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Health policy and systems research priority-setting exercise in Ethiopia: a collaborative approach

Getasew Amare[1,3*], Berhanu Fikadie Endehabtu[2,3], Asmamaw Atnafu[1,3], Lemma Derseh[3,4], Kassu Ketema Gurmu[5,6,7], Theodros Getachew[8] and Binyam Tilahun[2,3]

Abstract

Introduction Health policy and systems research (HPSR) is a multi-disciplinary approach of generating health system and policy-level evidence. Setting HPSR agendas is considered as an efficient strategy to map and identify policy and cost-effective research topics, but its practice in developing countries is limited. This paper aimed to conduct a collaborative health policy and system research priority-setting exercise in Ethiopia.

Method The WHO's plan, implement, publish, and evaluate (PIPE) framework and the Delphi technique were used to conduct the priority-setting exercise. The PIPE model was used to lead the priority-setting process from planning to evaluation, while the Delphi technique was used to run the rating and ranking exercise with the aim of reaching a consensus. Two rounds of expert panel workshops supplemented with an online survey were used for the HPSR agenda setting, rating and ranking purposes. Groups were formed using the WHO health system building blocks as a base framework to identify and prioritize the HPSR topics.

Result Under 8 themes, 32 sub-themes and 182 HPSR topics were identified. The identified research themes include leadership management and governance, health policy, health information system, healthcare financing, human resource for health, medical products and supply, service delivery and cross-cutting issues.

Conclusions Priority HPSR topics focussing on national health priority issues were identified. The identified topics were shared with policymakers and academic and research institutions. Evidence generation on the identified priority topics will guide future research endeavours and improve evidence-informed decision-making practice, health system performance and national health goals and targets.

Keywords Health policy and system research (HPSR), Priority setting, Delphi technique

*Correspondence:
Getasew Amare
getasewa23@gmail.com
[1] Department of Health Systems and Policy, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia
[2] Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia
[3] Center for Digital Health and Implementation Science, University of Gondar, Gondar, Ethiopia
[4] Department of Epidemiology and Biostatistics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia
[5] Universal Health Coverage Life Course Cluster, Health Systems Team, World Health Organization Country Office, Addis Ababa, Ethiopia
[6] Department of Health Policy and Management, Jimma University, Jimma, Ethiopia
[7] Department of Health Policy and Global Health, Addis Continental Institute of Public Health, Addis Ababa, Ethiopia
[8] Health System and Reproductive Health Research Directorate, Ethiopian Public Health Institute, Addis Ababa, Ethiopia

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Introduction

The current global health system agenda focusses on strengthening health systems with a system-thinking approach [1, 2]. Health policy and systems research (HPSR) seeks to understand and improve how societies organize themselves to achieve collective health goals and how different actors interact in policy implementation to contribute to policy outcomes [3]. HPSR is experiencing a diverse level of interest [4], and has been identified as essential to scaling up interventions to achieve different health goals in general and universal health coverage (UHC) in particular [5]. Moreover, HPSR is a vital research approach for a responsive, adaptive and resilient health system. It helps with collaboration, fund mapping and priority, efficient and effective resource allocation, as well as with improving health system performance [6]. However, current research priority-setting exercises often do not address HPSR well. HPSR prioritization is crucial, as it helps to best utilize available resources in areas that maximize the impact of research on population health [7]. It also significantly impacts the relevance and utility of evidence to policymakers and decision-makers [3]. Low- and middle-income countries, including Ethiopia, face serious resource scarcity to the healthcare system; these countries need critical, informed, evidence-based decisions on properly allocating resources to the health system [2, 8]. Cognizant of this, allocating limited resources to essential areas of the health system with high impact, priority-setting and ranking the areas of interest is a strategic approach. Timely evidence generation and utilization while allocating resources, designing, implementing and evaluating appropriate interventions is paramount.

Ethiopia has developed and implemented a national health policy since 1993 emphasizing health promotion and disease prevention in rural areas. Moreover, several national health strategic plans and initiatives have been developed for the last 30 years [9]. In 2015, the country launched a long-term health sector transformation roadmap titled Envisioning Ethiopia's Path towards Universal Coverage through Strengthening Primary Health Care. This health sector transformation plan has four phases and a 5-year implementation period. The strategic plan aims to achieve sustainable development goals (SDGs), UHC and global health agendas and targets [10, 11].

Despite all the efforts of developing different strategic health plans, initiatives and transformation agendas, the health outcome improvement of the nation is not progressing as expected. The performance of key health variables and progress towards UHC is still low [12, 13]. The challenges include poor resource allocations, lack of evidence-based decisions, weak public–private partnerships, weak inter-sectoral collaboration and weak academia and health policymakers' collaborations [14–16]. In many developing countries, including Ethiopia, health policy and systems research studies are not the primary focus and lead to decisions without sufficient evidence; thus, the practice of evidence-based initiative, strategic plans and policy development in the health system is limited. Research findings and evidence for different decisions are essential to overcome the challenges.

Most health research in Ethiopia has focussed on clinical and biomedical research and HPSR receives little attention. A scoping review has shown that the research prioritization exercises done in Ethiopia focussed on reproductive maternal, newborn, child and adolescent health and nutrition (RMNCAHN); human immunodeficiency virus (HIV); sexually transmitted diseases; tuberculosis; and coronavirus disease 2019 (COVID-19) [17–20]. Therefore, this paper aimed to conduct a collaborative HPSR priority agenda-setting exercise in the case of Ethiopia.

Methods

Priority-setting approach

In the present paper, the authors employed the WHO's plan, implement, publish and evaluate (PIPE) model [21] and the Delphi technique for the health policy and systems research (HPSR) priority-setting exercise. The PIPE model, which was used in other similar settings [22, 23], served as a framework to guide the overarching implementation of this priority-setting activity. During the planning phase, a scoping review was done to identify what was already known and what was already done in the country, as well as identifying the principles that guide the priority-setting exercise, agreeing upon the methodology and developing an implementation proposal. Key priority-setting activities were done in the implementation phase according to the proposal. At the publishing stage, the findings were communicated with key stakeholders and this manuscript was developed. The final evaluation role was given to the Ministry of Health (MoH) and the Ethiopian Public Health Institute (EPHI) (Fig. 1).

