

Unit 3

Health Policy and Systems Research Priority Setting and Utilization

Introduction

Health Policy and Systems Research (HPSR) can be defined as the production of new knowledge and applications to improve how societies organize themselves to achieve health goals, including how they plan, manage and finance activities to improve health, as well as the roles, perspectives and interests of different actors in this effort. The aim of HPSR is to support the process of health policy making so as to achieve more effective, efficient and sustainable health policies and systems. HPSR should lead to action to improve the health of communities, by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socio-economic development.

Focal subjects for HPSR include health system functions of regulation, organization, financing and delivery of services, as well as broader determinants that affect the health system such as social and economic policies affecting key health system structures and processes (Baris 1998).

HPSR aims at assisting in identifying present and potential problems of a health system and opportunities for addressing them through an analysis of the socio-economic and political environment for policy formulation and implementation. In doing so, HPSR analyzes the values and goals of specific social settings including their economic relations, political cultures, and the distribution of power and authority relations. HPSR is also concerned with the analysis of costs, inputs and resources required for policy implementation, and the extent and levels of participation by stakeholders to ensure ownership. Effective HPSR requires:

- **Knowledge production, management and use.** This includes the generation of information, its dissemination and advocacy to assist in the development of strategies to solve health problems.
- **Stewardship.** It includes the creation of a supportive environment for dialogue and networking, priority setting and monitoring amongst stakeholders in HPSR.
- **Financing.** This includes resource mobilization for research, its allocation and administration.
- **Capacity development.** It includes training in research, financial management, research to action/policy, involvement of stakeholders, leadership and advocacy (COHRED 2001).

Practical and Learning Objectives

1. To understand the scope of HPSR as a knowledge base for decision making to improve the performance of health systems.
2. To understand why priority setting for HPSR needs to be viewed in the specific context of health systems and development situations.
3. To become familiar with processes for prioritizing HPSR and with factors contributing to the utilization of research for policy.
4. To understand the importance of the participation of stakeholders in HPSR and explore strategies for dealing with their different interests and viewpoints.

The scope of Health Policy and Systems Research

Jenkins defines policy as “[a] set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of those actors to achieve” (1978:15). In light of this definition, policy related research aims at illuminating the understanding of policy makers about a problem they seek to solve and ways of solving it. The basic justification for the utilization of HPSR for policy making and systems development is that policies that are informed by research will be better policies than otherwise would have been the case (et al 2003).

According to Hanney et al

“Research exposes policy-making to a wider range of validated concepts and experiences than those that could be drawn from the normal time-limited and politically constrained processes of policy deliberation. It thus allows a broader choice of policy options to emerge. Research can also enable policies to be generated upon technically well-informed bases. It gives warnings of reasons why some policies succeed and others fail. It can make connections between otherwise separate factors such as the nature of the substantive field and organizational patterns set up to manage them, or the power of environments over health outcomes. It legitimizes some policies and throws legitimate doubts on others” (Hanney et al, 2003).

HPSR addresses both research for policy and research on policy. Research for policy assists in identifying urgent and potential problems that need to be addressed by policy makers, the resources and inputs required, as well as options for addressing these problems.

Research on policy takes into consideration the process of policy making. Health policy making usually is influenced by multiple stakeholders. Therefore research on policy includes the political, social and economic dimensions of a problem and analysis of the perceptions and expectations of community members, health managers and professionals and policy makers. It identifies perceptions of people about health problems; contributes to consensus building about the nature of the problem and ways of finding solutions to it for the benefit of all stakeholders taking into consideration power structures, authority relations, and interest groups associated with a health problem. It also contributes to the development of alternative models for addressing health problems and their respective implications.

Context-Specificity of HPSR

Health Policy and Systems Research (HPSR) is more context-specific than other health-related research because health systems and policy are highly embedded in national and local socio-economic, cultural, political and geographical realities. HPSR and its emerging findings are likely to be of minimal value unless conceptualized in the context of a specific socio-economic and political milieu.

Health status is influenced not only by factors within the health sector, but also by factors in sectors like education, agriculture, housing, water and sanitation. All of these are likely to vary in different national settings. Since HPSR, aims to provide health managers, investors and community leaders with relevant information for decision making on current health problems it needs to address problems from the different perspectives of all those directly or indirectly involved with the problem. Thus HPSR is strongly context-specific.

Therefore HPSR is more likely to be sensitive to context specific issues during research priority setting processes. For example, Units 1 and 2 of this Module discussed how value systems would influence the extent to which equity would be used as a key criterion in research priority setting exercises, and the extent to which stakeholder participation is considered an important aspect of the priority setting process. The extent to which such aspects are reflected in any research priority setting is likely to influence greatly the priorities for in HPSR.

HPSR within Research Priority Setting

HPSR is a relative new-comer among recognized types of research, and therefore is less likely to have local champions than other types of research that have stronger institutions and a longer history of a presence on local scenes. Therefore HPSR might be at a disadvantage during health research priority-setting exercises. Furthermore, HPSR has several specific characteristics including its context-specific nature, which require special consideration during priority setting.

In this section, HPSR is reviewed in relation to its special characteristics and steps in priority setting that are elaborated in Units 2, 5 and 6, so as illustrate the issues of concern and suggest some useful approaches for dealing with these issues.

Rationale for priority setting

The rationale for priority setting implies the desire to obtain the best impact on health from the resources invested in health research (see Unit 1 – “Comparative analysis of approaches” and Item 5 in the Tools and Resources section “Comparison of various priority setting approaches”).

To what extent is it possible to demonstrate the impact of specific health policy and systems research and improvement in health status? Hanney et al review the literature and conclude that “evidence based policy is difficult to achieve and it is widely agreed that health policies do not reflect research evidence to the extent that in theory they could” (Hanney et al, 2003). There is limited, though increasing understanding of the processes by which HPSR influences policies. And the tools and methods for assessing such impact are as yet in early stages of development.

