Health Research Priority Setting in Uganda: A Qualitative Study Describing and Evaluating the Processes

Lydia Kapiriri (kapirir@mcmaster.ca)
McMaster University  https://orcid.org/0000-0002-1237-6369

Elizabeth Asege Ekochu
Consultant

Harriet Nabudere
Uganda National Health Research Organization

Research

Keywords: health research priority setting, evaluation, low-income countries, Uganda

DOI: https://doi.org/10.21203/rs.3.rs-90818/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License
Abstract

Background: Over the years, several approaches to health research priority setting (HRPS) have been devised and applied in low-income countries for national level research prioritization. However, there is often a disconnect between the evidence that health policymakers require for decision-making and the research that receives funding. There is a need for countries to evaluate their prioritization processes to support strategies to translate priority setting into policy practice. While health research priority setting is continuously carried out in Uganda, these processes are rarely reported on the scholarly literature and have not been evaluated. This study aimed to describe and evaluate HRPS in Uganda.

Methods: This was a qualitative case study consisting of document review and key informant interviews with stakeholders who had either directly participated in or had specialized knowledge of HRPS in Uganda.

Results: While Uganda has established and legitimized a National health research organization to set health research priorities, coordinate and provide oversight for health research in the country, several institutions independently conduct their own health research priority setting. The evaluation revealed that while the priority setting processes are often based on systematic approaches and tools and tended to be evidence based, most of the prioritization processes lacked stakeholder involvement and implementation. Moreover, the priorities were not publicized and none had mechanisms for appeals or revisions. In only one case were the priorities implemented.

Conclusions: The availability of strong political commitment and a national priority setting institution is an opportunity for strengthening health research priority setting. There should be increased support for the institution to enable it to carry out its duties. The institution should not only invest in participatory, systematic health research priority setting and implementation but evaluation as well in order for them to identify areas for improvement.

Introduction

In low-income countries (LIC), there is often a disconnect between the evidence that health policymakers require for decision-making and the research that receives funding. In many ways, this is due to a lack of mechanisms to protect researchers from the mandates of stakeholders such as politicians, interest groups, and foreign funders. Compounding this problem, projects addressing health issues in LICs are often uncoordinated, resulting in duplication and fragmentation. Research from multiple institutions, therefore, rarely coalesces into focused, evidence-informed policy decisions.

Given the scarcity of funding for health research in LICs, it is critical that resources are optimally allocated (1, 2). This can be done via priority setting (PS), a process that seeks to optimize resource allocation by providing stakeholders with a systematic approach to identifying all research possibilities, developing and evaluating criteria to assess those possibilities, and ultimately creating a ranked list that comprehensively captures their particular needs as priorities (3).

Over the years, several approaches have been devised for health research priority setting (HRPS). A methodical review for the period 2001–2014 found that across 165 studies, the most frequently used PS approach for health research was the Child Health and Nutrition Research Initiative (26%), followed by the Delphi approach (24%), James Lind Alliance (8%), Combined Approach Matrix (2%), and Essential National Health Research (ENHR) (< 1%) (4). Meanwhile, McGregor et al. (2014) showed that the majority of HRPS approaches were initiated by international organizations or collaborations (46%), with researchers and governments as the most frequently
represented stakeholders. This study also showed that there was limited evidence of implementation or follow-up strategies, and that challenges to PS include engagement with stakeholders, data availability, and capacity constraints (5).

The above studies demonstrate that progress has been made in understanding health research prioritization. Specific to low-income countries, some studies have assessed the institutional capacities, whereby limited institutional capacity has been documented (2, 5, 6). Other studies have documented limited capacity to implement the identified priorities (5), while others have focused on the criteria used (7), or the stakeholders involved in the process (8, 9). However, most of these studies have focused on some but not all of the critical components of health research priority setting. The literature highlights the relevance of understanding the context, the inputs or precursors, the actual process (of which fairness, stakeholder involvement, explicit guidance tools and criteria are key components), the implementation of the priorities and the evaluation of the process (10, 11). A study based in Zambia described and evaluated health research priority setting based on an internationally validated framework, which featured the key priority setting components discussed above (12). The study demonstrated that the framework provides a systematic and step by step approach to assess the degree to which the various key components of health research priority setting are being achieved. They were also able to identify key areas where improvement efforts could be focused (10, 12). The identified need for countries to evaluate their prioritization processes was critical to this paper, in order to obtain evidence upon which to base improvement strategies (1, 10).

While there have been efforts within the Ugandan research community to systematize HRPS, there have been no systematic evaluations of the same. With regard to financing of health research, a survey undertaken by the East African Health Research Commission found that health research in Uganda is financed from a variety of sources but mostly from external funders. The total health research investment in Uganda for 2014/2015 was USD 116.84 million out of which the share of domestic financing was USD 11.08 million. Therefore, 90.51% of the financing for health research was generated from external sources and only 9.49% was from the domestic sources (13). It is critical that these resources are allocated efficiently.

This paper, based on the framework for evaluating health research priority setting, fills this gap in the literature. The insights provided in this study can form the basis for designing focused strategies to strengthen health research prioritization and will benefit the Government of Uganda (GOU), other LICs, and partners who support health research systems in LICs.

**Objectives**

This study aimed to describe and evaluate HRPS in Uganda with the following specific objectives:

1. To describe and evaluate historical practices of HRPS in Uganda based on a validated framework.
2. To identify facilitators and barriers to effective HRPS in Uganda; and best practices that can be shared with other LICs.
3. To make recommendations for strengthening HRPS in Uganda and similar countries.

**Materials And Methods**
The conceptual framework: The evaluation was based on Kapiriri’s framework for evaluating HRPS (11, 14). While this framework was originally developed to evaluate priority setting for health interventions, it was adapted, validated and used to evaluate HRPS in Zambia (12). This framework consists of five domains: (i) The priority setting context, (ii) The priority setting pre-requisites, (iii) The priority setting process, (iv) Implementation and (v) Outcome and Impact. Within each domain, the framework specifies parameters. Subsequently, each parameter has objectively verifiable indicators and respective means of verification. These are summarized in Table 1.

