

Eldis Health Key Issues

Health management information systems

Health management information incorporates all the data needed by policy makers, clinicians and health service users to improve and protect population health. Few countries in the world today have effective and comprehensive systems in place to gather this data.

Yet there has never been a greater need for robust health information. As the world community has turned its attention to meeting **Millennium Development Goal targets**, and ever increasing resources are going towards preventing and treating high burden diseases such as **HIV and AIDS, tuberculosis** and **malaria**, decision-makers need to be able to measure whether policies and programmes are working, and whether progress is being made towards the goals that have been set. Donors are also placing more emphasis on performance, linking the release of funds to performance based measures.

See: **Structuring information and incentives to improve health**

The **World Health Organization (WHO)** argues that investment in health management information systems (HMIS) now could reap multiple benefits, including:

- helping decision makers to detect and control emerging and endemic health problems, monitor progress towards health goals, and promote equity;
- empowering individuals and communities with timely and understandable health-related information, and drive improvements in quality of services;
- strengthening the evidence base for effective health policies, permitting evaluation of scale-up efforts, and enabling innovation through research;
- improving governance, mobilising new resources, and ensuring accountability in the way they are used.

This key issues guide examines some of the strategic and operational challenges involved in implementing HMIS; considers the evidence from some case studies; and asks what lessons have been learned to date.

The online version of this guide is available at:

www.eldis.org/healthsystems/hmis/index.htm

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Low levels of public will

One of the basic building blocks for any HMIS is having a vital registration system (record of births and deaths). Yet roughly only half of countries in the world have a comprehensive vital registration system (78 out of 150) covering only one third of the world's population. Low government capacity and lack of political will are two main obstacles to making vital registration compulsory. See **The 'rights' start to life: a statistical analysis of birth registration**.

Gender bias also hampers accurate recording of births and deaths of girls and women, making monitoring of events such as maternal mortality even trickier in many countries. **The right to count** highlights problems of gender bias in counting maternal deaths, while **Maternal mortality at the end of a decade: signs of progress?** provides much further detail about the constraints of vital registration.

Competing donor and national programme requirements

are also making it very hard for Ministries of Health to institute a single, comprehensive information system. The "projectisation" of much of development assistance has meant that separate, individual reporting systems have been created for national disease control programmes and for individual districts within countries.

Health information systems: the foundations of public health argues that donors are largely responsible for fragmentation of health information, having prioritised urgent needs for data over longer term country capacity building. Anecdotal evidence indicates that even where central ministries are committed to rationalising the collection and use of health information, they are frequently obstructed by donors and by their own national programme managers, who fear losing the degree of information detail that they have through their own system. In this case, much greater advocacy is required to build the case for a single, unified information system, and to push forward potentially unpopular changes in what data is collected.

Why health care information systems succeed or fail argues that HMIS often fail because such behavioural aspects of organisations are not taken into account. Other reasons include problems that are encountered when trying to apply a system that works in one country to another, and of applying public sector HMIS to the private sector.

Integrating public and private sector information

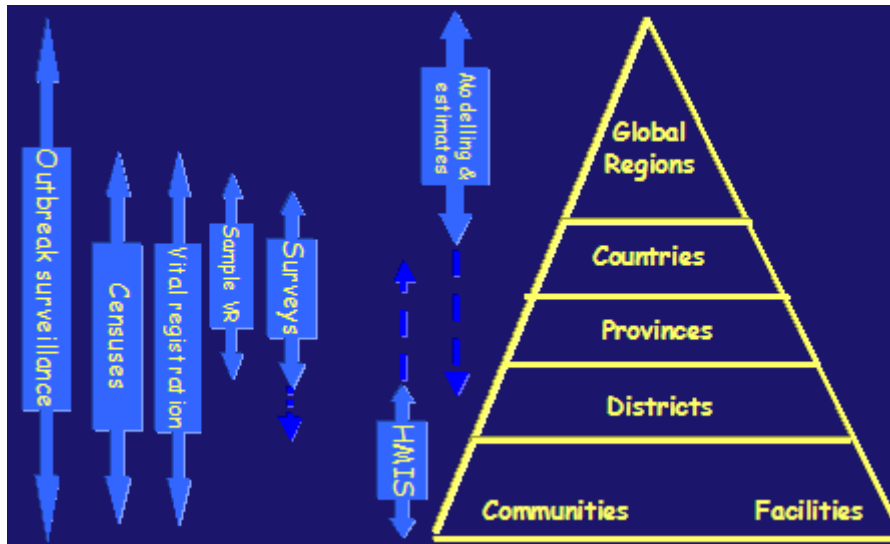
On top of the challenges of establishing a unified information system in the public sector there can also be substantial barriers to persuading non-state health providers to adopt the same information system as the one being used in the public sector. In many countries non-state provision can account for the large majority of health care provided so that data from non-state clinics and hospitals is critical for having a holistic picture of population health. Non-state providers may be reluctant to integrate into national information systems because of using their own established systems already (e.g. in faith based health networks) or because they are nervous of giving too much detail about their resource flows.

