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Bridging the Research to Policy Gap for Effective engagement in policy agenda
setting in southern and eastern Africa

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Abstract

Bridging the Research to Policy Gap for Effective engagement in policy agenda setting in southern and eastern Africa

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Increasingly, health conditions exist for which there are high quality local and international data; effective, feasible, and affordable interventions; and strong research communities advocating for attention in low- and middle-income countries (LMICs). Yet these conditions still lack the political priority to make it onto the agenda of health policy makers. Examples include both conditions well-resourced in high income countries, such as surgery and trauma care or most cancers, as well as issues neglected globally, such as access to pain relief and palliative care. The

reasons for the persistent absence of these issues from national priority lists in LMICs are still poorly understood. In this dissertation I bring together concepts of implementation science and political science to identify evidence-based, context-appropriate recommendations for improving the effectiveness of research use in driving policy agendas and prioritization. I first focus on assessing the current landscape of theories and frameworks available to researchers interested in building political priority for health conditions in low- and middle-income countries. I then use the frameworks to guide to two case studies looking at commitment to new health technologies in Uganda and the political prioritization of tertiary care in Malawi.

In Aim 1, I conduct a scoping review of evidence to policy and agenda setting frameworks and theories that have been applied to health topics in LMICs. In the absence of empirical research, frameworks and theories can provide a useful conceptual foundation for integration of current evidence-based strategies. The search included terms related to health, political priority, and frameworks and theories and looked for studies from 2000-2022. I found a total of 155 studies that applied 41 distinct frameworks and theories to understand the presence or absence of a health topic on the national or global health policy agenda. Theories relevant to political priority came from several academic disciplines, most notably political sciences public health, and vary substantially in complexity, orientation, and the extent to which they are adapted or modified prior to being applied. Of the 44% of studies that assessed health topics in LMICS, one-third were applied to questions of priority in African countries.

Aim 2, I used a qualitative case study approach to understand the policy roll out of a web-based electronic medical record designed to facilitate case management of rheumatic heart disease

(RHD) in Uganda, called the Active Community Case Management Tool (ACT). RHD is a significant cause of ill-health in young adults in Uganda, but access and adherence to diagnosis and treatment remain low. I combined primary data collection and analysis of interviews with RHD researchers and district health officials with secondary analysis of interviews with health care workers using the ACT software as part of a study to decentralize RHD care to health centers closer to patients in two districts in Uganda. Through mapping the national policy and regulatory approval process, I found strong evidence of expressed political commitment to this new technology, driven in part by trust in the local research community advocating for ACT's use. However, these expressions have been slow to translate into implementation. The reasons for this are varied, but limitations in the local system available to adapt national strategies into operational policies and guidance is one contributing factor.

In Aim 3, I use a process tracing methodology to map ongoing efforts to integrate tertiary care into the Malawi Essential Package of Health Services (EPHS). I draw from Shiffman and Smith framework for determinants of political priority and the SPIRIT action framework to identify determinants of tertiary care's recent rise and fall on the national health policy agenda in Malawi. The results show that having an available repository of effective interventions, a cohesive political community, and an open political window of opportunity are the strongest predictors a health issues political prioritization. Moreover, for tertiary care, research serves as a catalyst for each of these dimensions in Malawi.

This dissertation advances the limited body of literature in policy implementation science at a critical time in the field's development, by providing a synthesis of relevant frameworks and

theories complemented by empirical examples of their application. The focus on applying implementation science concepts to the agenda-setting stage of the policy cycle is particularly innovative, as much of the focus to date has centered on the policy implementation stage of the cycle. I hope that the findings presented here will provide a starting point for researchers interested in better engaging with the policy agenda setting process in southern and eastern Africa.

Aim 1: How does scientific evidence translate into policy development in low- and middle-income countries? A scoping review of theories, frameworks, and constructs

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Introduction: Numerous political science and research utilization theories have been put forth to explain how research is used in policy development, but their applicability to health policy in low- and middle-income countries (LMICs) is unclear. I did a scoping review to identify theories, frameworks, and constructs used in health policy studies, focusing on the “agenda-setting” phase of the policy cycle in LMICs.

Methods: This study followed the PRISMA-SR recommendations for scoping reviews. The search strategy was based on key words and phrases reflecting the concepts of political prioritization/agenda setting, frameworks/theories, and health. I considered studies published since 2000. Studies were included if they clearly developed or applied a theory or framework for understanding political priority, policy agenda setting, or policy prioritization; studies that did not apply a previously established framework or utilize their results to propose a new, generalizable framework were excluded.

Findings: I identified 155 studies that used 41 unique frameworks or theories. Over two-thirds of articles used frameworks developed by Kingdon’s seminal book or by Shiffman and Smith. Only one study in LMICs (68 of 155 studies) was published before 2009. LMIC studies were most commonly done in African countries (38%). Most studies were descriptive in nature; few were explanatory or validated the frameworks used. Comparison of constructs used across the different frameworks or theories revealed broad consensus on overarching determinants (e.g., an

issue's innate political appeal), but disagreement on the mechanisms by which researchers influence the prioritization process.

Interpretation: There is substantial scope to improve the theoretical and empirical understanding of evidence-to-policy issues in LMICs. Future research should emphasize the inductive development and validation of new theories and frameworks; consideration of a broader range of health topics (e.g., injuries, pandemics) would add value.

Key Messages – Practical Implications for Health Policy Researchers

- Empirical- and theory-derived frameworks exist to guide global health researchers interested in more strategically engaging in policy agenda processes setting in LMICs.
- Frameworks share common constructs but vary substantially in complexity and orientation, so care should be taken to match the framework selected to policy agenda-setting goals.
- Limited assessments of the predictive utility of most major frameworks substantially restricts our understanding of how they might inform selection of evidence-based approaches to policy translation.

Introduction

Motivating policy change in low- and middle-income countries (LMICs) is increasingly included as an explicit outcome of academic research proposals, but the methods employed by researchers to achieve this are most often ad-hoc and opportunistic approaches. The appeal of solving the evidence-to-policy puzzle is reflected in the range of major international health donor organizations [1], think tanks [2], and academic institutions [3-5] with major initiatives aimed at improving the uptake of evidence into policy. Interest in understanding how research is being incorporated into health policy is growing. [6]

The policy cycle stages is a commonly used heuristic to capture the multistep, iterative process of policy development. [7, 8] This study's focus is on the first stage of the cycle: setting the agenda. Agenda-setting is a critical, if often under-researched step in health policy development globally, but it is particularly central to health policy development in severely resourced

constrained settings. [9] Agenda setting is a competitive process in these settings, where issues such as HIV and maternal and child health have an understandably and persistently prominent place on the health policy agenda. [10]

What is less understandable is so many other worthy issues consistently fail to gain traction with policymakers despite having equally effective, affordable interventions available. [11, 12]

Previously hypothesized reasons include a relationship between research communities and political decisionmakers that is informal and under-developed, insufficient demand for research by political decision makers, and the production of evidence that inappropriate or mistimed for political processes. [13, 14] The result has been the development of an ad-hoc collection of strategies intended to improve researcher-to-policymaker engagement that have been infrequently and inconsistently applied, and rarely informed by implementation science best practices or political science theory on prioritization and agenda setting [15]. Systematically assessing the mechanisms by which researchers can effectively (and sustainably) use evidence-based strategies to improve the political priority of overlooked conditions on the national policy agenda is an essential first step.

In the absence of a large empirical evidence base, frameworks and theories can provide a useful conceptual foundation for integration of current evidence-based strategies. Theories are intended to be explanatory of the processes that they summarize, whereas frameworks typically provide an identification and categorization of important determinants without explaining how they lead to a particular phenomenon, though the boundaries are often blurry between how these terms are used.[16] Policy scholars have argued the benefits of incorporating theories and frameworks into policy analysis in LMICs, and numerous theories have been put forth to explain how research is used in policy formulation, but their applicability to agenda-setting for health is unclear. [15, 17]

They note several reasons for this, in particular, that most frameworks were developed in and for high income countries. Similarly, popular agenda-setting frameworks provide only a cursory inclusion of research evidence in their construction, if it is mentioned at all.

Given the importance of national policy agendas to the progressive realization of universal health coverage, there is a need to identify and map the growing number of framework options available for researchers and consider their relevance and applicability to settings in LMICs. I sought to explore these domains, evidence-to-policy and agenda setting, to understand if any theories or frameworks effectively merged the two.

Health Technology Assessment and Frameworks for Health Economics Priority-Setting

There is a large and rapidly growing literature base on health technology assessment (HTA) and the use of economic evaluation, equity, and other metrics for “priority setting”. This work has taken on a greater sense of urgency with increasing global and national interest in advancing the universal health coverage agenda. As expected, there exist several frameworks or tools available to inform the technical application of HTA within priority-setting, including program budgeting and marginal analysis, [18] multi-criteria decision analysis, [19] and accountability for reasonableness [20], and reviews of their application are available elsewhere. [21] In principle, HTA can and should be a valuable input early in an agenda-setting process, and there is a current push underway among priority-setting scholars to increase its use for this purpose. In practice, the use of HTA to-date has typically taken the form of informing the selection among policy implementation or intervention alternatives, for example the inclusion or exclusion of a cost-effective service in a publicly funded health benefits package. This use of HTA to aid in selection among intervention alternatives after an issue has garnered sufficient political priority to be included on a national or international health agenda, later in the policy cycle than was the

focus of the study. As such, the review of applications of traditional HTA priority-setting frameworks was beyond the scope of this review, though I acknowledge that this distinction is arbitrary as the policy cycle is not unidirectional in practice.

This review complements and extends to agenda-setting phase of the policy cycle recent efforts to document the use of frameworks and theories in LMIC health policy analysis by Jones and colleagues [22]. Applications of agenda-setting theories and frameworks is also an important element of the sub-field of policy implementation science, which aims to integrate methodological approaches and concepts from implementation science into the development of policy instruments for improving health. I respond to the call from leaders in this field to better understand how existing frameworks and theories can be leveraged to improve health in LMICs (Bullock and Emmons/chambers),

Through this scoping review I sought to understand three related questions: 1) What frameworks and theories exist to guide researchers interested in building political priority for or engaging in the policy agenda setting process around a novel or neglected health condition at the national level? 2) According to available frameworks, what are the key factors that influence political priority of new diseases or health services? And 3) Have these frameworks been validated in an LMIC-setting? As scoping reviews are particularly useful when the topic of inquiry is heterogenous and complex, [23] it was an appropriate tool to identify and map the coverage of literature on this issue of emerging interest.

Methods

I developed the protocol for this review in advance via an iterative deliberation process by members of the author team. The protocol was registered online and is available at

dx.doi.org/10.17504/protocols.io.bqfbmtin. The protocol follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for scoping reviews and incorporated best practices of the five-stage approach proposed by Arksey and O'Malley (namely 1) Identifying the research question; 2) Identifying relevant studies; 3) Study selection; 4) Charting the data; 5) Collating, summarizing and reporting the results). [24, 25]

Search Strategy

I consulted a research librarian during development who reviewed all protocol drafts. Prior to executing the full search I tested and revised the preliminary database search strategy to ensure that the final terms had the sensitivity to identify relevant articles for the inquiry.

The initial database search was run on December 4, 2020 and was updated on May 1, 2022.

Primary information sources included 6 medical and social sciences databases

(PubMed/MEDLINE, EMBASE, PsychINFO, PAIS, the Cochrane Library, and IBSS). I selected these databases in order to give a broad representation of both health- and political sciences-oriented literature sources. In addition to the database searches, I applied a comparable term string to Google Scholar, and made an *a priori* determination to include the first 200 results. I augmented the literature search methods by scanning the reference lists of included articles, conducting a forward citation search of key source articles, and sourcing from the professional knowledge of the author team.

The search included a combination of indexed (MeSH) and free-text terms and was modified according to the syntax requirements of each database (see Box 1 for the example of the string used for PubMed). To focus the search, I restricted free text terms to appearances in the title or abstract of publications. I used filters to limit results to those published after 2000 (through an

effective end publication date of April 30, 2022). The original protocol called for filtering results by those where an English language abstract was available, but this functionality was not available in several databases, so ultimately I chose not to apply a language restriction.

Box 1 – Search String for PubMed

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((((((((((((((policy[MeSH Terms]) OR (politics[MeSH Terms])) OR (policy[Title/Abstract])) OR (politics[Title/Abstract])) OR ("agenda setting"[Title/Abstract])) OR ("priority setting"[Title/Abstract])) OR ("priority-setting"[Title/Abstract])) OR ("setting priorities"[Title/Abstract])) OR ("policy setting"[Title/Abstract])) OR ("policy agenda setting"[Title/Abstract])) OR ("policy formulation"[Title/Abstract])) OR ("policy direction"[Title/Abstract])) OR ("policy development"[Title/Abstract])) OR ("political priority"[Title/Abstract])) AND ((framework*[Title/Abstract]) OR ("policy frameworks"[Title/Abstract]))) AND (((("health"[MeSH Terms]) OR ("global health"[Title/Abstract])) OR ("public health"[Title/Abstract])) OR ("international health"[Title/Abstract])) OR ("worldwide health"[Title/Abstract])) OR ("world health"[Title/Abstract]))
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Evidence Selection

I along with a colleague from the author team (RN) conducted the initial screening of titles and abstracts according to the established protocol. RN and I included articles for full-text review if their title or abstract clearly suggested that the article was dedicated to the development or application of a framework for understanding political priority, policy agenda setting, or the use of evidence in either of those processes. To ensure screening consistency, RN and I first selected a sample of 650 articles from the initial search results which were screened by both reviewers. RN and I discussed discrepancies in screening and confirmed a collective understanding of the inclusion and exclusion criteria prior to proceeding with the screening of the full set of results. I originally proposed to review 10% of articles to assess screening consistency. This number was based on the assumption that the search would produce 3,000-5,000 articles, based on preliminary research and other scoping reviews. The initial search produced approximately

16,000. During the review process it became clear that completing 1,600 dual reviews was not necessary for ensuring consistency. As a result, we reduced the threshold to 5 percent of the initial screening results (after updating the search to 2022, 650 results is approximately 4 percent of the final total).

RN and I selected sources of evidence from articles included for full-text screening based on the preestablished inclusion and exclusion criteria. We excluded articles according to the following criteria:

1. Papers that did not address the processes of agenda-setting or political prioritization.
2. Papers that presented a narrative description of the emergence, or lack thereof, of a new policy priority or agenda-setting process but did not either motivate their analysis with a theory or framework OR utilize their results to propose a generalizable theory or framework that could be applied to other settings or policy questions. (Note: We used a liberal interpretation of what was considered a framework or theory; if the paper authors described their work as such, the content was included.)
3. Papers that did not include information on the policy process (i.e., were solely an analysis of policy documents or legislation).
4. Articles that were clearly not relevant but were missed in the title and abstract screen.

Given the occasional ambiguity in usage of language around this topic, I included the term “priority setting” in the search strategy in order to adhere to best practices in scoping reviews, keeping the search strategy broad and evidence-type agnostic. [24] Articles that did not explicitly address the use of a priority-setting method for agenda setting or building political priority were excluded.

Data charting

RN and I extracted data from the studies selected for analysis to assess the theoretical, application, content, and geographic scope of the agenda-setting literature. We used Google sheets to chart the extracted data, including columns for items listed in Table 1. The results of included studies were beyond the scope of this review’s objectives, so we did not extract data on results or findings.

During initial data charting, the author team noted that applications of frameworks in early-reviewed articles were predominantly descriptive, presenting either a retrospective application of a framework to a previous agenda-setting success or failure to gain insight into the possible causes, or an assessment of the current state of political priority for a favorite health issue. There were limited examples of prospective application or validation of the chosen models. As a result, an additional item was added to the data extraction tool to capture the study type of articles along 3 dimensions: Explanatory (articles that introduced a new proposed framework or theory, or described the theoretical underpinnings thereof); Descriptive (articles that described the application of a framework to a retrospective case study of an issue, or used a framework to assess the current level of political priority for a measure); and Prospective theory testing.

Table 1: Categories used for Data Charting of Agenda-Setting Theories and Frameworks

Year
Title
Journal/Publication
Framework Used
Framework Type
Framework Elements
LMIC Country Application/Validation? (Y/N)
Location
Region
Neglected Condition? (Y/N)
Health Issue/Condition

Type of Application (Explanatory, Applied, Theory-testing)
Notes
Incomplete source?*

* Items in this category include dissertations, journal pre-preprints that were not subsequently published, conference abstracts and presentations.

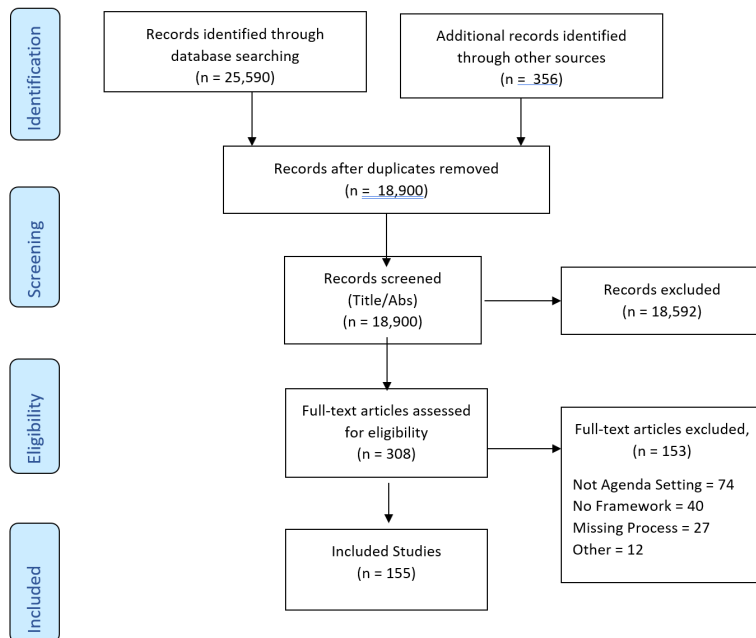
Synthesis of results

I developed the initial synthesis of findings. In addition to quantifying summary statistics of framework and theory utilization for select categories of charted data, I also extracted individual frameworks from their original articles for review. I qualitatively characterized the top three frameworks in each category on two dimensions: 1) complexity of components and relationships and 2) orientation toward context or process. Complexity was determined by the number of components within each framework or theory. Orientation was determined by whether the framework or theory’s primary design was to describe the status of an issue at a point in time or a process over time, as well as the number of suggested directional relationships between framework or theory components.

Results

After removing duplicates I identified a total of 18,900 sources by all methods (see Figure 1), and included 308 articles for full-text review following the title and abstract screening. After full-text review I included 155 articles for data charting and analysis (see Appendix 2). The most common reason for exclusion was articles that did not address political prioritization or agenda setting (48%), followed by the lack of development or application of a framework (26%), and articles that were exclusively analyses of policy content (18%).