The actors involved in priority setting

The complexity and scope of HPSR requires that a broad range of stakeholders be involved in priority setting This is more difficult to achieve than for other types of research. For example, a recent survey of developing countries showed that priority setting within in HPSR has been largely influenced by “representatives from the health sector, with little participation from the financial and private sectors that are vital for public policy” (Alliance, 2000).

Analysis of health status and determinants of health status

Advances have been more recent for methods of measurement of health system determinants (such as measurement of fairness of financing and responsiveness proposed by WHO) than for methods of measurement of health status (such as burden of disease and DALYs). There is less consensus and understanding of how measurements of health system performance can be implemented and interpreted. Since one critical step in priority setting is a situation analysis, groups that participate in priority setting could be deterred by the complexity of analysis and assessment of the current status of health system. System-wide issues might require different priority setting procedures, which may not be easy to combine with disease-specific priorities (see Tools and Resources section of this unit). This is an issue that requires further study.

Criteria for priority setting

Criteria used in the various priority setting approaches (see Unit 1) are relevant for HPSR. However, the special characteristics of HPSR influence the relative importance of some of the criteria.

- **Relevance.** Hanney et al (2003) suggest that probability of utilization of findings and probability of engaging the interest of researchers are two critical aspects of health policy research. Pointing out that policy makers have not always found it easy to identify their needs and recognizing the complexity of policy making processes, Hanney et al point out that sophisticated priority setting mechanisms might not necessarily produce research regarded as relevant by policy makers. Policy makers and other

potential users of HPSR are more likely to regard HPSR as relevant if they have been involved in priority setting as well as at subsequent stages of the research.

- **Interface between producers and users of health policy and systems research.** Development of long term linkages between policy makers and researchers enhance the potential for shared perceptions on the relevance and applicability of research and subsequent utilization of findings (Buxton and Hanney, 1996; Yesudian (2002). Several different types of mechanisms have been established to foster such linkages. These include specialized institutions (for example, in Canada, Mexico and Thailand), long-standing committees (for example, in Burkina Faso and the UK), and seminars for policy-makers and funders. It is as yet unclear how this issue could be integrated into the priority setting processes that are being developed by different agencies as described in the other Units in this Module.
- **Accountability to the public.** The relevance of research is a key element in ensuring accountability to the public. If key sectors in society are convinced that relevant research is being undertaken, then politicians and investors may be more easily convinced to provide adequate funds and resources and to address the findings emerging from the research. Thus, research that addresses public concerns and that is solicited is more likely to influence policy than research that is science-driven and investigator initiated.
- **Scientific quality.** The scientific quality of research is critical in assessing the likelihood of research to influence policy. HPSR, just as any other science, should aim to produce robust and convincing results through clear conceptual frameworks and appropriate methods. HPSR should provide new or contextualized information to decision makers that would not be otherwise available. Research that is of high scientific quality is more likely to influence policy than research lacking in methods and clear conclusions or bearing on problems already investigated or where answers can be derived from common sense. The usefulness of qualitative methods that are common in HPSR has to be clearly explained and demonstrated.
- **Feasibility and timeliness.** This relates to the complexity of the problem being investigated and the resources available to carry out the investigation in terms of the personnel, time, equipment and funds for the study. Given the complexity of health system issues and problems, special consideration has to be given to ensuring that research tackles only critical variables through appropriate methods. Policy-making is often a time-bound process. Therefore policy makers view timeliness as an important facet of HPSR (Innvaer et al 2002). Therefore criteria used for evaluating HPSR projects usually include emphasis on comparatively simple, short-term research designs that are likely to yield practical results relatively quickly.
- **Multi-disciplinary research.** Since health system problems are multi-faceted, multi-disciplinary research including, for example, skills from disciplines such as medicine, epidemiology, behavioral science, and economics is more likely to address critical issues.

- **Presentation of results.** Since users of HPSR are not themselves researchers, an important criteria for HPSR is provision for clear communication of results to potential users, in formats most useful to them, including a summary of the major findings adapted to suit them. (See Advocacy and Leadership module for further details).

Linking HPSR with Related Research in Other Sectors

Unlike biomedical research, HPSR encompasses a variety of sectors because of its multi-disciplinary nature. Since some of the major determinants of health lie outside the healthcare sector, it is important that health research is linked to health-related research in other sectors, in particular when it comes to making a radical impact at reducing health inequalities.

HPSR can be linked to research in other sectors through the creation of alliances and networks for collaborative research in sectors such as education, agriculture, finance, housing, water and sanitation and local government. Such collaborations could engage in research towards mutually-agreed, purpose-specific, equity-oriented research goals and support the research efforts of each other through the exchange or sharing of knowledge, resources and personnel.

Exercise 1:

There is an outbreak of cholera in one of the districts in your country for the second time in five years. The Ministry of Health is determined to find the root cause of this problem so that it can take steps to prevent the resurgence of the disease in the district.

You recognize that any specific intervention program (in this case, a nutritional intervention) must be considered within a broader “systems” context – specifically, the district health system. Also, the intervention program must not only be efficacious in the demonstration setting, but eventually be cost-effective and feasible in a “regular” health system infrastructure. Further, you recognize that the issue of selecting one intervention (e.g., nutrition) or another (e.g., spinal cord injury prevention) cannot be done independent of overall health and health research priorities at various levels – district and national.

You are the Head of the Research Division of the Ministry and have been tasked by the Minister to constitute a five-member team to conduct an investigation into the epidemic. Indicate the category of persons you will include in your team and the role each category of person(s) will play.

Choosing Between Immediate Challenges and Longer Term Options for Improving Health System Performance

The immediate challenges of a health system are likely to constitute urgent problems, requiring quick and timely responses or solutions. Placing a higher priority on them in the short term is likely to be more important and appealing to policy makers, political office holders and powerful interest groups than identifying longer-term options for improving health system performance.

