Comprehensive Overview of Human Resources for Health Management for Primary Health Care Services - Yemen

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Yemen

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by

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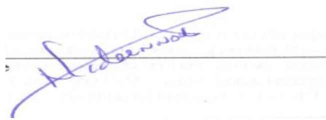
Yemen

Declaration:

Where other people’s work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements. The thesis *Comperhensive Overview of Human Resources for Health Management for Primary Health Care Services - Yemen* is my own work.

Signature: 

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List of Abbrevations:

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retroviral Therapy
CHW	Community Health Worker
DHMS	District Health Management System
DHMT	District Health Management Team
ESP	Essential Service Package
EHW	Extension Health Worker
GDP	Gross Domestic Product
GHWA	Global Health Workforce Alliance
GIS	Geographical Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HR	Human Resources For Health
HRD	Human Resources Development
HRH	Human Resources For Health
HRIS	Human Resources Information System
HRM	Human Resources Management
LHW	Lady Health Worker
MENA	Middle East and North Africa
NCD	Non Communicable Diseases
OCHA	Office for the Coordination of Humanitarian Affairs
PHC	Primary Health Care
SAF	Sister Arab Forum
TB	Tuberculosis
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United National Development Program
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WISN	Workload Indicator of Staff Needed

Glossary:

Compulsory Service: "Mandatory services of pre-defined number of years for new medical graduates to serve underserved areas before obtaining the first professional post. It's used as recruitment, deployment and retention strategy"[1]

Employee relations: "May be defined as those policies and practices which are concerned with the management and regulation of relationships between the organization, the individual staff member, and groups of staff within the working environment"[2]

Human Resources Development (HRD): "Is the process of developing and improving the capacity, ability skills, and qualifications of any organization's staff to a level required by the organization to accomplish its goals"[3]

HRH Leadership: "Capacity to provide direction, to align people, to mobilize resources and to reach goals"[4]

Health Management Information System (HMIS): "A system that integrates data collection, processing, reporting, and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services"[5]

Health policy: Is defined as "a vision for future, which in turn helps establish benchmarks for the short and medium term. It outlines priorities and expected roles of different groups. It builds consensus and informs people, and in doing so fulfills an important role of governance"[6]

HRH Education: "Production and maintenance of a skilled workforce" [4]

HRH Finance HRH Finance: "Obtaining, allocating and disbursing adequate funding for human resources" [4]

HRH Partnership: "Formal and informal linkages aligning key stakeholders (e.g. service providers, sectors, donors, priority disease programs) to maximize use of resources for Human Resources for Health"[4]

HRH planning: "A process of estimating the number of persons and kind of skills and attitudes they need to achieve predetermined health targets and ultimately health status objectives" [3]

Human Resources for Health (HRH): "All the people engaged in the actions whose primary intent is to enhance health"[7]

Human Resources Management (HRM): "The integrated use of systems, policies, and practices that will provide the range of functions needed to plan, produce, deploy, manage, train, support, and sustain the workforce. HRM focuses on people: how they fit and are utilized within a health

system and how they can be most effective"[8]

Human resources management (HRM) functions: "The mix of core strategic, operational, and administrative HRM functions and tasks that are in place. The HRH action framework defines the key functions of an effective HRM system to include personnel systems, work environment and conditions, HR information systems, and performance management"[9]

International Dollar: "Has the same purchasing power as the U.S. dollar has in the United States. Costs in local currency units are converted to international dollars using purchasing power parity (ppp) exchange rates. A ppp exchange rate is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as U.S. dollar would buy in the United States. An international dollar is, therefore, a hypothetical currency that is used as a means of translating and comparing costs from one country to the other using a common reference point, the US dollar"[10]

Performance management: "A process to ensure there is an effective performance appraisal system in place within the health system, and to lead and support systemic productivity improvement interventions"[9]

Primary Health Care: "Is essential health care; based on practical, scientifically sound, and socially acceptable method and technology; universally accessible to all in the community through their full participation; at an affordable cost; and geared toward self-reliance and self-determination"[11]

Task shifting: "The rational redistribution of tasks among health workforce team"[12]

Work environment and conditions: "The systems that monitor and support positive workforce environment practices that include effective employee relations, workplace safety, job satisfaction, and career development"[9]

Workforce plan: "Outline of what is needed over a projected time frame in terms of the size, type, distribution, and quality of the workforce—includes the mix of workforce experience, knowledge, and skills required"[9]

Abstract:

Introduction: After 25 years of primary health care implementation, PHC still remains a priority within the health system in Yemen. Maternal and child mortality and morbidity are still high despite all the efforts being made. PHC has proved to be the most cost-effective approach for disease prevention and control, yet the success of PHC depends on human resources. HRM is a critical component in ensuring that health workers are responsive to the health care needs of the population.

Objective: To identify the Human Resources situation and Human Resources Management policies and strategies in Primary Health Care in Yemen, and to describe emerging practices and lessons learnt related to HRM within the Health Sector elsewhere in order to give recommendations to address gaps in HRM in Yemen.

Methods: This thesis was an exploratory and descriptive desk review. An extensive review of reports and articles has been performed. Additionally, interviews have been used to obtain more information from key informants. Human Resources for Health Action framework and Human Resources Management function template were used for the analysis.

Findings: Yemen is facing a lot of HRH challenges including HRH shortage, skill mix imbalance, gender imbalance and mal-distribution especially for PHC. The HRM system for PHC in Yemen have some good policies, strategies and practices with some gaps in enforcing existing policies, workforce planning, working conditions, Human Resources Information System and performance management.

Conclusion: In order to fill the existing gaps and challenges, it's recommended to develop guidelines for missing issues, build capacity of Human Resources Management team, improve planning by coordination with stakeholders, improve data collection for HRH, and enforcement of existing laws and practices that can improve HRM management for PHC.

Key Words: Human Resources Management, Policies, Primary Health Care, Yemen

Word Count: 12,654

Introduction

Before I joined this masters program, I worked in different fields of public health in Yemen, namely HIV, AIDS, maternal and child health, humanitarian emergencies, and nutrition, and I have conducted four assessments in Sana'a, Hodeida, and Hajjah governorates of which human resources (HR) was one of the core components of the assessments. What was striking was the shortage of HR at the health facilities, especially those in the rural areas. Human resources for health (HRH), especially female health workers, has been a real challenge for implementing the program at the targeted areas. As a result, I was interested to know more about the existing HRH situation in the country and the existing polices to address HRH challenges.

HRH is the core component of any health system; the advancement of health can't be done without giving attention to health workforce. The evidence from different studies has shown that number, quality, and distribution are positively associated with health care coverage, and maternal and child survival.[7] The shortage of HR has influenced access, quality of care, and the achievement of health systems goals to improve health outcomes.

In Yemen, the health system is facing changes in disease epidemiology, the emergence of new diseases like HIV/AIDS, and transition to non-communicable diseases (NCDs) like cancers and heart diseases.[13] Improving health outcomes can't be achieved without the presence of enough qualified health workers. Many primary health care (PHC) units and centers have no/few health workers, and if they are available, they are usually over burdened with tasks and responsibilities (personal observation). This makes the health system unable to deliver public health services in an equitable and effective manner.

In recent years, the Ministry of Public Health and Population (MoPHP) has started to pay more attention to HRH. It has done a situation analysis for HRH and started developing a national strategy for HRH. Nevertheless little is known about human resources management (HRM) for PHC within the country. Therefore, this thesis aims to give a comprehensive view about the HRM for PHC and identify existing HRM policies. The literature review will highlight lessons learnt from other countries. Comparisons of HRM issues will be done to identify gaps and challenges in order to give recommendations to the MoPHP on how to best use existing HR and to strengthen and adapt existing strategies based on evidence-based interventions. The findings will help MoPHP modify existing interventions for the new HRH-European Commission-funded project that will be done in Yemen for two years and also for the new five-year HRH strategy that will be finalized by the end of the year. I intend to join the project upon return and hope I can contribute to improve HRM in the country.

Chapter 1. Country Background

Geography:

At 527,968 square kilometers, Yemen is the second largest country in the Arabian Peninsula. It is bordered by Saudi Arabia, the Red Sea, the Gulf of Aden, the Arabian Sea, and Oman (figure 1). Yemen is divided into 21 governorates, 33 districts, and 1,996 sub-districts.[14]

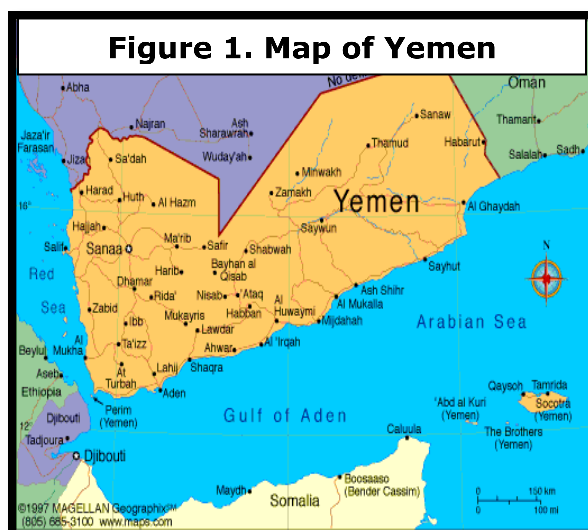


Figure 1. Map of Yemen

Population:

World Health Organization (WHO) has estimated that the total population is around 24 million with 3% growth rate. [15] Yemen's population is predominantly young; nearly half the population is below 15 years of age, and the 0–4 years group accounts for 19% of the total population (figure 2). Life expectancy at birth is estimated to be 63 for males and 66 for females.[16, 17, 18]

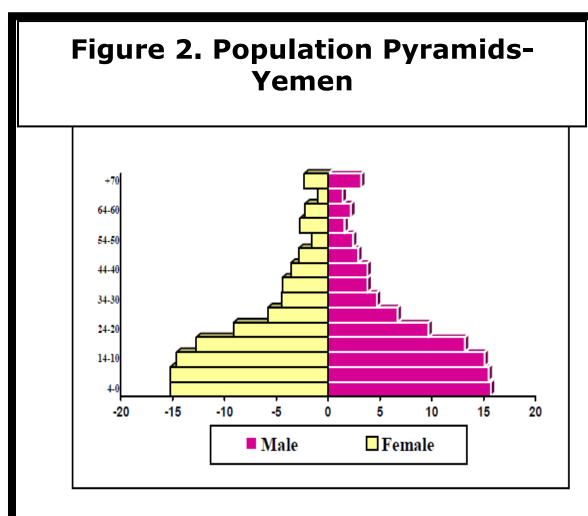


Figure 2. Population Pyramids-Yemen

Literacy and education:

United Nations Education, Scientific, and Cultural Organization Institute for Statistics (UIS) has estimated the overall literacy rate for the population 15 years old and above is 65.3%; 48.5% for females, and 82.1% for males. It has estimated that 82% of school age boys and 69% of school age girls are enrolled in primary school, whereas the enrollment rates in secondary school are only 48% and 31% for eligible school age boys and girls respectively.[16,19]

Socio-economic status:

Yemen is classified as one of the poorest countries in the Arab region with a per capita Gross Domestic Product (GDP) of US $2,170.[15] Yemen was ranked 154 out of 187 on the Human Development Index;[20] 47% of Yemeni people live on less than $2 per day.[21-22] The country's development is hindered by

major challenges like failing agricultural productivity, more acute food insecurity resulting from the current political situation, and deteriorating water and sanitation infrastructure.[21]

Political situation:

Yemen has faced an unstable political situation resulting from the Arab Spring revolution and the existing armed conflict in Yemen over the past ten years which has led to the displacement of many families from Sada'a and Arhab to Amran, Al-jawf, Hajjah and Aden governorates.[21] The violence and clashes have caused many injuries that need treatment leading to an increased need for health facilities. Also, the continuous tribal conflicts have led to the placement of many check points which are usually more concentrated in the rural areas. This has influenced movement and accessibility to health facilities and also resulted in closure of some health facilities.[21]

Socio-culture and gender:

Yemen is a very conservative country where social and traditional norms favor men. People still believe that women have low status within the community and are dominated by men. Gender inequality has been observed in all sectors, i.e. health, education, and employment. A woman is usually not allowed to go to health services unless she gets permission from her family or husband, and has to be accompanied by a male relative. Additionally, females also experience different forms of violence such as sexual and physical abuse due to their lack of power. This has a negative impact on the health of women.[23,24] Additionally, people in most communities, especially those coming from rural areas or with a tribal background in Yemen, prefer to have female health personnel to provide the service for women. Many females won't accept examinations or treatments by male health workers, especially for sexual and reproductive health services.[13]

Health System:

Health care system in Yemen consists of three levels:

1. **First level:** This is composed of community health workers (CHW), health units, and health centers that provide PHC. These are responsible for the provision of preventive services, which include immunization, maternal and child health and family planning, integrated management of childhood illness, health education, and some curative services.[13]

The HR structure which was introduced in 2000 for PHC is as follows:

CHW: Each CHW will cover one hamlet which is outside the catchment area of health facilities. CHWs are responsible for the provision PHC services like

preventive services .i.e. vaccination, education, some first aid management for minor conditions, and referral cases to the nearest health facility.

Health units: There are two types of Health units; temporary and fixed. The temporary units cover a catchment area of 500-750 inhibitors; with each unit having two staff health educator and support staff. While fixed units cover 5000 inhibitors with each having four staff members: one community midwife, one medical assistant, and two health guides.[13]

Health Centers: These are placed in rural areas to provide PHC package to about 10,000 persons. Each health center should be staffed by 2 general practitioners, 3 nurses (2 practical nurses and an assistant nurse), 2 medical assistants, 1 lab technician, 1 pharmacist, 1 x-Ray technician, 1 statistician, and 1 public health Technician and 1 health guide.[13]

2. **Second Level:** This includes district and governorate hospitals that provide curative care to cases referred from health units and centers.[13]
3. **Tertiary Level:** This consists of national and teaching hospitals that are located in Sana'a and Aden and which are responsible for the provision of specialized care.[13]

The public health care system constitutes the largest part of the health system. There are 28,495 health units, 791 centers, 2,266 maternal and child health centers, 175 rural hospitals, 53 governorate hospitals, and 2 tertiary hospitals.[25] Private sector institutions have increased recently. It was estimated that there are 85 hospitals, 534 polyclinics, 38 health centers, 70 laboratories, 20 x-ray clinics, 1,249 doctors' clinics, 615 foreign doctors, and 309 foreign technicians. Most of those are for profit and based in big cities. However, public private partnership doesn't exist to improve coverage of services within the country.[13]

The public health system has seen organization changes within the last five years. Decentralization, a district health management system (DHMS), and cost sharing (between governorates and patients through the introduction of user and drug fees) are the most important reforms that have been introduced into the system.[13] In 1998, the MoPHP introduced decentralization and established DHMS to increase access to PHC services, community participation in financing, ownership in management, and to determine needs and set exemptions for the poor. The law has delegated authority over financial, HR, and service organization function and access rules to governorate and district directors in order to increase health care coverage which in turn improves health conditions.[26,27,28] Detailed decentralization functions is attached in annex 1.