Putting a working HMIS in place

The Health Metrics Network, has brought together a **toolkit** for building a comprehensive, locally appropriate HMIS, accompanied by a **self-assessment tool** (excel spreadsheet, 430kb) so that countries can evaluate their own HMIS. Taking a pragmatic approach, the toolkit inventories the number of ways population based health data are currently collected and seeks to weave these different data collection strands into a seamless, continuous information system.

Issues in health information explains how different data is relevant for different levels in the health system and different users. As shown in the figure below, some types of data, such as censuses and vital registrations, should cover all levels from national government to the community, while others are intended primarily for use in patient or facility management.

Relevant health information tools for different levels of the health system



Source: World Health Organization, 2005

The World Health Organization (WHO) has also produced a **"how to" guide for developing HMIS**, focusing on practical advice for managers and staff.

Operational constraints

There are a number of constraints to implementing a comprehensive HMIS, including getting the coding right, human resource capacity, and data storage and use.

Measurement and coding

Health decision makers need to agree what diseases and what resource management issues they wish to monitor on a regular basis. There are international requirements with regards to disease surveillance that governments are obliged to adhere to. Each country may also have specific patterns of disease that are worth monitoring as well. However, disease surveillance isn't just a question of agreeing what diseases to report on, it also requires that clinicians are able to diagnose the diseases accurately and are rigorous about applying correct coding. The WHO has created the **International Classification of Disease (ICD)** to try and standardise disease reporting across the world, but not all countries use ICD codes.

Human resource capacity

One of the most difficult parts of improving HMIS is ensuring that the people filling in the forms at clinic level are skilled enough to report accurately, whether on diseases diagnosed or resources used.

Data storage and use

One of the temptations in HMIS has been to get carried away with the technical aspects of data storage and analysis, rather than focusing on the more fundamental issues of making sure the data is correct in the first place. Large investments have been made in improving information technology for ministries of health. There is no doubt that computerisation of data storage and analysis has sped up data handling considerably, but it has also drawn attention away from other more critical, and more challenging aspects of HMIS, such as coding and personnel capacity.

In terms of data use, countries have been consistently poor at supporting health workers who are collecting data to use it locally for planning and management purposes. Some observers speculate that facilitating greater local use of data could improve data quality overall, as those doing the data collection should be more motivated. **Using a simple health care information system for health sector reform and health system management** explores how to make data more user friendly for local use.

Finally, with the growing interest in using HMIS to support performance management, countries are having to decide performance indicators that can be monitored through routine data collection. Following on from a **workshop in May 2005**, the DFID Health Resource Centre (www.dfidhealthrc.org/) put together a comparative table of proposed performance indicators for the three East African countries, Kenya, Tanzania and Uganda.

Case studies

National case studies

Almost every country in the world has some form of national health management information system (HMIS), although many do not function well. Reports documenting country experiences confirm the presence of many of the challenges highlighted in the previous section.

The HMIS in Zambia: a trace on the implementation steps considers eight years of experience of implementing HMIS at national, regional and provincial levels in Zambia. Many of the challenges were found to stem from the way existing organisations and systems were set up. They included problems with creating a "data culture," as well as rapid turn over of health workers, which resulted in data collection falling to inexperienced staff.

The causes of failing HMIS in Tanzania and Mozambique are explored in a **comparative case study**. The authors identify a tendency for information systems to be rigidly designed because they are seen as isolated entities, and their integration into government is seen as only a technical issue. They argue that the chances of a sustainable HMIS could be improved by addressing the political interests of "key actors," including the Ministry of Health, donors and system developers. Local participation is needed in introducing the new ways of doing things that often accompany new information systems, and existing networks and infrastructures need to be cultivated.

Information systems for health sector monitoring in Papua New Guinea also addresses critical factors for ensuring HMIS sustainability, though the case study reports from a more positive perspective. Again, the key success factors centre around creating a policy culture that needs accurate information to feed decision makers, while also stimulating the use of health data for lower level decision making at the same time.

District health information case studies

Some countries have undertaken a more "bottom up" approach to developing their HMIS. In Kenya, for example, the **Aga Khan Community Health Department** set about supporting the Ministry of Health of Coast Province to revamp the HMIS to make it more useful and relevant. The project was careful to roll out the new system so that District Health Management Teams and clinical staff were adequately trained and supervised. Ownership of data was instilled through defining data needs with health workers and managers alike, while also getting all people involved in the information chain to determine the most appropriate and effective system of data flow. Based on the success of Coast Province, the national Ministry of Health is now adapting the Coast HMIS for a new national HMIS strategy. See **Leading the information revolution in Kwale District**.

