

The word "rhino" is written in a bold, lowercase, sans-serif font. It is centered within a white, irregular shape that resembles a speech bubble or a torn piece of paper. The background of this shape is a light gray silhouette of a rhinoceros's head and neck, facing right.

rhino

Routine Health Information Network

**The Potomac Statement on Investment in
Routine Health Information in Developing Countries**



This document is made possible by support from USAID under the terms of Cooperative Agreement HRN-A-00-97-00018-00. The opinions expressed are those of the authors, and do not necessarily reflect the views of the sponsors.

The Potomac Statement on Investment in Routine Health Information in Developing Countries

Introduction

What is the role of routine health information in securing adequate health system performance in developing countries? How can investment in routine information systems contribute to meeting national and local health information needs? This statement discusses these and others questions related to the benefits of routine health information, and proposes steps to increase and guide investment in this area.¹ The discussion is informed by analysis of health information system development reported in the literature and evidence presented at a recent workshop for health information professionals held in Potomac, Maryland.² The statement advocates greater analysis and dissemination of best practices in routine health information collection use, and outlines an agenda for future exploration and investment to optimize the use of routine information for improving health system performance.

Defining health information needs

There is little doubt that access to and use of timely and reliable health information from all sources is essential for ensuring adequate health system performance in developing countries. Sound evidence underpins decisions about policy direction, resource allocation, and management. Good health information encourages responsive and effective health service delivery. No health system can operate effectively without access to health and health system-related information.

Governments are generally expected to define and find ways to meet national health information needs. Information demands may differ significantly among central-, regional-, district-, and facility-based decision makers, depending on the roles and functions embodied in each level of the health system. Typically, developing countries have relied on a mixture of service-based statistics and surveys to support planning and management and monitor performance, often without reference to an overall framework for determining information requirements. Such an approach can lead to uncoordinated and excessive data collection and, subsequently, poor data use.

Recently in the *World Health Report*, the World Health Organization introduced a framework for defining basic health system objectives and functions that

challenges traditional notions of what constitutes national health information needs.³ The report distinguishes three overall objectives for health systems: improvement in health, fairness in financing, and responsiveness to client expectations; and four principal health system functions: stewardship, financing, resource generation, and service provision. Key issues, such as defining the appropriate type of information and data collection methods required to enable health systems to fulfill and monitor these functions, are currently the focus of discussion and debate.

In reality, very few developing countries are able to meet the demand for information resulting from the recent clarification of health system functions. They are also struggling to keep up with information demands that result from changing health conditions (i.e., the emergence and reemergence of certain infectious diseases, complex emergencies). Lack of performance is due in part to the inadequacies of existing information systems and tools. Government accounting systems, for instance, are not structured to provide data on the cost of service delivery, or to distinguish between expenditure categories such as primary and secondary care. Health service statistics are often outdated or incomplete, which limits their use in national level performance monitoring. However, broadening the scope of health system functions has also introduced additional information needs. Adequate fulfillment of roles related to stewardship and fair financing may require new or adapted data collection and analysis approaches. Planners want data on service utilization broken down by income level, sex, and vulnerable groups to allow greater targeting of resources based on need. Information on the scope and practices of the private sector should also be collected routinely, but few mechanisms exist for collecting it.

Clearly, the search for better information in recent years has led to improved methods for data collection and information use.^{4, 5, 6} However, the ever-increasing demand for all types of health information presents a serious challenge for designing national health information systems. Defining the optimal approach to meet national health information needs in this context requires further discussion and research.

Defining health information systems

By definition, national health information systems encompass the range of information sources and methods required to support all the functions of the health system. Every health system requires a well-crafted mix of information sources and methods to provide the information needed for guiding and executing essential decisions and actions. The choice of data collection methods depends on both the nature of information required and the intended use of the information.

In general, it is useful to classify the information collected and used in national health information systems into two groups according to data collection methods: routine and non-routine.^{4, 7, 8} In this document, “*routine health information*” is defined as information that is *derived at regular intervals of a year or less through mechanisms designed to meet predictable information needs*.

Examples of routine health information systems include systems for collecting and using:

- health services statistics for routine service reporting and special program reporting (malaria, TB, and HIV/AIDS);
- administrative data (revenue and costs, drugs, personnel, training, research, and documentation);
- epidemiological and surveillance data;
- data on community-based health actions; and
- vital events data (births, deaths and migrations).

The information these different routine health information systems or subsystems generate is intended to support a wide range of health system functions, including service delivery, disease control, planning and management, and performance monitoring.