Health Status:

The health status in Yemen is amongst the poorest in the region.[21] Yemen is going through epidemiological transition. High mortality and morbidity from both communicable diseases and NCDs have been seen, despite the fact that the burden of communicable diseases is still higher than NCDs. The most prominent health conditions among all age groups are diarrhea, respiratory tract infections, malnutrition, malaria, TB and cardiovascular diseases, road traffic accidents, and cancers as NCDs (table 1).[29]

It is estimated that maternal mortality ratio, infants and under 5 mortality rates are 365/100,000 58/1,000, 79/1,000 births respectively (table 2).[16, 30] The maternal mortality ratio has been reduced by 61%, whereas infants and under five mortality rates been have reduced by 56% and 53% since 1990.[31 ,25] In addition, 58% of children under the age of 5 suffer from stunting, 15% from wasting, and 43% from underweight.[16] The MoPHP is committed to improving maternal health and has invested in maternal and child health centers, and the training of health workers and midwives.[30]

Table 1. Country Burden of disease 2010[29]

No.	Disease	Years of life lost (%) of total
1.	Lower respiratory infections	1,496 (19.1%)
2.	Diarrheal disease	1,120 (14.5%)
3.	Congenital anomalies	720 (9.4%)
4.	Preterm birth complications	637 (8.5%)
5.	Ischemic heart disease	319 (4.2%)
6.	Stroke	270 (3.6%)
7.	Malaria	276 (3.6%)
8.	Road injuries	207 (2.7%)
9.	Neonatal encephalopathy	152 (2%)
10.	Protein energy malnutrition	146 (2%)

Table 2. Major Demographic indicators- Yemen[16]

1.	Total population (2004)	24M
2.	Deliveries by SBA (2009)	37%
3.	BGC vaccination coverage (2011)	59%
4.	Measles vaccination coverage (2011)	71%
5.	Crude birth rate (2011)	38%
6.	Growth rate (2011)	3%
7.	Crude death rate (per 1,000)	6
8.	Infants mortality rate (per 1,000)	58
9.	Under five mortality rate (per 1,000)	78

Chapter 2. Problem statement, justification, methodology

Problem statement:

HRH has gained prominent attention, especially in the last two decades.[7,32] HRH is a key component of an effective health system. A well functioning health system requires enough well-trained health personnel to deliver quality care services and to meet patients' expectations.[7,32] There is evidence that maternal, infant and child survival is positively associated with the density of health workers.[7]

Stephen et al. has indicated that a low number of trained health workers and difficulties in HRM (see glossary)—mainly retention, deployment, and poor performance—are the main obstacles for effective health systems in the developing counties.[33]

In 1998, Yemen national health strategy made PHC a core pillar to provide essential service packages (ESP) to the poor and to people in the rural areas where 71% of the population lives.[13] DHMS was introduced into the health system to support the delivery of PHC, yet the results were not as expected. The PHC coverage was very low (50%) with poor quality of care and inequality in the geographical distribution of services. Hence, in 2003, the MoPHP developed national guidelines and standards for HRH, medicine, supplies, and management guidelines to ensure effective implementation of PHC. Moreover, in 2003, the introduction of a law to boost decentralization aimed to improve HRM at the district and governorate levels.[13,26]

With all the efforts being made, the number of PHC units and centers has increased. Yet there are still discrepancies in locations and services being provided where some of the health centers and units are understaffed or closed.[13,25] It has been estimated that geographical coverage is 66% with only 30% of rural areas having access to PHC facilities.[13,25] This has been influenced by the geographical distribution of population—where people are scattered in more than 33,000 villages, by administrative, management, and financial obstacles, and lack human resources which led to great disparities in terms of number, gender, and location of health workers.[13]

Based on the current HRH situation analysis[34], the challenges which are faced by the country are similar to many other developing countries and include shortage of HR, skill mix imbalance, gender imbalance, inequitable geographical distribution of health workers, attrition, immigration, lack of motivation, poor performance and retention.[34, 35, 36] Added to that, the cultural norm of preferring female health workers has put a burden on the health system. Many women, especially those in the rural areas, prefer to be examined and treated by female nurse or doctor.[13]

Justification

After 25 years of primary health care implementation, PHC still remains a priority within the health system. Maternal and child mortality and morbidity are still high despite all the efforts being made.[25] PHC has proved to be the most cost-effective approach for disease prevention and control[37], yet the success of PHC depends on human resources. HRM is a critical component in ensuring that health workers are responsive to the health care needs of the population;[37] however no studies have been done in Yemen to analyze what has been done to identify and address HRM challenges at the PHC level. For that reason, it's essential to highlight the integrated aspects of HRM policies, practices to plan for HR, and practices to utilize HR within the decentralized system. This analysis will help to address the existing gaps and challenges within the HRH in Yemen and explain how to best use the existing workforce in a decentralized context using HRM to give recommendations to ensure the success of HRM for PHC services.

Study Objective:

Overall objective:

To identify the Human Resources situation and Human Resources Management policies and strategies in Primary Health Care in Yemen, and to describe emerging practices and lessons learnt related to HRM within the health sector elsewhere in order to give recommendations to address gaps in HRM policies and strategies to address HR challenges in PHC services in Yemen.

Specific Objectives:

Objective-1: To describe the current HRH situation for PHC services;

Objective-2: To discuss existing HRM practices and policies to solve HRM workforce issues;

Objective-3: To review good and emerging practices related to HRM issues in other countries; and

Objective-4: To give recommendations on how to improve existing HRM policies and strategies for PHC in Yemen.

Methods:

This thesis is an exploratory and descriptive desk review. An extensive review of reports and articles has been performed. Additionally, interviews have been used to obtain more information from key informants to fill information gaps and provide more insight on HRM issues and challenges for implementing the existing policies.

Methods of data collection:

Document and literature review: Desk review of all the available literature, reviews, policies, and strategies related to HRM to determine the current HRH situation, existing strategies, policies and challenges in implementing the strategies and plans.

Key informant interviews: Four interviews have been done with key officials at MoPHP-Head office, Sana'a Governorate, and Bani Mather district. The interviews aimed to get in depth information about the existing policies, strategies, and challenges faced by the government in the implementation of HRM polices and strategies. An interview guide with Arabic translation and oral consent form are attached in Annexes 2 and 3.

Search Strategies:

For Objective–1: Grey literature and secondary data was collected via personal contact from consultants who worked in Yemen, WHO, the MoPHP head office and the MoPHP office in Sana'a Governorate, and the Bani Mater health office.

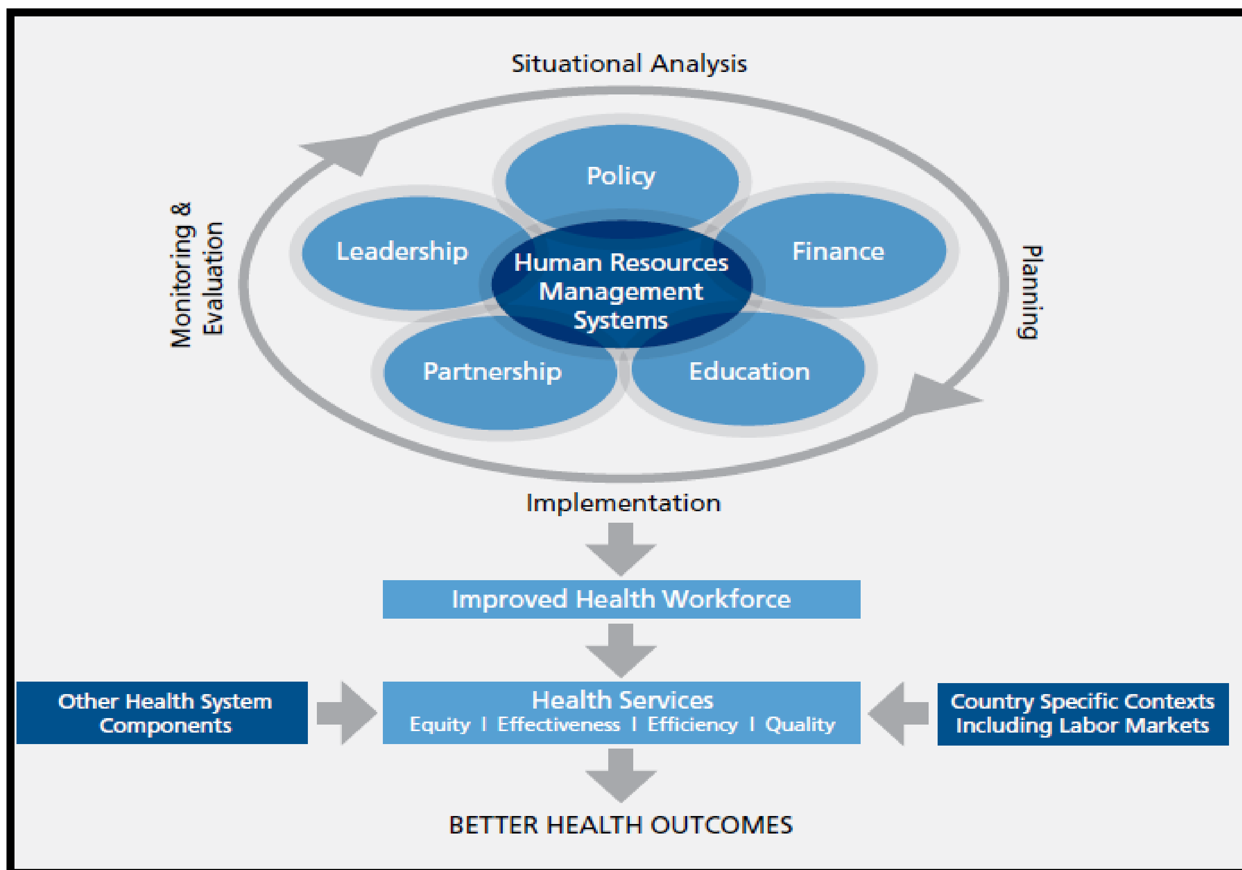
For Objective–2: Grey literature and secondary data were collected from the MoPHP office and four key informant interviews were done to get more information on HRM in Yemen.

For Objective–3: For the literature review an Internet search was done using Pub med and Google Scholar. The KIT library and UV database were also used for the search. Key words used for the search included human resources for health, doctors, nurses, midwives, health workers, personnel, health workforce, motivation, satisfaction, incentives, gender, policies, retention, performance, supervision, performance appraisal, leadership, education, partnership, human resources management, decentralization, continuous education. Combinations of those words were used to get the desired information.

Conceptual Framework:

HRH Action Framework was used for HRH situation analysis. This framework has been developed by WHO, Capacity Plus and Global Health Workforce Alliance.[38] The HRH Action Framework is usually used to provide a comprehensive analysis of all HRH dimensions including six action fields: finance, education, policy, leadership, human resource management, and partnerships (figure 3). [38]

Figure 3. HRH Action Framework[38]



A HRM functions template was used for the analysis of HRM functions in Yemen and for emerging practices elsewhere.[9] The template is aligned with the HRH Action Framework.[9] The HRM function template is focused on one action field of the HRH framework, which is HRM. It is used to provide comprehensive/detailed analysis of HRM function of HRH action framework. The template is divided into four main functions (table 3). The template has been used by many countries like Ethiopia, Nigeria, Zimbabwe, Bhutan, and others to implement gap analysis, establishing HRM baseline, assessing HRM policies and interventions, and mapping HRM functions.[9]

Table 3. HRM functions template[9]

HRM function	Components
Health Workforce Planning and Implementation	Workforce Planning
	Recruitment and Deployment
	Retention
Work Environment and Conditions	Employee Relations
	Workplace Safety and Security
	Job Satisfaction
	Career Development
Human Resources Information Systems	HRIS
Performance Management	Setting performance expectations, monitoring performance and providing feedback; providing supportive supervision; and sustaining an environment that supports productivity

In order to analyze how DHMS is implementing existing policies within the decentralized system at PHC level, one district was chosen to have a tangible example and to give an overview of what is happening on the ground and in practice. Bani Mather district in Sana'a Governorate was selected for this study because it represents Yemeni conservative tribal communities, and it was close and accessible for the research given the limited time for the field work. Background information about Sana'a Governorate is attached in Annex 4.

Bani Mather: It is the largest district within the governorate at 1127 square kilometers. It is inhabited by 100,013 people; 51% of them are males. Bani Mater is one of the rural areas of Yemen where all people are conservative with very famous tribes living in the district. The district contains 15 sub districts and 223 villages.[39] There are 1 hospital, 5 health centers and 13 health units, 3 of which are closed because of lack of equipments, and HR.

Study limitation:

This study has some limitations. First, the study largely relied on secondary review of existing reports and documents, which had gaps in data needed for the study. Second, the key informant interview at the district level was done in a district that might not be representative of other districts in Yemen. Because of the time constraints, the researcher didn't interview any health workers to get their perceptions on HRM and to validate the information collected. Finally, the interpretation of interview findings can be biased by the researcher's own perceptions and experience.

Chapter 3. Results

This chapter has three sections. The first one provides insight on the existing HRH situation in country and district level[1] and summarizes HRH leadership, financing and education, which are essential for HRM management. The second section focuses on HRM system and existing rules and regulation, and provides details on HRM for PHC. The last section highlights HRM good practices from other countries.

Section 1. HRH Situation in Yemen:

This part gives an overview of HRH in Yemen where it looks at HRH number, distribution, performance, immigration, attrition, and ghost worker, which are key determinants for HRM. Then the second part of the section provides insight on HRH leadership (management structure), financial and education components of HRH Action framework which are important components for HRM. The remaining components of the framework (policies, partnerships) are integrated in the second section of HRM.

Number:

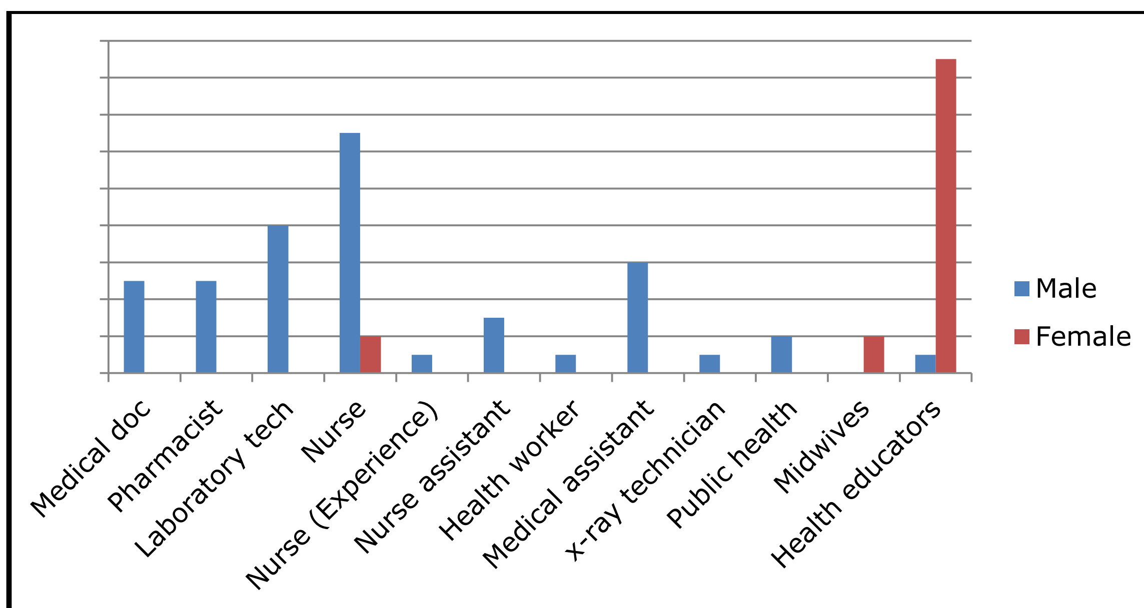
Yemen is among the countries with a critical shortage of HRH.[7] The HRH country report estimated that there are 63,147 health workers working for the public sector within the country; 52,267 of them are service providers while the rest are management and support staff (see Annex 5). The number of health workers in the private sector is unknown.[34] The number of doctors, nurses, and midwives per 1,000 population is 0.36, 0.53, and 0.29 respectively.[34] Those personnel ratios are low compared to other neighboring countries in the Middle East and North Africa (MENA) region such as Oman, Syria, Lebanon, and Sudan.[40] Additionally, it has been estimated there is a skill mix imbalance of health personnel. There are 2 nurses for every 3 doctors, and 1 doctor per 0.8 midwives, which is lower than the neighboring countries in the MENA region and similar to the ratio in Sudan.[41] What's more, there are 34,710 (73%) males vs. 12,761 (27%) females among the different cadres.[34] The percentage of females among nurses and doctors is 42% and 28% respectively.[34]

Looking at the HRH in Bani Mather district, the total number of health workers is 86; 22% of them are support/management staff. Additionally, the skill mix of health personnel is 3 nurses for 1 doctor, and the number of doctors is more than midwives despite the fact there is a shortage of all staff in the governorate as whole and PHC in particular. There are 64 (74.4%) males vs. 22 (25.6%) females among the different cadres. The percentage of females among nurses and doctors is 28.5% and 0% respectively. [42,34] The number of different cadres for PHC within the health centers and units is

[1] Providing information on Bani Mather might not be consistently used all over the result chapter because of lack of information on certain topics.

shown in Figure 5 below.[42] The age group of PHC workers is also unavailable.

