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Improving District Health Management Performance:

A New Framework with Tools for Situation Analysis

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IMPROVING DISTRICT HEALTH MANAGEMENT PERFORMANCE:

A NEW FRAMEWORK WITH TOOLS FOR SITUATION ANALYSIS

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To the many people who have loved me

and who still love me, in many different ways,

because they make my life fulfilling and meaningful

beyond what I can express in words.

Acknowledgments

Abstract

In recent decades, The United Nations, national governments, and many international donors and non-governmental organizations have dedicated considerable resources to the achievement of the Millennium Development Goals (MDGs) in low income countries. Special efforts have gone into achieving the health-related MDGs. Early in the process, many realized that health systems in poor countries would have to be strengthened to deliver the services necessary to achieving the MDGs. Recently it has also become clear that to make health systems stronger, it will be paramount to improve the management of the limited available resources and service provision at the local level. The improvement of district health management performance has been recognized as a key element in the complex task of strengthening health systems. This has become even more compelling since the number of countries that have decentralized health systems has increased significantly. While many studies, essays, guidelines and manuals have been published on how to strengthen health systems as a whole, little evidence is available on how to improve the management at the district level. This work contributes to bridging this gap by providing (a) a new theoretical framework that systematizes the main determinants of the performance of district health management teams in a coherent way using WHO approach to health systems; (b) a set of tools for a quick but effective situation analysis with indicators organized by health systems functions that can be used to identify which determinants are falling short and need to be addressed to improve the performance of health district managers on the ground; and (c) a list of possible strategies to resolve the identified deficits that have been reported in the literature to be successful in different contexts. The necessary characteristics for a comprehensive implementation strategy to improve district health management performance are also discussed. The application of the framework and of the analytical tools described in this document has the potential of producing a major improvement in many countries and constitute the strategy forward in this arena for UNCIEF.

Abstract in Italian

Negli ultimi decenni le Nazioni Unite, molti Paesi, vari donatori e organizzazioni non governative hanno dedicato ingenti risorse al raggiungimento degli Obiettivi per lo Sviluppo del Millennio (MDGs) in paesi a basso reddito. Attenzione particolare è stata dedicata al raggiungimento gli obiettivi degli MDGs relativi alla salute. Fin dagli inizi di questo immane sforzo internazionale, è risultata evidente la necessità di rafforzare i Sistemi Sanitari nei Paesi poveri per poter offrire i servizi necessari, in ordine al raggiungimento degli MDGs. Più recentemente si è anche compreso come sia indispensabile per rafforzare i Sistemi Sanitari migliorare la gestione delle risorse limitate disponibili per l'offerta di servizi a livello locale. Il miglioramento della *performance* della gestione dei distretti sanitari è stato identificato come un elemento chiave del complesso compito di rafforzamento dei sistemi sanitari. Tale priorità è diventata ancora più rilevante dato il crescente numero di Paesi che hanno sistemi sanitari decentralizzati. Molti studi, saggi, linee guida e manuali sono stati pubblicati su come rafforzare i Sistemi Sanitari nel loro complesso, mentre vi è poca *evidence* disponibile su come migliorare la gestione a livello di distretto sanitario. Il presente lavoro contribuisce a colmare tale lacuna offrendo (a) un nuovo modello teorico che sistematizza i principali determinanti della *performance* delle *equipe* di professionisti che dirigono i distretti sanitari, in modo coerente con il modello di Sistema Sanitario dell'Organizzazione Mondiale della Sanità; insieme a (b) degli strumenti per una rapida ma efficace analisi dello *status quo*, che fanno uso di indicatori organizzati secondo le funzioni dei Sistemi sanitari, al fine di identificare quali determinanti risultano carenti e hanno bisogno di essere corretti per migliorare la *performance* dei dirigenti sanitari a livello locale; e (c) un elenco di possibili strategie riportate in letteratura, che si sono dimostrate efficaci in diversi contesti. Vengono anche discusse alcune delle caratteristiche necessarie per mettere in opera una strategia complessiva tesa a migliorare la gestione dei distretti sanitari. L'uso del modello teorico e degli strumenti analitici descritti in questo documento può contribuire a portare un miglioramento sostanziale in molti Paesi e costituiscono la strategia che UNICEF intende adottare nell'immediato futuro.

Glossary

DHM   District Health Management

DHMP   District Health Management Performance

DHMTs   District Health Management Teams

HRH   Human Resources for Health

HS   Health System

IHI   Institute for Healthcare Improvement

MDGs   Millennium Development Goals

MoH   Ministry of Health

MoU   Memorandum of Understanding

MSH   Management Sciences for Health

NGO   Non Governmental Organization

UNICEF   United Nations Children's Fund

WB   The World Bank

WHO   World Health Organization

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1. Introduction

Over the past decades, several health agencies have dedicated a substantial amount of resources towards improving the health of populations in low-income countries. After an early stage (during the '90s), when much emphasis was given to vertical programs controlled by donors and tackling specific diseases, development agencies realized that in order to achieve the MDGs and provide the necessary services to the population, health systems in poor countries needed to be strengthened. More recently, it also became clear that to make health systems stronger, it would be paramount to improve the management of the limited available resources for the provision of health services at local level.

The improvement of district health management performance (DHMP) has been recognized as a key element in the complex task of strengthening health systems.[1] While many studies, publications, guidelines and manuals have been published on how to strengthen health systems as a whole, little evidence is available on how to improve the management of health systems at the district level. This thesis is an attempt to gather the available knowledge on DHMP in a coherent framework and to produce a set of tools for situation analysis that will help identify the main challenges a district is facing as well as solutions for improving DHMP.

This introduction presents briefly: how health systems strengthening has gained importance on the international agenda, why improving DHMP is essential to strengthening health systems, what role UNICEF has in improving DHMP, and how this thesis contributes to the improvement of DHMP.

1.1 The international agenda on health systems strengthening

Over the last ten years the global health agenda has shifted from an emphasis on disease-specific approaches (also known as the vertical program approach) to a focus on health

system strengthening (referred to as well as a horizontal approach).[2] The discussion is currently focusing on the "diagonal approach" to health system strengthening, which stresses complementarities and involves integrating vertical, disease-specific programs into efforts to strengthen the functioning of health systems and vice versa.[3] This shift in priority is due to several factors that are well described in the analysis carried out by the Japan Center for International Exchange for the G8 Summit in Hokkaido, Toyako.[4]

First, the disease-specific approaches had various unintended negative consequences.[5] While, on the one hand, they have undoubtedly contributed to health improvement in developing countries, especially in fighting diseases like HIV/AIDS, TB or malaria; on the other hand, they have left the assisted countries with fragmented disease-control programs. Indeed, such countries have found themselves accountable to several different donors, which has too often reduced the effectiveness of health ministries and distracted financial and human resources away from government agencies. Acknowledging these problems, two of the major disease-specific programs – the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund) and the Global Alliance for Vaccines and Immunization (GAVI) Alliance, a consortium of organizations to promote immunization and vaccination – have started to finance new strategies to strengthen health systems in their recipient countries.[6]

A second factor promoting the horizontal approach is the attempt of the World Health Organization (WHO) to give a second push for primary healthcare (PHC) polices that were first launched within the Alma Ata Declaration of 1978.[7] Indeed, the 2008 World Health Report advocated a renewed emphasis for the principles of universal coverage, people-centered approaches, and the effective delivery of primary care.[8]

A third factor is the concern that achieving the United Nations Millennium Development Goals (MDGs) is becoming increasingly difficult due to the weakness of health systems in developing countries. There are eight MDGs that all 191 UN member states have agreed to to achieve by the year 2015. However, many countries have experienced delays in achieving key targets related to child mortality (MDG 4), maternal mortality (MDG 5), and the prevention of HIV/AIDS, malaria, and other diseases (MDG 6).

A fourth factor is a pressing request from developing countries to harmonize and make the aid from international donors more effective at country level. This request has been captured in two documents: the Paris Declaration and the Accra Agenda for Action. The Paris Declaration, endorsed on 2 March 2005, is an international agreement to which over one

hundred Ministers, Heads of Agencies and other Senior Officials have committed to increase efforts in harmonization, alignment and managing aid for results with a set of monitorable actions and indicators. The Accra Agenda for Action (AAA) was drawn up in 2008 and builds on the commitments of the Paris Declaration, requiring that country systems, rather than donor systems, should be used to deliver aid as a first option.[9]

1.2 Strengthening health systems requires strengthening health districts

The local level is increasingly recognized as the weakest link in the health systems chain of low-income countries. In particular, the district level is where the provision of services is organized and implemented and, at the same time, it is where the resources are fewer and less skilled (financial, pharmaceuticals, equipment, vaccines, health professionals, etc.).[1] As such, to make health systems stronger overall, it is important to improve the management of these limited available resources and the provision of services at the district level. For this reason, district health management performance is a key element in the complex task of strengthening health systems. Moreover, the problem of inadequate health worker performance especially at local level in low- and middle-income countries is particularly urgent. Many resources are spent on health workers and the systems that support them, and such investments could produce greater benefits than they currently do.[10]

In part, this has been due to the decentralization that health systems in developing countries have experienced over the past decades.

Decentralization

Since the 1980s, health systems around the developing world have been decentralized. Decentralization policies have been encouraged by international agencies, such as the World Bank[11], because of their potential benefits: a more rational and unified health service that caters to local needs, decreased in duplication of services, contained costs, local community involvement, improved inter-sectoral coordination, and greater accountability, among other things.[12] They also have been often advocated for by district authorities, wanting greater autonomy on how to use available resources locally. However, along with greater responsibility and autonomy, district health management teams (DHMTs) require strengthened skills and competences to effectively manage their available resources in order to appropriately and effectively deliver quality health services to their populations.[13]

Equity strategy

In 2010, UNICEF launched a new strategy to achieve the MDGs through a more equitable approach[14], which has been received favorably by other international agencies like WHO, WB, and USAID. The strategy aims to reduce inequalities in access to health services between different groups of population by targeting disadvantaged groups.

This new approach has led to the realization that a greater level of detail is needed in order to put in place effective pro-equity strategies. For example, district level epidemiological data on population health. Moreover, coverage of essential health interventions will need to be expanded in order to target subgroups of the underserved population at district level. An effective district health management is required to implement both actions: gathering epidemiological information with district level detail, and ensuring expanded coverage locally.

1.3 UNICEF's role in DHMP

UNICEF has in recent years raised the profile of child survival within international health. Over the last two years, UNICEF has conducted effectiveness and cost analyses on the available information for essential public health interventions in developing countries, and modeled the impact of different strategies to implement them. This research has shown that, despite its high costs, an equity-focused health care service delivery approach, which targets the most disadvantages groups of the population, would be far more effective than any other alternative today. Such an approach would need to be implemented – including data collection and service provision – at the district level, by the DHMTs. Ensuring that these teams are competent, motivated and empowered to face this challenge, then, is key. This approach seems to be the main channel through which many countries may be able to reach most of the MDGs by 2015.[14] The dissemination of the potential results of an equity-focused approach is further influencing the way other aid agencies are working in development, and bringing more interest and emphasis to equity-focused programs. In particular, it has helped revise economic assumptions about the cost-effectiveness of equity based strategies.

Unlikely other major agencies, UNICEF has direct and extensive experience in strengthening operations at the point-of-service and, in particular, in helping to remove

critical barriers to scaling-up health care provision. Such expertise puts UNICEF in a unique position to be able to lead the effort necessary to improve DHMP in many countries. As such, the headquarters of UNICEF is undertaking a special effort to offer its country office staff an essential conceptual framework to guide its efforts to address the strengthening of DHMP. In addition, it is providing them with a user-friendly instrument to assess the situation of the country in which they operate, and to identify the causes of shortcomings as well as possible strategies to address those causes and shortcomings and, ultimately, improve DHMP.

The results of this thesis will contribute to both the framework and the assessment tools towards the strengthening of DHMP.

1.4   The contribution from this thesis

While many studies, reviews, guidelines and manuals have been published on how to strengthen health systems as a whole, less evidence is available on how to strengthen management at the district level in developing countries.[15]

The few recognized institutions working on district health management (e.g. WHO, MSH, USAID) have produced documents that mainly present strategies to improve the delivery of services rather than to strengthen the managerial competences needed to run the support functions of the health system at district level. However, without managerial competencies, it is impossible to organize the delivery of good quality services. Moreover, for the most part, available documents are generally training courses on a given function of the health system (i.e.: human resources management, procurement and supply) or on a practical but limited problem-solving approach.[16]

The literature is lacking a comprehensive framework that offers a vision for DHMP, which can identify its determinants and put in place strategies to improve it in a more systematic way. The present thesis aims to bring a substantial contribution to the study of DHMP, by providing a systematization of available knowledge on this topic in the literature and drawing on the expertise of staff in UNICEF and other international organizations working in this area.

An additional contribution to the global effort to understand and improve district health management (DHM) in developing countries is the set of tools for DHMP analysis that has been developed as part of this research. This has been done with the conviction that academic research in public health is more meaningful when it is immediately oriented to action, for the improvement of health outcomes in the population.

2. Objectives

The aim of this thesis is to make a substantial contribution to better understand and to provide tools for the improvement of district health management performance (DHMP) in low income countries. This will be accomplished by achieving the following objectives:

2.1 Adapt/create a framework for district health management

The first objective will be to develop a working definition of what DHM is and to design a theoretical framework to systematize the available knowledge on DHM. Such framework will be based on the evidence available in the literature, with particular reference to the publications from WHO on health systems strengthening, and on the results of an extensive consultation process with experts who will provide a firsthand understanding of the determinants of district health management performance.

2.2 Develop tools for situation analysis

The second objective will be to create a set of tools for a situation analysis at district level to assess whether HDMP meets the goal of providing quality services according to the local needs, in an efficient, effective, timely and equitable fashion and to identify shortcomings and issues in the main determinants of DHMP that need to be corrected. Such tools will encompass selected indicators organized according to the main functions of health systems and will utilize data that are routinely collected by the health system or that can be easily collected on an ad hoc basis.

2.3 Develop a list of possible interventions

The last objective will be to conduct a literature review to identify strategies shown to be effective in improving DHMP by acting on its determinants, to present them in a list organized according to the determinant that they address and by the context where have been implemented (i.e.: level of decentralization of the health system and availability of resources). The main gaps in the available evidence on how to improve HDMP will also be identified, to inform further operational research that may address and bridge such gaps.

3. Methods

An extensive literature review was conducted to acquire and systematize the available knowledge on how to improve DHMP, with the goal of producing a theoretical framework on DHMP, a set of tools for situation analysis and an initial list of possible improvement strategies. The results of the literature review were then discussed and integrated with the knowledge and expertise of professionals working at UNICEF. Finally, the framework, the tools for analysis and the list of interventions were shared with experts from other organizations working in international development of health systems, and their input was captured in a final document.

The following is a detailed description of the methods used to gather information to develop a comprehensive body of knowledge and to create evidence-based tools for DHMP improvement.

3.1 Literature review

A literature review was conducted to capture all relevant publications (reviews, articles, manuals, guidelines) on district health management. Two strategies were adopted: an extensive search through general and thematic search engines, and a comprehensive search by browsing key internet sites dedicated to health management.

Search engine strategy.

The search was limited to publication in English language, from January 2000 to June 2010 with few exceptions for older documents that are still very relevant (the oldest one being published in 1997).