The framework provided a basis both for the development of the study instruments and data analysis.
| Parameters of Successful Priority Setting | Objectively Verifiable Indicators (OVI) | Means of Verification (MOV) |
|------------------------------------------|----------------------------------------|-----------------------------|
| **Contextual Factors**                   | Conducive Political, Economic, Social and Cultural context | Relevant contextual factors that may impact priority setting | Follow up intermittent interviews with local stakeholders, systematic longitudinal observations, relevant reports, Media. |
| **Pre-requisites**                       | Political will | Degree to which the politicians support the set priorities | Follow up intermittent interviews with local stakeholders, systematic longitudinal observations, relevant reports, Media. |
| Resources                                | Budgetary and human resource allocation to the health research | National budget documents |
| Legitimate and Credible institutions      | Degree to which the priority setting institutions can set priorities, public confidence in the institution | Stakeholder and public interviews |
| Incentives                               | Material and financial incentives | National budget documents |
| **The Priority setting process**         | Stakeholder participation | Number Stakeholder participating, number of opportunities each Stakeholder gets to express opinion | Observations/minutes at meetings, media reports, special reports |
| Use of clear priority setting process/tool/methods | Documented Priority setting process and/or use of Priority setting framework | Observation/minutes at meetings, media reports, special reports |
| Use of explicit relevant priority setting criteria | Documented/articulated criteria | Observations/minutes at meetings, media reports, special reports |
| Use of evidence                          | Number of times available data is resourced/number of studies commissioned/existing strategies to collect relevant data | Observations/minutes at meetings, media reports, special reports |
| Reflection of public values              | Number and type of members from the general public represented, how they are selected, number of times they get to express their opinion, proportion of decisions reflecting public values, documented strategy to enlist public values, number of studies commissioned to elicit public values | Observations/minutes at meetings, study reports, meeting minutes and strategic plans |
| Publicity of priorities and criteria     | Number of times decisions and rationales appear in public documents | Media reports |
| Parameters of Successful Priority Setting | Objectively Verifiable Indicators (OVI) | Means of Verification (MOV) |
|------------------------------------------|----------------------------------------|---------------------------|
| Functional mechanisms for appealing the decision | Number of decisions appealed; number of decisions revised | Observations/minutes at meetings, media reports, special reports |
| Functional mechanisms for enforcement | Number of cases of failure to adhere to priority-setting process reported | Observations/minutes at meetings, media reports, special reports |
| Efficiency of the priority-setting process | Proportion of meeting time spent on priority setting; number of decisions made on time | Observations/minutes at meetings, annual budget documents, health system reports |
| **Implementation of the set priorities** | Decreased dissentions | Number of complaints from stakeholder(s) | Meeting minutes, media reports |
| Allocation of resources according to priorities | Degree of alignment of resource allocation and agreed upon priorities, times budget is re-allocated from less prioritized to high prioritized areas, stakeholder satisfaction with the decisions | Annual budget reports, evaluation documents |
| Decreased resource wastage / misallocation | Proportion of budget unused | Budget documents, evaluation reports |
| **Improved internal accountability/reduced corruption** | Number of publicized resource allocation decisions | Evaluation reports, stakeholder interviews, media reports |
| **Increased stakeholder understanding, satisfaction and compliance with the Priority setting process** | Number of SH attending meetings, number of complaints from stakeholder, % stakeholder that can articulate the concepts used in priority setting and appreciate the need for priority setting | Observations/minutes at meetings, special reports, SH satisfaction survey, media reports, stakeholder interviews, evaluation reports |
| **Improved internal accountability/reduced corruption** | Number of publicized resource allocation decisions | Evaluation reports, stakeholder interviews, media reports |
| **Strengthening of the PS institution** | Indicators relating to increased efficiency, use of data, quality of decisions and appropriate resource allocation, % stakeholders with the capacity to set priorities | Training reports, evaluation reports, budget documents |
| **Impact on institutional goals and objectives** | % of institutional objectives met that are attributed to the priority setting process | Evaluation reports, special studies |
| Parameters of Successful Priority Setting | Objectively Verifiable Indicators (OVI) | Means of Verification (MOV) |
|-----------------------------------------|----------------------------------------|---------------------------|
| **Outcome and impact**                  | **Impact on health policy and practice** | Changes in health policy to reflect identified priorities | Policy documents |
| **Achievement of Health system goals**  | **Research contribution to achievement of health system goals** | Ministry of health documents, Demographic and Health Surveys, commissioned studies |
| **Improved financial and political accountability** | **Number of publicized financial resource allocation decisions, number of corruption instances reported, % of the public reporting satisfaction with the process** | Reports, media reports, interviews with stakeholders |
| **Increased investment in the health sector and strengthening of the health care system** | **Proportion increase in the health research budget, % of the public/researchers reporting satisfaction with the health research system** | National budget allocation documents, |

**Study approach:** This was a qualitative case study consisting of (1) document review and (2) key informant interviews with stakeholders involved in HRPS in Uganda.

**Data collection:**

**Document review:** We obtained and reviewed the unpublished (institutional) reports that were relevant to HRPS. These reports provided information on the HRPS processes within the different institutions in Uganda, the various priority setting institutions in Uganda, and the overall governance structures and institutions of health research within Uganda. Documents also provided information on the context and reported successes and barriers to HRPS in Uganda.

**The Qualitative interviews:** We interviewed a total of 33 stakeholders at the national and district levels who had been involved in or were knowledgeable about HRPS. Snowball sampling was used to identify the relevant stakeholders. At the national level, the list of organizations that are involved in HRPS, generated from the document review, provided a basis for identifying the index respondents. These included representatives from: The Ministry of Health (MoH), research regulators, national research institutions, public and private academic institutions, and private research organizations. The heads of 19 organizations were initially contacted, once interviewed, they identified any relevant additional respondents. We interviewed a total of 25 national-level key informants. At the district level, a representative selection of health research technical leads within the districts—district health officers (DHO)—were sampled from a list of all DHOs. Out of the 21 DHOs that were contacted, 8 were interviewed. Respondents were recruited until theoretical saturation was achieved (15).

