Health research prioritization at WHO

An overview of methodology and high level analysis of WHO led health research priority setting exercises

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Acknowledgements

Abbreviations

CAM	Combined Approach Matrix
CHNRI	Child Health and Nutrition Research Initiative
CIPIH	Commission on Intellectual Property Rights, Innovation and Public Health
COHRED	Council on Health Research for Development
DeCS	Health Sciences Descriptors
ePub	WHO electronic publishing process
GSPA	Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property (WHA resolution 61.21)
MESH	Medical Subject Headings
PHI	Public Health, Innovation and Intellectual Property
R&D	Research and Development
RPC	Research Policy and Cooperation
TDR	Special Programme for Research and Training in Tropical Diseases
UNbis	United Nations Bibliographic Information System
WHA	World Health Assembly
WHO	World Health Organization
WHO HQ	WHO headquarters, Geneva, Switzerland
WHOLIS	WHO Library Database

Definitions

Department	Is used as a collective term to describe the 37 operational units within WHO covered by this review.
Gaps in R&D	Missing knowledge in one of the generic areas of research as defined by the WHO strategy on research for health.
Global research priority setting exercise	A research priority setting exercise where priorities are established to be generically relevant without regional constrictions.
Health research areas	A broad term for possible research areas in health including diseases and determinants of health or cross-cutting health research areas.
Information products	This definition encompasses documents, presentations, meeting notes, websites and all other sources of information.
Research	Research is defined by the WHO strategy on research for health as the development of knowledge with the aim of understanding health challenges and mounting an improved response to them. This definition, in the research for health strategy, covers a spectrum of research, which spans five generic areas of activity: measuring the problem; understanding its cause(s); elaborating solutions; translating the solutions

	or evidence into policy, practice and products; and evaluating the effectiveness of solutions.
Research agenda	A list of research topics or questions that will be addressed in the future by a particular institution or country.
Research priorities	A list of research topics or questions that should be addressed with priority, usually following from a process of prioritization of R&D gaps.

Executive Summary

This review was performed in support of element 1.1 of the global strategy and plan of action (GSPA) on public health, innovation and intellectual property and the Priorities Goal actions (a) - (d) of the World Health Organization (WHO) strategy on research for health. Both strategies describe actions to map research and development (R&D) with a view to identifying and prioritizing gaps in R&D.

Introduction

As an initial step towards mapping and identifying research priorities globally, this report describes a review of health research priority setting exercises that have been organized or coordinated through WHO headquarters (HQ) since 2005. The majority of these exercises are undertaken with a view to identifying global health research priorities and usually draw on a wide range of stakeholders. Hence, the priorities that have been set by these exercises can be viewed as indicative of global health research priorities. The review analysed methodologies used to prioritize research and assessed the number of research priority setting exercises that were performed per health area. As such, it informs both the potential for undertaking a global health research prioritization exercise, as well as the necessity of increased guidance on methods for health research prioritization.

Summary of findings

This work found that there is a wide variety of research priority exercises undertaken at WHO. The predominance of these exercises has been in the areas of infectious and communicable disease. In order to identify a global view it remains to be decided whether a meta-analysis or review of these exercises would be appropriate as a summary of global priorities or if a specific global exercise needs to be undertaken. A review of methods used in the prioritization exercises indicates there can be no gold standard or best practice in setting research priorities, but that there is a need and an expressed demand for normative work in this area.

Discussion

This project had two main goals. Firstly to provide an overview of methodologies used for research priority setting by WHO HQ departments. Secondly, it intended to acquire an estimate of the volume of research priority setting per health area by a simple measure of the number of activities in that area. This can provide an initial insight into whether the depth of this work is greater in some health areas than in others as an indicator of research gaps.

In the course of the project 230 information products were identified that discussed research priorities, research agenda or R&D gap analysis. Information products were collected by searching the WHO library database, by searching departmental websites and by interviewing representatives of individual departments. The information products that were found were catalogued in such a manner that provides opportunity for periodical updates.

In analysing the exercises in the catalogue, we found a wide variety of methods being employed. This often involved stakeholder meetings to identify consensus and at times literature review. The use of an established priority setting tool was rare; many departments had developed their own, unique methods to suit their needs. In discussing the exercises with representatives from departments a need for more guidance on research prioritization was regularly expressed.

Research priority setting exercises, research agendas and R&D gap analyses were counted and represented graphically per health area (see Figure s1). For this analysis we used a classification system devised by the WHO electronic publishing process (ePub). A focus on infectious and parasitic diseases was observed, with fewer priority setting activities in the areas of chronic diseases and conditions and of emergencies. A meta-analysis of all the exercises might well serve as an adequate surrogate for a specific or bespoke global health research prioritizaiton exercise, as has been performed in the past.

Information products by WHO HQ since 2005 with research priority setting categorized per ePub level I health topic
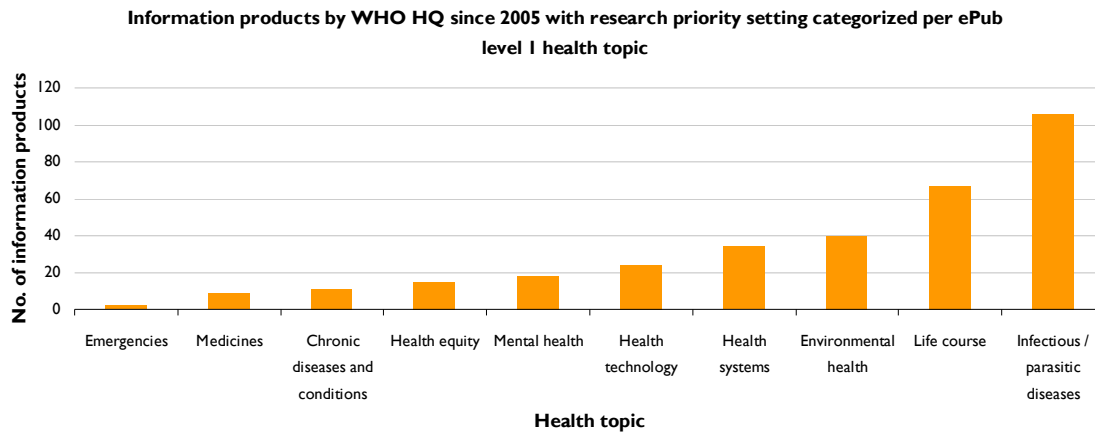
Figure s1

Taking these findings into consideration, several options for next steps were formulated to further work on mapping and prioritizing health R&D as defined by the GSPA and the WHO strategy on research for health:

1. The development of a generic guidance for setting health research priorities, that allows for the necessary flexibility to accommodate different contexts for research prioritization and that reviews existing methodologies, should be considered.

2. An assessment of which countries have and which have not established national health research priorities should be performed.