Non-routine health information is usually derived from data collected through surveys and special purpose studies conducted on an ad hoc or nonrepetitive basis. Examples of nonroutine data collection approaches include large demographic and health surveys; program-level baseline and impact studies; facility surveys; and national health accounts. The information generated supports many of the same health system functions supported by routine methods, as well as a number

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of special applications that are not well served by routine sources. In contrast to routine information, however, data generated by nonroutine methods are rarely collected at predictable intervals for routine decision making. Nor are they ordinarily intended for immediate use to support day-to-day health system operations.

In practice, there is some overlap between the two types of health information, and they are often used to complement or corroborate one another. For example, small facility surveys or rapid assessments can be used routinely as part of local or national planning. Longitudinal studies

take repeated measures of the same population to monitor trends over time. In addition, regular use of standardized household and facility surveys at the national or sublevel, and other newer data collection tools (i.e., National Health Accounts) is becoming more common.

Role of routine health information in the health system

The distinction made between routine and non-routine information reflects not just the frequency of data collected but the intended primary use of the data as well. Traditionally, routine health information systems are part and parcel of the local service delivery system. They are created to document ongoing health care provision, administration and financing, morbidity, births and deaths, and, increasingly, community-level public health actions. Routine information systems, therefore, provide the only way to document, on a routine basis, what occurs at the point of contact between the health system and its clients and the communities the health system is meant to serve. The primary data generated describe essential operations related to management, service delivery, and public health interventions, and monitor trends in morbidity of the client base and service coverage locally and nationally.

The strength of routine information systems is that they put data directly into the hands of decision makers and managers at all levels of the health system. This asset is particularly relevant for planning and budgeting, continuous quality improvement, and responding effectively to clients’ needs. From routine data, managers are able to determine the effectiveness of case management and quality of care; resource generation patterns; and financial, human, and material

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resource management practices. In other words, routine data empower practitioners and managers to identify problems as they arise and solve them. For example, in Ghana recently, introduction of a criterion-based clinical audit of routine information on obstetric care made health practitioners aware of the frequency of undesirable health outcomes and led to improvements in clinical monitoring, drug use, and record keeping.⁹ Using routine data already available to service providers served as a tool for action, and for monitoring the quality of care and management of obstetric complications. In contrast, information collected through nonroutine methods, such as survey data, often fails to reach the operational level because it cannot be disaggregated sufficiently or is only available long after the need to act.

Since the majority of routine health data are collected at the first level of contact with the population, routine information systems also serve to bring together professional health services and the communities they serve. Effective collection and use of information at this level of the health system forges a necessary link between individual and community health interventions, enabling health workers (with community members) to define appropriate medical and public health solutions to common problems. Sound community-based routine information systems have been effective on a small scale in identifying pockets of underserved populations and helping to target resources to those in greatest need.

Central-level decision makers also benefit from access to routine health information. At this level, national planners and health program managers use routine information to guide policy, follow expenditure and monitor performance through tracking trends in service provision and coverage compiled from aggregated service statistics. Responding to client needs requires regular information on service utilization patterns to make decisions about resource allocation. Routine information also provides a picture of the overall distribution of public sector resources such as health sector personnel and facilities.

Routine information, whether guiding national or local action, is a necessity for country-led decision making. In addition to health information's role in securing performance, its regular collection and use promotes local ownership and control of essential health system functions. An effective health information system enables decision makers and managers at all

levels of the health system to take the lead in setting priorities, regulating practices, and controlling costs.

Promoting greater local control of decision-making functions and information management forms an increasingly important part of many prevailing strategies for strengthening health systems in developing countries. In Zambia, the government found that the demand for health-related information increased among managers and policy makers under health reform and poverty alleviation programs.¹⁰

Decentralization, often the cornerstone of health reform, means that district- and facility-level health managers control planning and information management. In Baluchistan, information from a restructured facility-based data collection system was used to develop annual district plans.¹¹ In Kenya, analysis of service statistics formed the basis of budget requests to the district finance board, securing a portion of district development resources to improve the village water supply. In both cases routine information systems were instrumental in facilitating the behavior change that must take place during devolution of responsibility to local managers.¹² As information systems improve, district health managers are able to improve their skills and interest in using evidence for planning and resource management. Finally, sector-wide approaches to investment (SWAP) promoted by many external funders also advocate locally led planning, and require dependable reporting on expenditure and performance at all levels of the system. Without accurate and timely information, SWAPs cannot function effectively.

