

## *Annex 9. PAKISTAN case study*

### **Background**

The Islamic Republic of Pakistan is located in southern Asia. The country faces major challenges such as overpopulation, political instability, poverty, illiteracy, and terrorism. Pakistan has a multi-cultural and multi-ethnic society and hosts one of the youngest, largest refugee populations. We review Pakistan's health statistics and analyze some of the important health indicators to contextualize a consideration of the impact of mid-level health workers (MLHW) on health-related MDGs in this country.

Over the years, Pakistan has faced political turmoil, alternating between years of democratic and military rule. The divide between the rural and urban cultures is immense. Pakistan is considered a lower middle-income country by the World Bank. The UNDP Human Development Index (HDI) ranks Pakistan 128 out of a total of 172 nations. The primary health concerns in Pakistan, accounting for almost 40% of the total burden of disease in the country, are infectious/communicable diseases which include acute respiratory infection, viral hepatitis, malaria, diarrhea, dysentery, and tuberculosis.<sup>71</sup> Data on health indicators show positive trends in the well being of Pakistanis however, there remains room for improvement.

The Millennium Development Goals (MDGs) represent shared ideals of the improvement of human lives in developing countries. Of the 18 targets and 48 indicators, Pakistan, in an effort to meet the goals by 2015, has adopted 16 targets and 37 indicators. The 3 health-related MDGs—reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and other diseases, are aimed at improving national and local health infrastructures and programs with the goal of decreasing preventable deaths among vulnerable populations.

Pakistan's Ministry of Health dictates National Health Policy, serving as a collective framework that provides guidelines to provinces while implementing plans in the health sector in accordance with their requirements and priorities. Current health sector reforms aim to achieve accessible quality healthcare for all, including reduction in the widespread prevalence of communicable diseases, addressing inadequacies in primary/secondary healthcare services, removing professional/managerial deficiencies in the district health system, promoting greater gender equity, bridging basic nutrition gaps, correcting urban bias in the health sector, introducing regulation in the private medical sector, raising public health awareness, improving the drug sector, and capacity-building for health policy monitoring.<sup>71</sup>

The Pakistani government's Medium Term Development Framework 2005-10 (MTDF) presents a vision of a "developed, industrialized, just and prosperous Pakistan, through rapid and sustainable development, in a resource constrained economy by deploying knowledge inputs." The MTDF outlines the following major challenges facing Pakistan's healthcare system: organizational issues including inadequacies in primary/secondary healthcare services, urban/rural imbalances, professional and managerial deficits in district health systems, gender inequity, unregulated private sectors, burden of disease issues including widespread prevalence of communicable diseases, basic nutrition gaps in target populations, addiction, mental health, and deficiency in the health education system.<sup>71</sup>

In line with the MTDF, the Planning Commission of Pakistan also developed and released in 2007 the Vision 2030 Document for Pakistan, in which it presents a strategic framework for overcoming obstacles and challenges standing in the way of the preferred future for Pakistan. The document discusses issues related to energy, knowledge, science and technology, as well as changing demographics, and health. The aspirations outlined in this document will be implemented in 5-year development frameworks. Additionally, the Poverty Reduction Strategy Papers (PRSP) capture Pakistan's macroeconomic, structural and social policies and programs to promote growth and reduce poverty.<sup>71</sup>

Healthcare is overseen by the Ministry of Health at the federal level,<sup>72</sup> and by health departments at the provincial levels, which are responsible for public health service delivery in Pakistan. According to the Economic Survey of Pakistan (2006-2007), the government of Pakistan devoted 0.75% of the country's total GDP to making the population healthier. Total per capita health expenditure is approximately US \$18.<sup>71</sup> There are a number of vertical and horizontal government-funded programs in Pakistan. Federally funded vertical programs include the Lady Health Visitor Program, Malaria Control Program, Tuberculosis and HIV/AIDS control program, National Maternal and Child Health Program, the Expanded Program on Immunization, Cancer Treatment Program, Food and Nutrition Program, and the Prime Minister Program for Preventive and Control of Hepatitis A and B.<sup>71</sup>

Medical services are comprised of primary, secondary, and tertiary health care facilities. Primary health care facilities include rural health centers, basic health units, primary health care centers, dispensaries, first aid posts, mother and child health centers, and lady health visitors.<sup>71</sup> Secondary health care facilities, including District and tehsil headquarter hospitals, which look after clients on both out-patient and in-patient bases. Tertiary care centers are mainly located in major cities and are typically affiliated with research and teaching organizations. Secondary and tertiary care facilities are generally open all day and night.

There is approximately one doctor available for every 1,475 persons and one nurse for every 3,644 persons.<sup>64</sup> Pakistan's Ministry of Health reported that in 2006-2007, the country had 13,937 total health facilities, including 965 hospitals, 4,916 dispensaries, 4,872 basic health units, 595 rural health centers, 1,138 maternal and child health centers, 371 Tuberculosis centers, and 1,080 first aid points.<sup>64</sup> Furthermore, they report a total bed capacity of 105,005 in hospitals and dispensaries, with approximately one bed for every 1,515 persons and 11,413 persons to a single health facility.<sup>64</sup> In 2007, the government of Pakistan reported that there is one hospital available for over 170,000 persons, one rural health center available for more than 184,000 persons living in rural areas, one basic health unit available for more than 19,000 persons in rural areas, and one maternal and child health center available for more than 4,400 expecting mothers and newborns.

## Situational analysis of MLHW in Pakistan

According to the WHO, Mid-level Practitioners are front-line health workers in the community who are not doctors, but who have been trained to diagnose and treat common health problems, to manage emergencies, to refer appropriately, and to transfer the seriously ill or injured for further care.

Data from the Pakistan Nursing Council shows that there is a difference in the number of Mid-level Health Workers (MLHW) who enroll in the training programs as compared to those who successfully graduate the program. At almost 1,000, the difference is seen to be the greatest in the nursing program,

followed by 700 in the midwifery program. The lady health visitor and community midwife programs have a dropout number ranging up to 200.