3. A workplan delineating how WHO should facilitate research priority setting in countries where this has remained absent to date should be created.

4. A consultation of key funders and donors of global health research should be conducted, assessing the need for establishment of coordinated global health research priorities and collecting views on options for implementation of such priorities.

5. An analysis of the impact of previous global health priority setting exercises should be performed, to inform discussion on the necessity and possible approaches to implementation of a potential future exercise.

6. Discussion should be initiated among a broad group of stakeholders (including WHO, health research funders and donors, international research organizations, other international intergovernmental organizations and national governments) on possible approaches to and methods for global health research prioritization.

7. Coordination of health research prioritization, in whatever form, should be a continuous process, subject to periodical re-evaluation.

Background on the GSPA and the WHO strategy on research for health

This project was undertaken by the Department of Public Health, Innovation and Intellectual Property (PHI) *(1)* and by the WHO strategy on research for health, Department of Research Policy and Cooperation (RPC) *(2)*. The results of the project will inform both programs. A short overview of these programs and their relation to the project is provided here.

Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property

The GSPA was adopted by the sixty-first World Health Assembly (WHA) in 2008.*(3)* Among others, it aims to

> "promote new thinking on innovation and access to medicines, as well as, based on the recommendations of the CIPIH report, provide a medium-term framework for securing an enhanced and sustainable basis for needs driven essential health research and development relevant to diseases which disproportionately affect developing countries, proposing clear objectives and priorities for R&D, and estimating funding needs in this area".

The GSPA consists of eight elements. This project addresses element 1, which defines the actions that are to be taken to prioritize research and development needs.

WHO strategy on research for health

The WHO strategy on research for health was adopted at the sixty-third WHA in 2010.*(4)* The vision of the WHO strategy on research for health is that decisions and actions to improve health and enhance health equity are grounded in evidence from research. Five interrelated goals have been defined to enable WHO to achieve this vision:
- *Organization* – this involves the strengthening of the research culture across WHO.
- *Priorities* – this concerns the reinforcement of research (at national, regional and global levels, and within WHO) in response to priority health needs.
- *Capacity* – this relates to the provision of support to the strengthening of national systems for health research.
- *Standards* – this concerns the promotion of good practice in research, drawing on WHO's core function of setting norms and standards.
- *Translation* – this involves the strengthening of links between the policy, practice and products of research.

This project addresses the *Priorities* and *Organization* goals of the WHO strategy on research for health.

Introduction

Methods for research priority setting

Setting priorities for research is a complex process. Although there are several tools available to guide this process,*(5-7)* there is general consensus that there can be no best practice for research priority setting, due to contextual differences between individual priority setting exercises.
Element 1.1 (a) of the GSPA reads that action needs to be taken to

> 1.1 (a) "develop methodologies and mechanisms to identify gaps in research on type II and III diseases and on developing countries' specific R&D needs in relation to type I diseases".

The project assessed what kind of methodologies and mechanisms were employed by WHO staff in setting research priorities since 2005. Because the assessment was in part based on expert consultation, insight was obtained into the need for guidance on the process of research priority setting.

GOAL 1: To acquire an overview of *methods* for research priority setting used by departments at WHO HQ.

GOAL 2: To identify a potential need for normative work on the process of research priority setting.

RATIONALE: Acquiring an overview of *methods* used for research priority setting at WHO in past years and identifying a potential need for more guidance on this topic is in line with element 1.1 (a) of the GSPA and will contribute to informing future discussion on next steps necessary for mapping and prioritizing health R&D, as defined by the WHO strategy on research for health and element 1.1 and 1.2 of the GSPA.

Mapping global R&D

Recently, the report of the WHO Expert Working Group on Research and Development Financing was completed.*(8)* Inter alia, this report discusses possible mechanisms for increased coordination of research and development on a global level. It proposes a globally coordinated approach to R&D, involving three key elements: coordination in the identification of priorities for action, coordination in the distribution of research among various entities and coordination in the financing of R&D.
The call for increased coordination of health research on a global level by the WHO Expert Working Group report on Research and Development Financing is not novel. Three previous exercises that established global priorities for health research discussed this subject.
Chapter seven of the 1990 report by the Commission on Health Research for Development discusses the need for an overview mechanism for global health research: *(9)*

> "The complex worldwide system for promoting health research on health and development lacks an effective overview mechanism." … "It is difficult to escape the conclusion that the current system of promoting research on developing-country health problems is fragmented and lacks overall coherence. No mechanism exists currently to identify and promote research on problems that lack an advocacy group."

Chapter seven of the 1996 report from the Ad Hoc Committee on Health Research Relating to Future Intervention Options came to a similar conclusion and proposes a global forum to bring

donors and funders for health research together (which resulted in the establishment of the Global Forum for Health Research): *(10)*

> "In the Committee's view, there is a need for a mechanism to enable the review of global health needs, the assessment of R&D opportunities and the monitoring of resource flows." … "A new collaboration, which might be called the Forum for Investors in International Health R&D, could bring governments, other investors and scientists together to perform these functions."

Chapter seven of the 1998 report of the Advisory Committee on Health Research also discusses the topic of global health research coordination and even proposes a strategic concept: *(11)*

> "In order to mobilize the entire scientific community and partners to implement a Research Policy Agenda in support of global health development, it is proposed to initiate and sustain a systematic, dynamic process of dialogue, joint planning and multidisciplinary participation in research, making fullest use of modern information and communication technologies, and acting through a global network of 'intelligent' research networks that address the major research imperatives and opportunities in all domains affecting human health."

The first key element of a globally coordinated approach to health R&D according to the WHO Expert Working Group report on Research and Development Financing – the identification of R&D gaps and the prioritization thereof – is also recognized in the GSPA in the form of elements 1.1 and 1.2, which specify that action needs to be taken on

> (1.1) "mapping global research and development with a view to identifying gaps in research and development on diseases that disproportionately affect developing countries"

and

> (1.2) "formulating explicit prioritized strategies for research and development at country, regional and inter-regional levels".

The WHO strategy on research for health also specifically calls for an increase in coordination of health R&D prioritization on national and global levels, with the following expected results:

- "Greater awareness of, and action on, research priorities at a national level"
- "Greater awareness of, and action on, research priorities at regional and global levels"
- "Improved cooperation and coordination among research funders and other key partners to align global resources so that priority needs for research for health can be met"
- "More robust agendas for research on specific priority areas that are facilitated by WHO, and greater coherence and clarity concerning WHO's involvement therein"

To inform possible next steps on mapping and prioritizing global R&D, this project assessed the volume of health research priority setting exercises led by WHO HQ since 2005 and analysed these per health area. The inclusive nature and global scope of research priority setting at WHO make an analysis of WHO led exercises a plausible surrogate and a useful precursor for a potential global, more comprehensive evaluation.