South Africa has a well developed HMIS, whose core is based on the District Health Information System. A **World Health Organization review** provides an overview of the DHIS, including how analysed data is fed into various types of reporting tools for use by managers.

Lessons learned

The key lessons learned in developing and implementing health management information systems (HMIS) to date include:

Need for strong political backing

Leaders, both within the national government as a whole, and within Ministries of Health, need to show strong support for an integrated HMIS, in order to overcome both external (donor) and internal (staff) resistance to data collection routines. They also need to espouse principles of transparency and the value of good information for good governance of a health system.

Developing a culture that values and uses information

Related to issues of leadership, health workers and managers need to understand the need for and value of having good health information to help with planning and decision making.

Involve all levels in changes to HMIS

One way to instil an appreciation for good health information is to involve people from all levels of the data chain in determining what data is needed and how it will be used. This is particularly critical for local health workers who may be sceptical about changes to what data is collected and how it is to be collected. The aim of any changes should be to try and reduce the amount of data collected at clinic level and should focus on how data can be better used at a local level.

Start with improving the paper based system

Much attention in HMIS has been given to improving IT aspects of the information system, when in fact the fundamentals of diagnosis, coding and reporting are not yet in place. The most successful experiences of HMIS in resource poor countries have been those that ensure that the routine record keeping is of sufficient quality before considering the use of IT systems.

Ensure the feedback loop is continuous and reliable

Health workers and managers who have to undertake the data collection are more likely to remain motivated if they see the outputs of their work. This can be further enhanced if, as in a system geared towards performance management, health centres, hospitals or districts see their 'results' compared with those of other facilities or districts.

References and summaries

1. Maternal mortality at the end of a decade: signs of progress?

How progress in maternal mortality has stalled in sub-Saharan Africa

AbouZahr, C.; Wardlaw, T. / Bulletin of the World Health Organization (WHO): the International Journal of Public Health (2001)

This article, published in the Bulletin of the World Health Organization, examines recent trends in two indicators of maternal mortality: the percentage of births attended by a skilled health care worker, and rates of caesarean delivery. It reveals that globally, modest improvements in coverage of skilled care occurred, with an average increase of 1.7 per cent per year during 1989-99. Progress was greatest in Asia, the Middle East, and north Africa, with annual increases of over 2 per cent. But in sub-Saharan Africa, coverage stagnated. Countries where the rates of caesarean deliveries were lowest - and where the needs were greatest - showed the least change.

The article concludes that there may be grounds for optimism regarding trends in maternal mortality in parts of north Africa, Latin America, Asia, and the Middle East. But the situation in sub-Saharan Africa remains disquieting, especially for areas with high prevalence of HIV and AIDS, where the need for skilled care during labour and childbirth is critical. It notes that this data represents a snapshot of a complex reality, and argues that much more detailed information is needed, both with regard to how indicators are measured, and precisely what they mean in different settings.

Available online at: [http://www.who.int/bulletin/archives/79\(6\)561.pdf](http://www.who.int/bulletin/archives/79(6)561.pdf)

2. Health information systems: the foundations of public health

More than money is needed to improve health information systems

Abou Zahr, C.; Boerma, T. / Bulletin of the World Health Organization (WHO): the International Journal of Public Health (2005)

This theme paper, published in a special issue of the Bulletin of the World Health Organisation on health management information systems, argues for the importance of health information systems in public health. It considers how well they are performing at present and looks at how they might be improved through initiatives such as the Health Metrics Network. The authors argue that public health decision-making is critically dependent on the timely availability of sound data. But in practice health information systems rarely function systematically; they are complex, fragmented, and unresponsive to needs. The paper claims that international donors are largely responsible for the problem, having prioritised urgent needs for data over building countries' longer-term health information capacity. The result is that many countries are unable to generate the data needed to monitor progress towards the Millennium Development Goals.

The authors argue that solutions to the problem of poorly functioning health information systems must be comprehensive. Money alone is likely to be insufficient unless accompanied by sustained support to country systems development coupled with greater donor accountability and allocation of responsibilities. The authors conclude that good examples exist of the use of data for evidence-based decision-making leading to better health, and argue that such examples need to be extended and scaled up.

Available online at: <http://www.who.int/entity/bulletin/volumes/83/8/578.pdf>

3. Integrating equity into health information systems: a human rights approach to health and information

Equity focused health information systems strengthen human rights

Bambas, L. / Public Library of Science Medicine (PLoS Medicine) (2005)

This PLoS medicine article argues that health information systems can play an important role in supporting human rights. Firstly, health information systems can document and track health and health inequalities. Secondly, they can create a platform for action and accountability. Thirdly, they can support effective health development by providing access to population health information that is socially and economically disaggregated. The Equity working group of the Health Metrics Network (HMN), a global collaboration focused on strengthening country health information systems, has made a number of recommendations which provide a framework for an equity-sensitive information system.