In addition, we conducted two rounds of the Delphi technique, which involved rating and ranking exercises, to reach a consensus on the identified research topics (Fig. 2). The Delphi technique, established during the 1950s, consists of a systematic, multistep procedure that involves expert panellists engaging in a sequence of rounds to pinpoint, elucidate and ultimately reach an agreement on a specific matter. Each round consists of clear, unbiased statements on the basis of prior responses. The goal is to achieve consensus through

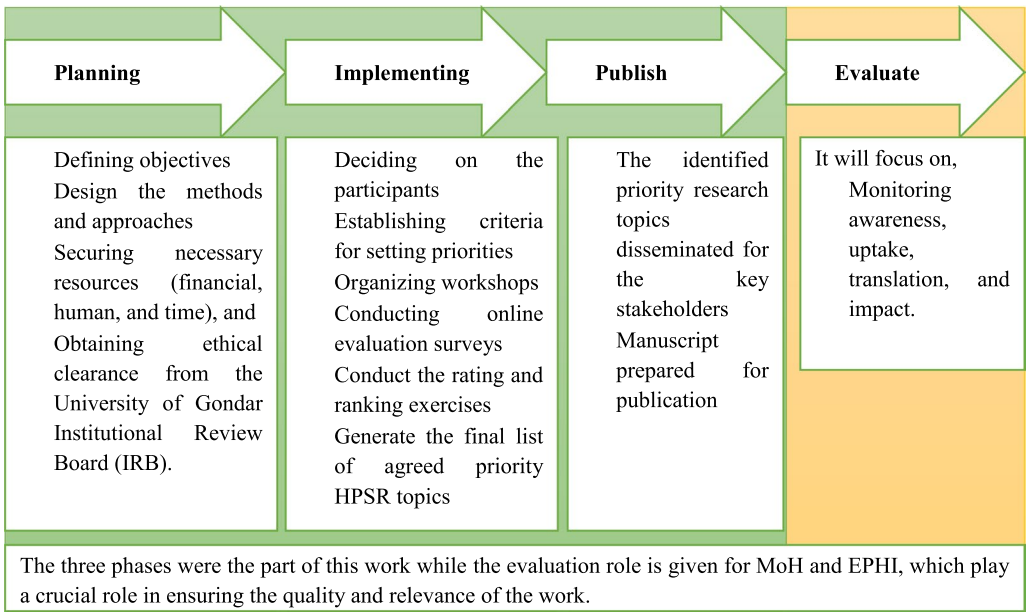

Fig. 1 The PIPE framework used for the HPSR priority-setting exercise adapted from WHO research priority-setting exercise [21]

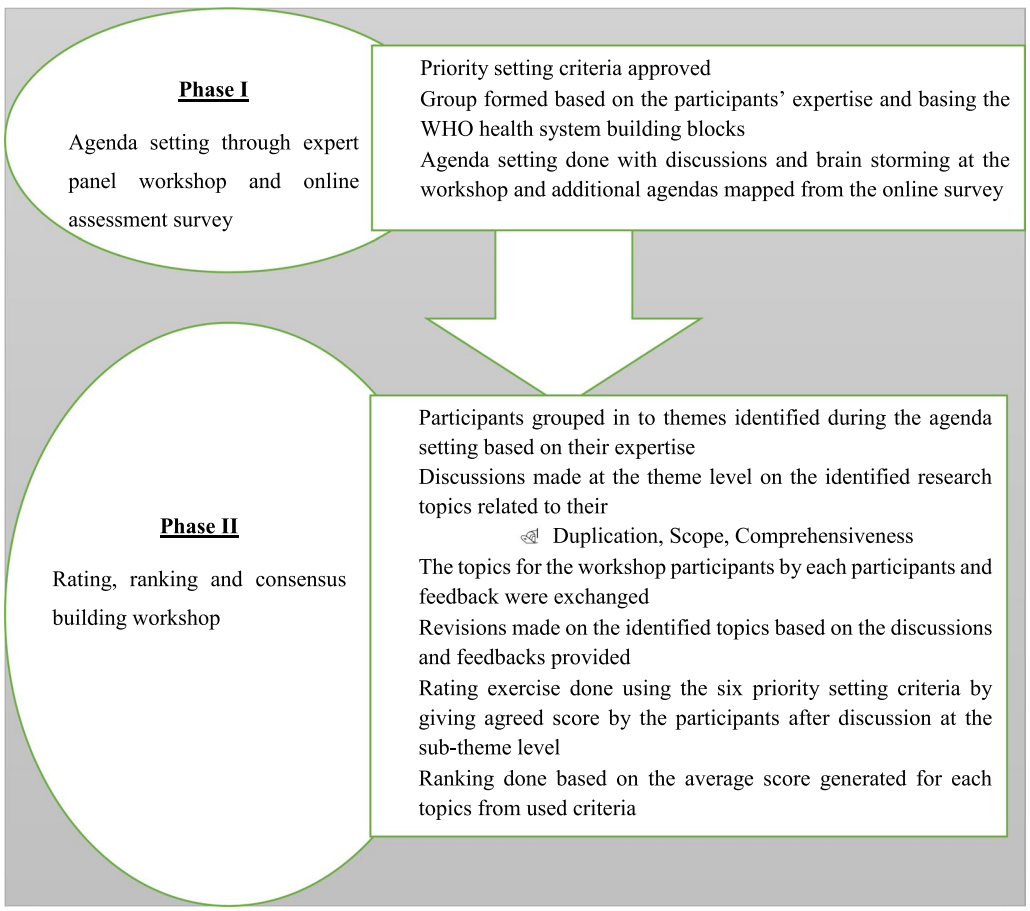

Fig. 2 HPSR priority-setting Delphi technique process

Table 1 HPSR priority-setting criteria with their weights

No	Criteria	Score to be given
1.	(Impact on health) What is the potential for the research findings to impact population health?	0–10
2.	(Relevance for policymakers) How much of a priority is this question for program implementers and policymakers	0–10
3.	(Workability) Likelihood to answer the question using existing routine or survey health datasets	0–10
4.	(Feasibility) How feasible is researching this topic (cost, ethical considerations, expertise, etc.)?	0–10
5.	(Availability of evidence/originality) How much research evidence already exists in relation to this research topic?	0–10
6.	[Practicability of the finding (translation to action)] Is the research result likely translated into health intervention/policy or program action?	0–10