The following words were used, alone and in a variety of combinations: low income countries, developing countries, & performance, determinants, & health district, health management, health systems strengthening, health managers, district health management

teams, & motivation, incentives, financial incentives, non financial incentives, supervision, positive supervision, mentoring, & capacity building, training, peer to peer, adult learning, & decentralization, decision space, working environment, satisfaction.

The following sites were searched (a short presentation of each site is provided, often by synthesizing the information available on the same sites):

- PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
  PubMed is a free database that comprises more than 20 million citations for literature from MEDLINE, life science journals, and online books. The United States National Library of Medicine (NLM) at the National Institutes of Health (NIH) maintains PubMed as part of the Entrez information retrieval system. Although the main focus is on biomedical topics, it contains a wealth of citations on public health and health systems.

- The Lancet: http://www.thelancet.com/
  The Lancet is a weekly peer-reviewed general medical journal. With an impact factor of 30.8, it is one of the world's best known and most respected general medical journals. Many articles deal with health systems, human resources for health and health management issues.

- http://scholar.google.com
  Google Scholar provides a simple way to broadly search for scholarly literature such as articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites. It presents documents in rank order based on the full text of each document, where it was published, who wrote it, and how often and how recently it has been cited in other scholarly literature. It is often a good starting point to identify more specialized sources of information in the internet.

- http://www.cochrane.org/
  The Cochrane Collaboration is an international network of individuals who assist healthcare providers and policy makers to make well-informed decisions about human health care by preparing and updating rigorously conducted literature reviews known as Cochrane Reviews. To date, over 4,000 reviews have been published online in The Cochrane Library.

- http://heapol.oxfordjournals.org/

  Health Policy and Planning is an Oxford Journal published bimonthly with an impact factor of 2.5. Its articles encompass different specialties as epidemiology, health and development economics, management and social policy, planning and social anthropology and other issues in global health. It aims to reach policy and public health researchers and practitioners, to provide them with evidence and ideas to improve the design, implementation and evaluation of health policies in low- and middle-income countries.

- http://www.who.int/workforcealliance/en/

  The Alliance Knowledge Centre is part of the Global Health Workforce Alliance website and collects documents, relevant news, scientific articles and fact sheets on human resources for health. The Alliance was created in 2006 as a common platform for action to address the health manpower crisis (one of the most fundamental constraints to achieving progress on health and reaching health and development goals). The Alliance is a partnership of national governments, civil society, international agencies, finance institutions, researchers, educators and professional associations dedicated to identifying, implementing and advocating for solutions.

- http://www.who.int/topics/management/en/

  WHO has a highly developed website on health management and serves as a repository for the main publications and tools produced on health systems strengthening, with special emphasis on providing direction to, and gaining commitment from, partners and staff; facilitating change; and achieving better health services through efficient deployment of people and other resources.

- http://www.healthsystems2020.org/

  Health Systems 20/20 is funded by the U.S. Agency for International Development (USAID). It is a five-year (2006-2011) cooperative agreement that offers assistance to USAID-supported countries to strengthen health systems through integrated approaches to improve financing, governance, operations, and building capacity of local institutions. The project acts through global leadership, technical assistance, brokering and grant making, research, professional networking, and information dissemination. The website of the project contains the documents related to all the projects and the research implemented to date.

- http://econ.worldbank.org

  This website features the research outputs of the Development Research Group and the World Development Report Unit (both a part of the World Bank's Development Economics Vice Presidency located in Washington, D.C.). The objective of these outputs is to provide the development community and Bank staff with the analytical tools and research data necessary to generate more effective development policy. The site contains a wealth of document on health systems strengthening.

- http://www.hrhresourcecenter.org/

  The HRH Global Resource Center is a knowledge management service of CapacityPlus, a USAID-funded project led by IntraHealth International. The HRH Global Resource Center is a global library of human resources for health (HRH) resources focused on developing countries. This site contains many well presented and properly indexed articles and is a highly useful resource for evidence on HRH and health systems strengthening.

Browsing key internet sites.

The following sites were browsed using the menus and the map of the sites, to identify sources of knowledge in various formats (html, pdf, ppt, doc). This was done in some cases by using internal search engines at some of the institutional websites. Although many suffered from poor indexing of articles, it was in some cases possible to identify relevant information that would be otherwise missed with a traditional search.

The following sites were systematically browsed:

- http://www.prime2.org/sst/index.html

  Webpage on "Stages, Steps and Tools for Performance Improvement" on the site of the PRIME II Project. The Project, which was funded by USAID and implemented by IntraHealth International was a partnership involving global health care organizations dedicated to improving the quality and accessibility of family planning and reproductive health care services throughout the world. Its focus was on strengthening the performance of primary care providers to improve services in their communities. To accomplish its goals, PRIME II applied innovative training and learning and performance improvement approaches in collaboration with host-country colleagues to support national reproductive health goals and priorities.

- http://www.who.int/management/en/

  A WHO site targeting health managers in resource-poor settings who must make decisions on how best to use staff, budgets, drugs and other resources. The site aims to strengthen management capacity by providing concepts, guidance and tools to help make best use of resources or solve problems to do with: working with staff, budgeting and monitoring expenditure, collecting and using information, obtaining and managing drugs and equipment, maintaining equipment, vehicles and buildings, interacting with the community and other partners. It is also a place for managers and experts to share materials such as policies, procedures, standards or guidelines, reports on some aspect of management implemented or changed in a country, and links to useful websites related to management and health systems.

- http://www.ghwa.org/

  Global Health Workforce Alliance: see description provided in the list of searched sites.

- http://www.who.int/management/links/websites/en/index.html

  This is another WHO site with a list of links to other institutions' sites on health systems management. It gathers documents on the following topics: management for health services delivery, general management, partnerships management, sub-national and district management, facility management, programme management, community health services, resource management, quality management, country experiences.

- http://erc.msh.org/mainpage.cfm?file=2.8.0.htm&module=hr&language=English

  Management Sciences for Health (MSH) is a nonprofit international health organization composed of more than 2,000 people from 73 nations. Its mission is to improve the health of the world's poorest and most vulnerable people by closing the gap between knowledge and action in public health and by helping managers and leaders in developing countries create stronger management systems that improve health services for the greatest health impact. In their website there is a collection of tools and evidence for improving health systems management.

- http://www.hciproject.org/node/451

  The USAID Health Care Improvement Project (HCI) is a five-year task project designed to support countries in improving the quality and impact of health services by using approaches such as continuous quality improvement, collaborative improvement, accreditation, and pay for performance. HCI's technical publications describe country

experiences, methods and tools, and findings from research and evaluation studies supported by the project.

- http://www.hrhresourcecenter.org/taxonomy/term/50
  The HRH Global Resource Center: see description provided in the list of searched sites.

Organization of the findings

All relevant documents found through the literature review were indexed and grouped according to the following themes: frameworks on health management and system strengthening, evaluation and improvement of performance in health districts, characteristics of enabling working environment, motivation and incentive systems, innovations in capacity building for health management. The reference and a synthesis of the relevant information for the key documents was shared with experts in UNCIEF.

The relevant bibliography cited through the thesis and listed at the end of it does not include articles found in reviews and institutional documents, even when such articles have been analyzed. This has been done to offer the reader only very significant and relevant documents worth consulting, that already provide a degree of synthesis of the evidence on a given topic.

3.2 UNICEF experts workgroup

A group of nine health professionals working in the Health Section, of the Programme Division of UNICEF Headquarters in New York was convened by the chief of the section and assigned with the task of analyzing the results of the literature review conducted on DHMP. Each group member was chosen due to his/her relevant experience working in low income countries implementing projects in health districts. The group provided a realistic perspective and a deeper understanding of the main determinants of DHMP and contributed to give shape to the theoretical framework.

Over a one month period, two meetings were held where the evidence from the literature review was discussed extensively and a framework was draft and agreed upon. This framework captured the role of HDM within the health system in each of the six "building blocks" or functions identified by the WHO (leadership and governance, health-financing,

health care workforce, high-quality health services, equitable access to essential medical products, vaccines and technologies and well-functioning health information system), and was used to organize the main determinants of DHMP.

The advisors were then organized in three smaller working groups. Each working group met three times over a period of four months and carried out a deeper analysis of the available evidence and produced a synthesis of the determinants of DHMP grouped as follows: determinants linked to motivation and incentives, determinants relative to necessary skills and capacity building, determinants from the working environment and the kind of decentralization.

The main results from the working groups were consolidated in a single document and then shared with experts from other organizations.

3.3 Interviews to experts from other organizations

To obtain a more comprehensive perspective on DHM strengthening, some experts from different organizations were contacted. A meeting was held with one person from each organization and each was asked to share with the working groups the approach that her/his institution had taken to analyze and improve DHMP.

At the beginning of each meeting the theoretical framework produced by the UNICEF experts group was presented. During the meeting, feedback was solicited on the framework, on possible tools for situation analysis and on effective strategies to improve DHMP. The notes from the interviews were then discussed and incorporated into the documents produced on the determinants of DHMP by UNICEF working group.

The following are the organizations that were contacted and that offered their collaboration:

- The World Bank (WB), in the person of dDr. Peter Berman, lead health economist at the Human Development Network, Health Nutrition and Population, head of the Health Systems Global Expert Team (HS GET). This team, as part of a corporate commitment to meet the challenge of strengthening health systems, brings together health systems experts from across the Bank to offer just-in-time technical advice to Ministries of Heath and project teams on issues such as health insurance policy and implementation, health

financing reforms, pharmaceutical policy, and heath system organization. It also perform operational research on health systems related topics.

- Management Sciences for Health (MSH), with both its Center for Health Services (CHS) and its Center for Leadership and Management (CLM), in the person of dr. Diana R. Silimperi, Vice President of the CHS at MSH. The CHS works with ministries of health, local governments, the private sector, and nongovernmental and civil society organizations to develop systems and build management capacity. It addresses geographic and financial barriers to care using innovative approaches such as community financing, community case management, public-private collaborations, and performance-based contracting for services. The CLM serves as the hub for MSH's activities and expertise in the areas of leadership development, human capacity development, health financing and financial management, health systems strengthening, and health information systems. It aims to improve the effectiveness, efficiency, and sustainability of health services, by working with managers at all levels to strengthen management systems including planning, human resource management, financial management, and information systems.

- The Institute for Healthcare Improvement (IHI), in the person of Dr. Pierre Barker, Senior Vice President of IHI, responsible for Africa and Asia. IHI is a US based non-for-profit organization with 20 years of working experience, of which the last 10 in low and middle-income countries such as Ghana, India, Malawi and South Africa. IHI has a complement of more than 120 staff, of which a sizeable team works on monitoring, evaluation and research. They consolidated over time a methodology on collaborative learning for quality improvement which has been applied at regional and health facility level. Other strong points in their experience include capacity development through training (using traditional individual courses for regional managers, and problem-based coursed for groups of district managers) and mentoring of managers, ongoing evaluations and operational research.

The suggestions and feedback from these external experts was incorporated in the main document presenting the theoretical framework, the situation analysis tools and the list of possible interventions, which constitute the core of the results session of this document.

4. Results

4.1 A new framework on DHMP

4.1.1 Conceptual frameworks and operational framework

Before describing the framework for DHMP, some key concepts and operational definitions that were agreed upon in the working group are presented here. They are part of the results achieved, because some definition and concepts are new, while others are taken from the literature but used here in a new way to make them more meaningful when studying the district level of health systems.

Operational definition of health district

Health district is a term commonly used to describe the local organization of the health system, which can differ greatly across countries. Health districts vary widely in population size and can be managed by a few professionals or by big and articulated organizations.

In this document I use "health district" to identify the smallest territorial organization of the health system providing services to a population, through a network of health facilities (generally a district hospital and some smaller clinics), and with a directorate or other local authority that plans and supervises its activities. In some countries this organization is actually called a "district," in others it corresponds to a sub-district level of the health system, and will have different names.

Operational definitions of a district health manager and management team

I adopted the operational definition of district health manager provided by WHO: "a health manager is someone who spends a substantial proportion of his/her time managing:

- volume and coverage of services (planning, implementation and evaluation);
- resources (e.g. staff, budgets, drugs, equipment, buildings, information);
- external relations and partners, including service users."[17]

Often, in big districts where there is availability of skilled personnel, these functions are carried out by a team of professionals under the responsibility of a director. I refer to such a group as the District Health Management Team (DHMT).

Health systems functions, or building blocks

As identified by the World Health Organization (WHO), a health system has six core functions or "building blocks." If all six components perform effectively and deliver their intended results, the health system – which includes the health care organization or program – is strong.

The WHO's six building blocks are:
"1. **leadership and governance** (stewardship): leadership and governance procedures and practices – including planning – that engender commitment and accountability;

2. **health workforce**: human resource policies and procedures that produce a supported and motivated workforce;

3. **information**: health information and associated monitoring and evaluation practices that facilitate effective problem solving, informed decision-making, and the formulation of policy based on evidence;

4. **medical products, vaccines, and technologies**: management of medicines and medical supplies so that the right products are delivered in the right quantities, at the right time, and in the right place – and then used appropriately;

5. **financing**: financial management, which is concerned with accounting and budgeting, along with the related reporting and analysis that make it possible to ensure that the organization's resources are used in the service of its mission, for maximum impact, in

compliance with laws and donor requirements, and in accordance with ethical standards and sound operational practices;

6. **service delivery**: health service delivery that is supported by quality management processes and that addresses the basic health needs of the populations to be served."[18]

Building blocks and their functions need to be implemented at every level of the health system, and most importantly at the district level, where the DHMT is responsible for their achievement.

In the present document I consider leadership and governance to be the main function of the DHMT: the team manages the other building blocks (health workforce, information, procurement and supply and financing) in order to deliver health services to the population. The following figure illustrates the relationship between the blocks.
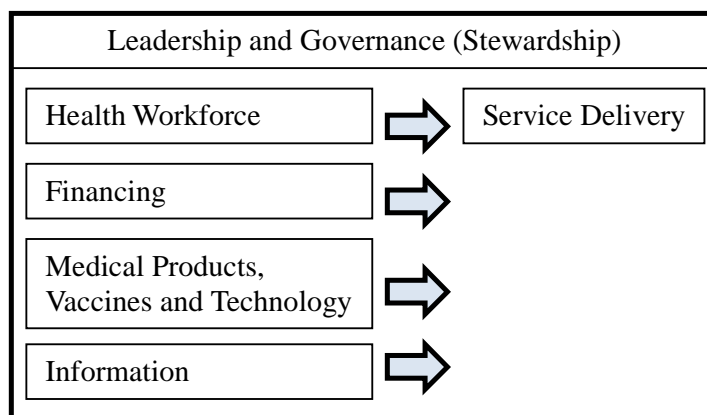
Figure 1. WHO building blocks reinterpreted for DHM

Framework on DHM

WHO has produced an articulated conceptual framework to strengthen management in health systems, which has been used to carry out situation analyses in different countries.[19,20] A synthesis of the related WHO literature can be found in the Annex. The following figure presents the framework in its general terms:
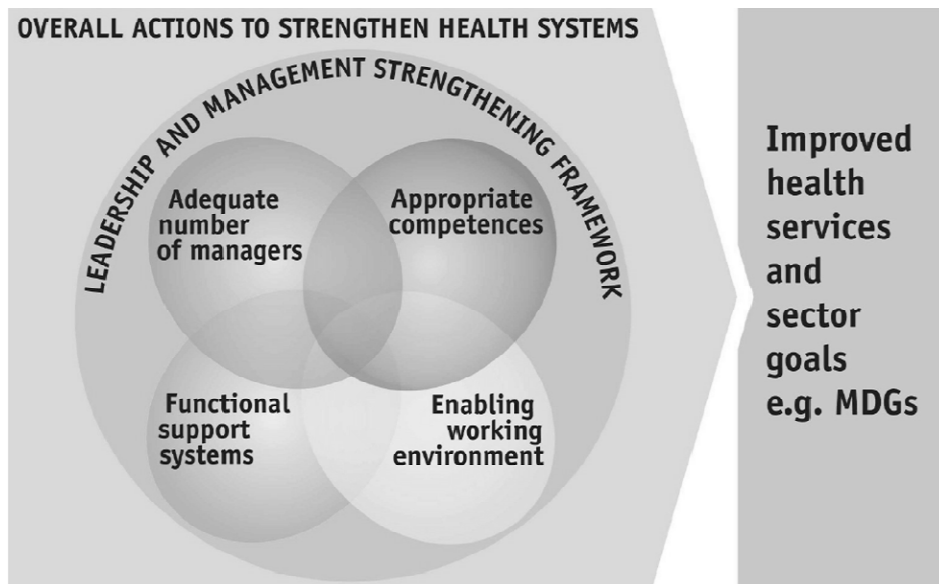
Figure 2. WHO framework for Health System Strengthening[21]

To create the framework for DHMP, the WHO framework was applied to health districts, with some adjustments:

- "Ensuring an adequate number of managers" is often not feasible in health districts and a problem of concern at the national level. It is also out of the realm of UNICEF activities to influence substantially the provision of health district managers. Hence I consider it a pre-requisite known to be necessary, not addressed directly in this document.