> **GOAL 3**: To acquire an overview of the *volume* of research priority setting exercises per health area, to investigate whether there are health areas where research priority setting is less or more common than in others.
>
> **RATIONALE**: By acquiring an overview of the *volume* of research priority setting exercises per health area at WHO HQ, we hope to be able to inform future discussion on next steps necessary for mapping and prioritizing health R&D on national, regional and international levels, as defined by the WHO strategy on research for health and element 1.1 and 1.2 of the GSPA.

Methods

Data collection

All information products containing research priorities, a research agenda or gaps in R&D that were led by WHO HQ and produced since 2005 were collected. Information products were collected using a three-step process that was meant to minimize the possibility of missing any relevant information products:

1. A search of the WHO Library Database (WHOLIS) was performed. The following keywords were used: (research AND agenda) OR (research AND priorities) OR (research AND priority). Information products originating from the year 2005 or later that were found were scanned for the presence of research priorities, a research agenda or gaps in R&D.
2. All information products produced since 2005 in "publications" sections of departmental websites were manually scanned for the presence of research priorities, research agenda or gaps in R&D.[*]
3. Departments were contacted to confirm information products found and asked to provide any missing information products containing research priorities, research agenda or gaps in R&D. Information products from before 2005 were included if they were indicated to still be relevant today. Information products since 2005 were omitted if they were indicated to be obsolete.

Assessment of employed methods

A quality assessment framework was developed that assessed all information products on key methodological approaches in setting research priorities. For every information product that was found, nine questions were answered (see Table 1). This analysis was repeated for the subset of information products whose main purpose was research priority setting.[†]

Assessment of volume of research priority setting per health area

To acquire an overview of the *volume* of priority setting exercises per health area, information products were categorized according to the classification scheme of health topics as used by the WHO electronic publishing process (ePub). This scheme was developed by the WHO Web team and the WHO Library, combining terms from Medical Subject Headings (MESH), the United Nations Bibliographic Information System (UNbis), WHO specific terms and DeCS (Health Sciences Descriptors) and adapted by the WHO Press for electronic publishing purposes. The scheme was chosen because of its inclusive nature, encompassing all possible health topics that are subjects of research at WHO. As used in the electronic publishing process, each information product can only have one category. We allowed for multiple categories per information product. This analysis was repeated for the subset of information products whose main purpose was research priority setting.

Limitations

The study was bound by several limitations.

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[*] Two departments had a very extensive publications section that did not allow for manual searching (Health System Governance and Service Delivery (HDS) and Essential Medicines and Pharmaceutical Policies (EMP)). These publications sections were searched using a web search engine and the keywords: "research priorities" OR "research agenda" OR "research needs" OR "priorities for research".
[†] *Main purpose* was defined as the establishment of research priorities, research agenda or R&D gaps being the primary aim of the information product, or these terms being mentioned in the title of the information product.

Firstly, although we were systematic in our search strategy for information products that discussed research priority setting, it is possible that we missed certain information products, especially those in the form of grey literature or meeting notes. We have attempted to limit the number of missed information products by confirming our findings with representatives of all WHO HQ departments.

Secondly, in applying the quality assessment framework, we were dependant on the information provided in the information products. This limited the aspects of priority setting methods that we could assess. For example, an evaluation of how many priority setting exercises used literature review would have been an interesting outcome. However, due to the large differences in terminology used and the lack of clarity surrounding the term "review" in many information products, we decided to omit this evaluation.

Thirdly, there was large variation among different information products in the scope of established research priorities. For example, one exercise might look at research priorities for malaria globally, while another focuses on research priorities for preventive measures in the form of bed nets in a certain region. This makes comparison of research priorities difficult and limits the implications of quantitative analyses. We have attempted to remediate this issue by presenting separate results for information products whose main purpose was research priority setting.

Fourthly, we noticed during the assessment that definitions for research priority setting, research agenda setting and R&D or knowledge gap analysis are often used interchangeably. Although these definitions imply different things, we therefore chose to analyse information products discussing any of these concepts as one group.

Fifthly, this assessment limits itself to exercises led by WHO HQ since 2005. Therefore, the assessment cannot be taken as a true measure of the global situation. However, because the majority of priority setting exercises were undertaken with a view to identifying global health research priorities and usually draw on a wide range of stakeholders, these exercises can be viewed as indicative of global priorities and a review of their methodologies and resultant recommendations can inform any potential for undertaking a bespoke global exercise.

Results

Catalogue

230 information products were found. A catalogue of these information products was created. The catalogue is intended to be a 'living' document and allows for periodical updates. The results as presented here are based on the catalogued information products on 20 April 2010.

Assessment of employed methods

The quality assessment framework that was developed was applied to the 230 information products that were catalogued. The results of this assessment can be found in Table 1.

Question	Answer	%	N
Was the main purpose of the information product to set research priorities, research agenda or evaluate R&D gaps? [*]	Yes: No:	27% 73%	62 168
What was the scope of the exercise?	Global: Regional: National: WHO: Global and regional: Global and WHO:	87% 4% 0% 7% 0% 1%	200 10 1 15 1 3
Was it mentioned that the exercise was informed by a priority setting exercise with a different geographical scope, or that it will inform another exercise with a different scope in the future?	Yes: No:	7% 93%	16 214
Were stakeholders consulted as part of the research priority setting process?	Yes: No: Not mentioned:	66% 29% 6%	151 66 13
When stakeholders were consulted, how were the priorities set?	Consensus: Ranking (metrics based): Ranking + consensus: Compiled by the authors of the final document:	84% 8% 3% 5%	127 12 5 7
When stakeholders were consulted, was a list of participants provided in the final document?	Yes: No:	75% 25%	113 38
Did the information product mention plans for revision of the research priorities, agenda or R&D gaps, or was a timeframe provided for which these were expected to remain relevant, or was a governance structure in place ensuring periodical revision?	Yes: No:	34% 66%	79 151
Was the use of criteria mentioned to be part of the process of setting research priorities?	Yes: No:	10% 90%	22 208
Was the use of any established tools mentioned to be part of the process of setting research priorities?	Yes: No:	3% 97%	7 [†] 223

Table 1 - Quality assessment framework

[*] *Main purpose* was defined as the establishment of research priorities, research agenda or R&D gaps being the primary aim of the information product, or these terms being mentioned in the title of the information product.
[†] One information product mentioned use of the Combined Approach Matrix (CAM), five information products mentioned used of the Child Health and Nutrition Research Initiative (CHNRI) approach and one information product mentioned use of Delphi techniques.

The quality assessment framework was also applied separately to the subset of 62 information products whose main purpose was to set research priorities. The results of this assessment can be found in Appendix 1.