Figure 4. Number of different cadres for PHC within the Health Canters and Units- Bani Mather[43]



Distribution:

The geographical distribution of health workers is challenging. The national health strategy stated that ¾ of health workers are based in four governorates: Sana'a, Taiz, Aden, and Hadramot where the majority of these health workers are based in urban areas while the remaining ¼ are distributed in the remaining 17 governorates leading to an inequitable distribution of health workers.[34] (see Annex 6 for HRH distribution in all governorates).

The total number of health workers working at PHC is not available; however, the interviewed officials stated that the majority of health workers are based in governorate and tertiary hospitals. In Bani Mater, 15% of staff is based in the district hospital while the remaining health workers are distributed in PHC within the district. The number of available staff at PHC units ranges between 10–3 in the health centers and between 4–0 in the health units, which is below the required number as per the national guidelines.[43]

Migration:

Despite the fact there is no exact figure on the number of emigrating health workers, especially doctors; the health system has been suffering from both external and internal migration of health workers.[34,44] The head of the HR development department said, "We don't have statistics on the number of

emigrating health workers, however, there are so many workers that go to Saudi Arabia and other Gulf countries, move to big cities, and shift from rural to urban areas to have a better living for them and their families".

Attrition:

There are no statistics on the number of HR workers who leave the public sector to join the private sector, to retire, or due to death, or those leaving PHC services.

Performance:

Little is known about staff performance either for overall health workers or for PHC workers. The European Commission report on health worker performance states that interviews with some officials indicated poor performance of health workers. This is due to a number of underlying factors, which include low salaries, a lack of performance monitoring and management, a lack of motivation, and a lack of compliance to treatment guidelines.[45] However, the evidence available is not enough to measure the exact performance of health workers at PHC level.

Ghost worker:

The health system is also suffering from what is commonly called within the system the "ghost worker." This phenomenon is seen within the public health sector where some of the health workers registered within the health system and pay role but not in the post because of the dual practice of health workers working both in the public and the private sector.[46] Information at PHC Level is not available. The head of the HR development department said, "At the central level, there should be 1,200 employees, however, the number of people who actually come and work is about 400. The same is applied for governorate and district levels.

HRH leadership:

Within the MoPHP there are two units that are responsible for HRH. The first one is the department of Human Resources Development (HRD), which is under the health planning and development unit managed by the deputy health minister. The second unit is the general directorate of personnel, which is managed directly by the minister of health. The first unit is responsible for the development of policies, human resources management, and postgraduates and continuous training while the second one is responsible for the recruitment, deployment, remuneration, incentives, and applying the norms of administration.[34,44]

Since the introduction of decentralization, every governorate has a ministry representative for HR management. The structure of HRH management at the governorate level is similar to that at the central level where there are two offices for HRD and the personnel department. The first one is responsible for the higher education and training of the personnel while the second one is responsible for administration staff and payroll staff. There is no department that is fully responsible for the recruitment, management, and distribution of HRH.[44,34]

At the district level, the office of local authority is responsible for the recruitment of health workers, in practice most of the recruitment is done by civil services at the central level. Additionally, the head of the district health office is responsible for the distribution of health workers within the different health facilities based on the needs of each facility.[44]

HRH financing:

There is lack of information concerning HRH financing, yet the total health expenditure is 4.2% of the total government expenditure.[15] Salaries and wages of health workers account for approximately 35% of the total government health expenditure,[13] which is lower than the average of 40–50% of total government health expenditure (salaries and wages) spent by other countries.[47] The salary scale of public health workers is very low when compared to private sector and in neighboring countries where private sector workers receive triple the salary and in Saudi Arabia more than ten times the salary.[34,44] This has negative impacts on the motivation and performance of health workers and increases the migration of many doctors.[34] The public sector at the governorate level and district level has some income, which is sometimes spent for HR short-term contracts and allowances. Furthermore, there are also some financial resources spent from donors' budgets on salaries for specifically funded health projects, pre-service education, and post-graduate higher education, yet the exact amount of the governorate and donor budget for HRH is still unknown.[34,44]

HRH education:

There are 86 universities and institutions—44 private and 42 public—distributed through the country, which provide medical education.[44] Universities are usually supervised by the ministry of higher education, while training institutions are managed by MoPHP[44,34] (table 4). Education in the public sector is normally with a minimal student fee, while with the introduction of the parallel education fee, which is higher than the normal student fee as the financial education support has been reduced by the government.[44] The number of graduates from medical school has increased by 49% (2000–2008). Table 5 below shows the increase of graduates among different cadres between 2004 and 2008.[44]

Table 4.Number of public and private institution for each medical category[44]

University/institute	Public	Private	Total
Medical schools	5	2	7
Dental schools	4	2	6
Pharmacy	3	1	4
Nursing	8	-	4
Health science	22	39	61
Total	**42**	**44**	**86**

Table 5. Number of graduates between 2004 and 2007[44]

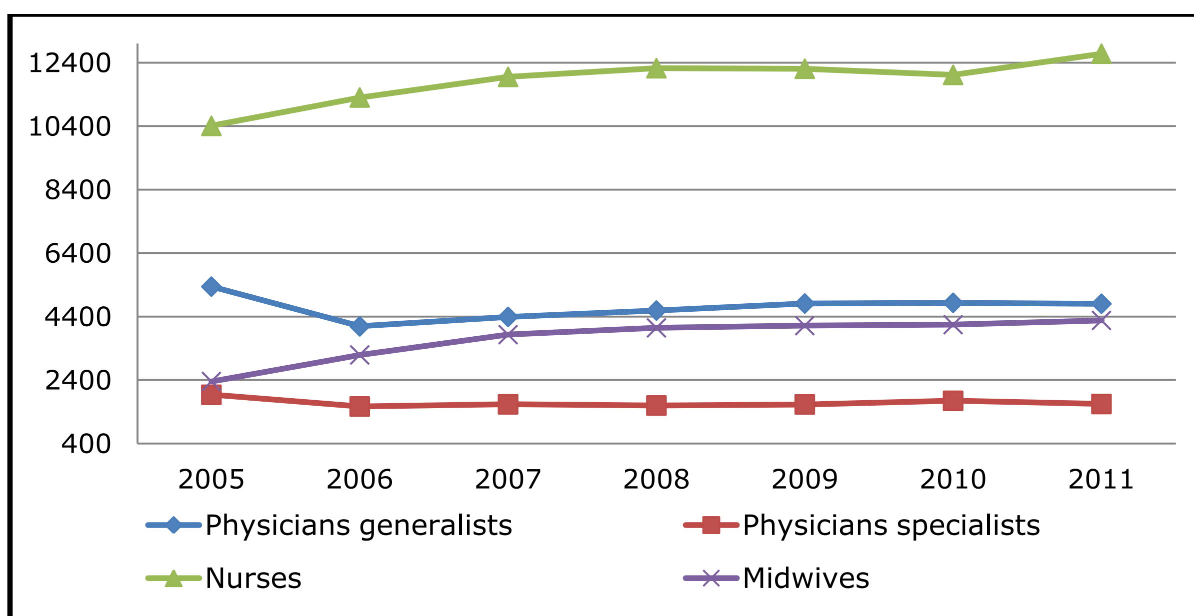
Cadre	2004	2008
Doctors	660	2,402
Nurses	314	1,535
Midwives	173	1,086
Total	1,147	5,023

Between 2005 and 2011, the number of graduated midwives and nurses has increased, while the number of specialized and general practitioners within the public health sector has remained stable with a slight increase despite the huge drop between 2005 and 2006 where attrition rate reached 23% (see Table 6 and Figure 5 below).

Table 6. Number of new health workers in the pubic sectors between 2005 and 2011[44]

Health cadres	2005	2006	2007	2008	2009	2010	2011
General Physicians	5344	4091	4389	4590	4811	4834	4804
Physicians specialists	1935	1566	1635	1597	1631	1745	1645
Nurses	10410	11305	11954	12227	12211	12017	12685
Midwives	2357	3191	3832	4044	4115	4145	4279

Figure 5. Trend of health workers between 2005-2011[25,48]



The available data doesn’t reflect much on institutional capacity to hire new graduates as little is known on the vacancy rates and attrition rate due to retirement, leaving the health sector, immigration, and death of health workers. However, looking at the number of health workers entering the health system and the number of new graduates (annex7), if we assume that the attrition rate is low among them, we can say that the absorption rate ranged between 40–50% for doctors and more than 100% for midwives and nurses. Additionally, the number of health workers who are entering the private sector, unemployed, or who work in other occupations is not available making an analysis of the need and supply equation difficult.

Section 2. Human Resources Management:

This chapter gives details on HRM management and policies—with focus on PHC services at the district level—using the HRM functions template. *When no references to published literature are provided, the information provided in this section comes from the conducted key informant interviews.*

Workforce planning and implementation:

Workforce planning:

There are three articles (84, 85, 86) in the civil service law pertaining to staff planning. Article 84 indicates "Staff planning is a necessary process for effective organization and utilization of human resources for the present time and future".[45] Articles 85–86 of the civil service law clarify the responsibilities for staff planning.[45] In 2000, the MoPHP developed the national guidelines for workforce planning for different levels including PHC.[13] The district health offices, governorates, and MoPHP offices use these guidelines to determine needs based on population catchment area and to estimate the HR needed for PHC services for existing and new health units and centers.[34]

The interviews showed since the introduction of the five-year national strategy plan in 1996, the MoPHP has had a HRH component within the plan. It usually contains projections of HRH needs with no detailed planning on how to fulfill the requirements, but in 2010, for the first time the ministry of health developed a comprehensive HRH plan within the fourth five years national strategy 2011–2015. The plan was based on a HRH analysis, which identified the needs and the gaps in all 21 governorates. However, the strategy was not implemented because of the political conflicts that took place in 2010. According to the deputy minister of health and planning and development, "The strategy for HRH was not implemented as we got notification from the ministry of planning and cooperation to withhold the implementation of the plan because of changing government priorities given the political crisis that Yemen had between 2010 and 2011. We had to adapt the transition strategy that was prepared for the ministry which didn't focus on HRH".

Usually, the local authorities and district health offices identify needs based on the planning guidelines and then communicate the needs to governorate offices which in turn will transfer the needs to ministry of health office for implementation.[44] The MoPHP has to discuss HRH needs with the council of ministers. However, the council and ministry of civil service may not approve the required number of staff given the limited financial budget allocated from the ministry of finance. For example, in 2010 the MoPHP requested 14,000 additional health workers of different cadre, yet they endorsed only

1,500. After the approval of required posts/grades, the MoPHP, governorates and district health offices, reflect the approved number in their action plan to start implementation within the timeframe of the year. Distribution priorities and how the needs for PHC are reflected in those priorities are explained below.

Recruitment and deployment

Articles 22–30 of the civil service law and recruitment system issued by cabinet decree no. 40 of 1991, no. 138 of 2003, and no. 119 of 2004 form the legislative framework and guidelines for recruitment in the public sector entities. The articles and decrees indicate that every governmental entity is held responsible for the advertisement of the approved post and must have a transparent competition for all applicants.[45,44] The ministry of civil services should review the selection and decision of recruitment. The applicants can appeal to the ministry if they feel that the selection was not fair.[44,45]

MoPHP is responsible for providing support to governorate offices for the recruitment and distribution process of health personnel, and is no longer in charge of the process itself.[34,44] However, the MoPHP is still responsible for the recruitment and distribution of international health workers; it signs protocols with other countries such as Russia, China, India, and other Arab countries that provide health workers with needed specialties like anesthesia, surgery and gynecology. The protocols are then sent to the ministry of civil service for final approval. Those staff will be mainly distributed to district, governorate, and specialized hospitals but not to PHC centers or units.

Health offices at the district and governorate level are responsible for the identification of HR needs in terms of numbers and cadre type while the process of recruitment is usually done by the civil service department at the central and rarely by local authority offices at the governorate level.[44] The civil service law gives MoPHP the right to advertise all the approved posts and to open competition for new opportunities, while the director general at the ministry of civil service is held responsible for the final decision of recruitment and selection. The selection process is based on the specialization of applicants and recommendations.[44]

The selected candidates are usually divided equally between the 21 governorates i.e. two posts for each governorate since the allocated grades are usually less than needed. Also, in certain conditions where most of the selected candidates are females, the deployment and distribution of those are subjected to norms of giving preference of females where they are mainly distributed to big cities and urban areas since most female health workers refuse to work in rural areas and may not accept the post if placed in rural areas because of poor living conditions, lack of security, and

traditional norms that don't allow females to move alone to another city or area. In addition, the accepted personnel may not necessary match the required qualification and background needed. For example, if Bani Mather district is in need of two medical doctors, the ministry of civil service will recruit and deploy two medical assistants instead because of limited applicants, which makes the planning process difficult to handle. This influences the needs of PHC staffing which in turn has a negative impact on the type and quality of services provide at PHC level.

At Bani Mather district level, after getting the approved grades with the assigned specialties, the distribution gives priorities to health centers and to areas that are highly populated, accessible, and have equipped health facilities or those that have less or no health personnel. The health workers are usually located in the areas where they come from. For instance, if a nurse is coming from Jehama village, she or he will be deployed to Jehama health unit. Additionally, on very rare occasions, the district health office might contract some health workers from the same or surrounding districts. The salaries are provided from the district revenue or allocated budget when there is a need to provide services in an underserved area or to conduct outreach activities, such as vaccinations or specific campaigns. The contracting option is not always done due to limited financial resources at the district level.

There are some graduates within the district who are not recruited (in-active) to work within the health facilities. The limited number of posts and grades limit the full use of existing human resources at the district level. The head of the health office in Bani Mather said, "Health workers forget how to give injections because they have to wait for 2–3 years or even more till they are hired."