<b>Table 37: Health Workforce Pakistan</b>	
<b>Health personnel</b>	<b>Number of health personnel</b>
Doctors	139,555
Dentists	9,822
Nurses	69,313
Midwives	26,225
Health visitors	10,731
Registered vets	4,800
<b>Source: Government of Pakistan, Statistics Division 2009</b>	

The registration statistics from the database of the Pakistan Nursing Council show that 82.44% of all MLHW are nurses, followed by Lady Health visitors at 9.37%, midwives at 5.92% and community midwives at 2.27%. Despite these figures, Pakistan has a shortage of nurses, which is further aggravated due to uneven distribution across the provinces. Pakistan had a nurse-to-population ratio of 1:32,000 in 1960, improving to 1:5,199 by 1997.<sup>73</sup> The greatest shortage is seen in Sindh, where there are not enough nurses and midwives to assist doctors.<sup>74</sup> The greatest number of nurses are seen in Khyber Pakhtunkhwa, both as a total and as a ratio of the population.<sup>74</sup> The number of midwives and nurses is also significant in relation to the achievement of the MDG target of the deliveries to be attended by skilled birth attendants, as a shortage is going to hinder achieving this target.<sup>74</sup>

### ***National HRH strategic plan and policy***

Pakistan is listed as one of 57 countries with a critical health workforce deficiency by the WHO World Health Report 2006. In the past, a National policy for Human resources for health (HRH) in Pakistan was developed in the year 2000, but currently, there are no well-defined policies or plans for human resource development. The Ministry of Health does not have any department under which human resource for health would lie. The training programs of the health personnel do not meet international standards, nor does it meet the requirements of Pakistan. Apart from a few private institutions over the country, most institutes are using curriculums that have not been revised for 5-10 years. The result of this is that the health force that is being produced is not competent enough to function effectively in primary and secondary health care centers.

There are many good medical colleges all over the country, and more money is being invested in improving them. There seems to be a lack of interest in investing to improve the standards of schools of nursing, midwifery, skilled birth attendants, lady health visitors or pharmacists. This is leading to a low number of workers in a few categories of health care providers.

### ***MLHW Strategic Plan and Policy: Recent policy documents***

No policy regarding MLHW by the Ministry of Health is available.

## Types of MLHWs

Mid-level health workers in Pakistan include:

1. Nurses
2. Midwives
3. Community Midwives
4. Lady Health Visitors

## NURSES

Nursing is a profession in which the practitioner applies knowledge with skills and attitudes in the provision of comfort and care for the health needs of people. It is a dynamic, therapeutic and educational process by which the practitioner promotes health, prevents illness and participates in curative and rehabilitative services to individuals, families and communities.

The nurse provides health care for the comfort and well-being of patients by promoting, maintaining and restoring health, preventing illness, injury or disability; caring for the sick or those who are dying, health teaching and collaborating with other members of the health team. Nursing care is directed at individuals, families and communities in a non-discriminatory manner, regardless of race, color and religion.

Nurses function in a variety of settings at each level of the health care system. The nurse has a role in the provision of primary health care, which aims to assist all people to have access to appropriate health care. The nurse collaborates with members of the health team to help individuals, families and communities to meet basic needs. As a member of a health profession, the nurse recognizes the existing health problems of the country and assures a leadership role in providing health care in different settings. The nurse is also responsible for her own professional development. The basic nursing curriculum of Pakistan describes the role of a nurse as follows: Nurses assist individuals, families and communities to develop self-reliance in promoting health, preventing disease and maintaining and restoring health. The goal of nursing is to enhance this quality of life throughout the life cycle.

## Pre-requisites

All applicants should:

- Be between 16-35 years of age
- Have completed secondary level education

## Training

The basic nursing program is a 3-year long course. The degree program offers research-based integrated nursing knowledge, skills and professional attitude. Upon completion of this program, the graduate is prepared to be a safe clinical nurse, who will be able to provide comprehensive care at primary, secondary and tertiary levels with in hospitals and community settings. The faculty of a nursing institution includes the Dean, Professor, Associate and Assistant professors, Senior Nurse, Instructor and part time teachers as per subject requirements.

The overall aim of the program is to produce nurses who can apply a multidisciplinary approach in nursing practice through an integrated educational degree. This program is intended to foster critical

thinking, knowledge-based actions, and personal as well as professional development among the nurses, in order to enable them to implement their knowledge and skills with the ever-changing context of health care.

## Courses

First year courses include basic health sciences as well as fundamentals of nursing and community health nursing. Year 2 includes sociology, psychology, medical, surgical and pediatric nursing. The 3<sup>rd</sup> year courses include Pakistan studies, continuation of medical and surgical nursing, as well as community health nursing. Psychiatric nursing and Nursing leadership courses are also included.

## LADY HEALTH VISITORS

Lady Health Visitors are primary community health workers. They have successfully completed their prescribed course of the subject and acquired a diploma that is recognized by the Pakistan Nursing Council. Their job is not only based on Rural Community Health services but also on meeting the health needs of the Community.

### Duties of a Lady Health Visitor

Lady Health visitors are expected to use their knowledge in providing nursing care to sick and well individuals. They are responsible for the prevention of disease and for the promotion and maintenance of health theory, and reducing morbidity and mortality of mothers and children. Their duties are not limited to the clinic. They are expected to look after the health needs of families with homes in a specified area. Their main responsibility is however, to use effective written and verbal communication skills with these family members to change their attitude and behavior towards their health. It is also an essential part of their duty to effectively utilize resources to improve the health status of the families and therefore of the whole community in the long run.

### Pre-requisites

All candidates should:

- Have a Basic education till F.Sc (Intermediate) + Matric Science, or FA + Matric Arts
- Be between ages of 15-35 years

### Training

On joining the training program, each student has to spend the first week getting oriented to the new environment, understanding the course of training and fulfilling the requirements for admission. All candidates are selected purely on merit; there is no admissions test or interview.

The teaching strategies followed include lectures, as well as individual guidance, if needed. Models, charts, demonstrations, and practical and audio visual aids are used to assist students in learning. Students are evaluated on the basis of a written and practical examination with passing marks at a minimum of 50%. Attendance in lectures and practicals is mandatory and an attendance of less than 85% is not acceptable.

The faculty consists of a Principal at the highest level followed by a Woman Medical Officer, a Chief Nursing Superintendent, a Nursing Superintendent, Tutors, a Domiciliary Midwifery Supervisor, a Public Health Supervisor, and Senior Lady Health Visitors.

## Courses

The training of the lady health visitors is divided into 2 parts:

### 1. Preliminary Training Session (PTS):

This is a 12 week course. Its purpose is to give students a brief knowledge of basic health sciences like anatomy, physiology, microbiology, pharmacology, physics, chemistry, first aid and basic nursing procedures.

Beginning with anatomy and physiology, a total of 78 hours are dedicated to teach the theory as well as practicals of these subjects. This course includes topics that range from the structure and function of cells to that of organ systems in the human body. Followed by this is the microbiology course that lasts a total of 30 hours. This is followed by the material medical course, which includes pharmacology and the legal and ethical responsibilities of a lady health visitor when using drugs. This is a 24 hour course. The first aid course provides the knowledge of principles of immediate care in case of trauma and emergency, has 20 hours of practicals, and 15 hours of theory classes. The longest and most important of these courses is the Basic Nursing Procedures Course. This includes teaching procedures, for example giving a bed bath, use and removal of a bed pan, filling of a hot water bottle and ice cap, monitoring of vitals, handling and collecting specimens, catheterization, obstetric and gynecological procedure and sterilization.