Key informant interviews were conducted between February and April 2019. An interview guide, based on the evaluation framework, was used to collect the data. EE conducted the face-to-face interviews, which lasted between 30–40 minutes. All interviews, except for one, were audio recorded with permission from the respondents. The recorded interviews were transcribed verbatim.
Data Analysis: Analysis was conducted manually. To facilitate the description and evaluation of how the current health research priorities of the MoH were identified; EE and LK read through the whole transcripts and identified broad themes that matched the study objectives. Further analysis involved the two investigators mapping out the responses according to the parameters in the evaluation framework. Themes related to the various parameters were then grouped under the respective domains. Subsequently, we assessed the degree to which the description met the requirements for a given parameter. The report is organized according to the domains and parameters. Areas of alignment were identified as lessons of good practice to be shared and areas of non-alignment were identified as challenges where improvement strategies are required.

Validation: The initial synthesis of the results was presented to and validated by study participants and additional health research stakeholders in a workshop in May 2019.

Ethics

Ethical clearance for the study was obtained from the National HIV/AIDS Research Committee and final approval from Uganda National Council for Science and Technology (UNCST). The study was also approved by McMaster University Research Ethics Board.

Results

The findings are based on the document review and analysis of the 33 key informant interviews including: four respondents from development assistance partners (DAPs), five from health-related ministries, seven from academic institutions, five from private research organizations, four from regulatory institutions, and eight district health officers.

The results section is organized according to the five domains of the framework: (1) contextual factors, (2) prerequisites, (3) processes, (4) implementation of priorities, and (5) outcomes and impacts.

Contextual factors for HRPS

This domain reflects on the degree to which the political, social, and cultural contexts are conducive for HRPS. Politically, the reviewed documents and the interviews alluded to the idea that the Ugandan government recognizes the importance of health research for evidence-based policy and decision-making. For example, the 1997 Local Government Act stipulated that while the DHOs set and implement priorities which should be aligned with national priorities; at the national level, health-related ministries manage and implement research. Furthermore, the health policies also mandate the establishment of a national health research organization with specified roles and responsibilities. The other contextual factors were discussed in terms of barriers to HRPS and implementation whereby lack of funding and negative cultural beliefs are believed to hamper HRPS and health research.

"it has set up bodies like NDAs, like UNHRO, like us UNCST then there is political will otherwise they would have just shut us down." However, "Political will is constrained by limited resources." #18.

"Then cultural issues play a role but at a very micro level. They get pieces of research showing that may be there is resistance to immunization because of certain cultural issues and practices or beliefs." #30.
Prerequisites for HRPS

The evaluation framework identifies three prerequisites for successful HRPS: (1) political will, (2) availability of human and financial resources, and (3) a HRPS institution with the capacity to set priorities.

Political will for HRPS

As discussed above, there is political will demonstrated by the establishment of the different health research management structures and the mandates of various political offices. The Ministry of Science, Technology, and Innovation (MoSTI), Ministry of Education and Sports (MoES), and the MoH are the key ministries involved in providing oversight for health research in Uganda. The MoH’s affiliate organization, the Uganda National Health Research Organization (UNHRO) is the umbrella organization for health research coordination. Established in 2009, UNHRO undertakes, coordinates, promotes, and provides guidance for health research and development in Uganda. Respondents thought there was political will.

“...Currently the political will in the Ministry of Health, like the Permanent Secretary, is very committed to research. Being scientists, so many people are committed to research verbally, but I don't think they have appreciated the gritty of what it takes to do research. There is importantly, the institutional commitment like politically, institutions have been set up” #16.

“UNHRO was instituted by parliament. The law is in place for UNHRO, and it clearly stipulates UNHRO as the key organization to coordinate health research actors in the country – both public and private.” #10.

Furthermore, there are several government policies that explicitly support HRPS such as: the UNCST policy (2009), the MoH health research policy (2012–2020), the Health Research Strategic Plan (2010/11–2014/15) based on the UNHRO Act (2011), and the One Health Strategic Plan (2018–2022).

However, some respondents expressed doubt, referring to the lack of funding. These respondents believed that relative to other political priorities, health research did not enjoy as much political support.

“I don’t think even political will which is there. It's not as much as a high agenda as security, it’s not as a high agenda as infrastructure, it’s not a high agenda as probably looking for markets, tourism. I don’t think it’s that level.” #28.

Availability of financial and human resources

Several respondents reported that there were limited financial and human resources to support HRPS. Health research priority setting receives funding from the GOU or from donor agencies, but this funding is often meagre. For example, the governmental allocation for health research for 2017–2018 was only 0.17% of the health sector allocation and 0.01% of the overall budget allocation (16).

“There is political will, but the ability to support I know is limited through allocation of resources.” #27

External funds often support actual research. However, it is difficult to quantify, as these contributions do not come via GOU budget support and the Ugandan annual national health accounts do not itemize health research as a study category (17):
“There's a lot of research work going on, but is funded through project support not budget support, and it is not captured in the government reporting framework—even if they are consistent with national research priorities.” #18

Arguably, the limited resources also impact the number and quality of human resources that are available to provide health research oversight:

“But you look at the entire ministry, we had challenges with human resource capacity in every aspect—inadequate numbers and inadequate capacity. UNHRO has no representation at sub-national level (e.g., regional, district); they should be represented in all centers where power belongs.” #16

“I don’t think they [UNHRO] have a budget, and if they do it must be very minimal. And they do not have real mechanisms to implement their mandate.” #19

Institutional capacity

The most commonly mentioned entities responsible for HRPS were the MoH, UNHRO, UNCST, and MoSTI. However, UNHRO is the institute that is mandated to lead and coordinate health research in the country. Some respondents felt that the MoH and UNHRO had the capacity to achieve HRPS, while others felt there was need to strengthen the other institutions’ capacities:

“...Institute of Public Health, Uganda National Research Organization ... the Ministry of Health: their capacity is, I would say, over 80%. But the others, maybe just give some cheques, so you can maybe rate them at around 60 to 70%...” #24

Furthermore, respondents also reported that the very busy landscape of actors in health research undermines UNHRO’s capacity to manage and coordinate research activities.

