), Uganda (n = 11), Nigeria (n = 9), and Bangladesh (n = 7) representing the highest number of articles. Over half the studies focused on a single country (53%, n = 30), whereas 24 involved more than one country (n =18 multi-country studies; n = 6 regional studies). Studies were located at different administrative tiers of the health systems with the majority of research conducted at the national level (n = 39), followed by regional studies (n = 7), district (n = 2), state (n = 1), and studies that operated at multiple levels (n = 4). The majority of studies (87%, n = 47) were conducted in urban areas, while only one was conducted exclusively in a rural area. In summary, this review found that most research was published in the last eight years from a variety of LMICs. Roughly half focused on a single country, using research conducted at the national level and in urban areas.

Nearly all of the studies were written in English (n = 52) while one was in Spanish. The search and selection criteria returned original research articles (n = 49) and review articles (n =4). Research was published in a variety of public health journals (n = 26), with nine journals having more than one citation. Relevant articles were published most frequently in the journal *Health Research Policy and Systems* (n = 9), *Health Policy and Planning* (n = 5), *BMC Health Services Research* (n = 4), *BMC Public Health* (n = 4), and *International Journal of Health of Technology Assessment in Health Care* (n = 4).

Types of Knowledge

Different types of knowledge were used to inform policymaking in the HPSR literature. Research was oriented around scientific (epistemic) knowledge (n = 38 articles), pragmatic skill-based (technical) knowledge (n =10), or unspecified (n = 10) usage. There was a single example of deliberative value-based ethics (phronesis) which relied on principles of reflective practice, akin to auto-ethnography [43]. Research was categorized by the type of knowledge used for policymaking purposes. Nearly half of the articles (n = 27) highlighted the use of research to inform policymaking. Many also illustrated the use of routine epidemiological or health system data (n = 15), survey data (n = 12), advice (n = 12), economic evaluations (n = 4), reports (n = 4), or civic participation (n = 4). Several articles (n =10) referred to multi-faceted forms of knowledge without clearly differentiating them. The majority of research from this review presented epistemic uses of knowledge as represented by research findings and to a lesser extent technical advice, routine health systems data, and survey data.

Actors, Organizations, and Institutions

A variety of actors, organizations, and institutions were represented by this cohort of HPSR research. Across this literature an average of 3.67 actors (n = 198 actors / 53 articles) were explicitly identified in the process of knowledge utilization. This represented a mix of organizational and institutional entities. The most frequently mentioned actors in the policy process were domestic government employees, mostly health officials (n = 43), civil society (n = 21), international stakeholders including donors, bilateral and multilateral representatives (n = 19), academics (n = 17), in-country programs or projects (n = 13), and technical advisory groups (n = 11). Think tanks (n = 2), media (n = 2), and unspecified actors (n

= 2) were represented to a lesser degree. In summary, most of the articles in this review concentrate on domestic public sector employees and their interactions with civil society representatives, international stakeholders, or academics in utilizing epistemic knowledge for policymaking in LMICs.

Institutionalization

The process of institutionalization was determined interpretively to identify emerging themes across articles reviewed for this analysis. The vast majority of articles identified normative dimensions of institutionalization (n = 47). Cultural-cognitive dimensions of institutionalization (n = 16 articles) were represented more frequently than regulative dimensions (n = 8 articles). In most of the articles represented in this review, the process of institutionalization was characterized by social obligation as the basis of compliance, binding expectations as the basis of order (which relied on a logic of appropriateness), and frequently mentioned accreditation or certification as indicators of institutional design. For example, many articles referred to the creation of technical committees or government programs such as health technology assessment programs. On the other hand, legislation was explicitly mentioned in five articles, and very few articles focused on expedience as a basis of compliance and regulative rules as the basis of order, or were governed by a logic of instrumentality.

Health System Performance and Health Outcomes

Finally, articles were mapped to the MtE Framework to assess the extent to which research supplied evidence of health systems performance and impacts on health. It is important to note that the use of different kinds of knowledge is not always a governance intervention. However, the ways in which knowledge is used for policymaking reveals how health programs are governed and thus the influence of knowledge use on health system outcomes and health impacts is of interest. Nearly half of the articles reviewed (n = 24) described health system outcomes of varying specificity, but mostly policy formulation through the establishment of guidelines, provision of care, or organizational development. In contrast, there were few articles (n = 7) that described health impacts, with the majority (n = 47) either focusing on health system outcomes or not explicitly identifying any outcomes or impacts. While there remains evidence of how different uses and institutionalization of knowledge can strengthen health systems, the evidence on how these processes can improve health outcomes remains unclear.

IMPLICATIONS

In this section, we discuss the findings above in greater detail, noting conspicuous gaps in the literature where necessary. First, we discuss the different types of knowledge used for policymaking purposes. Second, we reflect on the various actors (individual, organizational, and institutional) represented in these studies. Third, we illustrate the processes by which knowledge is institutionalized for policymaking in these articles. Fourth, we explain how knowledge usage and institutionalization appear to influence health system outcomes and health impacts in LMIC health systems. In this way, the following section points to general trends and notable gaps in how knowledge is used and institutionalized and to what extent, for this particular body of literature.

Types of Knowledge

Several important observations were made when analyzing the types of knowledge used to support policymaking in LMICs. Nearly half of the articles (n=27) articulated specific examples of research being used to inform policymaking. This included multiple examples of strengthening policymakers' capacities to incorporate research in policymaking process in Nigeria [44–46]. In other ways, research on catastrophic health expenditures was used to inform the design of a new health insurance program in Mexico [47]. Similarly, an analysis of the policy process for the introduction of male circumcision for HIV prevention in Uganda illustrated how research (particularly randomized controlled trials) was used to inform the national policy agenda in 2007 [48]. Two multi-country studies demonstrated how efforts to enhance research capacity [49] and develop policy dialogues [50] resulted in research-informed policymaking. In this way, much of the literature included in this review focuses on the use of research as a particularly helpful, if not persuasive, form of knowledge to inform policymaking.

An interesting finding of this review is that less-structured types of knowledge such as advice (n=10) and inputs from civil society (n = 2) were used for policymaking purposes. The role of advice, particularly in the form of technical guidance, was pronounced in studies concerning vaccine [51,52], health technology assessment [53–55], and pharmaceutical policy [56]. WHO seems to be well-positioned in this process as some studies focused on its ability to establish technical guidelines and convene diverse groups of stakeholders [56–59]. On the other hand, input from civil society organizations was seen as a crucial element of forming deliberative policy dialogue [60–63]. In this way, technical advice and civic participation were considered essential and arguably overlooked forms of knowledge for policymaking in health systems.