- "Functional support systems" coincide with some of the building blocks of a health system that I consider instrumental to the provision of health services (health workforce, information, procurement and supply and financing).

- Acquiring "appropriate competencies" and an "enabling working environment" are key determinants of district health management performance, together with "motivation and incentives", and are therefore included in the framework.

- In particular, for an "enabling working environment" it is necessary for the DHMT to have the authority to manage the functions for which is given responsibility. Hence I will focus on the decision space available to DHMTs for each function and the level of decentralization in which they operate.

Framework on DHMP

Based on what has been described so far, the following new framework was created to describe the determinants of DHMP and to identify possible strategies to improve it. This framework is the first important result of this research and constitutes a meaningful contribution the development of a comprehensive understanding of how to improve the management of health systems at local level in developing countries.
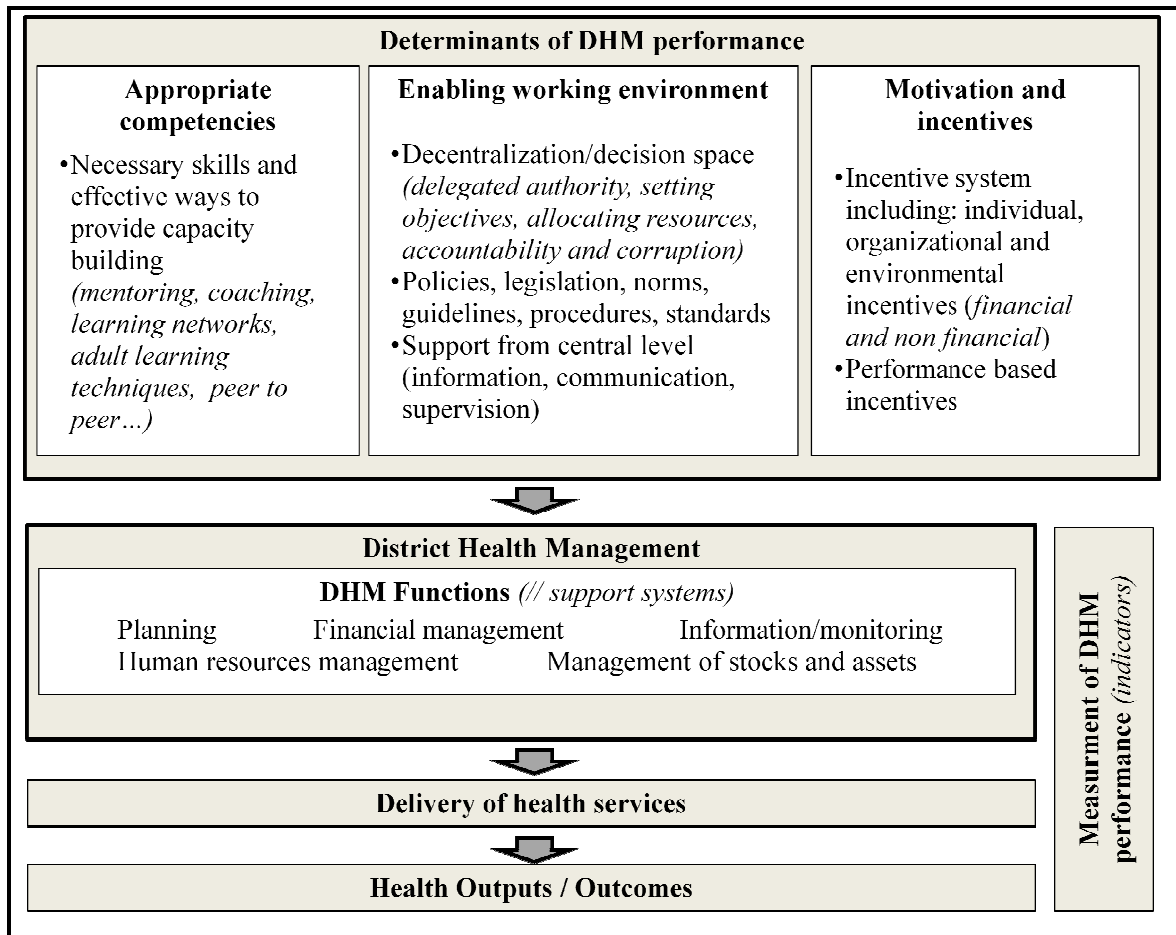
Figure 3. Framework for DHMP

The contents of this framework are explained in the following three sections, each one describing in detail one group of determinants of DHMP.

4.1.2 Determinants linked to working environment and decentralization

The working environment is one of the main determinants of good performance of managers and management teams working in health districts and an important aspect of this is how much responsibility, authority and power is given to the DHMTs. This reflects the degree of decentralization of the functions of the health system to the local level, so that districts can then set their own priorities, objectives and strategies, can implement them by allocating the available resources; and can monitor and steer the provision of services.

The amount of space given to the DHMTs to make autonomous decisions and the way in which the central government supports these decisions determine to a great extent how DHMTs will perform.[22]

Decentralization of the health system and of its functions

Based on a review of the literature, key concepts about decentralization were defined, and different theories were synthesized to develop an operational framework to identify and improve determinants of DHMP.

"Decentralization deals with the allocation between center and periphery of power, authority and responsibility for political, economic, fiscal and administrative systems."[23] A given country usually decides to decentralize the governance of its health system to reach a combination of the following goals, according to the constraints and needs perceived:
- improve effectiveness of service delivery, by adapting to local conditions
- increase quality of services offered to the population
- improve financial soundness[24]
- increase cost-consciousness
- improve efficiency of resources utilization, by incorporating local preferences
- increase workers motivation, with local supervision, involvement of users and performance assessment
- improve accountability, transparency and legitimacy, through local administrative systems
- increase beneficiaries and stakeholders participation

- improve equity of service delivery, by addressing local needs
- increase the role of the private sector[23]

Decentralization is a complex process, heavily influenced by the national and local contexts, which can result in very different institutional structures. Each country defines the level and type of decentralization in a unique way. The following are three possible scenarios:[23]

- Deconcentration: power of making choices and implementing them is given from a central office to field offices, within the same agency.
- Delegation: power of making choices and implementing them is given from a central agency to field organizations under its control.
- Devolution: power of making choices and implementing them is given from central to local government, with transmission of formal power and functions.

In reality, a complex mix of central control and local management often exists which combines centralized and decentralized components for administration.

DHMTs in different decentralized settings

Depending on the context and level of decentralization, the structure and composition of the local DHMT can be very different. Each organizational lay out reflects different contexts and will have different needs to be functional. The political context is very relevant.

Different configurations for the composition of the DHMT include:

- In a "deconcentration" setting: there can be a field administration (within the national ministry, with frontline health workers forming an extension of the formal health organization), or health teams (horizontal links between separate divisions within the ministry of health –MoH-), or interdepartmental committees (interdepartmental and intersectoral coordination).
- In a "delegation" setting: we can find executive agencies (executive and political bodies, combinations of local representatives and health officials with managerial responsibility), or management boards (representatives from client groups who form managing bodies for local health institutions).
- In a "devolution" setting: there can be a multi-purpose council (elected members, involvement of local and traditional leaders), or single-purpose council (composed of

representatives of the people, but with one single function), or an hybrid council (mixing types of recruitment – local representatives and government officials)[25]

When performing a situation analysis to identify the constraints that are hindering performance of management at the district level, it is important to recognize the institutional setting and the nature of the DHMT. Possible solutions will then be identified and tailored to the local setting and needs.[26]

Using decision space approach to identify issues with the determinants of DHMP

Describing the level of decentralization of the health system in a given country is the first step to identify the root causes of the shortcomings in management of health districts. The decision space approach provides a quick and effective analysis of the situation in order to identify possible solutions. This approach builds on other approaches to analyze decentralization which are sometimes used by partners and development agencies. Therefore, it is useful to be familiar with them. The main approaches, as described by T. Bossert[24], are:

- *Public administration approach*: provides an institutional framework that focuses on types of institutional arrangements. It is useful for describing transfers of authority to different types of institutions (devolution, delegation and privatization). It is particularly important to analyze the capacity of the institutions receiving the new powers and authority to take on the tasks assigned.
- *Local fiscal decision approach*: is especially useful in focusing attention on the accountability of local officials to local populations (voters/tax payers). Since it uses assumptions of public choice models, it also proposes a clear set of objectives and/or motivations for generating hypotheses about choices at this level. However, the importance of intergovernmental transfers compared to local funding sources and the restrictions on their use by central governments, limit flexibility and accountability at the local levels, undermining the utility of this approach as a general framework.
- *Social capital approach*: suggests that some characteristics of the local community may facilitate the capacity of local governments to perform better and to achieve objectives such as those of health reform. It is a relatively conservative vision, however, that does not have clear policy implications.

- *Principal-agent approach*: is likely to be the most effective overall approach to decentralization and one to which other approaches may offer supplementary concepts and hypotheses. The principal-agent framework focuses our attention on the relationship between the center and the periphery and can generate policy recommendations about how the center can shape decisions made at the periphery so that they are more likely to achieve the objectives of national health reforms. Its major weakness is that it does not have a clear means of defining the range of choice transferred to the districts by decentralization.

The decision space approach elaborates on the principal agent approach, to capture and describe the widening range of discretion or choice allowed to agents in the process of decentralization, which differentiates decentralized principal agent relationships from centralized relationships.

"Decision space" can be defined as the range of effective choice that is allowed by the central authorities (the principal) to be utilized by local authorities (the agents). Such space for choice is formally defined by law and regulations, but there can be lack of enforcement, so it is important to identify whether legal and regulatory rules have been respected or whether the actual range of choice is different.[24] In fact, both the formally delegated powers and authority and the lack of enforcement of some of the central level powers can enable decentralized level authorities to bend the rules.

The range of discretion allowed on each of the functional areas might differ in different contexts. It is important to note that local authorities do not necessarily take advantage of the delegated new powers even when a wider decision space has been provided. Their choice could range from opting for change and innovation to continuing business as usual.[22]

DHMTs act as agents of the central and regional level, and their ability to make autonomous choices when it comes to managing the support functions of the health system in the district is key to their success. As agents, DHMTs do not have always the same goals as the central level, and a process of negotiation might be necessary. Unfortunately, often managers at the regional and central level lack the skills to lead such processes (known in literature as stewardship). The main objectives of agents usually are: "to maximize control, to search for professional approbation, to ensure the achievement of specific institutional mission, and to look after their organizational survival. But they also interact with local principals, often outside the health system, such as mayors, governors, legislators".[24]

Decision space can be usefully displayed as a map (table) of functions and degrees of choice. Such maps are simple to use, and constitute a powerful tool to identify what the systemic constraints of DHMTs are, to present them clearly to the counterparts and to advocate for their removal.[24]

The table below is an original contribution to describing decentralization at district level, and summarizes the main functional areas for which various degrees of choices could be allowed. The decisions made in each of these functional areas are likely to impact the system's performance, as well as its ability to achieve the objectives of equity, efficiency, quality and financial soundness.[22] The relevant functions of DHM and the possible decentralization level of each of them are shown below (sometimes different choices are equally valid, depending from the level of decentralization of the entire health system).[27]

Function		Optimal decision space at local level		
Name	**Description** *(if necessary)*	**Low**	**Medium**	**High**
Implementation:				
Human Resources Management				
Quantifying needs and planning	global policies & regulations; setting ceilings & approving needs; determining needs & selecting personnel	←– – – – – – – –→		
• Hiring/firing	Civil servants vs. term contracts	←– – – – – – – –→		
• Deploying	To the regional/provincial level, to the local level and to the facilities		←– – – – –→	
• Defining salaries, allowances and incentives		←– – – – –→		
• Allocating allowances and incentives	Monitoring system, reward system		←– – – – –→	
Financing				
• Resource collection	(Fiscal decentralization) - pooling Collection through taxation	←– – – – –→		
• Resource allocation	(Objective setting) Define how much money to the regions/provinces and districts; and to the providers	←– – – – – – – –→		
• Accountancy and accountability	Audits, monitoring, supervision, publication of budgets	←– – – – –→		

Procurement and Supply Management	Includes both drugs, consumables and equipment, for clinical care and laboratory activities	
• Quantification: forecasting needs and budgeting	Based on historical consumption or on projected needs (using incidence of disease, and/or guidelines)	←– – – – – – –→
• Procurement (economy of scale)	Better prices, better quality control and less corruption if managed at the central level	←–→
• Licensing, registration, testing	High technical skills, needed only at the central level	←–→
• Storage and distribution	For medical equipment, drugs, consumables	←– –→
• Monitoring consumption and use	Of consumables and drugs. Maintenance of equipment and vehicles.	←– –→
HMIS (health management information systems)		
• Definition of needed data & information	Diseases, services and health outcomes to be described	←– – – – – – –→
• Data collection	What, when, how, where, by whom	←– – – –→
• Data analysis and generation of information	Define: where and by whom	←– – – –→
• Dissemination and use of information	Knowledge management strategy	←– – – – – – –→
Governance:		
Accountability		
• To the upper level	Province, region, MoH.	←– – – – – – –→
• To the local level (community, health workers, authorities)	Within the districts, with community empowerment.	←– – – – – – –→
• Publication of data	Transparency, on local media.	←– – – – – – –→
• Arbitration, registration of complaints	If not mediated by higher levels.	←– – – – – – –→
Service organization		
• Situation analysis	Epidemiological analysis; equity analysis; providers analysis	←– – – – – – –→
• Priority and standards setting	Target setting; input from the community	←– – – – – – –→
• Objectives settings	Key function, often delegated by central authority in a partial way and without clear guidelines.	←– – – – – – –→
• Interaction with private sector	NGO and for profit organizations	←– – – – – – –→

Monitoring and Evaluation		
• Supervision of lower levels	Health facilities and personnel in the district (incentives and sanctions)	←– – – –→
• Ensure availability of instruments and tools necessary		←– – – –→
• Capacity building	Within the DHMTs	←– – – – – – – –→
• Monitoring processes		←– – – – – – – –→
• Evaluation of attainment of objectives	As part of the budgeting cycle	←– – – –→

4.1.3   Determinants linked to motivation and incentives systems

One of the main determinants of performance in any human activity is motivation. This is true also for health district management teams. Incentives can be put in place to increase motivation and address issues that affect motivation negatively. It is usually more effective to set up an incentive system comprised of various motivational factors, which, in combination produce a stronger and lasting motivation rather than individual incentives. Some incentives are more effective in retaining health professionals rather than in motivating them. Performance based incentives are more suited to motivate for improved performance than other incentive-based strategies, but they are more difficult to set up and maintain as they involve building up capacities in monitoring and supervisory skills at the central and regional levels.[28]

Most evidence available on motivation and incentives in low and middle income countries refers to health professionals providing services as clinicians; while evidence on effective incentives for managers is limited largely to research from high income countries. The evidence presented here is useful to provide some guidance to incentivize health managers in low and middle income countries.

