



Islamic Republic of Afghanistan
Ministry of Public Health

**The Essential Package of
Hospital Services
for Afghanistan**

March 2005

Abbreviations

| | |
|------|---|
| ANC | Antenatal Care |
| BHC | Basic Health Center |
| BPHS | Basic Package of Health Services |
| CHC | Comprehensive Health Center |
| CHW | Community Health Worker |
| DH | District Hospital |
| DOTS | Directly Observed Therapy, Short Course |
| DPT | Diphtheria Pertussis Tetanus |
| EPHS | Essential Package of Hospital Services |
| EPI | Expanded Program on Immunization |
| HP | Health Post |
| MOPH | Ministry of Public Health |
| PH | Provincial Hospital |
| RH | Regional Hospital |

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1. The Hospital Sector in the Afghan Health System

1.1 Background: The Afghan Health System and Issues Facing Hospitals

The Ministry of Health (MOH) of Afghanistan determined the priority health services which would address the most immediate needs of the population. That culminated in the release of “A Basic Package of Health Services for Afghanistan” in March 2003. This package included the most needed services at the health post and health center level of the health system.

After establishment of the Basic Package of Health Services (BPHS), the Hospital Management Task Force of MOH saw the need for development of a framework for the hospital element of the health system. The Basic Package made clear the need for a primary care based health system which requires to have a functioning hospitals system in order to have an appropriate referral system where all health conditions may be treated. Health services in Afghanistan operate at three levels. At the community or village level there are health posts (HP) and community health workers (CHWs). In larger villages or communities of a district are Basic Health Centers (BHC), Comprehensive Health Centers (CHC), and District Hospitals. The third level are the provincial and regional hospitals. In urban areas, for the time being and due to a general lack of facilities offering basic curative and preventive services, urban clinics, hospitals and specialty hospitals provide the services that in rural areas are provided by the HPs, BHCs and CHCs.

Hospitals are a critical element of the Afghan health system because they are part of the referral system which is required if there is to be a reduction in high maternal and early childhood mortality rates. In addition, hospitals utilize many of the most skilled health workers and the financial resources used by the health system. Hence, it is important that these scarce resources used by hospitals be used in an effective and efficient manner. This requires the dramatic improvement in the management of hospitals so they function better as part of the health system as well as ensuring that their resources are used more effectively. These needs for improvement are at all hospital levels—district, provincial and regional hospitals as well as the tertiary and specialty hospitals in Kabul.

As a consequence, the Hospital Management Task Force began working on a national policy on hospitals. A policy was needed in order to define the role of the hospital in the Afghan health system. First however, the key problems facing the Afghan hospital system had to be identified. The Hospital Management Task Force determined that the key issues facing hospitals could be summarized by five key problems and the resultant consequence:

1. Problem: Misdistribution of hospitals and hospital beds throughout the country
Consequences: Lack of equitable access to hospital cares throughout the country—people in urban areas have access but semi-urban and rural populations have limited access. For example Kabul has 1.28 beds per 1000

- people while in provinces they have only 20% of the beds/pop that Kabul has (0.22 beds per 1000 population)
2. **Problem:** Lack of standards for clinical patient care
Consequences: Poor quality of care,
 3. **Problem:** Lack of hospital management skills for operation of hospitals
Consequences: Inefficiently run hospitals, poorly managed staff, lack of supplies, unusable equipment due to lack of maintenance
 4. **Problem:** Hospital system is fragmented and uncoordinated, hospitals are not integrated into the health system
Consequences: Referral system does not work—people from rural areas and basic health centers not referred to hospitals for problems, such as problem pregnancies. So there is a lack of support for Basic Package of Health Services based system for secondary and tertiary services. The roles of hospitals in a BPHS-based health system have not been spelled out.
 5. **Problem:** Financial resources for hospitals and sustainability
Consequences: Virtually all hospitals in Afghanistan lack adequate financial resources. There is a need to develop a user fee system to help finance hospitals while ensuring there are exemption mechanisms for the poor so they continue to have access to care.
 6. **Problem:** Lack of qualified personnel, especially female, in remote areas.
Consequences: difficulties to guarantee 24-hour coverage, problems with quality of care provided to female patients.

As a result of the Hospital Management Task Force’s review of the situation, a national policy was adopted in February 2004 by the MOH Executive Board that had been drafted by the Hospital Management Task Force: “Hospital Policy for Afghanistan’s Health System” (Annex A). This policy provided the rational, structure and guidelines needed to complete the definition of a health system that was appropriate for Afghanistan by clearly (1) identifying the needs of the hospital sector, (2) establishing 10 key policies relative to hospitals, (3) setting forward 31 standards for hospital in 6 major areas (responsibilities to the community, patient care, leadership and management, human resource management, management systems, and hospital environment), (4) identifying the levels of hospitals in the system and (5) the need for rationalizing hospitals. This is the framework by which work in the hospital sector is moving forward.

1.2 Purpose

The Essential Package of Hospital Services (EPHS), has four purposes: (1) to identify a standardized package of hospital services at each level of hospitals, (2) to provide a guide for the MOH, private sector, NGOs and donors on how the hospital sector should be staffed, equipped and provided materials and drugs to perform a defined set of services at each level of the hospital sector, (3) to promote a health referral system that integrates the Basic Package of Health Services with the hospitals and (4) to provide a basis for establishing a hospital system that provides quality hospital services through efficient management. The EPHS defines, for the first time, all the necessary elements of services, staff, facilities, equipment and drugs for each type of

hospital in Afghanistan. The EPHS identifies, with tables, the following elements for each level of hospital—district, provincial and regional—so that the inputs or resources needed at each level of the hospital referral system may be easily compared:

- Services, diagnostic and treatment, for various conditions (section 2);
- Diagnostic tests (section 3);
- Staffing (section 4);
- Equipment and supplies (section 5); and
- Essential drugs (section 6).

