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Abstract

This chapter emphasises the need for a routine information system for Human Resources Management (HRM). It provides an assessment of the current information system for HRM using a case study approach. It also outlines a suggested approach for the development of a Routine Information System with an Essential Data Set for HRM. Finally, it provides an overview of proposed indicators to produce information for the management and monitoring of Human Resources for the health sector.

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Introduction

The human resource (HR) problem in the health sector of sub-Saharan Africa (SSA) has reached crisis proportions in many countries. Key problems, which are encountered by several countries regarding their HR, are:

➤ Personnel Management Systems are highly centralised and weak

➤ Adverse impact of HIV and AIDS on health workers

➤ Maldistribution of professional cadres

➤ Lack of capacity, especially managerial

➤ Increasing workload of health workers and high rates of absenteeism

➤ Low productivity and low morale of health workers

➤ The 'brain drain' mostly due to migration.

There are a number of weaknesses in the management and monitoring of HR including a reactive, ad hoc attitude towards problems of HR; dispersal of accountability within human resource management (HRM), a limited notion of personnel administration that fails to encompass all aspects of HRM, and a short perspective of HRM.[1] Human Resource Management is defined as "the integrated use of procedures, policies, and management practices to plan for necessary staff, recruit, motivate, develop, and retain employees in order for the organisation to meet its desired goal".[2] In addition HRM includes the following broad areas: HRM Capacity (staffing, budget, and planning), personnel policy and practice, HRM data, performance management, and training.[2]

In South Africa (SA) the health department has introduced a number of reforms that establish the primary principles to effect the appropriate changes under conditions of fiscal austerity.[3] Decentralisation is a common feature of reform. However, these reforms have focused much attention on financial and structural measures, whilst human resource implications have largely been ignored,[4] despite the fact that HR comprises approximately 70% of the public health sector recurrent expenditure.

The wider implications of decentralisation for HR have not been adequately addressed although several authors recognise that health care is a human system, and that reforms have to address themselves centrally to the personnel staffing the service.[5] One of the emerging issues in transferring power to lower management levels is the adequacy of available information on HR.[6]

Accurate information on the supply and use of health personnel is central to improving the health of the population. It is found that even in countries where information is available, it may be insufficient or out of date; in some instances where the information is available it is not being used with poor communication between the different hierarchical levels.[7] However, HR management depends on the availability of accurate HR information.

Assessment of the current HRM Information System

The need for information for HRM

Managers, planners and policy makers need a variety of different information for effective decision making and planning. The purpose of decisions related to health human resource management is to identify and achieve an

appropriate number and mix; and equitable distribution of personnel whilst being cost-effective. To achieve this there is a need to systematically analyse trends, develop perspectives, define response strategies and develop a coherent plan to address the wide spectrum of issues that impact on the production, retention and distribution of HR in the public health sector.[8]

One of the weaknesses is that adequate information is not available to support decision making, planning and the identification of problems for the assessment of priorities. It was found, in cases in Malawi, Zambia, and Zimbabwe, that the problem with the data collection is that it is usually reactive rather than being proactive.[9] In order to improve this situation the development of an information system for HRM should be a consultation process between the relevant stakeholders at national, provincial and district level. For example, the health human resource team at the Canadian Institute for Health Information worked with stakeholders across the country to develop standards and systems for health human resource management in Canada.[10]

In SA, the national Department of Health (DoH) has made some progress in stipulating and defining the Goals, Objectives and Indicators for HR Planning, Development and Management 2001-2005, as shown in Table 1. Unfortunately these indicators do not meet the information needs to manage, plan and develop the HR at provincial and district level. In addition the primary data source for this, the personnel information system, (PERSAL), which is used by the public sector, is not able to produce all the data on which the indicators are based.

