Health policy and systems research: defining the terrain; identifying the methods

Anne Mills

Across low- and middle-income countries on the one hand, and high-income countries on the other, there is confusion in the terminology relating to the study of health services and health systems. This commentary discusses health policy and systems research (HPSR) methods, drawing on the health services research literature and on recent work on HPSR. An earlier version of the text was written to contribute to discussions at a meeting organized by the Alliance for Health Policy and Systems Research, an agency set up in 1998 to promote and support such research in low- and middle-income countries. The paper comments on the field of HPSR methods, suggests priorities and identifies challenges facing the field of HPSR.

Keywords Health policy and systems research, research methods, low- and middle-income countries

**KEY MESSAGES**

- Greater clarity is needed in the definitions of health policy and systems research and health services research.
- A lack of attention has been paid to methods for health policy and systems research.
- Action is needed to clarify definitions and scope out relevant methods.

**Introduction**

The labels of ‘health systems research’, ‘health policy and systems research’ and ‘health services research’ are the source of much confusion. Within my own Faculty of Public Health and Policy of the London School of Hygiene and Tropical Medicine, for example, those doing research on a topic such as hospital governance structures would define themselves as doing health systems research if the work concerns low- and middle-income countries, whereas those doing similar research in the UK would define themselves as health service researchers. The Alliance for Health Policy and Systems Research (the ‘Alliance’), created in 1998 to promote research on health systems, has pioneered the broader term of health policy and systems research (HPSR), out of a concern to include the goal of influencing policy explicitly within the remit of health systems research. The Alliance defines HPSR as ‘the production of new knowledge to improve how societies organize themselves to achieve health goals’ (http://www.who.int/alliance-hpsr/en/).

The origin of this commentary was a concern to explore the definition of HPSR methods, to help the Alliance develop a programme of capacity strengthening for low- and middle-income country researchers. Health systems and health systems research have come to the fore in recent years in low- and middle-income countries. External support to such countries has focused especially on disease-specific support, for control of diseases such as HIV/AIDS, tuberculosis and malaria, yet it is increasingly being recognized that only limited and short-term gains can be made unless the broader health system infrastructure is strengthened at the same time as interventions are being introduced on a large scale (Travis et al. 2004). It is also recognized that research has an important role to play in helping countries to improve their health system. In 2003, for example, WHO set up a Taskforce on Health Systems Research,
to develop a research agenda to support the attainment of the Millennium Development Goals (Taskforce for Health Systems Research 2004, 2005). Alliance publications have included *Strengthening Health Systems: the Role and Promise of Policy and Systems Research* (Alliance for Health Policy and Systems Research 2004), *Sound Choices: Enhancing Capacity for Evidence Informed Health Policy* (Green and Bennett 2007), and most recently *Systems Thinking for Health Systems Strengthening* (De Savigny and Adam 2009).

However, HPSR methods appear to have been neglected as a specific area of study or review. A Google and Google Scholar World Wide Web search done from the UK on ‘health systems research’ and ‘health policy and systems research’ undertaken in May 2008 brought up virtually no useful results except references to the Alliance’s website, and a link to a volume produced by the Canadian International Development Research Centre (IDRC) on designing and conducting health systems research, which addresses a very specific type of research (primarily problem-based action research at a local service level).

Yet within high-income countries there is the burgeoning field of health services research, and indeed a Google search on health services research methods in May 2008 brought up a number of results on just the first page, encompassing journals (e.g. *Health Services Research and Journal of Health Services Research and Policy*), university research units, a book on health services research methods (Black et al. 1998), journal paper citations, and degree courses in health services research and related subjects.

Given that the field of health services research seems much better developed than that of HPSR, at least in high-income countries, and the apparent overlap in their fields of interest, it seems sensible to address first health services research and the relevance of its methods to HPSR, before directly considering HPSR methods. In the following section, the commentary thus examines the terminology and terrain of health services research. It then reviews the content of the report of the Taskforce for Health Systems Research (2005), summarizing methodological priorities mentioned within it and mentions of methodological issues in *Sound Choices* (Green and Bennett 2007). These were chosen as two recent efforts to make the case for increased emphasis on health systems research in low- and middle-income countries, and to suggest what should be research priorities. Based on these analyses, in the third section the paper seeks to outline the field of HPSR methods, it then suggests priorities, and finally identifies challenges.