information feedback and repetition, concluding once the agreement has been obtained [24–26]. Different countries used the Delphi technique as a consensus-building approach for health research priority-setting [27–32].

Selection of participants for priority-setting

To select the participants for HPSR priority-setting, the research team, in consultation with the Policy, Strategy, and Research Executive Office of the Ministry of Health of Ethiopia, developed the selection parameters. Initially, before mapping the participants we group the potential HPSR topics on the basis of the WHO health system building blocks and we set parameters to identify participants under each thematic area. The participants were identified on the basis of the parameters set by the research team: active engagement in the area by health system leadership, program implementation, policy development, research and evidence generation, partnership and funding programs. During participant selection we also tried to include participants from different types of organizations who have an active stake in the health system and policy of Ethiopia. Considering their representatives, 112 participants were chosen from diverse organizations such as the MoH, regional health bureaus (RHB), national health agencies, research institutes, universities, development partners, private facilities and community representatives.

The WHO's health system building blocks were used as a foundation for assigning experts in different healthcare areas, including health policy leadership management and governance (LMG), health information systems (HIS), human resources for health (HRH), healthcare financing (HCF) and medical supplies and service delivery [33].

The priority-setting exercise comprised an expert panel workshop complemented by an online assessment survey. Two rounds of workshop for agenda-setting and consensus-building were conducted to ensure a comprehensive approach to the priority-setting process.

Agenda-setting through expert panel workshop and online assessment survey

The HPSR agendas were mapped using the expert panel workshop supplemented by the online assessment survey.

An expert panel workshop was organized with 40 participants to set the HPSR agendas from 21–25 December 2022. During the agenda-setting workshop, the several key activities were performed.

To mention some: the research team presented six HPSR prioritization criteria to workshop participants, and a discussion took place. The prioritization criteria were adapted by review different priority setting approaches by considering importance of the topic in improving the body of knowledge or solving the problem, the alignment with national priority health initiatives, its adaptability to the local context, the capacity of implementation and the key stakeholders' demands [34, 35]. Participants discussed and agreed on the presented priority-setting criteria and their respective weights. The criteria are relevance to policymakers, impact on the health, workability (ability to answer the question using existing data), feasibility (cost, ethics, expertise), availability of evidence and practicability of results (to be translated into action) (Table 1).

The workshop participants were grouped into seven groups using the WHO health system building blocks as a base framework and adding health policy theme. The group formation was based on the participants' profession and expertise. The groups were used as a theme for the identified HPSR research agendas. Each group was assigned to set the HPSR agendas under each theme on the basis of their opinion and the above-mentioned criteria. After setting the HPSR topics, each team presented the identified research topics for the workshop participants, and further discussions were conducted on the topics' scope and context from the HPSR perspective. After the discussions, feedback was

forwarded to each team for revision and amendments. In addition, after the discussion, additional cross-cutting research topics were identified. The team makes revisions to the topics they set and submit by the end of the workshop.

The HPSR agenda-setting practice was also supplemented by an online assessment survey from 72 participants from January to April 2023. The online participants were also identified from different fields of expertise on the basis of the identified themes.

Rating, ranking and consensus building

A workshop with 38 participants was organized from 22–26 July 2023 to conduct rating and ranking exercises and build consensus on the identified research topics. The rating, ranking and consensus building on the priority topics were done through the following steps. Initially, the participants were grouped into seven and discussed the identified topics' relevance, duplication and comprehensiveness.

Then participants conducted the rating and ranking exercise. The rating and ranking exercise was done at the sub-theme level. First, each participant gave their scores and displayed them to the group members for discussion. After brainstorming and a thorough discussion, the group members gave the final and agreed score for each research topic with consensus. The scoring was done by evaluating each research topic under each sub-theme using the pre-defined priority-setting criteria and scoring 0 to 10. For example, under the health policy theme, policy implementation and evaluation sub-theme, five identified topics were evaluated and scored from 0 (least valued) to 10 (highest valued) for each of the six criteria. The average score from the scores given at each criterion was generated for each research topic. Even if the score was considered from 60, in the end we computed it from 100. The ranking was done by comparing the average scores of each research topic from 100 at the sub-theme level.

Each group then presented the final list of priority research topics with scores and ranks for the workshop participants. After discussions, each group collects feedback from the workshop participants for finalization. Finally, the workshop participants presented and approved the revised list of topics as a final list of priority HPSR topics.

Ethical clearance

Ethical clearance was obtained from the University of Gondar's ethical review board (ref. VP/RTT/05/218/2022). Consent was received from the participants, and the participant's anonymity was maintained.

Finding

Participant characteristics

A total of 112 participants participated in the HPSR priority-setting exercise through expert panel workshops and online assessment surveys; 30 experts were from universities and 50 were from national research institutes and the MoH. In addition, 18 experts from developmental partners and 10 from RHBs participated. There were also four participants from private facilities and other government sectors (Table 2).

Prioritized HPSR topics

Findings from the HPSR agenda-setting workshop and the online survey

Under 8 themes, 34 sub-themes and 227 research topics were identified with the agenda-setting workshop and online assessment survey.