Annex A provides the national hospital policy and annex B describes the assumptions behind the staffing calculations.

1.3 Levels of Hospitals

Hospitals are a critical element of the Afghan health system because they support the primary health services and are part of the referral system which is required if there is to be a reduction in high maternal and early childhood mortality rates. There are three levels of hospitals:

- District hospitals (as a part of the BPHS)
- Provincial hospitals
- Regional hospitals

Hospitals are classified into one of three groups according to the size of the referral populations they serve, the number of beds, their workload, and the complexity of patient services offered.

Another group of hospitals, specialty hospitals, are referral centers for tertiary medical care and are primarily located in Kabul. They provide education and training for health workers and act as referral hospitals for the provincial and regional hospitals. A separate category of “specialty hospitals” was not created for the Essential Package of Hospital Services because each of these hospitals is unique. Thus, it would be difficult in this document to characterize as one group the unique services, staffing, equipment, and drugs required at each of these hospitals.

For the three category of hospitals, there are four core clinical functions that will exist in each level of hospital: medicine, surgery, pediatrics, and obstetrics and gynecology. Mental health and dental health are predominantly provided as outpatient services at various levels. Mental health services, for instance, is provided as an outpatient service at the district and provincial hospitals while such services on an inpatient basis are provided at the regional level, if required.

District hospitals and, where there are no district hospitals, provincial hospitals, support the primary health services of the BPHS. District hospitals are generally staffed by junior general medical officers. Provincial hospitals, as compared to district hospitals, provide more sophisticated services for diagnosing and treating various conditions and support the use of some specialist doctors. Regional hospitals are

tertiary hospitals which, in addition to the above, provide more advanced specialized care. Research, and training medical officers, midwives and nurses will be practiced at all three levels of hospitals.

1.4 The Relationship between the BPHS and the Essential Package of Hospital Services

Hospitals are the part of the health system that provide increasingly sophisticated services in support of referrals from the primary health care system. The health post, basic health center and comprehensive health center offer basic curative and preventive services. An escalating level of sophistication exists as one moves from district to urban hospitals. The district hospital (for which the provincial hospital serves that function where there is no district hospital) is the link between the BPHS and the hospital referral system, as illustrated in Figure 1.

The entry point to the hospital system at the district hospital level is shown in Figure 2 for the district hospital. The flow would be similar for the provincial and regional hospital in accepting patients from the lower level health facilities and hospitals.

1.5 The Role of Hospitals in the Health System

Each level of hospital has a role in providing a continuum of care from the health post to regional and specialty hospitals. This section defines the purpose, role and summary of services of each hospital level.

District hospitals

Purpose:

The district hospital brings professional inpatient and emergency services closer to the population in rural areas. It's supplementary role to the health centers aims at reducing the Maternal Mortality Ratio (MMR), Infant Mortality Rate (IMR), and Under-5 mortality (U5M). The district hospital is mainly an emergency hospital where patients are assessed, diagnosed, stabilized and either treated or referred back to a lower level or up to a higher health facility level. 24-hour Comprehensive Emergency Obstetric Care services is a crucial aspect of a district hospital. There are two entry points to the district hospital, the outpatient department (OPD) and emergency department as illustrated in Figure 2.

Role:

- The district hospital (DH) is an important part of the referral system. It is the first point of entry for referrals from the comprehensive health center (CHC) and for self-referrals in case of an emergency.
- The DH is part of the Basic Package of Health Services (BPHS). The DH functions as a triage station where patients are assessed, diagnosed, stabilized and treated and referred if needed to a higher hospital level.
- The DH outpatients department functions as the entry point to the health system in case there are no BHCs or CHCs available.

- The health system promotes a two-way referral system where patients that no longer need DH care are referred back to the health centers.
- Performing primarily emergency surgery is not a role of the DH.
- The DH has a role in capacity building of health workers, providing health education, collecting HMIS health information, and participating actively in improving the health of the population. This includes health education, immunization campaigns, information sharing with partners, to be responsive to changing needs of the community and to ensure appropriate use of materials and equipment.

Summary of services:

A district hospital should have the following clinical, diagnostic and administrative services. See section 2 for a more detailed listing of conditions diagnosed and treated at the district hospital.

Table 1 Summary of Services at a District Hospital

| | |
|--|---|
| Clinical and diagnostic services | <ul style="list-style-type: none"> • Inpatient services (24-hour) <ul style="list-style-type: none"> ○ general surgical services (operating theater, anesthesia, recovery room services, and sterilization services) ○ general obstetric and gynecology services ○ general pediatric services (including therapeutic feeding services) ○ general medical services • Emergency department open and staffed 24 hours • Outpatient services (including vaccinations, mental health and dental services) • Hospital pharmacy • Physiotherapy services • Basic laboratory and blood transfusion (no blood bank) services • Basic x-ray and ultrasound services |
| Administrative and support services | <ul style="list-style-type: none"> • Management and administration team <ul style="list-style-type: none"> ○ finance and accounting ○ procurement and medical stores ○ human resources ○ supervision of all support services and buildings ○ security • Central sterile supply • Medical records and HMIS statistics • Kitchen • Laundry and tailor • Waste management and cleaning services • Maintenance services and workshop • Vehicles: transportation for emergencies and transferring patients |