Assessment of volume of research priority setting per health area

The number of information products per health area was evaluated. When classified according to level 1 health topics as used by the WHO ePub, the distribution of research priority setting at WHO HQ is as in Figure 1.

Information products by WHO HQ with research priority setting categorized per ePub level I health topic (2005 - 2009)
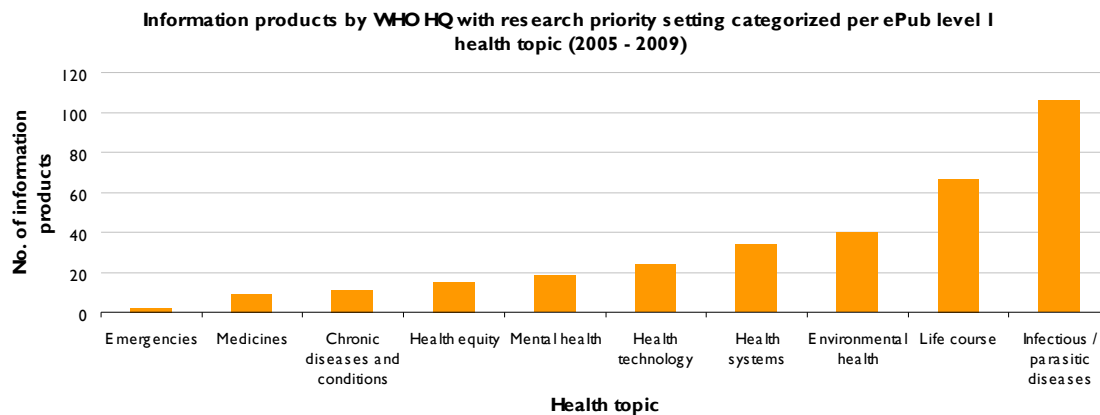
Figure 1

To acquire a more in-depth view on priority setting exercises and information products that discussed research prioritization specifically, we repeated abovementioned analysis only for the 62 information products whose main purpose was research priority setting. The results of this analysis can be found in Appendix 2.

The catalogued information products were also classified according to *level 2* health topics as used by the WHO ePub. The results of this classification can be found in Appendix 3.

Lastly, in Appendix 4 the number of information products is presented categorized per WHO HQ department.

Discussion

This project should be seen as an initial step towards mapping global health R&D with a view to identifying gaps in research and setting priorities for research, as specified by the GSPA and the WHO strategy on research for health. Our assessment only included priority setting exercises led by WHO HQ. Although this sample is limited, the scope of research priority setting exercises that were assessed was generally global (i.e. priorities were established to be generically relevant without regional constrictions) and this analysis can therefore be viewed as indicative for global health research priority setting. Secondly, this project analysed methods used for health research priority setting at WHO HQ, assessing and addressing the need for normative work on this issue.

Several conclusions can be drawn from the project. Firstly, the assessment of volume of research priority setting exercises per health area provided results that have a relevance for future identification of global health research priorities. From our analysis a focus on infectious and parasitic diseases became apparent with less priority setting in the areas of chronic diseases and conditions and of emergencies. This assessment cannot be taken as a true measure of the global situation, but if there are health areas where research priorities have remained absent on a global level, than to set research priorities for these areas should be a priority. It remains to be decided whether a meta-analysis or review of previous global priority setting exercises would be appropriate as a summary of global health research priorities, or if a specific global exercise needs to be undertaken (see Options for next steps).

Secondly, this project shows that a wide variety of research priority exercises was undertaken at WHO HQ and that researchers often chose to develop their own, unique methods for setting research priorities, rather than using one of the available tools for research prioritization. A need for more guidance on the topic was often expressed. The contextual differences between individual exercises confirmed that a gold standard or best practice for research priority setting is not appropriate.

Options for next steps

We provide options for next steps here below for the elements of the GSPA and the WHO strategy on research for health that are relevant to this project. This discussion is meant to inform further action by the Department of Public Health, Innovation and Intellectual Property and the WHO strategy on research for health on health research prioritization.

Guidance on the process of research prioritization

The GSPA specifies that action should be taken to

> 1.1 (a) "develop methodologies and mechanisms to identify gaps in research on type II and III diseases and on developing countries' specific R&D needs in relation to type I diseases".

Additionally, our review showed an expressed need among researchers for more guidance on the process of setting health research priorities. Because there are already several tools available to provide this guidance, *reviewing* existing methodologies and mechanisms should be the first step in addressing element 1.1 (a), rather than *developing* new methodologies and mechanisms. There is general consensus among researchers that there can be no best practice for this process, but that there are key aspects that should be given consideration. The possibility for developing a generic guidance that allows for the necessary flexibility to accommodate different contexts and that reviews existing methodologies should be explored.

> Next step 1: The development of a generic guidance for setting health research priorities, that allows for the necessary flexibility to accommodate different contexts for research prioritization and that reviews existing methodologies, should be considered.

Coordination of research prioritization

The GSPA specifies that action should be taken to

> 1.1 (b) "disseminate information on identified gaps, and evaluate their consequences on public health"

> 1.1 (c) "provide an assessment of identified gaps at different levels – national, regional and international – to guide research aimed at developing affordable and therapeutically sound products to meet public health needs"

> 1.2 (a) "set research priorities so as to address public health needs and implement public health policy based on appropriate and regular needs assessments"

These three elements are in line with the recommendations of the WHO Expert Working Group report on Research and Development Financing, that calls for coordination in the identification of priorities for R&D.*(8)* Here below we discuss coordination of health research prioritization on two different levels: nationally and globally.

On a national level

The GSPA specifies that action should be taken to

> 1.2 (d) "urge the leadership and commitment of governments, regional and international organizations and the private sector in determining priorities for R&D to address public health need".

Additionally, in order to champion research that addresses priority health needs the WHO strategy on research for health expects to produce

> "greater awareness of, and action on, research priorities at a national level".

On a **national level**, the responsibility for providing an assessment of R&D gaps and prioritization thereof lies with the respective governments. However, in accordance with element 1.2 (d) of the GSPA, WHO HQ can take lead in the coordination of national health research priority setting exercises in cooperation with the WHO regional offices and urge the leadership and commitment of governments in determining priorities for R&D. Firstly, an assessment of which countries have and which have not prioritized national health research should be conducted. Work in this direction has already been performed by Ahmedov et al, for 38 countries.*(29)* This analysis should be expanded to all WHO member states. The Health Research Web by COHRED contains a section on national health research priorities and could aid in such an assessment.*(30)* Secondly, a work plan delineating how WHO should work with countries that have so far not set national health research priorities should be created. WHO's role in these exercises should be that of facilitator. Emphasis should be put on the importance of periodicity of these exercises: they should not be singular and plans for periodical re-evaluation should form an integral part of the exercises. Cooperation with international research organizations with experience in research priority setting should be considered in the facilitation of health research prioritization on a national level.