Rating, ranking and consensus building of HPSR-identified topics

After the discussion during the consensus building workshop, the participants agreed to approve 182 research topics under 32 sub-themes and 8 themes (Table 3). The identified topics were allied with the current national and global health priority issues and transformation agendas. The average score given during rating ranges from a minimum of 73.3 to a maximum of 96.7 out of 100.

Leadership, management and governance (LMG)

Under LMG-related HPSR topics, 29 research topics were identified under 5 sub-themes (Table 4). The priority topics were healthcare leadership skills and competencies, social governance and accountability, and healthcare management. The evidence on the identified topics will help produce sound evidence and design appropriate and context-specific interventions on one of the critical components of the health system. Transforming healthcare leadership is one of the transformations of Ethiopian HSTP to enhance the healthcare leadership capacity, regulation, accountability, and health planning skills to dive into national health initiatives [11].

Health-policy-related priority HPSR topics

Under the health policy theme, 28 research topics under 3 sub-themes were identified (Table 5). The identified

Table 2 Participant characteristics

No	Characteristics	Level	Frequency	Percent
1.	Age	≤ 40 years	45	40.2
		40–50 years	52	46.4
		> 50 years	15	13.4
2.	Sex	Male	85	75.9
		Female	37	33.0
3.	Institution	MoH	36	32.1
		RHB	10	8.9
		Universities/academic institutions	30	26.8
		Research institutions	14	12.5
		Partners/NGO	18	16.1
		Private health facilities and community representatives	4	3.6
4.	Position	Researcher	55	49.1
		Policy advisor	18	16.1
		Policymaker	19	17.0
		Program manager	10	8.9
		Health system expert	10	8.9
5.	Level of education	PhD	55	49.1
		Master's	45	40.2
		BSc	10	8.9
		Diploma	2	1.8
6.	Years of experience in the health system (Only for the participants other than community representatives who are 2)	≤ 15 years	15	13.4
		15–25 years	58	51.8
		> 25 years	37	33.0
Total			112	100

Table 3 HPSR themes, sub-themes, and priority research topics identified after the consensus-building workshop

No	Themes	Number of sub-themes identified	Number of research topics identified
1.	Leadership, management and governance (LMG)	5	29
2.	Health policy (HP)	3	28
3.	Health information system (HIS)	5	35
4.	Healthcare financing (HCF)	5	23
5.	Human resources for health (HRH)	3	17
6.	Medical product and supply	3	10
7.	Service delivery	8	31
8.	Cross-cutting research topics		9
Total		32	182

priority topics were focussed on population policy needs, policy formulation, implementation and evaluation.

Health information system

For HIS HPSR priority-setting, 35 research topics from 5 sub-themes were identified, and a subsequent rating and ranking exercise was also done (Table 6). The identified research topics, which focussed on digitalization data quality, analysis and use, received priority. These topics align with the national health information system strategy, digital health blueprint initiatives and HSTP transformation agenda. Evidence generated on the selected priority topics will enhance informed

Table 4 Top five health-related HPSR priority topics under each respective sub-themes

No	Priority research topics	Score/100	Rank
Population needs sub-theme			
1.	Identify the policy gaps in emerging and re-emerging infectious disease prevention and control in Ethiopia and determine how to address the identified policy gaps	93.3	1st
2.	Identify the policy gaps concerning chronic disease and trauma prevention and control in Ethiopia and how to address the identified policy gaps or create a resilient health system	91.7	2nd
3.	Examining how the health policy documents align with other sector policy documents (agriculture, education, broadcast agency, ministry of communication, plan minister, CSS, police, security, etc.)	90	3rd
4.	Exploring how the health system can be informed of public concerns (opinions) on health service quality, cost and bureaucracy	88.3	4th
5.	Investigate the approaches that need to be followed to develop a policy document addressing the demands of both urban and rural settings	86.7	5th
6.	Explore how the public and private healthcare system could work in harmony	85	6th
7.	Examining how media access, coverage and capacity can be improved to enhance the health literacy of rural and urban communities (effective communication, health journalism, media brief)	83.3	7th
8.	Exploring how the national media agency policy is in line with the health sector policy documents for facilitating health research evidence and HMIS data communication	81.7	8th
9.	Explore how the health system could address the barriers between local cultures (language, norms, values, etc.) and modern medical practice	80	9th
10.	Identify the policy analysis competencies of policymakers/decision-makers at all health system levels	75	10th
11.	Identify the experiences of health policy agenda-setting in Ethiopia (required standards/procedures according to Ethiopian context)	73.3	11th
Policy formulation sub-theme			
1.	Explore how legal frameworks for modifiable risk factors/behaviours such as the use of tobacco, alcohol, other substances/drugs, sweetened foods/beverages, exercise and safety belts are implemented	91.7	1st
2.	Explore how the current policy documents accommodate policy alternatives (e.g. chronic illness screening and management at the community level, health technology assessment and so on)	90	2nd
3.	Evaluate how the national health policy addresses and considers the issue of Indigenous knowledge (e.g. traditional medicine)	88.3	3rd
4.	Explore how social/economic/political changes affect health policy (from formulation to implementation)	86.7	4th
5.	Explore how potential stakeholders engage in the policy formulation process	85.8	5th
6.	Examine how the policy documents (strategic documents, plans, guidelines, directives, standard procedures) are harmonized from the policy level to tools at the facility level	85	6th
7.	Investigate how the health policy documents accommodate the health workforce forecasting, capacity building, task shifting/sharing for chronic disease management, retention, motivation, etc.	83.3	7th
8.	Examine the extent to which policy documents and strategies are informed by scientific evidence. Identify the criteria for Ethiopia's context	82.5	8th
9.	Identify the health intervention and technology prioritization approaches that should be adopted or adapted in the health system	81.7	9th
10.	Identify the best policy alternatives the health system could establish for data archiving and sharing at all levels	80	10th
11.	Explore how the policy formulation processes of the country forecast the policy demand using different models (e.g. predictive model)	78.3	11th
12.	Investigate how external influences dominate health policy formulation (agenda-setting), implementation and evaluation, including international commitments	75	12th
Policy implementation and evaluation sub-theme			
1.	Identify the health policy implementation challenges encountered (methodology gaps, policy formulation, accountability, law enforcement, measurement, incentive mechanisms)	93.3	1st
2.	Explore how unintended consequences of a health policy can be detected and reverted (mitigated)	91.7	2nd
3.	Identify and test the effects of decentralized (versus centralized) policy on the health system	90	3rd
4.	Investigate how the policy implementation is evaluated using the six WHO health system building blocks (HSPA) or other approaches	88.3	4th
5.	Identify the ways to sustain gains (access, quality, efficiency, equity) of policy implementation	86.7	5th