Figure 1 – Scoping Search and Screening Results



The characteristics of included articles are summarized in Table 1. I identified 41 distinct frameworks, of which 23 had been previously published elsewhere and 18 were newly developed or adapted by the authors [26-40] for application in the article in which they were used and did not appear in another publication. Frameworks fell into three categories: 1) those that described the process of building political priority or agenda setting or the policy process overall (n = 24); 2) those that sought to explain the role or use of evidence in policy formulation (n = 14); and 3) policy frameworks that were not specific to agenda setting but used to understand an agenda-setting process (n = 3).

Table 1 – Summary of results

Framework used	Number of Articles
<i>Agenda-Setting</i>	
Kingdon’s Multiple Streams	48
Shiffman and Smith’s Determinants of Political Priority	39
Advocacy Coalition Framework	11

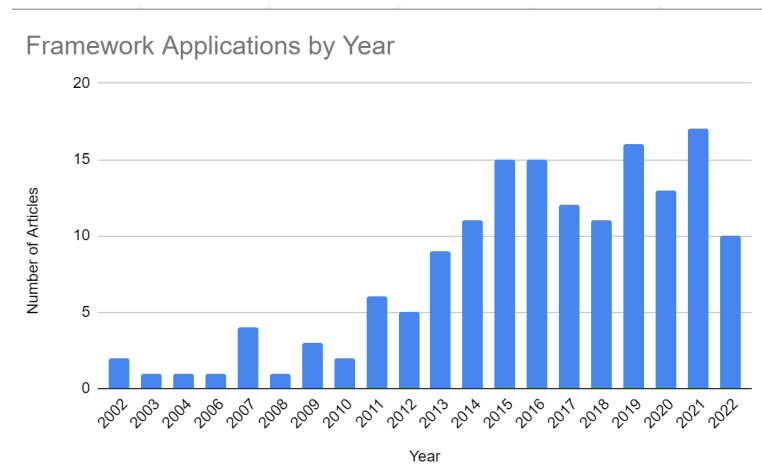
Shiffman’s Network Effectiveness Framework	8
Shiffman (Factors Influencing the Degree to Which Maternal Mortality Reduction Appeared on National Policy Agendas)	5
Shiffman (Social Constructionist Political Priority Framework)	2
Shiffman - Four Challenges Faced by Networks	2
Schmidt's Indicators of Discourse at Work	1
Multiple Governance Framework	1
Policy Arrangement Approach	1
Policy Transfer Framework	2
Howlett’s Five Stream Framework	1
Baumgardner - Theory of Punctuated Equilibrium	1
Author Created	13
<i>Evidence-to-Policy</i>	
Knowledge Translation in Ageing and Health Framework	3
SPIRIT Action Framework	2
3i + N Framework	
Trigger-to-Action	2
Research Utilization in Policy Making model	1
EVITA 2.0	1
WHO-INTEGRATE	1
Author Created	7
<i>Non-specific</i>	
Walt and Gilson Policy Triangle	3
Skok Structural-Functional framework	1
Diffusion of Innovations Theory	1
Author generated framework	0
Applied in LMIC Setting?	
Yes	68
No	87
Type of Application	
Explanatory	17
Applied - Descriptive	135
Applied - Theory-testing	3

Note – Most frameworks classified as “Author Created” were unnamed. The names used here are assigned only for ease of reference, drawn from descriptive definitions within the articles in which they were presented

Application of frameworks to health agenda setting in general is a relatively recent phenomenon (see Figure 2). Ninety-two percent of studies (142) were published in or after 2010, and 50%

were published in the last 5 years. I found only one study applying frameworks in LMICs published before 2009. [41]

Figure 2: Framework Applications by Year



Use of Frameworks and Theories

The diversity of frameworks and theories belies their disparate utilization in the literature. Over two-thirds of articles included the presentation or application of one of two frameworks:

Kingdon’s Multiples Streams Theory (48) or Shiffman and Smith’s framework for generation of pollical priority for global health initiatives (39). No other framework was used more than 6 times in the results.

While presented here as distinct frameworks to align with the ways in which they were used in the literature, several of the frameworks should be understood as evolutions of the Shiffman and Smith Framework for Determinants of Political Priority. Shiffman himself notes the limitations of his popular 2007 framework, including lack of prioritization and limited theory underpinning this earlier model. [42] Shiffman’s initial attempt to address these shortcomings resulted in a

more streamlined iteration of the framework, focused on three key constructs: policy communities, ideas, and institutions. [43] This evolution continued amid growing interest in the role and power of actor networks [44, 45], and in 2016 Shiffman put forth a Framework on Network Effectiveness that is, itself, an incremental update on prior iterations. [46]

Eighty-eight percent of the results used methods that were applied but descriptive, and another 11% were explanatory. Only three studies [47-49] purported to use the framework to guide prospective implementation of engagement strategies after which they observed an increase in political priority or agenda presence.

Application in low- and middle-income countries

Approximately 44% (68) of studies reviewed applied a framework in a low- or middle-income country (or multiple LMICs). Africa was most common region for country applications (26), followed by Asia (19), and LMICs broadly (5). LMIC application slightly favored Kingdon's Multiple Streams Theory (22) as compared to the framework of Shiffman and Smith (18).

Framework origins

Frameworks and theories originated from multiple academic traditions. Of the agenda setting-specific frameworks, 11 came from non-health specific political sciences. [34, 50-60] Notably, the frameworks from this tradition tend to be substantially older than those from the health policy literature. The motivation for and empirical evidence underlying the original development of these frameworks comes exclusively from high-income settings, most commonly the United States, United Kingdom, and Europe, though they have since been applied more broadly. Agenda setting frameworks emerging from the health policy literature were equally numerous. Of the

nine distinct frameworks identified, one was that of Shiffman and Smith and five others were author adaptations of the Shiffman and Smith approach [10, 27, 37, 43, 46]. All nine of the evidence-to-policy frameworks or theories were designed to address a health policy problem.

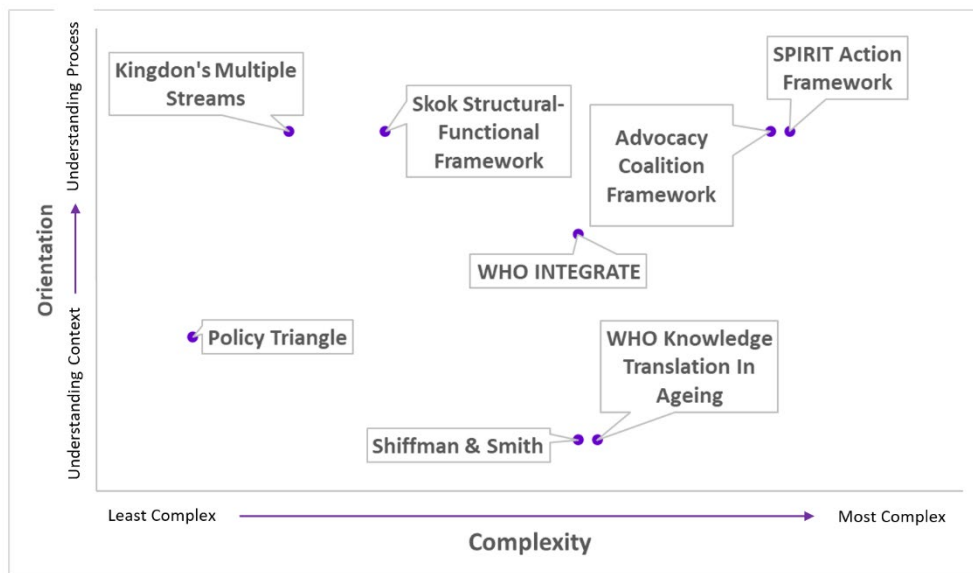
Framework construction

After reviewing the applications, I then extracted each framework referenced from the source in which it first appeared. A comparison of constructs used across the different frameworks or theories reveals broad consensus on overarching determinants, but disagreement on the mechanisms by which the determinants influence the prioritization process. Agreement on the definition or characteristics of an issue is a necessary, if not sufficient component of major frameworks or theories. In some, such as the Advocacy Coalition Framework, the basic attributes of the problem are the starting point from which all subsequent agenda-setting steps flow. More commonly, however, problem agreement is portrayed as an equal-weighted part of a multi-dimensional process, proceeding either in parallel [41, 50, 61] or iteratively [53, 62] with other determinants of agenda change. Most, but not all, frameworks place actors, both individuals and institutions, in a central position within agenda setting. Actors are most commonly conceptualized as “brokers” of information [38, 39, 63] among evidence-to-policy frameworks, or power [10, 50, 51, 55]. The literature for some sub-constructs, such as power dynamics, has been studied within other actor groups, such as medical professionals, and could share lessons for researchers. [64-66]

Framework features

In general, the most popular frameworks or theories are comparatively less complex but cover a range from context- to process-oriented (see figure 2). There is no clear distinction between the evidence-to-policy frameworks used to understand agenda setting and agenda-setting specific approaches. Indeed, this characterization exercise revealed that wherever a researcher’s needs fall along the complexity and orientation spectrum, there exist framework and theory options from which to choose.

Figure 2: Relationship between orientation and complexity among frequently used frameworks



Discussion

This scoping review offers a comprehensive look at the theories and frameworks guiding researcher’s efforts to understand agenda-setting for health policies globally. Interestingly, the most commonly applied frameworks in LMICs were not originally designed for that purpose. Shiffman and Smith designed their framework as explanatory of the determinants of political priority for initiatives at the global level.[41] While Kingdon’s Multiple Streams Theory and

Walt and Gilson policy triangle were developed to characterize agenda setting and general policy processes within a national political system, both are derived from empirical case studies from the United States.[50, 53]

The choice not to adjudicate if author-described theories and frameworks were sufficient to be categorized as such is a major limitation of this analysis. The broad interpretation and liberal approach to inclusion is in keeping with best practices of scoping reviews, but resulted in a disparate collection of outputs that range from complex graphics representing dynamic systems and interactions, to simple lists of constructs with associated definitions. This is particularly true when considering “evidence-to-policy” frameworks and theories, as these articles more frequently describe elements of knowledge translation and exchange generally.

Providing guidance on how to compare the relative advantages of each framework and theory and select among them for use in study design or practice is an important area for future research. Oliver and colleagues have hypothesized the reasons why Kingdon’s framework has emerged as the most frequently applied of the political science driven theories in health, including its flexibility, broadly defined scope, and explicit integration of the role of chance in setting policy agendas.[17] There is less evidence as to why Shiffman and Smith is so dominant in the health agenda setting landscape, but the limited number of currently available alternatives is likely a key motivating factor.

Though I did not do a systematic assessment of article quality, it was also clear from the full-text reviews that studies varied substantially in the degree to which they integrated the framework into data collection or analysis. For some, frameworks provided a comprehensive underlying architecture or fully motivated the research questions, whereas for others they served as a more superficial input to instrument design or analysis. I also focused the search on the agenda-setting

phase of policy creation, excluding articles that, by the authors' descriptions solely focused on later stages (e.g., policy selection). While they are conceptually different, in practice phases are not always clearly separable. In addition, given the complexity of the topic and fact that it spans multiple research traditions, many relevant terms are used inconsistently or colloquially by researchers. As such, I may have omitted frameworks that others would have classified as agenda-setting.

Lastly, the limited assessments of the predictive utility of major frameworks is a significant limitation in the field. Taking the Shiffman and Smith framework for determinants of priority setting as an example, there exist dozens of published uses of the framework by researchers to understand the current or historical political prioritization of issues ranging from maternal and newborn health [10, 67] to surgical [68] and dental care [27] in an equally diverse range of country contexts [69-71]. When using the framework, researchers most commonly start from the assumption that the framework is correct and appropriate for the issue or context under investigation (though a description of why this particular framework was selected is uncommon). These case study applications represent an essential and compelling type of validation – the fact that the theory ultimately proved to be a useful and meaningful organizing approach for the authors is a testament to the relevance of the constructs within it. However, there are significant challenges in relying solely on retrospective or contemporary reviews. Most importantly is the risk of “finding only what one is looking for”, i.e., missing significant determinants or misclassifying findings in an effort to fit the findings to the framework. Indeed, Walt and Gilson in their validation exercise for the Shiffman and Smith framework identified several additional constructs necessary to explain selected case studies. [72] This limitation speaks to the need for additional studies on how to effectively move existing popular frameworks and theories from

their current descriptive applications to decision-support tools for researchers looking to engage in national policy agenda setting more effectively.

Funding

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Aim 2: Understanding the Dimensions of Political Commitment for New Health Technologies in Uganda

Authors: Kristen Danforth, Kristin Beima-Sofie, Jeff Lane, Amanda Phipps, Kenny Sherr, David Watkins

Abstract

Background: Rheumatic heart disease (RHD) is the most common cause of heart disease in young adults in Uganda, and frequently leads to severe outcomes because individuals present late for care. Despite expressed commitment to addressing RHD by the Ugandan government, access and adherence to care in remains very low. New technologies offer promise to address persistent health problems like RHD, but their use is limited.

Methods: I used a qualitative case study approach to understand the policy roll out of the Active Community Case Management Tool (ACT), a web-based electronic medical record designed to facilitate case management of RHD. Two categories of in-depth interviews provided data for analysis. I conducted semi-structured interviews with 5 district health officials and RHD researchers involved in centralized policy or regulatory approvals. I also used existing data from previously conducted interviews with 32 health care workers involved in providing RHD care in two districts, Gulu and Lira, for secondary analysis. I used thematic network analysis to assess data. I supplemented with a desk review of existing regulatory and guidance documents as well as published literature on the topic.

Results: The stakeholders involved in policy and regulatory approval for new health technologies differ based on whether the technology is a device or information technology. Following the successful navigation of this approval process, there was clear evidence of rhetorical commitment at the national level for the ACT software. Two obstacles the ACT software policy implementation aspirations were identified. First, there is an absence of operational policy and guidance related to electronic medical records systems in Uganda. Second, the tendency of RHD implementers to directly develop and deliver relevant policies and related trainings is a missed opportunity to build needed capacity in policy translation and technical advising at the sub-national level.

Discussion: I hope this work may demystify the process and help future researchers navigate an opaque system. The main findings offer clear avenues of future research on investment in sub-national operationalization of policies and the infrastructure required to institutionalize them.

Key Messages

- Rheumatic heart disease (RHD) is well-established on the health policy agenda, due in large part to the strategic advocacy of an organized research community of local and international actors. However, there is, to-date, a disconnect between policy agenda prominence and policy implementation.
- This political commitment allowed for the introduction of a new digital health technology to facilitate RHD detection and care management. This technology successfully navigated policy and regulatory requirements at the national level that are unclear, but increasingly institutionalized. Reasons for its success include external financial support for development and implementation and high level of trust by the MOH in the producers of this technology.
- While this case study was a success story at the national level, we have reason to suspect that future innovations that are more complex and costly would not be implemented as effectively. This is because policy successes at the national level are not matched by policy development at the sub-national level. This is not due to a lack of interest, but because in Uganda the regional and district-level infrastructure for translating national strategies and political commitment into operational policies and guidelines desired by healthcare workers implementing a new innovation is often overlooked.
- Institutional capacity challenges have been exacerbated by the operating practices of researchers and health program implementing partners, who bypass engagement at these levels and instead develop practice guidelines and deliver trainings directly.

- Addressing this hollowing out of the health policy system is an opportunity to improve effective implementation of novel health technologies, and disease programs more broadly.

Introduction

Rheumatic heart disease continues to cause poor health in low-income countries.[73, 74] RHD is the most common cause of heart disease in young adults in Uganda, and frequently leads to severe outcomes because individuals present late for care.[75, 76] Several effective strategies exist to reduce morbidity and mortality from RHD, most notably echocardiography (echo) screening for early detection and the use of benzathine Penicillin injections for prophylaxis.[75, 77] Despite expressed commitment to addressing RHD by the Ugandan government,[78, 79] access and adherence to care in remains very low.[80]

There is growing interest in the promise of new technologies to address persistent health problems in Uganda, but their use is limited.[81, 82] Researchers in Mbarara found strong patient and provider interest in using digital health methods to increase adherence to tuberculosis treatment.[83] Madore and colleagues, documenting lessons learned from the implementation of an electronic medical record (EMR) program at a regional referral hospital, identified provider buy-in, infrastructure resources, and tensions between clinical service delivery and research goals as key challenges to EMR use.[84] Most new health technologies trialed to date have been implemented within research or donor-funded initiatives.[81]

The Active Case Detection and Decentralized Dynamic Registry to Improve the Uptake of Rheumatic Heart Disease Secondary Prevention (ADD-RHD) study sits at the intersection of

these two issues. ADD-RHD uses a package of implantation strategies to facilitate the decentralization of patient care for rheumatic heart disease in an effort increase access to care and coverage of secondary prevention interventions.[85] This decentralization approach relies on the use of several novel health technologies in Uganda, such as portable echoes, and, most critically a new electronic patient care management software, called Active Community Case Management Tool (ACT). ACT is a web-based EMR designed specifically to facilitate RHD case management, with the flexibility to be expanded to other conditions if successful.[85] The ACT software replaces the existing paper-based RHD registry and integrates scheduling with electronic records management as a strategy to improve patient adherence. ACT was newly designed for the purpose of the ADD-RHD study, which is piloting the use of ACT in eight health centers within two districts in Uganda, Gulu and Lira, as part of the decentralization of patient care from regional referral hospitals to local health centers.[85, 86] If the ACT software is shown to be effective and feasible, the goal is to scale it up until it is the official national register for RHD at all levels of care in Uganda.

In this study I seek to fill in key gaps in knowledge regarding the process for approving and integrating new technologies for health in Uganda, using the case study of the ACT software program. I then explore the ways in which determinants of effective political commitment are linked to policy-related barriers to implementation of a new health information platform, in preparation for the effective future rollout of ACT.

Methods

The original intent of this study was to assess the adequacy of current policy and regulatory guidance in Uganda for the adoption of new technologies for health in general, and for rheumatic

heart disease diagnosis and management and to describe system and policy constructs necessary for the successful approval of new health technology. This intent dictated the focus on national policymakers and researchers for purposive sampling and guided the design of data collection tools. However, after completing initial interviews and a preliminary assessment of sourced documents, my interest in the policy-related processes subsequent to approval at the national level grew, as the data suggested that this sub-national level was an under-addressed source of policy implementation failures in Uganda. While it was not possible to fully pivot the existing study design to comprehensively address this emerging area of importance, I decided to both shift and expand the focus of the study and analyses to explore preliminary themes in this area. This was possible in part because of the availability of existing data from healthcare workers collected in an earlier stage of the ADD-RHD study (described further below).