Provincial hospitals

Purpose:

The provincial hospital (PH) is the referral hospital for the provincial health system. The provincial hospital is, in essence, not very different from a district hospital. It has the same clinical services and possibly a few added specialities (see section 4 for staffing) It is, in most cases, the last referral point for patients referred from the districts. In some instances, the provincial hospital can refer to higher levels of care—to the regional hospital or to a specialty hospital in Kabul. The PH brings professional inpatient and emergency services closer to the population in the rural areas. Through a supplementary role to the basic and comprehensive health centres and the district hospital, it aims at reducing the Maternal Mortality Ratio (MMR), Infant Mortality Rate (IMR), and Under-5 mortality (U5M) and other diseases and conditions responsible for the high mortality and morbidity in Afghanistan.

Role:

- The provincial hospital (PH) is an important part of the referral system and the first point of entry for referrals from the district hospital or comprehensive health center (CHC) and for self-referrals for emergencies.
- The PH is supplementary to the BPHS and functions as a triage station where patients are assessed, diagnosed, stabilized and treated or referred to a regional hospital.
- The health system promotes a two-way referral system where patients that no longer need PH care are referred back to the health centers (similar to referral patterns shown in Figure 2).
- The PH outpatients department functions as the entry point to the health system in case there are no BHCs or CHCs available.
- Because the PH is primarily an emergency hospital, it does not perform complicated elective surgery (see Section 2).
- The PH's role includes the training of health professionals, collecting HMIS health information, and participating actively in improving the health of the population through community outreach, health education, immunization campaigns, information sharing with partners, being responsive to the changing needs of its community and province, and ensuring the appropriate and efficient management and use of staff, buildings, equipment, and materials.

Summary of services:

A provincial hospital should have the following clinical, diagnostic and administrative services. See section 2 for a more detailed listing of conditions diagnosed and treated at the provincial hospital.

Table 2 Summary of Services at a Provincial Hospital

| | |
|--|---|
| Clinical and diagnostic services | <ul style="list-style-type: none"> • Inpatient services <ul style="list-style-type: none"> ○ general surgical services (operating theater, anesthesia, recovery room services, and sterilization services) ○ general obstetric and gynecology services ○ general pediatric services (including therapeutic feeding) ○ general medical services • Emergency department open and staffed 24 hours • Outpatient services (including vaccinations, basic ENT, mental health, eye care and dental services) • Hospital pharmacy • Physiotherapy services • Basic laboratory, blood transfusion services and blood bank • Basic x-ray and ultrasound services |
| Administrative and support services | <ul style="list-style-type: none"> • Management and administration team <ul style="list-style-type: none"> ○ finance and accounting ○ procurement and medical stores ○ human resources ○ supervision of all support services & buildings ○ security • Central sterile supply • Medical records and HMIS statistics • Kitchen • Laundry and tailor • Waste management and cleaning services • Maintenance services and workshop • Vehicles: transportation for emergencies and transferring patients • Mortuary |

Regional hospitals

Purpose:

The regional hospital (RH) is mainly a referral hospital with a number of specialities for assessing, diagnosing, stabilizing and treating or referring back to a lower level hospital. The RH brings professional inpatient and emergency services at a higher level than available at district or provincial hospitals, yet the overall objective remains to reduce the high maternal mortality (MMR), infant mortality (IMR) and under-five mortality (U5M) and other diseases and conditions responsible for the high mortality and morbidity in Afghanistan.

Role:

- The regional hospital (RH) is an important part of the referral system as it contains many of the specialists that are not present at other levels of the hospital system.

- The RH, as a part of Afghanistan health system, has a significant role to play in training of health professionals, collecting HMIS and medical research information, and conducting medical and health system research.

Summary of services:

A regional hospital should have the following clinical, diagnostic and administrative services. See section 4 for a more detailed listing of staffing of specialists and section 2 for the range of conditions diagnosed and treated at the provincial hospital.

Table 3 Summary of Services at a Regional Hospital

| | |
|---|--|
| <p>Clinical and diagnostic services</p> | <ul style="list-style-type: none"> • Inpatient services <ul style="list-style-type: none"> ○ general and specialized surgical services (operating theater, anesthesia, recovery room services, and sterilization services) ○ obstetric and gynecology services ○ pediatric services (including therapeutic feeding center) ○ general and specialized medical services ○ ophthalmology and ENT services ○ mental health and psychiatric services ○ dental services ○ forensic medicine • Emergency department open and staffed 24 hours • Outpatient services • Hospital pharmacy • Physiotherapy services • Laboratory, blood transfusion services and blood bank • X-ray and ultrasound services • Endoscopy services • CT scan (Kabul only at tertiary hospital level) |
| <p>Administrative and support services</p> | <ul style="list-style-type: none"> • Management and administration team <ul style="list-style-type: none"> ○ finance and accounting ○ procurement and medical stores ○ human resources ○ supervision of all support services & buildings ○ security • Central sterile supply • Medical records and HMIS statistics • Kitchen • Laundry and tailor • Waste management and cleaning services • Maintenance services and workshop • Vehicles: transportation for emergencies and transferring patients • Mortuary |

1.6 The Organization of Hospitals

The general administration of hospitals in Afghanistan should be organized as indicated in Figure 3, “Organizational Structure of Hospitals.” Figure 3 shows the staff positions, how various departments of the hospital relate and the necessary reporting relationships. As noted in the next section, hospital boards will be introduced to ensure that hospitals are provided oversight by community members who can identify the true needs of the community and ensure that the administration of the hospital is held accountable for addressing the needs of the community in an efficient and effective manner.