Table 5 Top five HIS-related HPSR priority topics under each respective sub-theme

No	Priority research topics	Score/100	Rank
Health information system/DH needs sub-theme			
1.	Identify what HIS/DH system provides comprehensive information/evidence for program people, directors and decision-makers to address equity, efficiency and effectiveness	96.7	1st
2.	Investigate how the program needs can be integrated with the national HIS and if all programs have been given equal attention in terms of program monitoring	93.3	2nd
3.	Investigate whether we have program-specific, automated, user-friendly/simplified and mobile-based dashboards to summarize and visualize data from different sources	90	3rd
4.	Identify and compare the required indicators/data at different levels in the health system	88.3	4th
5.	Investigate how we can create a standardized and unique personal/national ID and system for service provision	78.3	5th
6.	Examine how to link individual-level performance (e.g. BSC automation) with institutional plans and targets	76.7	6th
7.	Determine the HIS investment and the sufficiency of HIS costing to address current and future needs gaps	75	7th
Data generation and storage sub-theme			
1.	Investigate and design interventions to address behavioural problems related to data recording, reporting and use by health workers and health managers	95	1st
2.	Examine how the health data are safely stored, managed and shared/utilized from a database/warehouse at all levels	88.3	2nd
3.	Identify strategies that are effective in creating positive attitudes towards quality data generation	86.7	3rd
4.	Investigate whether we have validated, comprehensive, standardized tools (register, tally sheet and reporting forms)	85	4th
5.	Identify the best HIS strategies to implement and how they can be scaled up	81.7	5th
6.	Identify the tool/technology needed to capture appropriate resource allocation, performance monitoring and evaluation information	80	6th
7.	Determine the health workforce's digital literacy level and the skill in computer application. Identify the interventions helpful to improve digital literacy gaps	75	7th
Data quality sub-theme			
1.	Explore how to improve/maintain data quality dimensions (completeness, timeliness and accuracy)	96.7	1st
2.	Investigate how guidelines and SOPs are developed, implemented and evaluated	93.3	2nd
3.	Identify and test contextualized digital solutions to improve data quality (recording, generating, managing and reporting)	91.7	3rd
4.	Explore how to deal with poor data quality's consequences and establish accountability mechanisms	90	4th
5.	Determining the maturity level of the current HIS and different DH systems	86.7	5th
6.	Identify the organizational, technical, cultural and behavioural factors affecting HIS implementation. Interventional studies to overcome the challenges	85	6th
7.	Identify the advantages and disadvantages of global goods (eHealth solutions, DHIS2, etc.) in the HIS	81.7	7th
Data analysis, presentation and dissemination/communication sub-theme			
1.	Examine the capacity to analyse and interpret available data/information from different sources at different levels	95	1st
2.	Investigate how the health messages (information) are prepared, using local language to reach target audiences	91.7	2nd
3.	Identify channels or platforms available/needed for communicating and disseminating information/evidence across different health system levels	90	3rd
4.	To examine how to bridge the gap between evidence to practice and best ways of evidence dissemination strategy	88.3	4th
5.	Investigate the platforms and how research findings are communicated to policymakers	86.7	5th
6.	Assess how to prepare, organize and present data (public speaking, conference, etc.)	85	6th
7.	Examine how the health data are linked to geographical (location) data and their use in the decision support systems	83.3	7th
Data use sub-theme			
1.	To determine whether our system uses available data for performance review at different levels and how regular it is	93.3	1st
2.	Investigate how the routine/research data are utilized for resource allocation and target setting/planning health programs	91.7	2nd
3.	Examine how we use data for program/service quality monitoring and improvement	90	3rd
4.	Explore how we can ensure accountability for data generation and use, including leadership and governance	88.3	4th
5.	Identify and test the motivational strategies/ways to acknowledge the data users	86.7	5th
6.	Explore how the available platforms are effective in linking research outputs with policymakers	85	6th
7.	Explore how to establish functional knowledge translation/management platforms at different levels	83.3	7th

Table 6 Top three healthcare-financing-related HPSR priority topics under each sub-theme