Actors, Organizations, and Institutions

In general, articles were characterized by an array of actors, including domestic government officials, civil society, international stakeholders, and academic researchers. The largest number of different types of stakeholders (n = 10) engaged in knowledge translation for policymaking in a single study were identified by multiple articles from an ongoing research effort in Nigeria [45,46,64]. Most of the articles (n = 43) focused on domestic governments, a stated emphasis of this review. Many articles (n = 21) included civil society participation, usually in the form of non-governmental organizations (NGOs) [65], but also directly with communities themselves [66]. International stakeholders (n=19) and academics (n = 17) were also well-represented in the pool of literature. Surprisingly, no study illustrated the various

uses of knowledge among the four groupings of actors simultaneously (domestic government officials, international stakeholders, civil society, and academics). Just three articles explicitly mentioned knowledge exchanges among government officials, international stakeholders, and academics [48,49,54].

The most frequent interaction among these four entities were studies that highlighted exchanges between domestic governments, international stakeholders, and civil society (n=6). This included research on integrated community case management in Malawi [67], coordination of policy dialogue in Guinea [68], aid coordination and policy formulation in South Sudan [69], policy dialogues in three West African countries [50], Global Fund financing in Brazil [70], and the policy process for maternal health in Ghana [71]. In this way, the body of research suggests that it is widely acknowledged that many actors are involved in the process of exchanging knowledge in LMICs, with the engagement of civil society, international stakeholders, and domestic government officials central to this dynamic.

While some articles highlighted the role of key individuals in positions of authority, most articles did not distinguish between individual actors, organizations, and institutions. Instead, most research focused at the organizational level, which is composed of individuals acting in their professional capacity. The lone exception to this was a multi-country effort to strengthen individual, organizational, and institutional capacity to use research for policymaking by Hawkes and colleagues [72]. The authors noted, however, that none of their study countries were *fully* engaged in institutional capacity development despite its widely acknowledged importance for sustainability. Rather, the authors posited that *"developing individual and organizational capacity is a pre-requisite for seeing long-term institutional change"* [72] Therefore, it is plausible that processes of knowledge use in the authors' study countries might be heading towards full institutionalization, but the groundwork has yet to be sufficiently established to build regulative, normative, and cultural-cognitive platforms to do so. This conclusion seems to be broadly supported by the scoping review presented here.

Institutionalization

Collectively the articles in this review roughly illustrate an understanding of the three dimensions (regulative, normative, and cultural-cognitive) of institutionalization of knowledge for policymaking purposes. Three review articles [24,52,57] reflected on regulative aspects of institutionalization of knowledge use, while some research highlighted regulatory policy design [73,74], especially the formation of specialized state agencies responsible for knowledge transfer. Still, there appears to be a gap in the health literature on regulative forms of institutionalization that adhere to binding rules and structured incentives for the purpose of expedient knowledge transfer.

Articles varied significantly in the level of detail regarding how knowledge was institutionalized, though most of them focused on normative processes of institutionalization (n = 47). Indicators of normative institutionalization were through recurrent mention of processes of accreditation or certification [59,75]. For example, the literature is largely focused on creating an ideal environment for facilitating knowledge transfer, exchange, and dialogue to better inform policymaking. Unlike regulative institutionalization, which seeks to induce knowledge utilization through binding agreements, the literature suggests that greater emphasis in LMIC health systems has been placed on developing norms and best practices.

Cultural-cognitive dimensions of institutionalization were represented more frequently than regulative dimensions, but less so than normative dimensions. Notably, cultural-cognitive institutionalization was never fully documented in any of the studies. Yet, aspects of it were present in studies on citizen involvement in the health policy process in Brazil [63], in three case studies of NGO involvement in

policymaking [65], and in creating effective policy dialogues in West Africa [50]. In fact, it could be argued that most of the policy dialogue literature focuses on cultural-cognitive institutionalization, whereby individuals interact through shared routine without questioning basic assumptions. This is also particularly true for studies that were conducted at regional level [57,58,76–78], seek to develop a common understanding, and establish modes of practice that can be shared across contexts.

The boundaries between these dimensions of institutionalizing knowledge for policymaking are not always clear. Vaccine advisory committees [51,52,79], health technology assessment programs [53–55,74], and drug policy [56, 73, 75, 80] are established with normative aims. However, they appear at times to have a regulative (legislative) basis for their formation, even if their recommendations are not binding. Similarly, a great deal of research on policy dialogues is largely normative in nature, but also overlapping to a limited extent with the cultural-cognitive processes of institutionalization. There was no specific example of research (i.e., discourse analysis, ethnography, deconstruction) conducted on cultural-cognitive dynamics, however, virtually all of the policy dialogue and policy exchange literature seems to imply that this is an ultimate goal [46,50,61,68,81].

Post the March 2017 search for this study, one of few examples specifically focusing in detail on the processes of institutionalization in LMIC health systems was published. It is a body of work devoted to the formation of institutionalized structures for knowledge-informed policymaking in Burkina Faso. It includes research on the policy process leading to the formation of a General Directorate of Health Information and Statistics and Coordination of performance-based financing [82] and factors affecting institutionalization of a National Health Accounts Unit and Program for Fighting Non-Communicable Diseases in the Ministry of Health (MOH) [83]. In addition, case study analysis on the actual process of institutionalization for a health policy rapid response unit to supply policymakers with relevant health system information, including research evidence [84], is another focus. This work is notable for the extent to which it implicitly addresses all three dimensions of institutionalization (regulative, normative, and cultural-cognitive) as well as its practical implications for health system development. While it does not describe health system outcomes or health impacts (focus of the subsequent section), it does provide an unusually detailed view of institutionalization as a dynamic social process.

Several notable findings carry implications for policymakers and future research. In their first paper, Zida and colleagues [82] noted that key factors that appear to influence institutionalization are perhaps capably handled by analyzing agenda-setting processes through established policy frameworks. Kingdon's three streams [85], which includes a well-understood problem, viable set of policy proposals, and conducive politics, illustrates this. They argue that for institutionalization attention should be devoted to incorporating the perspectives of high-level policy elites who are better positioned to know the intricacies of social dynamics in the health sector [82].

In the second paper, Zida and co-workers [83] adopted a World Bank framework to analyze elements of policy unit institutionalization. Elements include existence of an institutional framework (policy unit's government mandate), consistent data production and report preparation, adequate financial and human resources, and infrastructure capacity to routinely produce and use data in policymaking [86]. Again, the authors argue that political will—namely the direct involvement of key politicians—is a central feature of institutionalization and that a broad coalition of stakeholders, especially civil society, is likewise important [83]. Future research should be conducted to further develop certain elements of the framework and reflect on how processes of institutionalization develop over time.