“...There are multiple layers, a busy landscape—NGOs, donors, development partners—so coordination becomes difficult. Determining priorities becomes difficult...” #18

“...There are so many research institutions that do not talk to each other...” #8

“...I think there is no proper coordination of ... either the research institutions or those who generate the research questions. There is no repository for research either—evidence or even research questions. There is no ... research hub or a unit ... such that these things can be taken up, can be prioritized, can be discussed and funded...” #11

Although the districts are also mandated to identify their own research priorities, their capacity to do so was doubted:

“For local governments, some don’t have capacities to identify priorities, they are not able to observe and articulate a priority because they are too engrossed in being part of the community and are not exposed to other contexts.” #18

Priority Setting Processes: A Historical Perspective

Although Uganda has one main designated institution, UNHRO, for health research priority setting, since Uganda adopted the ENHR strategy, different research institutions have conducted HRPS. These include; (i) the Ad hoc Committee on ENHR (1997), (ii) College of Health Sciences, Makerere University (2011), (iii) the Medical Research
Council—UVRI Unit (2014), the School of Public Health, (iv) Makerere University (SPEED Project) (2015), and (v) UHNRO-Busitema University-MoH (2018). We describe these processes in detail, where information was available. These processes have been conducted independently although they should, ideally, support the ENHR strategy. For each initiative, we identify the critical parameters relevant to the evaluation framework for a standardized evaluation.

Table 2 summarizes the previous HRPS in Uganda, identifying the leaders of the initiative, the stakeholders who were involved, the criteria used to rank the priorities, outputs and dissemination and implementation. Below we organize the descriptions under the parameters according to the evaluation framework.
Table 2
Summary of the five previous HRPS initiatives

| Initiative                        | Year  | Facilitator          | Criteria                                                                 | Outputs                                                                 | Dissemination and impact                                                                 |
|----------------------------------|-------|----------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Ad hoc committee                 | 1997  | UNCST                | -Avoidance of duplication, Feasibility                                   | A list of both disease and health system health research priorities.    | Shared with stakeholders and each research institution was encouraged to set its own research priorities |
|                                  |       |                      | -Political acceptability, - Capability                                   |                                                                         |                                                                                         |
|                                  |       |                      | -Urgency, -Ethical acceptability                                         |                                                                         |                                                                                         |
| College of Health Sciences (CHS) | 2011  | CHS                  | -Public health benefit, Research Capacity and Relative cost              | -A list of health research priorities.                                   | Disseminated to the college constituents and Periodic evaluations were suggested.          |
| Makerere University              |       |                      |                                                                         | -An end-of-workshop evaluation showed 80% participant satisfaction.     |                                                                                         |
| Medical Research Council (MRC) - | 2014  | UVRI Unit            | -Disease burden in Uganda; CHS research priorities; future 10–20 years’ health priorities | A list of future health research priorities for UCRI/MRC,                | A summary of these future research priorities is available on the MRC Uganda website.      |
|                                  |       |                      |                                                                         |                                                                         |                                                                                         |
| School of Public Health, Makerere University | 2015 | SPEED Project.       | What 2–3 solutions need to be prioritized for scaling up the UHC vision? What 2–3 problems need solving to accelerate the attainment of UHC vision? | A list of health research priorities to address UHC                    | Disseminated to all stakeholders who attended the workshops via email. Some organizations have aligned their research to these priorities |
| School of Public Health (MakSPH), | 2015  | MakSPH & PEPFAR      |                                                                           | A list of HIV/AIDS research priorities                                 | The list was used in the PEPFAR-Uganda Country Operational Plan 2016.                      |
| UHNRO-Busitema University-MoH    | 2018  | UNRHO                | -Importance of the problem, availability of viable interventions, opportunity for change, uncertainty about the issue, availability of relevant research | None reported                                                            | A nine-member committee was set up for the follow up on activities. These activities are yet to be implemented. |

**Stakeholder involvement**

As discussed above, several institutions are involved in HRPS in Uganda. These have implemented HRPS processes over the years, as demonstrated in Table 3. To date, there have been five national HRPS initiatives in Uganda. These have invariably involved a wide range of stakeholders including: UNCST, UNRHO, MoH,
Development Partners, Academia, Research Institutes, other Ministries, Departments and Agencies (MDA), the District Leadership, the community (direct), and community (indirect: CSOs, NGOs, etc.) (Fig. 1).

All initiatives involved representatives from academia. However, among all initiatives, the Ad Hoc committee, which was the first HRPS initiative in Uganda, was the most participatory; involving focus group discussions with the community representatives and districts - a stakeholder group that is consistently missing from most of the subsequent initiatives.

One DHO recalled attending an HRPS event organized by the Ad Hoc Committee on ENHR at regional level 10 + years earlier. At this meeting, several districts were represented by the political and technical leaders, including DHOs, to seek their perspectives on research priorities.

“Every district would present a list, then we would say among these (which are the priorities)? There would be a scale... some kind of ranking. The forum was interactive, guided by some lectures, experience from some countries...” #29.

Other than that initiative, however, most of the district respondents reported participating at dissemination meetings as opposed to the meetings where priorities are determined.