No	Priority research topics	Score/100	Rank
Healthcare financing strategy analysis sub-theme			
1.	It includes exploring how the healthcare financing governance and accountability framework is implemented and its effectiveness	83.3	1st
2.	Explore how the advocacy for healthcare financing is implemented and effective, and identify the implementation challenges	80	2nd
3.	Examine how HCF manuals and guidelines are adaptable, reachable and adherent	76.7	3rd
The evaluation of first-generation HCF reforms sub-theme			
1.	Identify the health sector resource mobilization mechanisms, utilization, trends and challenges	93.3	1st
2.	Investigate how the first generation of HCFR components is implemented and examine its impact on the health system performance	90	2nd
3.	Identify the facilitators and barriers (challenges, lessons learned and experiences) of first-generation HCFR implementation	83.3	3rd
4.	Identify and measure the contribution of sustainable health care financing/healthcare financing reform components on the resilience of the health system/service	80	4th
5.	Explore how exempted services are implemented. Determine the cost of exempted services and identify reimbursement challenges	76.7	5th
6.	Explore the acceptability and feasibility of the sliding scale and examine its contribution to improving financial mobilization and equity	66.7	6th
Implementation status of second-generation HCF reforms sub-theme			
1.	Identify the implementation challenges (structure of payer, regulator and provider), best practices and lessons learned on the CBHI implementation	93.3	1st
2.	Explore how the implementation of social health insurance is acceptable, including its system readiness	90	2nd
3.	Examining how the efficiency and effectiveness of the risk pooling design is approached (single or multiple)	83.3	3rd
4.	Identify and measure the contribution of the health insurance scheme on the health sector performance, health outcome and social protection	81.7	4th
5.	Investigate how the private health facilities are engaged and effective in service delivery	76.7	5th
6.	Evaluate the capacity of health facilities, including their responsiveness in ensuring users' expectations	75	6th
7.	Identify the patient preferences (payment method, modality of service provision, type of profession, facility, etc.) on the CBHI	70	7th
Implementation status of strategic purchasing sub-theme			
1.	Explore the relevance and effectiveness of payment modalities	91.7	1st
2.	Explore the governance and institutional capacities required for effective strategic health purchasing	90	2nd
3.	Explore the challenges of implementing a fee-for-service payment strategy	83.3	3rd
4.	Identify the risks and benefits of purchasing healthcare services from informal sectors such as traditional medicine and examining how it can be integrated with formal healthcare systems	76.7	4th
Equity, efficiency, effectiveness and digitalization of healthcare financing reform components sub-theme			
1.	Examine the efficiency and effectiveness of the HCFR strategies	86.7	1st
2.	Investigate the effect of digital health information systems on the implementation of HCF (revenue generation, contribution collection, membership and claim management and reimbursement)	80	2nd
3.	To examine how the financial contributions and health service utilizations are equitable and the extent to which CBHI financial contributions address the equity gap	76.7	3rd

decision-making and the county's progress towards stated HIS targets [11, 36, 37].

Healthcare financing

The other HPSR priority-setting exercise area was healthcare financing, and 23 priority research topics were identified under 5 sub-themes (Table 7). The priority topics focus on evaluating first-generation HCF reforms and testing different strategic payment modalities. In addition, the other identified priority topics are equity, efficiency and effectiveness in implementing HCF reforms and applying digital health systems. Information on the identified priority topics will help design different HCF implementation strategies. This will help achieve the national healthcare financing initiatives and the country's progress towards universal health coverage [13, 38, 39].

Human resource for health (HRH)

A total of 17 research topics under 3 sub-themes were identified for the HRH theme (Table 8). Under this theme, the identified topics focus on human resource

Table 7 Top-five leadership-, management- and governance-related HPSR priority topics under each sub-theme

No	Research topics	Score/100	Rank
Healthcare accountability sub-theme			
1.	Examine the extent to which the healthcare system is resilient and responsive to societal health problems and needs	88.3	1st
2.	Identify the areas of fraud and theft in healthcare organizations and possible mitigation strategies	86.7	2nd
3.	Identify the key components of an effective accountability framework and its implementation in the healthcare delivery	81.7	3rd
4.	Explore individual and organizational (internal and external) accountabilities in a healthcare organization and how these accountabilities are controlled	78.3	4th
5.	Examine how management decisions are made in the health sectors (transparency, participation, inclusiveness, integrity, accountability)	80	5th
6.	Identify the mechanisms to improve individual and organizational responsibilities	76.7	6th
Leadership and management for health sub-theme			
1.	Examine the implementation of the key leadership and management skills and practices required for effective healthcare delivery	90	1
2.	Determine, test and examine the impact of a change initiative on the performance of the health sector	86.7	2
3.	To examine the level of acceptability and implementation of the health sector change initiatives	85	3
4.	Explore how decision-making, problem-solving and conflict-management practices are implemented in the health sector	83.3	4
5.	Explore the capacity of healthcare managers in creating partnerships and resource mobilization	81.7	5
6.	Investigate the capacity of healthcare managers in team building and organizational management (planning, organizing, directing, staffing and controlling)	78.3	6
7.	Investigate how healthcare organizational culture impacts organizational behaviours, and explore how organizations develop and maintain their culture and behaviour	73.3	7
Social governance for health sub-theme			
1.	Explore the barriers and the extent of social inclusion for individuals with disability identities and concerning gender	96.7	1st
2.	Investigate how health facilities engage stakeholders (communities, providers, regulators, partners, etc.)	93.3	2nd
3.	Explore how communities perceive and develop trust and confidence in the health sector and identify factors influencing their perceptions	91.7	3rd
4.	Examine and explore the level of social accountability in healthcare organizations and their effect on promoting transparency, responsiveness and accountability is effective	88.3	4th
5.	To identify the existing strategies to promote social accountability and how effective they are in achieving their intended outcomes	83.3	5th
Healthcare service and resource governance sub-theme			
1.	Explore how clinical governance is currently implemented in the health sector and identify factors influencing its effectiveness	91.7	1st
2.	Examine the current information governance framework in the health sector and its effect in ensuring the confidentiality, integrity and availability of health information	90	2nd
3.	Explore how human resource governance is currently structured and implemented in the health sector	88.3	3rd
4.	Examine how governance is currently structured and implemented in the pharmaceutical sector and identify factors influencing its effectiveness	86.7	4th
5.	To investigate how the public–private partnerships in the health sector are implemented and determine their effect in achieving their intended health outcomes	86.7	5th
6.	Identify the health sector's legal, ethical and moral behaviours and explore how stakeholders perceive and enforce them	85	6th
7.	Identify the challenges faced in financial governance in the health sector and examine how they impact financial management's transparency, accountability and effectiveness	83.3	7th
Health system governance sub-theme			
1.	How is resource stewardship practised in the healthcare sector, and what factors influence its effectiveness in ensuring the optimal use of resources	86.7	1st
2.	Investigate the level of decentralization in the health sector in a given context, explore how it impacts the accessibility, quality and efficiency of health services	85	2nd
3.	Examine how the healthcare regulation system is currently governed and identify factors that influence its effectiveness in ensuring patient safety and quality of care	81.7	3rd
4.	Examine the level of harmonization and alignment across all levels in the health sectors and explore how it impacts the effectiveness and efficiency of health service delivery	76.7	4th