This framework is based on four principles. Firstly, each person has dignity and matters. Secondly, everyone should have opportunities for health and the means to improve health, with special attention given to vulnerable populations. Thirdly, governments are accountable to the public, communities have a right to the information they need to make healthy decisions and individual autonomy should be supported. Fourthly, governments, communities and individuals are all responsible for promoting health and health opportunities. The author argues that these recommendations provide a strategy for strengthening decision and policymaking by providing a strong empirical base for human rights. [adapted from author]

Available online at: <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pmed.0020102>

4. The HMIS in Zambia: a trace on the implementation steps

Achievements and challenges for Zambia's health management information system

Central Board of Health: Government of Zambia / Central Board of Health, Government of Zambia (2003)

This document, published by the Central Board of Health of Zambia, describes the implementation of the country's health management information system (HMIS) during 1995 to 2003, and considers the system's achievements and the challenges facing it. The new HMIS was a response to weaknesses of the previous system, which was highly fragmented but with centralised data management. The aim was to establish a self sustaining monitoring and evaluation system that would improve decision making at all levels of the health care system with timely, valid and appropriate information.

Achievements of the new system included institutionalising data usage in district management; improved reporting timelines; and improved data quality. However, there were also a number of ongoing challenges. The design of the system was unfinished when implementation began; reporting systems were fragmented; and a review that was supposed to be carried out after two years never happened. Senior officials appeared too busy to undergo orientation on data use for decision-making, and it appeared difficult for some people to change the way they do business in order to make greater use of data. Other challenges included human resources problems, the lack of a clear monitoring and evaluation framework, and inadequate documentation.

Available online at:

<http://www.cboh.gov.zm/documents/HMIS/HMIS%20Background%20Document%20-%20Final%20-%20November%2012.pdf>

5. Information systems for health sector monitoring in Papua New Guinea

How a new information system helped to support Papua New Guinea's national health plan

Cibulskis, R.E.; Hiawalyer, G. / Bulletin of the World Health Organization (WHO): the International Journal of Public Health (2002)

This paper, published in the Bulletin of the World Health Organization, describes the design, implementation and testing of a new, national health information system in Papua New Guinea during the 1990s; how the system was integrated with other management information systems;

and how information from it has been used to support decision making. It reports that improvements in information systems eventually allowed the government to undertake more extensive analysis than was previously possible, and to use information for assessing priorities in the national health plan. Information was also used to market the plan to other government sectors and parliamentary leaders.

The paper concludes that central coordination of systems design is essential to make sure that information systems are aligned with government priorities and can deliver the information required by managers. While there is often scope for improving the performance of existing information systems, too much emphasis can be placed on revising data collection procedures and creating the perfect information system. Data analysis, even from imperfect systems, can stimulate greater interest in information, which can improve the quality and completeness of reporting and encourage a more methodical approach to planning and monitoring services. The authors also highlight the role that senior decision-makers can play in creating a culture of information use.

Available online at: [http://www.who.int/bulletin/archives/en/80\(9\)752.pdf](http://www.who.int/bulletin/archives/en/80(9)752.pdf)

6. Supporting NHA in Africa: a brief for donors

How the concept of National Health Accounts (NHA) addresses donor concerns about fiscal transparency

De, S.; Hjortsberg, C.; Vassal, A.; Picazo, O. / Partners for Health Reformplus (PHRplus) (2003)

Information on the flow of funds through the health sector is crucial to knowing how to direct health care funds and monitor investments. National Health Accounts (NHA) is a useful framework which allows for more fiscal transparency in health systems. This brief, published by PHRplus, is intended as an introductory guide to the NHA approach for both multilateral and bilateral donors who are involved in African health sectors.

The document outlines the concept of the NHA, which measures and tracks the use of total health care expenditures in a country. It then explains how the NHA addresses donor concerns and interests, citing specific examples. Presented in a question and answer format, it offers critical suggestions for the successful implementation of this approach, addressing both technical and financial concerns. New aid modalities offer new, resource- monitoring, multi-sectoral challenges to countries and donors. The NHA offers a standardised and comprehensive framework with which to implement, monitor and analyse the flow of funds in health system.

Available online at: <http://www.phrplus.org/Pubs/sp7.pdf>

7. East Africa Policy Forum: health management information systems

Plans to improve health information in East Africa

DFID Health Resource Centre / Department for International Development (DFID) Health Resource Centre (HRC) (2006)

This report, published by the DFID Health Resource Centre, covers the proceedings of an East Africa Policy Forum on health management information systems (HMIS). Participants included staff from East African ministries of health, non-government organisations, and academics. Topics covered included the World Health Organization's new Health Metrics Network; the development of a harmonised statistical database for East Africa; and demographic surveillance surveys. Challenges identified in implementing national level HMIS included: inadequate policy, coordination and harmonisation; inadequate managerial support; and a lack of evaluation or quality assurance of HMIS to find out what is or is not working.