It should be noted, however, that identifying strategies to deal with immediate challenges of a health system, without making efforts to improve long-term health system performance, might render these strategies ineffective. If the performance of the health system is poor, identifying strategies to deal with immediate challenges of the health system is likely to result in sheer wastage and ineffective use of scarce resources, in particular if the institutional structure for addressing these challenges is weak. This implies that placing more emphasis on identifying longer-term options for improving health system performance, might increase the efficiency, effectiveness

and sustainability of the health system and increase the effectiveness of strategies to deal with immediate challenges of the health system.

Hence, it might not be prudent even in the short-term to concentrate research efforts on identifying strategies to deal with immediate challenges of a health system to the complete neglect of identifying longer-term options for improving health system performance.

Exercise 2:

An International Non-Governmental Organization (NGO) that has been operating in your country for the past five years will wind-up its activities and leave next year. During the five years that the NGO has been in your country, it provided nutritional support to malnourished children under ten years of age in two districts. Evidence provided by the NGO indicates that the nutritional status of children in the two districts has improved considerably over the five years that the nutrition intervention program has been in place.

The government, with the assistance of some donor agencies, is interested in continuing support for the nutrition intervention program when the NGO leaves and also in extending the support to two other districts where children are known to be malnourished. There is, however, information from one of the districts receiving support from the NGO that spinal cord injury is on the increase. The government is, therefore, also considering launching a program to either prevent or reduce spinal cord injury in the affected district. It does not have enough resources to do both.

The government has requested proposals for research to be conducted into these problems. The proposals are intended to provide a basis for decision-making by the government, on whether to continue support for the nutrition intervention program or start a program to prevent or reduce spinal cord injury.

You are the Head of the Health Policy Research Centre in the country and you have been invited by the Minister of Health, as a member of a three-member team to evaluate the research proposals and advise the government on whether to continue with the nutrition intervention program or start a program to prevent or reduce spinal cord injury in one of the districts. How will you set about this task?

In the short-term, therefore, a country's research portfolio should maintain some strategic balance, which places more emphasis on identifying longer-term options for improving health system performance while still pursuing efforts to identify strategies to deal with immediate challenges of the health system. This will result in building an efficient and effective health system, which will provide a framework for identifying and implementing effective and sustainable strategies to deal with immediate challenges of the health system.

Stakeholder Interests and Points of View

Health Policy and Systems Research aims to be participatory. Potential stakeholders in health policy include policy makers, health managers, healthcare providers and community members. In addition, stakeholders in HPSR, which aims to inform policy-making would include, research donors and investors, and researchers.

It is not always possible to have a convergence of interests between stakeholders. Communities tend to be less interested in knowledge for its own sake but are concerned rather with the relevance of the research to their lives. They are likely to expect some tangible benefits either to themselves, their family or community within a reasonable timeframe in return for their participation in research. They may therefore lose interest in participating in research when they perceive that such benefits are not likely to materialize.

Policy makers are interested in information that provides effective linkages between research, policy and action. This enables them to make fast or quick decisions to solve urgent health problems. They tend to prefer simple, easily understood information that is applicable to specific health problems. Policy makers, however, are also potentially interested in having a moderately effective and stable research system at hand which can be relied upon for policy and system development. Their interest in strengthening research capacity at national and local levels should therefore not be underestimated.

Many policy makers think researchers are inclined to study issues that are mainly academic. They often perceive researchers as persons who provide information, which is couched in excessive scientific jargon and has low social relevance. They sometimes also think researchers do not take into account resource or political constraints in the implementing of findings.

Researchers are curious and creative individuals who delight in discovering relationships between phenomena. They sometimes undertake research mainly for academic interest or for career advancement. They often think that policy makers and community members cannot appreciate the merits of the scientific information they provide. Many researchers also perceive policy makers as bureaucratic and conservative individuals who think that research is common sense.

In general, researchers try to be objective in their work. They can become uncomfortable with attempts by either decision makers or community members to influence the conduct of their research. The fruits of research are, however, likely to be ignored if the social, political and economic context in which research is conducted is not taken into account or the traditional practices and beliefs of communities, associated with the research, are not considered. This means that policy makers and community members should be involved in the identification of health research priorities, the execution of research and the analysis of its findings, and the implementation of the results of the research.

The involvement of policy makers in the research process contributes to the implementation of results, whilst the involvement of researchers in the

implementation of their recommendations ensures their concern for the feasibility of the recommendations they make.

The involvement of community members in the research process, particularly in problem identification, priority setting and implementation of research results, ensures that the priority health needs of the people are taken into account in relation to their development needs and aspirations. It also ensures community ownership of the research results. It increases the acceptance of the results of research and the effectiveness and sustainability of health programs that are implemented as a result of the recommendations from the research.

Donors and investors can play a critical role in setting research priorities. The main avenue of influence is through identifying topics of interest for funding or specifying areas for research as part of wider development project investments. Commissioned research will normally identify the key questions to be researched. Gonzalez Block & Mills 2002 found that in developing countries, research institutions are the initiator in only about a third of HPSR projects, while another third are initiated by a donor agency, international research partner or by a private contractor. Governments initiate projects in about 24% of cases.). Research also indicates that international donors are the most important influence in terms of number of projects funded, funding 60% of the total, while governments fund 30% and private and other sources 10%.

However, donors or investors are seldom represented in the governing boards of institutions, and there is little informed interaction between researchers and donors or investors beyond announcing and requesting funds and reading about research undertaken through scientific journals. There is particular weakness in assessing the impact of research on policy and in gaining community-wide recognition for producer institutions as sources of high quality, objective HPSR. Institutions are generally confident of their efforts to strengthen stakeholder engagement, although this view may consider a rather low expectation of the potential of HPSR to influence policy.