“So you are called at the end (at national dissemination meetings); basically that you’re given the research priorities but have not contributed to determining them.” #24.
Table 3
Stakeholder involvement for HRPS events, 1997–2018

| Stakeholders                                      | Ad hoc Committee on ENHR 1997 | CHS 2011 | MRC-UVRI 2014 | MakSPH (SPEED) 2015 | MakSPH (PEPFAR) 2015 | Busitema University-UNHRO 2018 |
|---------------------------------------------------|-------------------------------|-----------|----------------|---------------------|----------------------|-------------------------------|
| Separate Stakeholder Meetings                     | ✓                             | ✓         | ✓              | ✓                   | ✓                    | ✓                             |
| Stakeholders                                      |                               |           |                |                     |                      |                               |
| UNCST                                             | ✓                             | ✓         | ✓              |                     |                      | ✓                             |
| UNHRO                                             |                               |           |                |                     |                      | ✓                             |
| MoH                                               | ✓                             | ✓         | ✓              | ✓                   | ✓                    | ✓                             |
| Development Partners                              |                               |           |                |                     |                      | ✓                             |
| Academia                                          | ✓                             | ✓         | ✓              | ✓                   | ✓                    | ✓                             |
| Research Institutes                               |                               |           |                |                     |                      | ✓                             |
| Other Ministries, Departments and Agencies (MDA)  | ✓                             | ✓         | ✓              | ✓                   | ✓                    | ✓                             |
| Community (direct)                                |                               |           |                |                     |                      | ✓                             |
| Community (indirect: CSOs, NGOs, etc.)            |                               |           |                |                     |                      | ✓                             |
| District Leadership                               | ✓                             |           |                |                     |                      |                               |
| Others                                            |                               |           |                |                     |                      | ✓                             |

Some key informants noted the limited stakeholder involvement, although they recognized the relevance of including a broad range of participants in the PS process in improving the process's success and the subsequent uptake of the priorities:

“...The problem I’m seeing is the way they organize the process of setting the priorities, because it’s like they went and sat in [region]. How many were there? How many people come? Instead they should have broken it into regions ... they can go to some sub-counties and invite sub-county chiefs, CDOs...” #6

**Use of an explicit approach/ method, evidence, and criteria**

All five initiatives reported a systematic approach however, these varied from using a specific approach e.g. the ENHR approach with the Ad hoc committee, to explicit steps in which options are identified and ranked based on specific considerations or criteria, or “consultations” with experts about what they perceived the priorities to be, as exemplified by a respondent who stated, “...It was more of a consultative process to start research priority setting...” #10

The prioritization processes were all achieved in face-to-face workshops. All the approaches considered research evidence, evidence on the disease burden, and gaps in the literature. However, notably, only the UVRI process,
considered the previously identified research priorities.

With regards to criteria, while all five initiatives considered several factors when determining their research priorities, these again varied from explicit criteria to questions that the stakeholders were asked to consider. The criteria used by the different initiatives collectively included: feasibility (including costs, capacity), avoiding duplicity, urgency, acceptability, potential benefit, disease burden, link to (institutional, national e.g. UHC, and regional) research priorities, degree of uncertainty, and opportunity for change. While all these criteria could potentially be relevant to any HRPS process, no single initiative considered all these criteria when identifying their research priorities. Another controversial criterion was the funders’ priorities,

“…Donor interests will influence what kind of research you would want to do. Remember we do a lot of collaborative research [with] people from the west…” #4

Overall, there was no clear documentation on the origins of the criteria with the exception of the CHS initiative where they identified Vierger’s framework (7) as the source of the factors/criteria they considered.

**Publicity**

All initiatives developed a list of health research priorities (Table 4). The lists show a shift from disease-specific priorities to health system issues.
| ENHR Ad Hoc Committee (1997) | CHS (2011) | UVRI/MRC (2014) | SPH (2015) | UNHRO-Busitema University (2015) |
|------------------------------|------------|-----------------|-----------|---------------------------------|
| 1. Water, sanitation, and environment | 1. Infectious and communicable diseases (including HIV, TB, and malaria) | 1. Infections (especially HIV, malaria, TB, neglected and emerging infections) | 1. Governance: Finding relevant, effective, and sustainable ways to regulate the private sector | 1. Motivation of the health workforce |
| 2. Communicable diseases | 2. Maternal, adolescent and child health, sexual and reproductive health (including behavioural research) | 2. Non-communicable diseases | 2. Service Delivery: Mechanisms through which different factors influence quality of care and finding solutions to address those problems | 2. Corruption in the health workforce |
| 3. Non-communicable diseases | 3. Health systems research | 3. Maternal neonatal and child health issues | 3. Health Financing: Effective means for increasing national budget allocation to health programs | 3. Decentralization versus recentralization of health service management |
| 4. Health policy and health systems | 3. Health systems research | 4. Health systems research | 4. Community Health: Community empowerment and role clarification, including community production of health and improvement of community health literacy | 4. Weak public sector engagement with private sector |
| 5. Drug-use studies | 5. Urban health, food security | 5. Urban health, food security | 5. Others: Understanding socio-determinants of health | 5. Inequitable distribution of interventions in the country; poor quality of care in health facilities |
| | 6. Environmental/climate change | | 5. Others: Understanding socio-determinants of health | 6. Poor utilization of evidence to address to inform practice |
| | | | Streamlining multi-sectoral engagements: tools, methods, and approaches to motivate or enable multi-sectoral collaboration for health | 7. Promotion of indigenous medical products and technology |
| | | | | 8. Health insurance models that work in Uganda |
| | | | Interoperability of health information systems of the public and private sectors |
The study team found a list of priorities dated 2005–2010 on the UNHRO website, a narrative summary of the MRC-UVRI on the MRC website, and the report of the SPEED project PS events on the SPEED website. The other priorities (usually within HRPS event reports) were sourced from key informants, since they seemed to be available only within institutions. This was supported by the key informants who reported that their priorities are usually disseminated:

“...We disseminated to those who were in the space: the Ministry of Health, those who attended. We had a mail list actually, many of these conferences, these are documents we print and put on the desk for people to pick...” #7

However, one respondent highlighted the need for priorities to be made available to stakeholders who are not usually considered in the dissemination process. Complementing this suggestion, and considering that not everyone may have access to the above mechanisms, were recommendations to pursue more channels for publicizing priorities:

“...A research agenda, I believe it would be important to communicate it to key stakeholders who would at least participate in research especially universities, some health facilities. The big ones like national referral hospitals, regional referral hospitals ... But also, it should be available to the public in various fora ... and should be freely available online...” #15

**Implementation of the health research priorities**

This domain includes allocation of resources according to the identified research priorities.