After the completion of the PTS course, candidates have to pass an examination. If a candidate fails to pass the exam, she is allowed a re-take after 15 days. If she is still unable to pass, her training is terminated.

### 2. Public health:

This course lasts a total of 52 weeks. The contents of this course focus on public health aspects of maternal and child health, child survival, prevention of communicable diseases, management of common ailments, health education, training of indigenous dais and TBAs, community involvement and administrative/supervisory aspects of lady health visitors' roles. Emphasis is placed on the principles of primary health care and the goal of HFA-2000.

The courses taught in this module are public health practice and administration, primary health care, MCH services, family planning, food and nutrition, child survival, hygiene, epidemiology and communicable diseases, health education, principles, method and techniques of teaching, school health services, statistics and records, public health care, management and supervision, and English.

There are periodic internal tests and examinations. Final examinations are conducted by the Nurses Examination Board in the following subjects: 1. Public health practice; 2. Maternal and child health practice; 3. Hygiene and communicable diseases; and 4. Education and management.

## MIDWIVES

A midwife is one of the most important mid-level workers in the health system of Pakistan. Midwifery is a health care profession in which providers offer care to childbearing women during pregnancy, labour and birth, and during the postpartum period. They also care for the newborn and assist the mother with breastfeeding. In addition to providing care to women during pregnancy and birth, many midwives also provide primary care to women, well-woman care related to reproductive health, annual gynecological exams, family planning, and menopausal care.

In Pakistan, a midwife has to successfully complete a prescribed course and acquire a diploma recognized by the Pakistan Nursing Council before beginning her duties. According to the Pakistan Association of Midwifery, this profession is facing a lot of challenges. There is an acute shortage of licensed practicing midwives in spite of the fact that thousands graduate yearly. Even for those that have trained and are licensed, there are no policies. Midwives are still not recognized as being distinct from nurses and have no opportunities for advancement in this profession.

### Pre-requisites

All candidates applying should be:

- Females
- Of ages 15-30 years, and must not exceed 35 years in any circumstance
- Having a matriculation or equivalent degree
- Having at least 45% marks in their matric examination

### Training

The period of training is a minimum of 1 year for a nurse midwife as well as pupil midwife. During the training period, each student must do at least 20 antenatal examinations in clinics/homes, 5 vaginal examinations, conduct 25 deliveries including 5 in the districts, and records of each should be entered in their case books. These case books must be filled out and signed by the Nursing Superintendent at the time of the Oral examination. Each student must have a minimum of 85% of attendance.

The nurse midwife has to pass an exam after 52 weeks of theoretical and practical training in obstetrics. Along with this, the pupil midwife has to pass an exam after 12 weeks PTS training in obstetrics. After 10 weeks of the PTS training, an internal exam is conducted by the institute, and if a student fails, she will get a chance to re-take the exam after 4 weeks. In the case of a second failure, she will be discharged from the school. Pupil midwives who fail to clear the final examination after 1 year of training stop getting paid and can reappear in 2 successive examinations after attending 15 lectures and conducting 5 cases in her institution. A nurse midwife who fails to pass the exam at the end of 1 year can reappear in any number of attempts in the midwifery examination without a stipend until she passes.

### Courses

The PTS for a pupil midwife includes anatomy and physiology, microbiology, material medical, first aid and basic nursing care. The 52 weeks course that follows includes obstetrics theory as well as practical training. It starts with the basic anatomy of the reproductive system and moves onto embryology, antenatal, natal and postnatal care. It also includes training in obstetrical surgeries and neonatal care.

Principles and practice of district midwifery and its relation to public health are taught. Courses about family planning and the expanded program of immunization are also taught to the students.

**Table 38: Regulation of Midwives**

Legislation exists recognizing midwifery as an autonomous profession	No
Midwives hold a protected title	No
A recognized definition of a professional midwife exists	Yes
A government body regulated midwifery practice	Yes
A license is required practice midwifery	Yes
Midwives are authorized to prescribe life-saving medications	Yes
<b>Source: state of the world's midwifery, 2011</b>	

**Table 39: Midwives Education**

Midwifery education programs direct entry; combined; sequential	Yes ; No ; Yes
Number of midwifery education institutes (total ; private)	242; 44
Duration of midwifery education program (in months)	12-18
Number of student admissions (first year)	9,019
Midwifery education programs are accredited	Yes
<b>Source: state of the world's midwifery, 2011</b>	

**Table 40: Midwifery workforce**

Number of midwives (including nurse-midwives)	54,706
Obstetricians	2,933
Community health workers with some midwifery training	-
A live registry of licensed midwives exists	No
<b>Source: state of the world's midwifery, 2011</b>	

**Table 41: Midwifery Barometer**

Midwives per 1000 live births	10
Birth complications per day; rural	2281; 1368
Lifetime risk of maternal death	1 in 93
Intrapartum stillbirth rate (per 1,000 births)	26
Neonatal mortality as % of under-5 mortality	48
<b>Source: state of the world's midwifery, 2011</b>	

## COMMUNITY MIDWIVES

According to the International Council of Midwives (ICM 1999), a midwife is a person, who having been regularly admitted to a midwifery educational program duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery.

At 276/100,000, Pakistan has one of the highest maternal mortality ratios in South East Asia. Pakistan, too, has realized that this number can be lowered through wider involvement of professional midwives who can promote safe motherhood within communities and avert maternal death and morbidity. A midwife is responsible for improving the health standards in Pakistan by providing maternal and neonatal health care services by way of the Primary Health Care programs and through activities of disease prevention and health promotion.



## Pre-requisites

- Candidates should be females
- Age group of applicants 15-30 years
- Candidates should have passed matric or equivalent with a minimum of 45% marks
- Candidates should clear the medical fitness checkup conducted by the institution
- Preferably married
- Belongs to the community from where she is selected and is to serve

## Training

The midwifery course is 18 months long and is meant for the training of females as midwives to practice safe normal delivery. The training is conducted in accordance with local traditions, cultural values and beliefs of the community, with emphasis on the care of women during pregnancy and neonatal care. 25% of the time is dedicated to theoretical teaching, and 75% of the time is spent in supervised and hands-on practical training, in the community as well as institutions.

Each student must attend 85% of interactive discussions and 85% of practical job training to be eligible to take their final examination.

## Courses

The courses are distributed into 2 sections where initially Basic Nursing Care is taught. This includes anatomy, physiology, microbiology, pharmacology and first aid.

The second section is the Midwifery section, which includes anatomy and physiology of the reproductive system, pregnancy, normal labour, puerperium, abnormal labour, care of the newborn and community midwifery and health education.

Students are also provided with the domiciliary midwife experience through a 10 week training program. In the event that this is not possible for the institution, they must affiliate with the nearest MCH center or Public Nursing School.