The following original figure presents the main factors that contribute to motivation of health workers, the three dimensions of motivation and how it affects job retention, alignment of individual goals with the organizations' goals, and the achievement of such goals.
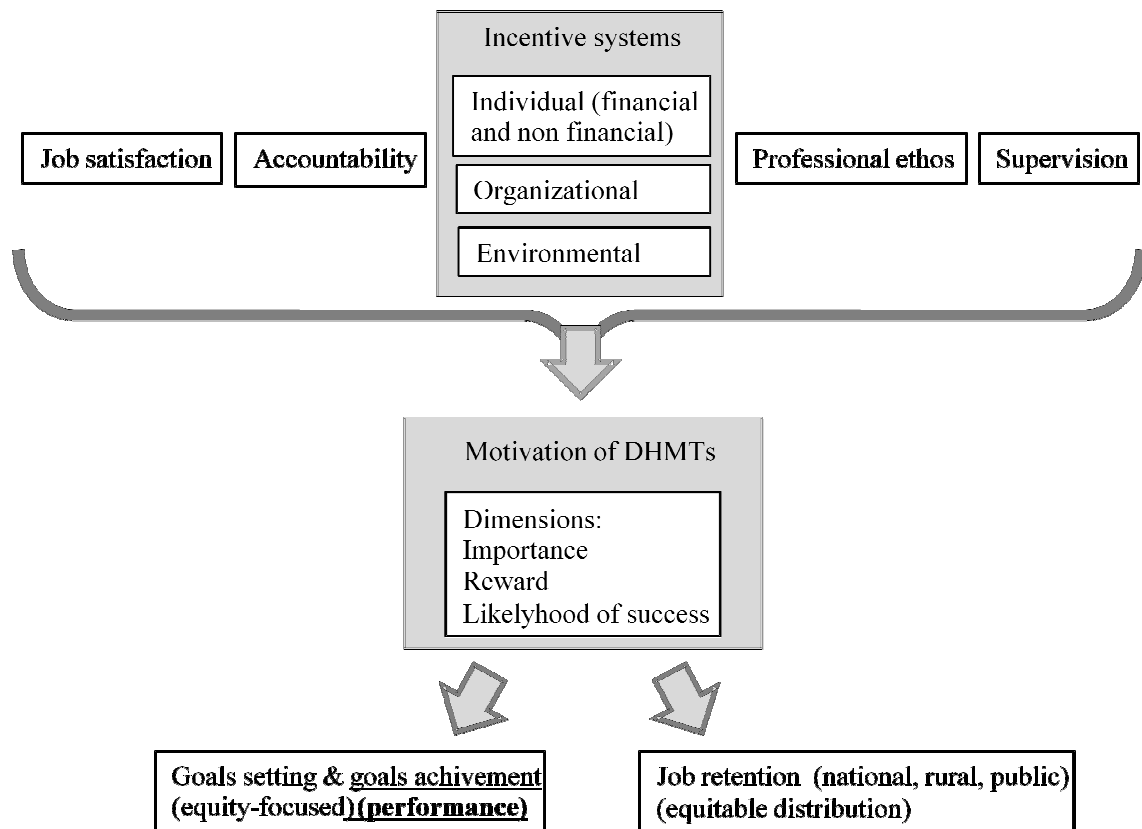
Figure 4. Determinants and effects of motivation

Motivation

An operational definition of motivation can be: the tendency to initiate and sustain effort towards a goal.[29] Motivation in itself is difficult to measure and to provide, nevertheless is one of the main determinants of performance for any job. An organization or individual can only create the enabling conditions within which internal motivation can flourish. There are three main dimensions that drive workers' motivation:[29]

- The perceived importance of one's work/task ("valance"): this can be increased by communicating what is known about the impact of the work and how clients, patients, the community or society at-large will benefit.

- The perceived chances for success ("self-efficacy"): this can be enhanced by pointing out where the worker has been successful at similar tasks or show how people like her/him have been successful at the task in question. Improved motivation depends

heavily on the persuasiveness of the arguments, or the worker's history with similar efforts at persuasion in the past.

- The expectation for personal reward (called "expectancy"): this is by far the easiest to impact through a combination of tangible rewards (money, prizes, increased benefits such as time off and additional training) and intangible rewards (formal recognition systems and praise from supervisors, peers and clients).

Valence and self-efficacy can be improved through positive supervision while a good incentive system can address expectancy. The combination of the two approaches has been shown to improve and sustain performance.[29]

The major motivational strategies found in the literature and often used to create incentive packages and to structure the contents of supervision can be grouped as follows:

- Financial incentives (in terms of salary or allowances) and fringe benefits (e.g. housing and transport allowances), are effective but they need to be combined with non financial incentives[30]
- Career development (as the possibility to further specialize or be promoted)[28]
- Continuing education and further qualification (like the opportunity to attend classes and seminars)[28]
- Personal recognition or appreciation (either from managers, colleagues of the community or recognition schemes)[31]
- Adequate resources (refers to equipment and supplies to perform the job) and appropriate infrastructure (the physical condition of the facilities)[28]
- Professional environment (positive working relationship with superiors and peers; supervision schemes; participation mechanisms; intra-organizational communication processes)[32]
- Others: job security, personal safety, social factors (such as effect on family life).[28]

While some motivational factors are context and culture specific, financial incentives, career development and management issues are core factors that can play an important role in most countries. Further, financial incentives are not enough to motivate health workers. Recognition is highly influential in health worker motivation and adequate resources and appropriate infrastructure can improve their morale.[28]

When trying to improve the motivation of health district management teams, theories developed in western countries need be assessed and adapted to the local culture before using in a developing context.[28]

Finally, it is also important to take into account specific motivational factors that are often ignored when looking at how to improve motivation and performance. These include professional ethics, social expectations, informal organizational culture, and alternative sources of income.

In turn, the main effect of motivation towards performance is two-fold: first, the establishment of congruence between personal goals and the goals of the organization (goal setting); second, the increased extent of individual resources that are mobilized to accomplish the adopted goals (goal achievement). Therefore motivation enables staff to buy in the objectives of the organization, and to commit to their fulfilment.[32]

Incentives and incentive systems

According to available evidence, incentive schemes are the most reliable means of improving motivation.[28] WHO defines incentive as "all the rewards and punishments that providers face as a consequence of the organizations in which they work, the institutions under which they operate and the specific interventions they provide".[33]

Incentives are generally designed to accomplish the following purposes: to encourage providers to furnish specific services; to encourage cost containment; to support staff recruitment and retention; to enhance the productivity and quality of services; and to allow for effective management (the last two are of particular interest for DHMP).[34]

Incentives can be categorized to reflect the factors affecting the personal motivation of health workers:

- Individual level: individual needs; self-concept; expectations of outcomes or consequences of work activities.[35]
- Organizational context: salary; benefits; clear, efficient systems; HR management systems; feedback about performance; organizational culture.[35]
- Social and cultural context: community expectations and feedback.[35]

- Health sector reform: communication and leadership; congruence with personal values of workers.[35]

The vast majority of incentives aim to retain health personnel in the public sector, in underserved areas, or in poor countries. Some that aim primarily to improve workers' performance are the most relevant for DHMP.

The following table presents a summary of the most common lists and classifications of incentives available in literature (performance enhancing incentives are underlined).

In each context a proper incentive system should be put in place, combining incentives of different nature so as to make them effective and balanced. The most successful incentive packages are those that are tailored to the particular context in which they will be implemented. For that reason, there is no 'incentives template' that can be easily applied to a given situation.[35]

Individual incentives		
Financial	**Non-financial**	
Terms and conditions of employment • Salary/wage • Pension • Insurance (health, life…) • Allowances (e.g. housing, clothing, child care, transportation) • Paid leave **Performance payments** • Achievement of performance targets • Length of service • Performance-related bonuses **Other financial support** • Allowances (hardship, rural location…) • Fellowships • Loans • Tuition reimbursement • Subsidized meals • Travel and transport • Housing allowances	**Positive working environment** • Enforced protection of pregnant women against discrimination • Equal opportunity policy • Functional and professional autonomy • Parental leave • Potential for dual practice • Improved working and living conditions • Safe and clear workplaces • Technical support and feedback systems • Clarity of roles and responsibilities • Sufficient resources • Supportive management and peer structured • Manageable workload • Effective employees representation and communication **Flexibility in employment arrangements** • Flexibility in working hours and job sharing • Planned career breaks • Granting unpaid leave	**Support for career and professional development** • Coaching and mentoring structures • Continuing education, training and professional development • Sabbatical and study leave • Job descriptions, criteria for promotion and career progression • Transparent reward systems **Access to services such as** • Occupational health • Recreational facilities • Housing • Transport • Child care and schools **Intrinsic rewards** • Recognition of work, valued by the organization • Respect of colleagues and community • Membership of team, belonging
Organizational incentives		**Environmental incentives**
Internal • Autonomy • Accountability • Market exposure • Financial responsibility	**External** • Governance • Public finance policy • Regulatory mechanisms	• Amenities • Transportation • Job for spouse • School for children

Incentives have been collected from the following documents
(see bibliography): 28, 30, 31, 32, 33, 34, 35, 36

Performance based incentives

Some incentives are conditional to the achievement of a set level of performance. Their use requires good regulatory frameworks (with the identification of indicators of performance

that can be easily measured over time) and skilled managerial resources (above all at the central level, where the indicators will be monitored and feedback will be provided).

Incentive packages should link payment with individual or group performance and should be paralleled by supportive organizational changes if the desired behaviour is to be achieved.[34]

Supervision

It is virtually impossible to enforce an incentives system based on performance without proper supervision. Positive supervision is the main tool to provide support to the DHMTs, to assess their performance (positive and negative) and to identify their needs. Each time a shortcoming is registered a solution should be sought by the DHMT with the supervisor.

To provide positive supervision, it is important to ensure that the supervisors (from the central and regional levels) have the appropriate skills, tools and transportation. The determinants of a supervisor's performance should be understood and strategies implemented to support supervisors and improve their performance. Strengthening of supervisors can quickly improve performance of much larger numbers of frontline health workers. This is especially true in decentralized health systems. The main challenges for supervisors are improving the quality of supervision, increasing the time spent with health managers, and measuring the cost-effectiveness.[36]

Health workers are motivated to perform well when, through supervision, their organization and managers:

- provide a clear sense of vision and mission;
- make staff feel recognized and valued whatever their job;
- listen to staff and increase their participation in decisions;
- encourage teamwork, mentoring and coaching;
- encourage innovation and appropriate independence;
- create a culture of benchmarking and comparison;
- give feedback on, and reward, good performance – even with token benefits; and
- use available sanctions for poor performance in ways that are fair and consistent.[36]

Job satisfaction, professional ethos and accountability

The following consideration clarifies why job satisfaction, professional ethos and accountability are not included in this analysis, despite the fact that they are often cited in the literature on motivation of health workers.

Incentives and supervision are the two main strategies that have been shown in the literature to be effective in improving performance through motivation. In contrast, job satisfaction was not addressed since there is a substantial difference between motivation to perform well and job satisfaction: while motivation has a major role in improving performance, job satisfaction has a positive effect on retention, but the correlation between job satisfaction and performance is inconsistent.[29]

Professional ethos plays a big role ensuring consistent and lasting good performance. Although adequate human resource management tools can uphold and strengthen the professional ethos of doctors and nurses, a major part in the building of a strong professional ethos is played by the teaching and training institutions during the initial training of health professionals.[32] Therefore, it is not a focus of improving performance at DHM level, nor in this analysis.

Finally accountability is a key function presented in the chapter on decentralization and working environment, and is therefore not included here.

4.1.4 Determinants linked to necessary skills and capacity building

To manage a health district and perform well in all functions of the health system, it is necessary to have a wide set of skills. Such skills can be grouped in four key areas: clinical skills, public health skills, management skills and leadership. Academic training and professional experiences equip DHMTs well to meet the desired levels of clinical and public health skills in most countries. Much attention is paid to these two areas during on-the-job training as well. Less focus is given to developing the management and leadership skills of the DHMT.[37]

This is why capacity building of both individuals and institutions is one of the main determinants of good performance of managers and management teams working in health districts.[38]

Capacity building for DHMTs

Capacity building can be defined as: a process that improves the ability of a person, group, organization, or system to meet its objectives and to perform better.[38] It aims to instill commitment and improve fundamental management and technical skills within an organization, thereby making the institution more effective and sustainable.

Often capacity building is identified with further training although a broader approach may be more effective in achieving a steady improvement in capacity. The following strategies can be put in place simultaneously, according to needs, to create synergy and develop capacity:

- skill building: human resources development by training trainers, increasing managerial and IT capacity at central and local level;
- technical assistance: in the development of health programs and leveraging of funds;
- fostering linkages: with local institutions, to create synergy of activities on priority issues;
- tools development: adaptation of technical and managerial tools for training, management of HR, financial and other systems, use of evidence based practices;
- partnerships: based on the goal of implementing activities and delivering expected results.[38]

Within such a broad approach, training available staff is still often needed. Many courses for health management are available for free over the internet or through partnerships with international development agencies.[39] There are courses targeting district health managers, some designed for an initial training with basic skills, others more specific and technical on particular areas of activity such as human resources management, programs management, and financial management.[40]   The issue is then not what to teach, but how to train DHMTs to provide them with the necessary skills to their context, in an effective and lasting way.[41]

Content and approaches to build capacity of DHMTs

Capacity building of DHMTs addresses the lack of technical knowledge and skills in management and leadership and builds a supportive network that is crucial for making improvements.[42,43]

It is important then to understand what the main skills and competences are that should be the object of capacity building for DHMTs. The following table collects the areas of knowledge in capacity building that have been documented in the literature to have a positive impact on health systems strengthening and process related outcomes.[37]

• Leadership development	• Management of budgets[43]
• Planning and coordination	• Teamwork[43,44]
• Strategic thinking, priority setting, problem solving[38,43]	• Supervision
• Delegating and sharing responsibilities	• Ethical behavioral management[45]
• Change management	• Manage public-private partnership[42]
• Conflict management	• Problem solving and participatory strategy for planning and implementation[43]
• Skills in information presentation and dissemination[38]	• Fostering community participation[42]
• Marketing and fund raising[38]	• Knowledge of socioeconomic, cultural and political aspects of health and poverty[42]
• Business plan development[44]	
• IT capacity / using computers and information systems[45]	• Capacity to analyze and interpret 'what is really going on' in one's area[42]
• Management of human resources[38]	

Many different approaches to capacity building have been experimented in different countries with different results, both at individual and institutional level. The following is a list of the approaches that have shown some effectiveness in terms of retention and use of the content and skills taught:

- Online courses[38]/ distance learning courses[42]
- Regional training programmes (i.e.: AWARE)[38]
- On the job management and supervision training[43]
- Study tours (north-south, or south-south)[38]
- Mentoring
- Apprenticeship[38]
- Twining for upgrading analytical skills[38]
- Technical meetings
- Producing and disseminating targeted print and electronic materials.