The initiatives did not report clear and explicit implementation plans. For some, the process ended with submitting the list of research priorities to the organizations that contracted the HRPS or the MOH (for example the UVRI and MUSPH initiatives). The latter hoped that their priorities would be used by the MOH, recognizing their limitations to actually ensure resource allocation:

“The goal was actually not necessarily around research funding. It was to give the kind of document which speaks to issues that are necessary to move the agenda with HSDP forward. And some of the research is being guided by that, but also other players have come to do the research. But I can’t tell you how much money has been spent on those topics because we don’t have capacity to tell who is working in this area but at least there was a dissemination of that information for use.” #7.

Our respondents recognized the limitation and futility of priority setting without the accompanying allocation of resources:

“...I think as long as priority setting is not linked to resources then it can’t be a priority...” #28

“...If we do not implement what we have put down, then it is as good as a waste of time. So, the experience in Uganda, you will find a lot of write ups on priority setting efforts in Uganda, but what follows after the priority setting exercise? It’s worrying!” #8

Additional implementation challenges exist at the district level. These issues cut across all components of HRPS—either due to funding constraints or resistance to research efforts:
“...Locally there is political will but the ability to support I know is limited; through allocation of resources...” #27

“...When there is poor communication with the community, that one can also affect the implementation of those priorities of research..”. #21

However, previous surveys of health research in Uganda seem to suggest that some of the work being undertaken aligns with the priorities that have been set. One study of publications from Makerere University between January 2005 and December 2009 showed that out of 837 publications, two-thirds (66%) addressed the country’s priority health areas (18). There are no equivalent studies, however, on alignment of research outside the confines of Makerere University.

**Outcome and Impact**

Our results did not provide clarity with regards to which priorities were actually implemented and had an impact on policy, with the exception of the PEPFAR initiative of priority setting for HIV/AIDS research. In this case, the list was used to identify the annual research focus for funding by PEPFAR. The other output was the recommendation to institutionalize the UNHRO, which was made by the Ad Hoc priority setting initiative.

Beyond these two examples, respondents decried the limited translation of research into policy and programming and the disconnect between the research and policy needs:

“...That connection with the government, constant connection with policy makers and implementers, I feel is lacking. They are not connecting, so that to me is a big weakness in national development. Instead we have got people who do research from outside and talk better about our systems...” #9

“...We have various government structures here where research questions are generated ... unfortunately not many of the research questions generated are taken up for research...” #11

The GOU requires each recipient of a budgetary vote to report on specific development indicators based on their responsibilities. For example, the MoH reports on the indicator of “Proportion of research informed policy and guidelines” for funds received for health research, which in 2017/18 was rated as 30%. The same indicator for the same year is reported by UVRI as 20%. A key informant noted that these numbers do not capture external health research funding:

“...The reporting indicator framework for MoH/NPA is an incentive to comply—i.e., you have to report on priorities. This is an in-built mechanism to ensure ministries use resources for what they were purposed, but most research is donor funded and not reported through the government structures, so does not get reported. ..”#18

**Recommendations for improvement**

At the member check and dissemination meeting the participants, who are stakeholders in HRPS in Uganda, made some recommendations based on the findings. These were related to: stakeholder involvement, championing HRPS, establishing a HRPS think tank, and including HRPS in annual work plans. These are summarised in Table 5.
Table 5
Recommendations from HRPS stakeholders

| Recommendation                                      | Explanation                                                                 | Illustrative quote                                                                 |
|-----------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Stakeholder involvement                            | This results in nationwide ownership of the set priorities                   | “…The process needs to be so wide, and so integrated in as many constituencies as possible to be owned nationally by as many people as possible…” #10 |
| Champions for HRPS                                  | It is not enough to include stakeholders; there must be people whose responsibility it is to drive HRPS | “…It requires a champion. Somebody, a senior researcher to champion this agenda. It needs a lot of lobbying and advocacy for research either at parliamentary level or at ministerial level so that research issues are embraced by all institutions…” #11 |
| Establishing a think tank                          | One of the private academic institutions has established a think tank consisting of individuals from different disciplines—including the business and industry communities—to advise on research needs in the country | “…We also have a think tank, which is specifically to us but not the country at large. At that think tank we have multiple stakeholders; the think tank is very much research driven and majority of our priority setting comes from those conversations…” #3 |
| Capturing research priorities in annual work plans  | Including research priorities in the work plan as an important step towards implementation | “…After agreeing on the (research) priorities, we were able also to capture this, to prioritize this and capture in our annual work plan and budget. Where we have the source of fund identified we also include, where we don't have the source of funding, we keep it as unfunded priority then we start looking for the money…” #24 |

Discussion

Across the five domains (context, prerequisites, PS process, implementation, and outcome/impact), our study found a number of factors that either facilitated or hindered HRPS in Uganda. In terms of the context domain, the study findings show that both the political and socio-cultural contexts including the relevant laws, statutes, and health policies provide an enabling environment for HRPS to take place in Uganda. However, there are some contextual barriers in terms negative cultural beliefs which hamper successful HRPS. Furthermore, limited and irregular funding make it difficult for the PS institution to strengthen their capacity and regularly conduct health research priority setting activities such as implementation, monitoring, and evaluation.