While the Hospital Director is responsible for the hospitals operations and the day-to-day management of the facility and its services, it is expected that a management team of the key staff will be developed by the Director. The major plans, problems, and budgets of the hospital are brought to the team members at weekly meetings for discussion and resolution through the advice of the management team. With the sense of participatory management and teamwork, the Hospital Director will be able to improve the quality of care, performance, operation and management of the hospital.

1.7 The Future of Hospitals in Afghanistan

The top three priorities of the hospital sector in the coming years is to increase access to hospital services, improve the quality of patient care, and make the operation of the hospitals more efficient. To bring about these improvements will require several initiatives. The following three initiatives can be expected to be operationalized in the next 5 to 10 years.

First, is the need to establish standards. Standards are required in clinical and administrative operations of hospitals. Standards are required to improve the clinical and managerial performance to attain an acceptable level of patient care and operations for hospitals. Standards establish what is expected of hospitals and their staff at all levels of operation. It is the establishment of such reasonable standards which permits the monitoring of hospital operations against which hospital performance can be measured. The national hospital policy (Annex A) outlines the six areas of basic standards that need to be developed. They are presented in Table 4. Specific elements of each standard must be developed and specified in greater detail by the Ministry of Health (MOH).

Second, hospital boards will need to be established for the purpose of strengthening community involvement in the hospital. Community support for hospitals is often poor and communities which use the hospital tend to regard it as the “government’s hospital” or the “NGO’s hospital” rather than “their” hospital. Hospital community boards will be made up of volunteers. These volunteer board members with diverse skills and experience will be responsible for the long term viability of the hospital and ensure that it meets the real and felt needs of the community. A hospital board would provide the general direction and guidance for the management and operation of the hospital as well as serving as a link between the community and hospital.

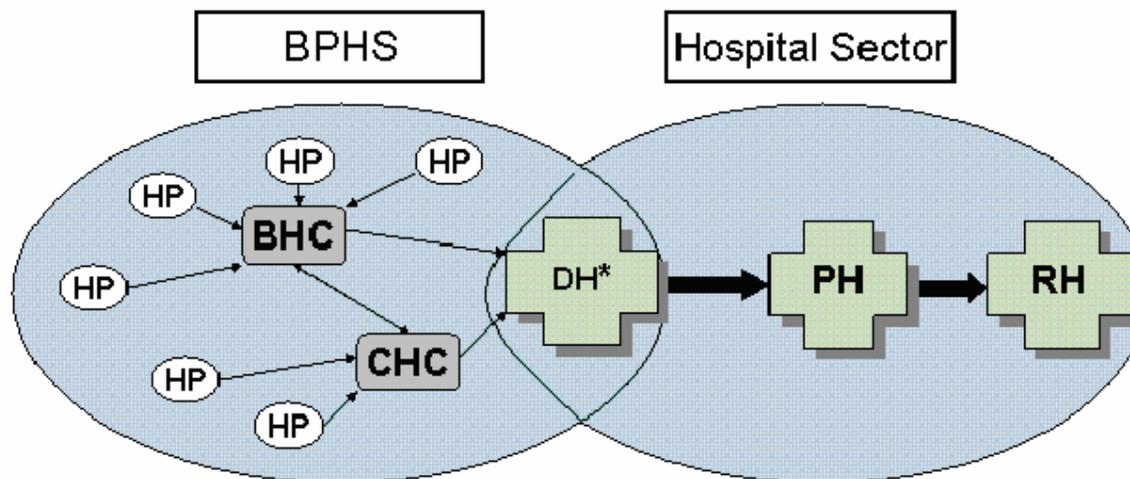
Its responsibilities would include:

- Ensuring that high quality services are provided;
- Maintaining community and government relations and generate community support for the hospital;
- Serve as the policy and strategy-setting body of the hospital;
- Supporting the leadership of the hospital;
- Providing financial oversight; and
- Helping develop a hospital's strategic plan.

Third, as the number of hospitals that are operated by government, NGOs and private entities increase there will be a need for hospital certification or accreditation to ensure that all hospitals provide a basic standard of care. Accreditation is the process of assessing health institutions against a commonly accepted set of standards. The purpose of accreditation is to ensure and improve quality of health services. The main issue with accreditation is to ensure that providers, both the hospital as an institution and its physicians and nurses provide good quality care. Table 5 provides elements of quality of care that would be considered in accreditation.

Figure 1 Link between the BPHS and Hospital Sector

Figure 1
Link between the BPHS and Hospital Sector



* Where there is no district hospital, the provincial hospital provides services to fill this role.
Where there are not CHCs and BHCs, then DH and PH fill in this role through their OPD

Key:

BPHS: HP: Health Post; BHC: Basic Health Center; CHC: Comprehensive Health Center
Hospitals: DH: District Hospital; PH: Provincial Hospital; RH: Regional Hospital