> Next step 2: An assessment of which countries have and which have not established national health research priorities should be performed.

> Next step 3: A workplan delineating how WHO should facilitate research priority setting in countries where this has remained absent to date should be created.

A potential future global exercise as described below could also be used by member states in the process of establishing national research priorities. To illustrate, the Special Programme for Research and Training in Tropical Diseases (TDR) is currently involved in a global priority setting exercise for research on infectious diseases of poverty.*(31)* As part of this exercise, an advocacy group will be established that will attempt to engender commitment at country level for the established research priorities, promoting utilization of the global priorities for national research priority setting exercises.

On a global level - Is there a need for global health research priorities?

In order to champion research that addresses priority health needs the WHO strategy on research for health expects to produce

> "improved cooperation and coordination among research funders and other key partners to align global resources so that priority needs for research for health can be met".

Coordination of health research priorities on a **global level** is an important part of the establishment of a platform for the coordination of health research.*(8;32)* There are several challenges that concern the coordination of identification of research priorities on a global level, the most important obstacle being how to involve the great diversity of funders and donors in such a process. Before embarking on establishing global health research priorities, due consideration should be given to the need for such an exercise and to options for implementation according to funders and donors.

> Next step 4: A consultation of key funders and donors of global health research should be conducted, assessing the need for establishment of coordinated global health research priorities and collecting views on options for implementation of such priorities.

As discussed in the introduction, several large global health research priority setting exercises have been performed in the past.*(9-11)* An analysis of the *impact* of these previous global exercises would also inform the necessity of a similar potential future exercise and would provide insight into best implementation practices. Possible indicators for such an analysis could be changes in research output and in funding flows towards research based on the established research priorities, and national governments setting national research priorities based on the global exercise.

> Next step 5: An analysis of the impact of previous global health research priority setting exercises should be performed, to inform discussion on the necessity and possible approaches to implementation of a potential future exercise.

Possible approaches to research priority setting on a global level

In order to champion research that addresses priority health needs the WHO strategy on research for health expects to produce

"greater awareness of, and action on, research priorities at regional and global levels".

This section presents different possible approaches to an assessment of R&D gaps and prioritization thereof on a global level. The first two options are aimed at establishing global health research priorities. The third option discusses an alternative approach.

1. Global review of health research priorities, research agendas and gaps in R&D

    The approach for a global review of research priorities could be similar to the approach used in this project, aiming to acquire insight into the presence or absence of research priorities per health area. To achieve establishment of global health research priorities through review of previous exercises (a meta-analysis), previously set priorities would have to be compiled per health area.
    Advantages: A review of previous priority setting exercises would be informative with regards to identification of areas where research priority setting has remained absent and would contribute to dissemination of information on gaps that have been established previously.
    Disadvantages: Several difficulties would complicate such a meta-analysis. It is likely that more than one research priority setting exercise has been performed per health area. Contextual factors and approaches to the priority setting process can differ greatly per priority setting exercise. It is difficult to imagine how the results of different exercises with different underlying contextual factors and approaches could be compiled. Combining the results of different exercises into one new research agenda would per definition be so subjective, that a new priority setting process would have to be employed. Also, merely reviewing previous exercises that set research priorities per health area does not provide any information about prioritization among different health research areas.

2. The creation of a committee that would establish global health research priorities

    This option entails a novel health research priority setting process, similar to those exercises performed by the Commission on Health Research for Development in 1990 *(9)*, the Ad Hoc Committee on Health Research Relating to Future Intervention Options in 1996 *(10)* and the Advisory Committee for Health Research in 1998 *(11)*.
    Advantages: Such an undertaking would prioritize health areas and set priorities per health area. Furthermore, the process for the setting of priorities could be newly initiated and would therefore be conform across different health areas and cross-cutting research areas, avoiding problems with compilation of exercises of a different nature as under the previous option.
    Disadvantages: This option negates all research priority setting exercises that have been performed on a health area level. The acceptance of and support for newly established

research priorities might therefore be questionable. Secondly, this would be a large undertaking, requiring substantial resources. Thirdly, implementation is key in this option, a solitary document without any funding and/or policy implications will not be useful. Aligning the wishes of the different global health research funders and donors would be a challenge. Fourthly, this option would not entail a review of research priority setting exercises and would therefore not reveal health areas in which there has been no research priority setting in the past.

Note 1: Should this option be evoked, it might merit from a review of the impact of previous similar exercises as under next step 5. This could inform the decision of whether such an exercise should be performed at all and if so, if there are elements that deserve particular attention (especially elements concerning implementation).

Note 2: The value of an exercise such as this might lie in its implicit rather than in its explicit value to inform priority setting for research. Funders and donors are unlikely to adopt literally or commit financially to the priorities set by a committee. They might however take priorities that are set into consideration to inform institutional priority setting processes.

3. A platform for collection of research priority setting exercises

Contrary to the two previous options, this option does not entail the establishment of global health research priorities. Importantly, this does not imply that there can be no coordination in global health research prioritization. A platform where research priority setting exercises are collected (but not compiled) per health area and/or region would provide useful input for funders and other decision makers.* This option does not differ substantially from the global review of option 1, only in that it does not pursue compilation of different exercises. As for the first option, prioritization of health areas could be initiated separately.

Advantages: This approach would avoid compilation issues as under option 1. Also, it would be based on previous priority setting exercises, increasing overall acceptability. Finally, health areas where there has been no research priority setting could be identified.

Disadvantages: This approach would provide a lesser degree of usability than the other two options. It would not present a coordinated set of global health research priorities. Although health areas might be prioritized separately, this prioritization would be delinked from prioritization of research issues or questions.

Next step 6: Discussion should be initiated among a broad group of stakeholders (including WHO, health research funders and donors, international research organizations, other international intergovernmental organizations and national governments) on possible approaches to and methods for global health research prioritization.

Overall note on periodicity

The GSPA specifies that action should be taken to

1.2 (a) "set research priorities so as to address public health needs and implement public health policy based on appropriate and **regular** needs assessments".

The identification of health research priorities should be seen in the broader context of health research coordination and should inform funding and policymaking for health research. Whichever of the abovementioned approaches to coordination of research prioritization is taken, the process should be subject to periodical re-evaluation. Singular exercises without plans for revision or re-evaluation do not deserve recommendation. A governance structure on research coordination ("global health observatory") as proposed by the Expert Working Group on Public Health, Innovation and Intellectual Property, incorporating coordination of research prioritization as one of the objectives, would ensure continuity in this regard.*(8)* An overview of R&D gaps,

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* The Health Research Web by COHRED is an example of such an approach. National research priority setting exercises are collected here on an online, interactive platform.

research priorities and financial flows for research could for example inform periodical health research policy meetings such as the four yearly Ministerial Summit on Health Research.