Each approach can use appropriate aids/media, such as: technical publications, websites, program briefs, toolkits, e-newsletters, interactive web-based CD ROMS.[38]

Overall, the most effective approaches to provide technical and managerial skills to DHMTs are: using a peer to peer approach based on problem solving[46], using adult learning techniques, and an intense use of on-site mentoring.[38]

Capacity building impact on performance

Capacity building aims to increase or improve performance. Capacity building for DHMTs can be considered really effective only when achieves a sustainable performance improvement through institutional leadership, management systems and personnel skills improvement.[38]

Some experiences have been documented on how to make sure that capacity building and further training have an impact on performance. The use of such techniques is especially useful when a training scheme is in place but performance is still low. But it is a good practice to use them when a new training scheme is designed and implemented for the first time, to ensure its effectiveness from the start.[37] This approach can become a cycle, as

synthesized in the next figure, to facilitate periodic monitoring of the impact of ongoing training for DHMTs personnel and to adjust over time its contents and approaches[47].
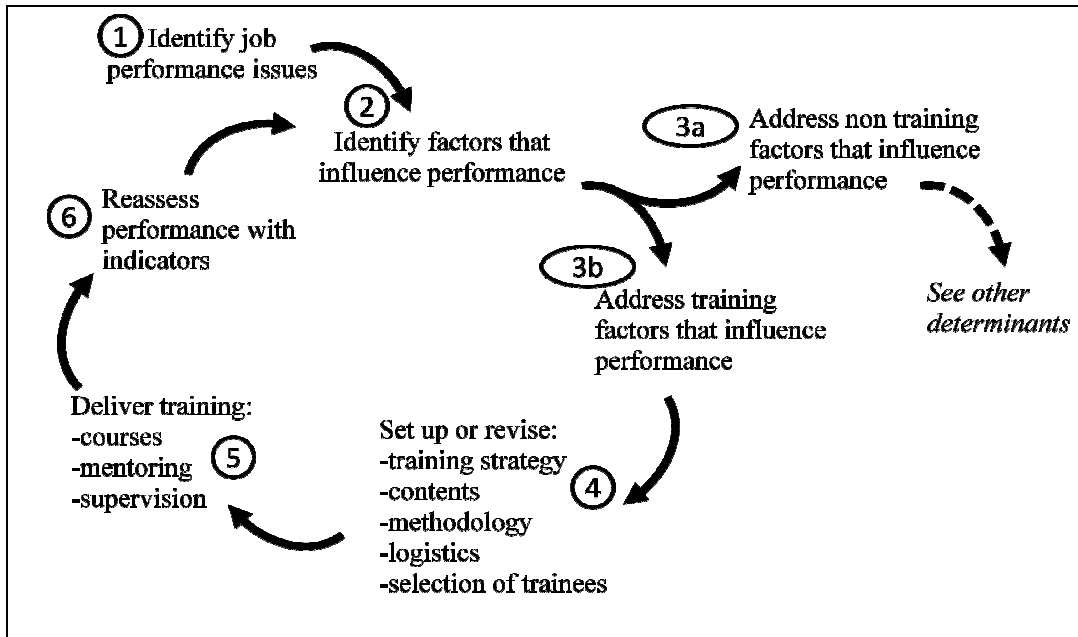
Figure 5. Cycle to improve impact of training on performance

Capacity building and decentralization

Capacity building becomes especially important when decentralizing a health system. Often the main constraint to a successful decentralization of the health system is the lack of skills and capacity to manage at the local level and to provide supervision from the central level.

It is important to implement decentralization and capacity building simultaneously. Developing institutional capacity ensures effective management, in order to build local capacity and to achieve goals with local ownership. At the same time, the newly acquired skills need to be put in practice to grow and allow the local level to be autonomous, and this can happen only if authority and responsibility on running the function of the health system are gradually but significantly decentralized.[48]

The following figure illustrates how it is possible to implement decentralization and capacity building as parts of the same process to develop institutional capacity, in order to effectively strengthen district management in countries while introducing decentralization.
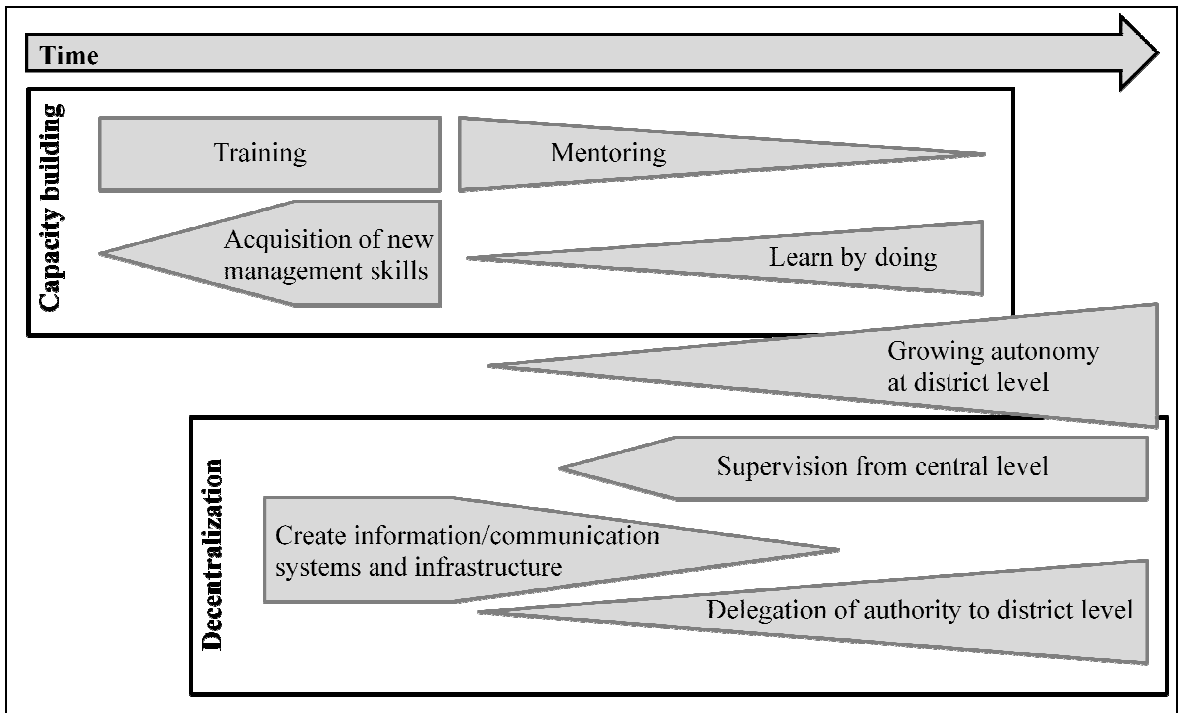
Figure 6. Implementation of capacity building and health system decentralization

4.2 A set of tools for situation analysis on the determinants of DHMP

A further contribution to the understanding and improvement of DHMP is a set of tools created to support a situation analysis. The combination of these tools will help DHMTs identify the main shortcomings in performance and achieve an understanding that will enable adequate, effective and context-appropriate solutions.

Many indicators used in the tables of this section are revisions of indicators included in the *Health Systems Assessment Approach*, a manual used by USAID to analyze national health systems.[49] Other indicators are adapted for application at the district level based on ones suggested in *Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and their Measurement Strategies*, a recent WHO publication.[50] The indicators have been selected, reorganized, simplified and tailored to the district level of the health system. This was done to satisfy a double requirement: on one hand there is the need to ensure consistency with the analysis carried out at national level by MoHs and other agencies, and on the other indicators have to be simple to measure to allow DHMTs with less skills than MoH staff to perform a rapid assessment with minimal guidance.

By filling in empty tables, a description of the local determinants of district health management performance will be elicited, leading the user to gain a deep understanding of the determinants that affect the performance of the DHMT.

4.2.1 Steps to perform the analysis

The analysis is performed through four conceptual and practical steps. Each step will lead to the following, allowing to eventually link DHMP with the impact on the health of the population.

I first illustrate the steps to be undertaken to perform a complete analysis of DHMP, and then present the tools to be used in each step of the analysis.

The first step aims to describe the broader context in which the DHMT operates and to identify local health priorities and the health services that address them. This is done by collecting and analyzing background information on the health system at national and district level through a list of indicators. The information collected will cover key aspects of:

- the country and the health sector environment (basic ground information on the country and the health sector)
- the health system (in particular: how it is organized and managed to provide services to the population)
- the district level of the health system (in particular: how it is organized and managed to provide services to the population, and which are the priority health services)

The second step consists in identifying which priority health services have not been provided to the population as planned or expected. This step provides focus for further analysis and ensures a necessary link between DHMP improvement and better health outcomes in the district through the improvement of specific health services. A table is provided to analyze the shortcomings in service delivery based on the Tanahashi model which focuses on the assessment of availability, accessibility, utilization, coverage and quality of health services.[51]

In the third step DHMTs identify the shortcomings in the support functions that are preventing the adequate provision of the health services identified in the previous steps. The tool provided for this step is a table suggesting what indicators can be used to identify possible shortcomings. Information is to be collected on performance in each support function of the health system in the district:

- governance (planning, service organization, accountability)
- human resources management (remuneration, allocation, benefits)
- information management (health information system, monitoring and evaluation)
- operation management (procurement and supply management, stocks and assets – equipment, drugs, facilities, vehicles)
- financial management (revenue generation, allocation of resources, budgeting, audit)

The fourth step leads to identify the determinants of DHMP that need to be improved to improve the provision of health services. This is done by linking each shortcoming in each support function of the health system with the corresponding determinant of DHMP. This last step is innovative and requires the DHMTs to reflect in depth on the causes of the identified problems in order to find later effective strategies to address them. There are two actions to perform in this step of the analysis:

- identify determinants of shortcomings in DHMP
- describe the causes of the issues related to such determinants

4.2.2 Describing the health system and the priority services

The following table presents the indicators to be used to describe the context in which the DHMTs operate as well as priority health services (step one).

The data necessary to populate this table can be gathered in different ways. Information on the national level can be gathered through: document reviews, internet searches, stakeholders interviews, and consultation of available data from the health information system. Information on the district level will be obtained through: interviews with DHMT members and health facility managers, consultation of reports and documents from the local health system and from the management information system, if in place.

Country and health sector environment (basic ground information on the country and the health sector)
Total population
Annual % of population growth
Rural vs. urban population
% of literacy in adults
Total fertility rate
Total life expectancy at birth
Infant mortality rate (/1000 live births)
U5 mortality rate (/1000)
Maternal mortality rate (/100.000 live births)
GDP per capita
GDP % annual growth
Total per capita expenditure on health
% private per capita expenditure on health (/total)
% out of pocket expenditure on health (/private)

GINI index

% of population with access to improved drinking water
% of population with access to improved sanitation (urban vs. rural)
% U5 stunting
% U5 underweight

HIV prevalence
AIDS prevalence
TB prevalence (/100,000)
Proportion of TB cases cured under DOT
Prevalence of malaria
Proportion of people using bednets in malaria-risk areas
Measles vaccination coverage

List of major causes of mortality
List of major causes of morbidity (using DALY if possible)

Health system (how it is organized and managed to provide services to the population)
Decentralization (if possible by function of the HS)
Health system organization
MoH structure
Donors mapping
Donors coordination system
Private Organizations involved in the Health Care System
Consumption of drugs (proxy: purchase)
Access to services
Number of beds per population (/10,000)
Number of health workers of each cadre (doctors, nurses, midwives, pharmacists, lab technicians, TBA, admin staff)
Doctor to population and nurse to population ratios
Health priorities
Priority health interventions (reflecting health priorities)
Priority services (reflecting priority interventions)

District level of the health system (how it is organized and managed to provide services to the population)
Use same indicators at district level when available, but at least the following:
Total population
Rural vs. urban population
Infant mortality rate (/1000 live births)
Maternal mortality rate (/100.000 live births)
% of population with access to improved drinking water
% of population with access to improved sanitation (urban vs. rural)
HIV prevalence
TB prevalence (/100,000)
Prevalence of malaria
Proportion of people using bednets in malaria-risk areas
Measles vaccination coverage

Vaccinations coverage (other than measles)
List of major causes of mortality
List of major causes of morbidity (using DALY if possible)
Donors mapping
Private Organizations involved in the Health Care System
Consumption of drugs (proxy: purchase)
Priority services (reflecting main diseases)
Access to services
Number of beds per population (/10,000)
Number of health workers of each cadre (doctors, nurses, midwives, pharmacists, lab technicians, TBA, admin staff)
Ratio of health workers over population by cadre, by level of care (primary, secondary, tertiary), by geographical area, urban/rural, private/public sector
Local health priorities
Local priority health interventions (reflecting health priorities)
Local priority services (reflecting priority interventions)

4.2.3 Identifying shortcomings in health services provision

The following table is used in step two of the analysis, and it helps DHMTs identify possible shortcomings or bottlenecks in the delivery of the health services described in step one.

Health services		Bottlenecks				
		Availability	Access	Utilization	Coverage	Quality
Community based services, mainly through volunteers	Preventive care					
	Curative care (primary)					
Population oriented services through outreach and schedulable services	Preventive care					
	Curative care (primary)					
	Curative care (referral)					
Continuous individual care, facility based services	Curative care (primary)					
	Curative care (referral)					

To use the table the DHMTs will need to be familiar with the following concepts:

- Community based services: these are services provided to the population mainly through volunteers that live in remote areas. They are mostly preventive services, with some simple curative care (i.e.: treatment of diarrhoea in children)

- Population oriented services through outreach and schedulable services: these are services provided to the population by health workers that go to underserved areas to provide a given set of preventive (i.e.: vaccinations) or curative care (i.e.: mobile clinics providing specialized services).

- Continuous individual care, facility based services: these services are provided in hospitals, outpatients clinics and health centres, and range from preventive from very specialized curative care (i.e.: surgical interventions).

- Preventive care: from health education to vaccinations, from treated bed-nets distribution to screening, any intervention aiming to reduce morbidity.

- Curative care (primary): is the clinical care provided to patients from front line health workers, from nurses to midwives, to general practitioners.

- Curative care (referral): patients that cannot be treated by the frontline health workers are stabilized if necessary and referred generally to hospitals for specialist care.

- Availability: whether the service is actually available to the population. The availability of a health service can be compromise in particular by the lack of critical health systems inputs such as drugs, vaccines, supplies, and/or human resources.

- Access: whether services are directly and permanently accessible with no undue barriers. The physical access of health services to the clients includes the presence of trained human resources.

- Utilization: it describes the first use of multi-contact services. For example, first antenatal contact or first immunization.

- Coverage: whether service delivery is designed so that all people in a defined target population are covered (i.e.: all income groups and all social groups). It describes the extent of achievement compared to optimal contacts and services and it is used to assess the continuity and compliance of care.

- Quality: whether health services are of high quality (i.e.: effective, safe, timely). It is measured by assessing the skills of the health workers.

4.2.4 Measuring performance of DHMTs in the five support functions

The following tables present the indicators suggested to measure DHMP. DHMTs will identify the shortcomings in the support functions of the health system for those health services that suffer from significant shortcomings (step three).