Figure 2 Entry and Flow of Patients at the District Hospital

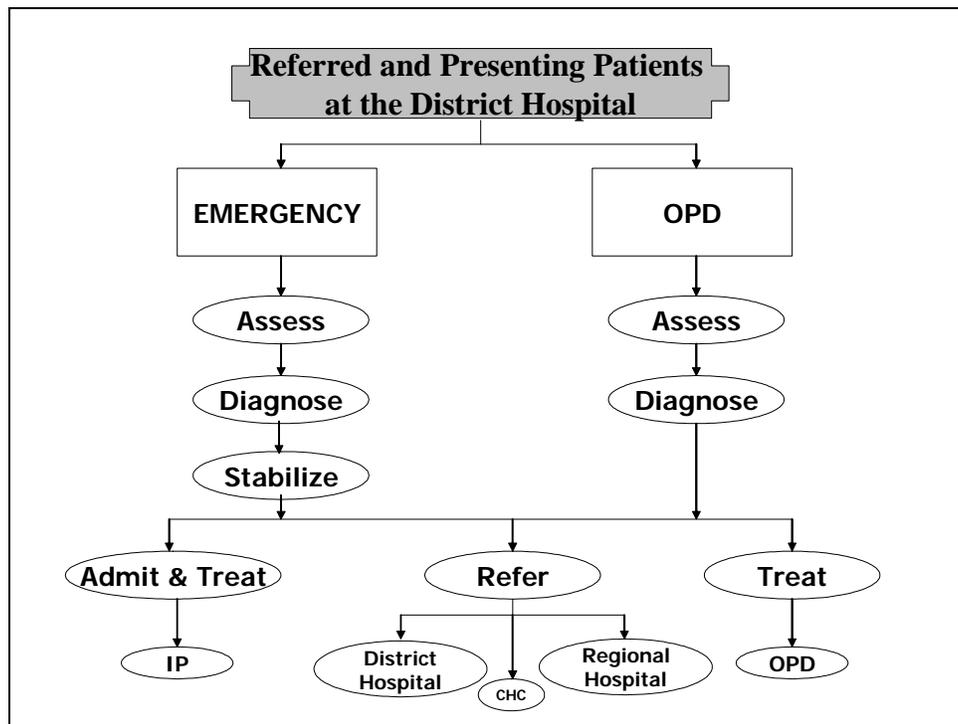


Figure 3
Hospital Organizational Structure

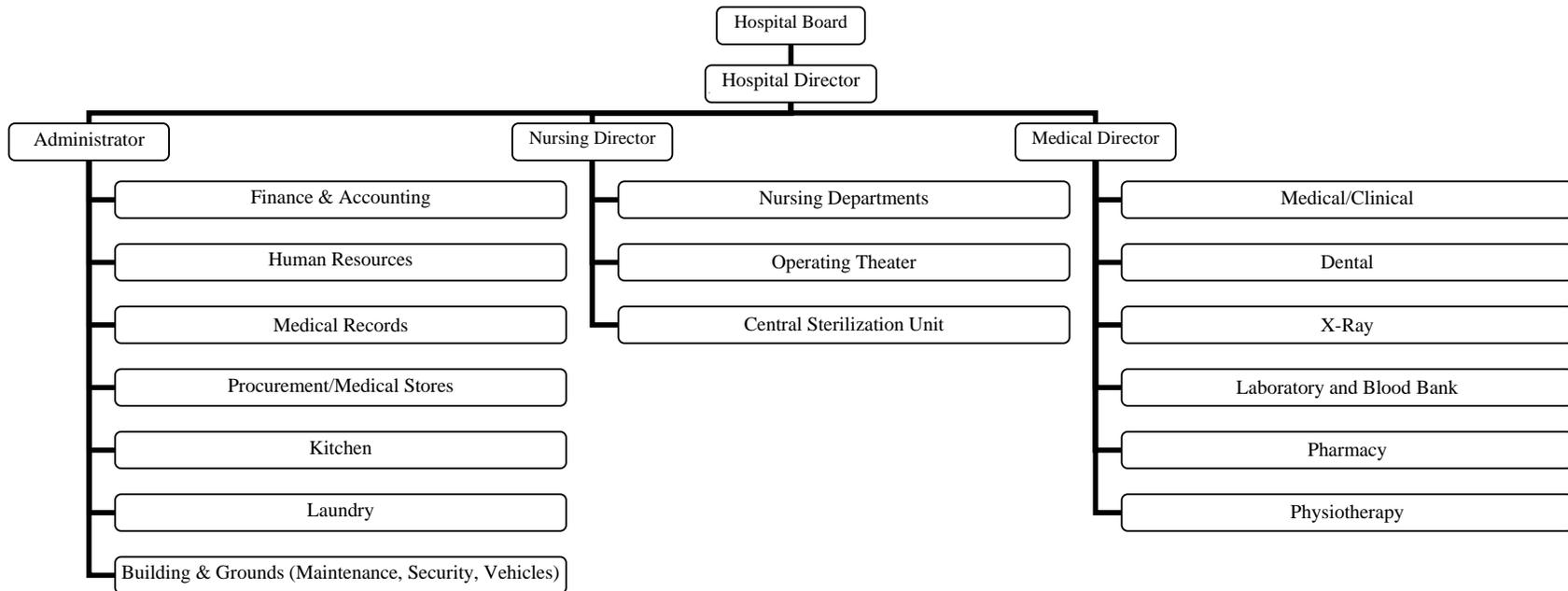


Table 4 Standards for Hospitals

1. Responsibilities to the Community:
 - 1.1. The hospital is responsive to the community's [health] needs
 - 1.2. Hospital services will be accessible to the community.
 - 1.3. Hospitals will have a proper disaster preparedness plan so it can properly respond in the event of natural or man-made disasters.
2. Patient Care
 - 2.1. Patients will be treated with dignity and have a right to be treated in a respectful manner.
 - 2.2. Quality of clinical care to the patient that the hospital serves is high and appropriate for Afghanistan, including the proper staffing, equipment and supplies.
 - 2.3. Quality of care will be monitored and measured by agreed indicators (e.g. wound infections, length of hospital stay, operations per patient, mortality rates etc).
 - 2.4. Women and children will receive the basic package of health services at hospitals, including immunization, outpatient care for conditions, such as pneumonia and diarrhea, as well as appropriate assistance at the time of delivery.
 - 2.5. Hospitals will be "mother and baby friendly" and encourage "rooming-in" and immediate, exclusive breast feeding.
 - 2.6. Care delivery is monitored by the hospital's health care team to ensure that care meets the needs of patients and to assist in the improvement of care.
 - 2.7. Medical records are maintained for each patient and are kept confidential and secure.
3. Leadership and Management
 - 3.1. The hospital is effectively and efficiently governed, organized, supervised and managed to ensure the highest quality of care possible for patients.
 - 3.2. To ensure the responsiveness of hospitals to the community, a hospital board of directors or board of management will be established at each hospital to govern and oversee the proper operation and management of the hospital.
4. Human Resource Management
 - 4.1. Staff planning ensures the hospital is staffed with properly trained staff and the appropriate number of staff.
 - 4.2. Staff are appointed through a recruitment, selection and appointment procedure that is consistent with human resources policy of MOH.
 - 4.3. Staff will adhere to high ethical standards and code of conduct in performance of their duties.
 - 4.4. A comprehensive program of staff development and in-service training meets individual and hospital needs.
 - 4.5. Effective workplace relations are developed through use of teams
5. Management Systems
 - 5.1. Financial management policies and procedures are developed and adhered to in order to ensure accountability of the hospital's finances from all sources.
 - 5.2. Management information systems meet the hospital's internal and external needs
 - 5.3. Patient care, management of services, education and research are facilitated by the timely collection and analysis of data
 - 5.4. Information technology enhances the hospital's ability to gather, store and analyze information and to communicate.
 - 5.5. Appropriate logistics and purchasing systems are maintained to ensure clinicians

have the proper equipment, supplies and pharmaceuticals to provide patient care.

5.6. Buildings and grounds are maintained to ensure proper management.