There is therefore a need to establish linkages or coalitions and alliances to identify priority health problems and funding across all relevant stakeholders. Such coalitions and alliances can draw on their knowledge and experience to define common research objectives, commit resources and develop solutions to health problems.

Attempts should therefore be made to establish dialogue between the stakeholders in research. Researchers should communicate research information in appropriate ways. They must develop communication and advocacy skills and understand the processes for decision making on resource allocation and policy development, implementation and monitoring.

Policy makers, on their part, must develop an interest and inclination for evidence-based decision making. They should appreciate the importance of investing in multi-stakeholder health research and support health and development discussions as crucial to addressing problems of inequity in health.

Exercise 3:

The Ministry of Health has identified low antenatal attendance in some districts that have experienced high maternal mortality and neo-natal mortality in the past five years. The Ministry is taking steps to initiate discussions with the residents of these districts with the view to commissioning research into the causes of low attendance at antenatal clinics.

However, following discussions with the Director-General of Health Services, the Ministry of Health is advised to stop the initial discussions with the districts but rather to proceed with the commissioning of the research. The argument of the Director-General of Health Services is that the initial discussions between the Ministry of Health and the affected districts, before the commissioning of the research, will be time wasted as most of the residents in the districts have little or no training in medicine or health sciences and therefore do not have enough knowledge about health problems.

As a member of the Health Policy Research Division of the Ministry of Health, you have been invited by the Minister of Health to comment on the advice of the Director-General of Health Services, so a decision can be taken on whether to proceed with consultations with members of the affected districts before commissioning the research.

What advice will you give to the Minister and why?

If you are not in agreement with the advice given by the Director-General of Health Services, what steps do you think can be taken by the Ministry of Health to prevent the Director-General from professing the same opinion about the value of local knowledge and stakeholder involvement in the future?

References

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¹ The *Journal of Research on Health Systems* is a forthcoming electronic journal. It will be accessible at URL: <http://www.biomedcentral.com/info/newjournals.asp#forthcoming>

Recommended Readings

1. Neufeld, V., Johnson, N. 2001. (Eds.) *Forging Links for Health Research: Perspectives from the Council on Health Research for Development*. Ottawa, Canada: International Development Research Centre.

The book surveys the contribution of health research to equitable development. In particular, it explores how developing countries could strengthen the linkages between research and action or policy to effectively solve their health problems. The book also emphasizes the importance of building coalitions between communities, researchers and policy makers for dialogue in defining health research priorities and for developing and understanding solutions to specific health problems to promote equitable health development.

2. The Joint WHO/DGIS/RTI Project in the Southern African Region. 1990. *Health Systems Research, Does it make a Difference?* Geneva, Switzerland: World Health Organization.

The booklet highlights the importance of carrying out health systems research of good quality and applicability on national health research priorities to secure the involvement of policy makers in health research priority setting and in using research results. It outlines the approaches and methodologies used in the identification of health needs of communities and in finding solutions to them. It also states the main characteristics of health systems research. In addition, the booklet indicates the rationale for the Joint Dutch International Cooperation (DGIS) and WHO Health Systems Research and Development Programme in the Southern African Region -- namely to promote the contribution of properly organized health systems research to primary health care implementation in Africa. It also indicates the strategies adopted, the activities undertaken and the achievements and constraints of the program.

3. Walt, G. 1994. *Health Policy: An Introduction to Process and Power*. London: Zed Books.

The book provides a clear and in-depth understanding of the process of health policy formulation, adaptation and implementation. It discusses the tools for analyzing the complicated processes involved in health policy formulation and implementation. This includes the roles of the political system, political actors and power groups within and outside the health system, the state, the media and external structural factors such as international organizations. The book also analyses the role of research and evaluation in the health policy process and outlines some of the impediments to the use of research in health policy.

4. Hogwood, B.W., Gunn, L.A. 1984. *Policy Analysis for the Real World*. Oxford: University Press.

This book discusses the techniques, approaches and models available for use by policy analysts and decision makers at various stages of the policy process. The book provides a

critical survey of the techniques in the analysis of the policy process, including the importance of issue search, agenda setting, issue filtration and definition, forecasting, priority setting, option analysis and policy implementation, evaluation, succession and termination. It also stresses the limits of policy analysis techniques in real world political settings.

5. Janovsky, K. (Ed). 1995. *Health Policy and Systems Development: An Agenda for Research*. Geneva, Switzerland: World Health Organization.

The book identifies the elements or actors in the health system, their functional interrelationships and the place of health policy as one of the dimensions of the health system. It documents the key research needs, methods and priority research issues in health policy, health needs assessment, health financing, public/private mix, decentralization, quality of care, and monitoring of health systems. It provides a rationale for setting health research priorities and analyses the different levels at which priorities can be set – sector, geography, services, clientele, diseases and programs.

The book also outlines a framework for assessing health research priorities and reviews the experiences of countries at the forefront of efforts to set priorities on a more explicit basis. Important elements of the framework for assessing health research priorities include perceived relevance or potential impact, expressed interest of stakeholders or the policy agenda, advancement of knowledge, coherence of issues and research methods and societal values. The book advocates a holistic approach to health policy or systems development. This is seen as a pre-requisite to increase the capacity of the health system as a whole to improve health status and to assess or predict the net effects of health interventions or different combinations of institutional changes in terms of efficiency, equity, quality and cost-effectiveness, in line with the objective of health policy and systems research.

6. Hanney, S.R., Gonzalez Block, M.A., Buxton, M.J., Kogan, M. (2002) The utilization of health research in policy-making: Concepts, examples and methods of assessment. *Health Research Policy and Systems* 2003 1:2 (13 January 2003)

The importance of health research utilization in policy making, and of understanding the mechanisms involved, is increasingly recognized. Recent reports calling for more resources to improve health in developing countries, and global pressures for accountability, draw greater attention to research-informed policy making. Key utilization issues have been described for at least twenty years, but the growing focus on health research systems creates additional dimensions. The utilization of health research in policy making should contribute to policies that may eventually lead to desired outcomes, including health gains.