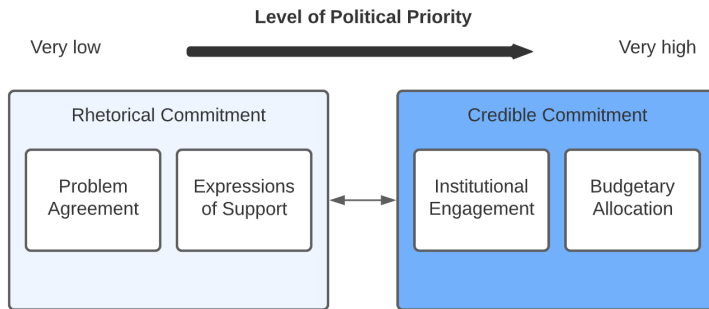
Theoretical Framework and Orientation

As a result of the shift in study focus, two distinct conceptual approaches informed data collection. No perfect model exists to structure questions about navigating national policy requirements for new health technologies. Multiple frameworks exist to guide health technology assessments, most of which come from the field of priority setting.[87] These frameworks are designed to facilitate the integration of multiple sources of information in a systematic way to facilitate for policy judgements on funding allocation in resource limited settings. Interest in priority setting in low-and middle-income countries has grown alongside the rise of universal health coverage as a global goal.[88] While designed with policy processes in mind, priority setting frameworks are fairly technocratic and limited in their ability to integrate with the activities beyond agenda-setting that are necessary to policy implementation. In contrast, the

Technology Acceptance Model (TAM), the most widely used framework to study adoption of new technologies, focuses on the perspective of end users of an innovation. The TAM is not health specific and was derived from behavioral psychology and is designed to explain and predict barriers to actual use of new technologies. [89] Despite this, the TAM has several helpful advantages over priority-setting frameworks. It is simple (five constructs related in a linear fashion), flexible, and does not require significant amounts of data to operationalize. I drew from both the TAM and priority-setting theory generally for the study's initial design (and the development of the data collection tools).

For data analysis I adapted Fox and colleagues' conceptualization of dimensions of political commitment [90] and took a positivist frame to guide the inquiry. Fox's political commitment definition is comprised of three components: expressed, institutional, and budgetary.[91, 92] Expressed commitment refers to statements made by politicians or others in leadership positions in support of an issue. What constitutes a sufficient number of statements on or level of enthusiasm about an issue for a leader to be considered "committed" is not explicitly defined.[90] Institutional commitment involves the establishment of the organizational or government structures required to advance a policy response to an issue. [90] Budgetary commitment, as its name implies, is the allocation (or distribution) of financial resources to an issue.[90] Figure 1 below presents these dimensions within conceptual clusters with the addition of a fourth component, problem agreement.

Figure 1 Components of Political Priority



Source: Author created from Fox et al.[90] and Shiffman and Smith[93]

Approach and Data Collection

I used a qualitative case study approach to document the landscape of policy requirements for the ACT software in Uganda and understand policy-related barriers to implementation.[94] I relied on individual interviews supplemented by a desk review of existing regulatory and guidance documents as well as published literature on the topic.

I sourced documents from publicly available websites, key informants, paper documents available in government offices, and existing study team knowledge. Interviewees were also asked about relevant guidance and policy documentation during semi-structured interviews (see below). I reviewed two dozen relevant policies and guidelines. Documents fell into four categories: strategic plans, practice guidelines, technical guidance, and laws.

Individual Interviews

In parallel with document review, I, in collaboration with colleagues at the Uganda Heart Institute (UHI) conducted in-depth, semi-structured interviews with key informants in the policy approval, development, and implementation process in Uganda. I also completed a secondary analysis of data from interviews conducted with healthcare workers as part of the ADD-RHD study's implementation research objectives. This combined approach allowed me to connect

interviewee perspectives on policy implementation at multiple levels—national, district, and health center.

Sampling

A full list of interviewees is seen in Table 1. For national and district policy stakeholders I used purposive sampling to select key informants from three stakeholder groups: policy decision makers within the national government, district health officers, and technical advisors and RHD researchers involved in centralized policy or regulatory approvals. To be eligible individuals had to be working adults at least 18 years of age who fit the description of one of the key informant categories. UHI colleagues and I contacted 11 individuals comprised as follows: 5 RHD researchers/technical advisors; 3 district health officers (2 in Gulu and 1 in Lira); 3 policy decision makers within the national government. A total of 5 individuals across categories agreed to be interviewed. We collected data from October-December 2022. Interviews took place in-person in both Kampala, Uganda (1) and at the local district health office (1), as well as remotely via zoom. I and a UHI research team member conducted the interviews which were audio recorded and which I subsequently transcribed.

Healthcare worker interviews for secondary data analysis

Interviews with healthcare workers were collected as part of the ADD-RHD study's primary aim to assess the acceptability of plans to decentralize RHD care using a new registry platform and assess potential barriers to adoption for providers and administrators at health center IIIs. The interview guides were informed by Proctor et al.'s definition of implementation outcomes and Weiner et al.'s acceptability and feasibility implementation measures. [95, 96] They did not

contain any questions specific to policy. I developed the sampling strategy and interview guides, including refining them via our piloting of tools in ADD-RHD, and oversaw the data collection and management process. Following from this experience, I was deeply knowledgeable about the corpus of data and aware of implementation themes present in the responses. I chose to leverage this existing data set to try to fill some of the emerging gaps around sub-national policy implementation, cognizant that given the original orientation and purpose of the data collection, the insight these interviews provide will be incomplete.

The healthcare worker interviews were conducted in December 2021 (Lira) and July 2022 (Gulu) at the 8 health center IIIs participating in the ADD-RHD study. For each health center we invited all healthcare providers eligible to care for RHD patients, which was 4 providers at each health center, for a total of 32 providers across all health centers. A Ugandan research team member each screened individual by phone and invited him or her to participate. There was no additional screening for eligibility. Interviews with healthcare workers took place in-person at the provider’s working location in either Gulu or Lira districts in Uganda. Healthcare workers interviews were conducted by a research nurse with training in qualitative data collection. All interviews were conducted in English, one of the official languages used in Uganda. All interviews were recorded and transcribed by a member of the Ugandan research team.

Table 1: Interviewees by Role

Interviewee Code	Role
I 1-16	Healthcare provider at HCIII in Gulu
I 17-32	Healthcare provider at HCIII in Lira
I-33	RHD Researcher/Technical Expert
I-34	RHD Researcher/Technical Expert
I-35	RHD Researcher/Technical Expert

I-36	District Health Official
I-37	RHD Researcher/Technical Expert

I used several best practices in qualitative data collection enhance rigor, including peer debriefs and confirming statements by interviewees with published source where possible and followed the Consolidated Criteria for Reporting Qualitative Studies in presenting our findings.[94, 97, 98]

Analysis

We used thematic network analysis to assess data from semi-structured interviews. The goal of thematic network analysis is to produce an integrated, coherent narrative of themes and their interpretation from the textual data.[99] Thematic network analysis has been used previously to explore implementation questions,[100] understand health systems performance,[101] and to understand local ownership of health equity policies.[102] Interviews were de-identified prior to coding and each interview was assigned a number-stakeholder category code. I coded all interviews. To ensure consistency in applying the codebook, I selected a sub-sample of 20 percent of the interviews (7) to review and recode twice, one week apart. The results of the two coding sessions were compared and discrepancies were resolved by clarifying problematic codes. I developed the codebook using a combination of pre-determined and emergent themes. A priori codes were derived from Fox et al.'s categories of political commitment. Emergent codes identified during the initial coding review and calibration were added to the codebook applied to the full set of data. We used Atlas.ti for data management and coding.

Ethical considerations

This study received ethical approval from the Makerere University School of Medicine Research and Ethics Committee, the Ugandan National Council on Science and Technology, and the University of Washington's Institutional Review Board. We obtained written informed consent from all interviewees prior to data collection.

Researcher Positionality

I, as the lead author, primary data collector for national policy interviews, and sole data analyst am a White woman who is a doctoral candidate living and working in the United States. I have 14 years of experience and training in qualitative data collection and analysis, predominantly in low-resource settings, including Uganda. The three staff members from UHI who conducted the interviews of healthcare workers are Ugandan researchers, either nurses or public health officers. They have prior experience conducting qualitative interviews with healthcare workers at health center IIIs in Uganda.[79]

Results

Following two decades of engagement by cardiovascular disease researchers, RHD is now well established on the Ugandan national health policy agenda, according to benchmarks proposed in common agenda-setting frameworks.[93, 103] Effective, affordable interventions exist for diagnosis and disease management, there is agreement on the severity of the issue and framing of the problem by invested stakeholders, and the engaged policy community of actors is small, but cohesive. This policy community recently seized a window of opportunity opened by global focus on RHD in 2018 to advance a National RHD Strategy in Uganda.[78, 79]

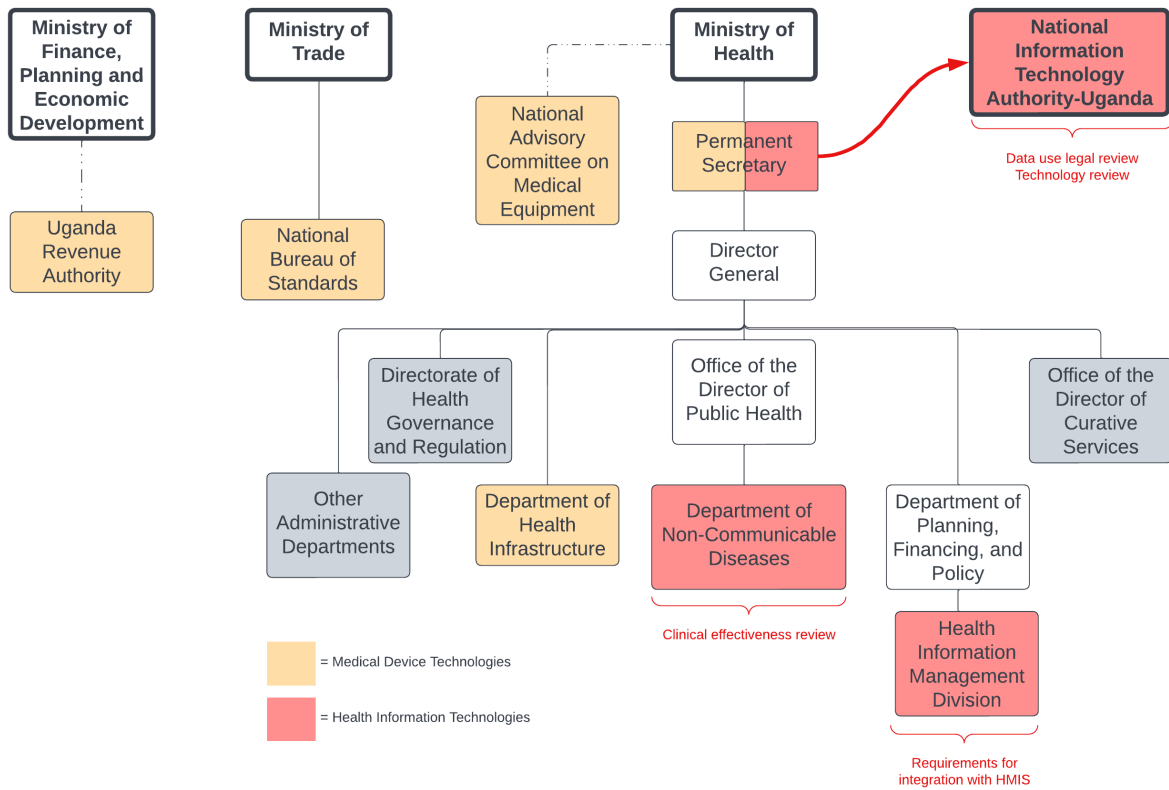
Global Theme 1: *National Rhetorical commitment as a necessary foundation for implementation*

As a result of this groundswell of RHD policy momentum, the ACT software emerged as well-timed and well-positioned to further advance the RHD agenda operationally. Given the new and untested nature of the ACT software researchers within the ADD-RHD study recognized the need to secure political commitment for the tool and took a parallel, but distinct, approach to garnering support for ACT as had been used to advance RHD more broadly.

Effective Navigation of Policy and Regulatory Requirements as a Tool for Buy-in to ACT: We

found expressions of political commitment for new RHD health technologies and the ACT software in particular to be essential contributors to ACT's implementation. Though the primary focus of this study was on policies and procedures required to gain support for new health data platforms, we also explored the requirements related to new health technologies broadly, given the role that innovations in medical devices, such as hand-held echo machines, play in the diagnosis and treatment of RHD. The policy process for soliciting commitment for health technologies in Uganda differs substantively depending on whether the technology is a medical device or data platform (See figure 2).

Figure 2: Institutions involved in approval of new health technology at the national level in Uganda



Medical Devices Our search turned up no publicly accessible guidelines for the regulatory and policy approval process for medical devices in Uganda. Medical devices are governed by a collection of agencies within Uganda, including the Ministry of Health, the National Advisory Committee on Medical Equipment (NACME), the Uganda National Bureau of Standards, and the Uganda Revenue Authority. Interviewees identified the Permanent Secretary of the MoH as the first point of contact when beginning the policy approval process for a new device, noting that they were most likely to direct one to NACME. (I-33, I-34) The NACME was first constituted in 1989 and works in partnership with the Health Infrastructure Division and the Division of Clinical Services within the Ministry of Health.[104] NACME is responsible for validating the health benefits and functionality of the technology both during the proposal stage as well as following up once a device has been deployed to hospitals or health centers to validate it is being used and maintained as intended.[105] (I-34) As most technology is imported, the Bureau of

Standards and Revenue Authority are also required to provide a Letter of Clearance before devices can enter the country. (I-34, I-37) However, full progression through these official channels was reported as variable for devices intended for use solely in research studies. The main reason cited for avoidance was bureaucratic delay. (I-37)

Health Information Technology. As with the process for new medical devices, limited publicly available documentation exists on the requirements for approval of health information management technologies. Researchers working on the ACT software succeeded in navigating the policy environment based on extensive prior experience working with the key actors in Uganda, and described the process as straightforward, predictable, and time consuming. (I-33-35) Responsibility for approval of these technologies is shared between multiple departments within the MoH and the National Information Technology Authority in Uganda (NITA-U). For each institution, the research team involved in the ACT software study provided a written proposal and in-person presentation on the platforms' key features and underlying evidence base. (I-34) Within the MoH, interviewees identified the Director of Health Information, whose office oversees the health management information system (HMIS), the Director General of Health Services, and the Director of Noncommunicable Diseases as primary focal persons. [106] (I-34, I-35) The MoH staff review focused on the health-related dimensions of the software. (I-34) NITA-U serves as the regulatory body for information technology in Uganda. NITA-U's remit is not health-specific but covers all utilization of information technology in both public and private sectors. Though NITA-U was established in 2009, interviewees described the review process as still under development, contributing to the 18-month timeframe required for obtaining clearance for ACT. (I-34) The choice to store ACT data outside of Uganda led to the need for legal representation, both by UHI and the Cincinnati Children's Hospital Medical Center, the lead

international implementing partner for ADD-RHD, to develop a legally acceptable data-sharing agreement. (I-34; I-35) This requirement added both time and expenses to the review process. Despite its opacity, interviewees were clear in describing the NITA-U engagement as a strength of the system, praising the support and communication they received throughout the process. (I-33, I-34) They also stressed the value of engaging with government officials during the software's conceptualization and design phase, noting that officials provided feedback on content and technology decisions to help the ACT software avoid the pitfalls of other EMRs.[86] (I-33, I-35)

Institutional Trust and Credibility is a Powerful Determinant of Success in the National Policy

System: The perception of institutional actors involved in advancing a policy topic has been shown elsewhere to be a critical feature of successful efforts to increase the profile of issues on the policy agenda, which was true in Uganda.[103] UHI is a highly trusted organization in this field and lead investigators have long relationships with policy decision makers. (I-34, I-35, I-37) Because the use of the ACT software is part of a larger research study led by the same individuals who motivated attention to RHD on the national agenda, the need for regulatory approval opened its own political window of opportunity.

Box 1: Alignment with the Privacy and Data Protection Agenda Created Complications and Opportunities

The development of ACT aligned with increased prioritization of privacy and data confidentiality within the Ugandan political agenda. The Ugandan Parliament passed the Data Protection and Privacy Act in 2019.[107] The act formalized Uganda citizens' right to privacy, making Uganda the first country in the region to do so, and outlined seven data collection principles that must be adhered to by all actors who collect, hold, process, or use personal data.[108] As evidence of organizational commitment to the political priority of the issue, the Personal Data Protection Office was created within NITA-U to enforce compliance. In our thematic analysis of data from interviewees, privacy and confidentiality of patient data

emerged as a central determinant of engagement with new health information technology across all levels, from the national regulatory process to provider experience with patient care management systems. Interviewees linked data protection to the perceived usefulness of the software as well as identified it as a conceptual barrier to patient care. Establishing a legal data sharing agreement for the information collected within the ACT software and ensuring the security of data stored on the servers of external institutions was the central concern of NITA-U and the primary issue that delayed regulatory approval. (I-33, I-34) Echoing these legal safeguards, there was a strong perception among healthcare workers that data in an electronic registry like the ACT software would be more secure and less prone to confidentiality breaches, despite the majority of healthcare workers having never used an EMR in their practice. The primary reason given for increased privacy was the ability to limit how many individuals can have access to a patient's record in an EMR as compared to the current paper register. (I-8, I-17, I-30) One individual shared

Computerized things are almost not exposed, it's only between you and the client. Because what the client tells you is what you enter into the computer... Anyone can access the [paper] register because with the registers, like right now, the registers are outside the record department so, anyone can open and see. (I-22)

Healthcare workers stated that the primary consequence of a breach of patient confidentiality is that client choose to stop attending the health center and, in some cases, stop receiving care altogether. (I-1-6, I-8-9, I-11-15, I-17-18, I-29, I-31)

Global Theme 2: A Gap in Sub-national Institutional Capacity Limits Credible Commitment to Policy Implementation

Our data collection and document mapping revealed that for electronic medical records, rhetorical commitment at the national level is a necessary but insufficient path to implementation. Conceptually, institutional commitment is thought to be a more durable measure of political intention because of the resources (time, human, financial) required to stand up bureaucratic structures.[90] While institutional engagement between UHI, the MoH, and NITA-U was a strong predictor of ACT's success within the national policy landscape, a different story emerged as policy implementation extended to the subnational level. Missed opportunities for engagement by researchers with subnational institutions in the technology deployment process and insufficient capacity within government to develop operational policy and guidelines at district and health center levels reveal a health policy system.

A Missing Link: Operational Policies and Guidelines

Providers at health center IIIs were generally very positive about the potential for using ACT software for managing their RHD patients. As one stated,

You see the world is now digitalizing so I prefer we should now start using the electronic [registry]. (I-19)

But when pressed on the question of how to integrate ACT, interviewees offered multiple challenges. Most of the described barriers were related to financial resource and training needs, a common issue for EMR implementation in Uganda.[84, 109] Interviewees also highlighted the role that specific guidelines on the expectations and procedures played in integrating the new tasks into providers' workflow.