All trainees undergo 4 levels of skills training:

Observation of normal delivery cases	5
Assisted normal delivery cases	5
Normal delivery cases under supervision	5
Independent normal delivery cases	10

The students must also record all these procedures in a log book or midwifery journal, along with follow ups of all the patients. They must also submit a report in the form of a casebook or project report on a health issue faced by the community.

Despite a proper curriculum and educational structure, the midwifery association of Pakistan paints a dim picture of the current situation of midwifery in the country, at present. It states that there are more schools of midwifery than schools of nursing in the country, yet the midwifery students have been

graduating with little or no practical experience in delivering babies. There is also an extreme shortage of qualified teachers to teach midwifery.

### Faculty at the training institute

This should include:

- Principal
- Nursing superintendent
- Midwifery tutors
- Midwifery supervisors
- Guest lecturers

### Examinations

At the end of the first 10 weeks, an internal examination is to be taken by the candidates. Those who are unsuccessful get a re-take in 4 weeks, and if they are still unable to pass they are not allowed to continue training further. After completion of the 18 months course, the students have to appear in an examination conducted by the Nursing Examination Board. Candidates who pass with a score of at least 50% in the written and oral examinations are considered successful.

### Skills and Obligations

According to the Pakistan Nursing Council, the skills and obligations of a midwife include:

- Promote health awareness
- Assessment of the client/woman
- Managing the pregnant woman
- Taking care of the woman dependently and independently during antenatal, natal and postnatal period
- Seeking help from others
- Caring for the woman as prescribed by the doctor
- Has good communication skills
- Awareness of research and participate in research activities
- Knows how to work in a team
- Knows the law and legal aspects of practicing
- Is aware of ethics
- Assessment and care of neonate
- Communication and counseling
- Practice the ethical law and legal aspects of midwives as prescribed by the Pakistan Nursing Council.

### Functions of a Midwife

- Diagnosis and management of normal and complicated pregnancy, labour and puerperim at home, birthing station, in urban and rural settings
- Early detection of abnormalities throughout the maternity cycle, taking decisions required for action in each individual case and implementing the decision
- Care of the normal and premature neonates
- Care of asphyxiated and low birth weight babies

- Advice/guidance in the form of health education for healthy habits and prevention of disease
- Providing general and obstetric first aid in case of emergencies, and making timely referrals to the next level of EmOC facilities by developing linkages
- Advice/guidance/assistance and services to mothers and couples to plan and space their pregnancies
- Ensuring implementation of policies, rules and regulations governing MCH services in Pakistan
- Performing administrative and management functions related to her duties
- Respecting at all times women's rights to life and health, and contributing towards the attainment of these rights
- Continuing her educational and professional growth by keeping her knowledge up to date and by attending continuing professional development activities whenever possible
- Participation in activities aimed at improving midwifery education and practice and conditions of midwife's services.

### Career Advancements

According to the Midwifery Association of Pakistan, there are no opportunities for advancement in midwifery. There is no career structure laid out for midwives. The midwife starts at the lowest rung of the pay scale and retires in the same grade.

### Key problems

The problems faced by Pakistan with regard to mid-level health workers are mainly due to a lack of policies by the Ministry of Health. The health policy of Pakistan (2009) does state that they will develop a "comprehensive health workforce policy by 2010," but so far no such policy has been published. If any progress is to be made in improving the health workforce, this policy needs to be designed soon.

The fact that proper training curriculums, as advised by the Pakistan Nursing Council, exist for nurses, midwives and lady health visitors, points in the positive direction. There are also a number of public and private training institutes for nurses. However, the main challenges that the Ministry of Health faces are in defining their career structures and laying down rules for their services, recruitment and promotion. Recruitment into this field is also a challenge because the payscale is low, and there is very little or no promotion opportunities available with difficult working hours. Efforts also need to be made to retain these workers in their respective cadres. Due to all these problems, the number of mid-level health workers in the country is less compared to other health workers. Once an official policy is made, many of these problems can be overcome. This needs to be recognized as an overriding obstacle, and action must be taken soon, as health workers are an important part of the mission to achieve MDGs on time.

NURSES	
Basic qualification	Secondary School (10 <sup>th</sup> grade)
Selection	Based on admission test and interview
Age group	16-35 years
Licensing body	Pakistan Nursing Council
Duration of training	3 years
Goals of training	Produce nurses with multidisciplinary approach in nursing practice
Duties	Provide health care to patients by promoting, maintaining and restoring health, prevent illnesses, injury or disability
Career advancement	Promotion to head nurse. Can enroll in other degree programs
Places of work	Hospitals, clinics,

LADY HEALTH VISITORS	
Basic qualification	Secondary School (10 <sup>th</sup> grade)
Selection	On merit
Age group	16-35 years
Licensing body	Pakistan Nursing Council
Duration of training	53 weeks
Duties	Prevention of disease and promotion and maintenance of health theory, reducing morbidity and mortality of mother and children

NURSE MIDWIVES	
Basic qualification	Secondary School (10 <sup>th</sup> grade)
Age group	16-35 years
Licensing body	Pakistan Nursing Council
Duration of training	1 year
Goal of training	Promote maternal and child health services in the country
Duties of a midwife	Proper management of pregnant women, mothers and infants under her care, identify abnormal conditions and refer such cases to the appropriate facility/specialist, after providing emergency first aid care to stabilize the condition of the patient.
Career advancement	None
Places of work	Hospital, clinic, health units, domiciliary conditions

MIDWIVES	
Basic qualification	Secondary School (10 <sup>th</sup> grade)
Age group	16-35 years
Licensing body	Pakistan Nursing Council
Duration of training	18 months
Goal of training	Promote maternal and child health services in the country

<b>Duties of a midwife</b>	Proper management of pregnant women, mothers and infants under her care, identify abnormal conditions and refer such cases to the appropriate facility/specialist, after providing emergency first aid care to stabilize the condition of the patient.
<b>Career advancement</b>	None
<b>Places of work</b>	Hospital, clinic, health units, domiciliary conditions

## Appendix 9.1

### Country Context

#### Country Profile

The Islamic Republic of Pakistan is located in Southern Asia, bordering the Arabian Sea, between India on the east and Iran and Afghanistan on the west, as well as China in the north. It is overpopulated, facing major challenges such as political instability, poverty, illiteracy and terrorism. Pakistan has a multi-cultural and multi-ethnic society and hosts one of the youngest and largest refugee populations.