Participants at the forum agreed on a number of activities, including: developing an HMIS strategic plan to inform each country's national health sector plan; creating processes such as monitoring and evaluation to improve implementation of HMIS; and replicating good models of HMIS on a larger scale. It was also agreed that an East African HMIS network would be formed,

so that forum participants and other interested individuals could continue to share lessons learned. Proposed activities for the new network included documentation of best practice; standardisation of common indicators; and developing HMIS policy guidelines.

Available online at: http://www.dfidhealthrc.org/publications/health_service_delivery/HMIS%20East%20Africa%20Policy%20Forum%20Report%20June%202005.pdf

8. Managing misinformation - introducing a new health management information system in Uganda

Jean Gladwin, Robert A. Dixon and Tom D. Wilson / University of Sheffield, UK / id21 Development Reporting Service (2002)

How can health management information systems (HMIS) be successfully introduced in low-income countries? Research coordinated by the University of Sheffield examined the introduction of HMIS in Uganda and identified the problems experienced in the process. Can the introduction of HMIS support the decentralisation of the Ugandan health service? Can it assist real organisational change at the local level?

Available online at: <http://www.id21.org/health/h1jg4g2.html>

9. Making the connection - decentralising the management of health information in low- income countries

Jean Gladwin, Robert Dixon and T. D. Wilson / University of Sheffield, UK / id21 Development Reporting Service (2003)

How does the shift towards decentralisation of health services in low- income countries affect the way in which health information is managed? Researchers from the University of Sheffield investigated the effects of the introduction of a new health management information system (HMIS) into primary healthcare (PHC) and how it affected the role of local managers. How successful was the systems introduction? Does this process offer further opportunities for future transitions to the decentralisation of information in healthcare?

Available online at: <http://www.id21.org/health/h1jg4g1.html>

10. The right to count

The need for better information for maternal mortality targets

Graham, W.; Hussein, J. / The Lancet (2004)

This case report, published in the Lancet, examines the issue of under- reporting of maternal deaths in developing countries, and considers the implications for the UN Millennium Goal target of reduction maternal mortality by three-quarters by 2015. It reports that, even in several developed countries, under-reporting of maternal deaths ranges from 17 per cent to 63 per cent. But in the world's poorest countries, vital registration and health services data are totally lacking or highly unrepresentative of particular subgroups, especially the poorest. Barriers to setting up and maintaining national health information systems have included financial constraints, skills shortages, and politics.

The authors conclude by drawing attention to the perversity of promoting maternal mortality reduction as a goal without addressing the weaknesses of information systems to monitor progress. They argue that to deny women and their families the right for their health burden to be counted is to ignore the burden itself. It thus presents fundamental challenges to the poverty reduction strategies of developing countries.

The full text of this article is only available to subscribers. Users in developing countries can access it via [Hinari](#).

Available online at: http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6T1B-4BC1S83-12-3&_cdi=4886&_user=128860&_orig=search&_coverDate=01%2F03%2F2004&_sk=996360597&view=c&wchp=dGLbVtb-zSkWz&md5=6df2d89fb245ad0619421583b453215d&ie=/sdarticle.pdf

11. Why Health Care Information Systems Succeed or Fail

Heeks, R.; Mundy, D.; Salazar, A. / *Institute for Development Policy and Management (IDPM), Manchester (1999)*

This document offers an understanding and model of why health care information systems succeed or fail, and with general guidance on how to avoid HCIS failure.

Some health care information systems (HCIS) do succeed, but the majority are likely to fail in some way. To explain why this happens, and how failure rates may be reduced, this paper describes the 'ITPOSMO' model of conception-reality gaps. This argues that the greater the change gap between current realities and the design conceptions (i.e. requirements and assumptions) of a new health care information system, the greater the risk of failure. Three archetypal large design-reality gaps affect the HCIS domain and are associated with an increased risk of failure:

- Rationality-reality gaps: that arise from the formal, rational way in which many HCIS are conceived, which mismatches the behavioural realities of some health care organisations
- Private-public sector gaps: that arise from application in public sector contexts of HCIS developed for the private sector.
- Country gaps: that arise from application in one country of HCIS developed in a different country.

Some generic conclusions can be drawn about successful approaches to HCIS development. Examples include the need for more reality-oriented techniques and applications, and greater use of participative approaches to HCIS. More specifically, techniques can be identified for each of the seven ITPOSMO dimensions that will help close the gap between conception and reality. This can include the freezing of one or more dimensions of change. Such techniques will help improve the contribution that information systems can make in health care organisations. [author]

Available online at: http://www.sed.manchester.ac.uk/idpmpublications/wp/igov/igov_wp09.shtml

12. Contributing to the fight against HIV/AIDS within the informal economy: the existing and potential role of decentralized systems of social protection

Decentralised systems of social protection in the fight against AIDS

International Labour Office; STEP; ILO: AIDS / International Labour Organization (ILO) (2002)

This paper reviews the ad hoc evidence and explores the potential of decentralised systems of social protection (DSSP) to contribute to the fight against HIV/AIDS. The paper focuses on systems set up by associations and organisations in civil society to cover workers and households that do not have access to statutory systems of social protection. It places particular attention on the role of health micro-insurance schemes (HMIS), which constitute a dynamic innovation in terms of community mechanisms to face health-related risks.