Guidelines are actually used a lot at the lower facilities. If you go to the health center III center IV those guidelines on the tables and for clinical, they work with those guidelines in their pockets. (I-33)

These operational documents, referred to as “little ‘p’” policies, help to contextualize national laws and strategies and identify the implementation steps applicable at each descending level of the healthcare system. They are often developed by what Bullock et al term “street level bureaucrats”.[110] These are individuals at sub-national levels who have substantial discretion over the implementation of policies and interact to some degree with end users.[111] In Uganda, which decentralized its health system beginning in the mid-1990s, a leading group in this category is district health management teams, who have substantial autonomy to interpret and implement MoH programs.[112, 113] The presence of this cadre of technical personnel has not

resulted in the production of corresponding policy documentation. Even interviewees deeply knowledgeable about the steps for EMR integration were unsure where to look for appropriate guidance. As one researcher put it

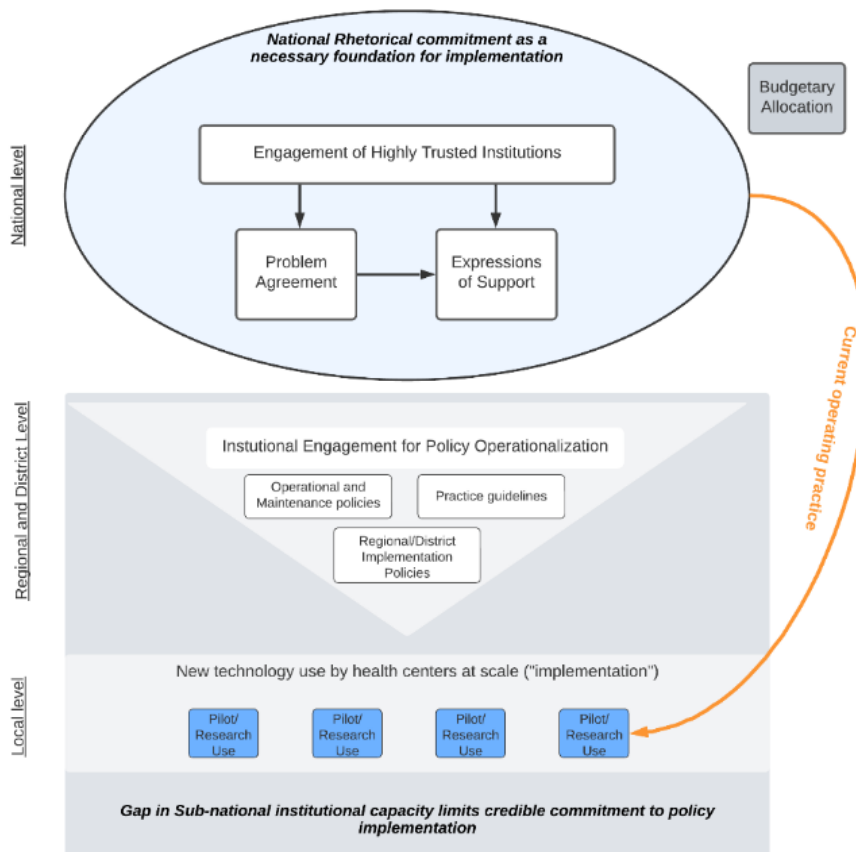
“The fact that I don't know also tells you something. Like probably I should know. So the fact that I don't know also tells you something. But one thing that I'm getting to appreciate is that...information is available but we just don't know... I think that comes from maybe the government is not doing enough to increase the awareness of the services or the information that's available.” (I-33)

Business as Usual Leads to Missed Opportunities for Engagement The institutional strength of UHI also contributed to barriers to government engagement. Healthcare workers perceived the new ACT software as useful, (I-18, I-21-22, I-31) but expressed significant reservations about its ease of use, (I-5, I-7, I-13, I-20-21) identifying training as one of the key determinants of their likelihood of integrating it into practice. (I-1, I-5-7, I-13-15,) As a result, the ADD-RHD program has incorporated a significant training component to the decentralization plan and ACT software roll-out. The ADD-RHD engaged with district health officials to solicit buy-in for approval of activities in their catchment areas, but the training was designed and delivered by the research team based at UHI, with input from international collaborators. It is a rational approach given the training demands on the MoH but cuts off an avenue for increasing political commitment through institutionalizing training within the MoH and district health offices. Two interviewees highlighted the lack of institutionalization as contributing to past failed efforts to prioritize new technology, including the prior rollout of an EMR, at health centers and referral hospitals. (I-33, I-36)

A revised framework for understanding the intersection of political commitment and policy implementation

Based on the results of the analysis I expanded my initial depiction of the dimensions of political commitment into the integrated framework seen in Figure 3. This working framework positions the global and organizing themes identified during the study in relation to one another, with elements in gray denoting gaps or weaknesses in the current approach to implementation of policies for new health technologies in Uganda. The framework offers a preliminary hypothesis of an initial set of constructs that could be tested in future studies.

Figure 3: Hypothesized framework for the relationship between national political commitment and sub-national policy implementation in Uganda



Discussion

In this study I first map the national regulatory process for new health technologies in Uganda, through the case study of ACT, an electronic medical record and care management web application designed to facilitate access to care for RHD. I show that the key actors involved in approving new technologies differ depending on whether the technology of interest is a device or information tool, with the Ministry of Health retaining near exclusive effective oversight of the former. For innovations that address health information, a growing body of organizations claim ownership, driven partly by an elevated attention to privacy within the broader Uganda policy landscape. As these organizations, like NITA-U, are still in the process of being fully established, the approval process for health technology is complex and resource-consuming, in terms of both time and cost. While the ADD-RHD study absorbed these expenses given the centrality of the ACT software to its objectives, this could be a significant barrier to less resourced implementers.

I identified features of the national process that provide evidence for the Ugandan government's political commitment to ACT as an extension of the recently established prioritization of RHD on the national health agenda. This rhetorical commitment at the national level emerged as a necessary characteristic for the study's future aspirations for the ACT software. In light of the successful navigation of ACT through the national approval processes, and in anticipation of demonstrating its effectiveness as an RHD registry, efforts are already underway to onboard ACT as the exclusive RHD case management tool and integrate it into Uganda's health management information system. [114](I-34) This will require working through the Ministry of Health to facilitate uptake in health centers at scale. This study revealed two significant obstacles to those policy implementation aspirations. First, there is an absence of operational policy and guidance related to electronic medical records systems. This finding is in line with earlier work

of Nabyonga Orem and colleagues who found that fewer than 40% of centrally developed guidelines in Uganda had been successfully disseminated to sub-national levels.[115] Second, and relatedly, the tendency of RHD implementers to directly develop and deliver relevant policies, such as guidelines on clinical practice, guidelines on use and maintenance of new technologies, and related trainings is a missed opportunity to build needed capacity in policy translation and technical advising at the sub-national level.

This study has several limitations. Most important was the low response rate from contacted interviewees at the national and district level. Though UHI colleagues and I made efforts through multiple channels to contact government officials within departments referenced by other interviewees, scheduling challenges precluded successful interviews of national policymakers. Our experience was similar to colleagues who sought to engage national policymakers outside of their regulatory approval role around the ACT software's design.[86] Of note, the district officials who declined our invitation stated that they did not feel qualified to speak on the subject, explaining that they had limited or no experience with the introduction of policies for new technologies in their districts. While I am limited in the inferences I can draw from an absence of data, the reaction of the district-level officials is in line with our broader finding that capacity at the meso-level of policy implementation is a key barrier to ACT's rollout success. I plan to do follow-on interviews as part of the evaluation of implementation objectives for ADD-RHD to further explore and validate the preliminary findings discussed here.

I also encountered several challenges with accessing relevant policy documents. Policies and guidelines were not well catalogued, with limited information as to what version was in effect. Given the ambiguity of dates it was often difficult to map the guidance referenced by informants during interviews to corresponding printed documents. When possible, I followed up with

interviewees to request direct confirmation that I had identified the correct document, but this was not always feasible.

Uganda is not alone in lack of awareness around and inconsistency in health policies for innovation. Experiential knowledge is gained through navigating the process, but this is not well-documented. As such, I hope these findings may assist other developers of innovative health approaches in Uganda to navigate an oftentimes opaque system of approvals at the national level and demystify some of the steps involved. The main findings offer clear avenues of future research on investment in sub-national operationalization of policies and the infrastructure required to institutionalize them. Several of these questions will be addressed in Accelerating Delivery of rheumatic heart disease preventive interventions in Uganda (ADUNU), an implementation science study currently underway testing strategies for supporting the Ugandan MoH in scaling up decentralized RHD care nationwide.

Funding

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Aim 3: The Emergence of Political Priority for Tertiary Hospital Care in the Malawi Essential Package of Health Services

Authors: Kristen Danforth, Jeff Lane, Kristin Beima-Sofie, Amanda Phipps, Kenny Sherr, and David Watkins

Abstract

Background: Malawi has made significant improvements in provision primary care, but tertiary care has languished, despite growing global evidence that affordable, feasible services exist. Increasing the political priority of tertiary care on the national health agenda in Malawi is a necessary first step to improving access. One pathway to achieving this attention is through inclusion in the Malawi Essential Package of Health Services (EPHS).

Methods: I employed a modified process tracing methodology to capture the emergence of tertiary hospital within the EPHS and identify factors that led to this change. I drew from the Shiffman and Smith framework for determinants of political priority, and the SPIRIT action framework to develop a preliminary set of potential causal mechanisms of influence on the contents of the EPHS. I combined data from documentation; individual interviews; and meeting participation and observation to test the strength of the causal role of each pathway in the causal map

Results: The results reveal that the process of research creation acts as a catalyst for increased attention to tertiary care on the health agenda in Malawi. The evidence for the causal role of other determinants varies. Evidence was weak or equivocal for the availability of credible indicators as well as the role of the internal frame and leadership. Within actor power, prioritization by donor institutions emerged as sufficient to firmly set an issue on the health

policy agenda, but was not a necessary element, as evidenced by the attention and funding allocated to other priorities. The strongest evidence was for the availability of effective interventions, the presence of cohesion within the policy community, and the opening, or abrupt closure, of a window of opportunity for policy action.

Discussion: This study presents a first of its kind assessment of how tertiary care rose on the national health policy agenda in a low-income country. Through outlining the process and identifying the most influential determinants of priority in Malawi, I hope to provide insight into opportunities for researchers, technical advisors, and practitioners to more effectively engage around this overlooked health system platform.

Introduction

Limited access to tertiary hospital care is an important cause of death and ill-health in Malawi. Malawi has made significant progress in improvement of care at the primary level, but tertiary care has languished,[116, 117] despite growing global evidence that there are affordable, feasible tertiary care services for low- and middle-income countries (LMICs). A key factor in improving the quality of and access to health services is their presence (or lack thereof) on the national policy agenda. In highly resource constrained settings, one pathway to presence on the health policy agenda is through an issue's inclusion in an essential health benefits package.[118, 119] Health benefits packages have received renewed attention over the past two decades due to the World Health Organization's (WHO) focus on universal health coverage and represent a unique path through which academic researchers attempt to influence political priorities in LMICs.[120, 121]

In Malawi, the Essential Package of Health Services (EPHS) is a well-established policy mechanism, that undergoes regular revision as part of the National Health Sector Strategic Planning (NHSSP) process.[122, 123] First adopted in 2004 it was integrated into the Malawi National Health Policy in 2018 to guide rational and equitable use of health care.[124] The Malawi EPHS development follows an evidence-based approach integrating economic data with stakeholder input to identify what is intended to be an optimal set of interventions to maximize health gains given the level of available resources for the health sector.

The Department of Planning and Policy Development (DPPD) within the Malawi Ministry of Health, in collaboration with the Health Economics and Planning Unit (HEPU) at the Kamuzu University of Health Sciences, has just completed its 2-year long revision of the country's essential health package.[125] I sought to understand the undulations of care services at tertiary

hospitals on the Malawi health policy agenda by leveraging this timely process. In this paper I trace the mechanisms by which tertiary care services gained, and ultimately lost, prominence within the EPHS revision process.

Methods

Methodological orientation and theory

I employed a modified process tracing methodology to capture emergence of tertiary hospital care from overlooked platform to credible candidate for EPHS prioritization and identify factors that led to this change. Process tracing is a type of qualitative case study method whereby multiple data sources are integrated to link specific inputs and actions to subsequent policy effects [126, 127]. Process tracing has been used successfully to investigate the evolution of political prioritization in for health conditions at the multinational level as well as in multiple LMIC contexts [128-137] . The goal of process tracing is to identify the components involved in policy development and, by analyzing their temporality, intensity, and relationship to actors and the policy outcome, suggest which might operate as causal mechanisms for change. I applied the process tracing method to a single case study in Malawi to take advantage of the strength of case study methods in linking data to context.[138]

Two frameworks guided this work: the Shiffman and Smith framework for determinants of political priority, and the SPIRIT action framework. The Shiffman and Smith framework outlines 11 determinants grouped into four overarching categories (actor power, ideas, political contexts, and issue characteristics).[134] Collectively these determinants inform a health issue's the political priority, which the framework creators define as the “degree to which international and national political leaders actively give attention to an issue, and back up that attention with

the provision of financial, technical, and human resources that are commensurate with the severity of the issue”[134], p. 1370]. The SPIRIT Action Framework uses a linear conceptualization of catalysts, capacity, research engagement actions, and outcomes as a guide for how research can inform health policy.[139]

I relied on three primary sources of data to inform the process tracing approach: documents (including government policy and process documentation and peer-reviewed academic literature); individual interviews; and meeting participation and observation.

Document review and construction of the proposed causal process

I first created a history of tertiary care within the national health policy and EPHS revision processes drawing from documentation (meeting schedules, planning documents, attendee and reviewer lists, technical reports) and interviews among HEPU staff and technical staff from the Ministry of Health. I collected and reviewed approximately 90 different documents, both public and internal, including policies, drafts, and peer reviewed published literature. I identified relevant documents through internet searching of organizational websites (e.g., the Malawian Ministry of Health), professional knowledge of the research team, and soliciting recommendations from stakeholders. I used the results of this mapping to develop a preliminary set of potential causal mechanisms of influence on the contents of the EPHS, as a microcosm of the broader national health agenda in Malawi.

Participant Selection, Setting, and Data Collection

For individual interviews, I developed a semi-structured interview guide informed by the Shiffman and Smith policy agenda setting framework. The guide was reviewed by staff at the Health Economics and Policy Unit and Department of Planning and Policy Development. In

person interviews too place in March 2022 in Lilongwe, Malawi. Additional interviews were conducted via videocall from March– October of 2022. I purposefully sampled participants to obtain a cross-section of representatives from key groups in the policy revision process: government officials, national technical advisors, international technical advisors, and district health leadership. I also targeted individuals with deep historical knowledge of the EPHS and tertiary care. A total of nine interviews were conducted across both formats (See Table 1). The sample was smaller than my initial expectations, but within the range of what has been shown to be necessary for conceptual saturation [140] and the targeted sampling approach is in line with that taken in other process tracing studies.[141] I obtained informed consent from all interviewees. I led most interviews, with a colleague from HEPU present for all in-person interviews. Interviews took 30-60 minutes depending on the role, knowledge, and availability of the interviewee. All interviews were conducted in English. Audio recordings transcribed in batches after collection, prior to data analysis. I supplemented the documentation and individual interviews with data from direct observation. I attended a series in person meetings in Lilongwe October 2019 focused on tertiary care and surgery as well as the HSSP III Development Workshop in March 2022, also in Lilongwe. A high-level self-guide for observational data collection based on the hypothesized mechanisms in the policy process tracing guided the my data documentation while on-site.

Table 1: List of Interviewee Types

Interview Number	Type of Interviewee
1	District Official
2	District Official
3	Government Official
4	Government Official
5	Government Official
6	Technical Advisor

7	Technical Advisor
8	Technical Advisor
9	Technical Advisor

Data Analysis:

In line with the policy process tracing approach, I used Shiffman and Smith and SPIRIT Action Frameworks to create a hypothesized causal pathway of tertiary care’s changing presence on the health policy agenda in Malawi.

For the individual interview data, the hypothesized pathway formed the basis for our coding scheme. The included constructs from each framework were used to define an initial list of codes that were applied to the data. These a priori codes were complemented by inductive codes focused on categorizing the role and robustness of potential causal mechanisms and their relationship to independent and dependent roles of evidence use during the national strategy revisions. I used Atlas.ti to manage data and coding. I and another coder applied the codebook to one interview, and then revised and clarified definitions before jointly coding the remainder of the interview data. The analysis focused on iteratively relating the constructs proposed by the Shiffman and Smith framework to the mechanisms of action identified in the initial causal process map (see Figure 1).

I used several best practices for case study methodologies to minimize bias and enhance rigor. These included triangulating data from multiple sources and data types as well as independently corroborating events described interviews with published documentation.[138] I have also used the Consolidated Criteria for Reporting Qualitative Research to organize the presentation of the methods and analyses.[142]

Research Team and Relationship with Participants

I was the primary interviewer and lead for data analysis. I am a doctoral student at the University of Washington who has previously conducted qualitative research in the areas of HIV/AIDS program evaluation and polio eradication. I am a white, non-Malawian (American) woman, who, critically, has not previously worked in Malawi for an extended period of time. In addition to entering the data collection process as an outsider, I was also a member of a stakeholder population of interest (an international researcher collaborating on UHC projects in Malawi) who has a professional relationship with several other members of this population category as well as a working professional relationship with the policy community in Malawi.

Ethical Considerations

This study was reviewed and approved by the National Health Science and Research Council of Malawi and the University of Washington’s Institutional Review Board (determined to be exempt).

Results

Tertiary Care in Malawi

Tertiary care has undergone a gradual evolution in attention in Malawi that has, in many ways, paralleled the growth of surgery more broadly. Table 2 below outlines the key events in the trajectory of tertiary care within the Malawi health policy agenda. It also highlights ways in which efforts to enumerate interventions built upon each other to lead to consideration of tertiary care services for inclusion the 2022 EPHS.