**Terminology and terrain issues**

On the face of it, the term health services research would seem to imply a focus on individuals and the services they receive and provide. However, the health services research literature demonstrates ambiguity (or possibly evolution over time) on whether health services research encompasses also higher organizational and system levels. For example, the book *Health Services Research Methods* by Black et al. (1998) seems firmly focused on the level of individual patients and providers. Box 1 lists chapter titles, which encompass the conceptual framework (costs and benefits of medical care), methods of

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<tr>
<th>Box 1 List of chapters in Black et al. (1998)</th>
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<td>1. Researching health services</td>
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<td>Part one: Measurement of benefits and costs</td>
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<td>2. Patient-assessed outcome measures</td>
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<td>3. The use of health-related quality of life measures in economic evaluation</td>
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<td>5. Designing and using patient and staff questionnaires</td>
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<td>6. Choosing between randomized and non-randomized studies</td>
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<td>8. Factors that limit the number, quality and progress of randomized trials</td>
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<td>10. Implications of socio-cultural contexts for ethics of randomized trials</td>
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<td>12. Qualitative methods in health services research</td>
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<td>13. Statistical methods: good practice and identifying opportunities for innovation</td>
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<tr>
<td>14. An introduction to Bayesian methods in health services research</td>
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<td>15. Quality of life assessment and survival data</td>
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<tr>
<td>Part four: Presenting, interpreting and synthesizing evidence</td>
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<tr>
<td>16. Systematic reviews of randomized trials</td>
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<td>17. Handling uncertainty in economic evaluations of health care interventions</td>
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<td>18. Consensus development methods for creating clinical guidelines</td>
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| Evaluating health care, statistical methods, and presenting, interpreting and synthesizing evidence. |

On the other hand, a later book, by Fulop et al. (2001), explicitly addresses the rapidly developing area of research on
The organization and delivery of health services, explaining it as follows:

“Research on the way health services are delivered and organised is part of the broader field of health services (or health systems) research which has become well-established in the UK, North America and parts of Europe in the last twenty years.” (p.2)

The aim of health services research itself is defined, after Bowling (1997), as to ‘produce reliable and valid research data on which to base appropriate, effective, cost-effective, efficient and acceptable health services’. It draws on many disciplines and adopts a population perspective.

It is interesting to observe the bracket in the Fulop et al. quote, which highlights the current confusion in terminology. Health services research appears to have developed over time to colonize much of the terrain relating to the health system as a whole. A US textbook by Aday et al. (1998) makes this clear in its definition of health services research —to describe and assess the performance of the healthcare system—and in its framework for classifying topics and issues in health services research. This encompasses structure (availability, organization and financing of health care programmes, population characteristics, and the environment), process (transactions between patients and providers and health risks), intermediate outcomes and ultimate outcomes. Policy analysis (analysis and comparison of alternative problem definitions and health policy solutions) is considered a separate, though linked, type of enquiry. A more epidemiologically-influenced model is proposed by Schäfer et al. (2005), the input–output model, which links patient and resource inputs to changes in health status, and encompasses both patient–provider interactions and system level interactions.

Confusion is evident also in the seminal reader Health Services Research: An Anthology, produced by PAHO in 1992 (White et al. 1992), where the broader areas of concern above the service level were categorized as the ‘context’ of health services (e.g. issues such as state intervention, and organisational issues). In the Introduction, Kerr White does distinguish health systems research (‘study of a set of resources that a society mobilises and institutions that it organises to respond to the health conditions and needs of its population’) and health services research (one element of the response). However, he then states that because health services research was introduced first and is more widely employed, it is used as the generic term in the book. He does add, ‘Perhaps the relationship between health systems research and health services research will change in the future.’

Most relevant for this paper, Fulop et al. (2001) distinguish health service delivery and organizational research as being at three levels:

- **Micro**: that of the individual practitioner or patient;
- **Meso**: that of institutions [more appropriately labelled ‘organisations’ if the term ‘institutions’ is retained for broader social, economic and political structures, following North (1990)];
- **Macro**: that of the health system.

They comment that different disciplines tend to address different levels, and indeed are better suited to addressing certain levels: for example policy analysis and history tend to focus on meso and macro levels, whereas epidemiology and psychology tend to focus on meso and micro levels.

Fulop et al. chose to structure their book primarily by discipline or method (see Box 2). However, they provide a very useful extended example in the first chapter of how the various disciplines and approaches can address the full range of research questions raised by a change in service delivery (the introduction of telemedicine).

Assessing this health services research terminology for its relevance to HPSR, the Alliance stands out not merely for its use of the health ‘systems’ terminology (as opposed to ‘services’), but also for its addition of the word ‘policy’. White et al. structured their list of contents by topic (e.g. resources for health services), within each topic listing theoretical and conceptual developments, methods of research and implications for health policies (containing examples of research likely to significantly influence policy). This suggests that policies follow from research findings, rather than being a subject of study in their own right. The Alliance was very clear from the start that it was concerned with research not just for policy but also on policy. In other words, the study of the process of policy making, the actors and interests involved, is of critical importance to a subject area which explicitly seeks to influence policy (Walt 1994). This places political science, in particular, centre stage along with the more standard disciplines.