Recommended actions to strengthen the potential of DSSPs include:

- research and analysis on the impact of HIV/AIDS on work and workers in the informal economy
- a systematic analysis of existing DSSP to draw lessons on how they address HIV/AIDS
- further action and experimentation
- dissemination and application of lessons

The paper concludes that the increased understanding and experience stemming from these actions will be relevant not only for DSSP, but also for many other types of community-based organisations and associations. [adapted from author]

Available online at: http://www.ilo.org/public/english/protection/socsec/step/reslib/publ.php?idpubl=60&EN&c_year=2002&c_region=All&c_tdoc=All&c_tpage=0

13. Analysing the problem of unsustainable health information systems in less developed economies: case studies from Tanzania and Mozambique

Introduction of new health information systems requires the participation of local people
Kimaro, H.C.; Nhampossa, J.L. / Department of Informatics, University of Oslo, Norway (2005)

This working paper, published by the Department for Informatics at the University of Oslo, examines donor-supported health information systems (HIS) implemented in Tanzania and Mozambique, in order to analyse the factors affecting sustainability of such systems and to suggest ways of making them more sustainable. The authors argue that the relationship between the Ministry of Health and donors was unbalanced in both cases. Combined with weak institutional and technical capacity of the two ministries, and contracts which gave them insufficient control over consultants, this contributed to making the HIS unsustainable. There were also problems with the software development agencies involved, including lack of coordination; poor understanding of user requirements; and inflexible systems designs.

The authors suggest that for an HIS to be sustainable, it needs to be integrated into the everyday routine of the user organisation, but also flexible enough to allow changes needed by the user. Introduction of a new HIS should not only be seen as a technical change, but requires the cultivation and institutionalisation of a new kind of culture. The paper argues that for this to happen, local people need to participate in shaping their own ways of doing things, and technical and managerial capacity must be built.

Available online at: <http://www.ifi.uio.no/english/research/groups/is/docs/KimaroNhampossa.pdf>

14. Harmonizing health information systems with information systems in other social and economic sectors

Improvements to data systems for the health sector
Macfarlane, S. B. / Bulletin of the World Health Organization (WHO): the International Journal of Public Health (2005)

This bulletin argues that health systems in low- and middle-income countries should include linkages with other social and economic sectors. There are duplications and inconsistencies between sectors in the collection, reporting, storage and analysis of socioeconomic data and statistics offices give higher priority to economic data than other social statistics.

The report argues that there must be a long-term commitment to improve training and career structures for statisticians and information technicians working in the health and other social sectors. There is an opportunity for the health sector to:

- collaborate with other sectors to lever international resources to rationalise definition and measurement of indicators common to several sectors
- streamline the content, frequency and timing of household surveys
- harmonise national and sub- national databases that store socioeconomic data

Available online at: <http://www.who.int/entity/bulletin/volumes/83/8/590arabic.pdf>

15. Monitoring global health: time for new solutions

Call for a new global health monitoring organisation

Murray, C.; Lopez, A.; Wibulpolprasert, S. / British Medical Journal (BMJ) (2004)

This article from the British Medical Journal explores the problems and potential solutions to the gaps in global health monitoring systems. The article outlines how the availability of health information can be improved by four, interconnected efforts: improving technology and methods of measurement, improving national capacity to collect and analyse data, establishing global norms and standards for health measurements, and reporting valid and comparable assessments of inputs, service delivery and achievements. The authors argue that the last area is currently the weakest and getting worse.

The article suggests that the World Health Organization's (WHO) ability to undertake independent global reporting is limited by its multiple roles as a global health advocate, technical advisor to many countries, and monitor and evaluator of health issues. It is also limited by intense political pressure. The authors conclude that a new global health monitoring organisation is needed to provide independent health information to the world. This organisation would: report regularly and collate, analyse and disseminate the best available evidence; work closely with partners such as WHO technical programmes; and be sheltered from political interference. It would also have to be committed to the principles of validity, reliability and open consultation and would require stable, core resources. [adapted from author]

Available online at: <http://bmj.bmjournals.com/cgi/reprint/329/7474/1096>

16. Using a simple health care information system for health sector reform and health system management

A guide to using the InHCC health management information system

Shankle, C.G.; Shiroma, M.G.; Gonzalez, J.G. / International Health Care Consultants (InHCC) (2002)

This paper, published by International Health Care Consultants (InHCC), presents a simple health management information system (HMIS) for collecting data to be used in the management of health sector reform policy. The system is intended to be easy to use and inexpensive. It focuses on the collection of information that measures six key dimensions of health system performance: access, effectiveness, efficiency, equity, quality, and sustainability. The paper argues that the information collected can be used not only to guide national policies, but also to direct the day-to-day management of the individual clinic or health centre and provide quality of care to the client.