Table 2: Timeline of Key Events for Tertiary Care Policy in Malawi

<u>Millennium Development Goal Era</u> “Leadership focused on MDG targets”

- 1996 The College of Surgeons of East & Central and Southern Africa (COSECSA) is formed from a steering committee of the Association of Surgeons of East Africa [143]
- 2004 First Essential Health Package is developed and released [123]

Universal Health Coverage Era

Donor interest in tertiary care grows, increasing research and academic publications

- 2008 Trauma care study at Kamuzu Central Hospital [144]
- 2009 University of North Carolina Malawi Surgery Initiative [145, 146]
- 2012-2016 Lilongwe Institute of Orthopaedics and Neurosurgery (LION) Trust demonstrates Norwegian Investment interest [147]
- 2011 Second Essential Health Package is developed and released [122, 123]
- 2016 National Health Sector Strategic Plan II is passed; includes new Essential Health Package

Traction gained during EHP (now Essential Package of Health Services – EPHS) revision

- October 2019 – Essential surgery meeting for the Bergen Center for Ethics in Priority Setting
- 2019-2021 EPHS Drafting occurs (gathering of economic data, presentation to technical working groups in Ministries); multi-criteria decision analysis approach used for first time to prioritize among tertiary care interventions lacking sufficient traditional cost-effectiveness data
 - Feb 2021 Initial Draft Workshop
 - Feb 2021 Validation meeting with district and central hospital teams
 - March 2022 – National NHSSP workshop; EPHS with tertiary care elements presented as part of one of the working groups

Shock to the fiscal space for health

- August 2022: Currency Devaluation (Kwacha devalued by 25%) leads to Forex problems. [148] Fiscal space for EPHS under revision shrinks, leading to tertiary care being removed.
- November 2022: NHSSP III Finalized

Notes: EHP = Essential Health Package; EPHS = Essential Package of Health Services; NHSSP = National Health Sector Strategic Plan

Hypothesizing the relationship between determinants of political priority for tertiary care

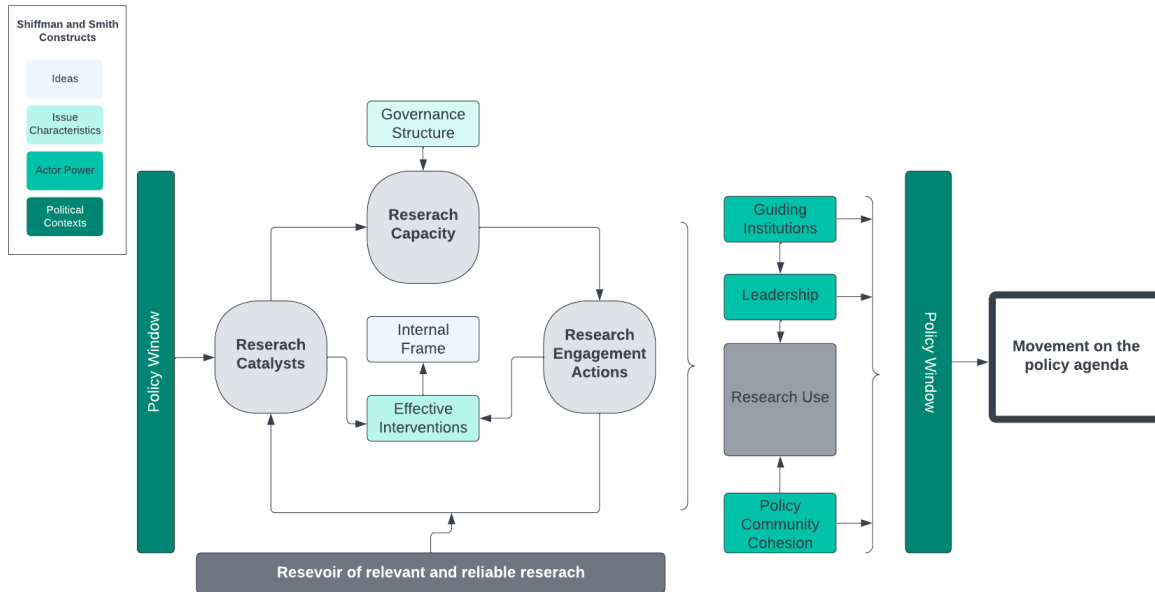
Figure 1 presents the hypothesized map of causal mechanisms for the changing political priority of tertiary care on the Malawi health agenda. In addition to the expected interdependent influence of actors, ideas, issue characteristics, and political context, our initial exploration

suggested that changes in research availability and focus played a central role in the recent shifts. As such, the map draws from both the Shiffman and Smith and SPIRIT Action Frameworks to situate research within the larger contextual political processes underway in Malawi.

In the proposed process diagram, two policy windows bookend tertiary care's changes on the agenda. The expectation was that the anticipated review of the essential package of health services as part of the NHSSP 5-year revision cycle would prompt renewed engagement with academic health researchers, providing an opening for advocacy regarding tertiary care. This would catalyze a cycle of research generation, evaluation, and uptake that would lead to a coalescence around the key dimensions of tertiary care as an issue.

The results of this collective understanding of demand and supply for tertiary care should feed into to the ongoing, structured NHSSP revision process through the mechanism of a list of priority interventions within the EPHS. This policy mechanism, alongside the leadership of key individuals and institutions, would come together following the finalization of the NHSSP III to establish tertiary care services as key set of publicly funded health care options in Malawi. This would demonstrate not only attention, but also commitment of technical and human resources to the issue, and thus an increase in political prioritization.

Figure 1: Proposed Process of Changes to Political Prioritization of Tertiary Care



Source: Author created. Adapted from [134, 139]

Not all determinants within the Shiffman and Smith framework emerged as relevant in explaining the status of tertiary care's prioritization. Below I explore the key categories in turn.

Issue characteristics

Tertiary care struggles from several disadvantages with respect to issue characteristics, which are evident in Malawi. With respect to credible indicators, the range of services delivered via the platform, from orthopedics to obstetrics to management of complex illness require dozens of metrics to effectively track.[116, 144, 149, 150] Recent efforts to document the status of tertiary care capacity and utilization in Lilongwe and Blantyre relied upon time and resource intensive retrospective record reviews [149, 150] or real-time creation of a hospital care registry [144]. While central hospitals are part of and required to report into the national health management information system (HMIS), the Malawi HMIS suffers from significant limitations in staffing, technical capacity, and funding, [151] making it an unreliable source of credible indicators.

However, the fact that most patients admitted to tertiary care facilities are admitted for surgical diagnoses [116] may provide an opening for more cohesive tracking, reporting, and advocacy.

Much stronger evidence for the causal role of issue characteristics came from the availability of effective interventions. This was also where I found the first intersection between the research generation and use cycle and agenda setting in Malawi. I hypothesized that, taken together, this new and existing research on effective interventions would be a driving force in the increased prioritization of the tertiary care platform. Multiple interviewees spoke of the availability and ease of identifying interventions for well-supported conditions such as HIV, malaria, and maternal health, during their descriptions of the EPHS construction process. (I-8, I-4, I-3) Evidence for the effectiveness and feasibility of interventions beyond the community and primary care level has substantially increased in the UHC era. For example, improvements in data on surgery and cancer in LMICs has precipitated recommendation lists of tertiary-level interventions in global reports such as Disease Control Priorities, included alongside similar packages of services for lower levels of care.[152, 153] These interventions are broadly cost-effective and estimated to be affordable at initial coverage levels.[152] The intervention lists, while derived from empirical data in LMICs, have been developed and advanced as research products.[154, 155] They were led by physicians and scholars at large academic institutions and are published in traditional peer reviewed academic journals, in addition to being available electronically on organization websites.[155, 156]

In Malawi, these documents were instructive, but insufficient. As a result, both the current and prior EPHS processes catalyzed the development of new analyses on disease burden, and cost effectiveness for primary and secondary level services, thanks in large part to the strong existing structure governing EPHS revisions. (I-4) However, for the tertiary level stakeholders repeatedly

noted that the absence of typically-used data on costs and intervention effectiveness was a main reason for its omission in the current EPHS. (I-4, I-6, I-7) This was also the motivation for using a new multi-criteria decision approach to reviewing and prioritizing potential interventions for inclusion. This structured analysis took place in concert with the review of existing evidence for primary and secondary care interventions between August 2021 and February 2022, led by the DPPD. Each of these research and prioritization exercises undertaken by the Ministry of Health provide strong evidence of the shift in political priority, but taken together were still not sufficient for tertiary care to be firmly on the health policy agenda in Malawi.

Ideas

Through the model I hypothesized that the research on effective interventions catalyzed by the EPHS revision process should lead to increased coherence in the internal frame of the issue. The importance of a strong internal frame was made clear by interviewees. When asked why tertiary care had yet to appear prominently in prior iterations of national policy documents, multiple interviewees cited the importance of goals in general, and the influence of the Millennium Development Goals in particular, on the shape of priorities in earlier essential health packages. (I-3, I-4, I-6) As one interviewee noted:

The alignment to international goals has been always echoed in the health sector strategic plan, and then the essential health package reflects that type of care that is supposed to be given. (I-3)

However, discussion over the course of the health sector strategy and topic-specific meetings suggested that this did not occur. Interviewees expressed confusion over what the revised EPHS was supposed to cover, the process by which it was created, and how it was intended to be used. (I-1, I-9) During the HSSP III Development Workshop in March 2022, the EPHS was discussed

in multiple working groups, with different conclusions reached regarding the health sector's readiness with respect to human resources, governance, financing, and service delivery to expand beyond primary care. Disparate conversations likely stemmed from the complexity of non-primary care implementation, but provide evidence that the policy community has yet to achieve consensus on the key features of tertiary care services. However, this evidence was insufficient to make a definitive judgement on the necessity of a strong internal frame to agenda prioritization in Malawi.

Actor power

I expected the body of research created as part of the revision process to be one of many influences converging within the political process, though its relative importance compared to key actor groups was unclear. Beyond research, I hypothesized that three determinants of actor power would play a causal role in the health agenda-setting process.: political community cohesion, guiding institutions, and leadership.

The community of individuals and organizations with a stake in improving tertiary care policy in Malawi is notably fragmented. One of the most invested groups is individuals who implement services at this level, including physicians (primarily surgeons and but also general practitioners) at the central hospitals and district hospitals, along with district health management teams. (I-1, I-7)[147] Researchers working on specialty health services and priority setting also emerged as influential. While these communities were small, individual members of each focused on advancing different dimensions of the EPHS within the policy process.[157] A subset of these individuals, including myself, participated in the NHSSP and EPHS planning workshops in other capacities, but there was no collective advocacy for tertiary care. While I did not extensively evaluate other levels of service delivery, the disconnectedness of tertiary actors stood in contrast

to how interviewees spoke about policy communities within the community care platform. (I-1, I-3) Interviewee comments were supported by the existence of a national strategy document that laid out policy priorities at this level of care.[158]

Within the policy community donors are particularly important to prioritization in Malawi. Donor interest in topics and interventions primarily delivered at the tertiary level is growing, as can be seen in the investments in Lilongwe Institute of Orthopaedics and Neurosurgery and University of North Carolina's surgery residency program. But this has not reached the same level of influence as that of vertical programs in HIV, malaria, maternal health, neonatal mortality, and child health. Donors for these conditions operate independent parallel systems in Malawi with non-fungible budgets. Donors were included in some stages of the EPHS development process, in particular on technical working groups, but not all. There were, for example, few donors represented at the March 2022 HSSP III Development Workshop, which focused on soliciting input from district representatives. No donors led or served as consultants for the health systems building blocks working groups that provided the most written input into the NHSSP III.(I-7, I-9) However, collective donor budgets for vertical disease programs account for 50 percent of the available resources for health in the country.[125] As a result, despite this modest official role in the EPHS development process, the practical effect is that donor priorities are explicitly incorporated into the EPHS intervention enumeration activities, as they do not face the same funding constraints as interventions in other areas and the resources for donor interventions cannot be reallocated.(I-7, I-9) Of note, this does not suggest that donor priorities are at odds with that of other actors. Evidence for this is seen in the fact that three-quarters of the interventions in the primary and secondary EPHS are in support of conditions for which there are vertical programs.[125] The remaining 25 percent are for interventions for non-

communicable and neglected tropical disease that are not the purview of any major funder in Malawi currently.[125] Taken together, this demonstrates strong evidence that prioritization by a donor is sufficient, but not necessary, to lead to prioritization of a set of interventions within the EPHS.

The findings on leadership were mixed. Several staff at the DPPD were strong champions for tertiary care, but realism about what was feasible within the resource constraints facing Malawi appeared to temper the forcefulness of their advocacy. Some of the most powerful leaders came from the ranks of physician scholars. Attention to tertiary in Malawi has been largely driven by health professionals, specifically members of the surgery community. The newest revision also followed several years of growing momentum around surgical care both globally and nationally. The revision of the EPHS for the NHSSP III coincided with the conclusion of the technical assistance provided by the consultants who had been engaged for economic analysis for the NHSSP II.[159] (I-4) The DPPD's need for additional support during the preparation and stakeholder engagement phase of the EPHS revision led to the opportune engagement of a technical expert with experience in hospital care service delivery. (I-8)

Political context

The NHSSP revision process provided an essential window of opportunity for tertiary care's emergence onto the health policy agenda. This typically 5-year planning process was modified to an eight-year timeframe to coincide with the Sustainable Development Goal target date of 2030. The explicit connection to the Sustainable Development Goal era led to a focus on universal health coverage, which is amenable to the inclusion of tertiary care services within comprehensive national strategies. Equally importantly, interviewees indicated that fiscal pressures caused by Malawi's rapidly growing population and limited health budget converged

to provide strong pressure to think about the EHPS from a health systems perspective in order to improve efficiencies. (I-4, I-6, I-7, I-9) While the tertiary level is supposed to be restricted to provision of specialized services, nearly 70 percent of the services provided by central hospitals are ones designated for delivery at lower levels of care.[117] One of the primary reasons for referral from a health center to a higher level of care is lack of available medications. (I-1) Rationalizing services away from tertiary care to delivery at the appropriate level of the health system emerged as a key strategy to defining a feasible EPHS in the NHSSP III. (I-1, I-4, I-7) However, the political window for tertiary care in the EPHS proved short-lived. In May of 2022, the Royal Bank of Malawi moved to devalue the country's currency, the Kwacha, by 25 percent following a shortage of foreign currency. This, coupled with a decline in aid from international donors in response to concerns about corruption, dramatically shrank the fiscal space available for health. In response, the staff at the MoH responsible for finalizing the NHSSP III decided to remove tertiary care services from the EPHS.[125, 160]

Discussion

Taken together the data confirmed the hypothesis that the research creation process acts as a catalyst for increased political prioritization for tertiary care on the health agenda in Malawi. Beyond this there was wide variation in the evidence for causality across the determinants of influence drawn from the Shiffman and Smith framework. Evidence was weak or equivocal for the availability of credible indicators as well as the role of the internal frame and leadership. Within actor power, prioritization by donor institutions emerged as sufficient to firmly set an issue on the health policy agenda, but was not a necessary element, as evidenced by the attention and funding allocated to other priorities. The strongest evidence for causal mechanisms was for

the availability of effective interventions, the presence of cohesion within the policy community, and the opening, or abrupt closure, of a window of opportunity for policy action.

This study complements a growing body of literature on understanding the determinants of health policy agendas in LMICs. To date, most of the work in this areas has focused on specific conditions, such as hepatitis C,[161] or health areas, such as oral health[162], neonatal mortality,[163] and surgical care. [129] To my knowledge this is the first examination of the political priority of a platform of tertiary care services in any setting. Similar to what has been reported in these disease area-focused efforts, I found that changes in the prioritization of tertiary care resulted from a dynamic, interdependent relationship between actors, political context, and windows of opportunity. However, advocacy from civil society organizations did not play a prominent role in the progression of tertiary care, a notable departure from the findings of Shiffman et al.[163], Smith [135], and Dare [129] in similar low resource settings.

Limitations

This work is subject to several limitations. Despite multiple outreach efforts I was unable to include select high-level political leaders and representatives of major funding organizations among our interviewees. With respect to the role of funders, I was still able to capture and include important examples of influence through the information provided by national and district policy officials who worked extensively with these organizations. How representatives of funding organizations perceive their influence on the health policy agenda in Malawi is an area worthy of future research.

The approach was also limited by the focus on the Essential Package of Health Services as policy mechanism and proxy for presence on the health policy agenda. Despite such a long period in

use as national health policy in Malawi, it remains unclear the degree to which the EPHS is used for decisions such as prioritization of resource allocation or informing condition-specific national strategies and guidelines. There is currently no standalone tertiary care or surgery-specific national guidance in Malawi, suggesting that, despite its stated purpose, the EPHS may have limited ability to catalyze subsequent stages of political prioritization, including budgetary and institutional commitment.[164]

Finally, my professional relationship with HEPU and support of the DPPP staff in their revision of the EPHS allowed me to take on the role of participant observer, leading to an immersive understanding of the dynamics of the policy generation process. However, this introduced a risk that the author's presence artificially disrupted the underlying policy development process.

Implications for practice and policy

Through outlining the process by which a complex health system platform gained status on the policy agenda in Malawi, I have identified opportunities for researchers, technical advisors, and practitioners to engage around tertiary care. More directly, this study was developed in collaboration with staff at HEPU, a department within the Kamuzu University of Health Sciences that serves as an institutional technical advisor to the Ministry of Health. By collaborating with colleagues at HEPU in the study conceptualization and execution, I hope to increase the likelihood that the results presented here meet a relevant and immediate need of those involved in the development and implementation of Malawi's EHP.

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Appendix 1: References

1. World Bank, *Evidence to Policy (Full List)*. 2016, The World Bank Group: Washington, DC.
2. Al Sabahi, S., et al., *Examining and Contextualizing Approaches to Establish Policy Support Organizations - A Critical Interpretive Synthesis*. Int J Health Policy Manag, 2020.
3. University of California San Francisco. *Evidence to Policy Initiative | Global Health Sciences*. 2021 [cited 2021 March 3]; Available from: <https://globalhealthsciences.ucsf.edu/about-us/our-organization/global-health-group/evidence-policy-initiative>.
4. Duke University. *The Center for Policy Impact in Global Health*. 2021 [cited 2021 March 3]; Available from: <https://centerforpolicyimpact.org/>.
5. Onse, T.L. *Bringing research closer to policy making: launch of new initiatives to support strategic thinking on healthcare resource allocation in the ECSA Region*. 2022 [cited 2022 November 23]; Available from: <https://thanzi.org/bringing-research-closer-to-policy-making-launch-of-new-initiatives-to-support-strategic-thinking-on-healthcare-resource-allocation-in-the-ecsa-region/>.
6. Verboom, B. and A. Baumann, *Mapping the Qualitative Evidence Base on the Use of Research Evidence in Health Policy-Making: A Systematic Review*. International journal of health policy and management, 2020.
7. Jann, W. and K. Wegrich, *Theories of the policy cycle*. Handbook of public policy analysis: Theory, politics, and methods, 2007. **125**: p. 43-62.
8. Benoit, F., *Public policy models and their usefulness in public health: The stages model*. 2013: National Collaborating Centre for Healthy Public Policy, Institut national

9. Fischer, F. and G.J. Miller, *Handbook of public policy analysis: theory, politics, and methods*. 2017: Routledge.
10. Shiffman, J. and S. Smith, *Generation of political priority for global health initiatives: a framework and case study of maternal mortality*. *Lancet*, 2007. **370**(9595): p. 1370-9.
11. Watkins, D.A., et al., *Universal Health Coverage and Essential Packages of Care*, in *Disease Control Priorities: Improving Health and Reducing Poverty*, D.T. Jamison, et al., Editors. 2017, The International Bank for Reconstruction and Development / The World Bank © 2018 International Bank for Reconstruction and Development / The World Bank.: Washington (DC).
12. Jamison, D.T., et al., *Universal Health Coverage and Intersectoral Action for Health*, in *Disease Control Priorities: Improving Health and Reducing Poverty*, D.T. Jamison, et al., Editors. 2017, The International Bank for Reconstruction and Development / The World Bank © 2018 International Bank for Reconstruction and Development / The World Bank.: Washington (DC).
13. Lavis, J.N., et al., *Assessing country-level efforts to link research to action*. *Bull World Health Organ*, 2006. **84**(8): p. 620-8.
14. Lavis, J.N., et al., *Examining the role of health services research in public policymaking*. *Milbank Q*, 2002. **80**(1): p. 125-54.
15. Hanney, S.R., et al., *The utilisation of health research in policy-making: concepts, examples and methods of assessment*. *Health Res Policy Syst*, 2003. **1**(1): p. 2.
16. Nilsen, P., *Making sense of implementation theories, models, and frameworks*, in *Implementation Science 3.0*. 2020, Springer. p. 53-79.