In this article, exploration of these issues is combined with a review of various forms of policy making. When this is linked to analysis of different types of health research, it assists in building a comprehensive account of the diverse meanings of research utilization. Previous studies report methods and conceptual frameworks that have been applied, with varying degrees of success, to record utilization in policy making. These studies reveal various examples of impact within a general picture of underutilization of research. Factors potentially enhancing utilization can be identified by exploration of:

priority setting; activities of the health research system at the interface between research and policy making; and the role of the recipients, or 'receptors', of health research. An interfaces-and-receptors model provides a framework for analysis.

Recommendations about possible methods for assessing health research utilization follow identification of the purposes of such assessments. Research utilization can be better understood, and enhanced, by developing assessment methods informed by conceptual analysis and review of previous studies.

7. Gonzalez Block, M.A., Mills, A. (2002) Assessing capacity for health policy and systems research in low and middle income countries. Forthcoming, *Journal of Research in Health Systems*.

As demand grows for health policies based on evidence, questions exist as to the capacity of low- and middle-income countries to produce the health policy and systems research (HPSR) required to meet this challenge. A postal and Web survey of 176 HPSR institutions in low-, lower middle- and upper middle-income countries outside Europe assessed institutional structure, institutional capacity, degree of attainment of critical mass, the process of knowledge production, and engagement with stakeholders. On the basis of contacts between the Alliance for Health Policy and Systems Research and a larger number of institutions, data were tentatively projected to estimate a total population of 649 institutions in the same regions.

Producers of HPSR are mostly small public and increasingly private institutions/units with an average of 8 researchers undertaking 3 projects for a total project portfolio worth \$155,226 on average. Experience, attainment of critical mass and stakeholder engagement are low, with only 19% of researchers at PhD level, although key disciplines are well represented and researchers in these areas are better qualified. Research capacity and average project funding levels are similar across income regions, although inequalities are apparent when population-to-project funding ratios are calculated. Only 7% of projects are funded at \$100,000 or more, but they account for 54% of total project funding. Only 17% of institutions hold this size of grant. Direct funding from international sources accounts for 69% of total project funding and funding from national governments (of which part would originate from multilateral institutions) for 26%. A large proportion of global funds available for HPSR appears not to be spent by institutions within these countries.

HPSR producers need to increase their capacity and critical mass to engage effectively in policy debates and interaction with stakeholders, and to absorb a larger volume of resources. The relationship between funding agencies and the attainment of critical mass needs further research to identify the best funding support, incentives and capacity strengthening approaches. Support should be provided to institutions to network and concentrate resources and to tap into national and international funding related to health sector development.

Tools and Resources

1.0 Models of Research Utilization

Hanney et al (2003) summarize the work of Carol Weiss and others in terms of several models of research utilization in policy making. These are particularly useful for HPSR:

The classic/purist/knowledge-driven model. This suggests a linear sequence in which research generates knowledge that impels action.

The problem-solving/engineering/policy-driven model. This also follows a linear sequence, but begins with the identification of a problem by a customer who requests the researcher to identify and assess alternative solutions. This was explicitly the model behind the changes attempted in the UK Department of Health in the 1970s.

The interactive/social interaction model. The process here is a set of interactions between researchers and users rather than a linear move from research to decisions. It ensures they are exposed to each other's worlds and needs.

The enlightenment/percolation/limestone model. According to this, research is more likely to be used through the gradual "sedimentation" of insight, theories, concepts and perspectives. This model has the advantage of extending the range of ways in which research is seen to be utilized.

The political model. In this, research findings become ammunition in an adversarial system of policy making.

The tactical model. Here, research is used when there is pressure for action to be taken on an issue, and policy makers respond by announcing that they have commissioned a research study on the matter. While this can sometimes be seen as a cynical delaying tactic, there are other occasions on which the commissioning of research provides the political system with a valuable breathing space thus reducing the chances of irrational policy making.

2.0 Processes in Research Utilization

The combination of diverse forms of scientific inputs and decision outputs shapes the processes of utilization and creates specific expectations by policy actors and opportunities for policy making (Hanney et al 2003) (Figure 1). The following models are closely related to those of Carol Weiss describing the utilization models more generally (see Tool 1 above):

Conceptual modeling. Knowledge to inform complex situations is frequently demanded in the form of concepts to model or shape the general nature of the policy problems and possible solutions. Planning health sector reforms and identifying health policy in areas normally outside its purview, such as poverty or economic development, are likely to demand such knowledge, as they provide new

disciplinary or social perspectives on a given problem and activate new associations and meanings for policy issues. They can be a first step to other forms of research utilization.

Data-based policy. This form of utilization aims to influence courses of action on the basis of the strength of empirical findings. Scientists may take the lead through a “knowledge-driven” approach, or policy makers can demand such knowledge to solve specific problems. In either case, scientific rigour, robustness and objectivity would be principles trusted by both researchers and policy makers.

Constrained modeling. Constrained political conditions give rise to utilization that, from the perspective of researchers, uses only a restricted range of available knowledge. Likewise, policy makers will not commission or will discourage research that, in its broad outline, poses more political risks than benefits.

Strategic research. Policy is most often formulated in a context where lay (as opposed to technocratic) actors vie for power and resources. The choice of policy may be open, but only through politically controlled windows of opportunity. Under these circumstances, the ultimate validity of research will be assessed together with other and often competing evidence. The aim of researchers is usually to influence policy choice or to make explicit the costs of not adopting a recommended course of action.

Symbolic payback. Science has become a potent cultural symbol that permeates modern life and confers privileges on its users. Likewise, there is a political pay-off in supporting research and building research capacity in strategic areas. Research has become “an essential mode of communication and persuasion in the public arena”. In complex organizations, research could be a common language used to talk across the boundaries of interests and content areas given its capacity to effectively link disparate realities and because of “the patina of rigor that science confers to discourse”. This might suggest that policies from bodies known to be research-informed might be more likely to be supported.