In the last column of each table there is a suggestion on decision space that is likely to be hold at each level of the health system. There is no perfect combination, and the right level of decentralization of each function will need to be determined for each country according to the overall organization of the health sector and the specific broader context.

In the decision space column: N = national level, R = regional level, D = district level, h = high decision space, m = medium decision space, l = low decision space.

Governance				Decision space		
Function	Objective	Performance indicator	Origin of data	N	R	D
Planning	Needs of the population are assessed and published	Presence of epidemiological updated information in the HDM office. Presence and circulation of publications (in any format) of epidemiological updated information in the district	HDM office, Health facilities, Local media	h	m	h
	Health services provided meet the needs of the population	Health services provided in the district are the one prioritized on paper	Health facilities reports, health workers reports, consumption of drugs and consumables	m	l	h
	Allocation of resources reflects priority health services	Budget reflects the priority of health services	Health District Budget	h	h	h

Service organization	Allocation of resources among facilities according to needs	Resources meet needs at facility level (diagnosis, forecasted services and resources allocated)	Reports, lot quality assessment survey	m	l	h
	Involvement of private providers with proper incentives	Number of private facilities with an formal agreement and % of services provided/tot. population	District records, survey	m	l	h
	Local referral system in place and working	% of patients referred/diagnosis (100% appropriateness)	District and facilities reports	l	l	h
	Information on type and cost of services made public at health facilities	List of services with price publicly displayed in 100% of facilities	Survey	m	l	h
	Scientific evidence, clinical outcome and patient satisfaction used at facility level to improve quality	Presence and use of clinical guidelines, presence of a feedback system on patients satisfaction, plan for quality improvement	Survey, reports	h	l	h
	Clear norms and regulations are disseminated and observed by health workers	Guidelines on procedures and logistics disseminated and known	Documents and survey	l	l	h
Accountability	Central, regional and provincial health authorities are regularly informed on health needs, services provided, health outcomes, financial situation	Presence of a reporting system, a health plan for the district, an explanation of the budget	Reports, Dbases, documents	m	m	h
	Health professionals in the district are regularly informed on health needs, services provided, health outcomes, financial situation	Presence of written communications, meetings with oral presentations	Documents, flyers, fact sheets, survey	l	l	h
	Community/ the general population is regularly informed on health needs, services provided, health outcomes, financial situation	Presence of written communications through the media or other means, oral communications	Media, documents	l	l	h

Information management				Decision space		
Function	Objective	Performance indicator	Origin of data	N	R	D
Health Information System	Timely and high quality core of indicators on population health	Amount and quality of indicators shared with MoH	Reports and Dbases available	m	m	h
	Surveillance systems in place for relevant diseases	Completeness and timeliness of surveillance data	Surveillance systems Dbases	h	l	l
	Adequate resources to support the HIS	Presence of gaps in the system due to lack of resources	District budget	h	l	h
	Skilled human resources to feed the data and analyze them	Number of HR dedicated, adequate titles, good performance	District HR department, quality control data on HIS	m	l	h
	Guidelines on methods and products of analysis	Presence and quality of guidelines, knowledge of guidelines	Survey on presence and staff knowledge	m	l	h
	Availability of accurate denominators	Denominators based on proper counting or reliable estimates	HIS Dbases	l	l	h
Monitoring and Evaluation	Timely and high quality core of indicators on services provided (inputs, outputs and outcomes)	Indicators describe effectively the situation and identify shortcomings timely	Reports, internal communications	m	l	h
	Clear regulation and procedures to mandate health facilities to provide data	Presence of regulation and knowledge by staff in facilities	Survey	l	l	h
	Facilities and health workers report data timely and consistently	100% of facilities reporting, adequate number of reports per facility per year	Reports, Dbase	l	l	h
	Ongoing data quality assessment in place	Quality assessment performed regularly and amendments implemented	Dbases and records of amendments	l	l	h
Use of information	HIS indicators used for planning, budgeting, managing and evaluating provision of services	Mention of data from reports in the budget description and in health plans	Budgets, district health plans	l	l	h
	Feedback system to facilities and health workers on programs	Timely and precise communications of shortcomings	Written communications to facilities and	l	l	h

performance from the results of the analysis		staff, staff survey for oral communications			
Availability of a report that summarizes the information to the public	Availability of the report and knowledge of it from the public	District communication department, media, survey	l	l	h

Operation maintenance (PSM)				Decision space		
Function	**Objective**	**Performance indicator**	**Origin of data**	**N**	**R**	**D**
Stocks and Assets (drugs and vaccines)	Expenditure on drugs per capita	Expenditure consistent with needs, historical trend	Budget and reports	m	l	h
	Consistency between cases treated and drugs prescribed	5-10% mismatch between diagnosis and drugs prescribed	Reports from facilities and budget	l	l	h
	Procedures and registers for drugs in pharmacies and facilities	Procedures known by technicians and registers updated weekly	Registers, technicians survey	l	l	h
	Existence of a public price list for common drugs	List available to the public and updated regularly	Public boards in facilities	l	l	h
	% of procurement purchased according to plans	90% of correspondence between planned and purchased	Reports, budget	l	l	h
	Stock outs for main drugs	No stock outs for life saving and more common drugs	Reports, survey	l	m	h
	% of value of inventory lost over last year (/total value)	5% of lost, broken, expired drugs and equipment	Reports, budgets	l	l	h
	% of deliveries according to plans	95% deliveries and pickups as scheduled	Reports, registries	l	l	h
	% of children vaccinated in the last year (and against what)	98% for all vaccines	Reports	l	m	h
Stocks and Assets (equipment)	Presence of refrigeration units with functional temperature control	100% working refrigerated units in adequate number and locations	Reports, survey	h	h	h
	Equipment in place and functional in facilities (tests, surgery rooms, etc.)	100% working equipment in adequate number and locations	Reports, survey	h	h	h

Function	Objective	Performance indicator	Origin of data	N	R	D
	Number of labs for biochemical analysis (/population)	100% working labs in adequate number and locations	Reports, survey	h	h	h
Assets (facilities and vehicles)	Regulations and procedures for use of vehicles	Clear procedures in place (each vehicle) and known by staff	Documents and survey	l	l	h
	Adequate number of vehicles for health workers and referral needs	100% working vehicles in adequate number and locations	Survey	m	m	l
	Adequate maintenance of vehicles	95% of vehicles functioning, maintenance budget met	Survey, reports	m	l	h
	Adequate provision of water, electricity and sanitation to facilities	100% facilities with reliable electricity supply, improved water and sanitation	Reports, survey	l	l	h
	Adequate maintenance of facilities	95% facilities well maintained (hygiene and safety wise), maintenance budget met	Survey, reports	m	l	h

Financial Management				Decision space		
Function	Objective	Performance indicator	Origin of data	N	R	D
Revenue collection	Resources from central government captured in the budget	% of resources from central government in the budget	Budget, documents from MoH	h	l	l
	Resources from local taxation captured in the budget	% of resources from local taxation in the budget	Budget, documents from district financial authority	l	l	h
	Resources through fees captured in the budget	% of resources from fee in the budget	Budget, reports from facilities, bank statements	l	l	h
	Use of a health insurance scheme	Health insurance scheme in place, coverage of the population	Documents, reports	m	m	h
	Level of detail of the budget	Presence in the budget of details specifications to track use of money	Budget	m	m	h
Allocation of resources	Budget correspondence with priority health interventions	Indication in the budget of services supporting priority interventions	Budget, health plan	m	m	h
	Accounting system for tracking expenses	Monthly reports on budget use and collection of funds	Reports	l	l	h

	Clear protocols for disbursing money	Presence of protocols and knowledge of it from health administrators	Documents, survey	m	m	h
	Use of all the budget to implement planned activities	% of budget spent	Reports	l	l	h
Adherence to budgeting	Adherence to the budget	% of budget allocation changed over the year	Budget, reports	l	l	h
	Monitoring of facilities' budgets	Supportive supervision of facilities budget implementation	Budgets, reports	l	l	h
	Absence of informal fees in facilities	Use of informal fees	Survey	l	l	l
Financial accountability	Public reports on budget and use of resources	Reports sent to MoH, yearly balance published in local media	Documents, reports	h	m	h
	Supervision by a higher health authority (external audit)	Supervision reports every six months	Reports	h	h	l

Human Resources Management				Decision space		
Function	Objective	Performance indicator	Origin of data	N	R	D
Policies and regulations on staffing	Planning at local level for HRH	Presence of strategic plan for HRH, evidence of its implementation	Documents, reports, budget	l	l	h
	Scope of practice defined for all cadres	Presence of a manual/ guidance document on scope of each cadre	Documents	h	m	m
	Manual with employment practice polices available to HRH	Presence of the manual and knowledge of its existence by HRH	Documents	h	m	h
Determining needs and setting ceilings	Forecast of HRH needed by area, ceiling of HRH by facility	Need assessment for HRH in the district health plan, indication of vacancies by facility and by community	Documents, budget, reports	l	l	h
Hiring/firing	Authority and capacity to select HRH in the district	Presence of guidelines on how to select health workers, presence of a committee in charge	Documents, reports	h	m	h
	Authority to timely hire and fire HRH, according to needs and performance	% of health staff recruited locally, number of staff fired	Reports, HR Dbase	l	l	h
	Civil servants vs. term contracts	Ratio of term contracts/ civil servants	HR Dbase, reports	m	m	h

Deploying personnel to health facilities	Authority to attach HRH to communities and facilities according to local needs	% of health workers assigned to facilities by the district	Documents, records	h	l	h
Defining salaries and benefits	Competitive salaries in regional labor market, benefits comparable with private sector	Less than 10% difference in salary and benefits compared to private sector and other regions	Pay slips, benchmarks from private sector and other districts	h	l	h
	Reports on HRH expenditure to national level of HS	Presence of yearly report on HRH expenditure	Reports	m	l	h
	Absence of health workers with a second informal job	% of health workers moonlighting	Survey	l	l	h
Monitoring and reward system	Monitoring on health workers performance to be used for incentives	Reports with records of performance, shared indicators of performance	Records, documents, survey	m	l	h
	Defining allowances and incentives	95% of retention of health professionals and constant quality improvement	Regulation, protocols, pay slips	h	l	h
	Allocating allowances and incentives	% of staff that have received allowances according to shared criteria and performance	Pay slips, documents, survey	l	l	h
Ongoing training	Training is adequate to the local needs	Evaluation of needs performed and skilled trainers engaged	Documents and reports	m	m	h
	Training opportunities are provided for all cadres every year	100% of HRH receive regular training on the job	Reports, survey	l	m	h
	Training is coordinated and evaluated	Presence of a coordination committee, proofs of evaluation	Reports, documents, proceedings	l	l	h
Partnerships	MoU with NGOs to provide health services	Number of MoUs, that must be necessary and with adequate retribution if needed	Documents, MoUs	h	m	m
	Volunteers and community care providers	Number of volunteers and of community served by them	Reports, survey	m	m	h

4.2.5 Identifying issues in determinants of DHMP and their causes

The following table is used in the fourth step of the analysis to link the shortcomings identified in each of the support functions of DHMTs to the determinants of their performance that need to be addressed. This supports identification of managerial issues that should be addressed to improve health service provision and population health.

Support functions

Governance	Info. Manag.	Oper. Mainten.	Finan. Maag.	Hum. Res. Manag.	Issues with determinants of DHMP	Causes
					Skills and capacity building	**5 "Why?"**
					Lack of staff in DHMT with the necessary skills	
					Lack of ongoing training	
					Ongoing training is not targeting the right skills	
					Ongoing training is not targeting the right people	
					Ongoing training is not effective (due to methodology, timing…)	
					…	
					Motivation and incentive systems	
					Lack of performance assessment of DHMT	
					Lack of incentive system linked to performance	
					Ineffective or counter-productive incentives in place	
					Incentives too week or enforced too late	
					…	
					Working environment and decentralization	
					Insufficient decision space in the affected support function for the DHMT	
					Decentralization being implemented without timely capacity building	
					Lack of national regulation and guidance	
					Lack of positive supervision by upper levels (regional, national)	
					Lack of effective information exchange with upper levels (regional, national)	
					Lack of equipment, infrastructures or vehicles to perform	
					…	

Shortcomings identified through the analysis in each support function

The matrix also prompts DHMTs to perform an analysis of the causes of the issues related to such determinants using the 5 "why" method. This is a simple technique that consists of asking what is the cause of a problem; when the cause is stated, the facilitator asks what is the cause of the identified cause; and so on. The process is repeated usually five times in order to identify the deeper, systemic causes of the problem analyzed. It is a diagnostic tool useful for situations in which DHMTs are not sufficiently aware of the wider picture that would allow them to conduct a fuller analysis.[52]

4.3   A list of effective interventions to improve DHMP

Due to the complexity of the health system and to the presence of many confounders, there is a dearth of evidence on the impact that interventions targeting any level of the health system have on health outcomes. Similarly, evidence is scant on strategies used to improve DHMP. Not surprisingly, most of the available evidence is qualitative and indirect; nonetheless it is clear that improving management improves the delivery of services that positively impact on health.

The available evidence on what strategies may work in different settings to improve DHMP is very heterogeneous: there are few interventions that have been properly documented and that can be considered effective in a given context. In addition, there are many qualitative considerations on how to implement broad strategies necessary to ensure the success of any intervention aiming to improve DHMP.

Due to the different nature of the available knowledge, it is presented hereby in two different sections: in the first section single successful interventions will be presented in a table, with few annotations; in the second section the broader considerations collected from the literature and from expert interviews will be presented grouped by the determinants that they refer to.

4.3.1   Single interventions documented in the literature

Interventions that have proven successful in improving district health management performance in different contexts, have been grouped by the determinants of performance that they address and by the context where they were implemented. Such strategies are presented in the same order and structure used in the framework and in the situation analysis tool, to make evident when they can be chosen to address problems identified with each determinant.

The following table presents the interventions better documented in the literature: its intent is not to be exhaustive, but to provide some meaningful and solid examples that show what is possible to implement at local level.