The paper's chapters cover: the purpose, definitions and framework for the InHCC system; a description of the system itself; dealing with client, household, and medical system information; and programming the system's software. The system proposed involves rural clients using a low-cost computer system connected to the internet, and storing data in a centralised "data warehouse". Specialised computer applications for data processing can then be used to provide useful information for decision makers from the local level up to national and international level without the need for further processing.

Available online at: <http://www.shetu.com/InHCC-Documentation.pdf>

17. Best practices in community-based health initiatives: leading the information revolution in Kwale district

Improved health systems through local information management

Sohani, S.; Kamau, M.; Alidina, S. / Aga Khan Health Services (AKHS) (2005)

This policy brief from Aga Khan Health Services examines the key issues relating to the development and implementation of HMIS (Health Management Information Systems) in the Kwale district of Kenya. The briefing also examines the impact of the Kwale HMIS, prospects for

replication, expansion and improvement and policy implications of a national HMIS. Findings show that the Kwale HMIS has resulted in: readily available timely and accurate information, making it possible to respond to problems quickly; more effective targeting of programmes and funding; and more effective disease surveillance.

Key lessons learned include that: local efforts to build HMIS from the ground up can result in success; HMIS needs the support of leaders at all levels; and sufficient time and resources are needed to implement systems properly. The authors highlight how an effective national HMIS would link all levels of the health system, allowing the rapid flow of information and significant improvements to the system's ability to track effectiveness and manage change. Recommendations to establish a national HMIS include: cover all parts of the health system; do a thorough assessment of current design and needs of users; make the new HMIS flexible to allow for updates and new facilities; and ensure a two-way flow of information. [adapted from author]

Available online at:

http://www.eldis.org/healthsystems/pdfs/best_practices_community_based_initiatives.pdf

18. Structuring information and incentives to improve health

The need to invest in better health information systems

Stansfield, S. / Bulletin of the World Health Organization (WHO): the International Journal of Public Health (2005)

This editorial piece introduces a special issue of the Bulletin of the World Health Organisation on health management information systems. It argues that, within the health sector, choices made in the collection and use of information will determine the system's effectiveness in detecting health problems, defining priorities, identifying innovative solutions, and allocating resources to improve health outcomes. Despite this, the author claims that there has been little awareness of the potential ramifications that improved use of information can have for advancing the cause of health. However, global infectious threats such as severe acute respiratory syndrome (SARS), scrutiny of progress towards the Millennium Development Goals, and performance-based release of donor funding have all contributed to increased awareness.

The editorial argues that it is in the mutual interest of both the developing and industrialised worlds to invest in strengthening systems for collection and management of health information. It suggests that investments in comprehensive development of health information systems will deliver good value for money, and that such improvements can accelerate broad improvements in health if they are engineered to reflect, reinforce, evaluate and even drive improved performance. They could also help to create a "culture of evidence" among government officials, and to overcome obstacles to accountability and transparency.

Available online at: <http://www.who.int/bulletin/volumes/83/8/562.pdf>

19. The 'rights' start to life: a statistical analysis of birth registration

Children denied their rights: analysis of birth registration

UNICEF / United Nations (UN) Children's Fund (UNICEF) (2005)

This report presents an analysis of the situation of birth registration. It explores the connections between birth registration and the rights of the child; the scale of non-registration; who are unregistered children; the barriers to registration, including political, administrative, legislative, economic, cultural, gender, geographic and conflict-related obstacles; and the initiatives that have been taken to improve birth registration since the adoption of the Convention on the Rights of the Child in 1989.

Findings include:

- in South Asia, 63 per cent of children are not registered by their fifth birthday
- in sub-Saharan Africa 55 per cent of children are not registered by their fifth birthday

- three most common reasons for not registering birth were found to be: it cost too much; the distance to the registration centre; not knowing that the birth should be registered
- overall, the country level data indicate that male and female birth registration rates are very similar approximately. However, 80 per cent of boys in Cameroon are registered compared with 77 per cent of girls; in Gambia, 34 per cent of boys and 30 per cent of girls are registered
- children under five who have been denied the right to identity tend to be poor, live in rural areas, have limited access to health care, are not attending early childhood education, have higher levels of malnutrition and have higher mortality rates
- these children are also likely to have been born without the support of a health professional or midwife, their mothers have low levels of formal education and are less likely to have adequate knowledge of signs of some child illnesses and of HIV/AIDS transmission.

In conclusion, the paper emphasises that rural poverty may negatively affect numbers of registered children; integrated programmes can benefit birth registration rates; improving mothers' knowledge and education might benefit birth registration rates; and mapping levels of birth registration is useful for determining where to launch new birth registration campaigns.