A further characteristic of the Alliance’s approach is that it encompasses the global level as a further level of enquiry. While supra-national issues are receiving greater attention in high-income countries—for example, issues of trade in human products and movement of health workers—this does not seem to have received much attention within the domain of health services research. From a low- or middle-income perspective, global factors are key influences on health systems, as recognized in the UK Department for International Development’s strategy on research for development which includes global influences on health systems as a priority (Department for International Development 2008).

Finally, the Alliance’s very wide definition of HPSR suggests that broader determinants of health, including intersectoral factors and public health interpreted broadly, are as relevant as

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**Box 2 List of chapters in Fulop et al. (2001)**

1. Issues in studying the organization and delivery of health services
2. Organizational studies
3. Micro-level qualitative research
4. Epidemiological methods
5. Organizational psychology
6. Policy analysis
7. Economic evaluation
8. Organizational economics
9. Historical research
10. Operational research
11. Action research
12. Synthesizing research evidence
health care. While the health services research community would not equate health services with curative care, it is nonetheless true that the focus of developed world health services research has been very much on what goes on within primary and hospital care, rather than public health activities delivered outside facilities which might be considered to be the remit of public health research. However, it is interesting to note that the White et al. (1992) definition of health systems research given above is as broad as that of the Alliance, encompassing all resources and institutions that respond to health conditions and needs, and that the second edition of Aday et al., published in 1998, broadened health services research to include population (public health) services.

Methodological issues in HPSR
To identify methodological concerns within the developing country health systems research literature, the report of WHO’s Taskforce on Health Systems Research (2005) was examined for mention of methods. The Taskforce was set up to assess priorities in health systems research and was primarily concerned with addressing knowledge gaps relating to health systems issues, but it did include some mention of methodological problems of past research, and methodological issues in desired research priorities, in both the main text and the various templates which summarize priorities in 12 topic areas. Table 1 extracts the methodological content of the report.

There are two striking features about this table. Firstly, the report has very limited material on methods. One template makes no mention at all of methods as either a problem or as one of the priorities (Equitable, effective and efficient health care). Methodological problems are not mentioned in the main text and five other templates, and methodological priorities are not mentioned in one other template.

When the actual references to methods are examined, it is apparent that the wording is not at all precise. Under problems, the most common phrases are various ways of referring to lack of methodological rigour. The one exception is for the topic ‘Priority setting and evidence-informed policy making’, where one-off research studies and small-scale implementation are the source of concern.

On priorities, again methodological soundness (without further explanation) is a common call. Beyond that, there is mention of the full range of types of research and methods (e.g. randomized and non-randomized, qualitative and quantitative, multidisciplinary, participatory, case studies, conceptual frameworks). There is also attention given to the need to increase research capacity, including not just technical skills but also interpersonal skills.

Secondly, the text of Sound Choices (Green and Bennett 2007) was examined for material relevant to methodologies. As with the Taskforce report, ‘trustworthy’ evidence is called for, and the need identified to develop stronger methodologies for conducting HPSR (p.13). Examples of areas where conceptual and methodological development is still needed are listed (p.83):

- Methods for studying corruption;
- Basic concepts such as equity;
- Ethical dimensions of HPSR;
- Systematic review methods for HPSR allowing for the diverse range of types of evidence and the diverse purposes of reviews (going beyond effectiveness research);
- How different disciplines relate to each other and can be complementary.

The text also noted that the choice of methods needs to take into account the acceptability of different types of evidence to policy makers. It suggests that policy makers seem to prefer to rely on multiple sources of evidence, not just from their own country but also from elsewhere.

The methodology of HPSR
From the above analysis, it seems that the field of HPSR methods has not been systematically constructed or presented. It is beyond the ambition of this commentary to remedy this; rather the various elements which might constitute the field are summarized here, drawing on chapter 1 of Fulop et al. (2001) and on some more recent thinking.

Disciplines: Disciplinary orientation can affect the questions asked, and the theories, concepts and research techniques used. Disciplines employed in HPSR include anthropology, economics, epidemiology, geography, history, medicine, nursing, political science, sociology and statistics. Disciplines tend to be associated with different paradigms, of which those capable of creating most tension in health systems/services research are positivism/objectivity vs interactionism/subjectivity, and deductive vs inductive approaches. However, there is not necessarily a one-to-one relationship between disciplines and paradigms, and there can be frequent drawing by one discipline on the concepts and techniques of other disciplines, as with the application of qualitative techniques within health economics (Coast et al. 2004). Multi- or inter-disciplinary research is a frequent aspiration in health services/systems research.