Retention:

In 1990, the prime minister endorsed law no.89, which focused on the provision and granting allowance for people working in rural areas. However, the law was cancelled after the approval of a new decree no. 136 in 2006 on the principles and rules for granting remote areas allowance.[49] The remote areas were classified into three categories based on the development and geographical location of the areas. The less developed and farther the area is, the higher is the allowance. Also, in 2002, articles no. 6 and 17 were endorsed to ensure the binding of new medical graduates, e.g. doctors, dentists, and pharmacists, to provide services in the rural areas for a period of six months to two years.[44] The graduates will not receive a license unless they perform the compulsory services as per the agreement on duration which is determine by the assignment committee.[44,49] Those strategies were used to retain staff before the decentralization. The health workers used to

get double salary to be retained in the rural areas and compulsory service for newly graduates was done. The MoPHP office believed that those policies and strategies were effective to retain health workers in the rural areas for 2–3 years. The deputy minister of health planning and development said, "I graduated from medical school before the decentralization and my batch was one of the groups that had to comply with rural compulsory services. I had to do the service before I obtained my medical license". Those policies are no longer implemented because of the loss of follow up and loss of enforcement from the central level due to decentralization. The HR units seem to lack the capacity to enforce and implement laws at the governorate and district levels.[50]

MoPHP tends to train more female health workers or midwives from rural areas to ensure their retention and provide incentives for female health workers, especially in the fields of nursing, midwifery, and PHC to increase the responsiveness of the health system to improve health status.[44] Also, the ministry plans to activate compulsory services to increase retention of health workers in the rural areas. The head of the recruitment office at the personnel department said, "MoPHP is planning to find a mechanism to activate compulsory services in the rural areas and to have a payment system to increase retention, to give incentives to health workers".

At the governorate and district level, retention is challenging, especially in underserved and mountain areas. There has been no clear mechanism to retain staff in the rural posts and centers despite the fact that there are some mechanisms in place by local authorities to retain staff such as the provision of accommodation or transport. The head of personnel department in the Sana'a governorate office said, "We may provide incentives or accommodation for some of the health workers. It depends on the availability of financial resources and infrastructure needed for housing. The retention of female health workers is even harder; most female workers don't accept work in rural areas and many will resign if they are assigned to rural areas". For example, in Bani Mather, the lack of retention measures for health workers in general, and female health workers in particular, is one of the main obstacles within the district. The head of the health office said, "A newly assigned health worker will come and work for 1–2 months then will leave the health center, moving to another big city. The same is applied for female health workers, especially those who get married to men coming from another city."

Working environment and conditions:

There are no policies or strategies within the MoPHP to ensure good a work environment and working conditions. The national health strategy 2010–2025 indicates the importance of a good workplace to provide good quality

care and the development and preparation of job descriptions[30], in practice; nothing seems to be done to improve working conditions. Officials at different levels are not fully aware of working conditions and possible interventions that would improve working conditions for health workers in general and female health workers in particular.[50]

The work environment has been influenced by the lack of financial resources and equipment, lack of protection from tribal conflicts that take place within districts, lack of support in the work environment, especially for the female health workers who need things like flexible working hours and childcare services in the health facilities.[34,44] The head of the health office in Bani Mather district said, "We don't have specific guidelines or procedures to ensure good working condition for the health workers in general nor for female health workers in particular."

Poor working conditions have negatively influenced the performance of health workers leading to absenteeism among health workers, to reduced working hours, and to dual practices, which affect the services in the public sector.34 The study conducted by Eigenbrodt which targeted 20 districts in 6 governorates and interviewed 575 workers from different levels including PHC (Al-Jawf, Al-Mahra, Hadramaut, Marib, Sa'ada, and Shabwa) showed that 90.4% of health workers are not happy with the working environment and would like to change it. The percentage is even higher among PHC workers; 97.5% because of a lack of leadership management, lack of training opportunities, financial incentives, a clean work place, and room for health workers.[51]

For PHC, the head of the recruitment unit indicated that there are no clear job descriptions despite the fact that the law of civil services indicates the necessity of job descriptions for all posts and ensures that all health workers have a clear job description and classification.[45,46] There was an effort to develop job descriptions with the support of the European Union.[52] They developed a guideline on how to develop job descriptions and created terms of reference to be used by the ministry. However, the ministry does not use those guidelines despite the fact that there are almost no job descriptions available at the different levels.[50]

Two of the interviewees indicated that there are few good practices to ensure a good working environment in governorates that have administrative, management, and financial support as the European Commission funded project in Taiz and Lahj.[53,54] Those governorates provide financial and administrative support to staff by providing the necessary equipment, drugs, protection guidelines, and supportive supervision, guidance, and training to health workers. Yet, no studies have been done to

evaluate the program and how effective those interventions are on health worker performance and productivity.

Employee relations:

There are no policies or strategies concerning employee relations and how health workers are involved in decision-making and problem solving. The engagement of health professional associations (doctors, dentist, and pharmacist), employee representatives to improve working conditions, and decision-making process is not known at the central, governorate, or district levels.

Workplace safety and security:

Interviews showed there are no comprehensive policies or strategies on workplace safety and security. Infection safety guidelines for all the different PHC programs are available, however, those guidelines don't come under one clear set of national safely guidelines for patients and health workers. No guidelines are available concerning violence and harassment at the central or district levels. There is no concrete information on enforcement of law and on how health workers must comply with those guidelines.

In Bani Mather district, head of health office indicated the presence of safety measures at PHC units and centers vary and are dependent on the availability of funds. However, medical incinerators, cleaning products, and gloves are usually available but not in all health facilities. The local authorities or district health offices usually provide protection in the way of security guards at some of the health facilities, however, in many districts tribes are in charge of protecting health facilities, which might be closed if any conflict develops between tribes putting the health workers at risk. The head of the health office in Bani Mather said, "One of the health workers was kidnapped by one of the tribes, and I had to interfere and contact tribe leaders to negotiate to bring back the worker within the same day."

Job satisfaction:

The national health strategy has a component on job satisfaction. The strategy states, "Adapting clear and fair policies in coordination with the ministry of finance and the ministry of civil service in job motivation and stability through paying salaries and incentives prioritizing the rural and remote areas."[45,46]

There is no mechanism to assess the job satisfaction of health workers at the PHC health facilities. The overall impression from the interviews shows the job satisfaction of health workers to be low where health workers work for few hours and leave to work in the private or other sector. The study conducted by Eigenbrodt showed that health workers are not satisfied especially those at the health units and centers (PHC level).[51]

Additionally, according to the civil service law no. 19 of 1991, the salary scale is based on 5 grades with each grade having 2–3 levels and 12 ranks within each level. Based on the civil service law, the salary scale of health workers should be equivalent to any workers within the government if hired at the same level;[45] however, in reality what is implemented is different. "A health worker with diploma and 5 years of work experience will get 40,000 Yemeni rial ≈ 190USD, whereas a worker with the same level at the ministry of water and sanitation will get 2–3 times the salary of health workers," according to the head of the recruitment office.

Articles no. 39–40 of the civil service law and 13–24 of the salaries and wages law no. 43 of 2004 regulate the promotion of public employees. According to the articles mentioned above, a public employee is eligible for promotion to a higher grade if the employee obtains a grade of excellent in his performance evaluation reports during the two preceding years or has achieved a new education certificate.[45]

The promotion practice is not always done in transparent way or based on qualification or out-put. Most of the time, promotion is based on personal relations—if the employee is well connected and has a good relationship with officials, he or she will be promoted.[46] A survey conducted by MoPHP showed that three quarters of the respondents were not satisfied with their opportunities for promotion, as promotions are not done according to the guidelines. [55]

The head of the personnel department in Sana'a governorate said, "Promotion of PHC health workers is based on evaluation done by direct supervision, head of health office at district level and head of service provision to determine if the health worker is eligible for promotion." It's not known if PHC gets any particular training to obtain certificates that make the health worker eligible for promotion.

Career development:

There is not a clear strategy for continuous education and career development. The national health strategy 2010–2015 indicates the importance of continuous education and availability of a national program to train staff on the latest professional developments.[30] The MoPHP is working on a strategy for career development based on the needs for different levels starting from PHC to tertiary levels.

MoPHP usually provides fellowships for health workers. The government allocates 12 million Yemeni rial every year for the fellowship program. Any workers can apply for fellowship after four years of services depending on how unique their specialty is. However, the process of career development is done ad hoc and lacks long-term, proper planning. According to the head of the human resources development unit, "We don't have strategy/policy for

career development of health workers working with the MoPHP. Most of the refresher training done for PHC is donor driven."

At Bani Mather, the head of the health office also confirmed that there is no official career development plan for health workers. Most of the training done at the district level is provided by non-governmental organizations that are implementing projects in the district and are not linked to health workers needs.

Health Information Management system (HIMS):

There are no policies or strategies that focus on Human Resources Information System (HRIS).[49] Interviews indicated data collection used to be manually transferred from lower to central level every one or five years depending on when the central level asked for the data for planning. Since 2009, the MoPHP has developed a database for 78,000 health workers, which includes data on numbers, cadres, gender, and distribution in different governorates but no data is available on age or the distribution of cadre on the different levels within each governorate. It also contains information on all medical graduates and medical institutions within the country. The data is usually used for planning, but is not updated on regular basis and not linked to salary registers or the database at the ministry of civil service.34 For example, the local head of the district level health offices in Bani Mather recognizes that some data are missing and not updated when they go to the field. For example, the system indicates that a health worker is based in a certain health facility, but when they go to the field, they find that the health worker has been transferred by the local authority or ministry of civil services.

The MoPHP faces many challenges, such as the lack of HR working on the HIMS, the data base is not linked to district and governorate offices, and the software used is limited and doesn't have the capacity to include all the needed information.[34] Interviews showed data on PHC is not regularly disseminated to central level but is sent upon request whenever needed (1–5 years), and it is used for planning for HRH needs.

Performance management:

Performance monitoring/staff appraisal article 100–107 in chapter 3 of the civil service law states that the ministry of civil service in cooperation with state administrative entities is responsible for establishing performance evaluation mechanisms and standards for all public sector positions.[45,46] As for disciplinary measures/dismissal, article no. 111 of the civil service law and article no. 191 of its by-laws determine the disciplinary process and procedures that should be applied by the governmental organizations to ensure their proper functions, maintain integrity, and protect the citizens' rights. If any employee fails to perform his or her duties, disciplinary action

may be required. The sanctions stated by the civil service by-laws comprise various degrees of penalties.[45,46]

In 2005, the staff performance appraisal form was developed with support from an external consultant.[52] The performance appraisal was meant to be conducted on a yearly basis and on a clearly defined job description. Officials at the MoPHP said this assessment was done once in 2007, and staff didn't receive any feedback on the assessment. It has not been repeated. There are performance forms for local and international staff (see Annexes 8–10), however, the assessment for international staff is only done on yearly basis to renew the contracts of the international staff.

For Bani Mather, performance management for PHC seems to be decentralized; health offices have their own forms and procedures to assess health worker performance. The head of Bani Mather health offices said, "We have our own performance forms. We assess performance on a monthly basis. The assessment includes punctuality, appearance, working with colleagues, dealing with patients (satisfactory surveys), using treatment and safely guidelines, quality of care, and others."

In Bani Mather, supervision visits to PHC units and centers is also conducted usually on monthly basis but sometimes less often because of the lack of financial resources for field visits as well as the location of health facilities. Health workers receive support from direct supervisors whenever needed and receive warnings if they don't provide the required work or don't follow treatment guidelines.

PHC face some obstacles. According to the head of the Bani Mather health office, "Lack of a clear performance system at the district level makes it difficult to manage staff performance despite the fact we try to have our own performance form." In addition, the interfering of local authorities and tribal leaders influences the performance evaluation, especially when it's linked to promotion.

Section 3. Best practices related to HRM issues in other countries:

The chapter highlights best practices related to HRM for PHC with emphasis on gender sensitive strategies and challenges. A lot of countries have implemented different interventions to address shortages, especially for PHC services, however, little is known about the effectiveness of those interventions because of the complexity of the intervention and the existence of other influencing factors such as the social, political, and economic factors within which the interventions occurred. [56] Some interventions have been evaluated. Below are some of the good existing practices related to HRM.

Workforce planning and implementation:

There are a number of ways to plan and project for health workers' needs, yet, little has been found on the effectiveness of practices relating to workforce planning. Below are the descriptions, some evidence (if any) showing the advantages and disadvantages related to each model.

Table 6. Summary of Health Workforce Planning models

Model	Description	Advantage	Disadvantage
Workload Indicator of Staff Needed (WISN)	These methods are used to measure health workers' workload to determine number of workers needed to do the work needed at the health facility. Uganda, Indonesia and Mozambique have used the tool at both the central and district levels. The success of WISN methods depends first on the involvement of all stakeholders and on an understanding of how to use WISN. The bottom up approach seems to be more effective especially in decentralized settings and when used with other planning methods.[57]	Easy to measure. Feasible. Can help in re-allocating health workers based on workload.[57]	Costly. Need to be used with other models.[57]
Need-based approach	This model determines required future health	*This* HRH method is easy to use and	Difficult to determine needs.

	workers based on the current met and unmet needs of the population.[58,59,60]	can easily be used to advocate for HRH planning.[58]	May come up with unrealistic numbers and doesn't give any information on how to best distribute health workers. It doesn't take into consideration the limited resources which will be prioritized based on needs[58,59,60]
Utilization-based approach	This model determines required future health workers based on current utilization of services. This model requires information about health workers attrition, turnover, and migration.[58,59,60]	It gives an estimate based on current utilization rates which makes the projections realistic and can be financed.	It doesn't highlight difference in quality, accessibility of health services. It doesn't take into consideration changes in utilization patterns due to behavioral changes. Wrong calculation can be obtained if inaccurate assumptions have been made.[59]
Health worker-to-population ratio	This model determines current and needed doctors, nurses, and midwives ratio per 1,000 population. The method compares the project's supply, needs, and available funds. The WHO set a target of at least 2.8 per 1,000 population and this ratio has been used by many countries.[58,59,60]	Quick. Simple.[61]	It doesn't take into consideration changes in utilization or health worker mix.[59,60]

Service target-based approach	Service targets are calculated based on current health service supply. The number of staff is then determined as per productivity norms for health facilities.[58]	It is useful for the planning of small population of certain health care service. Can be used along with other models.[58]	It may rely on unreliable assumptions. It presumes that service standards can be met by health workers within the fixed allocated time.[58]
Facility-based Approach	It determines human resources based on the fixed number needed for each facility to provide health services. It aims to improve health facility capacity and ensure geographic coverage of health services.[58]	Gives detailed information on type and number of staff needed.[58]	It can't give information on the quality of services and doesn't take into consideration patients' needs.[58]

Given the crisis of the health worker shortage, there are several existing good practices followed in developing countries to overcome this problem. Pakistan, Uganda, South Africa, Zambia, Ethiopia, Brazil, and China have very successful intervention programs to overcome shortages. They started new programs where they created new or mid-level cadres such as Lady Health Worker (LHW), Extension Health Worker (EHW), CHWs, and rural doctors who are recruited from the rural community giving preference to females.[62,63,66,65] They are trained for 1–3 years (varied depending on the program). Those interventions have shown positive impact on the coverage or PHC reaching 87% in Ethiopia, in reducing child mortality and increasing life expectancy of rural Chinese, and improved PHC service such as HIV, TB, Malaria, immunization, and child care and reduction of child mortality in other countries.[62,63,64,65,66,67]

Furthermore, task shifting has been introduced or used in many countries to tackle HR shortages in Malawi, Uganda, Congo, USA, United Kingdom, Australia, Ethiopia, Brazil, Malawi, Mozambique, and Zambia. Task shifting is believed to have a positive impact and could be a potential plan for PHC in the long run.[33,68,69]

Contracting has also been shown to be an effective intervention to overcome shortage. Senegal, Kenya, Tanzania, Combodia, and Guyana have experience contracting inactive health workers via different programs including short-term contracting with plans such as the Emergency Hiring Plan in Kenya supported by a public private partnership. The impact of

intervention has led to the reopening of 122 PHC units in Senegal, the rapid hiring of 830 workers in Kenya, and successes in other countries.[56,70,71]

Recruitment and deployment:

The studies conducted in the USA and Australia showed that educational intervention and bonding schemes have been effective in retaining health workers in rural areas. However, those studies were done in developed countries meaning the effective intervention in developing countries could be questionable as the context is completely different. On the other hand, financial incentives and compulsory services have been used in South Africa and Niger, yet the impact of those interventions has been small.[72,1] (see detailed interventions in annex 11).