Table 1: National DoH Goals, Objectives, and Indicators for Human Resources Planning, Development and Management, 2001-2005

Goal	Objective	Indicator
Ensure that there are sufficient staff with the right skills in the right location	Planning norms for staffing requirements	Planning Norms produced
	Formulating strategies to fill posts in areas of need	Vacancy rates according to norms
	Training of new categories of health workers, including mid-level workers	Percentage of mid-level workers trained
	Appropriate production of health professionals	Percentage of trained health professionals according to training norms
	Strategies for recruitment and retention	Attrition rate
Transformation of training and education of health professionals	Improving representivity in under-graduate and postgraduate student demography	Percentage of blacks, women and disabled being trained
	Strategies to reduce migration of health personnel	Staff migration rate
	Transformation of Schools of Public Health	Percentage of Schools of Public Health implementing policy guidelines
Transformation of professional legislation	Structural reform of professional statutory councils	Statutory councils reformed
	Regulation for health workers currently not regulated	Legislation revised and implemented

Source: Health Goals, Objectives and Indicators, 2001-2005[11]

A further development was the District Health Planning and Reporting Guidelines intended to help district health managers to prepare and implement medium-term sub-district and district health plans, and to assess and report progress in achieving the stated goals and objectives.[12]

Table 2:   National DoH Extracted HR Indicators for District Health Planning and Reporting

Indicator Name	Indicator Type	Indicator Construction		
		Numerator	**Denominator**	**Factor**
Employed in category	%	Total # employed in category	Total # employed	X100
Employed by category approved as % required	%	# Employed by category	# Employed by category – required	X100
Employed by category – actual as % of required	%	# Employed by category – filled	# Employed by category – required	X100
Vacancy rate per category	%	# of unfilled posts in category	Total # posts in category	X100
Employed per 1 000 people	#	# of filled posts per category	Total population	X1 000
Professional Nurse (PN) per 100 000 people	#	# of PNs employed	Total population	X100 000
Personnel budget per category	R	Personnel budget by category	Total personnel budget	
Cost per staff member per category	R	Personnel budget by category	Total # of filled posts per category	
Expenditure on PHC personnel per person – total	R	Expenditure on PHC personnel	Total population	
Expenditure on hospital staff as % of total hospital expenditure	R	Total expenditure on hospital staff	Total hospital expenditure	
PHC nurse facility headcount workload	#	PHC total headcount	# Nurses employed	
PN clinical workload (PHC)	#	PHC total headcount	PN clinical workdays	
Enrolled Nurse (EN) clinical workload (PHC)	#	PHC total headcount	EN clinical workdays	
Enrolled Nursing Assistant (ENA) clinical workload (PHC)	#	PHC total headcount	ENA clinical workdays	
Nurse clinical workload	#	PHC total headcount	Nurse clinical workdays	
Pharmacy staff clinical workload (PHC)	#	PHC total headcount	Pharmacy clinical workdays	
Doctor clinical workload (PHC)	#	PHC total headcount	Doctors clinical workdays	

Source: Adapted Guidelines for District Health Planning and Reporting, 2003[12]

Case Study: Assessment of the current HRM Information System at district level

As part of a project aimed at improving district level health information systems in South Africa[a] an assessment of HRM management information systems was carried out in two districts in the Western Cape and Eastern Cape Provinces. The PERSAL information system, which contains a wide variety of data in the following categories: Individual Member Data, Job Information, Organisational Structure and Salary Information, was reviewed. The main weakness of PERSAL as an information system is that its primary function is to manage salary payments. This dominates the use of the system to the detriment of the accuracy of the non-salary information in the system.[13] There is an over-reliance on the PERSAL system and a misconception that it provides all the information required for human resource management.

Review of PERSAL as HRM information system

Data Collection

➤ Different people are in charge of different data and there is not one central person who manages and monitors the data of the whole establishment.

➤ The data collection is centred around the daily transactions of approving, authorising and capturing on PERSAL. The only non-salary related data collected are the new appointments and terminations of staff.