In their third paper, Zida and coworkers [84] used the same institutionalization framework to look at the creation of a health policy rapid response unit. This time, they analyze the framework's elements by five phases of institutionalization: awareness, experimentation, expansion, consolidation, and maturity [87,88]. The authors illustrate the political and socially contingent process of institutionalization of

knowledge use for health policymaking, identifying success in fulfilling the government mandate of providing timely knowledge for policymakers' use, but questioning the extent to which financing mechanisms exist to ensure long-term sustainability [84]. Future research that seeks to identify novel solutions for addressing the resource constraints may help similar policy units move beyond the expansion and consolidation phases to reach full maturity.

This work suggests that institutionalization of knowledge for health policymaking in LMICs is an emerging area of interest for HPSR scholars. While the exact nature of this process is still poorly understood, there is clearly a need to devote more research and attention to furthering this particular process of knowledge utilization in LMIC health systems. This extends to institutionalization of a variety of forms of knowledge that have been the focus of research that were not included in this review, such as national health accounts [89] and service delivery for maternal, newborn, and child health [90]. Refinement of existing frameworks to understand the process, generate political will for exploring their development, and develop long-term financing strategies to ensure their sustainability are all of paramount importance if the wealth of various types of knowledge are to be harnessed to inform policy deliberation and debate in LMICs.

Health System Performance and Health Outcomes

In assessing the extent to which articles illustrated health system outcomes and health impacts, we used the MtE Framework for broad conceptual guidance. The first section discusses health system outcomes categorized by financial protection, equity, access, and quality. The second section describes the few articles that illustrated health impacts. We were somewhat surprised to find studies linked to both health system outcomes and health impacts, with the former being more prevalent. These were qualitatively reported in vague detail and specifically documented using process-oriented indicators and outcomes. Still, while there were a few examples of knowledge utilization, particularly research findings and routine health system data informing policymaking, the majority of research included in this review did not document health system outcomes and health impacts. Moreover, virtually all of the research followed a similar form whereby knowledge informs policy and health system improvements or health impacts are claimed to be linked. There were no experimental studies isolating systems of knowledge usage to separate their impacts in a rigorous manner. The ability of governance research to accomplish these types of outcomes remains debatable.

Health outcomes were reported for numerous studies and organized according to UHC principles of financial protection, equity, access, and quality. This was not always easy to accomplish, as some studies reported knowledge use that resulted in macro-level health system changes that did not fit neatly into specific categories. This included the incorporation of research findings into national-level policy and strategy documents [49], the creation of new state agencies or units [53,54,74,91,92], and agenda-setting for the policy process [43,71]. Nevertheless, the utilization of knowledge to improve financial protection was illustrated in research from Mexico which resulted in a reduction in out-of-pocket expenditures [47] and research from Colombia that noted a decline in spending for oncological treatment by users [80]. Equity was a dimension of health system performance outcomes that perhaps was not fully represented. The exception to this was arguably the focus on deliberative modes of policy governance through engagement with civil society organizations which resulted in better representation and accountability [63,66,70]. Access was represented primarily through several articles which reflect on the use of research and routine system information to influence drug policy, essential medicines, and other pharmaceuticals [53,56,64,73,75,80,93]. Knowledge utilization to enhance the quality of service delivery was mentioned in research on integrated community case management in Malawi [67], non-

communicable disease service delivery in five Asian countries [92], multiple primary care services in Nigeria [44], and male circumcision for HIV prevention in Uganda [48]. In this way, the review identified numerous studies that could loosely be characterized as corresponding to UHC- related health system improvements.

Health impacts of knowledge use and institutionalization were reported for a few articles with varying levels of specificity. Some research suggested that health impacts were achieved indirectly through health system improvements such as improved malaria treatment in Uganda [56], reduced catastrophic expenditures in Mexico [47], improved drug availability in Tanzania [75], increased access to emergency contraception in multiple countries [65]. There were just three studies that explicitly mentioned indicators of health impacts, including reductions in prevalence of hypertension in Cambodia and diabetes in Fiji [92], reduced alcohol consumption, tobacco use and increased exercise in Thailand [91], and a reduction in TB prevalence in Brazil [70]. Thus a very small body of literature suggests any health impacts related to increased knowledge use and institutionalization for policymaking in LMIC health systems.

Much like the literature on health system outcomes, the literature is vague on the nature of any health impacts. For example, though alcohol consumption and tobacco use in youth dropped over the first few years of the Thai Health Promotion Foundation (ThaiHealth), it is difficult to determine the extent to which the results can be directly attributed to institutional development [91]. At minimum, other socio-political conditions played a role in reducing harmful behaviors among Thai youths. Thus, it seems that the evidence of health impacts related to knowledge use and institutionalization is at best weak or underdeveloped.

Measuring health system outcomes seems to be more tractable because of its focus on process-level indicators. Arguably, health impacts are more difficult because the analytic focus blurs incommensurable research paradigms and also shifts from dynamic macro-level considerations to narrow individual-level biological changes. Some social science scholars argue that the principles of inquiry for social phenomena are always inadequate to investigate causal features of the natural world [94]. For these scholars, context, judgement, and timing render human behavior unpredictable; therefore, complex social processes such as knowledge utilization and institutionalization will always yield incommensurable and insufficient causal explanations for biological processes, such as disease etiology [95]. This is perhaps one reason for the paucity of research on health system outcomes and health impacts. Another possible reason is that it either is too difficult to accomplish from a research standpoint or, more simply, little attention has been paid to it until relatively recently.

STUDY LIMITATIONS

There were several limitations to this review. The search strategies conducted by two researchers differed, with one reviewer including an additional search term. Still rigor was pursued by reading every full-text result from both pools of articles, discussing them, and making a joint determination about which articles to include in the final review. Another limitation was that the abstract nature of both knowledge and institutionalization proved difficult to reconcile in a systematic way. For example, institutionalization is a complicated process that involves a degree of nuance that was difficult to adequately capture in the charting stage. Similarly, the outcomes and impacts of knowledge utilization were less clear and not readily identifiable. Furthermore, the inclusion/exclusion criteria were such that it resulted in title review of a lot of articles, which may have led to some articles being unfairly excluded. This was offset to some extent by the use of multiple reviewers, but the boundaries of knowledge utilization remain fuzzy at best. In fact, all research can be considered an exercise in the production, use, or sharing of knowledge and thus identifying how this occurs in context presents researchers with a somewhat circular argument to follow. In addition, deliberative forms of knowledge such as the participation of civil society, including media, were not adequately reviewed. This suggests a larger limitation in that only literature with a health sector focus was reviewed and salient research on the policy process might exist in other social sectors that remain outside the purview of our original research question. Nonetheless this salient research would further our understanding of the social phenomena in question. This is perhaps not surprising since tacit knowledge is by nature unacknowledged or difficult to articulate, but further efforts should be made, perhaps by focusing on different bodies of research, to try to harness this form of knowledge and how it can be used or institutionalized for policymaking.