Table 8 Top-five human resources for health-related HPSR priority topics under each sub-theme

No	Research topics	Score/100	Rank
HRH structure and policy sub-theme			
1.	Explore how the implementation of the HRH policy	88.3	1
2.	Examine how the flooding strategy addresses the health workforce gap and health outcomes	83.3	2
HRHM practice and staffing conditions sub-theme			
1.	Examine the current health workforce density, distribution and skill mix	91.7	1st
2.	Examine the implementation design and consequence of regulations in the dual practice	88.3	2nd
3.	Explore how the health sectors efficiently utilize their staff's knowledge and expertise to improve performance and productivity and its implementation barriers	86.7	3rd
4.	Examine healthcare managers' competency (knowledge, skill and attitude) in implementing HRM practices	85	4th
5.	Identify the current demands and challenges healthcare organizations face in implementing capacity-building processes for their workforce	81.3	5th
6.	Determining the implementation status of CPD and impacts of CPD implementation and staff licensing practice on professional growth and improved performance in the health sector	83.3	6th
7.	Explore how the HRH management is implemented (HR planning, recruitment, selection, training, development, etc.)	81.6	7th
8.	To determine whether any specific HRH policy/governance practices positively impact the budget allocation for capacity building, staff motivation, retention, etc.	81.7	8th
9.	Explore the context, mechanism and outcome of human resource information systems (HRIS) implementation in the health sector	80	9th
10.	Explore how these practices impact the wellbeing, job satisfaction and job performance of the healthcare providers, as well as measuring and testing the impact	78.3	10th
11.	Examine the extent and effects of the health workforce turnover and identify measures that can be done to mitigate problems of staff turnover	76.7	11th
12.	Examine how healthcare providers are executing their roles as described in the job description and specification (challenges and barriers)	76.7	12th
Healthcare provider education and training (private and public institution) sub-theme			
1.	Compare and test the health professional competencies between private and public education graduates	85	1st
2.	Explore how the training institutions manage and determine their enrolment capacity and its implementation challenges	83.3	2nd
3.	Explore the women's representation and leadership role in health and education sectors and the challenges	81.7	3rd

Table 9 Top three medical product and supply-related HPSR priority topics under each sub-theme

No	Research topics	Score/100	Rank
Health technology assessment			
1.	Determine the cost-effectiveness of medical technologies and new health service delivery modalities	91.7	1st
2.	Explore the opportunities and capacity for vaccine, drug, and medical equipment development	90	2nd
3.	Explore innovative technologies' availability, adaptation, management, functionality, interoperability and efficiency to provide quality health services	88.3	3rd
Medical equipment management			
1.	Evaluate medical equipment utilization and management system (equipment selection, purchase, maintenance and disposal)	90	
Supply chain management			
1.	Explore the health regulatory systems and capacity to ensure the safety of health services, medicine (storage, dispensing, prescription, usage, reporting) and supplies	90	1st
2.	Explore the challenges on the supply chain (procurement to use) of medicines and medical supplies and innovative mechanisms to address them	90	2nd
3.	Investigate the quality and efficacy of medicines and medical supplies	88.3	3rd
4.	Explore the dynamics of drug resistance and approaches to mitigate its burden	80	4th
5.	Evaluate the availability and management of essential medical equipment, drugs, reagents and other health commodities	80	5th
6.	Evaluating vaccine efficacy, safety, cold chain and supply chain management	80	6th

Table 10 Top five service-delivery-related HPSR priority topics under each respective sub-theme

No	Research topics	Score/100	Rank
Primary healthcare services sub-theme			
1.	Explore and evaluate approaches to providing equitable, accessible and quality health service	91.7	1st
2.	Explore innovative approaches for health service delivery in IDP settings	91.7	2nd
3.	Evaluating the challenges and impact of out-of-pocket expenditure on health services utilization	88.3	3rd
4.	Community engagement for effective delivery and utilization of primary healthcare services	85	4th
5.	Explore implementation strategies and impact of redesigning health service delivery (HC reform, HEP road map implementation, family health team approach, self-care, task shifting PPP, Privet wing, etc.)	83.3	5th
6.	Evaluate readiness for early childhood development service delivery at primary healthcare units	81.7	6th
7.	Evaluate healthcare provider's motivation, compliance with guidelines and provision of compassionate and competent care	78.3	7th
8.	Identify and test innovation strategies to build a resilient health system in the face of global and local emergencies	75	8th
9.	Evaluation of health service delivery outcomes (mortality, morbidity, disability and so on)	75	9th
Hospital-based services sub-theme			
1.	Assessing the impact of affiliation/collaboration with academic institutes on the quality of health service provision	83.3	1st
2.	Evaluate patient safety and quality of services in hospitals	81.7	2nd
3.	Examine patient care pathways within and between healthcare facilities	81.7	3rd
4.	Access, capacity, capability and timeline of care provision for NCD (CVD, DM, cancer, mental health)	80	4th
5.	Investigating facility readiness, implementation and quality of rehabilitation and palliative care services	78.3	5th
6.	Explore the role of multi-sectoral coordination and collaboration in health service delivery	76.7	6th
Reproductive, maternal, neonatal, child, adolescent and youth health (RMNCAYH) sub-theme			
1.	Identify social determinants of maternal, child, neonatal adolescent and youth health and their impact on service provision and utilization	88.3	1st
2.	Evaluation of maternal and child health service delivery outcomes (mortality, morbidity, disability, complication, etc.)	85	2nd
3.	Explore how the quality of preconception, ANC, IPC, PNC, neonatal and child health service delivery can be improved	81.7	3rd
4.	Examining health system readiness and approaches to deliver comprehensive sexual and reproductive health services for adolescent and youth	80	4th
5.	Exploring barriers to implementing legal and policy actions to mitigate child marriage and pregnancy, GBV	78.3	5th
Prevention and control of major infectious diseases sub-theme			
1.	Examine how to improve the prevention and service quality for common infectious diseases	88.3	1st
2.	Exploring health facilities' readiness and implementation of NTD health services provision	83.3	2nd
3.	Examining how the public health surveillance system can be improved for effective monitoring, detection, and response of emerging and re-emerging infectious diseases	78.3	3rd
Non-communicable diseases sub-theme			
1.	Explore the implementation and health system readiness to provide prevention and treatment of mental health and substance use disorders	81.7	1st
2.	Explore and test innovative approaches to improving the prevention and quality of care for NCD	78.3	2nd
Injuries and accident sub-theme			
1.	Evaluate emergency care service readiness, integration and care pathway (pre-facility, hospital-based care)	81.7	1st
2.	Determine the magnitude, burden on the health system, types, causes, pattern and distribution of injuries and accidents	76.7	2nd
Health promotion sub-theme			
1.	Identify SBCC and other strategies to address social and health system level determinants of health service delivery and utilization	71.7	
Service integration sub-theme			
1.	Explore the use of digital solutions and its impact on improving health service quality, continuum of care and information for decision	81.7	1st
2.	Test innovative approaches to integrate health services in public and private health facilities for better health outcomes	80	2nd
3.	Explore the scope of traditional medicine practices and the potential for integration with the routine health service delivery	76.7	3rd