➤ There is duplication in the data collected with the same data collected for different purposes.

➤ The data collected are incomplete with an emphasis on professional categories and not on support and administrative categories.

➤ Records and personnel files are not kept up to date. This results in problems regarding the accuracy of the staff establishment.

➤ There is no aggregation of data as the record keeping is based on individuals. This prevents any monitoring of changes in staff categories.

➤ The majority of the tools used for data collection are forms and registers, some of which are not user-friendly and cumbersome to complete.

Data Analysis and Use of Information

➤ Data are not converted into indicators to produce information. Calculating and understanding indicators is a new concept for the HR staff at District level.

➤ There is little to no evidence of the use of raw data mainly because managers consider the data unreliable.

➤ Use of information for the management of the HRH is considered more appropriate for provincial and national level.

Overall Assessment

Contrary to expectations, there were no significant differences between the rural and urban districts. The PERSAL system is considered insufficient, unreliable and not up to date.[14] This is especially the case for the number of approved and filled posts. There is no aggregation of data, which makes it difficult to detect trends. There are very poor linkages to health data and other sources of data except for the financial systems, which are linked in the shared mainframe.

Several staff working in HR section consider data collection, collation and analysis to be new functions and not as part of their current job descriptions. However they agreed that the current information is inadequate for HRM. Historic job functions and a limited notion of personnel administration have contributed to the absence of an information system for HRM at district level.

Developing a routine Information System for HRM

Routine Information System

A suggested approach to developing an information system for HRM to meet the information needs is a Routine Information System. Routine information systems for HRM would create a culture of information production, appreciation for importance of the information, and ultimately the use of information to meet set objectives, planning and decision making.

It is believed that information carries a symbolic value; whether asking for information, using information and justifying decisions in terms of information have all come to be significant ways in which we symbolise that the process is legitimate, that we are good decision makers, and that our organisations are well managed.[15] In South Africa, the use of information for decision making has received increased stature over the last eight years with efforts being made to improve the quality, distribution and use of information. Human Resource Management needs to attach value to information to enhance the management of HR. A routine information system for HRM would enhance managers' ability to set and achieve objectives, legitimise decisions and set priorities.

Process for developing a routine Information System for HRM

A commitment is required to implement a process to establish and generate additional information required for HRM. An appreciation of information will be acquired when buy-in for information for HRM has been established and once information is produced and used. However, the first step would be to determine the information needs, using indicators to reflect the identified priority problems. Routine data collected are based on the predetermined indicators. Information requirements should be established at facility and district level to meet the different information needs. The routine data required for the indicators would compose an Essential Data Set. Routine data collection and use of information systems are new concepts for HR staff. They will need to acquire new skills. To acquire these skills, they will need training in routine information systems, development and construction of indicators, data collection and collation tools, data handling processes, analysis, interpretation and use of information produced.

Furthermore, clear logistics for data collection and information flow should be established. This should allow for the incorporation of the current data collected for HRM. Ensuring the accuracy of the data collected requires accuracy checking measures to be put in place. Their job purpose and function will have to be amended to incorporate this.

International examples of information systems and information requirements for HRH development

In 1988, the WHO consultation on the Collection and Use of Health Manpower Information proposed a set of indicators to assess the HRH development at country level as shown in Table 3.

Table 3: WHO Consultation on the Collection and Use of Health Manpower Information proposed set of indicators for HRH development at country level