Symbolic argumentation. Policy making may be based mainly on reasons of interest, ideology or intellect. Under these circumstances, however, research can still be used as ammunition to support the decisions made and being implemented. Science content is here used as a collection of arguments, rather than as data or evidence to be weighed. Arguments may be fashioned as by-products of formal research publications, particularly by policy analysis units, consulting firms and the media.

Paradigms. Given the large measure of unconscious elements in everyday decision making, accepted ways of interpreting reality and facing problems are the most important influence. An aggregate of normative expectations, such as those advanced in Welfare State thinking, may amount to an overriding view of what is desirable health policy. Such policy paradigms may be triggered or supported by single or grouped assumptions derived from research, which also may achieve paradigmatic status. Individual policies are likely to reflect the dominant paradigms of their time.

Policy Makers’ Practice Wisdom. How far individual policy makers will automatically attempt to use research findings on a regular basis will depend on

multiple influences, such as training, continuous education, exposure to the media and to the demand of clients.

Although these categories are not watertight, they help indicate the breadth of types of research utilization and therefore areas on which any assessment methods should focus. Reviewing previous work provides examples of where wide interpretations of utilization have been incorporated into impact studies

Figure 1: Decision Context, Research Inputs and Forms of Research Utilization in

3.0 Identifying HPSR Priorities

The importance of ensuring participation by key actors at the right time and through appropriate processes and expectations is critical for priority setting in HPSR.

Researchers are trained to ask questions in the right way by focusing on conceptual and methodological issues. Policy makers and service managers are more interested in asking the right questions by focusing on the magnitude and urgency of problems and the feasibility of solutions. As Gerard Rosenthal² found from many years leading researcher-policy maker liaison activities in the United States "asking the right questions in the right way is what priority setting is all about". This clearly requires bringing together diverse actors to agree on a subject matter that pertains to all. It is also particularly important to ensure the participation of research investors and donors and the community.

A process should be devised that is able both to focus on specific diseases and on system wide issues. A five-step approach similar to the one suggested for disease specific problems by the Ad Hoc Committee on Health Research Relating to Future Intervention Options³ is conceivable:

Step 1: Calculate the attributable costs or the relative severity of specific health system problems (e.g., inequitable resource allocation or the lack of financial protection).

Step 2: Identify the reasons for the persistence of health system problems and, on this basis, identify the kind of HPSR required to solve them:

lack of knowledge	→ analytical/strategic research
lack of tools for resource allocation	→ applied/developmental research
Inefficient use of existing tools	→ Operational research.

Step 3: Judge the adequacy of the current knowledge base for each problem.

² Forum on the Utilization of Research on Health Sector Reforms in Latin America, Salvador, Brazil, May 2000.

³ Ad Hoc Committee on Health Research Relating to Future Intervention Options. 1996. *Investing in Health Research and Development*. Geneva, Switzerland: World Health Organization. TDR/GEN/96.1.

Step 4: Assess the promise of possible research and development efforts.

Step 5: Assess the current resource flows for these efforts.

The major obstacle to applying such a framework to HPSR seems to lie in the first step. A consensus on the nature and situation of health system problems would first be necessary similar to the consensus that now exists for the identification and measurement of specific diseases and risk factors. Furthermore, to enable the undertaking of Steps 3-5, there is a need to agree on the classification of HPSR (see HPSR Thesaurus (Tool 4 below)).

4.0 HPSR Thesaurus Produced by the Alliance for Health Policy and Systems Research

Work is currently underway to create a thesaurus of terms related to health policy and systems research (HPSR). Existing thesauri covering related aspects do not focus specifically on HPSR, which is essentially a new field. Where some related glossaries and thesauri exist, they generally do not focus on developing countries. Thus, this is a unique, ground-breaking effort to help map the domain of HPSR knowledge and create tools that will support Alliance partners and grantees in knowledge management in HPSR.

Essentially two main functions are envisaged for the Thesaurus:

- To enable a more rigorous analysis of the literature, classification of research proposals, and the identification and use of evidence for priority setting, fund raising and advocacy and
- To provide direct input for a customized web-based search engine for HPSR literature, which will be made available on the Alliance website.

The 16-term HPSR classification was developed on the basis of an analysis of a range of items related to health policy and systems research, with a particular emphasis on developing countries. These included short statements of project content, a listing of HPSR priorities as expressed by projects, letters of intent submitted for the second round of small grants of the Alliance for HPSR, selected abstracts from the ExtraMED database, and articles contained in the ID-21 website. The software used to derive a first approximation of the taxonomy was TextAnalyst (<http://www.megaputer.com>). This was then validated by Alliance partners.

In an international collaboration between regional HPSR networks, definitions for the concepts are currently being drawn up. These will then serve as the basis for “core fingerprints” that can be used by the context-based software at the heart of the SHARED database (www.shared.de) to analyze the literature and identify projects and experts in this field.

Case Studies

Case Study 1: The Use of Research in Control Policies for Chagas Disease and Foot and Mouth Disease in Uruguay

(Abstracted from: Salvatella, R. Muzio, F. Sanchez, D. 2000. Research to policy: The cases of Chagas disease and foot and mouth eradication in Uruguay. In: Lessons in Research to Action and Policy. Case Studies from Seven Countries. Geneva: Council on Health Research for Development, COHRED Document No. 2000.10.)

Uruguay's economy is based on agricultural production. In spite of this, there has been historically a divorce between the capital city, where half the population lives, and the countryside – the generator of wealth, but also the place where living conditions in general and health indicators in particular are worst.

Chagas disease and foot and mouth disease affect the countryside in particular. While Chagas disease afflicts the human population – in this case the rural poor, foot and mouth disease is of importance in veterinary medicine and affects the economic well-being of cattle ranch owners – traditionally a well-off sector of society. These facts are not of minor importance in the very long policy making processes that led to control of the diseases.