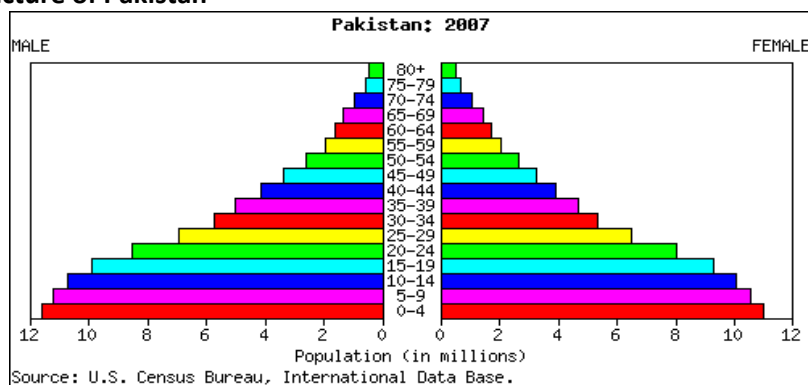
We review Pakistan's health statistics and analyze some of the important health indicators to contextualize a consideration of the impact of mid-level health providers on health related MDGs in this country.

#### Demographic information

The sixth most populous country in the world, Pakistan has a population of approximately 180,808,000 people, growing at roughly 1.6% per year,<sup>72</sup> with 37% of the population settled in urban areas.<sup>72</sup> Estimates from 2009 show that Pakistan has a birth rate of 30 births/1,000 persons and a death rate of 7 deaths/1,000 persons.<sup>75</sup> Additionally, more recent data on fertility rates from 2011 reveal that on average 3.17 children are born per women (CIA). The most populous city in Pakistan is the port city of Karachi with an estimated 13 million residents.<sup>76</sup>

The age structure in Pakistan is bottom heavy. In 2009, UNICEF reported that the total population under 18 in Pakistan is 78,786,000 and the total population under 5 is 24,121,000.<sup>76</sup>

**Figure 5: Age structure of Pakistan**



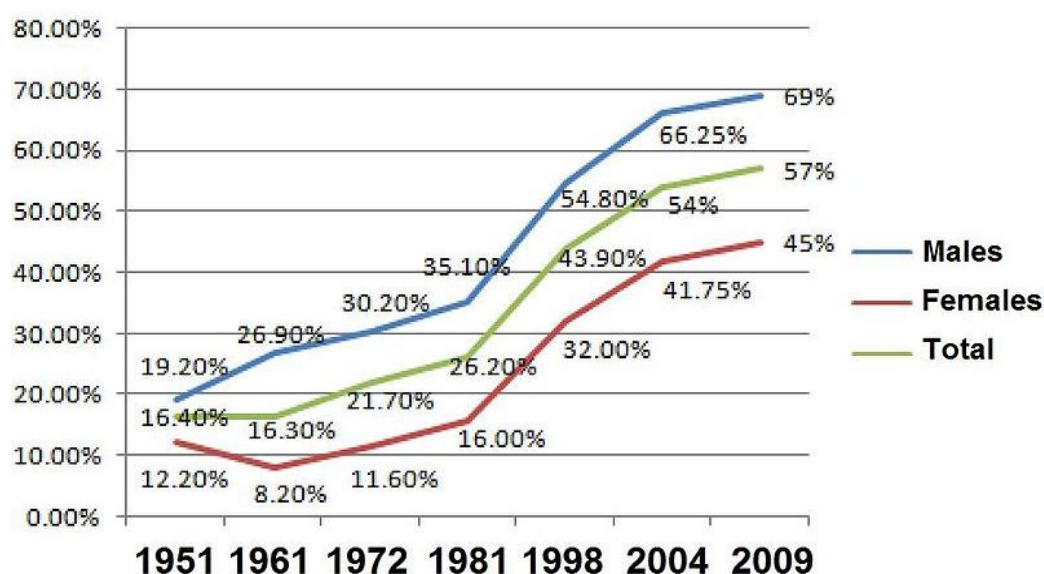
Between 2000 and 2011, there was a decline in the population growth rate from 2.17% to 1.57% which can be accredited to various family planning programs, inflation, terrorism and poverty.<sup>76</sup>

Pakistan hosts a large foreign-born and refugee population. The majority of those foreign-born are Muslim refugees that fled from persecution in India after the 1947 partition. However, there are also large refugee communities from Afghanistan, Myanmar, Iraq, Somalia, Bangladesh, Iran, Tajikistan, and Uzbekistan. Additionally, Pakistan's census does not include the registered 1.7 million Afghan refugees found throughout the Khyber-Pakhtunwa Province and the Federally Administered Tribal Areas.<sup>77</sup>

Ethnic groups in Pakistan are categorized by a combination of religion, language and tribe. Punjabis, representing 44.68% of the population, are the largest group, followed by Pashtun (15.42%), Sindhi (14.1%), Sariaki (8.38%), Muhajirs (7.57%) and Balochi (3.57%).<sup>72</sup> Urdu and English are the official languages, but ethnic dialects commonly spoken include Punjabi, Sindhi, Pashtu, Balochi, Hindko, Brahui, and Burushaski.<sup>78</sup> The state religion in Pakistan is Islam, which is practiced by about 95-98% of the people. Muslims are divided into 2 major sects: the majority practicing Sunni Islam, and minority 5-20% of the population practicing Shia Islam. Other minority religions practiced in Pakistan include Christianity, Hinduism, Bahais, Sikhism and Zoroastrianism.<sup>79</sup>

The total literacy rate among Pakistanis in 2009 was 57%, representing 69% of males and 45% of females.<sup>80</sup> Additionally, literacy rates vary widely across the country, from highs of 87% in the nation's capital Islamabad to 20% in the Kohlu district. The majority of illiterate people in Pakistan reside in remote rural areas, including mountainous regions such as the federally administered tribal and northern areas, rural areas of Balochistan, Sindh and Khyber-Pakhtuna, urban slums, and amongst large refugee encampments.<sup>80</sup> A number of factors may contribute to high illiteracy rates, including lack of awareness regarding the importance of education, limited accessibility to schools and formal education, and local social taboos and customs.<sup>80</sup>

**Figure 6: Literacy rate of Pakistan**



Source: Population association of Pakistan

**Table 42: Selected demographic information for Pakistan**

Population (thousands)	180,808
Population (thousands) under 18	78786
Population (thousands) under 5	24121
Annual no. of births (thousands)	5403
Annual no. of under-5 deaths (thousands)	460
% Urban population	37
Average annual growth rate of urban population 1970-1990	4.2
Average annual growth rate of urban population 2000-2009	3
<b>Source: Population Division UNICEF, United Nations Population Division and United Nations Statistics Division. 2009</b>	

## Geographical characteristics

Pakistan is spread over an area of 880,940 km<sup>2</sup> and is a profound blend of landscapes varying from plains to deserts, forests, hills, and plateaus ranging from the coastal areas of the Arabian Sea in the south to the Karakoram mountain range in the north. It is divided into provinces namely Sindh, Baluchistan, Punjab, Khyber-Pukhtoonkhwa, Azad Kashmir and Hazara. Some of the world's highest peaks, including K2 and Nanga Parbat are found in the Karakoram and Pamir mountain ranges. The Baluchistan Plateau lies to the west, and the Thar Desert to the east. Alluvial plains lie in Punjab and Sindh along the Indus River. The 1,609 km Indus River and its tributaries flow through the country from the Kashmir region to the Arabian Sea.