Orientation of health care	Equity	Functions / Performance	Economics	Numerical Imbalances	Imbalances in quality of graduates	Occupational Imbalances
% Health budget spent on primary care, secondary / tertiary care hospitals, urban vs rural areas	Professional category per personnel in different levels	What types of personnel perform / assist in births / deliveries	Proportion of health budget allocated salaries, drugs, equipment	Trends in health personnel population	Number of schools who have revised curricula towards primary health care	Ratio of nurses or other categories of health workers to doctors
Proportion of professional health personnel in primary care, hospitals above the district level	Trends in access of population to organised health care	Deviations from established norms of service for selected health conditions	Trends in earnings for selected categories of health personnel	Trends in numbers of health graduates	Proportion of curricula orientated to primary health care	
Trends in personnel trained for geriatric care	Vacancies per geographical areas	Proportion of districts having integrated health management teams	Trends in public / private sector expenditures	Trends in unemployment	Proportion of time community nurse spends in community	
Specialised physicians vs general practitioners		Growth of refresher / continuing – education courses	Rate of return on education	Trends in rations of graduates to number of recruitment by public sector		
				Trends in proportion of health personnel in public / private sectors		

Source: WHO Study Group, 1990[5]

These sets of indicators are a useful starting point for the development of a HR information system. They highlight the different categories in which HR should be monitored. A major weakness is that the indicators are for the national level and do not meet the information needs at provincial and district level.

WHO later sponsored the development of a microcomputer-based toolkit that could facilitate access to the world experiences with the planning, training and management of HR.[16] One of the outputs of the toolkit is a manual for developing and using a system of HR performance indicators to monitor the activities of a public sector health service. The manual includes a framework for introducing a Performance Indicator System (Table 4) and a basket of indicators (Table 5).

The HRH Toolkit provides a basket of indicators which was developed and aimed at providing comprehensive information for human resource management. It is particularly aimed at supporting the management process in developing countries and draws on experiences of pilot work in establishing HR indicators in Sri Lanka and Nepal. Table 5 provides a selection of the basket of indicators.

Table 4:   A Framework for Introducing a Performance Indicator System

1.   Establish the objectives to be achieved using indicators

In designing indicators, it has to be clear who wants the information and for what reason; for example, whether it is primarily for monitoring health service performance by the Ministry, or for local operational management purposes or some combination of the two. Finally, it is important to consider how the information produced by the indicator system will relate to existing or future planning and budgeting cycles.

2.   Appraisal of existing lines of accountability

The assessment of accountability is closely linked to step 1 above, as it will determine the structural and administrative arrangements for the development and use of the indicators. Such an appraisal will help to highlight any apparent 'gaps' in the management accountability structure and whether this, in turn, might cause problems in the future.

3.   Establish managerial levels at which the indicators are to be used

It is important to establish early in the indicator development process the different levels to be involved, as indicators need to be timely and relevant to the managers making use of them. Establishing this will also help to determine which indicators are appropriate for given management levels and how frequently data need to be collected or the indicators disseminated.

4.   Describe required indicators

The actual indicators are defined at this stage. An initial list of HR indicators, derived from workshops and field experience is reflected in Table 5.

5.   Identify existing / required data sources

There will inevitably be a need to compromise between being able to obtain the 'ideal' data for a set of indicators and having to 'make do' with what is already available or straightforward to measure. In general, the basic set of HR indicators in Table 5 has been established in the light of experience of using data systems in developing countries. Nevertheless, identifying data requirements and sources are an important early undertaking in setting up an indicator system.

6.   Establish data collection and processing procedures

If the indicators do require new data sources then how this is to be obtained (in the light of existing mechanisms for data collection) has to be considered. A decision also has to be made as to what level in the health system data need to be collated and where the indicators themselves are to be constructed. Protocols for data collection need to be set out for managers and staff working in the field.

7.   Develop an indicator distribution network

A time scale for collating and processing data and the development of the indicator sets and how this fits into any existing schedules for local planning, budgeting and review cycles needs to be determined. It is also necessary to decide in what format indicators are to be presented (and whether with or without any supporting analysis); how they are to be distributed and how frequently; who they are to be given to; and what subsequent actions are to be taken by recipients.