adequacy, competency, distribution and HRH practices. Research findings on the identified topics will help achieve the national HRH strategic vision, which is to have an adequate number of well-qualified, committed, compassionate, respectful and caring health workers contributing to the health sector vision of Ethiopia [40].

Table 11 HSPR research sub-themes on the cross-cutting health system program in Ethiopia, 2023

No	Cross-cutting HPSR topics
1.	Health systems resilience
2.	Health system responsiveness
3.	Social Determinants of Health
4.	Community engagement (trust building): HEW role
5.	Engagement of health care providers in the formulation and implementation of d/f healthcare reforms (communication, stakeholder engagement and so on)
6.	Multi-sectoral collaboration and coordination (civil service, MOFEC and so on)
7.	The role of global health initiative (GAVI and so on) on human force development and management
8.	Client preferences studies
9.	Economic evaluation of healthcare interventions

Pharmaceutical and medical products and supply

A total of 10 research topics were identified under the medical product and supply theme (Table 9). The priority topics are focussed on health technology assessment, medical equipment and supply chain management. The identified topics align with the national pharmaceutical and medical supply initiatives. Evidence produced in pharmaceutical and medical products and supplies will help to progress the targets set in the program area, which aims to ensure the sustainable supply of quality-assured and affordable pharmaceutical and medical equipment, ensure rational use of medicines, and integrate traditional and modern medicine [41].

Service delivery

In the service delivery theme, 31 research questions were generated under 8 sub-themes (Table 10). The identified priority topics focussed on primary healthcare services; reproductive, maternal, neonatal, child, adolescent and youth health services; hospital services; nutrition; communicable and non-communicable diseases; injuries; and mental health. These topics are the priority and public health concerns of the country. Knowledge generation and synthesis on these priority topics will enhance the practice of evidence-based decisions and interventions to improve service quality, equity and access. In addition, the evidence will support the achievements of the county's HSTP and sustainable development goal targets [11, 42].

Cross-cutting HPSR priority topics

During the discussion of each research topic under each theme, nine priority cross-cutting research topics were identified, and it was decided to bring the theme into a separate cross-cutting theme (Table 11). Health system resilience, responsiveness, social determinants of health, multi-sectoral collaboration, preferences studies, global initiatives' role and economic evaluation of healthcare interventions were among the identified cross-cutting topics. Evidence on the cross-cutting research topics will help to understand the multi-contextual and systemic factors of the health system and to design appropriate interventions with the system thinking approach.

Conclusions

A total of 182 priority HPSR topics were identified with the collaboration of key stakeholders. The topic identification was matches with the current Ethiopian and global health initiatives and targets. The identified research topics tried to address different health system components by referencing the health system building blocks. The HPSR topics were identified under the following themes: health policy, HIS, HCF, LMG, HRH, pharmaceutical and medical product and supply, service delivery and cross-cutting issues.

Application of the findings

The identified priority HPSR topics were disseminated to MoH, RHBs, research and academic institutes. Therefore, the research and academic institutes should do the evidence generation and synthesis practice on the priority research topics. Since the topics identified are referencing the current national and global health priorities by experts with a reach experience in each theme, the evidence produced will help improve the program and health system performance. Moreover, the results of this research will have relevance to the context of Ethiopia. Firstly, the participants were mapped and selected with their active engagement and experience in different aspects of Ethiopian health system and policy development and implementation. Secondly, the process of setting priorities in health policy and systems research (HPSR) specifically addresses the needs, gaps and key areas of focus within the Ethiopian healthcare system.

Abbreviations

EPHI	Ethiopian Public Health Institute
HCF	Healthcare financing
HIV	Human immunodeficiency virus
HIS	Health information system
HPSR	Health policy and system research
HRH	Human resource for health
LMG	Leadership, management and governance
MoH	Ministry of Health
PIPE	Planning, implementing, publish and evaluate
RHB	Regional health bureau
RMNCAHN	Reproductive, maternal, newborn, child and adolescent health and nutrition
SDGs	Sustainable development goals
UHC	Universal health coverage

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B.T. conceived the study and edited the manuscript. G.A., A.A., L.D., T.G. and B.F.E. searched, evaluated, extracted data and drafted the manuscript. K.K.G. edited the manuscript.

Availability of data and materials
Data will be available upon request from the corresponding author.

Declarations

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