Additionally, other studies done in the US, Australia, Thailand, Indonesia, Ethiopia, and Rwanda showed that the intrinsic motivation, rural background, and compulsory services influenced people's acceptance to be deployed in rural areas.[73,74,75,76,77]

Retention

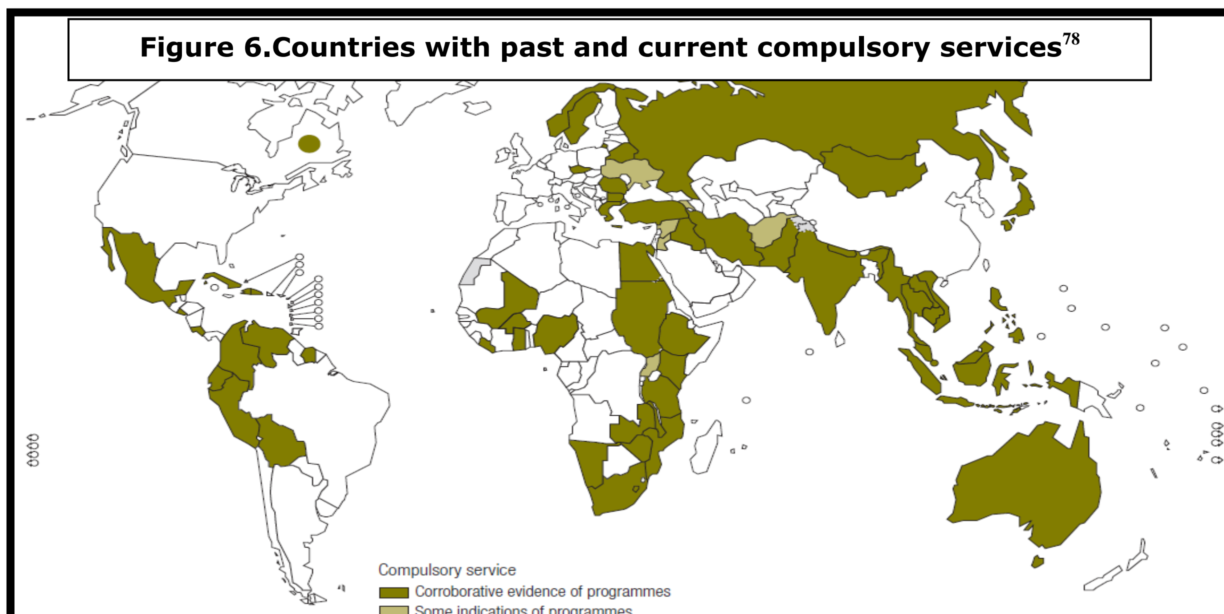
Bonding schemes, rural and financial incentives, professional and personal support, and education interventions have been used both in developing and developed countries (table 7). Most evaluated interventions are done in developed countries where they show positive impact on retaining health workers.[1]

Table 7. Retention strategy recommended intervention[1]

Category of intervention	Examples
A. Education	Students from rural backgrounds
	Health professional schools outside of major cities
	Clinical rotations in rural areas during studies
	Curricula that reflect rural health issues
	Continuous professional development for rural health workers
B. Regulatory	Enhanced scope of practice
	Different types of health workers
	Compulsory service-Bounding Schemes
	Subsidized education for return of service
C. Financial	Appropriate financial incentives
D. Professional and personal support	Better living conditions
	Safe and supportive working environment
	Outreach support
	Career development program
	Professional networks
	Public recognition measure

Frehywot et al has highlighted that compulsory services has been practiced in over 70 countries (figure 6). Bundled compulsory interventions that come with incentives—both financial and non-financial—have shown a better impact in retaining staff than compulsory services alone. The intervention's increased duration of services in rural areas ranges between 1–6 years. Nevertheless, the challenges that have been observed during the interventions are cost, turnover of health workers, lack of community support, lack of infrastructures, and human rights and management issues.[78]

Figure 6.Countries with past and current compulsory services[78]



In In certain settings, financial incentives or rural allowances used in a dozen of developing coutries showed positive improvements in performance and retention for PHC wokers.[56] Other studies that examine other policy interventions for recruitment and retention for female nurses in the rural areas in Kenya, South Africa, and Tanzania showed that the most influencing interventions for both Kenya and South Africa were financial incentives and continuous training for nurses.[79, 80] The studies show the higher the allowance, the higher is the likelihood for the nurse to choose a rural post. In Thailand, improved living conditions and health insurance were more effective in retaining nurses in rural areas.[80] What is interesting is that in either set of interventions, those with rural backgrounds are likely to be posted in the rural areas.

Working environment and conditions:

Literature is limited on effective interventions to cover all aspects of working conditions in developing countries. Below are some of the good practices related to working conditions.

Job satisfaction:

The provisions of good support, payment of salary on time, financial and non financial incentives, flexible working hours, improved working conditions, organizational support, and career development have been important factors for job satisfaction which in turn have a positive impact on health workers' productivity especially CHW for PHC services.[83] In Zambia and Pakistan, the lack of drugs and supplies for female health workers has influenced their performance, and the program has become ineffective.[71, 81] Supportive supervision, which focuses on empowering staff, has been effective in cases such as in Mozambique where the PHC workers were satisfied and dropout was minimal.[80] The case in Nigeria and Zambia was different where supportive supervision for PHC workers was not effective given the poor quality and frequency of supervision.[71,81,82]

Different countries in eastern and southern Africa, including South Africa, Angola, Kenya, Malawi, Botswana, Lesotho, Zambia, Zimbabwe, Mauritius, and Mozambique, have improved working conditions for HR. This includes the provision of better equipment, facilities security, access to Anti Retroviral Therapy (ART) of health workers, risk allowance, transport, and school education for kids,[83] yet the evaluation of those interventions on health provider productivity has been limited.

Different studies conducted in Cameroon, Ghana, Uganda, and Zimbabwe indicated that 36%–68% of health workers reported to be willing to remain in their country if the working conditions are improved, which shows the importance of working conditions in health worker retention.[84,85,86]

Career Development:

Education and training opportunities have been used in countries like Kenya, South Africa, and Thailand, which showed improved health worker retention and competency.[1,80 87 , 88] A review of 24 studies has shown that career development improved work performance within the work setting, especially for low level cadre, and poor career development could lead to staff emigration either internally or externally.[89 , 90] The issue of regulation of continuous education and its impact on improving performance is still debatable. Experience from different regions didn't show a clear indication on the effectiveness of mandatory continuous education.[91]

The existing experiences are not enough to provide options and ways of developing and implementing continuous education. However, Capacity Plus for Continuous Professional Development has made recommendations based on the evidence of existing practices. There are certain things that need to be taken into consideration to ensure the effectiveness of the program. First, there is a need to undertake continuous professional development; learning should be based on identified needs and followed up to ensure that the

learning objectives have been met; and finally, job training should be linked to medical schools to create and define a continuous professional development system.[38,91]

Health Information Management System:

A human resources information system is a very important tool used for planning, implementation, monitoring, and evaluating HRH strategies and interventions. The experiences from Malawi, Kenya, Thailand, Uganda, Rwanda, and Swaziland showed that using data from HMIS has potentially increased HRIS management's decision making for developing effective strategy.[92,93,94] The countries invested in the development of a system developed the capacity at different levels and ensured the dissemination and use of accurate data. Experience from the mainland and India, showed that the use of data is very limited in HRM because of lack of knowledge on how to use data, lack of trained staff, and coordination between all partners.[95,96]

Tanzania has a human resources Geographical Information System (GIS). The system has information on all health workers working in different health facilities in different locations, as well as information about each health facility, staffing, drugs, equipment, and more. The data at the end is visualized in maps. This system has information on almost all faith-based organizations and private sector and will be connected to the national health information system. The system has proved to be easily used for advocacy because of visualization, and the facility-based mapping helps in determining gaps in HRH.[97]

Performance management:

Performance appraisal with specific performance objectives, supportive supervision, and constructive feedback seems to be effective.[83] Pilot project in Malawi using results- oriented performance gave positive results from the pilot intervention for PHC Level.[85,86] Setting targets for health workers has improved quality of work, reduced working time and increase utilization of services.[85,86]

Experiences from Uganda, Belize, Costa Rica, El Salvador, Guatemala, Nicaragua, and Panama have indicated positive results from programs focused on performance improvement emphasizing staff empowerment and support rather than top-down oriented supervision[85]. Health workers become more connected to their supervisor and the feeling of isolation is usually reduced. It also improved relations and the linkage of different levels within the organization, which is essential for improving performance.[85,98]

Finally, the experience of Kenya has proved that the provisions of other administrative and support systems were essential to improve health workers' performance. The availability of clinical guidelines for HIV/AIDS and

malaria and continued support and feedback to PHC health workers has proved to be effective.[85]

Gender consideration:

There is very limited literature focused on gender issues relating to workforce planning, working conditions, HRIS, and performance management.[95, 99] Some countries have implemented good initiatives; however, the impacts of those strategies are not available yet as the initiatives are newly integrated in their plans.

In Kenya, gender analysis of data was presented at HRIS to determine gaps and inequalities related to continuous education opportunities, work harassment, discrimination, and other related factors that could influence job satisfaction to inform decision makers to come up with interventions to those gaps.[95] Nigeria, Uganda, and Tanzania have addressed gender planning, recruitment, and distribution in their national strategies or, as is the case in Nigeria, funded programs. As of yet, no details have been found on any existing practices.[95,100]

Chapter 4. Discussion

This chapter discusses and highlights HRH, HRM gaps within the health system and available evidence of interventions and how they relate to HRM issues with a focus on PHC within the Yemeni context.

Workforce planning and implementation:

Workforce Planning:

One on the main issues to be addressed is workforce planning. Yemen uses the facility-based approach, which is influenced by the location of health facilities that may sometimes influence geographical coverage of health services. The MoPHP seems to project needs for PHC using the national guidelines and available number of health units and center.

The Planning process in Yemen seems not very effective due to the following factors:

- Supply side and production of HRH are not linked to planning process;
- Absorption capacity of MoPHP is not taken into planning;
- The need for female health workers is not reflected; and
- The number of health workers who exits the system is not used.

This has led to HRH shortage, skill mix imbalance, gender imbalance, and mal-distribution of health workers. This is because of lack of clearly defined objectives for planning process, capacity of HRM units, lack of coordination between different stakeholders (Ministry of Education, Ministry of Civil Service, Ministry of Finance, MoPHP), and limited data on HRH which are essential requirements for workforce planning.

In the literature, different methods are used for HRH planning and projections and each method has its own advantages and disadvantages. Models such as utilization-based, need-based, and service-target approach require estimates of met and unmet needs, coverage, and data of HR, epidemiological and demographic trends, which are difficult to obtain from the health system in Yemen. The capacity of health workers to meet expected quality target services is also questionable. The application of WISN method in Yemen could be challenging given the limited financial resources of the health system and the need to use another model which makes the process time consuming.

HRH shortage is another key issue that needs to be highlighted. In Yemen HRH shortage particularly female health workers is a crucial issue within the health system especially for PHC. The HRH shortage has resulted from lack of proper workforce planning, and financial constraints. The social norm has also negatively influenced female enrollment in schools, especially in the

rural areas. Most of the girls will drop out of school after completion of primary or secondary school. Those that complete high school are not likely to continue on to higher education or to be enrolled in medical schools, which are not located near their hometowns. This influences the number of female personnel within the health system.

In 2000, Yemen has established CHW program to improve PHC services; yet, it is not properly used and utilized. The capacity of CHWs is also questionable to provide the needed quality of care. Other resource-constrained countries have good practices and similar experiences to overcome shortage which have showed success and increased coverage of PHC services such as HIV, TB, Malaria, immunization, and child care. The LHW, EHW programs required good leadership from MoPHP, coordination with training institutions and financial and political will to support such a program. The integration of such practice in Yemen can be done only if those conditions are met, and if training for CHWs is provided to ensure quality of care needed.

Task shifting has also proved to increase coverage and efficiency, and has proved to be cost-effective, especially for PHC services. Nevertheless, political and financial commitments, regulatory guidelines, the capacity of health workers, and the ability of management to provide supportive supervision are critical components that make implementation of such practice difficult within the Yemeni context.

Contracting of inactive health workers has been rarely used in Yemen despite the fact that contracting practices in other countries have been effective. The program needs coordination, good partnership and financial resources. Program implementation in Yemen is feasible since it already has experience on the ground, there are some inactive health workers, and district revenue can grant financial resources for contracting to cover salaries for contracted health workers.

Recruitment and deployment:

Recruitment and distribution of HRH especially for female personnel is another problem within the Health system which makes the provision of PHC in rural and underserved areas very difficult. This has been attributed by lack of guidelines on distribution, number and specialization of applicants, limited financial resources to approve the needed number of posts, and social norms, which makes deployment of female health workers in underserved areas very difficult. Education of people with rural backgrounds, integration of rural health in education curricula, and rotation of graduates are reasonable evidence based practices that can be applied within the health system in Yemen, as it only needs good coordination with educational institutions. On the other hand, the introduction of rural schools and use of

incentives might be challenges within the system given the limited financial resources.

Retention:

Despite the presence of some laws and legalization for retention of HR in the rural or underserved areas, those laws are no longer implemented after the decentralization of Health System and because of a lack of management capacity at the central and governorate levels to enforce existing laws. Compulsory services and financial incentives were practiced in Yemen. Although there was no study done to examine the impact of those retention strategies, the interviews with the official indicated that it helped in the retaining and deployment of health workers in PHC for the assigned duration which is in concurrence with other studies that have been done in many countries. Yet as evident from interviews, the very poor infrastructure, schooling, and housing conditions of the rural and underserved areas in Yemen make retention strategies difficult as other countries found those were prerequisites to ensure retention.

Studies showed educating people coming from rural areas can be very effective. Within the Yemen context, people coming from the rural areas are likely to work and settle in their home towns because of the attachment to their home towns as was the case in other countries. Nevertheless this could be challenged by other factors like poor working conditions, limited supportive supervision, and limited career development opportunities.