8.   Training and education in the use of indicators

This vital component is required from an early stage in setting up an indicator system and should encompass aspects such as: Explanation of why indicators are being introduced. It is important for managers at all levels to understand 'what is in it for them' and why they are being asked for their cooperation, how managers can (and should) interpret indicators, how they might actively use the raw data collected for indicators locally and even develop their own indicators for local use, Development of a reward system for local initiative in the use of indicators.

9.   Design overall monitoring and feedback arrangements for the indicator system

Some 'indicators of the indicators' can be helpful at higher management levels in the system to assess how the indicators themselves contribute to management performance and whether any adjustment is needed.

Source: HRH Toolkit for Planning, Training and Management, 2001[16]

Table 5:   HRH Toolkit Selection of Basket of Indicators

Indicatory Category	Indicator Name	Indicator Type %	Indicator Construction		
			Numerator	Denominator	Factor X100
Management of Workforce	Monthly Absenteeism Rate		# days absent	# of staff X workdays in month	
	Monthly Vacancy Rate		# vacancies over 1 month	total vacancies in month	
	Vacancy Rate		total vacancies	total budgeted positions	
	% Budget spent on Health Personnel		annual budget on health personnel	total annual health budget	
	% Staff Reviews		# staff reviews completed	total staff to be reviewed	
	% Overtime Costs		overtime costs	total staff costs	
	% Supervision sessions conducted		# documented supervision sessions	# facilities to be supervised	
Workforce Training	% Planned Training		# staff planned to have training	# staff needing training	
	% Training Completed		# staff received training	# staff planned to have training	
	% Staff with Job Descriptions		# staff with job description	total # staff	
	% Time Spent on Training		time spent on training	total available work time	
Motivation	% Promotions		# promotions	# positions	
	% Awarded Bonuses		# staff awarded bonus	total # staff	
	% Staff in Work-related Accidents		# staff in work-related accidents	total # staff	
	% Staff Complaints		# formal complaints by staff	total # staff	
	% Assaults on Health Personnel		# assaults on staff	total # staff	
	% Queries on Performance		# queries on performance	total # staff	
	Monthly Attrition Rate		# staff leaving each month	total # staff each month	
	% Uncertified Absenteeism		# days uncertified absence in month	total # staff X # workdays in a month	
Skills & Caseload	% Professional Health Staff		# professional health staff	total # staff	
	% Staff trained in Health Education		# staff trained in health education	total # targeted staff	

Source: Adapted HRH Toolkit for Planning, Training and Management, 2001[16]

The basket of indicators is comprehensive and each country would initially select those indicators that are of greatest priority. Consideration would also have to be given to the ease of data collection in making the choice.

These indicators highlight the link between HR information and health services and financial management information.

They create a different way of thinking by moving human resource management from being a vertical programme to an integrated programme specifically linked to financial and health services information.

Conclusion and recommendations

Decentralisation has led to the need for accurate information at district level for the management of HR. The current personnel information system (PERSAL) does not provide the information required for Human Resource Management, Planning and Development. The non-salary information is considered unreliable and is not used. An assessment conducted in two districts found that district level HR staff has a limited and narrow perception of personnel administration. District level managers need to obtain HR information to legitimise decision making and use of information for planning.

Currently district level staff have received little exposure in developing and using HR indicators. This has led to the lack of specific skills to identify their information needs and develop indicators. To remedy this situation, they will have to participate in training around human resource management and HR information systems.

The Goals, Objectives and Indicators for 2001-2005, outlined by the national DoH contains milestones to be reached and can be used as a starting point for the information requirements for human resource management, planning and development at all levels. Together with the lists of indicators in Tables 2, 3 and 5, these can be used to initiate the establishment of information requirements for HRM, especially linking it to health service information.

Additional recommendations are:

➤ Improve the completeness and accuracy of non-salary information (e.g. staff establishment) on PERSAL to increase the use of information.

➤ Prioritise the need for information to manage HR at all levels of the public health system.

➤ Put in place a consultation process involving stake-holders from the different levels of the health care system to determine the information requirements for the management of the HR.

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