> Next step 7: Coordination of health research prioritization, in whatever form, should be a continuous process, subject to periodical re-evaluation.

Health systems research priorities

The GSPA specifies that action should be taken to

> 1.2 (c) "include research and development needs on health systems in a prioritized strategy".

The Alliance for Health Policy and Systems Research performed a research priority setting exercise in 2008, in the areas of *health workforce*, *health financing* and *the role of the non-state sector.* The documents describing the research priorities and the methods used in the establishment thereof can be accessed through the website of the Alliance.* The regional exercises that informed this global exercise can also be found on the same website. One regional exercise was published *(33)*, as well as the methodologies used by the Alliance in the process of research priority setting *(25)*.

Furthermore, a symposium on health systems research organized by WHO and partners is currently planned for November 2010. The symposium will take further the research agenda set by the Alliance in 2008 by also incorporating other areas of health systems research. This goal is reflected in the second objective of the symposium, which is to

> "develop a global agenda of priority research on accelerating progress towards universal health coverage".

Finally, a priority setting process is currently being initiated by the Alliance in the area of access to medicines.

Elements that were not discussed

Recommendations for element 1.2 (b) and (e) of the GSPA fall outside the scope of this report. Recommendations for

> "more robust agendas for research on specific priority areas that are facilitated by WHO, and greater coherence and clarity concerning WHO's involvement therein"

as specified by the WHO strategy on research for health also fall outside the scope of this report.

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* http://www.who.int/alliance-hpsr/researchsynthesis/project1/en/index.html

Appendix 1 - Quality assessment framework for information products whose main purpose was research priority setting

| Question	Answer	%	N
What was the scope of the exercise?	Global: Regional: National: WHO: Global and regional: Global and WHO:	76% 8% 0% 11% 2% 3%	47 5 0 7 1 2
Was it mentioned that the exercise was informed by a priority setting exercise with a different geographical scope, or that it will inform another exercise with a different scope in the future?	Yes: No:	18% 82%	11 51
Were stakeholders consulted as part of the research priority setting process?	Yes: No: Not mentioned:	79% 15% 6%	49 9 4
When stakeholders were consulted, how were the priorities set?	Consensus: Ranking (metrics based): Ranking + consensus: Compiled by the authors of the final document:	61% 20% 8% 10%	30 10 4 5
When stakeholders were consulted, was a list of participants provided in the final document?	Yes: No:	71% 29%	35 14
Did the information product mention plans for revision of the research priorities, agenda or R&D gaps, or was a timeframe provided for which these were expected to remain relevant, or was a governance structure in place ensuring periodical revision?	Yes: No:	52% 48%	32 30
Was the use of criteria mentioned to be part of the process of setting research priorities?	Yes: No:	31% 69%	19 43
Was the use of any established tools mentioned to be part of the process of setting research priorities?	Yes: No:	11% 89%	7[*] 55

Quality assessment framework (only for information products whose main purpose was to set research priorities)

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[*] One information product mentioned use of the Combined Approach Matrix (CAM), five information products mentioned used of the Child Health and Nutrition Research Initiative (CHNRI) approach and one information product mentioned use of Delphi techniques.
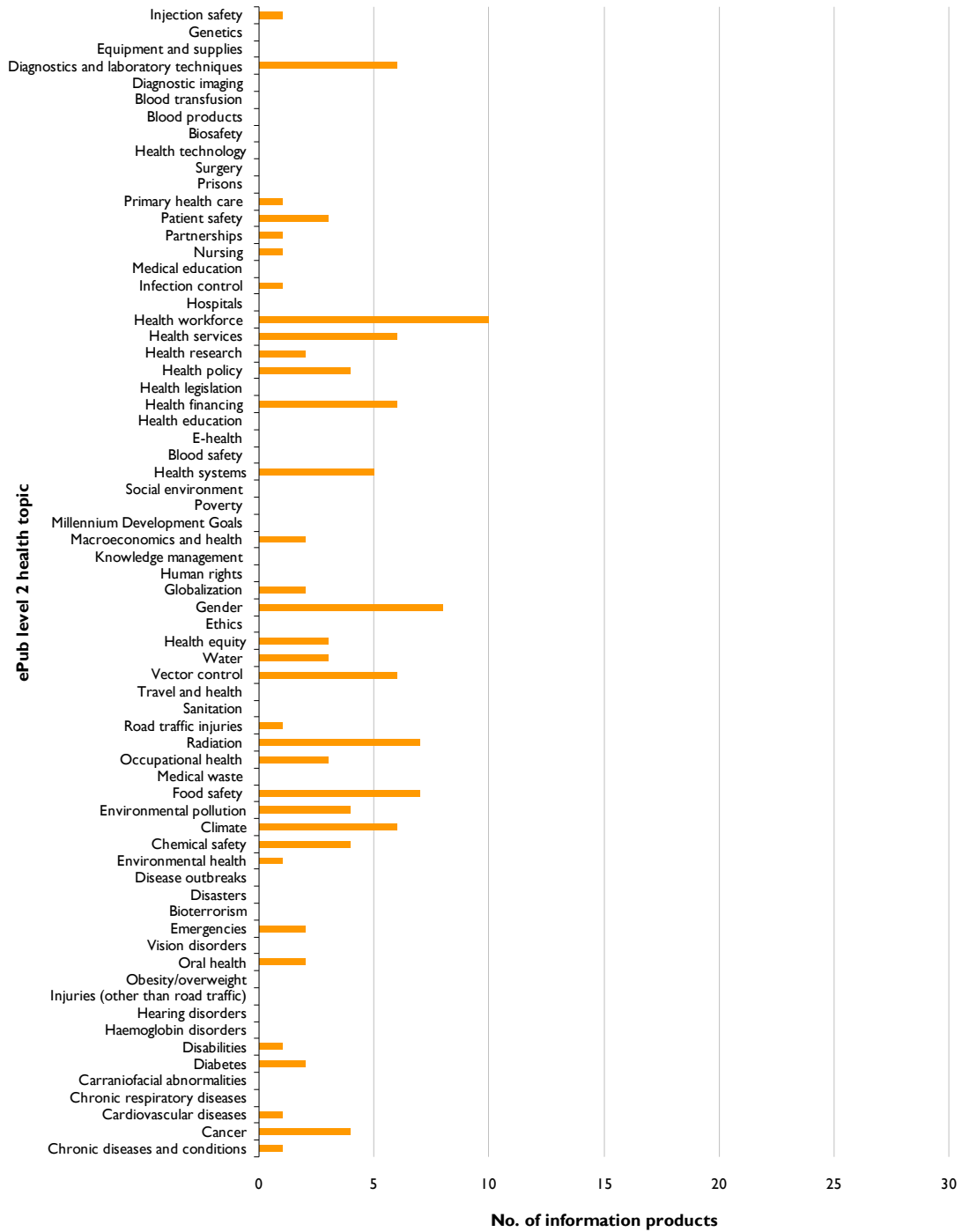
Appendix 2 - Information products by WHO HQ whose main purpose was research priority setting per ePub level 1 health topic