Located in a temperate zone, Pakistan is generally characterized by hot summers and cold winters.<sup>81</sup> Most of Pakistan receives less than 250 millimeters of rain per year, with much variability in the northern and southern areas. Pakistan experiences a cool, dry winter beginning from November in the north and December in the south. It progressively gets wetter during January and February, especially in the western parts of the country. Snowfall is common in the northern areas. Between March and April, these northern areas receive ample amounts of rain due to the Western Disturbance, an extra-tropical storm originating from the Mediterranean. Most of Punjab and Khyber-Pakhtunkhwa also receive substantial spring precipitation. Much of the country remains dry and hot in May and June. The Southwest Monsoon reaches Pakistan in July and causes heavy rainfall and high humidity. A dry autumn starts in September in the north and October in the rest of the country.

Pakistan has faced severe droughts. The drought of 1998-2002 is considered one of the worst in half a century and is blamed for numerous economic losses. More recently, Pakistan has seen many floods, the worst and most destructive of which occurred in 2010, and affected more than 20 million people, killing at least 1,781 people and destroying 1.89 million homes.<sup>82</sup>

The economic hub and largest city of Pakistan is Karachi, while its administrative capital is Islamabad. The provinces are divided into 105 districts, which are further divided into sub-districts which may contain villages or municipalities. Pakistan has over 5000 local governments. Some districts, incorporating large metropolitan areas, are called *City Districts*. A City District may contain subdivisions called Towns and Union Councils.



Figure 7: Map of Pakistan



Source: <http://geography.about.com/library/cia/blcpakistan.htm>

### Socio-political profile

The Islamic Republic of Pakistan is modeled as a 3 branched federal republic. Local governance is divided into 8 administrative units and 4 provincial governments, including Baluchistan, Punjab, Sindh and Kyber-Pakhtunkhwa.<sup>76</sup> The constitution, created on the 12<sup>th</sup> of April 1973, has been suspended multiple times over the course of Pakistan's history.<sup>76</sup> The Executive Branch of the government consists of a chief of staff, a prime minister and a cabinet. The Legislative Branch, also known as the Majilis-e-Shoora, consists of a 100 seat Senate and a 342 seat National Assembly, which reserves seats for women and non-Muslims. The Judicial Branch is divided into a Supreme Court system with justices appointed by the president, as well as a Federal Islamic or Sharia Court.<sup>76</sup>

Over the years, Pakistan has been facing political turmoil, alternating between years of democratic and military rule. Most recently, Asif Zardari and Yousuf Raza Gilani were elected President and Prime Minister, respectively. The President is chosen for a 5-year term by an electoral college consisting of the Senate, the National Assembly, and the provincial assemblies. The Prime Minister is selected by the National Assembly for a 4-year term. The bicameral parliament consists of the Senate (100 seats; members are indirectly elected by provincial assemblies) and the National Assembly (342 seats). Each of the 4 provinces—Punjab, Sindh, Khyber-Pakhtunkhwa, and Balochistan—has a Chief Minister and provincial assembly. The Northern Areas, Azad Kashmir, and the Federally Administered Tribal Areas (FATA) are administered by the federal government but enjoy considerable autonomy. The cabinet, the National Security Council and the governors serve at the president's discretion. The judicial system is comprised of a Supreme Court, provincial high courts, and Federal Islamic (or Sharia) Court.



The President names the most senior Supreme Court justice as chief justice. Each province, as well as Islamabad, has a high court, of which the President appoints justices, after conferring with the chief justice of the Supreme Court and the provincial chief justice

Pakistan's social system is strongly influenced by religion, with a majority of the population being Muslim. However, under the Musharaf regime, a more secular approach was adopted and has changed the mindsets of a majority of the urban populations. The rural areas of the country have lived under a feudal system for many years, where landlords are considered the wealthiest and farmers considered poor workers. They have their own rules of law such as the karo-kari system, and their own courts where the tribal elders pass judgments. A lack of education in these areas has enabled the existence of these current systems. On the other hand, the urban population is increasingly aware of their rights and is in the process of adopting an increasingly modern lifestyle. The divide between the rural and urban cultures is immense, and does not appear to bridge any time soon.

### Economy and Poverty

Pakistan is considered a low, middle-income country by The World Bank. Its GDP is around US\$166 billion at the official exchange rate. Pakistan's economic outlook has significantly deteriorated since the floods of July-August 2010. The external position had improved during the first 10 months of FY2010/11 because of robust export growth and strong inflows of workers' remittances. As a result, the account deficit fell from US\$3.9 billion (2% of GDP) in FY2009/10, to US\$748 million for the first 10 months of FY2010/11. Foreign exchange reserves amounted to \$ 17.1 billion by the end of April 2011.<sup>83</sup> Main drivers of inflation include food and utility prices, the Pakistani rupee's depreciation versus the U.S. dollar, and higher international commodity prices. Low levels of spending in the social services and high population growth have contributed to persistent poverty and unequal income distribution. The country's economy remains vulnerable to internal and external shocks due to internal security concerns and global financial crises.

Pakistan's manufacturing sector accounts for about 24% of the total GDP.<sup>84</sup> Cotton textile production and apparel manufacturing are Pakistan's largest industries, accounting for about 66% of total exports.<sup>84</sup> Other major industries include food processing, beverages, construction materials, clothing, and paper products. Manufacturing sector growth has slowed in the last few years due to energy shortages and capacity constraints.

According to the CIA World Fact Book, 24% of the population lives under the poverty line, and the unemployment rate is 15.4%. The United Nations Development Program's Human Development Index (HDI) ranks Pakistan 128th out of a total of 172 nations. According to the HDI, 60.3% of Pakistan's population lives on less than \$2 a day, compared to 75.6% in nearby India and 81.3% in nearby Bangladesh, and some 22.6% live under \$1 a day, compared to 41.6% in India and 49.6% in Bangladesh.

According to the World Bank, the poorest 10% of Pakistan's population consumes 4.0% of the total national consumption while the richest 10% consume 28.3%. Table 43 illustrates the extent of poverty in Pakistan.