Area	Interventions	Results*	Country of implementation	References
Greater decision space				
Financing	Greater budget control	Increased efficiency and quality of services (output)	Various countries	53
	Control on sources of revenue	Increase in accountability, salary payments and supply (output)	Nigeria	54, 55
Human resources management	Increased power over human resources	Increased accountability, efficiency and quality (output)	Zambia	56
Procurement and supply management Health management information system	Greater decision space across the functions (right mix between central and local)	Better percentage of skilled birth attendant-assisted births and two antenatal care indicators	Pakistan	57
Governance (accountability, M&E, service organization)	Strategic and operational planning centralized, organization of service delivery decentralized	More strategic planning (process) and better service delivery (output)	Pakistan	57

Area	Interventions	Results*	Country of implementation	References
Management skills and competency building				
Training	Training managers in management	Increased negotiation power with MOH (process)	Indonesia	58
	Training with WHO course on district planning	Better management cascade (process) and decrease in child mortality (outcome)	Tanzania (2 districts)	59
	Training with USAID/MSH distance learning program	Increase performance of managers (process), with service delivery results (output)	29 countries, 12 in Africa including Uganda	60
Peer-to-peer	Electronic learning networks	Facilitate peer-to-peer learning and sharing among managers (process)	RSA	61

| Supervision | Intensive coaching and mentoring | Increased coverage of maternal and child health services (output) | Togo | |
| | Supportive supervision and widening decision making authority | Development of institutional capacity in managing (process) | Cambodia | 62 |

Area	Interventions	Results*	Country of implementation	References
Management motivation and incentives				
Financial incentives	PBI financial incentives (pay per performance)	Increased coverage of basic services (output)	Rwanda	63
Non-financial incentive	PBI non-financial incentives in the form of trophies	As motivating, if not more motivating, than financial awards (process)	Zambia	64
	non-financial incentives (recognition, career development and further qualification) and HRM tools	Increasing motivation of health professionals (process)	Benin and Kenya	32
	job descriptions, supervisions, continuous education and performance appraisal	Increased motivation (process)	Mali	63
Incentive systems	the best strategies combine both non-financial and financial incentives	Increased retention (process)	Thailand and east-southern Africa	28
	Financial incentives help retention,	Increased retention and motivation to perform better (process)	Many countries, in particular North Viet Nam	33

Area	Interventions	Results*	Country of implementation	References
	non-financial incentives help motivation			

Area	Interventions	Results*	Country of implementation	References
Quality data as management empowerment tool				
	Timely access to actionable data	Empowered managers to take action (process)	RSA	65
	Regular scorecards with trends	Created competition and improved performance (process)	USA	66

Area	Interventions	Results*	Country of implementation	References
Community oversight and accountability				
	Annual District Health Forum	Improved coordination and stakeholder participation in planning (process)	Ghana	
	Community involvement in health committees	Improved performance through strengthened accountability (output)	Senegal	67
	Community involvement in costing through health committees	Improved efficiency in health provision (output)	DRC	68

Area	Interventions	Results*	Country of implementation	References
Engagement with the Private Sector				
	Transfer of private sector skills into public health	Improved performance (process)	Ghana	69
	Accreditation of drug dispensing outlets	Increased access to ACT treatment (output)	TZN	70

* *Improvement in performance are measured in different articles and review against: process, outputs/provision of services, or health outcomes.*

Notes on the interventions related to incentives

When looking at what the literature shows on incentives for health managers in developing countries, we find very little. Health managers are usually health professionals (clinicians) who happen to become district health directors. It is possible to identify incentives that are likely to work by looking at effective incentives for health professionals in low income countries and for health managers in developed countries.

The following are few key consideration on motivation and incentives for health managers:

- Enhanced motivation leads to improved performance, while increased job satisfaction leads to reduced turnover (greater retention).[29]
- In order to be effective, incentive systems should be open and transparent, fair and consistent and applied contingent on reaching a goal[29]
- There are low-cost methods of providing incentives, such as recognition systems, reallocation of existing budgets and posting of performance data[29]
- The use of incentives to improve performance normally requires good regulatory frameworks and skilled managerial resources[34]

Notes on the interventions related to capacity building

It is essential to provide health managers with the necessary competencies and skills to run the health system at the local level. The following are few key consideration on capacity building for health managers:

- Effective training is available, needs to be tailored to local needs, oriented to solve existing problems while building capacity for future challenges, use the adult learning approach[47]
- Make sure that the environmental conditions are there to allow health managers to perform[43]
- Health managers at the central level need to know how to provide a positive supervision.

Notes on the intervention related to decision space

Providing local health managers with the necessary decision space is important: there is no "right" setting, but a certain level of decision space is necessary at any level of decentralization, an in every function of health systems management.

Numerous conditions influence the success of decentralization processes, including local managerial and technical capacity, systems of accountability, clear and transparent legal frameworks that delineate the division of responsibilities, and sufficient funding to fulfill mandates and to meet local priorities.[71]

4.3.2 Broader strategies from the literature

To synthesize and systematize the available evidence and expertise gathered through the literature review and in the working groups, three lists are provided in this section for each group of determinants of DHMP (decentralization and decision space, managerial skills and capacity building, motivation and incentive systems). The first is a list of critical issues that should be avoided or controlled, since they could limit any improvement of DHMP; the second is a list of factors should be taken into consideration when implementing any strategy addressing a given determinant, since they could increase its effectiveness, and the third one is a list of possible broad strategies to be adapted to the local context in order to improve a determinant that is lowering DHMP.

Critical issues, factors for success and broad strategies for decision space and decentralization

The following is a list of c**ritical issues** to be avoided or resolved to be successful in improving DHMP in a decentralized setting:

- Ill defined roles and responsibilities between the central and the decentralized levels
- Lack of definition in the role of health districts as providers or as purchasers.
- Mismatch between authority (kept at the central level) and responsibility (decentralized)[23]
- Tension and conflicts among objectives (service mix not corresponding with health priorities, resources allocated elsewhere → need for central guidance, earmarking, functions retained at central level –i.e.: EPI, procurement of drugs–)[23]
- Capacity gaps when functions are decentralized (lack of technical and administrative skills at local level; lack of support, regulatory and oversight skills at central level)[23]
- Tension between vertical and horizontal integration (if what is in place is only a collection of vertical programs, only deconcentration is possible)[23]

- Political and process dimensions (interest in maintaining the status quo, oppose reform process → need for stakeholders participation, effective communication, political will)[23]

- Limited control over personnel issues (hire, fire, reward, transfer)[72]

- Limited numbers of staff with appropriate management skills and capacities (e.g. decentralized planning, budgeting and priority setting, conflict management)[72]

- Lack of management skills, also among key stakeholders[65]

- Central government unable to meet staff needs and demands at district level (increase salaries, improve work conditions, individual career development, appropriate equipment)[72]

- "Information gap" between DHMT and frontline workers, stakeholders and communities – top down approach to communication and weak channels of information[72]

- District Health Forum can be over-dominated by DHMT and requires engagement and full participation of other relevant stakeholders[72]

- District control over financial resources is often limited through "directives" from central level on how money should be spent[72]

The following is a list of factors that make more likely to succeed in improving DHMP in a decentralized setting:

- Decentralized decisions on sources of revenue and allocations of expenditures such as funding pro-poor interventions and delivery strategies are likely to have a positive impact of equity, efficiency, financial soundness and quality of services

- Decentralized decisions about the organizational structure of services are likely to have a positive impact of equity, efficiency and quality of services

- Allowing competition among providers and insurance plans and between public and private entities may increase efficiency and quality of services [25]

- Increasing funding for health is likely to improve quality and, if targeted correctly, improve equity.[25]

- Need for beneficiaries to play a role in selecting, assessing and disciplining community health workers[25]

- Need to mobilize and involve community and client groups in the management of facilities[25]

- Ensure management board for health facilities include community representatives[25]

- Need to motivate district team to support CHWs, employed by local bodies, as this improves performance[25]

- Need for technical and managerial support for PHC from both the local community as well as health professionals and administrators => but this can create divided accountability[25]

- Need for multi-sectoral decentralization and multi-purpose devolution to promote effective community participation[25]

- Incorporate health into a wider structure of decision-making at village level to legitimize the roles of new officials such as CHW[25]

- Generate resources for village-level health infrastructure[25]

- Improve communication between the various organizations[25]

- Technical support though an integrated health team, which maximized contact with the community through its range of expertise[25]

- Existence of active associations of health committees to i) pressure the government for improvements; ii) lend money to individual committees; iii) provide a link between new and existing committees; and iv) train committee officials. [25]

- Supportive political leaders[25]

- Health committee leadership is knowledgeable, able and experienced and receives assistance from health officials[25]

- Changes in administrative structures and budgetary controls => if not, decentralized decision-making will remain arbitrary, inflexible and inefficient in the use of resources[25]

- Not limiting the role of local people to solely implementation (under the assumption that the professionalism of staff in formal ministerial hierarchy inhibits flexibility and assumes health policy can only be made by experts) [25]

- Need for horizontal accountability systems vs vertical accountability systems (in case of the latter central policy makers fail to take local realities into account and systems do not allow flexible response at peripheral level) [25]
- Requisite human and organizational capacity needed to implement managerial reforms[72]
- Awareness creation and education of key stakeholders about their role in decentralized health management[72]
- Engagement and full participation of all relevant stakeholders in the annual District Health Forum[72]

Finally, the following is a list of broad strategies that can help to improve DHMP in a decentralized setting:

- Allowing local managers greater ability to hire, fire and provide incentives to employees may increase efficiency and quality of services[56]
- Separating financing and service provision and introducing some level of competition is likely to improve efficiency and quality of health services[53]
- Ensure JD of decentralized councils includes selecting, assessing and disciplining community health workers; management of facilities and goes beyond implementation solely[25]
- Advocate for presence of community representatives in management boards[25]
- Ensure the district teams JD/ ToR includes support for CHWs[25]
- Advocate for hybrid council (Devolution) that mixes local representatives and government officials when there is a need to take local politics and interests into consideration[25]
- Ensure technical support is integrated and combine support from local community and health professionals[25]
- Initiation of an annual "District Health Forum":
  - Held on annual basis for review of progress and development of annual plans
  - Participation of DHMT and all relevant stakeholders (local government, private providers, NGOs, sub-district health facilities, community members)

- Increase in district-level control and participation in district planning[26]
- Establishment of Budget Management Centre at district level:
    - In theory and in structure, gives district more control over financial resources[26]

Critical issues, factors for success and broad strategies for motivation and incentives systems

The following is a list of critical issues to be avoided or resolved to be successful in improving DHMP when dealing with incentives:

- Figuring out what to measure and how to measure it can be the hardest part of designing incentives[29]
- Incentives can sometimes affect performance in unexpected or unwanted ways[29]
- The introduction and institutionalization of non-financial incentives and the various human resources management tools or their improvement has its costs. It requires training, supervision from higher levels and follow-up. Change in organizational culture takes time. It is therefore important to develop realistic human resources management plans and to provide for the financing to implement such measures.[32]
- When setting up an incentive system and a supervision, there is the risk of falling into the following common mistakes:[32]
    - Supervision as control *versus* support supervision and recognition[32]
    - Lack of recognition *versus* institutionalized recognition and appreciation by superiors and communities[32]
    - Inadequate training *versus* needs- and problem-adapted training[32]
    - Non-transparent allocation *versus* equal opportunities for training and professional progress[32]
    - Passive staff involvement *versus* active staff participation[32]
    - Infrequent performance appraisals *versus* culturally adapted performance management[32]

- Disincentives for individual success *versus* team-based performance promotion[32]

- When team work is crucial for success, it might be counter-productive to apply individual incentives; doing so might cause unwanted competition among team members that would adversely affect team performance

- In developing countries, most health systems are large bureaucracies whose management is driven centrally by guidelines, standards, and reporting systems. Incentives in such systems work against innovation, risk taking, and improved efficiency.[34]

- Experience in developing countries shows that lack of capacity at subnational levels has constrained decentralization, sometimes leading to unintended effects such as wrong priorities. Any move toward decentralization requires investment in new management skills and capacities.[34]

The following is a list of factors that make more likely to succeed in improving DHMP through incentive systems:

- In order to be most effective, incentive systems should be applied:

  - Openly and transparently: each worker should understand the performance required for any kind of reward[29]

  - Fairly and consistently: the rules should apply to all workers without favoritism[29]

  - Contingent on reaching a well-understood work goal[29]

- With respect to performance management, the following actions usually lead to a higher performance:

  - Inform health workers about the process and indicators[32]

  - Provide thorough feedback on the results[32]

  - Use consistently good performance as the basis for promotional schemes by including elements of merit rather than length of service[32]

  - Introducing performance-related payment. (It is difficult to define objective and commonly accepted performance criteria and even more difficult to implement and apply those performance criteria, given political interference and lack of good governance and transparency and the existence of corruption as well as nepotism). [32]

- The following process requirements are considered essential for a contribution of Quality Management to human resources management:
  - Search for excellence: contribution of the whole staff body to quality improvement efforts; [32]
  - Orientation on quality as an outcome as much as on quality of the process;[32]
  - Strong emphasis on self-evaluation of individuals and organizations; [32]
  - More autonomy and responsibility for health workers; [32]
  - Focus on participation and self-realization, empowerment and to a certain extent emancipation of health workers. [32]
- Effective incentive systems that are based on performance require regulation and governance structures that minimize the common problems of patronage and corruption.[34]
- Successful incentive strategies are multifaceted and include:
  - long-term political commitment and sustained effort at all levels[36]
  - a deep understanding of the cultural, social, political and economic context in which the incentives strategy is being developed[36]
  - involvement of key stakeholders – especially the health workers themselves – in developing the strategy, formulating policy and implementing initiatives[36]
  - integration of efforts between government sectors, donors, non-governmental organizations and the private sector to ensure the initiatives are sustainable[36]
  - packages of coordinated and linked financial and nonfinancial incentives that adequately respond to the needs of health workers[36]
  - monitoring and evaluation tools and systems[36]
  - strengthened supervision and management capacities[36]
  - performance management systems that link health worker performance to supportive supervision and appraisal, [36]
  - continued research on what motivates health workers in order to adapt and adjust the incentives to the changing needs and desires of the workforce.[36]
  - Presents a well designed and supported package (in both financial and human resource terms).[33]

- Involves input from all relevant stakeholders in the design phase.[33]
- Embraces the principles of transparency, fairness and consistency.[33]
- Fits the purpose for which it is intended.[33]
- Maintains the strategic impact of the incentive components.[33]
- Employs a combination of financial and non-financial incentives.[33]
- Carries out regular and systematic reviews and evaluate impact.[33]
- Motivates the target population.[33]
- Clear objectives[35]
- Realistic and deliverable[35]
- Reflects health professionals' needs and preferences[35]
- Well designed, strategic and fit-for-purpose[35]
- Contextually appropriate[35]
- Fair, equitable and transparent[35]
- Measurable[35]
- Incorporates financial and non-financial elements[35]

- The successful application of non-financial incentives is associated with:
  - proper consultative planning; [35]
  - long-term strategic planning within the framework of health sector planning; [35]
  - sustainable financing mechanisms, e.g. national budgets; [35]
  - donor funding and national budgets through a sector-wide approach (SWAP) or general budget support, rather than project-specific funding. [35]

Finally, the following is a list of broad strategies that can help to improve DHMP through incentives:

- Each country has a unique human resource situation, and may require a specific mix of financial and non-financial incentives as part of a larger HRM or QM framework, including a proper mix of the introduction of and/or promotion of:
  - group-based performance awards and pay[32]
  - effort-related awards and pay[32]

- consistent application of clearly defined sanctions for wrongful behaviour[32]
- exposure to new knowledge (training, conferences) [32]
- team building[32]
- low-cost benefits that express personal appreciation (extra free time, tea during night duty)[32]
- development of career development plans[32]
- transparent and reliable promotion schemes[32]
- continuing professional development, training[32]
- supportive supervision and feedback[32]
- performance management tools[32]
- staff satisfaction surveys[32]
- increased staff participation in decision-making processes within the health structure[32]
- horizontal and vertical communication among staff[32]
- quality improvement teams and building a quality culture[32]
- participatory problem assessments and problem-solving processes[32]
- benchmarking and competition among facilities. [32]

- Not surprisingly, in their responses to surveys workers typically say that higher salary, additional staff and more pleasant working conditions would improve their performance. However, we know from research in developed countries that these factors alone do not necessarily correlate with improved worker motivation and performance.[29]

Critical issues, factors for success and broad strategies for skills and capacity building

The following is a list of critical issues to be avoided or resolved to be successful in improving DHMP in relation to capacity building:

- Donor supported programs that are still based on standardized models at national level do not allow for varying and complex environments at district levels. They can be a significant challenge to better management practices at

local level. In addition the 'top down' decision-making in programs supported by donors is resists the process of decentralization.[45]

- National governments and donors are generally more supportive of improving technical skills of health workers or of providing funds for vehicles, equipment and buildings rather than providing funds for health system management development.[43]

- Due to perception (true and false) of the government services as managerially inefficient or corrupt some donors, NGOs and partners prefer developing parallel services within or outside government structure both of these approaches not only undermine efforts for integration and efficiency but exacerbate management problems.[43]

- Weak management encourages vertical programs because it fosters a lack of confidence and discourages decentralization, program integration and local participation and initiative. [43,45]

- Clinical and public health education is important but should not take the place of or take precedence over managerial competencies that are essential to effective and efficient functioning of the district health system.[45]

- Often programme-centered training is preferred by staff because it provides extra income to health workers and district managers, as it is sponsored by the programs themselves, while institutional training in management it is often offered within the health system ongoing training with only reimbursement of expenses.[45]

The following is a list of factors that make more likely to succeed in improving DHMP through capacity building:

- Factors that need to be in place for initiating successful capacity building:
  - adoption of policy of decentralization of health services must be accompanied with corresponding changes in government procedures that ensure actual implementation of the decentralization policy. Since effectiveness of capacity building efforts for better management is often limited by the policy and practice of the national level government and

donor agencies, these must be addressed to get maximal benefit of any training of DHMTs.[43]

- Capacity building efforts are more successful when implemented in parallel with progressive decentralization of decision making on issues of staffing budgeting, and planning. [43,48]

- Decentralization and management reform need a critical mass of skilled managers at the national level with the time and skills to design and implement changes. DHMT capacity building can give its best results only when accompanied with national level managers' raining in positive supervision and motivation for management change.