6. Hospital Environment

6.1. Infection is effectively controlled throughout the hospital

6.2. The physical environment of the hospital and its equipment are properly maintained to ensure patient and staff safety and that there are no physical barriers for those with disabilities.

6.3. The hospital is accessible to all patients with including those with physical disabilities.

6.4. Buildings, grounds, plant and equipment are regularly maintained to ensure a safe environment for all persons in the hospital.

6.5. Waste from the hospital is handled, contained and disposed of safely and efficiently

6.6. Occupational health measures are adopted to ensure the safety of staff, especially those dealing with direct patient care.

6.7. Clean water of sufficient quantity and quality is available for patients and staff and for proper hospital functioning.

6.8. Toilets in the hospital are kept clean for use by patients, staff, and visitors.

Source: Ministry of Health, Hospital Policy for Afghanistan's Health System, February 2004.

Table 5 Accreditation: Dimensions of Quality of Care

1. Technical aspects of quality

- Accuracy of diagnosis
- Efficacy of treatment [appropriateness of treatment]
- Excellence according to professional standards
- Necessity of care
- Appropriateness
- Continuity of care
- Consistency

2. Interpersonal aspects of quality

- Patient satisfaction
 - ♦ Time spent with provider
 - ♦ Attitudes of provider and treatment by staff
- Community satisfaction
- Amenities

3. Social aspects of quality

- Efficiency
- Accessibility

Source: W. Newbrander, MSH, July 1999, "Report on Accreditation of Providers for the National Health Insurance Fund", Ministry of Health, United Republic of Tanzania.

2. Services Provided by Different Levels of the Hospital Sector

The services provided by hospitals encompass diagnosis and treatment, based upon the diagnosis. The services provided by each type of hospital in the system is identified in Table 6, "Diagnosis and Treatment of Common Conditions by Hospital Level."

To define the services provided at each hospital level, the EPHS in Table 6 categorizes the major physiological conditions or services. Within each of those categories the table lists the more specific conditions that may present and indicates at what level those conditions would be treated.

There are many conditions for which a particular hospital level is not suited to treat the condition but based upon an emergency situation, the only option is for the clinicians to treat the patient as best as possible. For instance, dealing with a cardiac arrest would best be served by use of a defibrillator. If a patient at a district hospital has a cardiac arrest, the staff will undertake to resuscitate the patient with basic means at its disposal even though a defibrillator is not available. Referral is out of the question. In such a case, in Table 6 the chart shows that cardiac arrest is primarily dealt with at the regional hospital level since that is the only level where a defibrillator, ECG machine, advanced cardiologic drugs and Cardiologist are available. However, it is understood that the district hospital clinical staff will make ever attempt to resuscitate the patient as best it can with the available staff, equipment and drugs. Such circumstances are noted in italics in Table 6.