17. Oliver, K., T. Lorenc, and S. Innvær, *New directions in evidence-based policy research: a critical analysis of the literature*. Health Res Policy Syst, 2014. **12**: p. 34.
18. Mitton, C. and C. Donaldson, *Health care priority setting: principles, practice and challenges*. Cost Eff Resour Alloc, 2004. **2**(1): p. 3.
19. Baltussen, R. and L. Niessen, *Priority setting of health interventions: the need for multi-criteria decision analysis*. Cost Eff Resour Alloc, 2006. **4**: p. 14.
20. Daniels, N., *Accountability for reasonableness*. Bmj, 2000. **321**(7272): p. 1300-1.
21. Razavi, S.D., et al., *Applying priority-setting frameworks: A review of public and vulnerable populations' participation in health-system priority setting*. Health Policy, 2020. **124**(2): p. 133-142.
22. Jones, C.M., L. Gautier, and V. Ridde, *A scoping review of theories and conceptual frameworks used to analyse health financing policy processes in sub-Saharan Africa*. Health Policy and Planning, 2021. **36**(7): p. 1197-1214.
23. Pham, M.T., et al., *A scoping review of scoping reviews: advancing the approach and enhancing the consistency*. Res Synth Methods, 2014. **5**(4): p. 371-85.
24. Arksey, H. and L. O'Malley, *Scoping studies: towards a methodological framework*. International Journal of Social Research Methodology, 2005. **8**(1): p. 19-32.
25. Page, M.J. and D. Moher, *Evaluations of the uptake and impact of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Statement and extensions: a scoping review*. Syst Rev, 2017. **6**(1): p. 263.
26. Akhnif, E., J. Macq, and B. Meessen, *The place of learning in a universal health coverage health policy process: the case of the RAMED policy in Morocco*. Health Research Policy and Systems, 2019. **17**.

27. Benzian, H., et al., *Political priority of global oral health: an analysis of reasons for international neglect*. *Int Dent J*, 2011. **61**(3): p. 124-30.
28. Crewe, E. and J. Young, *Working Paper 173: Bridging Research and Policy: Context, Evidence and Links*. 2002, Overseas Development Institute: London, United Kingdom.
29. Gautier, L., et al., *How do diffusion entrepreneurs spread policies? Insights from performance-based financing in Sub-Saharan Africa*. *World Development*, 2018. **110**: p. 160-175.
30. Gillespie, S., et al., *The politics of reducing malnutrition: building commitment and accelerating progress*. *Lancet*, 2013. **382**(9891): p. 552-69.
31. Gomez, E.J., *An Interdependent Analytic Approach to Explaining the Evolution of NGOs, Social Movements, and Biased Government Response to AIDS and Tuberculosis in Brazil*. *Journal of Health Politics, Policy and Law*, 2013. **38**(1): p. 123-159.
32. Hutchinson, E., *The development of health policy in Malawi: the influence of context, evidence and links in the creation of a national policy for cotrimoxazole prophylaxis*. *Malawi Med J*, 2011. **23**(4): p. 109-14.
33. Jones, C.M., C. Clavier, and L. Potvin, *Adapting public policy theory for public health research: A framework to understand the development of national policies on global health*. *Soc Sci Med*, 2017. **177**: p. 69-77.
34. Kersh, R. and J. Morone, *The politics of obesity: seven steps to government action*. *Health Aff (Millwood)*, 2002. **21**(6): p. 142-53.
35. Koduah, A., I.A. Agyepong, and H. van Dijk, *Towards an explanatory framework for national level maternal health policy agenda item evolution in Ghana: an embedded case study*. *Health Res Policy Syst*, 2018. **16**(1): p. 76.

36. Ongolo-Zogo, P., et al., *Assessing the influence of knowledge translation platforms on health system policy processes to achieve the health millennium development goals in Cameroon and Uganda: a comparative case study*. Health Policy and Planning, 2018. **33**(4): p. 539-554.
37. Smith, S.L. and J. Shiffman, *Setting the global health agenda: The influence of advocates and ideas on political priority for maternal and newborn survival*. Soc Sci Med, 2016. **166**: p. 86-93.
38. Smits, P., et al., *Getting evidence to travel inside public systems: what organisational brokering capacities exist for evidence-based policy?* Health Research Policy and Systems, 2018. **16**.
39. van Rinsum, C.E., et al., *Health Brokers: How Can They Help Deal with the Wickedness of Public Health Problems?* Biomed Res Int, 2017. **2017**: p. 1979153.
40. Votruba, N., et al., *A systematic review of frameworks for the interrelationships of mental health evidence and policy in low- and middle-income countries*. Health Res Policy Syst, 2018. **16**(1): p. 85.
41. Shiffman, J., *Generating political priority for maternal mortality reduction in 5 developing countries*. Am J Public Health, 2007. **97**(5): p. 796-803.
42. Shiffman, J., *A social explanation for the rise and fall of global health issues*. Bull World Health Organ, 2009. **87**(8): p. 608-13.
43. Shiffman, J., *Global health initiatives and health systems: Generation of political priority for global health initiatives: A framework, and reflections on the cases of maternal mortality, newborn survival and health systems strengthening*. Tropical Medicine and International Health, 2009. **14**: p. 11.

44. Reubi, D., *Making a human right to tobacco control: Expert and advocacy networks, framing and the right to health*. *Global Public Health*, 2012. **7**(sup2): p. S176-S190.
45. Gneiting, U. and H.P. Schmitz, *Comparing global alcohol and tobacco control efforts: Network formation and evolution in international health governance*. *Health Policy and Planning*, 2016. **31**(suppl_1): p. i98-i109.
46. Shiffman, J., et al., *A framework on the emergence and effectiveness of global health networks*. *Health Policy Plan*, 2016. **31 Suppl 1**(Suppl 1): p. i3-16.
47. The CIPHER Investigators, *Supporting Policy In health with Research: an Intervention Trial (SPIRIT)-protocol for a stepped wedge trial*. *BMJ Open*, 2014. **4**(7): p. e005293.
48. Araujo de Carvalho, I., et al., *Informing evidence-based policies for ageing and health in Ghana*. *Bull World Health Organ*, 2015. **93**(1): p. 47-51.
49. Stratil, J.M., et al., *Advancing the WHO-INTEGRATE Framework as a Tool for Evidence-Informed, Deliberative Decision-Making Processes: Exploring the Views of Developers and Users of WHO Guidelines*. *International journal of health policy and management*, 2022. **11**(5): p. 629-641.
50. Kingdon, J.W. and E. Stano, *Agendas, alternatives, and public policies*. Vol. 45. 1984: Little, Brown Boston.
51. Sabatier, P.A., *Theories of the policy process*. Westview Press: Boulder, CO, 1999. **117166**.
52. Grindle, M.S. and J.W. Thomas, *Public choices and policy change : the political economy of reform in developing countries*. A Johns Hopkins paperback. 1991, Baltimore: Johns Hopkins University Press.

53. Walt, G. and L. Gilson, *Reforming the health sector in developing countries: the central role of policy analysis*. Health policy and planning, 1994. **9**(4): p. 353-370.
54. Harmer, A., *Understanding change in global health policy: ideas, discourse and networks*. Glob Public Health, 2011. **6**(7): p. 703-18.
55. Skok, J.E., *Policy Issue Networks and the Public Policy Cycle: A Structural-Functional Framework for Public Administration*. Public Administration Review, 1995. **55**(4): p. 325-332.
56. Stassen, K.R., R. Smolders, and P. Leroy, *Sensitizing events as trigger for discursive renewal and institutional change in Flanders' environmental health approach, 1970s-1990s*. Environmental Health, 2013. **12**(1): p. 1-11.
57. Schmidt, M., et al., *Generating political priority to tackle health disparities: a case study in the Dutch city of The Hague*. Am J Public Health, 2010. **100 Suppl 1**(Suppl 1): p. S210-5.
58. Schmidt, V.A., *The futures of European capitalism*. 2002: OUP Oxford.
59. Howlett, M., *Moving policy implementation theory forward: A multiple streams/critical juncture approach*. Public Policy and Administration, 2019. **34**(4): p. 405-430.
60. Baumgartner, F.R. and B.D. Jones, *Agenda dynamics and policy subsystems*. The journal of Politics, 1991. **53**(4): p. 1044-1074.
61. Mello, M.M., D.M. Studdert, and T.A. Brennan, *Obesity — The New Frontier of Public Health Law*. New England Journal of Medicine, 2006. **354**(24): p. 2601-2610.
62. World Health Organization, *Knowledge Translation Framework for Ageing and Health*. 2012, World Health Organization: Geneva, Switzerland.
63. Redman, S., et al., *The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy*. Social Science & Medicine, 2015. **136-137**: p. 147-155.

64. Dalglish, S.L., et al., *A framework for medical power in two case studies of health policymaking in India and Niger*. *Global Public Health*, 2019. **14**(4): p. 542-554.
65. Gore, R. and R. Parker, *Analysing power and politics in health policies and systems*. 2019, Taylor & Francis. p. 481-488.
66. Marten, R., *How states exerted power to create the Millennium Development Goals and how this shaped the global health agenda: Lessons for the sustainable development goals and the future of global health*. *Global Public Health*, 2019. **14**(4): p. 584-599.
67. Smith, S.L., J. Shiffman, and A. Kazembe, *Generating political priority for newborn survival in three low-income countries*. *Global Public Health*, 2014. **9**(5): p. 538.
68. Dare, A.J., et al., *Prioritizing Surgical Care on National Health Agendas: A Qualitative Case Study of Papua New Guinea, Uganda, and Sierra Leone*. *PLoS Med*, 2016. **13**(5): p. e1002023.
69. Prata, N. and A. Summer, *Assessing political priority for reproductive health in Ethiopia*. *Reprod Health Matters*, 2015. **23**(46): p. 158-68.
70. Shiffman, J., *Generating political will for safe motherhood in Indonesia*. *Soc Sci Med*, 2003. **56**(6): p. 1197-207.
71. Shiffman, J. and F.E. Okonofua, *The state of political priority for safe motherhood in Nigeria*. *Bjog*, 2007. **114**(2): p. 127-33.
72. Walt, G. and L. Gilson, *Can frameworks inform knowledge about health policy processes? Reviewing health policy papers on agenda setting and testing them against a specific priority-setting framework*. *Health Policy Plan*, 2014. **29 Suppl 3**: p. iii6-22.
73. Watkins, D.A., et al., *Global, Regional, and National Burden of Rheumatic Heart Disease, 1990–2015*. *The New England journal of medicine*, 2017. **377**(8): p. 713-722.

74. Zühlke, L., et al., *Clinical outcomes in 3343 children and adults with rheumatic heart disease from 14 low-and middle-income countries: two-year follow-up of the Global Rheumatic Heart Disease Registry (the REMEDY Study)*. *Circulation*, 2016. **134**(19): p. 1456-1466.
75. Okello, E., et al., *Rheumatic heart disease in Uganda: predictors of morbidity and mortality one year after presentation*. *BMC Cardiovascular Disorders*, 2017. **17**(1): p. 20.
76. Okello, E., et al., *Cardiovascular complications in newly diagnosed rheumatic heart disease patients at Mulago Hospital, Uganda: cardiovascular topics*. *Cardiovascular journal of Africa*, 2013. **24**(3): p. 80-85.
77. Gewitz, M.H., et al., *Revision of the Jones Criteria for the diagnosis of acute rheumatic fever in the era of Doppler echocardiography: a scientific statement from the American Heart Association*. *Circulation*, 2015. **131**(20): p. 1806-1818.
78. White, A., *WHO Resolution on rheumatic heart disease*. 2018, Oxford University Press.
79. Ndagire, E., et al., *Examining the Ugandan health system's readiness to deliver rheumatic heart disease-related services*. *PLOS Neglected Tropical Diseases*, 2021. **15**(2): p. e0009164.
80. Huck, D.M., et al., *A qualitative examination of secondary prophylaxis in rheumatic heart disease: factors influencing adherence to secondary prophylaxis in Uganda*. *Global Heart*, 2015. **10**(1): p. 63-69. e1.
81. Kamulegeya, L.H., et al., *Continuity of health service delivery during the COVID-19 pandemic: the role of digital health technologies in Uganda*. *Pan Afr Med J*, 2020. **35**(Suppl 2): p. 43.

82. Olu, O., et al., *How Can Digital Health Technologies Contribute to Sustainable Attainment of Universal Health Coverage in Africa? A Perspective*. *Frontiers in Public Health*, 2019. 7.
83. Tumuhimbise, W., et al., *Enhancing Tuberculosis Care in Southwestern Uganda: Facilitators and Barriers to Utilizing Mobile Health Technologies*. *Global Implementation Research and Applications*, 2022. 2(4): p. 404-414.
84. Madore, A., et al., *Implementation of electronic medical records requires more than new software: Lessons on integrating and managing health technologies from Mbarara, Uganda*. *Healthcare*, 2015. 3(4): p. 264-269.
85. Minja, N.W., et al., *Implementation of a dynamic mobile application to enable community-based decentralization of rheumatic heart disease case management in Uganda: a study protocol*. *Implementation Science*, Submitted.
86. reach, *Report: Initial Consultation on the ADD-RHD Platform Design and Deployment*. 2020, reach: unpublished.
87. Razavi, S.D., et al., *Applying priority-setting frameworks: A review of public and vulnerable populations' participation in health-system priority setting*. *Health Policy*, 2020. 124(2): p. 133-142.
88. Glassman, A., U. Giedion, and P.C. Smith, *What's in, what's out: designing benefits for universal health coverage*. 2017: Brookings Institution Press.
89. Koul, S. and A. Eydgahi, *A systematic review of technology adoption frameworks and their applications*. *Journal of Technology Management & Innovation*, 2017. 12(4): p. 106-113.
90. Fox, A.M., et al., *Conceptual and methodological challenges to measuring political commitment to respond to HIV*. *J Int AIDS Soc*, 2011. 14 Suppl 2(Suppl 2): p. S5.

91. Fox, A.M., et al., *Measuring political commitment and opportunities to advance food and nutrition security: piloting a rapid assessment tool*. Health Policy and Planning, 2014. **30**(5): p. 566-578.
92. Hoe, C., et al., *Understanding political priority development for public health issues in Turkey: lessons from tobacco control and road safety*. Health Research Policy and Systems, 2019. **17**(1): p. 13.
93. Shiffman, J. and S. Smith, *Generation of political priority for global health initiatives: a framework and case study of maternal mortality*. Lancet, 2007. **370**(9595): p. 1370-9.
94. Yin, R.K., *Case study research: Design and methods*. Vol. 5. 2009: sage.
95. Proctor, E., et al., *Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda*. Administration and policy in mental health and mental health services research, 2011. **38**(2): p. 65-76.
96. Weiner, B.J., et al., *Psychometric assessment of three newly developed implementation outcome measures*. Implementation Science, 2017. **12**(1): p. 1-12.
97. McMahon, S.A. and P.J. Winch, *Systematic debriefing after qualitative encounters: an essential analysis step in applied qualitative research*. BMJ global health, 2018. **3**(5): p. e000837.
98. Booth, A., et al., *COREQ (consolidated criteria for reporting qualitative studies)*. Guidelines for reporting health research: a user's manual, 2014: p. 214-226.
99. Attride-Stirling, J., *Thematic networks: an analytic tool for qualitative research*. Qualitative Research, 2001. **1**(3): p. 385-405.
100. McCabe, A., et al., *Capturing data for emergency department performance monitoring purposes*. HRB Open Res, 2019. **2**: p. 18.

101. Romakin, P. and M. Masoud, *Healthcare Providers' Perception of Healthcare System Factors Associated with Poor Glycemic Control among Type 2 Diabetes Patients in Fiji*. *Rev Diabet Stud*, 2019. **15**: p. 49-57.
102. Scheele, C.E., I. Little, and F. Diderichsen, *Governing health equity in Scandinavian municipalities: The inter-sectorial challenge*. *Scand J Public Health*, 2018. **46**(1): p. 57-67.
103. Shiffman, J., et al., *A framework on the emergence and effectiveness of global health networks*. *Health Policy Plan*, 2016. **31 Suppl 1**(Suppl 1): p. i3-16.
104. The National Advisory Committee on Medical Equipment, *National Medical Equipment Policy 4th Edition*. 2009, Ministry of Health: Kampala, Uganda.
105. Health Infrastructure Division, *Operation Manual for Regional Medical Equipment Maintenance Workshops and Medical Equipment Maintenance Guidelines*. 2013, The Republic of Uganda Ministry of Health: Kampala, Uganda.
106. Ministry of Health. *Departments and Division*. 2022 [cited 2022 November 30]; Available from: <https://www.health.go.ug/programs/ministry-departments/departments-and-divisions/>.
107. *The Data Protection and Privacy Act*. 2019, The Republic of Uganda: Uganda. p. 30.
108. Katugugu, E., *Legal Alert The Data Protection and Privacy Act is here*. 2019, PricewaterhouseCoopers: Kampala, Uganda.
109. Tierney, W.M., et al., *Experience implementing electronic health records in three East African countries*, in *MEDINFO 2010*. 2010, IOS press. p. 371-375.
110. Bullock, H.L., et al., *Understanding the implementation of evidence-informed policies and practices from a policy perspective: a critical interpretive synthesis*. *Implementation Science*, 2021. **16**(1): p. 18.

111. Lipsky, M., *Street-level bureaucracy: Dilemmas of the individual in public service*. 2010: Russell Sage Foundation.
112. Alilio, M., et al., *Strategies to Promote Health System Strengthening and Global Health Security at the Subnational Level in a World Changed by COVID-19*. *Global Health: Science and Practice*, 2022. **10**(2): p. e2100478.
113. Chen, J., et al., *Does decentralization of health systems translate into decentralization of authority? A decision space analysis of Ugandan healthcare facilities*. *Health Policy and Planning*, 2021. **36**(9): p. 1408-1417.
114. Uganda Heart Institute, *Initial Review of UHIREC 0008: "Accelerating Delivery of rheumatic heart disease preventive interventions in Uganda" (ADUNU)*, E. Okello, Editor. 2022: Kampala, Uganda. p. 2.
115. Nabyonga Orem, J., et al., *Do guidelines influence the implementation of health programs?--Uganda's experience*. *Implementation science : IS*, 2012. **7**(1): p. 98-98.
116. Prin, M., et al., *Critical Care in a Tertiary Hospital in Malawi*. *World Journal of Surgery*, 2016. **40**(11): p. 2635-2642.
117. Ministry of Health. *Health Care System*. 2016 [cited 2022 November 22]; Available from: <https://www.health.gov.mw/index.php/2016-01-06-19-58-23/national-aids>.
118. Soucat, A., A. Tandon, and E. González-Pier, *From UHC benefit packages to fiscal space and budget appropriation: the long journey to implementation*. *BMJ Global Health*, 2022. **In Press**.
119. Waddington, C., *Essential health packages*. What are they for, 2013.
120. Watkins, D.A., et al., *Universal Health Coverage and Essential Packages of Care*, in *Disease Control Priorities: Improving Health and Reducing Poverty*, D.T. Jamison, et al.,

Editors. 2017, The International Bank for Reconstruction and Development / The World Bank: Washington (DC).