- Factors that need to be in place to make capacity efforts successful:
  - Clear criteria for who are the targets for a particular training or capacity building exercise and strict adherence to the criteria.[37]
  - Increased awareness and conviction among DHMTs that they can benefit from management change that follows capacity building in management skills.[43,48]
  - The action based and problem-solving, 'learning by doing ' approach is very successful for facilitating change in management practice.[43]
  - There is the need to always keep the focus on link between managing practices and improved health outcomes[73]
  - Short course format on key skills areas with practical tools are to be preferred (it minimizes workplace disruption, and allows to focus on didactic and group activities)[42]
  - On site mentoring and projects address practical problems and have real life relevance, with assignments in the working environment and a learning by doing approach[42]
  - Acknowledge the fact that most health managers are clinicians in training and often still perform clinical activities[46]

- Remember that capacity building is an ongoing and continuous process

Finally, the following is a list of broad strategies that can help to improve DHMP through capacity building:

- Five guiding principles for developing management skills and local capacity for instruction:[37]
  - Use a short course format focusing on key skill areas with practical tools that are specific and replicable.
  - Integrate class room training and field based, mentored projects
  - Collaborate with and in country institution willing and able to take full responsibility for scaling up and maintaining the training.
  - Provide train the trainer sessions for in-country institution faculty who will teach the training in future.
  - Secure Ministry of Health's support in border to enhance district and health facility participation.

- A program like the Cambodia experience with institutional capacity building: from unawareness to awareness, empowerment and consolidation. It can cover all the key elements needed for programs to scale up, replicate and sustain training initiatives. It can enhance foundational management skills critical to providing long-term strengthening of health system in low income countries.

- Transferring the capacity for sustained health management training from academic institutions abroad to the country level. This may be achieved through conduct of multiple training sessions with increasing responsibility shifted to an in country institution/ partner and its instructors in each successive cycle/ session.

- Linking class room didactics to field based application, where teams are expected to use management skills developed in class room to apply them to specific expectations of the DHMTs.[38] Implement follow up and mentoring of course participants after the training to assist them in managing projects and in reinforcing course concepts.[43]

- Competency based training courses focusing on core skills of health care management.[38]

- Distance learning courses can be effectively adopted (like the Public Health resource network in India) in training, motivating, empowering and building network of health personnel, which aim to build human resource capacity for strengthening decentralized health planning, to improve accountability of health systems, elicit community participation for health, ensure equitable and accessible health facilities and bring about convergence in programs and services.[42]

- Fast track capacity building programs: i.e. three rounds of six-day-long training workshop held three to four months apart focusing on capacity building for district level planning.[42]

5. Discussion and conclusions

5.1 What has been achieved

Through an extensive literature review, analysis with UNICEF working groups, and interviews with representative of selected international development partners, two major goals were achieved: a new synthesis of the knowledge on DHMP and the creation of situation analysis tools to inform the efforts to improve DHMP in developing countries.

A new framework

After a literature review and discussions with leading experts in UNICEF, I presented a new theoretical framework that explains DHM and the determinants of its performance. This framework is conceptually innovative in different ways:

- The framework is specific to health district management and, at the same time, coherent with the WHO framework for health systems. This coherency will allow for immediate comparisons of the results of analysis with surveys carried out at the national level following WHO guidelines.

- It contains a new approach of health system functions at the local level: support functions like human resources management, health information management, procurement and supply management, financial management are combined under the function of governance to provide health services. This interpretation of the functions goes beyond what is commonly adopted for national analysis and represents in a better way how things work at the local level.

- It provides a map for decentralized functions often used for broader analysis, but that has not been applied at the district level. Such a map demonstrates where there is the

need for a broader decision space in the different functions at the local level in order to improve the quality of service provision.

- It highlights which incentives documented in the literature are the most effective in improving managers' performance in health districts. It provides useful information on which incentives to prioritize when setting up an incentive system.

- It links capacity building and performance, and capacity building and effective decentralization. There are plenty of courses for health managers, ranging from the most basic to ones focusing on a specific task to be performed at the local level. What is often missed, however, is a systematic approach that stresses the need for capacity building to be timely in the context of localization or decentralization, and to be effective in improving the way managers work on everyday tasks.

A new set of tools for situation analysis

A new set of tools for situation analysis on DHM and DHMP was created, adapting concepts for more complex nationwide analysis tools that, otherwise, are almost impossible to apply at local level due to a lack of resources, skills, and reliable data. The contribution of UNICEF staff with extensive work experience in developing countries ensures that the data chosen to create the indicators is readily available or easy to gather at the local level in low-income countries – especially those with little infrastructure and personnel with basic epidemiological skills.

The analysis tools presented are easy to implement, and they can guide managers through a multi-phased analysis. The problems with DHMP are identified and described first, and then the causes of such problems (including their determinants) are also identified and well understood. The results of such an analysis offer a simple but accurate indication of where efforts need to be focused in order to solve the main problems affecting DHMP and, hence, the provision of quality health services.

Finally, the analysis links the improvement in managerial skills at district level with better quality in service provision and better health outcomes in the population, ensuring that the efforts that will be undertaken will have a real impact on health.

The literature review provided a synthesis of effective strategies at the district level that both district managers and UNICEF staff can utilize to orient their action in health systems strengthening. Despite the few interventions that have proven to be effective, the review offered many useful indications on how new strategies could be implemented successfully. The review found little good quality evidence for effective strategies, which pointed to a need for documenting what happens in the field more often and with greater quality. The simple awareness of the gaps that are present in our scientific knowledge on HDMP is an important starting point for further research.

5.2 Limitations

The main limitation of the work presented here is that the tools for situation analysis of DHM need to be tested on the ground before they can be considered valid. The virtual piloting of them was carried out with experts, which ensures that they are free from major mistakes and likely to be successfully used in low-income countries. At the same time, a real test of these tools needs to be carried out in several districts of different countries, so that they may be adjusted in a way that only direct experience can guide.

Another limitation of the work is that the number of partners that contributed to this effort, in addition to UNICEF, is still small. Understanding the fact that there are indeed few institutions with consolidated experience and recognized knowledge on the topic of DHMP, it is still possible to reach further qualified experts. In doing so, the framework and the tool for situation analysis could be strengthened further.

A third limitation is the fact that the literature on DHMP is scarce. Indeed, most of the knowledge collected for it is in gray literature, and institutional publications (WHO, WB, MSH, USAID, etc.). There is also a bit that is not published or circulated in English.

5.3 Use of the results and way forward

This research has produced and combined together a vision (through the theoretical framework) and a set of operational tools that will allow local managers, MoH staff and

professionals of international organizations to work in a systematic way to improve DHMP. The contents of this thesis will be further refined with their application in the filed and, subsequently turned into a guidance document on how to improve DHMP based on the evidence available.

To ensure the successful implementation of the tools for the analysis of DHMP in any given context, the guidance document will also provide advice on the following conditions:

- the situation analysis on DHMP should be performed using a participatory approach, in which DHMTs are the main actors of the process of change and improvement;

- the analysis should be tailored to the context, and the indicators adapted to make the best use of the data already available at the local level, minimizing the need for ad-hoc surveys;

- to make the change measurable over time, the focus during the analysis and the identification of strategies should be kept on few high priority and concrete objectives regarding health outcomes as well as service outputs;

- effective solutions to DHM problems –generally scarce in the literature– should be identified through a peer-to-peer approach among DHMTs: good practices that are successfully implemented in one district will be shared with others of a similar context;

- the analysis, whether carried out only in some or in all the districts of a given region/country, should be integrated with the planning activities carried out by the MoH at national level; this will ensure synergy of resources and the endorsement from the necessary central level of the health system;

- major development partners that are active in the health sector of a country (e.i.: bilateral cooperation agencies, UN agencies, major NGOs) should be involved as much as possible in the whole process because they can bring different perspectives and useful expertise to the strengthening of DHMP; likewise, local stakeholders should take part in the analysis and planning of possible interventions, as part of the participatory approach mentioned above.

Comprehensive strategy on DHMP strengthening

This research will contribute to UNICEF's structured approach to improve the quality and the equity of health service provision in developing countries. The analysis on DHMP will follow a broader analysis that will identify the health services that should be prioritized at local level. It will also identify the possible equity gaps that need to be bridged for the effective delivery of services to the entire population. Furthermore, it will identify the best way to deliver the health services in the districts.

In the next few months, UNICEF will begin to test the tools from this research in two sub-Saharan African Countries. After the test, the tools and the guideline document will be modified accordingly and scaled up in more countries. This will happen in collaboration with other international agencies, such as IHI, MSH, and the research centre of the WB.

The results of the application of these tools will be shared through institutional documents and peer-reviewed literature (e.g. the Lancet) to ensure the maximum dissemination within and outside the organization, and with the goal of filling at least some of the knowledge gap regarding effective strategies for improving DHMP.

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Annex

WHO conceptual framework for building management capacity in health (adapted from WHO working papers)[17,19,20,21]:

Areas	Actions	Specifications (can be organized in more structured sub-topics)
Adequate number of managers • Adequate numbers of managers in charge of the majority of critical service delivery units (e.g. Health Districts, Hospitals, Health Centres) • Reduced vacancy rates for critical service delivery management posts (DMOH/Hospital) *Managers are a vital part of the health workforce. The human resource system should have well-defined managerial posts with job descriptions and information on the managerial workforce (numbers, where posted, individual information on competences, etc.)*	Defining HD manager	Individual health managers have different skills, responsibilities and activities. Management teams are made of different individuals who need to integrate effectively.
	Information about managers	An information system providing basic information about vacant and filled management posts; Informing employment decisions (what managers are available, their length of service, performance record, qualifications, competences, etc.); enabling operational research (on key issues such as the retention of experienced managers); storing information on the qualifications and training record of individual managers.
	Formalizing management posts	Needed clarity about their roles and degree of authority (what kind of decisions they are entitled to make) at all levels of the health system; clarity about the competences they need to have at each level of the health system; job descriptions based on the above. These should make clear how much authority a particular post has, and the competences required.
Appropriate competences • Managers and managed units that are able to increase coverage of basic services	Realistic roles and tasks and hence, competences need to be defined for each management position	Existing competency frameworks should be used as reference.
	Information on the required managerial competences should be used to develop	Focus on skills, attitudes and behaviors rather than knowledge. Use adult learning techniques (work-based problem solving, use of technology). Overall planning of

	operational plans for competency development.	management training is needed.
• Service delivery plans and budgets prepared and local health targets are reached *National competency frameworks should be developed and used – these describe the competences required for different managerial posts. Competences should be acquired in a planned manner, using a variety of techniques including mentoring, action learning and classroom learning*	Competences need to be acquired through a variety of means, including coaching, mentoring and action learning.	Traditional classroom-based learning is rarely adequate for acquiring competences. Some activities should be organized for management teams, and some for individuals. On the job support and development is key (mentoring and coaching, learning networks).
Functional support systems • Staff turnover rates at district (or other operational level) reduced or stable • Stock-outs of essential drugs are avoided in the majority of service delivery units • Annual accounts and audits of service units completed on schedule *Managers need to develop the skill of negotiating support systems – i.e. getting the best out of real-life support systems, despite their flaws. The central ministry of health needs to take the lead in*	Planning	Planning should not be too time consuming, data necessary to plan should be accessible, degree of autonomy from central level can vary greatly. Involvement of health workers and communities in different ways.
	Financial management	Budget and accountancy. Multiple systems of budgeting to be avoided, actual expenditure trends, prompt disbursal, accountability (expenditure tracking, financial control). Accountants should be members of the management team. Different sources of revenue should be part of a common plan. Degree of autonomy in allocating resources and earmarked funds.
	Information/ monitoring	Knowledge sharing. Define list of core standardized indicators, keep the volume of data under control. Show usefulness of data at the local level (not only collected for the center). Indicators on health outcome, on service outputs and on process, to monitor local performance. Technology and training requirements.
	Human resources management	Including performance management. Comprehensive system and planning. Control over HR (salaries, quantify needs,

identifying when a support system is in need of substantial reform, rather than incremental strengthening		recruitment, deployment and promotion, continuing education, supervision). Conditions for good performance (JDs, personal objectives, training, feedback, enabling conditions). Incentives for HR (allowances, rewards for performance, public recognition). Appraisal systems and use of disciplinary measures.
	Management of stocks and assets	Drugs, vaccinations, equipment, vehicles, buildings. Procurement and distribution systems. Supervision of health services by HDM (supportive, integrated, coherent with planned objectives, providing feedback). Drug management (avoid stock out). Schedule maintenance for vehicles and buildings.
Enabling working environment • Increased innovation by managers to attain results • Managers are motivated to attain service delivery goals and are recognized for it. • The focus of service managers is directed to customers and communities' needs. *Ministries of health can demonstrate in word and deed that managers are important and are valued. Techniques for this include incentives for good performance,*	Immediate working environment (health sector)	Policies, legislation, norms and standards (on staffing and equipment for teams. and facilities; guidelines and procedures for planning, budgeting and accounting, monitoring and evaluation, supervision, staff appraisal and discipline). Support to managers (access to information and communication, supervision of managers) Authority delegated/possibility of prioritize locally, corruption, supportive superiors, isolation, incentives, appreciation from the central level (expressed). Decentralization/devolution: levels of local authority, responsibility, accountability). Structure and interaction of central, provincial, district and sub district levels. Interaction with private sector (private, NGOs, missionary).
	Wider working environment (public and private stakeholders)	Decentralized authorities, local politicians, private/NGO sector, development agencies and donors (harmonized)

worthwhile career paths and supportive supervision. Good donor coordination – so that donors are aligned with government priorities and harmonized with government procedures – makes the job of managers easier. Managers have to deal with a wide variety of stakeholders – this should be recognized as an important part of their job. Managers need the appropriate competences and enabling environment to forge these partnerships	Broad cultural, political and economic context	…
	Tracking management performance	Simple indicators can be used to compare districts and facilities. Sense of belonging and creation of associations of managers. Accountability for performance.
	Motivation and incentives	Financial incentives. Non financial incentives (status, degree of autonomy, opportunities for learning and advancement, recognition).