Information products by WHO HQ since 2005 with research priority setting categorized per ePub level 1 health topic

Only for information products whose main purpose was research priority setting
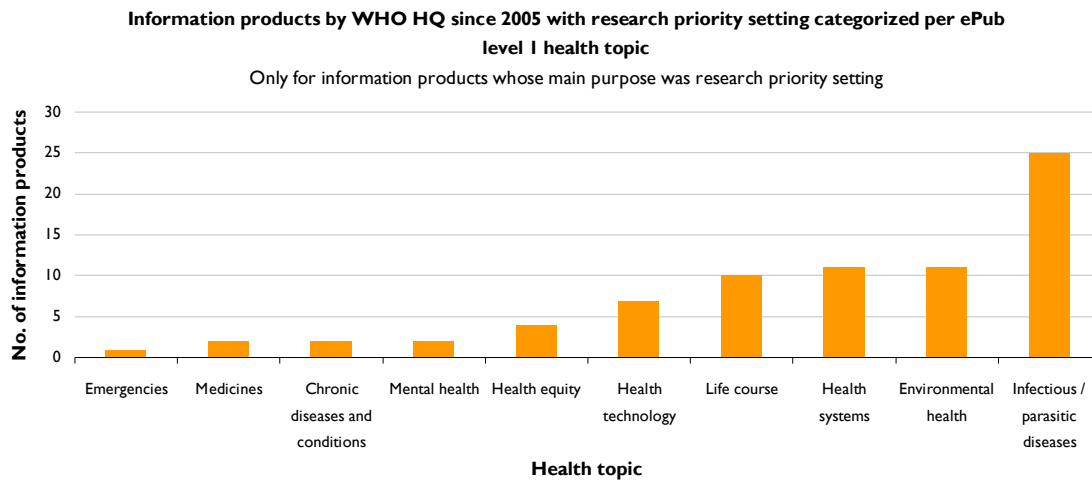
Appendix 3 - Information products by WHO HQ with research priority setting per health topic - per ePub level 2
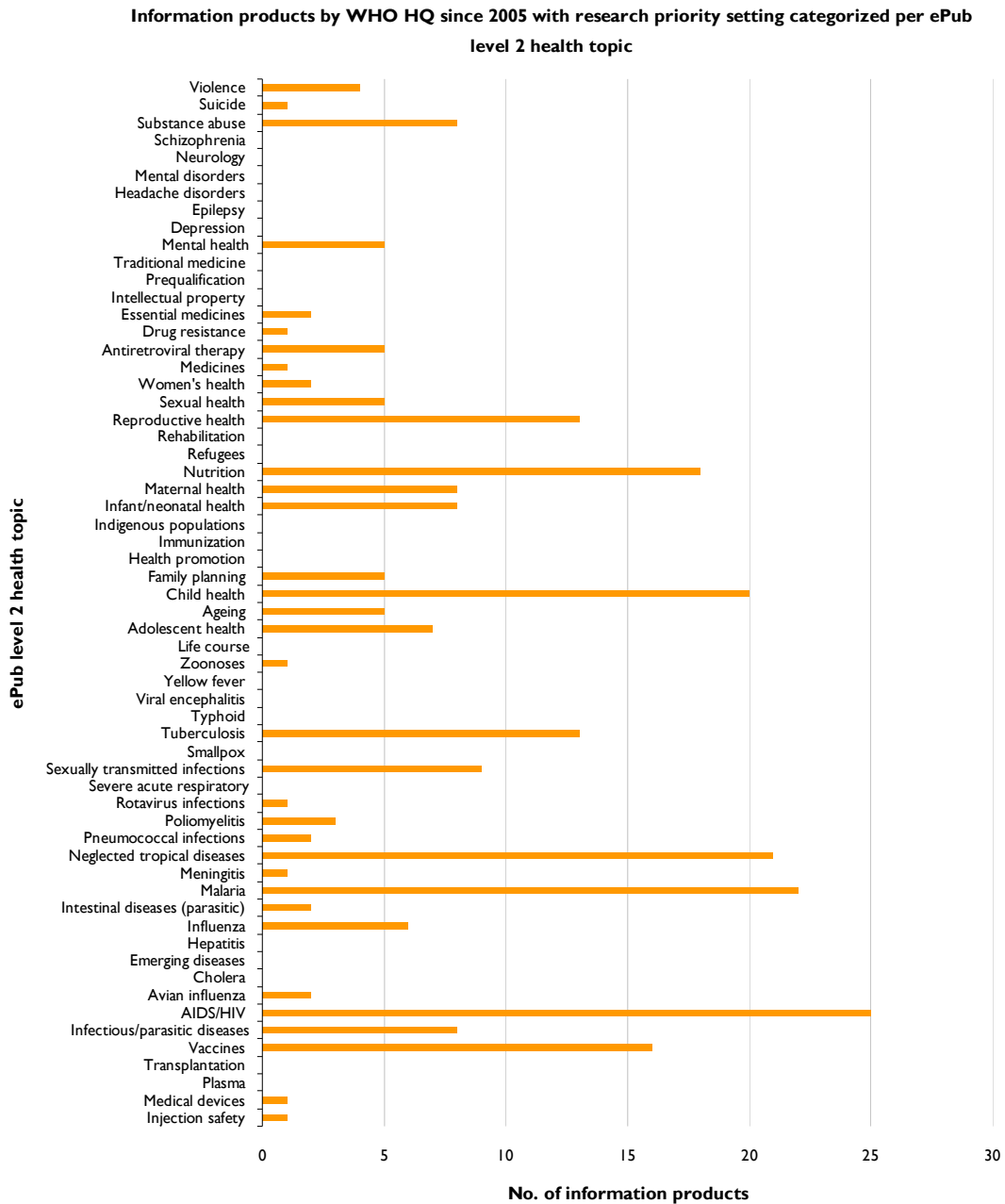
Information products by WHO HQ since 2005 with research priority setting categorized per ePub level 2 health topic

Information products by WHO HQ since 2005 with research priority setting categorized per ePub level 2 health topic *(continued)*

Appendix 4 - Information products by WHO HQ with research priority setting per department *