On the other hand Professional and personal support in Yemen seems weak despite the fact that good practices were seen in the presence of an HRH-funded project that provided financial support, supportive supervision, and training of health workers in Taiz and Lahj, yet an impact on retention has not been seen yet. The experience from other countries in providing professional and personal support has led to an increase in retention of up to four years. The incorporation of personal and professional support to ensure the retention of health workers in Yemen might be challenging given the limited management capacity at district and governorate levels and financial commitment.

Working environment and conditions:

Job satisfaction:

There is no policy for working condition within the system. Health system in Yemen is also facing poor working environment and conditions particular for PHC. The only study conducted revealed that PHC health workers are not happy with their working environment. The study showed that there are number of interplaying factors that influence working conditions, which are similar to findings from other countries. However, MoPHP didn’t pay much

attention to any of those factors despite the fact that those factors influence worker productivity and performance. Those factors were realized by other countries and have influenced the start of different interventions to improve working conditions. The introduction of such interventions would burden the health system due to the financial and political commitment needed to deal with all aspects of working conditions.

Work security and safety:

In spite of the presence of some safety and security guidelines, yet the system miss gender-related guidelines for harassment, violence, and abuse. The enforcement of the existing laws is also ambiguous. There is also discrepancy in the availability of security and safely measure between different PHC units and centers because of limited resources and management of District Health Management Team (DHMT) to ensure availability of all essentials at the PHC. Despite the fact that there is limited evidence on the impact of interventions to improve work security and safety for PHC. The application of those interventions is feasible within the health system since the measures are already applied yet, as evident from Bani Mather, needs proper management system at the district level and enforcement and support from the central management.

Continuous education:

Continuous education and career development do exist to limited extent within the health system in Yemen. Number of fellowships is granted every year for health workers with some prerequisites. While continuous training for PHC is done by NGOs and based on the organization running projects. However, the whole process is done with no clear plan or strategy. The reason is that existing practices are done with neither clear learning objectives, nor identified needs and therefore, don't have an impact on performance. Most of the workshops done are not relevant to health workers' practice; people will attend the workshop to obtain per diem which is also the case in other countries. The evidence from other countries reveals that a clear strategy on continuous education and career development is essential to improve performance, competencies, and retention of health workers especially those at PHC level, which is feasible within the context of Yemen. Nevertheless, a career development program cannot be mandatory, as it requires a strong regulatory system to monitor and regulate the whole process. Yemen doesn't have the capacity to undergo such a practice within the decentralized context where people at the lower level don't have the capacity and the support and supervision at the central level is very minimal or absent.

Health information management system:

HRIS system in Yemen has some gaps. First, there is no policy on HRIS. Second, data on HRH is not collected and disseminated regularly and the system misses essential information that is needed for HRH Planning. The evidence from literature is limited however; some countries have utilized data for the development of evidence-based interventions and strategies and have improved HRM. The application of such strategies in Yemen would be challenged by the commitment of MoPHP, the limited number of personnel working in the system, a lack of connection between different levels, and financial constraints.

The GIS-HR experience from Tanzania presents clear benefits which linked HRIS for different partners at different levels; however the implementation of such a strategy in Yemen might not be practicable given the limited financial resources available to get such an advance system and the lack of capacity and infrastructure to install and use such system.

Performance management:

The function of performance management seems to be neither well-designed nor organized at all levels though evidence by Bani Mather shows some encouraging efforts at district level. There is disconnection between the central and local levels within the decentralized context due to a lack of the function of supportive supervision, financial constraints, location and number of health facilities. Most of the supervisor's visits are top down approach and take punitive action for poor performance rather than providing supportive supervision for health workers, which is aligned with findings from other countries. Performance management is very essential to ensure performance, productivity of health workers, and the quality of work being provided.

Shifting toward a results-based performance in Yemen could give promising results provided building the capacity of management to provide supportive supervision for health workers and PHC, to ensure the quality of care needed. The use of performance improvement is crucial to improve health workers' productivity for PHC. The experience from other countries showed positive results. However, the implementation of such a strategy in Yemen could be challenged by the capacity of DHMT and staff, availability of treatment guidelines and lack of supervision and support from the central level. The intervention would be feasible if the government can give full commitment to provide support to local team at PHC.

Gender consideration:

The system in Yemen doesn't highlight gender issues either in their policies nor in HRM practices despite the importance of female health workers for

PHC, especially in the rural areas. The evidence from the literature is also limited, however, the initiative of using data from HIMS to address gender issues like number of female health workers, gender continuous education opportunity, work harassment, and discrimination. It's initial step to address gaps for HRM related to workforce planning, working conditions, performance, and to address special needs and to ensure equity and meet population's need.

Table 8 below summaries the situation in Yemen, best practices, and challenges that might face the system for each possible intervention.

Table 8. Yemeni HRM Practices, policies, challenges and good practices worldwide

HRM issue	Practice	Policy	Good practices	Challenges
Workforce planning				
Planning	Health facility-based planning to prepare for projection	National guidelines for HC/HU	WISN	High cost, time consuming
			Workforce to population ratio	Desired ratio to be set on regional ratio of 4 will make it difficult to achieve
			Utilization-based approach	To define needs in terms of coverage and quality might be difficult
			Need-based approach	Needs data that doesn't exist within the system
			Service target-based approaches	Capacity and skills of health workers are questionable to set targets, and data required might not be available/not accurate
Strategies for HR shortage	N/A	N/A	Task shifting	Capacity of health workers; Acceptance and workload; availability of laws
			Community health workers or extension health workers	Financial resources; Training and continuous education of community health workers
			Produce mid-level cadre	Limited financial resources; Requires long time,

				and capacity of training education is unknown; Cost effectiveness is not evident
Recruitment and deployment	Recruitment of approved vacancies is done at the central level, then distributed equally to governorates. Distribution done at the district level based on population density, accessibility, form of PHC facility, and whether facility is well equipped or not	No specific policy for HRH	Contracting	Financial constraints; Sustainability is questionable
			Public private partnership & contracting	Financial constraints; Sustainability due to limited number of grades/posts
Retention	No practices are currently done to retain staff with some exception of some interventions at the district level, financial allowance, and housing, and some past practices of compulsory services and rural allowance.	Compulsory services Financial incentives	Financial intervention: Rural allowance; Increased salaries	Limited financial resources, and poor working condition
			Regulatory bonding scheme, compulsory services (condition of services, compulsory with incentive, compulsory without incentives)	Difficulty in reinforcement of laws, financial constraints, coordination with other sectors might be difficult
			Education: Rural curriculum, clinical rotation, rural medical school, students with rural backgrounds, continuous medical education	Financial constraints, lack of regulations

			Personal and professional support: working conditions, supportive supervision	Lack of capacity, poor coordination with other sectors, financial constraints
		Working condition		
Job satisfaction	No mechanism to determine level of job satisfaction	N/A	Importance of factors that influence job satisfaction, and what health workers want and need	Capacity and commitment to give full attention to different dimensions related to job satisfaction
Career development	No clear career development plan	N/A	Career development and continuous education program (Mandatory and non mandatory)	Difficult to identify needs for individuals and institutions, financial resources
Equipment and supplies	District health offices try to provide the needed equipment	N/A	Provision of equipment	Financial constraints and availability of funds
Workplace security & safety	Availability of guidelines for workforce safety	N/A	Security, access to ART, transport	Lack of awareness, lack of financial resources
Living condition	No practices have been done	N/A	Loans, housing, grants for family education, insurance, school education for kids	Lack of financial resources, and lack of coordination with other sectors
HRIS	Development of data base for HR	N/A	Development of HRIS	Knowledge to use data, lack of trained staff, coordination of different stakeholders, capacity of health workers, financial constraints
		Performance management		
Performance appraisal	System is not fully developed and applied	Not specific for HRM	Participatory performance management, performance improvement	Availability of defined job description, capacity of supervisors, financial constraints.
Supportive	Top down	N/A		Lack of capacity at

supervision	supervision is mostly practice and is not done regularly		Empowering health workers, availability of guidelines, support	district and governorate levels; Lack of support from central level
Providing feedback	No feedback is being provided to health worker	N/A	Continuous constructive feedback	Lack of capacity at district and governorate level; Lack of support from central level

Chapter 5. Conclusion and recommendations

This thesis analyzed HRM management for PHC in Yemen and highlighted gaps, challenges within the system, and good practices from other countries to identify how best to use existing HR to provide required PHC services within the decentralized context. The analysis revealed that the HRH situation in Yemen has many gaps at PHC level.

Yemen is facing a lot of challenges, which include HRH shortage, skill mix imbalance, and gender imbalance, geographical mal-distribution in underserved and rural areas. The system seems to have some good policies and strategies related to HRM, which are not usually enforced within the system. Additionally, there are policy gaps related to female health workers, distribution and recruitment, workplace security and safely, continuous education, job satisfaction, HRIS, and performance management of health workers at PHC.

The system also had some good practices, such as retention, contracting, experience in the provision of personal and professional support, and performance but those seem not to have been compiled. There is also a lack of capacity to enforce the existing policies. On the other hand, the system has some gaps in HRH planning, recruitment, distribution, working conditions, performance management, and HRIS that are important to plan for HRH, to ensure a good management system for the PHC workforce, and to provide the required PHC service. This has been influenced and challenged by:

- Lack of coordination between different stakeholders (MoPHP, Ministry of Education, Ministry of Civil Service, Ministry of Finance, NGOs),
- Financial constraints,
- Poor capacity of the management team at different levels
- Lack of political will and commitment

Below is a list of evidence-based recommendations that can be used to address the existing gaps and limitations within the health system. Implementation of such activities can improve existing HRM policies and practices for PHC and aim to improve responsiveness to population needs and improve health status at the district and country level.

Policy makers – Strengthen HRM policies:

- The development of policies related to missing HRM functions, including deployment, working conditions, personal and professional support, harassment and violence, performance management and supervision system.

MoPHP – Invest in capacity building of HRM at all levels:

- Build the capacity of the HR management team at different levels to enforce existing laws, and coordinate functions of HRH, HRM to ensure proper HRH management.

MoPHP – Approaches to improve existing planning:

- Coordinate with all stakeholders, including ministry of finance, ministry of civil service, governorate and district health offices, universities, local and international organizations, and other partners to improve existing HRH planning practice under clearly defined objectives.
- Improve HRIS connection between different levels, and build capacity of staff on data collection needed for planning, such as migration, attrition, retirement, gender, and ensure regular updates and dissemination to improve the HRH planning process.

MoPHP – HRM short term activities to expand HRH numbers:

- Pilot contracting option in two underserved governorates under the leadership of MoPHP with the provision of required training of contracted health workers to ensure quality of worker needed for PHC. The contracting can be scaled up if it shows good results.

MoPHP – HRM long term activities to expand HRH numbers, distribution, and retention:

- Utilize CHW program with the provision of required training, supervision, and performance management.
- Coordinate with medical schools to increase the enrolment of students from rural backgrounds. Medical schools could have 3–4 seats for students, especially females coming from different governorates to ensure a good number of graduates from different districts to be deployed after graduation.

MoPHP - Approaches to improve working conditions:

- Develop a clearly defined career development plan based on HR needs at PHC Level.
- Advocate improving schooling and infrastructure with the assigned ministries.

MoPHP – Approaches to improve performance management:

- Pilot result-based performance in two governorates under the leadership and supervision of MoPHP to determine the success of intervention.

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Annex1 Functions of decentralized system

Table 9.Decentralization functions within the health system- Yemen[26,27,28]

Responsibility No.	Financial Resources	Human Resources	Service Organization Function	Access and governance Rules to Governorate
1.	District and governorate health directors have authority over financial resources	Governorate and district directors can hire and transfer staff based on needs and to improve services	MoPHP is responsible for planning and regulation and operational management of curative health services	Local governments are responsible for identifying exempted population that has access to minimum essential package
2.	The introduction of user fee/drug fee has generated some financial income to the district level to support the operational cost and drug cost of health facilities at the local level	The governor and some officials at the central level have the power to recruit and deploy staff	Devolution to governorate level Roles: Monitoring and regulation oversight of cost sharing schemes - contracts and licenses Monitoring of referral system within the governorate	Different community representatives, local authorities, district health management team (DHMT) are involved in setting objectives, targets, planning, discussion, supervision, and accountability
3.			Delegation health offices	The communities are involved in setting priorities, revenue generation and

				collection, and setting exemptions for the poor of the targeted community
4.			Hospital autonomy to ensure efficient management and quality services of hospitals	Local council and governorate health office are responsible for ensuring accountability and transparency

Annex 2 Interview guide- English

Background information	
Profession:	**Post:**
Sex:	**Year of experience:**
Location:	**Number:**

1. Health workforce planning and implementation:

- How do you plan for health personnel?
- What is the existing PHC workforce planning system at the central/ governorate-district?
  - How is it integrated into the overall national / governorates strategy?
  - How is it implemented? Can you give examples?
- What are the good practices?
  - How does it work? Give example, please.
  - What are the challenges? How do you think you can overcome those challenges? Give example, please.
- What are the existing PHC health workforce recruitment and deployment policies (focus on female health workers)?
  - How is it implemented? Can you give examples?
  - How does it work? What are the good practices? Give example, please.
  - What are the challenges? How do you think you can overcome those challenges? Give example, please.
- How do you plan immediate and long-term retention planning? How do you retain staff working especially female health workers in underserved /rural areas?

- How does it work? What are the good practices? Give Example please.
- What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

2. Work environment and condition:

- What practices are available and in place to have positive working environment? What is being done in practice at the governorates/ district level?
  - How does it work? What are the good practices? Example please.
  - What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.
- What do you do when they have an injury at work?
- What workplace policies / practices are in place to protect health workers, at the health facility level? First general than probe for violence, and infectious disease like HIV/ Hepatitis
  - How are they implemented? Can you give example, please?
  - How does it work? What are the good practices? Example please.
  - What are the challenges? Why? How you can overcome those challenges? Give example?
- What do you know about the level of motivation of your staff? How? Any mechanism? Give example please.
- What is in place for continuous development of health worker skills and knowledge? What are the existing processes, if any? How are they implemented? Give example please.
  - How does it work? What are the good practices? Example please.
  - What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

3. Human resource information system:

- What HRH information is usually collected? By whom?

- How often? How is it collected?
- How this information is used for planning? By whom?
    - What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

4. Performance Management

What policies / practices to support health workers performance? How are the implemented?

- How does it work? Example please.
- What are the good practices? What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

What policies / practice to supervise health workers? How are the implemented?

- How does it work? Example please.
- What are the good practices? What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

- What policies /practices to provide organization support for female health workers? How are the implemented?
    - How does it work? What are the good practices? Example please.
    - What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.
- How do you monitor performance of health workers? How often? By whom?
    - ? How does it work? What are the good practices Example please.
    - What are the challenges? Why? How do you think you can overcome those challenges? Give example, please.