Table 43: Poverty Rates	
GINI index	30.6
Income share held by highest 10%	28.3

Income share held by highest 20%	42.1
Income share held by lowest 10%	4.0
Income share held by lowest 20%	9.0
Poverty gap at \$ 1.25 a day (PPP)%	4.4
Poverty gap at \$ 2 a day (PPP)%	18.7
Poverty gap at national poverty line(%)	7 (1999)
Poverty headcount ratio at \$1.25 a day (PPP) (% of population )	22.6
Poverty headcount ratio at \$2 a day (PPP) % of population	60.3
Poverty headcount ratio at national poverty line (% of population)	22.3
<b>Source: World bank 2006</b>	

## Health Systems Overview

**Table 44: Health facilities in Pakistan**

Total health facilities	13,937	103,708 beds
Hospitals	968	84,257 beds
Dispensaries	4,813	2,845 beds
Rural health centers	572	9,612 beds
Tuberculosis clinic	293	184 beds
Basic health units	5,345	6,555 beds
M.C.H. centers	906	256 beds
<b>Source: Government of Pakistan, Statistics Division, 2009</b>		

## Main Health Problems

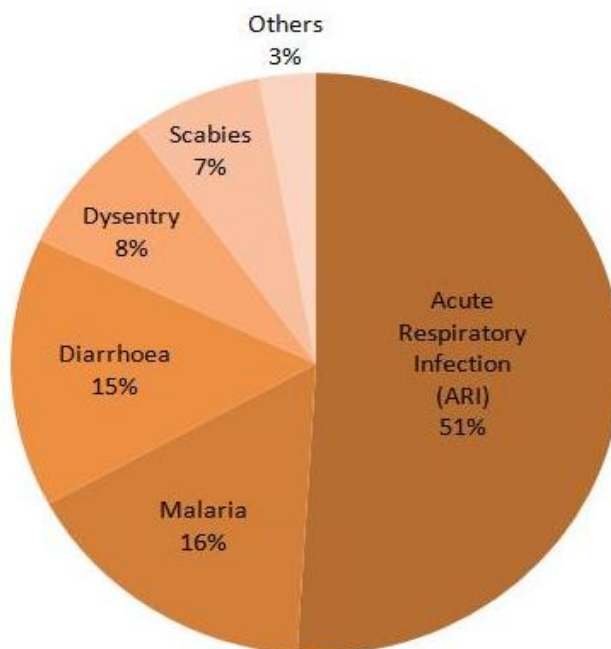
The primary health concerns in Pakistan, accounting for almost 40% of the total burden of disease in the country, are infectious/communicable diseases which include acute respiratory infection, viral hepatitis, malaria, diarrhea, dysentery, and tuberculosis.<sup>71</sup> Another 12% are due to reproductive problems and nutritional deficiencies, which account for an additional 6%.<sup>71</sup> Outbreaks of cholera following major flooding events, dengue fever, measles, meningococcal meningitis and poliomyelitis have also significantly contributed to total disease burden in Pakistan. Addiction to drugs is commonly seen amongst young people, with an estimated 5 million addicts, of which 50% are heroin users.<sup>71</sup> Multiple and shared use of intravenous injections by drug users also contribute to the disease burden.<sup>71</sup>

**Table 45: Selected health system indicators**

Health workforce per 10,000 population	Physicians	8
	Nurses and midwives	6
Births attended by skilled health personnel (%)	Country	39

Measles immunization in 1 year olds (%)	Country	80
% of population using improved drinking water sources	Total	90
	Urban	95
	Rural	87
% of population using improved sanitation facilities	Total	45
	Urban	72
	Rural	29
<b>Sources: WHO, World Health Statistics 2011. UNICEF, Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS).</b>		

**Figure 8: Infectious diseases in Pakistan**



**Source: Ministry of Health, Pakistan. 2006**

Data on health indicators show positive trends in the well being of Pakistanis however, there is still room for improvement. The average life expectancy is 64.18 years for males and 67.9 years for females.<sup>72, 83</sup> This has only slightly increased in the past few decades, where in 1970 and 1990, the average life expectancy in Pakistan was 54 and 61, respectively.<sup>75</sup> However, with improvements in life expectancy, morbidity related to old age—including eye problems, paralysis and bone diseases—has increased.<sup>71</sup> Maternal mortality rates in 2009 revealed 320 deaths per 100,000 live births. 2011 estimates show that Pakistan's crude birth rate was 24.8 births per 1,000 and the total fertility rate was 3.17.<sup>76</sup>

Under-5 mortality, defined as the probability of a child dying before their fifth birthday, is expressed per 1,000 live births. The earliest available data show that in the period of 1986-1990, the under-5 mortality rate in Pakistan was as high as 117 per 1000.<sup>85</sup> Since 1997, the rate has fluctuated in the high 90s until finally decreasing to a low of 87 per 1000 in 2009.<sup>86</sup> Presently, the greatest burden of under-5 mortality is in the Sindh province with a rate 101 per 1000, followed by Punjab (97 per 1000), Kyber-Pakhtunkhwa (75 per 1000), and lastly, Balochistan with a rate of 59 per 1000.<sup>86</sup> Studies have also consistently shown that there is a greater burden of under-5 deaths among rural regions when compared to urban settings.<sup>86</sup>

Infant mortality, defined as the probability of a child dying before their first birthday, is again expressed per 1000 children surviving to 12 months of age.<sup>86</sup> Pakistan has shown considerable progress in the reduction of infant mortality. In the study period of 1986-1990, the Pakistan Demographic Health Survey found that there was an infant mortality rate of 91 per 1000. Subsequent trends show an overall decreased rate of 71 per 1000 by 2009.<sup>75</sup> With regards to provincial data, Baluchistan has seen the greatest improvement in infant mortality reductions, with infant mortality rates as high 117 per 1000 in 1995-1996, and now as low as 49 per 1000. In the ten year study period of 1996-2006, Kyber-Pakhtunkhwa showed an infant mortality rate of 63 per 1000, while both Sindh and Punjab had rates of 81 per 1000.<sup>86</sup> Similar to trends seen with under-5 mortality rates, infant mortality was consistently greater in rural settings than urban centers.<sup>86</sup>

**Table 46: Selected health, mortality and burden of disease indicators for Pakistan**

Indicators	Country	Regional Average	Global Average
Life expectancy at birth	63	65	68
Neonatal mortality rate (under 28 days of life )	42	35	26
Infant mortality rate (1 year and more per 1000 births)	70	51	40
Adult mortality rate (per 1000 adults 15-59years)	208	203	180
Under-5 mortality rate (per 1000 live births)	89	78	57
Maternal mortality ratio ( per 100,000 live births)	276	420	400
HIV prevalence (per 100 adults 15-49 years)	0.1	0.2	0.8
TB prevalence (per 100000 population)	373	174	10
TB death rate (per 100000 people)	38		20