The evaluation revealed that all the historical processes used a systematic approach to identifying health research priorities and that they based their priorities on the available evidence. This may be an indication of capacity in the systematic priority setting. Recent years have seen focused capacity strengthening for HRPS in LICs (3, 19–21). While there is still room for improvement, these findings maybe an indication that with concerted focus on specific areas where there are weaknesses, health research priority setting systems in low income countries can be strengthened. The framework used in evaluating health research priority setting facilitated the identifying of specific areas where such concerted efforts could be focused (11, 12, 14). We discuss these areas in detail.

The findings that while a national health research organization is mandated by an Act of Parliament, to be the coordinating institution for all public and private research actors in the health sector, limited resources hamper the organizations' operations have been documented in similar contexts such as Zambia. This limited institutional
support results in countries having various institutions (often those that are better resourced) assume the health research priority setting role. This fragments national health priority setting. Furthermore, although the national health research organizations should be coordinating all HRPS within a country, some of these organizations do not report to or involve these organizations in their processes (1, 5, 12). However, recently the Uganda One Health Strategy has shown promise in bringing a multi-sectoral approach to the health system. The strategy specifically prioritizes the need to build capacity for multidisciplinary, collaborative research within Uganda and could be a step in the right direction of facilitating coordinated HRPS (17).

Another limitation of the HRPS was the limited involvement of the public and sub-national level stakeholders. When public input was sought this was limited to consulting with civil society organisations and non-governmental organisations. These findings are consistent with the HRPS literature (8, 22). While this literature emphasizes the relevance of public participation in priority setting, involving the public in health research priority setting may be more challenging since research (as compared to health interventions or disease programs) is not commonly discussed in public contexts. Since the respondents recognized this as a gap in their PS processes, the national health research organization could take the lead in educating the public about HRPS. Existing and already validated approaches such as the Choosing Healthplans All Together (CHAT) tool could be used as a basis for meaningful public engagement in health research priority setting (23). This approach would be supported within the decentralization framework. Since research implementation often occurs at the district level, decentralization provides opportunities where the public could potentially be meaningfully involved in HRPS within their local settings, and these priorities could contribute to the national level health research agenda. Such a participatory, bottom up process would contribute to local capacity strengthening and potential for support for research within the districts—which would be relevant to the local context (7, 8, 24).

Lastly, while all initiatives produced a list of priorities, there was no clarity with regards to: how they reflected on any prior priorities that were set; how they disseminated the list beyond the reports that were produced; and whether and how they evaluations were done to assess the degree to which the identified priorities were actually implemented. The literature alludes to the fact that lack of a formal publicity of results research priorities, and limited stakeholder buy-in can jeopardize the priority setting process and subsequent implementation of the determined priorities (1, 25). There were only two documented instances where priorities were actually implemented: PEPFAR’s HIV/AIDS priority setting initiative and the Ad Hoc Committee, which recommended the institutionalization of UNHRO. These examples underscore the discussion above with regards to stakeholder buy-in and engagement in implementation.

There is need to monitor and evaluate priority setting right from the planning process to implementation. Our findings support scholarly literature which has found that there systematic mechanisms for evaluating health research prioritization processes are lacking (25) and a paucity of published information on the implementation and evaluation of HRPS in LICs (5).

Limited evaluation of the degree to which priorities are actually implemented underscore the importance of a framework which looks beyond HRPS which culminates into a list of priorities. This, in many countries, ends up on shelves until yet another exercise. Systematic evaluation and publicizing the findings would examine the degree to which the research that is implemented in a country aligns with the national health research priorities and the health strategic plan. Evaluation would not only support focused allocation of health research funding, but also ensure that there is a synergy between health research and health policy and practice (26, 27).
While, in recent years, there have been efforts to set program and/or disease-specific health research priorities within Uganda (28, 29), to date, there are no recent undertakings on the stock of research in Uganda to better inform future research, to use resources more effectively and efficiently, and to reduce fragmentation of the responsible agencies, research institutions, and research funding agencies.

**Limitations**

The findings should, however, be interpreted with caution. Being a qualitative study with a disproportionate representation of national level respondents, it is difficult for us generalize the findings to sub-national levels. Furthermore, lack of direct observation of the priority setting process may imply that our findings may not accurately reflect actual practice. However, direct observation was beyond the scope of the current study and is a promising area for future research. Finally, there is also the possibility that researchers’ personal experience and knowledge influenced the observations and conclusions related to research problems, reflexivity of the researchers and the stakeholder validation of the results should have mitigated this.

**Conclusions**

While there is political will for undertaking HRPS within the GOU, insufficient funding has led to fragmentation of approaches and applications over the years. Health research priority setting in Uganda faces, challenges with coordination of HRPS efforts by the research coordinating entity (UNHRO), and dependence on external funding. Although all stakeholders have important roles to play in health research management, relevant stakeholders are unclear on the scope of their work, how they are meant to collaborate, and how to best ensure their outputs are coordinated and cost effective.

There is a need for improved coordination of health research across research institutions and other stakeholders. The One Health Platform—a new initiative—is planning to address the need to collaborate across sectors. While it is, still in its infancy and needs support, the initiative shows promise.

While there is sufficient awareness of the different approaches to HRPS at national level, no unified and accepted methodology has been applied consistently. Regardless of which HRPS approach is chosen, this study both point to the fact that the key elements of the process need to be (1) wide stakeholder consultation, (2) agreement of criteria to be used, and (3) a good ranking system.

In addition, there must be a systematic evaluation across all research implementers, in order to (1) align priorities, and (2) ensure the translation of research findings into actions. This will ensure that HRPS leads to the improvement of the population's health.

**References**

1. Chanda-Kapata P, Ngosa W, Hamainza B, Kapiriri L. Health research priority setting in Zambia: A stock taking of approaches conducted from 1998 to 2015. Heal Res Policy Syst [Internet]. 2016;14(72). Available from: http://dx.doi.org/10.1186/s12961-016-0142-z
2. Rudan I, Chopra M, Kapiriri L, Gibson J, Ann M, Carneiro I, et al. Setting Priorities in Global Child Health Research Investments: Universal Challenges and Conceptual Framework. Croat Med J. 2008;49:307–17.
3. Council on Health Research for Development. Essential National Health Research and Priority Setting: Lessons Learned. 1997;75.