Interview guide (Arabic translation)

معلومات اساسية	الوظيفه:
المهنه:	الجنس :
عدد سنوت الخبره	الموقع:
رقم الاستبيان :	

1. **تخطيط القوى العاملة الصحية وتنفيذها:**

- كيف يتم التخطط لموظفي الصحة؟
- ما هو نظام التخطيط للقوى العاملة للرعاية الصحية الأولية الموجودة علي المستوى الرائيسي- محافظة-المديريه؟
  - كيف يتم دمجها في الاستراتيجية الوطنية / المحافظات بشكل عام؟
  - كيف يتم تنفيذها؟ يمكنك إعطاء أمثلة؟
- ما هي الممارسات الجيدة؟
  - كيف يعمل؟ إعطاء المثال، من فضلك.
  - ما هي التحديات؟ كيف يمكن التغلب على تلك التحديات؟ إعطاء المثال، من فضلك.
- ما هي سياسات توظيف القوى العاملة الصحية الرعاية الصحية الأولية القائمة وسياسات التوزيع (التركيز على العاملات الصحيات)؟
  - كيف يتم تنفيذها؟ يمكنك إعطاء أمثلة؟
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ إعطاء المثال، من فضلك.
  - ما هي التحديات؟ كيف كنت تعتقد انك تستطيع التغلب على تلك التحديات؟ إعطاء المثال، من فضلك.
- كيف يتم التخطط لاستبقاء الموظفيين (الخطط الفورية والطويلة الأجل)؟ كيف يمكنك الحفاظ على الموظفين العاملين وخاصة العاملات الصحيات في المناطق النائيه / الريفية؟
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ يرجى إعطاء مثال.
  - ما هي التحديات؟ لماذا؟ ؟ كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.

2. **بيئة العمل وشرط**:

- ما هي الممارسات لتوفيير بيئة عمل إيجابية -؟ ما هي الممارسات التي يتم القيام بها في المحافظات / المديريات؟
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ يرجى اعطاء مثال.
  - ما هي التحديات؟ لماذا؟ كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.
- ماذا تفعل عندما تحصل إصابة في العمل

- ما هي السياسات / الممارسات في مكان العمل المعمول بها لحماية العاملين في مجال الصحة، على مستوى المرفق الصحي؟ بشكل عام
- ماهي السياسات / الممارسات في مكان العمل المعمول بها لحماية العاملين من العنف، والأمراض المعدية مثل فيروس نقص المناعة البشرية / التهاب الكبد الوبائي
  - كيف يتم تنفيذها؟ يمكنك ان تعطي المثال، من فضلك؟
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ يرجى سبيل المثال.
  - ما هي التحديات؟ لماذا؟ كيف يمكنك التغلب على تلك التحديات؟ إعطاء مثال؟
- ماذا تعرف عن مستوى التحفييز للموظفين؟ كيف؟ أي آلية؟ يرجى إعطاء مثال.
- ما هو السياسات /الممارسات للتطوير المستمر لمهارات العاملين الصحيين والمعرفة؟ ما هي العمليات القائمة، إن وجدت؟
  - كيف يتم تنفيذها؟ يرجى إعطاء مثال.
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ يرجى سبيل المثال
  - ما هي التحديات؟ لماذا؟ كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.

3. **نظام معلومات الموارد**:

- ما هي المعلومات التي تم جمعها صاحب عادة؟ على يد من؟
- كل كم(الفتره الزمنيه)؟ كيف يتم جمعها؟
- كيف يتم استخدام هذه المعلومات للتخطيط؟ على قبل من؟
  - ما هي التحديات؟ لماذا؟ كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.

4. **اداره الأداء**

- ما هي السياسات / الممارسات لدعم أداء العاملين في مجال الصحة؟ كيف يتم تنفيذها؟
  - كيف يعمل؟ يرجى سبيل المثال
  - ما هي الممارسات الجيدة؟ ما هي التحديات؟ لماذا؟ كيف كنت تعتقد انك تستطيع التغلب على تلك التحديات؟ إعطاء المثال، من فضلك.
- ما هي السياسات / الممارسة للإشراف العاملين الصحيين؟ كيف يتم تنفيذها؟
  - كيف يعمل؟ يرجى سبيل المثال.
  - ما هي الممارسات الجيدة؟ ما هي التحديات؟ لماذا ؟كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.
- ما هي السياسات / الممارسات لتقديم الدعم العاملات الصحيات؟ كيف يتم تنفيذها؟
  - كيف يعمل؟ ما هي الممارسات الجيدة؟ يرجى سبيل المثال.
  - ما هي التحديات؟ لماذا؟ كيف كنت تعتقد انك تستطيع التغلب على تلك التحديات؟ إعطاء المثال، من فضلك.

- كيف يمكنك مراقبة أداء العاملين في مجال الصحة؟ كيف كثير من الأحيان؟ على يد من؟
  - كيف يعمل؟ ما هي الممارسات الجيدة المثال من فضلك.
  - ما هي التحديات؟ لماذا؟ كيف يمكن التغلب على تلك التحديات ؟ إعطاء المثال، من فضلك.

Annex 3 Consent Form

Purpose:

My Name is Naden Al-hebshi, master student at Royal Tropical Institute. I am doing my thesis master on Human Resources for Health with focus on Human Resources Management for Primary Health Care in Yemen to inform policy makers, and Ministry of Health officials to address gaps in Human resources polices and strategies related to Primary Health Care.

Interview procedures:

If you agree to be interviewed, the interview will take 60 minutes and will be conducted in private place to ensure your privacy and confidentiality. I would like to explore Human Resources Management policies, strategies, practices with focus on Primary Health Care services. The interview will be recorded using notes and audio recorders. Everyone will have a code to ensure confidentiality. Notes and tapes will be locked to keep confidentiality and will be accessible for to researcher only. Those will be destroyed after 1 year of the research.

Rights, risks and benefits:

We want you to share your experience in Human Resources for Health in Yemen. However, if you feel at any time not to answer or disclose or discuss any of the issues raised, you have the right to refuse to answer or to withdraw without giving any justification for refusal.

You might not benefit directly from the research, but your participation will contribute to have better understanding of Human Resources Management System for PHC in Yemen.

Results:

Results will be share with you at the end of research.

Consent

Do you have any further question?

Do you need any further clarification?

Do you agree to proceed with the interview? ◻ Yes ◻ No

Annex 4 Sana'a Governorate Background:

The governorate is administratively divided into North-west, West, and South-east Regions, each region is divided into a number of districts.[43] It's divided into 16 districts and 149 sub-districts, 2105 villages.[43] Major demographic and health indicators are shown in table 4 below.

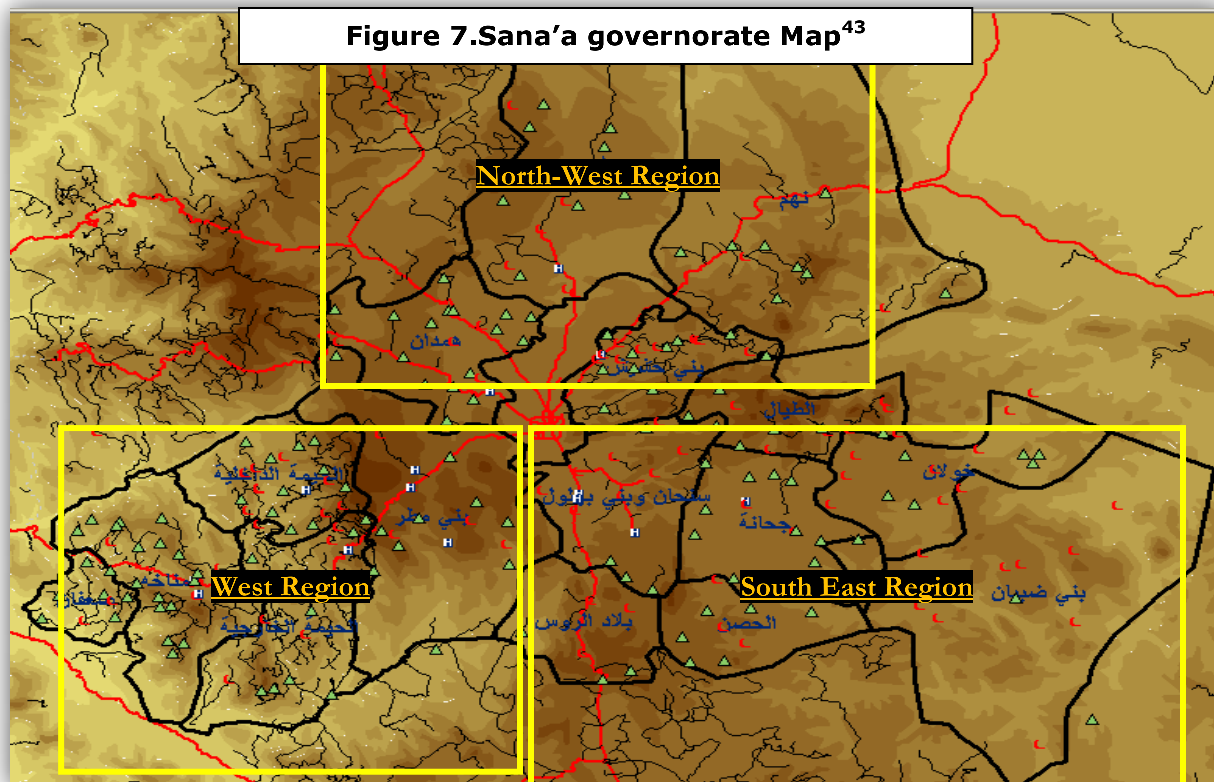

Figure 7.Sana'a governorate Map[43]

10 . Major demographic and health indicators- Sana'a governorate Table

Total Population (2004)	918343
Deliveries by skilled birth attendance (2009)	9%
BGC vaccination coverage (2009)	64%
Measles vaccination coverage (2009)	74%
Birth rate (2009)	2.6%
Growth Rate (2010)	2.07%
Crude death rate (per1000)	9
Infants mortality rate (per 1000)	77.7
Under five mortality rate (Per 1000)	92.3

Annex 5 Number and qualification of different cadre within the health system-2012

Table 11. Number and qualification of different cadre within the health system-2012[34]

Cadre	Qualification	Number
Specialized Doctors	PhD, Masters, Diploma	2,623
General Practitioner	Bachelor Degree	5,787
Medical Assistant	Diploma	5,601
Nurses	Bachelor Degree, diploma, one year practical	8,163
Midwives	Diploma, and three year certificate	6,570
Midwives supervisor	Diploma (three years)	36
Midwives trainers	Bachelor Degree	93
Health educators	One year certificate	1,272
Technicians	Bachelor Degree	776
Technicians	Diploma	6,228
Pharmacist	Bachelor Degree	834
Pharmacist	Diploma	10,920
Dentist	Bachelor Degree	1,503
Dental Technicians	Diploma	874
Dental assistant	Diploma	543
Anesthesiologist technicians	Diploma	406
Sub-total	**-**	**52,267**
Management and support staff	Various	10,880
Total	**-**	**63,147**

Annex 6 Distribution of health worker by governorate

Table 12. Percentage distribution of health workforce by governorates[44]

	Population	Physicians generalists%	Physicians specialists%	Nurses%	Midwives %	Dentists %	Pharmacists %	Laboratory %	Medical Equipments tech & public	Management and& Support workers %	Other %	TOTAL %
Head Quarter	-	2.6	5.8	0.7	0.4	1.9	5.2	5.2	9.1	9.6	1.5	3.8
Capital Sana'a	9.5	18.8	34.6	9.3	2.6	17.0	11.6	10.1	15.5	10.8	6.2	10.7
Sana'a	4.5	3.7	0.6	2.6	3.5	5.0	5.6	3.7	2.9	3.1	4.1	3.3
Aden	3.1	7.8	28.1	10.1	8.1	8.8	10.8	9.7	1.7	12.6	3.9	9.7
Taiz	12.0	12.2	4.2	7.5	10.7	7.6	10.4	10.4	6.7	7.6	7.6	8.4
Al Hodeida	11.0	4.9	2.3	7.6	7.4	5.2	7.3	6.5	1.0	3.2	6.1	5.7
Lahj	3.6	6.1	4.8	8.2	8.1	3.6	3.5	5.2	7.1	5.9	5.6	6.4
Ibb	10.6	6.3	2.8	5.9	8.2	5.3	7.0	6.7	5.8	5.6	6.0	6.1
Abyan	2.2	5.0	0.8	7.3	5.2	3.1	4.3	4.1	3.9	4.3	4.6	5.1
Dhamar	6.8	3.2	1.3	3.1	4.1	6.8	3.9	3.0	4.8	4.6	7.7	4.3
Shabwah	2.4	3.5	0.8	5.3	2.6	5.1	2.1	4.6	0.9	6.4	4.4	4.6
Hajjah	7.5	2.4	0.7	2.7	6.0	4.0	4.4	3.9	4.1	2.7	6.0	3.6
Al Baida'a	2.9	2.4	0.8	1.9	2.8	3.3	3.1	2.6	1.5	1.6	3.4	2.3
Hadramout	5.2	9.8	8.6	10.9	8.5	9.0	5.6	9.2	16.1	9.5	8.9	9.5
Sa'adah	3.6	1.3	0.6	1.2	1.9	2.3	3.4	1.4	2.3	1.5	3.8	1.9
Al Mahweet	2.5	1.4	0.2	2.0	3.2	1.9	2.0	2.0	3.3	1.4	2.4	1.9
Al Mahera	0.5	1.2	0.1	3.0	1.3	1.7	0.9	0.8	1.6	1.0	1.5	1.6
Al Jawf	2.2	0.5	0.1	0.4	1.6	1.6	0.9	0.6	0.1	3.3	2.4	1.5
Amran	4.3	2.5	0.8	2.8	5.5	1.5	2.4	4.1	2.6	1.8	4.6	3.0
Al Dhala'a	2.4	2.4	1.3	3.3	3.7	2.2	2.8	2.7	4.6	0.5	3.2	2.5
Raimah	2.0	0.4	0.1	1.4	1.9	0.6	1.3	1.1	2.3	0.8	2.7	1.3
Marib	1.2	1.6	0.6	2.7	2.6	2.5	1.8	2.4	1.9	2.2	3.6	2.5
Total %	100	100	100	100	100	100	100	100	100	100	100	100
The total	22,196,608	4590	1597	12227	4044	880	2336	2962	689	10539	7697	47561

Annex 7 Training output

Table 13. Training outputs in the health training institutions by 2003-2007[44]

Cadre being trained	Actual Annual Outputs				Total output
	2003 2004	2004 2005	2005 2006	2006 2007	
Physicians	660	675	587	480	2402
Nurses	314	496	318	407	1535
Midwives	173	246	314	353	1086
Dentists	124	376	311	402	1213
Pharmacists	638	936	998	1379	3951
Laboratory workers	462	728	687	966	2843
Environnent & public health workers	53	46	18	61	178
Community health workers	0	0	0	0	0
Other health workers	930	975	789	1305	3999
Health management and support workers	8	30	0	49	87
Total	3362	4508	4022	5402	17294

Annex 8 Staff performance appraisal form

Staff Performance Appraisal Form (Management staff)

I. Introduction

The objective of this appraisal is to assist the MoPHP and its general directorates / departments in achieving their operational goals and improving overall performance. The appraisal is to be conducted on a regular basis, i.e. 1 per year in a meeting with the staff member and his/her direct supervisor. The filled-in appraisal form will document the meeting. A copy is to be kept in the personnel record.