**Source: UNICEF, WHO – World Health statistics 2010.**

Neonatal mortality, defined as the probability of a child dying within the first month of life, is similarly expressed per 1000 children.<sup>86</sup> The Demographic Health Survey from 2006-2007 reports that neonatal mortality has been fairly constant over the years, estimated to be in the mid 50s per 1000.<sup>86</sup> The most recent data show that from 2006-2007, the neonatal mortality rate in Pakistan was 54 per 1000. By province, Baluchistan has the lowest neonatal mortality burden with 30 deaths per 1000, followed by Khyber-Pakhtunkhwa with 41 per 1000, then Sindh with 53 per 1000, with the greatest burden being in the Punjab province with 58 deaths per 1000.<sup>86</sup> Variations between places of residence (urban vs. rural), are less demarcated than in under-5 mortality and infant mortality rates. In the ten year study period between 1996 and 2006, the DHS reports neonatal mortality rates to be 48 per 1000 in urban areas as opposed to 55 per 1000 in rural areas.<sup>86</sup> Immunization rates also show that in 2004, 33% of children under 12 months of age did not get immunized against measles and 20% against tuberculosis.<sup>71</sup>

## Major Drivers of National Public Policy

The Millennium Development Goals (MDGs), as put forward by the United Nations, represent shared ideals of the improvement of human lives in developing countries. Of the 18 targets and 48 indicators, Pakistan, in an effort to meet the goals by 2015, has adopted 16 targets and 37 indicators. The 3 health-related MDGs—reducing child mortality, improving maternal health and combating HIV/AIDS, Malaria, and other diseases, are aimed at improving national and local health infrastructures and programs with the goal of decreasing preventable deaths among vulnerable populations.

Pakistan's Ministry of Health dictates National Health Policy, serving as a collective framework that provides guidelines to provinces while implementing plans in the health sector in accordance with their requirements and priorities. Current health sector reform aims to achieve accessible quality healthcare

for all, including the reduction in the widespread prevalence of communicable diseases, addressing inadequacies in primary/secondary healthcare services, removing professional/managerial deficiencies in the district health system, promoting greater gender equity, bridging basic nutrition gaps, correcting urban bias in the health sector, introducing regulation in the private medical sector, raising public health awareness, improving the drug sector and capacity-building for health policy monitoring.<sup>71</sup>

The Pakistani government's Medium Term Development Framework 2005-10 (MTDF) presents a vision of a "developed, industrialized, just and prosperous Pakistan through rapid and sustainable development, in a resource constrained economy by deploying knowledge inputs." The framework provides guidelines ensuring the equitable development of all of regions, and in regards to health, it emphasizes preventative medicine and primary healthcare while acknowledging the MDG targets. The MDTF also addresses issues of healthcare financing, health insurance and employees' social security, as well as the fostering of public-private partnerships in the health sector. The MTDF outlines the following major challenges facing Pakistan's healthcare system: organizational issues including inadequacies in primary/ secondary healthcare services, urban/rural imbalances, professional and managerial deficits in district health systems, gender inequity, unregulated private sectors, burden of disease issues including wide spread prevalence of communicable diseases, basic nutrition gaps in target populations, addiction and mental health and finally deficiency in the health education system.<sup>71</sup>

In line with the MTDF, the Planning Commission of Pakistan also developed and released in 2007 the Vision 2030 Document for Pakistan, in which it presents a strategic framework for overcoming obstacles and challenges standing in the way of the desired future for Pakistan. The document discusses issues related to energy, knowledge, science and technology as well as changing demographics and health. The aspirations of this document will be implemented in 5-year development frameworks.

The Poverty Reduction Strategy Papers (PRSP) captures Pakistan's macroeconomic, structural and social policies and programs to promote growth and reduce poverty. Prepared through a governmental participatory process, these documents outline national plans and define donor/development partner roles.<sup>71</sup> Pakistan's first published report, Interim-PRSP 2001-2002, mainly focused on engendering growth, improving governance, human development and social protection. This report also highlights the challenges facing the provision of health services, including weak policy formulation capacity, centralized management, frequent staff transfers and absenteeism. The PRSP documents, by providing annual and quarterly based public sector budgetary expenditures, put forward a strategy to achieve the MDGs. Among the proposed expenditures, the PRSP documents provide guidelines for sub-sectors of health including general hospitals and clinics, mother and child health facilities and prevention measures.<sup>71</sup>

## Financing Model for the Health System

According to the Economic Survey of Pakistan (2006-2007), the government of Pakistan devoted 0.75% of the country's total GDP to making the population healthier with total per capita health expenditure at around US\$18.<sup>36</sup> In fiscal year 2007-2008, the government spent 3.791 billion rupees in current expenditures and 14.272 billion rupees in development expenditures.<sup>64</sup>

Pakistan's Ministry of Health reported that in 2006-2007, the country had 13,937 total health facilities, including 965 hospitals, 4,916 dispensaries, 4,872 basic health units, 595 rural health centers, 1,138 maternal and child health centers, 371 Tuberculosis centers, and 1,080 first aid points.<sup>64</sup> Furthermore, they report a total bed capacity of 105,005 in hospitals and dispensaries, with approximately 1 bed for

every 1,515 persons and 11,413 persons to a single health facility.<sup>64</sup> In 2007, the government of Pakistan reported that there was 1 hospital available for over 170,000 persons, 1 rural health center available for more than 184,000 persons living in rural areas, 1 basic health unit available for more than 19,000 persons in rural areas, and 1 maternal and child health center available for more than 4,400 expecting mothers and newborns. There is approximately 1 doctor available for every 1,475 persons and 1 nurse for every 3,644 persons.<sup>64</sup>

<b>Table 47: Financing the health system</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Health expenditure per capita, PPP (current international \$)	20	22	22	23
Health expenditure, total (% of GDP)	3	3	3	3
Health expenditure, public (% of GDP)	1	1	1	1
Health expenditure, private % of GDP)	2	2	2	2
Health expenditure, public (% of total health expenditure)	30	30	32	33
Out-of-pocket health expenditure (% of private expenditure on health)	82	82	79	85
Out-of-pocket health expenditure (% of total expenditure on health )	57	57	54	57
<b>SOURCE : World Bank Data</b>				

There are a number of vertical and horizontal government-funded programs in Pakistan. Federally funded vertical programs include the Lady Health Visitor Program, Malaria Control Program, Tuberculosis and HIV/AIDS control program, National Maternal and Child Health Program, the Expanded Program on Immunization, Cancer Treatment Program, Food and Nutrition Program and the Prime Minister Program for Preventive and Control of Hepatitis A and B.<sup>71</sup>

## Decentralization Policy

Healthcare is overseen by the Ministry of Health at the federal level,<sup>72</sup> and by health departments at the provincial levels, who are responsible for public health service delivery in Pakistan. Medical services comprised of primary, secondary and tertiary health care facilities. Primary healthcare facilities include rural health centers, basic health units, primary health care centers, dispensaries, first aid posts, mother and child health centers and lady health visitors that look after out-patient patients.<sup>71</sup> Secondary health care facilities, including District and tehsil headquarter hospitals, look after out-patients and in-patients. Tertiary care centers are mainly located in major cities and are typically affiliated with research and teaching organizations. Secondary and tertiary care facilities are generally open all day and night.