Information products by WHO HQ since 2005 with research priority setting categorized per WHO HQ department
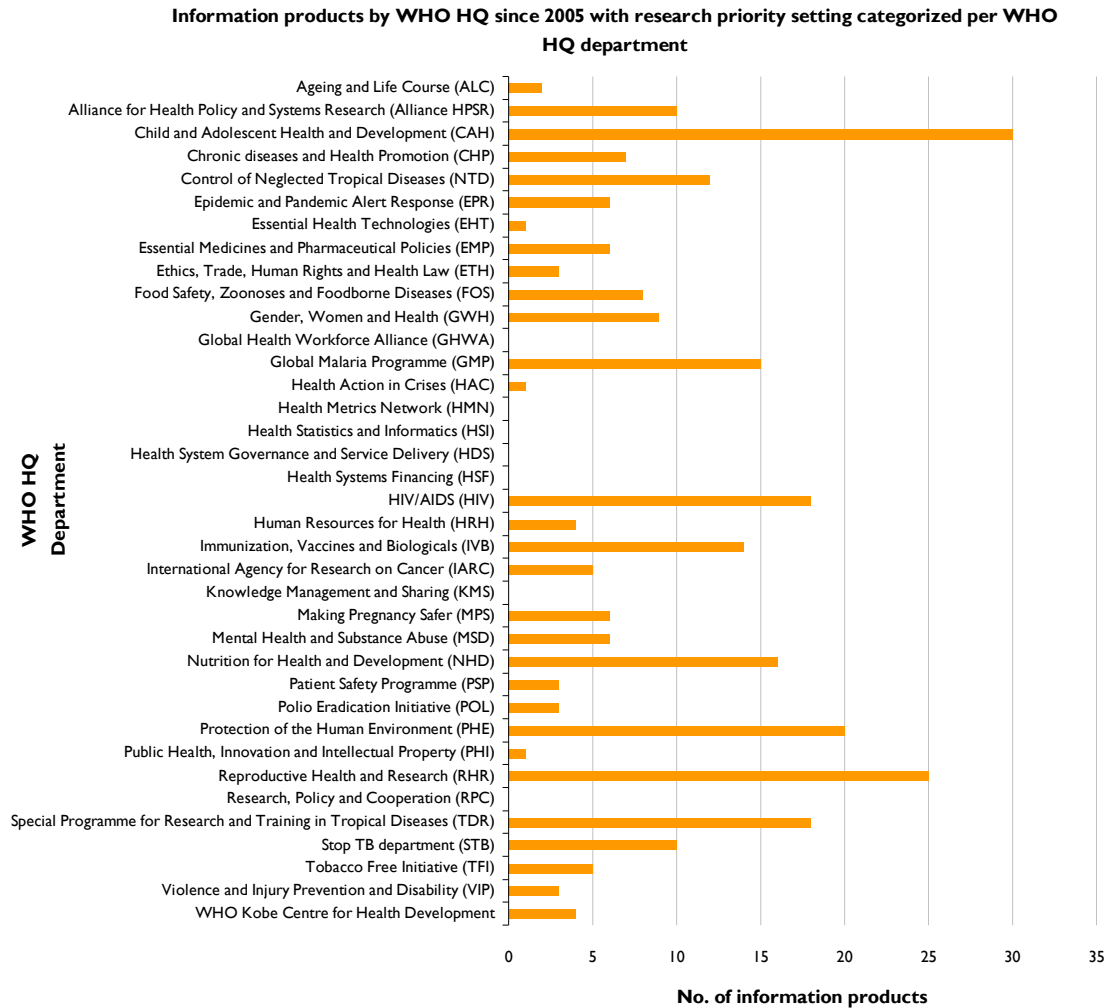
* HAC cluster is presented as one department in this figure.

Annex - Previous research on research priority setting at WHO

Setting priorities for research is one of the five core research activities of WHO.*(34)* This annex is meant to give a short overview of previous research on research priority setting emanating from WHO. Broadly, there are three categories of research that has been performed on research priority setting at WHO. Firstly, analyses of research priority setting practices at WHO, secondly normative work, attempting to provide guidance on research priority setting, and thirdly research priority setting exercises themselves that have performed research on methodologies for research priority setting as preparatory work.

Analysis of research priority setting practices at WHO

This report on Research priority setting at WHO 2005-2009 falls into this category. We only identified one other work of research that touched on this subject. The findings of a questionnaire that inquired into research priority setting practices of departments at WHO headquarters were presented in an *Overview of research activities associated with the World Health Organization: results of a survey covering 2006/07*:*(35)*

> "Priority setting is dependent on the governance arrangements described above. For those departments with a technical advisory group this body either advises on strategy and priority or, if it is linked to governance either the technical group has the authority to approve or reject the strategy or it makes recommendations to the governing board.
> Various processes of deciding on priorities were described by the 19 departments that provided input to this section of the report. The most common approach was the development of a strategy following consultation with technical experts. This strategy is then approved by the highest decision making body the department is responsible to.
> There is no common method for setting priorities within the departments and no mechanism across the Organization for discussing the research portfolio of the Organization as a whole."

Normative work

We identified three previous pieces of normative work on research priority setting. Firstly, in 1976 the Advisory Committee on Medical Research suggested ten criteria for selecting priority areas for WHO research efforts.*(36)* The second piece of normative work was produced as part of the Regional Health Forum WHO South-East Asia Region of 1999, for which Dr Myint Htwe wrote an article on research prioritization.*(21)* The article is meant to guide the process of research priority setting:

> "This article is an attempt to highlight general issues inherent in the research priority setting process. These issues may be considered before one embarks on prioritization of research areas in the research system of any country."

The third was the report of a workshop convened by TDR and RPC department on priority setting methodologies in health research.*(12)* It outlines good practices for priority setting for research in health, key elements of the process and discusses possible tools and methods.

> "A workshop on Priority Setting Methodologies in Health Research was held at the World Health Organization in Geneva, Switzerland from 10th -11th April 2008. The overall workshop objective was to develop practical proposals for user friendly methodologies for priority setting in health research for application in developing countries."

Research priority setting exercises

The information products that are in our catalogue have frequently performed research into methodologies for research priority setting as preparatory work for the exercise itself. One exercise deserves separate mentioning in this regard, the *Priority medicines for Europe and the World* project, which provides a review of available tools for research priority setting.*(13)*

Two large global health research priority setting exercises have been initiated by WHO in the past. Both also discuss methodologies for research priority setting.
The 1996 report of the Ad Hoc Committee on Health Research Relating to Future Intervention Options, *Investing in Health Research and Development*, discusses methods and process for research priority setting in several sections of the document.*(10)* The five-step process described in box S2 has been used as a basis for the creation of the Combined Approach Matrix (CAM) developed by the Global Forum for Health Research.*(6)* Section 1.3 gives more elaborate details on the Ad Hoc Committee's approach to research priority setting. Box A8.4 provides recommendations for the process of setting research priorities.
The second large global health research priority setting exercise was the 1998 *Research policy agenda for science and technology to support global health and development* by the Advisory Committee on Health Research.*(11)* Chapter 6.6 discusses research priority setting methodologies and criteria for priority setting.

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