Available online at: http://www.unicef.org/publications/files/rights_start_rev.pdf

20. Improving reproductive health care within the context of district health services

Managing sexual and reproductive health services: a manual

United Nations Population Fund (UNFPA) / Royal Tropical Institute (KIT) (2004)

This manual, published by the Royal Tropical Institute, aims to help district health staff in systematically planning, implementing, monitoring and reviewing sexual and reproductive health (SRH) activities. The first chapter defines SRH, describes what it should include, and highlights guiding principles and challenges for managing and planning an SRH programme. The second chapter presents a series of activities for examining the existing coverage of SRH in a district, including through the use of health management information systems (HMIS). The third and fourth chapters cover planning, coordination, implementation, and monitoring, while the final chapter looks at ways of reviewing the progress of an SRH work plan.

The manual argues that including community groups in the planning, monitoring and evaluation cycle is essential for promoting ownership and commitment on the part of communities. Good collaboration and partnership are vital to achieve targets. Other recommendations include: making a profile of the district's SRH coverage, including the number of facilities and staff working in SRH, and keeping this up to date; ensuring district level workers have access to data on their own district; using annual performance reviews to discuss achievements and challenges with all involved; and using advocacy to build public support for SRH.

Available online at: http://phishare.org/files/3036_RH_District_Manual.pdf

21. Review of health information systems (HIS) in selected countries: South Africa

Does South Africa's health information system lead to informed decision-making?

World Health Organization / World Health Organization (WHO) (2004)

This report, published by the World Health Organization, describes and evaluates South Africa's national and district health information systems. It reports that the information systems cover nearly all the country's public facilities, and that data is submitted in a timely fashion. However, data from the private sector is absent. The data collected through the district system is not readily available to the public, although it is available to donors and other organisations. At facility level,

the use of data for decision-making varies from province to province, and from district to district, depending partly on the degree of support and training that managers receive.

The authors argue that data dissemination and feedback needs strengthening through targeted interventions. At managerial level in districts and provinces, training is needed to help staff to provide feedback reports. At district level, supervisors need to be trained to appreciate the value of regular feedback to facilities, and the benefits of comparing facilities with each other. Targeted training and encouragement in the use of data for decision making is also needed. Other key challenges include: integrating different data sets so that managers have access to an integrated and user-friendly management information system; improving data quality; and increasing feedback.

Available online at: http://www.who.int/healthmetrics/library/en/south_africa_05apr.doc

22. Developing health management information systems: a practical guide for developing countries

Practical principles on building and improving health management information systems

WHO Regional Office for the Western Pacific / WHO Regional Office for the Western Pacific (WHO-WPRO) (2004)

This manual, produced by the World Health Organization Regional Office for the Western Pacific, is designed to be a user-friendly reference for the development of health management information systems (HMIS) in developing countries. It serves as a primer on HMIS development and provides a general overview of the basic principles, as well as the fundamental steps and issues involved in the different activities. It is aimed at heads and staff of statistics units at national, provincial or district health service level; members of committees tasked with overseeing the development of HMIS; and managers and staff of vertical programmes.

The manual's twelve chapters cover: basic concepts; defining data needs; determining the data flow; designing data collection and reporting tools; data processing; training; pre-testing; monitoring and evaluation; data dissemination and feedback; and enhancing the system. It also includes a list of basic indicators that might be used in Ministry of Health programmes, together with advice on data sources and collection. Principles outlined in the manual include: building on strengths of existing systems rather than destroying them; recognising the need for special studies and sample surveys for some types of data; and keeping reporting requirements to higher levels at a minimum.

Available online at: http://www.wpro.who.int/NR/rdonlyres/3A34C50D-C035-425A-8155-65E8AD3CB906/0/Health_manage.pdf

23. Issues in health information

Improving the use of information for health care decision-making: what is needed

World Health Organization / World Health Organization (WHO) (2005)

This paper, published by the World Health Organization, describes how health information systems work and considers how countries can reform them. It argues that some types of data are oversupplied whilst in other areas there are large unmet needs of information. Although many countries now have relatively good data on levels of (and trends in) child mortality, health services coverage, and health determinants, information on adult mortality and cause of death is not generally available. Other areas where better information is needed include: morbidity; coverage and costs of interventions; and equity. The use of information to inform decision-making is also weak at all levels of the healthcare system.

The paper calls for investment in sustainable national and sub-national health information systems and argues that countries will benefit greatly if such systems are based upon a national plan with a policy framework; core indicators; and data-collection, analysis and dissemination strategies. It also calls for national bodies to guide and oversee the implementation of the plan,

with full participation of stakeholders, users, and technical experts. International investors in health information should buy in to and support the country strategies. Collaborative efforts at the international level, such as the recently launched Health Metrics Network, are also important.

Available online at: http://www.who.int/healthmetrics/library/issue_1_05apr.doc