Purpose of research: There is a key difference, for example, between impact evaluation, an area of growing interest where the aim is to be able to make strong statements about causality, vs research which seeks to understand how and why things happen, as in process evaluation.

Approaches to research: Relevant approaches include action research, operational research, and participatory research, in contrast to the more traditional research approach where researchers and subjects of research are more distinct.

Types of research: A key distinction is between experimentation (encompassing controlled experiments, quasi-experiments and natural experiments) vs observation of everyday contexts including case studies. Randomization tends to be perceived in the medical world as the gold standard, but is often neither relevant nor feasible in health systems research. This can lead to health systems research being perceived as less rigorous, even when it follows standards of rigour relevant to other disciplines (Mills et al. 2008).

Methods of research: The most common distinction is between quantitative and qualitative methods, though mixed methods are also commonly recommended in health services research.
Data sources: They encompass individuals (whether as users, providers, managers, policy makers, politicians, etc.), documents and information systems (for secondary data).

Analytical methods: The main distinctions would be statistical methods vs approaches to analysing qualitative and documentary evidence. Systematic review methods are also relevant here.

The above listing raises the question of what is unique in terms of HPSR methods, given that innumerable sources of advice exist for all these areas, if not structured as a corpus of knowledge specifically related to HPSR. The latest Alliance Flagship report argues that systems thinking is at the core of HPSR, i.e. an understanding that 'Every intervention, from the simplest to the most complex, has an effect on the overall system, and the overall system has an effect on every intervention' (de Savigny and Adam 2009). In other words, it is not the specific methods, but rather the need to think systems-wide in terms of effects and influences.

A further question, given that the health services research methods literature relates mainly to high-income countries, is whether this body of methods is universally applicable, or are there areas where methods need further development for application in a very different context. For example, it could be argued that the development of new methods for

Table 1 Analysis of coverage of methodological issues in the Report of the Taskforce on Health Systems Research (2005)

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<thead>
<tr>
<th>Methodological problems diagnosed</th>
<th>Mention of methodologies in required research</th>
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<tr>
<td>Community financing, social health insurance and universal coverage</td>
<td>Lack of methodological rigour, e.g. low internal validity in CBHI studies</td>
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<tr>
<td>Human resources for health at district level and below</td>
<td>Lack of robust research Methodological limitations of TBA research</td>
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<tr>
<td>Human resources for health at national level</td>
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<tr>
<td>Community involvement</td>
<td>Few rigorous evaluation studies of ways of achieving community participation</td>
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<tr>
<td>Equitable, effective and efficient health care</td>
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</tr>
<tr>
<td>Approaches to the organization of health services</td>
<td>Reviews generally done from ideological standpoint with little attention to methodological rigour of studies</td>
</tr>
<tr>
<td>Drug and diagnostic policies</td>
<td>Little reliable evidence of most pharmaceutical policies</td>
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<tr>
<td>Governance and accountability</td>
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<tr>
<td>Health information systems</td>
<td></td>
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<tr>
<td>Priority setting and evidence-informed policy making</td>
<td>Much information on cost-effectiveness comes from one-off research studies and small-scale implementation</td>
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<tr>
<td>Effective approaches to intersectoral engagement in health</td>
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<tr>
<td>Effects of global initiatives and policies on health systems</td>
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Notes: CBHI: community based health insurance; TBA: traditional birth attendants; HIS: health information system.
assessing socio-economic status which do not rely on a detailed accounting of income or expenditure (Vyas and Kumaranayake 2006), and ascertaining health care expenditure of households through the use of pictorial diaries (Wiseman et al. 2005), are responding to the need for adaptation of methods to a low literacy, subsistence economy setting.

Current priorities for action on methods

Given the current lack of material relating to HPSR methods, three main priorities are suggested as ‘low hanging fruit’ which could be relatively quickly undertaken.