4. Yoshida S. Approaches, tools and methods used for setting priorities in health research in the 21st century. J Glob Health. 2016;6(1).

5. McGregor S, Henderson KJ, Kaldor JM. How are health research priorities set in low and middle income countries? A systematic review of published reports. PLoS One. 2014;9(10).

6. Adam T, Ahmad S, Bigdeli M, Ghaffar A, Røttingen JA. Trends in health policy and systems research over the past decade: Still too little capacity in low-income countries. PLoS One. 2011;6(11).

7. Viergever RFR, Olifson S, Ghaffar A, Terry RF. A checklist for health research priority setting: nine common themes of good practice. Heal Res Policy ... [Internet]. 2010;8(1):36. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3018439&tool=pmcentrez&rendertype=abstract%5Cnhttp://www.biomedcentral.com/content/pdf/1478-4505-8-36.pdf

8. Kapiiriri L. Stakeholder involvement in health research priority setting in low income countries: the case of Zambia. Res Involv Engagem. 2018;4(41):1–9.

9. Uneke CJ, Ezeoha AE, Ndukwe CD, Gold Oyibo P, Onwe F, Kaur Aulakh B. Research priority setting for health policy and health systems strengthening in Nigeria: The policymakers’ and stakeholders’ perspective and involvement. Pan Afr Med J. 2013;16:1–10.

10. Kapiiriri L, Arnold E, Campbell S, Chanda-Kapata, Pascalina Kapata-Chanda, Ngosa W, Humainza B. Approaches to Health Research Priority Setting: A Reference Manual Synthesizing the Literature and Demonstrating the Use of the Manual. 2017.

11. Kapiiriri L. International validation of quality indicators for evaluating priority setting in low income countries: Process and key lessons. BMC Health Serv Res. 2017;17(1):1–14.

12. Kapiiriri L, Schuster-Wallace C, Chanda-Kapata P. Evaluating health research priority-setting in low-income countries: A case study of health research priority-setting in Zambia. Heal Res Policy Syst. 2018;16(1):1–12.

13. East African Health Research Commission (EAHRC). Domestic Financing for Health Research: Regional Assessment Survey. Arusha, Tanzania; 2018.

14. Kapiiriri L, Martin DK. Successful priority setting in low and middle income countries: A framework for evaluation. Heal Care Anal. 2010;18(2):129–47.

15. Hennink MM, Kaiser BN, Marconi VC. Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough? Qual Health Res. 2017;27(4):591–608.

16. MoFPED. National Budget Framework Paper. Natl Budg Framew Pap. 2017;(December 2015):15.

17. Health M of. Uganda One Health Strategic Plan 2018 - 2022. Repub Uganda [Internet]. 2018; Available from: http://apps.who.int/medicinedocs/pdf/h2977e/h2977e.pdf

18. Nankinga Z, Kutyabami P, Kibuule D, Kalyango J, Groves S, Bollinger RC, et al. An assessment of Makerere University College of Health Sciences: Optimizing health research capacity to meet Ugandas priorities. BMC Int Health Hum Rights. 2011;11(SUPPL. 1):1–6.

19. Montorzi G, Haan S De, IJsselmuiden C. Priority Setting for Research for Health A management process for countries [Internet]. Development. 2010. Available from: http://www.cohred.org/downloads/Priority_Setting_COHRED_approach_August_2010.pdf
20. World Health Organization (WHO). Priority Setting for Health Policy and Systems Research The Priority-Setting Process: Key Concepts. 2009;1–14. Available from: http://www.who.int/alliance-hpsr/resources/AllianceHPSR_Brief_Note3_ENG.pdf

21. CCGHR. Report on External Consultations for CIHR/IDRC Strategic Plan. Nepean, Canada; 2018.

22. Razavi SD, Kapiriri L, Abelson J, Wilson M. Who is in and who is out? A qualitative analysis of stakeholder participation in priority setting for health in three districts in Uganda. Health Policy Plan. 2019;34(5):358–69.

23. Goold SD, Biddle AK, Klipp G, Hall CN, Danis M. Choosing Healthplans All Together: a deliberative exercise for allocating limited health care resources. J Health Polit Policy Law [Internet]. 2005;30(4):563–601. Available from: http://www.ncbi.nlm.nih.gov/pubmed/16318163

24. Kapiriri L, Chanda-Kapata P. The quest for a framework for sustainable and institutionalised priority-setting for health research in a low-resource setting: The case of Zambia. Heal Res Policy Syst. 2018;16(1):1–12.

25. Tomlinson M, Chopra M, Hoosain N, Rudan I. A review of selected research priority setting processes at national level in low and middle income countries: Towards fair and legitimate priority setting. Heal Res Policy Syst. 2011;9:1–7.

26. Kapiriri L. Does the narrative about the use of evidence in priority setting vary across health programs within the health sector: A case study of 6 programs in a low-income national healthcare system. Int J Heal Policy Manag [Internet]. 2020;9(10):448–58. Available from: https://doi.org/10.15171/ijhpm.2019.133

27. Sanderson I. Evaluation, policy learning and evidence-based policy making. Public Adm. 2002;80(1):1–22.

28. Ditai J, Nakyazze M, Namutebi DA, Auma P, Chebet M, Nalumansi C, et al. Maternal and newborn health priority setting partnership in rural Uganda in association with the James Lind Alliance: a study protocol. 2020;4:1–16.

29. Waiswa P, Okuga M, Kabwijamu L, Akuze J, Sengendo H, Aliganyira P, et al. Using research priority-setting to guide bridging the implementation gap in countries - A case study of the Uganda newborn research priorities in the SDG era. Heal Res Policy Syst. 2019;17(1):1–10.