A comparative review of these two processes by the Council on Health Research for Development's Working Group on Research to Action and Policy uncovered the following similarities and differences, illustrative of key factors that can help or hinder the use of research in decision making:

Similarities

- The continuing existence of groups of researchers on the subject, which allowed for the accumulation of knowledge, even when solutions were not yet available, and the creation of a critical mass to continue the different lines of research.
- The varying availability of research funds and infrastructure, which allowed for the work of these researchers.
- The permanence of both subjects in public opinion over many years.
- The negative impact of totalitarian regimes both on science and program development.
- The opposite situation following the overthrow of these regimes (not necessarily a lasting condition).
- The contribution of many different disciplines and approaches to the solution of the problem.
- Timely and appropriate international cooperation, particularly strong at the sub-regional level.

Differences

- In the case of Chagas disease, science preceded action, as the affected population did not have economic or political power. It was necessary for scientists to become active in political parties and at the Ministry of Health. They then introduced research findings into actual programs.
- Foot and mouth disease, on the other hand, because of its economic importance, was a government priority and research was always included as part of control plans.
- While much of Chagas research was supply-driven, in the case of foot and mouth disease much was demand-driven.
- Most Chagas disease research was university based. Government institutions were prominent in foot and mouth disease research, although the university also participated, particularly in basic research.
- Financing mechanisms were also different. While Chagas research was subject to severe budget cuts affecting the university for many years, foot and mouth disease research enjoyed better and more continuous funding.

There are many different roads leading to the successful use of research. In any case, it is a long process, needing continuity and a critical mass of committed scientists who may not see the application of their work in their lifetime. Political will to undertake action is more easily achieved when those affected are found in the more affluent or powerful sectors of society. Nonetheless, demonstration of the severity of a problem and the possibility of its solution can finally prompt action, especially if the whole of society is made aware of it.

Case Study 2: Getting Patients' Perspectives: Research as a Vehicle for Stakeholder Consultation

(Abstracted from: Adibo, M. 1996. *Research to policy: Ghana's experience*. In *How Can Research Influence Policy?, Reports from Policymakers in Three Countries*, International Health Policy Program Occasional Paper, World Bank, Washington, D.C.)

In 1995, the Ghana Ministry of Health introduced user fees for health services. In addition to premiums for health care, patients were required to pay the full cost of basic drugs. Around the same time, utilization of Ministry of Health's facilities – health centers and hospitals – was declining steadily nationwide. Outpatient attendance at both hospitals and health centers was decreasing steadily and hospitals' bed occupancy rate averaged between 50 and 60 percent. This could not be explained by the introduction of hospital fees alone, because mission hospitals, which had charged hospital fees for a longer time, were not experiencing a similar decline. What then could account for patients' dissatisfaction with government health services?

One of the regions with the most hospitals volunteered to examine this problem in depth. Researchers used a structured questionnaire and focus groups to elicit patients' opinions about the region's health services. The following are a sampling of the study's findings that translated eventually into policy and action:

Privacy: Forty percent of respondents to the structured questionnaire did not feel comfortable discussing their health problems in front of other patients awaiting consultation. Participants in the focus group discussions cited the lack of privacy as a major cause of dissatisfaction.

Cost of services: Sixty-two percent of respondents thought that charges at health centers were satisfactory, compared with only 38 percent who thought that hospital charges were reasonable. Participants in focus group discussions not only believed that the charges were too high, they complained about too many points for collecting revenue and the levying of illegal fees, and especially criticized doctors in this latter respect.

Working hours: Whereas 86 percent of the respondents were satisfied with existing working hours, 14 percent of the questionnaire respondents and those in the focus groups felt strongly that health centers and hospitals should be open twenty-four hours a day.

Supplies: One-third of the respondents to the questionnaires had to obtain certain items needed for their health care outside government facilities.

Drug supply: Only 37 percent of respondents obtained all the drugs prescribed for them, while 57 percent got about half the drugs prescribed, and 5 percent did not manage to get any of the drugs prescribed. Those in the focus group discussions agreed that it was extremely frustrating after spending virtually the whole day in the health facility to emerge with a long list of drugs that the dispensary could not supply.

Sanitation: While 79 percent of the questionnaire respondents thought that all areas of facilities were clean, participants in the focus group discussions agreed that government health facilities had dirty surroundings. They specifically cited weedy compounds and filthy toilets.

A conference of Regional Directors of Health Services discussed the study's findings and agreed that they were applicable to all regions. Consequently, they took a number of policy decisions, and these are now being implemented. The policies are as follows:

- Nurses in out-patient departments are to be carefully selected and given special training.
- All hospitals and health centers are to provide twenty-four hour service.
- Every hospital is to set aside at least one room where nurses can take patients' medical histories and their vital signs in private.
- The ministry's supply system is being overhauled to ensure that some 85 percent of all supplies, including drugs, are always available.
- Collection of fees for which no receipts are given are to be considered illegal and should be reported to the medical superintendent.

Case Study 3: Linking Health and Science & Technology Policies: Vaccine Development in Brazil

(Abstracted from: Gadelha, C. A. G. 2000. Incorporating biotechnology research into health policy: The case of vaccine development and production in Brazil. In: Lessons in Research to Action and Policy. Case Studies from Seven Countries. Geneva: Council on Health Research for Development, COHRED Document No. 2000.10.)