CONCLUSION

This review found growing evidence on the multiple uses and institutionalization of knowledge for policymaking as well as limited evidence on corresponding health system outcomes and health impacts of these processes in LMIC health systems. A total of 53 articles, from 1999-2016 and representing 56 countries, were identified. The majority of articles in this review used research findings and (to a lesser extent) technical advice, routine health system data, and survey data to inform policymaking. Most of the articles in this review centered on domestic public-sector employees and their interactions with civil society representatives, international stakeholders, or academics. There was little evidence about how think tanks and the media contribute to this process in LMICs. Nearly all of the articles identified normative dimensions of institutionalization and a few reflected on cognitive-cultural elements. There were few articles that provided examples of regulative institutionalization and much remains unknown about the role of legislation in facilitating this process. While there remains some evidence of how different uses and institutionalization of knowledge can strengthen health system, the evidence on how these processes can generate health impacts remains unclear. Additional research on the ways in which knowledge can be effectively utilized and institutionalized is needed to advance collective understanding of the governance dimensions of health system strengthening and enhance appropriate policy formulation.

REFERENCES

1. WHO. World report on health policy and systems research. Geneva; 2017.

2. WHO. Research for Universal Coverage. World Heal. Rep. Geneva: World Health Organization; 2013.

3. Greenhalgh T, Russell J. Evidence-based policymaking: a critique. Perspect Biol Med. 2009/04/28. 2009; 52:304–18.

4. Hawkins B, Parkhurst J. The "good governance" of evidence in health policy. 2015; 1–18.

5. Greenhalgh T, Wieringa S. Is it time to drop the "knowledge translation" metaphor ? A critical literature review. J. R. Soc. Med. 2011; 104:501–9.

6. Green A, Bennett S, editors. Sound choices: enhancing capacity for evidence-informed health policy. Geneva: WHO; 2007.

7. Frenk J, Gómez-Dantés O. False dichotomies in global health: the need for integrative thinking. Lancet [Internet]. Elsevier Ltd; 2016; 6736:8–11. Available from: http://linkinghub.elsevier.com/retrieve/pii/S0140673616301817

8. Saltman RB, Ferroussier-davis O. The concept of stewardship in health policy. Bull. World Health Organ. 2000; 78.

9. Nutley S, Powell A, Davies H. What counts as good evidence? [Internet]. Provocat. Pap. Alliance Useful Evid. 2013. Available from: http://www.alliance4usefulevidence.org/assets/What-Counts-as-Good-Evidence-WEB.pdf

10. van Kammen J, de Savigny D, Sewankambo N. Using knowledge brokering to promote evidence-based policy-making: The need for support structures. Bull. World Health Organ. Switzerland; 2006; 84:608–12.

11. Hatt L, Johns B, Connor C, Meline M, Kukla M, Moat K. Impact of health systems strengthening on health. Bethesda, MD; 2015.

12. WHO. The World Health Report 2000: Health systems: Improving performance. Geneva; 2000.

13. Travis P, Egger D, Davies P, Mechbal A. Towards better stewardship : concepts and critical issues [Internet]. Geneva; 2002. Available from: http://www.who.int/entity/healthinfo/paper48.pdf

14. Lavis JN, Lomas J, Hamid M. Assessing Provincial or National Efforts to Link Research to Action Acknowledgments. Bull. World Health Organ. 2006; 84:620–8.

15. Lavis JN, Robertson D, Woodside JM, McLeod CB, Abelson J. How Can Research Organization More Effectively Transfer Research Knowledge to Decision Makers? Milbank Q. 2003; 81:221–48.

16. Elliott H. How are policy makers using evidence? Models of research utilisation and local NHS policy making. J. Epidemiol. Community Heal. [Internet]. 2000; 54:461–8. Available from: http://jech.bmj.com/cgi/doi/10.1136/jech.54.6.461

17. Pappaioanou M, Malison M, Wilkins K, Otto B, Goodman RA, Churchill RE, et al. Strengthening capacity in developing countries for evidence-based public health: the data for decision-making project. Soc. Sci. Med. England; 2003; 57:1925–37.

18. Lomas J. Using "linkage and exchange" to move research into policy at a Canadian foundation. Health Aff. 2000; 19:236–40.

19. Lewis JM. Understanding policy influence and the public health agenda. N. S. W. Public Health Bull. [Internet]. 2009; 20:125–9. Available from: http://www.ncbi.nlm.nih.gov/pubmed/19735624

20. McCormack B, Rycroft-Malone J, DeCorby K, Hutchinson AM, Bucknall T, Kent B, et al. A realist review of interventions and strategies to promote evidence-informed healthcare: a focus on change agency. Implement. Sci. [Internet]. Implementation Science; 2013;8:107. Available from: http://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-8-107

21. Weiss CH. The Many Meanings of Research Utilization. Public Adm. Rev. [Internet]. [American Society for Public Administration, Wiley]; 1979; 39:426–31. Available from: http://www.jstor.org/stable/3109916

22. Boswell C. The Political Uses of Expert Knowledge: Immigration Policy and Social Research [Internet]. Cambridge University Press; 2009. Available from: https://books.google.com/books?id=RlZOOWC4D9oC

23. Smith KE, Stewart E. "Black magic" and "gold dust": the epistemic and political uses of evidence tools in public health policy making. Evid. Policy. 2015; 11:415–37.

24. Liverani M, Hawkins B, Parkhurst JO. Political and Institutional Influences on the Use of Evidence in Public Health Policy. A Systematic Review. PLoS One [Internet]. Public Library of Science; 2013; 8:e77404. Available from: http://dx.doi.org/10.1371/journal.pone.0077404

25. Koon A, Rao K, Tran N, Ghaffar A. Embedding health policy and systems research into decision-making processes in low- and middle-income countries. Heal. Res. Policy Syst. [Internet]. 2013; 11:30. Available from: http://www.health-policy-systems.com/content/11/1/30

26. Healy J, Maxwell J, Hong P, Lin V. Responding to Requests for Information on Health Systems from Policy Makers in Asian Countries [Internet]. Geneva; 2007. Available from: http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Responding+to+Requests+for+Information+on+Health+Systems+from+Policy+Makers+in+Asian+Countries#0

27. Bennett S, Corluka A, Doherty J, Tangcharoensathien V, Patcharanarumol W, Jesani A, et al. Influencing policy change: The experience of health think tanks in low- and middle-income countries. Health Policy Plan. 2012; 27:194–203.

28. Parkhurst J. The Politics of Evidence : From Evidence-Based Policy to the Good Governance of Evidence. Oxon: Routledge; 2017.

29. Jepperson R. Institutions, institutional effects, and institutionalism. In: DiMaggio PJ, Powell WW, editors. New Institutionalism Organ. Anal. Chicago: University of Chicago Press; 1991. p. 143–63.

30. Selznick P. Leadership in Administration: A Sociological Interpretation. Berkeley: University of California Press; 1957.