Investing in routine information

In the process of strengthening the capacity of health systems to manage information and improve performance, existing routine health information systems will require refinement and reorientation. There are significant gaps between national and local data needs and traditional health information systems' capacity to generate appropriate data. Some needs are best met with routine systems (including rapid assessments or inventories). Others will require special interventions to address specific questions. Financial accounting, management, and revenue information, for example, lends itself to a more traditional approach to routine data collection. Information for quality assurance and monitoring the scope and capacity of the private sector calls for new approaches and a review of developed-country experience with insurance-based information

Investors must address deficiencies in existing information systems...and design new approaches to meet emerging information needs

systems. When making these choices, investors must ask what mix of data collection methods and approaches are appropriate in different settings, keeping in mind the inverse relationship between data quality/utility and the quantity of data collected.

Specifically, investment in routine information should tackle four equally important areas. First, it is critical to promote local discussion and definition of essential health information needs, and the role of routine information systems in meeting those needs. Second, investment must focus on the structural and technical elements of routine health information system development, taking into account costs, new technology, and improvements in understanding of performance measurement. Third, investment must help instill a “culture of information” in health systems and health organizations. Incentives and rewards that demonstrate the value of using evidence to manage resources and services are critical. Finally, overall international and national coordination of investment in routine health information system development is required to enable investors and practitioners to learn from experience and maximize the use of resources.

More evidence is required, specifically from developing-country settings, to demonstrate the cost effectiveness of collecting and using routine health information and its direct effect on decision making and behavior. Does better collection and use of routine information contribute to more appropriate resource allocation and management of health services? Moreover, too little is known about the relative cost or cost effectiveness of national routine information systems compared with more selective approaches. Use of cost and other similar criteria should determine the choice of methods in a coordinated national health information system.

The basic characteristics of routine information systems—their focus on the provider-client interface, emphasis on locally driven decision-making, and proximity to the grassroots—while helpful at the operational level may also be appropriate for meeting the demand for new types of information. Many potential applications of routine information remain untested. Investors must identify the information they need to fulfill essential health system functions and determine where routine information can play a useful role.

For example, there is a need to explore the potential of routine health information to aid in monitoring

and evaluating aspects of health system performance. Information systems at the local level can be designed to include data on health-seeking behavior for assessing the responsiveness of the public system to meeting the wide range of society’s health needs. In addition, district managers are in an excellent position to collect data on the private sector, both for oversight of all district health activities and to inform public policies toward the private sector. Finally, as health systems begin to address the behavioral and environ-

mental causes of morbidity and mortality, the demand for community-level data increases. Traditional routine information systems can, with some adaptation, be used to monitor public health and community-based interventions in these areas.

Next steps

The presence of strong routine health information systems does not guarantee that evidence will guide every decision. However, it does promote information use and a balanced approach to planning and managing health activities. Weak routine health information systems encourage parallel data collection activities, particularly for meeting the performance-monitoring needs of external assistance organizations. As stewards of the health system, governments have a responsibility to determine and find ways to meet national information needs. Not all information is best collected through the public sector, but governments are increasingly expected to take the lead in managing information supply.

Investors must capitalize on the routine health information systems that exist in every country to improve and monitor performance in the health system. Promoters of routine health information should address deficiencies in current systems and design new approaches to meet emerging information needs. The Agenda for Action that follows includes steps to revitalize investment in this area and build a body of knowledge about routine health information system development in developing countries. The agenda represents specific activities and investment areas for governments and donor organizations to consider. These activities were identified by participants during the Potomac Workshop and provide the basis for discussion and debate. The first step of this action agenda—establishment of RHINO¹³, a network of professionals and organizations interested in promoting high-quality, practical approaches to collection and use of routine health information in developing countries—has already been completed.



**Agenda for Investment in Routine Health Information
in Developing Countries**

Agenda for Investment in Routine Health Information in Developing Countries

The following Agenda for Investment in Routine Health Information promotes lessons learned in routine information system development and explores ways to optimize use of routine health information for improving health system performance. It is not intended to cover all possible needs in health information system development. Rather, it suggests three areas for exploration and intervention, reflecting the priorities for investment outlined in the Statement above.

I. Coordinate investment and learning in routine health information system development

During the Potomac workshop, participants endorsed establishment of a new network of organizations and professionals concerned with improving the quality and sustainability of routine health information systems in developing countries: the Routine Health Information System Network, or RHINO. Core functions of RHINO include:

- promoting analysis of mechanisms and experience related to collection and use of routine health information;
- increasing access to information on best practices, innovation, and lessons learned in routine health information systems and approaches;
- forging productive networks and linkages among professionals working in routine health information collection and use;
- defining mechanisms for coordinating investment in the collection and use of routine health information; and
- assessing the role of routine information with respect to performance in the health system.