Brazil is an example of a developing country that has been relatively successful in engaging in vaccine production to meet national needs and that has progressively made headway in incorporating research results into its health policy. It affords the following lessons in linking health policy with science and technology policy:

1. The dichotomy between health policy and science and technology policy must be overcome in order to enable the public to make wider use of product and process research. On the one hand, the science and technology domain has neglected health policy priorities, as evidenced by the absence of precisely focused research activity, even when the aim was explicitly to develop products and processes and to give them industrial use.
2. On the other hand, the health policy formulators are, to a large extent, ignorant of the logic of scientific development and the factors that condition the transformation of this knowledge into usable technologies. Even at the heart of a sizeable program of investment in vaccines designed to boost local production, the strategic component of scientific and technological development was largely ignored.
3. The lack of interest from the private sector in carrying out research and development (R&D) in Brazil forced direct entry by the state in vaccine production, in response to a crisis in supply of essential immunobiologicals for immunization programs that had been growing since the 1970s. Although politically the moment was quite unfavourable, this proved the only possible way of internalizing activities with high technology content in Brazil and establishing links between research activities and health policy.
4. A conspicuous role was played by the leaders of those institutions most successful in having their research results utilized. This was particularly so in the relationship they established with science and technology (S&T) policy and health policy actors.
5. By mobilizing the stakeholders, it was possible to bring together the requirements of the immunization policy and vaccine research and development activity. In this type of action, it is clear that, in addition to technical and scientific proficiency, leaders of health product research and development programs must act as entrepreneurs to link up the worlds of science with those of industrial production and health policy.
6. Where a successful relationship was established among research, production and policy, the planning of research activities incorporated both a prospective view of

health policy needs based on vaccine purchase trends and, at the same time, a strategy for capacity-building in, and absorption of, new technologies.

7. Rather than specific products, planning was directed at laying a solid organizational foundation for research and development in response to social needs. As a result, it was possible to set strategies for progressively increasing the knowledge content of the activities pursued, and to open up promising prospects of capacity building.
8. The dispersion and fragmentation of research efforts connected with product and process development tends to lead to a generally low rate of research result utilization. The cases of success show that selecting strategic foci connected with the national health context is an appropriate means of ensuring that research activities (even when fundamental) produce an effect and generate knowledge that can be applied to a considerable range of products, thus legitimizing the activity of health research in developing countries.
9. In the field of vaccines and, more generally, of industrialized health products and processes, the application of research results depends on prior structuring of an entrepreneurial technological development capability. That is the base that enabled the link to be forged between the worlds of science and production, thus concretely allowing health policy to make use of research.
10. Whenever research initiatives occurred in isolation from a technological development and production structure, the results were confined to scientific publications and to increasing knowledge, but were not put to use in vaccination programs.
11. The existence of a local health products research base is essential. The impact of health product research and production on equity and quality of life will be greater the more these activities relate to local epidemiological needs. Just as health policy needs must serve as a focus for health research efforts, it should be stressed that health policy on product and process development rests on economic and technological policy. Poor countries' major health problems can be said to be underdevelopment and the lack of an endogenous innovative capability. Health policy research must be linked with a national development strategy.

Case Study 4: Health Research in Colombia Wins the State Lottery: How to Spend the Cash?

(Abstracted from: Yepes, F.J., Sanchez, L.H., Ramirez, M.L. 2001. Funding Research for Policy in Colombia's Reformed Health Sector. Alliance for Health Policy and Systems Research Working Paper 11.)

Soon, resources for health research in Colombia will notably increase thanks to a new law that sets aside a percentage of lottery revenues to finance health research.

Currently, HPSR is scarce in Colombia. Out of all research projects undertaken between 1990 and 1997, 40% were in the area of biomedical science, 29% in clinical science, 23% in epidemiology and only 8 % in HPSR. The Ministry of Health has not had a clear HPSR policy, nor indeed a health research policy overall. As a result it has allocated research resources haphazardly. This is a vicious circle; if there is no policy to strengthen HPSR capacity this will be reflected in the absence of a critical mass of investigators and a small number of HPSR proposals for funding.

The Ministry is currently pondering mechanisms for allocating HPSR funding. The first alternative essentially maintains the status quo and gives the Ministry autonomy to set priorities, select relevant research subjects and purchase on demand specific research from a national and international market. On the downside, this alternative exposes research to non-technical influences, risks lack of continuity due to frequent political changes and would impose restrictions on the use of information by government bureaucrats. The second alternative would see Ministry of Health resources placed in the Science and Technology system. This alternative would assure peer-reviewed selection, administration by an institution more stable and technically competent for research and unrestricted use of information. However, it opens up the process to the interests of the supply side (researchers and research institutions) which may not coincide with the Ministry's priorities. The Ministry would have to negotiate with the research community.

How should HPSR priorities be set in relation to other health research priorities?
What strategies, under each of the proposed mechanisms, would help to ensure that resources are allocated on the basis of priorities?

Case Study 5: The Dynamics of Policy Change: Lessons From Health Financing Reform in South Africa and Zambia

(Abstracted by Steve Hanney from Gilson, L., Bowa, C., Brihlal, V., Doherty, J., Antezana, I., Daura, M., Mabandhla, M., Masiye, F., Mulenga, S., Mwikisa, C., et al. 2000. The Dynamics of Policy Change: Lessons From Health Financing Reform in South Africa and Zambia. Bethesda, U.S.A: Partnerships for Health Reform Project, Abt Associates Inc.)

This study illustrates several of the approaches that can be applied when analyzing the process of policy making. The study is organized according to a conceptual framework consisting of a process of policy change moving from, as Gilson et al state, “agenda setting around a reform of focus, to reform design, and then through implementation to the achievement of immediate and longer term changes”. The policy analysis approach of Walt was also drawn upon so that the factors influencing each stage of the reform process were categorized and analyzed according to four broad factors: context, actors, process and content.

The methods used in the two countries included data collection through: document analysis, key informant interviews with policy makers and analysts, media analysis, and collection of secondary data. The data analysis techniques included: development of a timeline for each reform, stakeholder analysis, policy mapping techniques, impact analysis through use of secondary data, and review process. The two case studies incorporated examination of the impact made by research analysts, both inside and outside government, on policy development and found it to be “strongly dependent upon the presence of a policy champion”.