31. Scott WR. Institutions and Organizations: Ideas and Interests [Internet]. 3rd ed. London: SAGE Publications; 2008. Available from: https://books.google.com/books?id=7Y-0bDCw_aEC

32. NICE. National Istitute for Health and Clinical Excellence Charter [Internet]. London, UK; 2013. Available from: https://www.nice.org.uk/Media/Default/About/Who-we-are/NICE_Charter.pdf

33. Arksey H, O'Malley L. Scoping studies: Towards a Methodological Framework. Int J Soc Res Methodol. 2005; 8:19–32.

34. Petticrew M, Roberts H. Systematic reviews in the social sciences: A practical guide. 1st ed. Oxford: Blackwell Publishing Ltd; 2006.

35. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Heal. Inf. Libr. J. [Internet]. Blackwell Publishing Ltd; 2009; 26:91–108. Available from: http://dx.doi.org/10.1111/j.1471-1842.2009.00848.x

36. Rumrill P, Fitzgerald S, Merchant W. Using scoping literature reviews as a means of understanding and interpreting existing literature. Work. 2010; 35:399–404.

37. Aveyard H. Doing a literature review in health and social care: a practical guide. Berkshire: Open University Press; 2014.

38. Mitton C, Smith N, Peacock S, Evoy B, Abelson J. Public participation in health care priority setting: A scoping review. Health Policy (New. York). 2009; 91:219–28.

39. Brien S, Lorenzetti D, Lewis S, Kennedy J, Ghali W. Overview of a formal scoping review on health system report cards. Implement. Sci. [Internet]. 2010;5:2. Available from: http://www.implementationscience.com/content/5/1/2

40. Ridde V, Morestin F. A scoping review of the literature on the abolition of user fees in health care services in Africa. Health Policy Plan. 2011; 26:1–11.

41. Koon AD, Hawkins B, Mayhew SH. Framing and the health policy process: a scoping review. Health Policy Plan. [Internet]. 2016; 31:801–16. Available from: http://heapol.oxfordjournals.org/content/early/2016/02/11/heapol.czv128.abstract

42. Sil R, Katzenstein PJ. Beyond Paradigms: Analytic Eclecticism in the Study of World Politics. Basingstoke: Palgrave Macmillan; 2010.

43. Gilson L, McIntyre D. The interface between research and policy: experience from South Africa. Soc. Sci. Med. England; 2008; 67:748–59.

44. Onwujekwe O, Uguru N, Russo G, Etiaba E, Mbachu C, Mirzoev T, et al. Role and use of evidence in policymaking: an analysis of case studies from the health sector in Nigeria. Heal. Res. policy Syst. England; 2015; 13:46.

45. Uneke CJ, Ezeoha AE, Ndukwe CD, Oyibo PG, Onwe F. Development of health policy and systems research in Nigeria: lessons for developing countries' evidence-based health policy making process and practice. Healthc. Policy. Canada; 2010; 6:e109-26.

46. Uneke CJ, Ezeoha AA, Uro-Chukwu H, Ezeonu CT, Ogbu O, Onwe F, et al. Enhancing the Capacity of Policy-makers to Develop Evidence-Informed Policy Briefs on Infectious Diseases of Poverty in Nigeria. Int. J. Heal. Policy Manag. [Internet]. 2015; 4:599–610. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4537854&tool=pmcentrez&rendertype=abstract

47. Knaul FM, Arreola-Ornelas H, Mendez-Carniado O, Bryson-Cahn C, Barofsky J, Maguire R, et al. Evidence is good for your health system: policy reform to remedy catastrophic and impoverishing health spending in Mexico. Lancet (London, England). England; 2006; 368:1828–41.

48. Odoch WD, Kabali K, Ankunda R, Zulu JM, Tetui M. Introduction of male circumcision for HIV prevention in Uganda: analysis of the policy process. Heal. Res. Policy Syst. [Internet]. Health Research Policy and Systems; 2015; 13:31. Available from: http://www.health-policy-systems.com/content/13/1/31

49. Bennett S, Paina L, Ssengooba F, Waswa D, M'Imunya JM. The impact of Fogarty International Center research training programs on public health policy and program development in Kenya and Uganda. BMC Public Health. England; 2013; 13:770.

50. Dovlo D, Nabyonga-Orem J, Estrelli Y, Mwisongo A. Policy dialogues - the "bolts and joints" of policy-making: experiences from Cabo Verde, Chad and Mali. BMC Health Serv. Res. England; 2016; 16 Suppl 4:216.

51. Blau J, Faye PC, Senouci K, Dagnan SN, Douba A, Saracino JT, et al. Establishment of a National Immunization Technical Advisory Group in C??te d'Ivoire: Process and lessons learned. Vaccine [Internet]. Elsevier Ltd; 2012; 30:2588–93. Available from: http://dx.doi.org/10.1016/j.vaccine.2012.01.066

52. Tapia-Conyer R, Betancourt-Cravioto M, Saucedo-Martínez R, Motta-Murguía L, Gallardo-Rincón H. Strengthening vaccination policies in Latin America: An evidence-based approach. Vaccine [Internet]. Elsevier Ltd; 2013; 31:3826–33. Available from: http://dx.doi.org/10.1016/j.vaccine.2012.12.062

53. Banta D, Almeida RT. The development of health technology assessment in Brazil. Int. J. Technol. Assess. Health Care. England; 2009; 25 Suppl 1:255–9.

54. Gomez-Dantes O, Frenk J. Health technology assessment in Mexico. Int. J. Technol. Assess. Health Care. England; 2009; 25 Suppl 1:270–5.

55. Muratov S, Hailey D, Foerster V, Brady B, Juzwishin D, la Fleur P, et al. Mentoring a health technology assessment initiative in Kazakhstan. Int. J. Technol. Assess. Health Care. England; 2014; 30:147–52.

56. Nabyonga-Orem J, Ssengooba F, Macq J, Criel B. Malaria treatment policy change in Uganda: what role did evidence play? Malar. J. England; 2014; 13:345.

57. Becerra-Posada F, Minayo M, Quental C, de Haan S. National research for health systems in Latin America and the Caribbean: moving towards the right direction? Heal. Res. policy Syst. England; 2014; 12:13.

58. Nabyonga-Orem J, Tumusiime P, Nyoni J, Kwamie A. Harmonisation and standardisation of health sector and programme reviews and evaluations - how can they better inform health policy dialogue? Heal. Res. POLICY Syst. 2016; 14.