II. Analyze and disseminate best practices in routine health information collection and use

There is a clear need to analyze and share best practices in building and maintaining effective routine health information systems and approaches. Potential focal areas include:

- national coordination of health information systems;
- identifying national health information needs;
- defining the role of routine information in decentralized health systems;
- identifying and testing mechanisms and practices for maintaining the quality of routine information;
- choosing appropriate information technology for different settings, providers, and levels;
- applying routine health information to quality assurance;
- linking sentinel demographic surveillance systems and national routine health information; and
- promoting effective information use (i.e., defining incentives, and minimizing disincentives).

Possible products include:

- a virtual database of minimum routine health information system indicators and definitions;
- case studies of information use by stakeholders at different levels (e.g., successful presentation formats);
- case studies of processes to define national information needs in the health system;
- database of feedback reports and monthly reports for different levels of use with figures and graphs;
- guidelines for selecting and maintaining appropriate technology for routine health information systems; and
- guidelines for ensuring data quality from routine information systems.

III. Research, technical meetings, or pilot projects

Research topics or technical meetings:

- The causal relationship between better collection and use of routine health information and improved planning, management, and services delivery.
- The potential role of routine health information in monitoring health system performance with respect to health system functions: stewardship, financing, resource generation, and service delivery.
- Identifying the optimal mix of routine information approaches, nonroutine approaches, and research at various levels of the health system. What criteria should be used to determine this mix at the national level?
- The role of routine information in meeting the need for information about the private sector. What role should government play in promoting collection and use of health information about the private sector?
- The cost effectiveness of collecting routine health information compared with other information sources with respect to health services quality and efficiency.
- The role of information in decision making: how policy makers, planners, and managers make decisions.
- Defining the culture of information, and defining human resource and other elements of system capacity required to collect and manage routine health information effectively.
- The role of routine information systems in providing data on environmental and behavioral aspects of health status.

Pilot projects:

- Defining methods to assess the effect of information on decision making.
- Testing mechanisms to ensure data integrity when data are used to measure performance or to drive financial incentive schemes.
- Developing community-based information systems.
- Developing mechanisms to disseminate routine information to consumers and communities.
- Developing mechanisms to link essential routine data sets from different sectors (health, education, and water).

End Notes

1. Investment is defined as the injection of all types of resources (financial, material, human, and temporal) in the design, strengthening, and maintenance of information systems and approaches.
2. The Workshop on Issues and Innovation in Routine Health Information Systems in Developing Countries held in Potomac, MD, March 14 to 16, 2001, brought together 80 health system planning and information specialists from 26 countries. Complete proceedings of the workshop are available on the following website: <http://www.cpc.unc.edu/measure/rhino/rhino.html>
3. WHO, The World Health Report 2000: Health Systems: Improving Performance, Geneva, 2000.
4. Lippeveld T, Sauerborn, and Bodart, C (Eds.), Design and implementation of health information systems, WHO, Geneva, 2000.
5. MEASURE Evaluation, Quick Investigation of Quality (QIQ): A User's Guide for Monitoring Quality of Care in Family Planning, MEASURE Evaluation Manual Series, No. 2, MEASURE Evaluation, North Carolina, 2001.
6. UNAIDS, National AIDS Programmes: A Guide to Monitoring and Evaluation, UNAIDS, Geneva, 2000.
7. Anderson, N, et al. The use of community-based data in health planning in Mexico and Central America. *Health Policy and Planning*, 4, 1989.
8. Woodall JP, Introduction: epidemiological approaches to health planning, management, and evaluation. *World Health Statistics Quarterly*, vol 42, 1988.
9. Wagaarachchi PT, Graham WJ, Penney GC, McCaw-Binns A, Yeboah Antwi K, Hall MH, Holding up a mirror: changing obstetric practice through criterion-based clinical audit in developing countries. *International Journal of Obstetrics and Gynecology*, 74 (2): 119-130, 2001.
10. MEASURE Evaluation, Proceedings of Workshop on Issues and Innovation in Health Information Systems in Developing Countries, Arlington, VA, August 2001.
11. Green A, Ali B, Naeem A, and Vassal A, Using costing as a district planning and management tool in Baluchistan, Pakistan. *Health Policy and Planning*, 16 (2): 180-186, 2001.
12. Pyle D, Sharma B, Rao PH, and Keyonzo N, Mid-Term Evaluation, USAID/AKF USA Fourth Matching Grant (October 1994 to September 1997), Strengthening the Capacities of PVO/NGO and Government Health Systems in Asia and Africa to Design and Manage Sustainable Health Programs (Cooperative Agreement Number: FAO-0158-A-4023-00), October 1996.
13. RHINO is the acronym for Routine Health Information Network.

Workshop organizers would like to thank all our colleagues who contributed to earlier drafts of this statement.

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