Firstly, in terms of helping to define the field as a whole, there would be value in producing a textbook and/or reader or anthology in HPSR methods. A textbook would take time to write, and much relevant material is already available, if not with an emphasis on serving the needs of HPSR. For example, Bowling (1997) is an excellent introduction to research methods in health, including all the standard health service research methods, and the journal Health Policy and Planning has a series entitled ‘How to do (or not to do)…’ with many relevant papers such as those of Vyas and Kumaranayake (2006) and Wiseman et al. (2005). Existing readers/anthologies include those of White et al. (1992) and Clarke et al. (2004). The former is now quite dated and biased to the USA (no doubt due to the availability of material). The latter, the companion book to Fulop et al., is a product of the NHS Service Delivery and Organisation Research and Development Programme, and hence focused on UK issues. Given the recent development of interest in HPSR, it should not be difficult to choose a selection which exemplifies valuable HPSR methods applied to relevant topics in low- and middle-income countries. A useful supplement would be to add critical comment on each item included, for example highlighting issues of generalizability, or key ‘dos and don’ts’ related to the methods. This suggestion was adopted by the Alliance, and a reader is now under development.

Secondly, the area of comparative studies seems one where to date there has been relatively little development of methods, and yet which is vital for advising policy makers. In the area of health systems, there is rarely a blueprint of an ideal set of arrangements, but rather lesson-learning has to proceed by comparing how well similar arrangements work in different settings, or different arrangements work in similar settings (McPake and Mills 2000). For example, it may be possible to say that a specific intervention has one type of effect in one set of circumstances, and another type of effect in another set of circumstances. A related issue is that it is often not possible to define a specific ‘intervention’, since a particular arrangement or reform may involve multiple elements which are combined in different ways even within a country, let alone across countries. This can limit the value of quantitative comparisons, and means that comparative case studies are needed, which can look in-depth at the ‘hows and whys’ of arrangements. Methodological development and guidance is needed to help inform such multi-country and multi-site studies and establish what findings are highly site-specific, and what are more generalizable. As part of this, much greater attention is needed to defining the circumstances or the ‘context’, which can greatly affect how a particular approach works in real life (Victora et al. 2005).

Thirdly, while specific methods used in HPSR are often well established, how they are selected and combined to answer specific health policy questions is not at all straightforward. Therefore, for any particular priority area of health systems and policy knowledge, there is likely to be a case for developing guidance on what mix of methods is appropriate to answer what type of questions. Systems Thinking (de Savigny and Adam 2009) makes an important contribution in this area, but much more remains to be done.

All these priorities would serve the broad community of health policy and systems researchers, and help address the deficiencies in the knowledge base identified in the Taskforce Report. However, to the extent that poor quality results not just from poor choice or application of methods but also from limited funding (for example, where funds do not permit a research question to be answered satisfactorily), complementary action will be needed to ensure funding that is commensurate to the problems being researched.

Further challenges

The much greater attention now being given to health systems is helping to highlight knowledge gaps and encourage greater emphasis on HPSR. Funding has increased in recent years (Bennett et al. 2008), and a number of areas within HPSR are receiving increased attention, notably systematic reviews and impact evaluation. Beyond the immediate methodological development needs of HPSR, three main challenges stand out.

Firstly, based on personal interactions with traditional research funders, it is clear that they fear that HPSR does not produce generalizable findings, and hence may not be worthy of support. Indeed, the low priority often attached to health services/systems research is evident from the analysis that only 1.6% of UK Medical Research Council and 0.5% of Wellcome Trust research funding went to health services research (Rothwell 2006), and that 97% of grants awarded by the Bill and Melinda Gates Foundation and US National Institutes of Health went to development of new technologies (Leroy et al. 2007). Greater methodological development of comparative studies, as proposed above, would help address the concern of generalizability, but it is also important to build up an advocacy case, based on examples of high quality comparative research such as comparative case studies of particular issues.

Secondly, the generally poor quality of HPSR, as signalled in the Taskforce Report, highlights the need to invest in capacity development of researchers and their institutions, as well as in the knowledge base of research methods. Part of this will involve training, but as important is likely to be experience and learning by doing.

Finally, given the policy-orientation of HPSR, and the common criticism that HPSR knowledge is not well orientated to the needs of policy makers or well communicated to them, structures and mechanisms are needed which link the policy-making and research communities to agree research priorities and identify research questions. That is then the platform on which selection of appropriate research methods can proceed.
Acknowledgements

I am grateful to colleagues Kara Hanson, Lucy Gilson, Nick Black, Nick Mays and anonymous reviewers for comments on earlier versions. The text was originally developed for presentation at the meeting ‘Mexico to Mali: Taking Stock of Achievements in Health Policy and Systems Research’ hosted by the Alliance for Health Policy and Systems Research and WHO in Nyon, Switzerland, 25–27 May 2008. The meeting report and statement are available online at: http://www.who.int/pmnch/topics/health_systems/alliance_hpsr/en/index.html.

Funding

The Alliance for Health Policy and Systems Research covered the cost of attendance at the above meeting, but no payment was received for the paper itself.

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