59. Zielinski C, Kebede D, Mbondji PE, Sanou I, Kouvividila W, Lusamba-Dikassa P-S. Knowledge systems in health in sub-Saharan Africa: results of a questionnaire-based survey. J. R. Soc. Med. [Internet]. 2014; 107:22–7. Available from: http://jrs.sagepub.com/content/107/1_suppl/22%5Cnhttp://jrs.sagepub.com/content/107/1_suppl/22.abstract%5Cnhttp://jrs.sagepub.com/content/107/1_suppl/22.full.pdf%5Cnhttp://www.ncbi.nlm.nih.gov/pubmed/24643664

60. Cutler P, Hayward R. Researching public action and development concepts in the context of mental health. Dev. Pract. [Internet]. 2007; 17:301–6. Available from: http://www.tandfonline.com/doi/abs/10.1080/09614520701197267

61. Nabyonga Orem J, Marchal B, Mafigiri D, Ssengooba F, Macq J, Da Silveira VC, et al. Perspectives on the role of stakeholders in knowledge translation in health policy development in Uganda. BMC Health Serv. Res. England; 2013; 13:324.

62. Sauerborn R, Nitayarumphong S, Gerhardus A. Strategies to enhance the use of health systems research for health sector reform. Trop. Med. Int. Health. England; 1999; 4:827–35.

63. Coelho VSP. What did we learn about citizen involvement in the health policy process: lessons from Brazil. J. Public Delib. [Internet]. Berkeley: Institute for Civic Discourse and Democracy; 2013; 9. Available from:
http://proxy.library.georgetown.edu/login?url=http://search.proquest.com/docview/1418158085?accountid=11091

64. Uneke CJ, Ezeoha AE, Ndukwe CD, Oyibo PG, Onwe F, Ogbonna A. Assessment of organizational capacity for evidence-based health systems operations in Nigeria. Soc. Work Public Health. United States; 2013; 28:97–108.

65. Drake JK, Hutchings JE, Elias CJ. Making evidence work for communities: the role of nongovernmental organizations in translating science to programs. J. Womens. Health (Larchmt). United States; 2010; 19:2119–24.

66. Kaseje D, Olayo R, Musita C, Oindo CO, Wafula C, Muga R. Evidence-based dialogue with communities for district health systems' performance improvement. Glob. Public Health. England; 2010; 5:595–610.

67. Rodriguez DC, Banda H, Namakhoma I. Integrated community case management in Malawi: an analysis of innovation and institutional characteristics for policy adoption. Health Policy Plan. England; 2015; 30 Suppl 2:ii74-ii83.

68. Ade N, Rene A, Khalifa M, Babila KO, Monono ME, Tarcisse E, et al. Coordination of the health policy dialogue process in Guinea: pre- and post-Ebola. BMC Health Serv. Res. England; 2016; 16 Suppl 4:220.

69. Beesley M, Cometto G, Pavignani E. From drought to deluge: how information overload saturated absorption capacity in a disrupted health sector. Health Policy Plan. England; 2011; 26:445–52.

70. Gomez EJ, Atun R. The effects of Global Fund financing on health governance in Brazil. Global. Health. England; 2012; 8:25.

71. Koduah A, Agyepong IA, van Dijk H. "The one with the purse makes policy": Power, problem definition, framing and maternal health policies and programmes evolution in national level institutionalised policy making processes in Ghana. Soc. Sci. Med. England; 2016; 167:79–87.

72. Hawkes S, K Aulakh B, Jadeja N, Jimenez M, Buse K, Anwar I, et al. Strengthening capacity to apply health research evidence in policy making: experience from four countries. Health Policy Plan. England; 2016; 31:161–70.

73. Jirawattanapisal T, Kingkaew P, Lee T-J, Yang M-C. Evidence-based decision-making in Asia-Pacific with rapidly changing health-care systems: Thailand, South Korea, and Taiwan. Value Health. United States; 2009; 12 Suppl 3:S4-11.

74. Teerawattananon Y, Tantivess S, Yothasamut J, Kingkaew P, Chaisiri K. Historical development of health technology assessment in Thailand. Int. J. Technol. Assess. Health Care. England; 2009; 25 Suppl 1:241–52.

75. Rutta E, Liana J, Embrey M, Johnson K, Kimatta S, Valimba R, et al. Accrediting retail drug shops to strengthen Tanzania's public health system: an ADDO case study. J. Pharm. policy Pract. England; 2015; 8:23.

76. Cash-Gibson L, Guerra G, Salgado-de-Snyder VN. SDH-NET: a South-North-South collaboration to build sustainable research capacities on social determinants of health in low- and middle-income countries. Heal. Res. policy Syst. England; 2015; 13:45.

77. El-Jardali F, Saleh S, Khodor R, Abu Al Rub R, Arfa C, Ben Romdhane H, et al. An institutional approach to support the conduct and use of health policy and systems research: The Nodal Institute in the Eastern Mediterranean Region. Heal. Res. policy Syst. England; 2015; 13:40.

78. Rizk A, Kronfol NM, Moffatt S, Zaman S, Fares S, Sibai AM. A survey of knowledge-to-action pathways of aging policies and programs in the Arab region: the role of institutional arrangements. Implement. Sci. England; 2015; 10:170.

79. Grundy J. Country-level governance of global health initiatives: an evaluation of immunization coordination mechanisms in five countries of Asia. Health Policy Plan. England; 2010; 25:186–96.

80. Contreras-Hernández I, Prisco FE, Alvis-Gúzman N, Stefani SD. The use of economic evaluations for decision-making in oncological interventions: The experience of Mexico, Colombia and Brazil [El uso de evaluación económica para la toma de decisiones en intervenciones oncológicas: La experiencia de México, Colombia y. Pharmacoeconomics - Spanish Res. Artic. [Internet]. 2012; 9:117–33. Available from: https://www.scopus.com/inward/record.uri?eid=2-s2.0-84870891816&partnerID=40&md5=9b2b353191fc103c69f98f37c69defbc

81. Nabyonga Orem J, Mafigiri DK, Marchal B, Ssengooba F, Macq J, Criel B. Research, evidence and policymaking: the perspectives of policy actors on improving uptake of evidence in health policy development and implementation in Uganda. BMC Public Health. England; 2012; 12:109.

82. Zida A, Lavis JN, Sewankambo NK, Kouyate B, Moat K, Shearer J. Analysis of the policymaking process in Burkina Faso's health sector: case studies of the creation of two health system support units. Heal. Res. Policy Syst. Health Research Policy and Systems; 2017; 15:1–17.

83. Zida A, Lavis JN, Sewankambo NK, Kouyate B, Moat K. The factors affecting the institutionalisation of two policy units in Burkina Faso's health system: a case study. Heal. Res. Policy Syst. [Internet]. Health Research Policy and Systems; 2017; 15:62. Available from: http://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-017-0228-2

84. Zida A, Lavis JN, Sewankambo NK, Kouyate B, Ouedraogo S. Evaluating the Process and Extent of Institutionalization : A Case Study of a Rapid Response Unit for Health Policy in Burkina Faso. Int. J. Heal. policy Manag. 2017; 6:1–12.