121. World Health Organization. *UHC 2030 - Accelerating Progress toward Universal Health Coverage*. 2021 [cited 2021 March 1]; Available from: <https://www.uhc2030.org/>.

122. Government of the Republic of Malawi, *Health Sector Strategic Plan II (2017-2022)*. 2017, Government of Malawi: Lilongwe, Malawi.

123. Ochalek, J., et al., *Supporting the development of an essential health package: principles and initial assessment for Malawi*. 2016, Centre for Health Economics, University of York: York, UK.

124. Malawi Ministry of Health and Population. *Essential Health Package*. 2021 [cited 2021 March 4]; Available from: <https://www.health.gov.mw/index.php/essential-health-package>.

125. Government of the Republic of Malawi, *Health Sector Strategic Plan III 2022-2030: Reforming for Universal Health Coverage [DRAFT]*. 2022, Government of Malawi.

126. Beach, D. and R.B. Pedersen, *Process-tracing methods: Foundations and guidelines*. 2019: University of Michigan Press.

127. Bennett, A., *Process tracing and causal inference*. 2010.

128. Bhan, T., *Potty Politics: Investigating the policymaking processes of sanitation service to the urban poor in Delhi*. 2021, ProQuest Information & Learning: US.

129. Dare, A.J., et al., *Prioritizing Surgical Care on National Health Agendas: A Qualitative Case Study of Papua New Guinea, Uganda, and Sierra Leone*. PLoS Med, 2016. **13**(5): p. e1002023.

130. Hafner, T. and J. Shiffman, *The emergence of global attention to health systems strengthening*. Health Policy Plan, 2013. **28**(1): p. 41-50.

131. Hammonds, R. and G. Ooms, *The emergence of a global right to health norm--the unresolved case of universal access to quality emergency obstetric care*. BMC Int Health Hum Rights, 2014. **14**: p. 4.
132. Shawar, Y.R. and L.G. Crane, *Generating global political priority for urban health: the role of the urban health epistemic community*. Health Policy Plan, 2017. **32**(8): p. 1161-1173.
133. Shearer, J.C., et al., *Why do policies change? Institutions, interests, ideas and networks in three cases of policy reform*. Health Policy and Planning, 2016. **31**(9): p. 1200-1211.
134. Shiffman, J. and S. Smith, *Generation of political priority for global health initiatives: a framework and case study of maternal mortality*. Lancet, 2007. **370**(9595): p. 1370-9.
135. Smith, S.L., *The emergence, growth and decline of political priority for newborn survival in Bolivia*. Health Policy Plan, 2014. **29**(8): p. 951-9.
136. Smith, S.L. and J. Shiffman, *Setting the global health agenda: The influence of advocates and ideas on political priority for maternal and newborn survival*. Soc Sci Med, 2016. **166**: p. 86-93.
137. Shiffman, J., *Network advocacy and the emergence of global attention to newborn survival*. Health Policy Plan, 2016. **31 Suppl 1**(Suppl 1): p. i60-73.
138. Yin, R.K., *Case study research: Design and methods*. Vol. 5. 2009: sage.
139. Redman, S., et al., *The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy*. Social Science & Medicine, 2015. **136-137**: p. 147-155.
140. Hennink, M.M., B.N. Kaiser, and V.C. Marconi, *Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough?* Qual Health Res, 2017. **27**(4): p. 591-608.

141. te Lintel, D.J., et al., *Process tracing the policy impact of 'indicators'*. The European Journal of Development Research, 2020. **32**(4): p. 1312-1337.
142. Booth, A., et al., *COREQ (consolidated criteria for reporting qualitative studies)*. Guidelines for reporting health research: a user's manual, 2014: p. 214-226.
143. COSECSA. *Our History*. 2022 [cited 2022 November 21]; Available from: <https://www.cosecsa.org/our-history/>.
144. Samuel, J.C., et al., *Epidemiology of Injuries at a Tertiary Care Center in Malawi*. World Journal of Surgery, 2009. **33**(9): p. 1836-1841.
145. UNC School of Medicine. *About Us | UNC Project Malawi*. 2022 [cited 2022 November 21]; Available from: <https://globalhealth.unc.edu/malawi/about-2/>.
146. UNC School of Medicine. *Malawi Surgical Initiative*. 2022 [cited 2022 November 21]; Available from: <https://www.med.unc.edu/msi/>.
147. LION. *The Executive Team*. 2022 [cited 2022 November 21]; Available from: <https://lion.mw/the-executive-team/>.
148. Phiri, F. *Donor-dependent Malawi devalues kwacha by 25% as forex runs low*. 2022 [cited 2022 November 21]; Available from: <https://www.reuters.com/world/africa/donor-dependent-malawi-devalues-kwacha-by-25-forex-runs-low-2022-05-27/>.
149. Juvet, T., et al., *The burden of urological disease in Zomba, Malawi: A needs assessment in a sub-Saharan tertiary care center*. Can Urol Assoc J, 2020. **14**(1): p. E6-e12.
150. Grudziak, J., *Etiology of major limb amputations at a tertiary care centre in Malawi*. Malawi Medical Journal, 2019. **31**(4): p. 244-248.

151. Kasambara, A., et al., *Assessment of implementation of the health management information system at the district level in southern Malawi*. *Malawi Med J*, 2017. **29**(3): p. 240-246.
152. Mock, C.N., et al., *Essential surgery: key messages from Disease Control Priorities*. *The Lancet*, 2015. **385**(9983): p. 2209-2219.
153. Gelband, H., et al., *Summary*, in *Cancer: Disease Control Priorities, Third Edition (Volume 3)*, H. Gelband, et al., Editors. 2015, The International Bank for Reconstruction and Development / The World Bank
- © 2015 International Bank for Reconstruction and Development / The World Bank.: Washington (DC).
154. Debas, H.T., et al., *Disease control priorities, (Volume 1): essential surgery*. 2015: World Bank Publications.
155. Meara, J.G. and S.L. Greenberg, *The Lancet Commission on Global Surgery Global surgery 2030: evidence and solutions for achieving health, welfare and economic development*. *Surgery*, 2015. **157**(5): p. 834-835.
156. Watkins, D.A., et al., *Universal health coverage and essential packages of care*. 2018.
157. Varela, C.G., *Unmet Surgical Need in Malawi*, in *Department of Clinical Medicine and the Centre for International Health, Department of Global Public Health and Primary Care*. 2021, University of Bergen: Bergen, Norway. p. 104.
158. Malawi Ministry of Health, *Malawi National Community Health Strategy 2017 – 2022*. 2017, Government of Malawi: Lilongwe, Malawi.

159. University of York. *Thanzi la Onse | Interdisciplinary Global Development Centre*. 2022 [cited 2022 November 22]; Available from: <https://www.york.ac.uk/igdc/research/thanzi-la-onse/>.
160. Reuters. *Donor-dependent Malawi devalues kwacha by 25% as forex runs low*. 2022 [cited 2022 November 18]; Available from: <https://www.reuters.com/world/africa/donor-dependent-malawi-devalues-kwacha-by-25-forex-runs-low-2022-05-27/>.
161. Behzadifar, M., et al., *The hepatitis C infection in Iran: a policy analysis of agenda-setting using Kingdon's multiple streams framework*. *Health Res Policy Syst*, 2019. **17**(1): p. 30.
162. Etiaba, E., et al., *Development of oral health policy in Nigeria: an analysis of the role of context, actors and policy process*. *BMC Oral Health*, 2015. **15**: p. 56.
163. Shiffman, J.P. and S.M.B.A.M. Sultana, *Generating Political Priority for Neonatal Mortality Reduction in Bangladesh*. *American Journal of Public Health*, 2013. **103**(4): p. 623-631.
164. Fox, A.M., et al., *Measuring political commitment and opportunities to advance food and nutrition security: piloting a rapid assessment tool*. *Health Policy and Planning*, 2014. **30**(5): p. 566-578.

Appendix 2: Articles Included in Scoping Review

1. Abiola, S.E., J. Colgrove, and M.M. Mello, *The politics of HPV vaccination policy formation in the United States*. J Health Polit Policy Law, 2013. **38**(4): p. 645-81.
2. Agartan, T.I., *Explaining Large-Scale Policy Change in the Turkish Health Care System: Ideas, Institutions, and Political Actors*. Journal of Health Politics, Policy and Law, 2015. **40**(5): p. 971.
3. Agartan, T.I., *Politics of success stories in the path towards Universal Health Coverage: The case of Turkey*. Development Policy Review, 2021. **39**(2): p. 283-302.
4. Akhnif, E., J. Macq, and B. Meessen, *The place of learning in a universal health coverage health policy process: the case of the RAMED policy in Morocco*. Health Research Policy and Systems, 2019. **17**.
5. Amri, M.M. and D. Logan, *Policy responses to COVID-19 present a window of opportunity for a paradigm shift in global health policy: An application of the Multiple Streams Framework as a heuristic*. Glob Public Health, 2021. **16**(8-9): p. 1187-1197.
6. Andraka-Christou, B., *Policy process lessons from the Orphan Drug Act: applications for health policy advocates*. Journal of Entrepreneurship and Public Policy, 2015. **4**(3): p. 278-297.
7. Araujo de Carvalho, I., et al., *Informing evidence-based policies for ageing and health in Ghana*. Bull World Health Organ, 2015. **93**(1): p. 47-51.
8. Arturo, A.R. and B. Hawkins, *Advocacy Coalitions, Contestation, and Policy Stasis: The 20 Year Reform Process of the Colombian Health System*. Latin American Policy, 2018. **9**(1): p. 27-54.

9. Assarag, B., E.O. Sanae, and B. Rachid, *Priorities for sexual and reproductive health in Morocco as part of universal health coverage: maternal health as a national priority*. Sexual and Reproductive Health Matters, 2020. **28**(2).
10. Austin, S.B., et al., *Research-to-policy translation for prevention of disordered weight and shape control behaviors: A case example targeting dietary supplements sold for weight loss and muscle building*. Eat Behav, 2017. **25**: p. 9-14.
11. Aya Pastrana, N., et al., *The process of building the priority of neglected tropical diseases: A global policy analysis*. PLoS Negl Trop Dis, 2020. **14**(8): p. e0008498.
12. Baridam, B.B. and I. Govender, *Framework Development for ICT-Health Policy Formulation and Implementation*. 2020.
13. Behzadifar, M., et al., *The hepatitis C infection in Iran: a policy analysis of agenda-setting using Kingdon's multiple streams framework*. Health Res Policy Syst, 2019. **17**(1): p. 30.
14. Behzadifar, M., et al., *A policy analysis of agenda-setting of Brucellosis in Iran using a multiple-stream framework: health policy and historical implications*. Journal of preventive medicine and hygiene, 2021. **62**(2): p. E544.
15. Benedetti, G., et al., *Political priority of oral health in Italy: an analysis of reasons for national neglect*. Int Dent J, 2015. **65**(2): p. 89-95.
16. Benzian, H., et al., *Political priority of global oral health: an analysis of reasons for international neglect*. Int Dent J, 2011. **61**(3): p. 124-30.
17. Chipendo, P.I., et al., *Understanding factors impacting global priority of emergency care: a qualitative policy analysis*. BMJ Glob Health, 2021. **6**(12).

18. Colombini, M., et al., *Agenda setting and framing of gender-based violence in Nepal: how it became a health issue*. Health Policy and Planning, 2016. **31**(4): p. 493.
19. Costa Ames, M.C.F.D., et al., *Dynamics of the abortion agenda in the Brazilian Senate from 1988 to October 2020*. Cadernos EBAPE.BR, 2021. **19**: p. 656-674.
20. Crewe, E. and J. Young, *Working Paper 173: Bridging Research and Policy: Context, Evidence and Links*. 2002, Overseas Development Institute: London, United Kingdom.
21. Dare, A.J., et al., *Prioritizing Surgical Care on National Health Agendas: A Qualitative Case Study of Papua New Guinea, Uganda, and Sierra Leone*. PLoS Med, 2016. **13**(5): p. e1002023.
22. De Wals, P., M.E. Espinoza-Moya, and D. Béland, *Kingdon's Multiple Streams Framework and the Analysis of Decision-Making Processes Regarding Publicly-Funded Immunization Programs*. Expert Rev Vaccines, 2019. **18**(6): p. 575-585.
23. Dodd, M., et al., *Investigating the process of evidence-informed health policymaking in Bangladesh: a systematic review*. Health Policy Plan, 2019. **34**(6): p. 469-478.
24. Ellen, M.E., et al., *A Knowledge Translation framework on ageing and health*. Health Policy, 2017. **121**(3): p. 282.
25. Etiaba, E., et al., *Development of oral health policy in Nigeria: an analysis of the role of context, actors and policy process*. BMC Oral Health, 2015. **15**: p. 56.
26. Funk, T., et al., *Translating health information into policy-making: A pragmatic framework*. Health Policy, 2022. **126**(1): p. 16-23.
27. Gagnon, F., J. Turgeon, and C. Dallaire, *Healthy public policy: A conceptual cognitive framework*. Health Policy, 2007. **81**(1): p. 42-55.

28. Gautier, L., M. De Allegri, and V. Ridde, *How is the discourse of performance-based financing shaped at the global level? A poststructural analysis*. *Global Health*, 2019. **15**(1): p. 6.
29. Gautier, L., et al., *How do diffusion entrepreneurs spread policies? Insights from performance-based financing in Sub-Saharan Africa*. *World Development*, 2018. **110**: p. 160-175.
30. Gilbert Abotsem, A., K.A. Alatinga, and G. Yamey, *Why did Ghana's national health insurance capitation payment model fall off the policy agenda? A regional level policy analysis*. *Health Policy and Planning*, 2021. **36**(6): p. 869-880.
31. Gillespie, S., et al., *The politics of reducing malnutrition: building commitment and accelerating progress*. *Lancet*, 2013. **382**(9891): p. 552-69.
32. Gilson Siström, M., *Oregon's Senate Bill 560: practical policy lessons for nurse advocates*. *Policy Polit Nurs Pract*, 2010. **11**(1): p. 29-35.
33. Gneiting, U., *From global agenda-setting to domestic implementation: successes and challenges of the global health network on tobacco control*. *Health Policy Plan*, 2016. **31 Suppl 1**(Suppl 1): p. i74-86.
34. Gomez, E.J., *An Interdependent Analytic Approach to Explaining the Evolution of NGOs, Social Movements, and Biased Government Response to AIDS and Tuberculosis in Brazil*. *Journal of Health Politics, Policy and Law*, 2013. **38**(1): p. 123-159.
35. Gwozdek, A.E., R. Tetrick, and H.L. Shaefer, *The origins of Minnesota's mid-level dental practitioner: alignment of problem, political and policy streams*. *Journal of dental hygiene : JDH*, 2014. **88**(5): p. 292-301.

36. Hafner, T. and J. Shiffman, *The emergence of global attention to health systems strengthening*. Health Policy Plan, 2013. **28**(1): p. 41-50.
37. Hammonds, R. and G. Ooms, *The emergence of a global right to health norm--the unresolved case of universal access to quality emergency obstetric care*. BMC Int Health Hum Rights, 2014. **14**: p. 4.
38. Hanney, S.R., et al., *The utilisation of health research in policy-making: concepts, examples and methods of assessment*. Health Res Policy Syst, 2003. **1**(1): p. 2.
39. Haq, Z., et al., *Dynamics of evidence-informed health policy making in Pakistan*. Health Policy Plan, 2017. **32**(10): p. 1449-1456.
40. Hariharan, L., et al., *Reducing Blindness from Retinopathy of Prematurity (ROP) in Argentina Through Collaboration, Advocacy and Policy Implementation*. Health Policy and Planning, 2018. **33**(5): p. 654-665.
41. Harmer, A., *Understanding change in global health policy: ideas, discourse and networks*. Glob Public Health, 2011. **6**(7): p. 703-18.
42. Harris, J., *Advocacy coalitions and the transfer of nutrition policy to Zambia*. Health Policy Plan, 2019. **34**(3): p. 207-215.
43. Heller, O., et al., *The process of prioritization of non-communicable diseases in the global health policy arena*. Health Policy Plan, 2019. **34**(5): p. 370-383.
44. Hill, M. and P. Hupe, *Analysing policy processes as multiple governance: accountability in social policy*. Policy and Politics, 2006. **34**(3): p. 557-573.
45. Hoe, C., et al., *"Quitting like a Turk:" How political priority developed for tobacco control in Turkey*. Soc Sci Med, 2016. **165**: p. 36-45.

46. Hoe, C., et al., *Understanding political priority development for public health issues in Turkey: lessons from tobacco control and road safety*. Health Res Policy Syst, 2019. **17**(1): p. 13.
47. Holden, C.A. and V. Lin, *Network structures and their relevance to the policy cycle: a case study of The National Male Health Policy of Australia*. Soc Sci Med, 2012. **74**(2): p. 228-35.
48. Hugo, F.N., et al., *Role of Dentistry in Global Health: Challenges and Research Priorities*. J Dent Res, 2021. **100**(7): p. 681-685.
49. Hutchinson, E., *The development of health policy in Malawi: the influence of context, evidence and links in the creation of a national policy for cotrimoxazole prophylaxis*. Malawi Med J, 2011. **23**(4): p. 109-14.
50. Jackson-Lee, A., N.G. Barr, and G.E. Randall, *Mandating influenza vaccinations for health care workers: analysing opportunities for policy change using Kingdon's agenda setting framework*. BMC Health Serv Res, 2016. **16**(1): p. 522.
51. Jamieson, L., et al., *Indigenous Oral Health Inequalities at an International Level: A Commentary*. Int J Environ Res Public Health, 2020. **17**(11).
52. Janakiram, C., et al., *Political priority of oral health in India: analysis of the reasons for neglect*. J Public Health Dent, 2018. **78**(2): p. 144-153.
53. Jat, T.R., et al., *The emergence of maternal health as a political priority in Madhya Pradesh, India: a qualitative study*. BMC Pregnancy Childbirth, 2013. **13**: p. 181.
54. Johnston, B.D., *Injury prevention as a global health initiative*. Injury Prevention, 2008. **14**(3): p. 145-146.

55. Jones, C.M., C. Clavier, and L. Potvin, *Adapting public policy theory for public health research: A framework to understand the development of national policies on global health*. Soc Sci Med, 2017. **177**: p. 69-77.
56. Kadia, B.M., C.A. Dimala, and K.P. Njefi, *Emergence of universal antiretroviral therapy coverage in South Africa: applying the advocacy coalition framework to refine the narratives and inform epidemic responses*. Pan African Medical Journal, 2022. **42**.
57. Kaminska, M.E., et al., *Changing the healthcare financing paradigm: Domestic actors and international organizations in the agenda setting for diffusion of social health insurance in post-communist Central and Eastern Europe*. Social Policy and Administration, 2021. **55**(6): p. 1066-1081.
58. Kassabian, S., et al., *The political prioritization of preterm birth: A policy analysis using a prioritization framework*. Annals of Global Health, 2016. **82**(3): p. 428-429.
59. Kassabian, S., et al., *Building a global policy agenda to prioritize preterm birth: A qualitative analysis on factors shaping global health policymaking*. Gates Open Res, 2020. **4**: p. 65.
60. Kersh, R. and J. Morone, *The politics of obesity: seven steps to government action*. Health Aff (Millwood), 2002. **21**(6): p. 142-53.
61. Khayat-zadeh-Mahani, A., et al., *Banning shisha smoking in public places in Iran: an advocacy coalition framework perspective on policy process and change*. Health Policy Plan, 2017. **32**(6): p. 835-846.
62. Kim, D., *Using evidence, law and political science to advance obesity in prevention policies*. Prev Med, 2019. **129**: p. 105781.