Table 6 Diagnosis and Treatment of Common Conditions by Type of Hospital

| Diagnosis and Treatment of Common Conditions | | Type of Hospital | | |
|--|--|-------------------|---------------------|-------------------|
| | | District Hospital | Provincial Hospital | Regional Hospital |
| 1. ACUTE TRAUMA & SELECTED EMERGENCIES | | | | |
| 1.1 | Anaphylaxis | X | X | X |
| 1.2 | Cardiac Arrest (<i>simple ABC resuscitation done at all levels, but defibrillator only available at Regional Hospital</i>) | | | X |
| 1.3 | Abdominal Trauma | X | X | X |
| 1.4 | Bites & Rabies | X | X | X |
| 1.5 | Burns | X | X | X |
| 1.6 | Natural Disasters | X | X | X |
| 1.7 | Head Injury | X | X | X |
| 1.8 | Multiple Injury to Patient | X | X | X |
| 1.9 | Pneumothorax & Haemothorax | X | X | X |
| 1.10 | Poisoning | X | X | X |
| 1.11 | Shock | X | X | X |
| 1.12 | Tracheotomy (<i>done at all levels in cases of emergency</i>) | X | X | X |
| 1.13 | Fluid and electrolyt balance | | X | X |
| 2. AIDS/HIV AND SEXUALLY TRANSMITTED DISEASES | | DH | PH | RH |
| AIDS Prevention and Management | | | | |
| 2.1 | Universal precaution measures | X | X | X |
| 2.2 | Needle stick injury | X | X | X |
| 2.3 | Mother to child transmission of HIV | | | X |
| 2.4 | HIV screening by rapid test | X | X | X |
| 2.5 | Confirmation of HIV infection (<i>by two different Elisa tests</i>) | X | X | X |
| 2.6 | Stages and diagnosis of AIDS | | | X |
| 2.7 | Information, Education and Communication | X | X | X |
| 2.8 | Voluntary Counselling and Testing | | | X |
| Sexually Transmitted Diseases (STDs) | | | | |
| 2.9 | Gonorrhea & Urethral Discharge | X | X | X |
| 2.10 | Genital Discharge in the Female | X | X | X |
| 2.11 | Dysuria in the Female | X | X | X |
| 2.12 | Pelvic Inflammatory Disease | X | X | X |
| 2.13 | Genital Ulcer Disease | X | X | X |
| 2.14 | Buboes or Swollen Inguinal Glands | X | X | X |
| 2.15 | Venereal Warts (Genital) | X | X | X |
| 3. CARDIOVASCULAR CONDITIONS | | DH | PH | RH |
| 3.1 | Congenital Heart Disease | | | X |
| 3.2 | Deep Vein Thrombosis | X | X | X |
| 3.3 | Heart Failure | | X | X |
| 3.4 | Hypertension | X | X | X |
| 3.5 | Pulmonary Oedema | X | X | X |
| 3.6 | Ischemic Heart Disease (<i>symptomatic treatment only, refer to tertiary Kabul level if possible</i>) | X | X | X |
| 3.7 | Rheumatic Heart Disease | X | X | X |
| 4. CENTRAL NERVOUS SYSTEM | | DH | PH | RH |
| 4.1 | Cerebral Palsy | | | X |
| 4.2 | Seizure Disorders | X | X | X |

| 5. DENTAL AND ORAL CONDITIONS | | | DH | PH | RH |
|-------------------------------|--|--|----|----|----|
| 5.1 | Abscess, Periapical | | X | X | X |
| 5.2 | Acute Necrotizing Ulcerative Gingivitis | | X | X | X |
| 5.3 | Alveolitis (Dry Socket) | | | X | X |
| 5.4 | Cellulitis (Oral) | | X | X | X |
| 5.5 | Gingivitis | | X | X | X |
| 5.6 | Neoplasms, Salivary Gland, & Hereditary/Developmental Disorders (<i>refer to Kabul hospital</i>) | | — | — | — |
| 5.7 | Pericoronitis | | X | X | X |
| 5.8 | Periodontitis | | X | X | X |
| 5.9 | Pulpitis | | X | X | X |
| 5.10 | Temporomandibular Joint Disorders (<i>refer to Kabul if necessary</i>) | | | | X |
| 5.11 | Trauma (<i>jaw trauma: refer to Regional or Kabul tertiary Hospital level if necessary</i>) | | | X | X |

| 6. EARS, NOSE, THROAT CONDITIONS | | | DH | PH | RH |
|----------------------------------|-----------------------------|--|----|----|----|
| 6.1 | Acute Otitis Media | | X | X | X |
| 6.2 | Otitis Externa | | X | X | X |
| 6.3 | Chronic Otitis Media (CSOM) | | | | X |
| 6.4 | Epistaxis | | X | X | X |
| 6.5 | Foreign Bodies in the Ears | | X | X | X |
| 6.6 | Foreign Bodies in the Nose | | X | X | X |
| 6.7 | Mastoiditis | | | | X |
| 6.8 | Wax on Ear | | X | X | X |

| 7. ENDOCRINE SYSTEM | | | DH | PH | RH |
|---------------------|--|--|----|----|----|
| 7.1 | Diabetes Mellitus | | | X | X |
| 7.2 | Thyroid Diseases (<i>simple Goiter, otherwise refer to Kabul hospital</i>) | | X | X | X |

| 8. EYE CONDITIONS | | | DH | PH | RH |
|-------------------|--|--|----|----|----|
| 8.1 | Common Eye Conditions (<i>for most conditions a generalist may treat at all levels but for trachoma and cataracts and other complicated conditions, ophthalmologist at Regional Hospital required</i>) | | X | X | X |
| 8.2 | Eye Injuries (<i>many conditions can be treated at all levels, for those that cannot refer to ophthalmologist at Regional Hospital required</i>) | | X | X | X |