85. Kingdon JW. Agendas, alternatives, and public policies. Boston: Little Brown; 1984.

86. Barth M. Many roads lead to sustainability: a process-oriented analysis of change in higher education. Int. J. Sustain. High. Educ. [Internet]. 2013; 14:160–75. Available from: http://dx.doi.org/10.1108/14676371311312879

87. Renzi M. An integrated Toolkit for institutional development. Public Adm. Dev. [Internet]. 1996; 16:469–83. Available from: http://doi.wiley.com/10.1002/ (SICI) 1099-162X (199612)16:5%3C469: AID-PAD894%3E3.0.CO; 2-V

88. World Bank. Promoting the Institutionalization of National Health Accounts: A Globald Strategic Action Plan. 2010;

89. Bank W. Harnessing National Health Account to Strengthen Policymaking: A Compendium of Case Studies. 2011;

90. Story WT, Leban K, Altobelli LC, Gebrian B, Hossain J, Lewis J, et al. Institutionalizing community-focused maternal , newborn , and child health strategies to strengthen health systems : A new framework for the Sustainable Development Goal era. Global. Health. Globalization and Health; 2017; 13:1–13.

91. Buasai S, Kanchanachitra C, Siwaraksa P. The way forward: experiences of health promotion development in Thailand. Promot. Educ. England; 2007; 14:250–3.

92. Rani M, Nusrat S, Hawken LH. A qualitative study of governance of evolving response to non-communicable diseases in low-and middle- income countries: current status, risks and options. BMC Public Health. England; 2012; 12:877.

93. Kapiriri L, Norheim OF, Heggenhougen K. Using burden of disease information for health planning in developing countries: the experience from Uganda. Soc Sci Med. 2003; 56:2433–41.

94. Flyvbjerg B. Making social science matter: Why social inquiry fails and how it can succeed again. Camridge, UK: Cambridge University Press; 2001.

95. Kuhn TS. The structure of scientific revolutions. University of Chicago press; 1962.

ANNEX A: BIBLIOGRAPHY OF ARTICLES INCLUDED IN REVIEW

Ade, N. et al., 2016. Coordination of the health policy dialogue process in Guinea: pre- and post-Ebola. *BMC health services research*, 16 Suppl 4, p.220.

Banta, D. & Almeida, R.T., 2009. The development of health technology assessment in Brazil. *International journal of technology assessment in health care*, 25 Suppl 1, pp.255–259.

Becerra-Posada, F. et al., 2014. National research for health systems in Latin America and the Caribbean: moving towards the right direction? *Health research policy and systems*, 12, p.13.

Beesley, M., Cometto, G. & Pavignani, E., 2011. From drought to deluge: how information overload saturated absorption capacity in a disrupted health sector. *Health policy and planning*, 26(6), pp.445–452.

Bennett, S. et al., 2013. The impact of Fogarty International Center research training programs on public health policy and program development in Kenya and Uganda. *BMC public health*, 13, p.770.

Blau, J. et al., 2012. Establishment of a National Immunization Technical Advisory Group in Côte d'Ivoire: Process and lessons learned. *Vaccine*, 30(15), pp.2588–2593. Available at: http://dx.doi.org/10.1016/j.vaccine.2012.01.066.

Buasai, S., Kanchanachitra, C. & Siwaraksa, P., 2007. The way forward: experiences of health promotion development in Thailand. *Promotion & education*, 14(4), pp.250–253.

Cash-Gibson, L., Guerra, G. & Salgado-de-Snyder, V.N., 2015. SDH-NET: a South-North-South collaboration to build sustainable research capacities on social determinants of health in low- and middle-income countries. *Health research policy and systems*, 13, p.45.

Coelho, V.S.P., 2013. What did we learn about citizen involvement in the health policy process: lessons from Brazil. *Journal of Public Deliberation*, 9(1). Available at: http://proxy.library.georgetown.edu/login?url=http://search.proquest.com/docview/1418158085?accountid=11091.

Contreras-Hernández, I. et al., 2012. The use of economic evaluations for decision-making in oncological interventions: The experience of Mexico, Colombia and Brazil [El uso de evaluación económica para la toma de decisiones en intervenciones oncológicas: La experiencia de México, Colombia y . *Pharmacoeconomics - Spanish Research Articles*, 9(4), pp.117–133. Available at: https://www.scopus.com/inward/record.uri?eid=2-s2.0-84870891816&partnerID=40&md5=9b2b353191fc103c69f98f37c69defbc.

Cutler, P. & Hayward, R., 2007. Researching public action and development concepts in the context of mental health. *Development in Practice*, 17(2), pp.301–306. Available at: http://www.tandfonline.com/doi/abs/10.1080/09614520701197267.

Dovlo, D. et al., 2016. Policy dialogues - the "bolts and joints" of policy-making: experiences from Cabo Verde, Chad and Mali. *BMC health services research*, 16 Suppl 4, p.216.

Drake, J.K., Hutchings, J.E. & Elias, C.J., 2010. Making evidence work for communities: the role of nongovernmental organizations in translating science to programs. *Journal of women's health (2002)*, 19(11), pp.2119–2124.

El-Jardali, F. et al., 2014. Capturing lessons learned from evidence-to-policy initiatives through structured reflection. *Health research policy and systems*, 12, p.2.

El-Jardali, F. et al., 2015. An institutional approach to support the conduct and use of health policy and systems research: The Nodal Institute in the Eastern Mediterranean Region. *Health research policy and systems*, 13, p.40.

George, A. et al., 2015. ICCM policy analysis: Strategic contributions to understanding its character, design and scale up in sub-Saharan Africa. *Health Policy and Planning*, 30, p.ii3-ii11.

Gilson, L. & McIntyre, D., 2008. The interface between research and policy: experience from South Africa. *Social science & medicine*, 67(5), pp.748–759.

Gomez, E.J. & Atun, R., 2012. The effects of Global Fund financing on health governance in Brazil. *Globalization and health*, 8, p.25.

Gomez-Dantes, O. & Frenk, J., 2009. Health technology assessment in Mexico. *International journal of technology assessment in health care*, 25 Suppl 1, pp.270–275.

Grundy, J., 2010. Country-level governance of global health initiatives: an evaluation of immunization coordination mechanisms in five countries of Asia. *Health policy and planning*, 25(3), pp.186–196.

Hawkes, S. et al., 2016. Strengthening capacity to apply health research evidence in policy making: experience from four countries. *Health policy and planning*, 31(2), pp.161–170.

Hyder, A.A. et al., 2007. Exploring health systems research and its influence on policy processes in low income countries. *BMC public health*, 7, p.309.

Jirawattanapisal, T. et al., 2009. Evidence-based decision-making in Asia-Pacific with rapidly changing health-care systems: Thailand, South Korea, and Taiwan. *Value in health : the journal of the International Society for Pharmacoeconomics and Outcomes Research*, 12 Suppl 3, pp.S4-11.