63. Kind, J., B. Maeschli, and P. Bruggmann, *How to set the agenda for hepatitis C: a theory-driven policy analysis*. Health Res Policy Syst, 2022. **20**(1): p. 20.
64. Koduah, A., I.A. Agyepong, and H. van Dijk, *Towards an explanatory framework for national level maternal health policy agenda item evolution in Ghana: an embedded case study*. Health Res Policy Syst, 2018. **16**(1): p. 76.
65. Koduah, A., H. van Dijk, and I.A. Agyepong, *The role of policy actors and contextual factors in policy agenda setting and formulation: maternal fee exemption policies in Ghana over four and a half decades*. Health Res Policy Syst, 2015. **13**: p. 27.
66. Kolie, D., et al., *'Never let a crisis go to waste': post-Ebola agenda-setting for health system strengthening in Guinea*. BMJ Glob Health, 2019. **4**(6): p. e001925.
67. Kumar, M., D. Gleeson, and S. Barraclough, *Australia's Health Star Rating policy process: Lessons for global policy-making in front-of-pack nutrition labelling*. Nutrition & dietetics: the journal of the Dietitians Association of Australia, 2018. **75**(2): p. 193-199.
68. Kusi-Ampofo, O., *Negotiating Change: Ideas, Institutions, and Political Actors in Tobacco Control Policy Making in Mauritius*. J Health Polit Policy Law, 2021. **46**(3): p. 435-465.
69. Kusi-Ampofo, O., et al., *Resistance and Change: A Multiple Streams Approach to Understanding Health Policy Making in Ghana*. Journal of Health Politics, Policy and Law, 2015. **40**(1): p. 195.
70. Lee, A., et al., *Rise and demise: a case study of public health nutrition in Queensland, Australia, over three decades*. Health Promot Int, 2022. **37**(2).

71. Lesch, M. and J. McCambridge, *Coordination, framing and innovation: the political sophistication of public health advocates in Ireland*. *Addiction*, 2021. **116**(11): p. 3252-3260.
72. Llamas, A. and S. Mayhew, *The emergence of the vertical birth in Ecuador: an analysis of agenda setting and policy windows for intercultural health*. *Health Policy Plan*, 2016. **31**(6): p. 683-90.
73. Mackey, T.K., *Opening the Policy Window to Mobilize Action Against Corruption in the Health Sector Comment on "We Need to Talk About Corruption in Health Systems"*. *Int J Health Policy Manag*, 2019. **8**(11): p. 668-671.
74. MacLennan, B., et al., *Local government alcohol policy development: case studies in three New Zealand communities*. *Addiction*, 2013. **108**(5): p. 885-95.
75. Maher, A. and D. Sridhar, *Political priority in the global fight against non-communicable diseases*. *J Glob Health*, 2012. **2**(2): p. 020403.
76. Mannheimer, L.N., J. Lehto, and P. Ostlin, *Window of opportunity for intersectoral health policy in Sweden--open, half-open or half-shut?* *Health Promot Int*, 2007. **22**(4): p. 307-15.
77. Matlho, K., et al., *Policy-maker attitudes to the ageing of the HIV cohort in Botswana*. *Sahara j*, 2017. **14**(1): p. 31-37.
78. Mauti, J., et al., *Kenya's Health in All Policies strategy: A policy analysis using Kingdon's multiple streams*. *Health Research Policy and Systems*, 2019. **17**(1).
79. McAuliffe, Ú., et al., *'Toothless'-the absence of political priority for oral health: a case study of Ireland 1994-2021*. *BMC Oral Health*, 2022. **22**(1): p. 95.

80. McDougall, L., *Power and Politics in the Global Health Landscape: Beliefs, Competition and Negotiation Among Global Advocacy Coalitions in the Policy-Making Process*. Int J Health Policy Manag, 2016. **5**(5): p. 309-20.
81. Messham, E. and S. Sheard, *Taking the long view: the development of the Well-being of Future Generations (Wales) Act*. Health Research Policy and Systems, 2020. **18**: p. 1-12.
82. Mhazo, A.T. and C.C. Maponga, *The Importance of Prioritising Politics in Good Governance for Medicines Initiative in Zimbabwe: A Qualitative Policy Analysis Study*. Health policy and planning, 2022.
83. Milsom, P., et al., *Corporate power and the international trade regime preventing progressive policy action on non-communicable diseases: a realist review*. Health Policy Plan, 2021. **36**(4): p. 493-508.
84. Milton, K. and J. Grix, *Public health policy and walking in England-analysis of the 2008 'policy window'*. BMC Public Health, 2015. **15**: p. 614.
85. Mirzaei, S., et al., *Setting the policy agenda for the treatment of substance use disorders in Iran*. Harm Reduct J, 2022. **19**(1): p. 27.
86. Mukanu, M.M., et al., *Responding to non-communicable diseases in Zambia: a policy analysis*. Health Research Policy and Systems, 2017. **15**.
87. Murphy, L.E., et al., *Integrating Urban Adolescent Mental Health Into Urban Sustainability Collective Action: An Application of Shiffman & Smith's Framework for Global Health Prioritization*. Front Psychiatry, 2020. **11**: p. 44.
88. Nakkash, R.T., et al., *The passage of tobacco control law 174 in Lebanon: reflections on the problem, policies and politics*. Health Policy Plan, 2018. **33**(5): p. 633-644.

89. Neal, M.B., A.K. DeLaTorre, and P.C. Carder, *Age-Friendly Portland: a university-city-community partnership*. J Aging Soc Policy, 2014. **26**(1-2): p. 88-101.
90. Odoch, W.D., et al., *How are global health policies transferred to sub-Saharan Africa countries? A systematic critical review of literature*. Global Health, 2022. **18**(1): p. 25.
91. Okeke, C., et al., *Exploring mechanisms that explain how coalition groups are formed and how they work to sustain political priority for maternal and child health in Nigeria using the advocacy coalition framework*. Health Res Policy Syst, 2021. **19**(1): p. 26.
92. Ollila, E., *Health in All Policies: from rhetoric to action*. Scand J Public Health, 2011. **39**(6 Suppl): p. 11-8.
93. Ongolo-Zogo, P., et al., *Assessing the influence of knowledge translation platforms on health system policy processes to achieve the health millennium development goals in Cameroon and Uganda: a comparative case study*. Health Policy and Planning, 2018. **33**(4): p. 539-554.
94. Onono, M.A., et al., *Challenges to generating political prioritization for adolescent sexual and reproductive health in Kenya: A qualitative study*. PLoS One, 2019. **14**(12): p. e0226426.
95. Onvlee, O., et al., *Navigating the political and technical challenges of developing a national HRH strategy: a case study in Greece*. Health Policy, 2021. **125**(12): p. 1574-1579.
96. Pastrana, N.A., et al., *The process of building the priority of neglected tropical diseases: A global policy analysis*. PLoS Neglected Tropical Diseases, 2020. **14**(8): p. 1-22.
97. Pelletier, D. and M.J. Neuman, *Advancing the nutrition and early childhood development agenda: indicators and guidance*. Ann N Y Acad Sci, 2014. **1308**: p. 232-44.

98. Pelletier, D.L., et al., *Nutrition agenda setting, policy formulation and implementation: Lessons from the Mainstreaming Nutrition Initiative*. Health Policy and Planning, 2012. **27**(1): p. 19-31.
99. Phulkerd, S., et al., *Moving from silos to synergies: strengthening governance of food marketing policy in Thailand*. Global Health, 2022. **18**(1): p. 29.
100. Pillay, T.D. and J. Skordis-Worrall, *South African health financing reform 2000-2010: Understanding the agenda-setting process*. Health Policy, 2013. **109**(3): p. 321-331.
101. Prata, N. and A. Summer, *Assessing political priority for reproductive health in Ethiopia*. Reprod Health Matters, 2015. **23**(46): p. 158-68.
102. Redman, S., et al., *The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy*. Social Science & Medicine, 2015. **136-137**: p. 147-155.
103. Saidi, T., F. Salie, and T.S. Douglas, *Towards understanding the drivers of policy change: a case study of infection control policies for multi-drug resistant tuberculosis in South Africa*. Health Res Policy Syst, 2017. **15**(1): p. 41.
104. Sakamoto, H., et al., *Challenges and opportunities for eliminating tuberculosis - leveraging political momentum of the UN high-level meeting on tuberculosis*. BMC Public Health, 2019. **19**(1): p. 76.
105. Sardell, A., *US Children's Health Insurance Policy and the Multiple Streams Framework*.
106. Schmidt, M., et al., *Generating political priority to tackle health disparities: a case study in the Dutch city of The Hague*. Am J Public Health, 2010. **100 Suppl 1**(Suppl 1): p. S210-5.

107. Shapiro, G. and Z. Rosberger, *Cancer prevention policy in Canada: The decision to incorporate boys into HPV vaccination programs*. *Psycho-Oncology*, 2014. **23**: p. 185-186.
108. Shawar, Y.R. and L. Crane, *Generating political priority for urban health and nutrition: Application of a policy framework*. *Annals of Global Health*, 2014. **80**(3): p. 211-212.
109. Shawar, Y.R. and L.G. Crane, *Generating global political priority for urban health: the role of the urban health epistemic community*. *Health Policy Plan*, 2017. **32**(8): p. 1161-1173.
110. Shawar, Y.R. and J. Shiffman, *Political challenges to prioritizing gender in global health organisations*. *J Glob Health*, 2020. **10**(1): p. 010702.
111. Shawar, Y.R. and J. Shiffman, *Generating Global Priority for Addressing Rheumatic Heart Disease: A Qualitative Policy Analysis*. *J Am Heart Assoc*, 2020. **9**(8): p. e014800.
112. Shawar, Y.R., J. Shiffman, and D.A. Spiegel, *Generation of political priority for global surgery: a qualitative policy analysis*. *Lancet Glob Health*, 2015. **3**(8): p. e487-e495.
113. Shiffman, J., *Generating political priority for maternal mortality reduction in 5 developing countries*. *Am J Public Health*, 2007. **97**(5): p. 796-803.
114. Shiffman, J., *Global health initiatives and health systems: Generation of political priority for global health initiatives: A framework, and reflections on the cases of maternal mortality, newborn survival and health systems strengthening*. *Tropical Medicine and International Health*, 2009. **14**: p. 11.
115. Shiffman, J., *A social explanation for the rise and fall of global health issues*. *Bull World Health Organ*, 2009. **87**(8): p. 608-13.

116. Shiffman, J., *Network advocacy and the emergence of global attention to newborn survival*. Health Policy Plan, 2016. **31 Suppl 1**(Suppl 1): p. i60-73.
117. Shiffman, J., et al., *A framework on the emergence and effectiveness of global health networks*. Health Policy Plan, 2016. **31 Suppl 1**(Suppl 1): p. i3-16.
118. Shiffman, J., et al., *The emergence and effectiveness of global health networks: findings and future research*. Health Policy Plan, 2016. **31 Suppl 1**(Suppl 1): p. i110-23.
119. Shiffman, J. and S. Smith, *Generation of political priority for global health initiatives: a framework and case study of maternal mortality*. Lancet, 2007. **370**(9595): p. 1370-9.
120. Shiffman, J.P. and S.M.B.A.M. Sultana, *Generating Political Priority for Neonatal Mortality Reduction in Bangladesh*. American Journal of Public Health, 2013. **103**(4): p. 623-631.
121. Sirianni, G., *A Public Health Approach to Palliative Care in the Canadian Context*. Am J Hosp Palliat Care, 2020. **37**(7): p. 492-496.
122. Sisnowski, J., J.M. Street, and A. Braunack-Mayer, *Targeting population nutrition through municipal health and food policy: Implications of New York City's experiences in regulatory obesity prevention*. Food Policy, 2016. **58**: p. 24.
123. Smith, P., et al., *How to overcome political and legal barriers to the implementation of a drug consumption room: an application of the policy agenda framework to the Belgian situation*. Addict Sci Clin Pract, 2019. **14**(1): p. 40.
124. Smith, S.L., *The emergence, growth and decline of political priority for newborn survival in Bolivia*. Health Policy Plan, 2014. **29**(8): p. 951-9.
125. Smith, S.L. and M. Hunsmann, *Agenda setting for maternal survival in Ghana and Tanzania against the backdrop of the MDGs*. Soc Sci Med, 2019. **226**: p. 135-142.

126. Smith, S.L. and M.A. Rodriguez, *Agenda setting for maternal survival: the power of global health networks and norms*. Health Policy Plan, 2016. **31 Suppl 1**(Suppl 1): p. i48-59.
127. Smith, S.L. and J. Shiffman, *Setting the global health agenda: The influence of advocates and ideas on political priority for maternal and newborn survival*. Soc Sci Med, 2016. **166**: p. 86-93.
128. Smits, P., et al., *Getting evidence to travel inside public systems: what organisational brokering capacities exist for evidence-based policy?* Health Research Policy and Systems, 2018. **16**.
129. Sriram, V., A.A. Hyder, and S. Bennett, *The Making of a New Medical Specialty: A Policy Analysis of the Development of Emergency Medicine in India*. Int J Health Policy Manag, 2018. **7**(11): p. 993-1006.
130. Ssegujja, E. and M. Andipatin, *Building on momentum from the global campaigns: an exploration of factors that influenced prioritization of stillbirth prevention at the national level in Uganda*. Globalization and Health, 2021. **17**(1).
131. Stassen, K.R., R. Smolders, and P. Leroy, *Sensitizing events as trigger for discursive renewal and institutional change in Flanders' environmental health approach, 1970s-1990s*. Environ Health, 2013. **12**: p. 46.
132. Strand, M. and E. Fosse, *Tackling health inequalities in Norway: applying linear and non-linear models in the policy-making process*. Critical Public Health, 2011. **21**(3): p. 373-381.

133. Stratil, J.M., et al., *Development of the WHO-INTEGRATE evidence-to-decision framework: an overview of systematic reviews of decision criteria for health decision-making*. *Cost Eff Resour Alloc*, 2020. **18**: p. 8.
134. Stratil, J.M., et al., *Advancing the WHO-INTEGRATE Framework as a Tool for Evidence-Informed, Deliberative Decision-Making Processes: Exploring the Views of Developers and Users of WHO Guidelines*. *International journal of health policy and management*, 2022. **11**(5): p. 629-641.
135. Sugimoto-Matsuda, J.J., *Translating research to practice: Aligning the 'three streams' of policymaking to address bullying and youth violence among youth in Hawai'i*. 2014, ProQuest Information & Learning: US.
136. Tediosi, F., et al., *BRICS countries and the global movement for universal health coverage*. *Health Policy Plan*, 2016. **31**(6): p. 717-28.
137. Teixeira, L., C.H.A. Paiva, and V.N. Ferreira, *The World Health Organization Framework Convention on Tobacco Control in the Brazilian political agenda, 2003-2005*. *Cad Saude Publica*, 2017. **33**Suppl 3(Suppl 3): p. e00121016.
138. Tervonen-Gonçalves, L. and J. Lehto, *Transfer of Health for All policy - What, how and in which direction? A two-case study*. *Health Res Policy Syst*, 2004. **2**(1): p. 8.
139. The CIPHER Investigators, *Supporting Policy In health with Research: an Intervention Trial (SPIRIT)-protocol for a stepped wedge trial*. *BMJ Open*, 2014. **4**(7): p. e005293.
140. Tomlinson, M. and C. Lund, *Why does mental health not get the attention it deserves? An application of the Shiffman and Smith framework*. *PLoS Med*, 2012. **9**(2): p. e1001178.
141. van Rinsum, C.E., et al., *Health Brokers: How Can They Help Deal with the Wickedness of Public Health Problems?* *Biomed Res Int*, 2017. **2017**: p. 1979153.

142. Votruba, N., J. Grant, and G. Thornicroft, *EVITA 2.0, an updated framework for understanding evidence-based mental health policy agenda-setting: tested and informed by key informant interviews in a multilevel comparative case study*. Health Res Policy Syst, 2021. **19**(1): p. 35.
143. Votruba, N., et al., *A systematic review of frameworks for the interrelationships of mental health evidence and policy in low- and middle-income countries*. Health Res Policy Syst, 2018. **16**(1): p. 85.
144. Walls, H., et al., *The many meanings of evidence: a comparative analysis of the forms and roles of evidence within three health policy processes in Cambodia*. Health Res Policy Syst, 2017. **15**(1): p. 95.
145. Walt, G. and L. Gilson, *Can frameworks inform knowledge about health policy processes? Reviewing health policy papers on agenda setting and testing them against a specific priority-setting framework*. Health Policy Plan, 2014. **29 Suppl 3**: p. iii6-22.
146. Wassef, J., F. Champagne, and L. Farand, *Nutritionists as policy advocates: the case of obesity prevention in Quebec, Canada*. Public Health Nutr, 2021: p. 1-14.
147. Wild, K., et al., *Agenda Setting and Evidence in Maternal Health: Connecting Research and Policy in Timor-Leste*. Front Public Health, 2015. **3**: p. 212.
148. Wong, E.G., et al., *The absence of surgical care on the public health and global health agendas: Insights from a global surgery community*. Journal of the American College of Surgeons, 2014. **219**(3): p. S57.
149. Wong, E.G., et al., *Recommendations for including surgery on the public health agenda*. J Surg Res, 2015. **197**(1): p. 112-7.

150. World Health Organization, *Knowledge Translation Framework for Ageing and Health*. 2012, World Health Organization: Geneva, Switzerland.
151. Wu, D., S. Hawkes, and K. Buse, *Prevention of mother-to-child transmission of syphilis and HIV in china: What drives political prioritisation and what can this tell us about promoting dual control?* Sexually Transmitted Infections, 2015. **91**: p. A194.
152. Yang, J.S., H.M. Mamudu, and T.K. Mackey, *Governing Noncommunicable Diseases Through Political Rationality and Technologies of Government: A Discourse Analysis*. Int J Environ Res Public Health, 2020. **17**(12).
153. Yazdi-Feyzabadi, V., M. Bazayar, and S. Ghasemi, *District health network policy in Iran: the role of ideas, interests, and institutions (3i framework) in a nutshell*. Arch Public Health, 2021. **79**(1): p. 212.
154. Ziegler, B.R., A.J.D. Wray, and I. Luginaah, *The ever-changing narrative: Supervised injection site policy making in Ontario, Canada*. The International Journal on Drug Policy, 2019. **74**: p. 98.
155. Zimmerman, P.A., et al., *Adoption of an infection prevention and control programme (IPCP) in the Republic of Kiribati: A case study in diffusion of innovations theory*. BMC Proceedings, 2011. **5**.