Ideally, the Staff Appraisal should be based on

- *A defined Job description and / or*
- *Individual or Departmental Work plan.*

Nevertheless, it is possible to conduct the staff appraisal without existing job descriptions and work plans. In this case, the appraisal will be based on the jointly defined core tasks and responsibilities of the staff member – viz II. *Current status of tasks and responsibilities* and define the priorities for future appraisal in part IV. Perspectives and Priorities

Name and Title of Staff member's Position	
Organisational Unit of the Position (general directorate, department, Section, Unit)	
Staff Member working at the Position since (year/month)	
Name and Title of Evaluator (= direct supervisor)	

II. Current Status of Tasks and Responsibilities

Core Tasks of the Job / Position *(as per Job Description / Work plan)* ***or Currently Assigned Tasks***

Main Responsibilities / Authorities of the Job / Position

III. Assessment of Competencies

Key - please use categories A, B, C, D and indicate the performance in writing by using the key – words in the left column.	
A =	Exceeds expectations in almost every part; outstanding performance
B =	Exceeds expectations in many parts; good performance
C =	Fulfils expectations; satisfactory performance
D =	Does not fulfil expectations in many parts; unsatisfactory performance

Staff Performance Appraisal Form (Management staff)

Competency Areas	Aspects / guiding questions for Appraisal	A	B	C	D	Justification / Narrative Description	Agreed Activities until the next appraisal (What, When, Who)
TECHNICAL SKILLS As required for the position: (PLEASE SPECIFY:)							
ANALYTICAL SKILLS	Problems and Causes identified?						
PLANNING AND CONCEPTUAL SKILLS	Problems solved? New ideas tested? Planning realistic?						
ORGANISATIONAL SKILLS	Proper organisation of activities? Tasks delegated, monitored & evaluated? Staff supervised?						
FINANCIAL MANAGEMENT SKILLS	Realistic cost estimates? Keep within the budget? Compliance with financial regulations?						
PERSONALITY	Convincing personality? Reliable / Accurate? Initiative / takes responsibility?						

Staff Performance Appraisal Form (Management staff)

Competency Areas	Aspects / guiding questions for Appraisal	A	B	C	D	Justification / Narrative Description	Agreed Activities until the next appraisal (What, When, Who)
COMMUNICATION / TEAM SKILLS	Share information & ideas with colleagues, staff? Keeps agreements?						
REPORT WRITING SKILLS	Adequate Content and Writing Style? Clear Structure and Layout?						
ARABIC LANGUAGE SKILLS	Oral Writing						
ENGLISH LANGUAGE SKILLS	Oral Writing						
OTHER RELEVANT SKILLS: PLEASE SPECIFY:							
OVERALL JOB ACHIEVEMENT	GOALS ACHIEVED? (EFFECTIVENESS)						
	With appropriate Quality?						
	Within Time Schedule?						

Staff Performance Appraisal Form (Management staff)

VI. Perspectives and Priorities

Additional Comments

From the Staff Member - such as proposals on how to improve skills (Training, Coaching etc.) or use them in a better way (new tasks, Job rotation etc.).

From the Assessor – such as proposals on how to improve skills (Training, Coaching etc.) or use them in a better way (new tasks, Job rotation etc.).

Agreed Priority Tasks and Targets for the next 12 Months

Agreed Responsibilities / Authorities for the next 12 Months

Date: Signature of the Staff member: Signature of Supervisor:

Annex 9 Performance evaluation for international staff

epublic of Yemen
Ministry of Public Health
الرقم (   )
التاريخ . / / ٢٠م
الفترة : ....

الجمهورية اليمنية
وزارة الصحة العامة والسكان
قطاع

استمارة التقرير الربعي لاداء الكادر الصحي الاجنبي باليمن

المحافظه	المديريه	الزمام السكاني	اسم المرفق	القسم	نوع التعاقد	جهة التعاقد	جهة الاستقدام	الجنسيه	رقم الجواز

الاسم	الوظيفة التي يشغلها	تاريخ شغلها	المؤهل	التخصص	تاريخه	آخر برنامج تدريبي	تاريخ الميلاد

التقويم الشخصي للاداء (ممتاز) (جيد جداً) (جيد) (ضعيف)

العنصر	التقدير	العنصر	التقدير
المظهر العام		الالتزام بالاختصاصات وحدود العمل المسموح بها للطبيب	
الالتزام بمواعيد العمل الرسمية		القدرة على تقييم طرق العلاج المستخدمة وتحديد العلاج المناسب	
القدرة على العمل بروح الفريق		القدرة على تطوير اساليب العمل و متابعة ما يستجد في مجال التخصص	
الاحترام للعادات والتقاليد للمجتمع		الالتزام بالحفاظ على حقوق المريض بالسريه والخصوصيه	

التقويم الوظيفي للاداء

الشهر	ساعات العمل باليوم	عدد ايام الحضور	عدد ايام الغياب	عدد مرات المرور والمتابعة بالاقسام	عدد حالة عدم الاستجابة للإستدعاء	عدد اليمنين العاملين معه	عدد المترددين عليه بالعيادات	نسبة دقة التشخيص	مدى قدرته لتحديد خطة العلاج

التقويم المهني للاداء

الشهر	عدد العمليات الجراحيه	عدد الخطأ	عدد الوفيات	عدد الرقود	عدد الدخول	عدد الخروج	متوسط الاشغال لسرير	معدل الوفيات	

نؤكد ان ماورد اعلاه تعكس الصوره الحقيقه والفعليه للواقع العملي للكادر الاجنبي وعلى مسئوليتنا صحة ذلك

مدير المرفق الصحي

مدير عام مكتب الصحه والسكان بالمحافظة

1/2

Annex 10 Supervision form for HC/HC-PHC

Republic of Yemen
Ministry of Public Health and Population
SANAA Health Office

الجمهورية اليمنية
وزارة الصحة العامة والسكان
مكتب الصحة العامة والسكان
محافظة صنعاء
إدارة الخدمات الطبية والمساعدة

استمارة النزول الميداني للأشراف على المرافق الصحية

اسم المرفق / .... نوع .... مديرية / ....

يوم الزيارة / .... التاريخ / / 20م وقت الزيارة الساعة / ....

بيانات الكادر العامل في المرفق :-

البيــــان	التـقـيـيــم
حافظة الدوام	توجد ☐ لا توجد ☒
نوع الحافظة	يومية ☐ أسبوعية ☐ شهرية ☐ يدوي ☐ مطبوع ☐
شامل كل الموظفين من واقع كشف الراتب	شامل ☐ غير شامل ☐ ملاحظه........................
عدد الأسماء في الحافظة	الإجمالي ( ) المتواجدين أثناء الزيارة ( ) الغياب ( )
معدل الالتزام بالدوام	%( )
الزى العام للكادر	حضري ( ) القبلي ( )
الزى الوقائي (دجلة بيضاء)	توجد ☐ لا توجد ☒
المظهر العام للكادر	لائق ( ) غير لائق ( )
التفويض في الدوام عند غياب مدير المرفق أو أحد مشرفيه	يعمل به ☐ لا يعمل به ☐ مصدر التحقق (التكليف) يوجد ☐ لا يوجد ☐

☑ الكادر الصحي والإداري والمساعد المتواجد أثناء الزيارة بالمرفق الصحي :-

الكادر	أطباء		مساعدو أطباء		تمريض		مختبرات		صيدلة		قابلات	مرشدات / مرشدون		إداريون		حارس/ فراش
	ذ	أ	ذ	أ	ذ	أ	ذ	أ	ذ	أ		ذ	أ	ذ	أ	
العدد			١		١		—		—	—	١		١			—

☑ **العيادات والأقسام الموجودة في المرفق :-**

العيادات –الأقسام	السجل		المظهر العام			تسجيل البيانات		عدد الحالات	عدد الكادر العامل	الزى الرسمي	ملاحظه
	يوجد	لا يوجد	جيد	متوسط	ضعيف	كامل	جزئي				
								٢	١		
									١		
								٦	٢		

خليل الضبيبي

1

المختبرات الطبية	تعمل ☐ لا تعمل ☒ . الفحوصات التي تعمل : دم عام ☐ أمصال ☑ كيمياء ☑ طفيليات ☒ هرمونات ☒ مزارع ☐
أشعة X-ray	تعمل ☐ لا تعمل ☒
الطوارئ العامة	يوجد سجل حوادث ☐ سجل مريض ☐ أدوات جراحية وإنعاشية ☐ أكسجين ☐ تبخير ☐ جهاز شفط سونل ☐ أدوية الطوارئ ☐ نقاله مريض ☐ يتم استدعاء أطباء من خارج القسم ☐ سيارة الإسعاف ☐

☑الخدمات الطبية التي تقدم في المرفق الخدمات المستحدثة :-

....

....

....

☑البرامج	التحصين	يوجد ( ) لا توجد ( ) معدل الإقبال .... الثلاجة تعمل ( ) لا تعمل ( ) حرارة الثلاجة وقت الزيارة :........
	الصحة الإنجابية وسائل تنظيم الأسرة :	يوجد ( ) لا توجد ( ) معدل الإقبال .... حبوب ☐ لولب ☒ حقن ☐ غرسات ☒ أكياس ☒ قمع مهبلي ☐ تحاميل ☒
	صحة الطفل	يوجد ( ) لا توجد ( ) معدل الإقبال ....
	التغذية	يوجد ( ) لا توجد ( ) معدل الإقبال ....
	مكافحة السل	يوجد ( ) لا توجد ( ) معدل الإقبال ....
	مكافحة الملا ريا	يوجد الفحص والعلاج ( ) لا توجد ( ) معدل الإقبال ....

☑المترددون على المرفق الصحي :- (من واقع السجلات بمعدل ( ) باليوم .

☑مستوى تقديم الخدمات :- متدني ( ) مقبول ( ) ضعيف ( ) جيد ( ) جيد جداً ( )

☑المالية :-

الإيرادات	تذاكر معاينة ( ) سندات أشعة ( ) عمليات ( )	سندات مختبر ( ) ضرب ابر ومجارحة ( ) رقود ( )	أسنان ( ) .... ( ) .... ( )
التقيد بالسجلات المحاسبية	نعم ( ) لا ( )		
نسبة مشاركة المجتمع 40%	تصرف ☐ لا تصرف ☐ أجملي المبلغ المصروف		
المبلغ المورد للخزينة العامة	خلال : الشهر المنصرم ☐ الربع المنصرم ☐ النصف المنصرم المبلغ........		

☑التموين الطبي :-

أدوية الطوارئ التوليدية	توجد ☐ لا توجد ☐ تصرف : بسجل ☐ بدون سجل ☐ مجاناً ☐ بمبلغ ☐
أدوية الطوارئ العامة	توجد ☐ لا توجد ☒ تصرف : بسجل ☐ بدون سجل ☐ مجاناً ☒ بمبلغ ☐
أدوية الإمراض المزمنة	توجد ☐ لا توجد ☐ تصرف : بسجل ☐ بدون سجل ☐ مجاناً ☐ بمبلغ ☐
أدوية الرعاية التكاملية	توجد ☐ لا توجد ☐ تصرف : بسجل ☐ بدون سجل ☐ مجاناً ☑ بمبلغ ☐
المستلزمات الطبية	توجد ☐ لا توجد ☐ تصرف : بسجل ☐ بدون سجل ☐ مجاناً ☐ بمبلغ ☐

☑التعقيم :- مركزي ( ) بخاري ( ) حراري ( ) غلي ( ) لا يوجد ( )

☑الإنارة :- تغطي كل المرفق ( ) لا تغطي (X) ملاحظات ....

النظافة العامة والمخلفات :-

م	وسائل التنظيف	نعم	لا	أذا كانت الإجابة بلا (حدد الأسباب)
1	هل تتوفر المياه بشكل كافي	✓		
2	هل تتوفر مغاسل أيدي		✓	هل يتوفر صابون على مغاسل الأيدي (✓)
3	هل تتوفر مواد وأدوات تنظيف وتتوفر مطهرات		✓	هل الحمامات نظيفة : نعم ☐ لا ☒
4	هل يوجد براميل قمامة في العيادات والأقسام والصالات		✓	صناديق حرق ☐ أكياس بلاستيكية ☐ براميل ☐
5	التخلص من المخلفات	✓		الحرق ☒ الدفن ☐ أخرى....
6	الانطباع العام حول مستوى النظافة على مستوى المرفق			جيد ☐ متوسط ☐ ضعيف ☐ غير مقبول ☒

خليل الضبيبي

أهم المشاكل والحلول والإجراءات والمقترحات للزيارة الإشرافية للمرفق:-

☑المشاكل :-

اهم الاشكالية [illegible] استقبال الحالات كاملة منها الحالات [illegible]
عدم توفر المكتب وجهاز الحاسب - مواد النظافة

☑الحلول :-

☑أهم الإجراءات المتخذة من قبل اللجنة :-

....
....
....
....

☑أهم المقترحات والتوصيات :-

القائمون بالزيارة :-

م	الاسم	الوظيفة	التوقيع

خليل الضبيبي

3

Annex 11 Evaluated intervention

Table 14. Evaluated interventions for HR Planning[1]

1	Recruitment of health workers in rural areas		
	Category and type of intervention	**Place**	**Results reported**
	Education		
	Multi-faceted education	USA	84% of physicians practiced rural medicine in New Mexico
	Regulatory		
	Bonding scheme for postgraduates	Australia	Percentage of worker in rural location was doubled those practiced Nationally (43 vs. 20%)
	Compulsory service	South Africa	Just under 25% physicians were placed in facilities for the rural allowance
	Financial incentives		
	Financial incentives	Niger	There was an increase in the number of profession practicing outside the city (44% doctors, 46 pharmacists, 42% dentists)
	Bundled intervention (set of interventions)	Mali	During a period of 10 year, more than 100 doctors were placed in rural areas.
2	**Attractiveness to rural and remote areas**		
	Education		
	Rural curriculum, rural clinical rotations	USA	Graduates practicing in rural where higher than those nationally (50% vs. 9%)
			58% of graduates with a rural background were currently practicing in rural areas, compared to only 40% of metro-raised
		USA	Student coming from rural areas are 2-5 time higher to enter rural practice than urban students.
		New Zealand	There was in increase by 10 % of student indicating their intention to work in the rural area after the externship.

	Rural located medical school	Canada	Graduates from rural background were more likely to practice in rural Canada compared to those from urban backgrounds.
	Continuing medical education	Australia	Most of surveyed individuals said they are less likely to stay in rural areas if there is no continues medical education.
	Multi-faceted education program	USA	Program graduates are four times more likely than non-program graduates to practice in rural or underserved areas
	Financial incentives		
	Rural allowance	South Africa	28-35% of respondents change their career plan after the introduction of rural allowance
	Financial incentives retention program,	Australia	Doctors are more likely to leave rural areas if the incentives are not provided to them.
	Regulatory		
	Bonding scheme	USA	Bonding Scheme increase retention by 4 years among obligated doctors
	Personal and professional support		
	Professional support scheme	Australia	reduction by 5% in the number of Doctors wants to leave rural practice
3	**Retention of health workers**		
	Personal and professional support		
	Professional support	Australia	The mean of average retention time was 15 months
	Bundled intervention	Mali	The average retention year was 4 years
	Financial incentives		
	Financial incentives	Australia	Retention is 86% after the first year and decreased to 65% after five years. For the second plan the retention rate was 66% for the first year and reduced to 31% after five years.
	Regulatory		

	Bounding scheme	USA	40% of the participants in the bounding scheme are working the rural areas. 20% in the same allocated cities, whilst 20% in rural areas but other than originally assigned cities.
		USA	82% of the physician that enrolled in the program are still practicing, 67% of which are in the rural areas.
	Compulsory service	JAPAN	Retention of an average of 69.8% of medical graduates.
	Education		
	Multi-faceted education Program	USA	68% OF graduates enrolled in the program are sill practicing medicine in the rural area.