Kapiriri, L., Norheim, O.F. & Heggenhougen, K., 2003. Using burden of disease information for health planning in developing countries: the experience from Uganda. *Soc Sci Med*, 56(12), pp.2433–2441.

Kapiriri, L., Robbestad, B. & Norheim, O.F., 2003. The relationship between prevention of mother to child transmission of HIV and stakeholder decision making in Uganda: Implications for health policy. *Health Policy*, 66(2), pp.199–211.

Kaseje, D. et al., 2010. Evidence-based dialogue with communities for district health systems' performance improvement. *Global public health*, 5(6), pp.595–610.

Kim, D., Sarker, M. & Vyas, P., 2016. Role of spatial tools in public health policymaking of Bangladesh: opportunities and challenges. *Journal of health, population, and nutrition*, 35, p.8.

Knaul, F.M. et al., 2006. Health System Reform in Mexico 4 - Evidence is good for your health system: policy reform to remedy catastrophic and impoverishing health spending in Mexico. *LANCET*, 368(9549), pp.1828–1841.

Koduah, A., Agyepong, I.A. & van Dijk, H., 2016. "The one with the purse makes policy": Power, problem definition, framing and maternal health policies and programmes evolution in national level institutionalised policy making processes in Ghana. *Social science & medicine*, 167, pp.79–87.

Liverani, M., Hawkins, B. & Parkhurst, J.O., 2013. Political and Institutional Influences on the Use of Evidence in Public Health Policy. A Systematic Review. *PLoS One*, 8(10), p.e77404. Available at: http://dx.doi.org/10.1371/journal.pone.0077404.

McVeigh, J. et al., 2016. Promoting good policy for leadership and governance of health related rehabilitation: a realist synthesis. *GLOBALIZATION AND HEALTH*, 12.

Muratov, S. et al., 2014. Mentoring a health technology assessment initiative in Kazakhstan. *International journal of technology assessment in health care*, 30(2), pp.147–152.

Nabyonga Orem, J. et al., 2012. Research, evidence and policymaking: the perspectives of policy actors on improving uptake of evidence in health policy development and implementation in Uganda. *BMC public health*, 12, p.109.

Nabyonga Orem, J. et al., 2013. Perspectives on the role of stakeholders in knowledge translation in health policy development in Uganda. *BMC health services research*, 13, p.324.

Nabyonga-Orem, J. et al., 2014. Malaria treatment policy change in Uganda: what role did evidence play? *Malaria journal*, 13, p.345.

Nabyonga-Orem, J. et al., 2016. Harmonisation and standardisation of health sector and programme reviews and evaluations - how can they better inform health policy dialogue? *HEALTH RESEARCH POLICY AND SYSTEMS*, 14.

Odoch, W.D. et al., 2015. Introduction of male circumcision for HIV prevention in Uganda: analysis of the policy process. *Health Research Policy and Systems*, 13(1), p.31. Available at: http://www.health-policy-systems.com/content/13/1/31.

Onwujekwe, O. et al., 2015. Role and use of evidence in policymaking: an analysis of case studies from the health sector in Nigeria. *Health research policy and systems*, 13, p.46.

Rani, M., Nusrat, S. & Hawken, L.H., 2012. A qualitative study of governance of evolving response to non-communicable diseases in low-and middle- income countries: current status, risks and options. *BMC public health*, 12, p.877.

Rizk, A. et al., 2015. A survey of knowledge-to-action pathways of aging policies and programs in the Arab region: the role of institutional arrangements. *Implementation science : IS*, 10, p.170.

Rodriguez, D.C., Banda, H. & Namakhoma, I., 2015. Integrated community case management in Malawi: an analysis of innovation and institutional characteristics for policy adoption. *Health policy and planning*, 30 Suppl 2, p.ii74-ii83.

Rutta, E. et al., 2015. Accrediting retail drug shops to strengthen Tanzania's public health system: an ADDO case study. *Journal of pharmaceutical policy and practice*, 8, p.23.

Sauerborn, R., Nitayarumphong, S. & Gerhardus, A., 1999. Strategies to enhance the use of health systems research for health sector reform. *Tropical medicine & international health : TM & IH*, 4(12), pp.827–835.

Shroff, Z. et al., 2015. Incorporating research evidence into decision-making processes: researcher and decision-maker perceptions from five low- and middle-income countries. *Health Res Policy Syst*, 13(1), p.70. Available at: http://dx.doi.org/10.1186/s12961-015-0059-y.

Syed, S.B. et al., 2008. Exploring evidence-policy linkages in health research plans: a case study from six countries. *Health research policy and systems / BioMed Central*, 6, p.4. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2329631&tool=pmcentrez&rendertype =abstract.

Tapia-Conyer, R. et al., 2013. Strengthening vaccination policies in Latin America: An evidence-based approach. *Vaccine*, 31(37), pp.3826–3833. Available at: http://dx.doi.org/10.1016/j.vaccine.2012.12.062.

Teerawattananon, Y. & Russell, S., 2008. The greatest happiness of the greatest number? Policy actors' perspectives on the limits of economic evaluation as a tool for informing health care coverage decisions in Thailand. *BMC health services research*, 8, p.197.

Teerawattananon, Y. et al., 2009. Historical development of health technology assessment in Thailand. *International journal of technology assessment in health care*, 25 Suppl 1, pp.241–252.

Uneke, C.J. et al., 2010. Development of health policy and systems research in Nigeria: lessons for developing countries' evidence-based health policy making process and practice. *Healthcare policy = Politiques de sante*, 6(1), pp.e109-26.

Uneke, C.J. et al., 2012. Promotion of evidence-informed health policymaking in Nigeria: bridging the gap between researchers and policymakers. *Global public health*, 7(7), pp.750–765.

Uneke, C.J. et al., 2013. Assessment of organizational capacity for evidence-based health systems operations in Nigeria. *Social work in public health*, 28(2), pp.97–108.

Uneke, C.J. et al., 2015. Enhancing the Capacity of Policy-makers to Develop Evidence-Informed Policy Briefs on Infectious Diseases of Poverty in Nigeria. *International Journal of Health Policy Management*, 4(9), pp.599–610. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4537854&tool=pmcentrez&rendertype =abstract.

Zielinski, C. et al., 2014. Knowledge systems in health in sub-Saharan Africa: results of a questionnaire-based survey. *Journal of the Royal Society of Medicine*, 107(1 suppl), pp.22–27. Available at: http://jrs.sagepub.com/content/107/1_suppl/22%5Cnhttp://jrs.sagepub.com/content/107/1_suppl /22.abstract%5Cnhttp://jrs.sagepub.com/content/107/1_suppl/22.full.pdf%5Cnhttp://www.ncbi.nl m.nih.gov/pubmed/24643664.