| 9. FAMILY PLANNING | | | DH | PH | RH |
|--------------------|---|--|----|----|----|
| 9.1 | Hormonal Contraceptives | | X | X | X |
| 9.2 | Intrauterine Contraceptive Devices (IUCDs) | | X | X | X |
| 9.3 | Barrier Methods | | X | X | X |
| 9.4 | Surgical Contraception | | X | X | X |
| 9.5 | Periodic Abstinence (Natural Family Planning) | | X | X | X |

| 10. GASTROINTESTINAL CONDITIONS | | | DH | PH | RH |
|---------------------------------|--|--|----|----|----|
| 10.1 | Amoebiasis | | X | X | X |
| 10.2 | Diarrheal Diseases | | X | X | X |
| 10.3 | Gastritis | | X | X | X |
| 10.4 | Peptic Ulcer Disease | | X | X | X |
| 10.5 | Upper GI Tract Bleeding (<i>at all levels patient is stabilized with IVs and anti-peptic drugs, but further diagnosis and treatment requires referral for use of endoscope at Regional Hospital level</i>) | | | | X |
| 10.6 | Worms | | X | X | X |

| 11. GYNECOLOGY | | DH | PH | RH |
|----------------|---|----|----|----|
| 11.1 | Uterus Fibromyoma | | X | X |
| 11.2 | Infertility (<i>only basic treatment offered, advanced tests not available at any of the hospital levels</i>) | X | X | X |
| 11.3 | Pelvic Masses | | X | X |
| 11.4 | Menstrual Disturbances | X | X | X |
| 11.5 | Neoplasms (<i>refer to Kabul hospital</i>) | — | — | — |
| 11.6 | Vaginitis (Vaginal Discharge) | X | X | X |
| 11.7 | Pelvic Inflammatory Disease (PID) | X | X | X |
| 11.8 | Abscesses | | X | X |
| 11.9 | Prolapse and transvaginal operations | | | X |
| 11.10 | Fistulae | | | X |
| 11.11 | Sexual Assault | X | X | X |

| 12. IMMUNIZATION | | DH | PH | RH |
|------------------|---------------------------|----|----|----|
| 12.1 | Vaccination Schedule | X | X | X |
| 12.2 | Dosage and Administration | X | X | X |

| 13. INFECTIOUS (SELECTED) & RELATED CONDITIONS | | DH | PH | RH |
|--|--|----|----|----|
| 13.1 | Acute Rheumatic Fever (ARF) | X | X | X |
| 13.2 | Bacterial Infections | X | X | X |
| 13.3 | Leishmaniasis | X | X | X |
| 13.4 | Malaria | X | X | X |
| 13.5 | Measles | X | X | X |
| 13.6 | Meningitis | X | X | X |
| 13.7 | Poliomyelitis | X | X | X |
| 13.8 | Tetanus | X | X | X |
| 13.9 | Tuberculosis | X | X | X |
| 13.10 | Typhoid Fever | X | X | X |
| 13.11 | Rabies (<i>rather than refer with inherent dangers of transporting publicly, patients treated and isolated with arrier nursing at all hospital levels</i>) | X | X | X |
| 13.12 | Viral Hemorrhagic Fevers | X | X | X |

| 14. MENTAL ILLNESS | | DH | PH | RH |
|---|-----------------------------------|----|----|----|
| <i>(as a psychiatrist is only available at regional hospital level, common psychiatric conditions such as acute psychosis, depression, sleep disorders and suicide attempts will have to be treated at all hospital levels)</i> | | | | |
| 14.1 | Acute Confusion (Acute Psychosis) | X | X | X |
| 14.2 | Anxiety | | | X |
| 14.3 | Childhood Psychiatric Disorder | | | X |
| 14.4 | Conversion Syndromes | | | X |
| 14.5 | Depression | X | X | X |
| 14.6 | Mania | | | X |
| 14.7 | Schizophrenia | | | X |
| 14.8 | Sleep Disorders | X | X | X |
| 14.9 | Suicide Attempts | X | X | X |
| 14.10 | Substance Abuse | | | X |
| 14.11 | Post Traumatic Stress Syndrome | X | X | X |

| 15. MUSCULOSKELETAL CONDITIONS | | DH | PH | RH |
|--------------------------------|--------------------------|----|----|----|
| 15.1 | Arthralgia, Non-specific | X | X | X |
| 15.2 | Gout | | | X |
| 15.3 | Osteoarthritis | X | X | X |
| 15.4 | Osteomyelitis | | X | X |
| 15.5 | Rheumatoid Arthritis | | X | X |
| 15.6 | Septic Arthritis | | | X |

| 16. NEONATAL CARE & CONDITIONS | | DH | PH | RH |
|--------------------------------|---|----|----|----|
| 16.1 | Neonatal Asphyxia & Resuscitation | X | X | X |
| 16.2 | Care of the Normal Newborn | X | X | X |
| 16.3 | Birth Injuries | | X | X |
| 16.4 | Congenital Anomalies (<i>simple conditions, such as sixth finger, may be treated at lower levels</i>) | | | X |
| 16.5 | Infants of Diabetic Mothers | | X | X |
| 16.6 | Jaundice (<i>complicated cases to be referred to higher levels</i>) | X | X | X |
| 16.7 | Preterm Infant (<i>major difficulty is lack of power supply for operating incubators, if none then refer</i>) | | X | X |
| 16.9 | Apnoeic Attacks | | | X |
| 16.10 | Respiratory Distress | | X | X |

| 17. NEOPLASMS | | DH | PH | RH |
|---------------|--|----|----|----|
| 17.1 | Neoplasms in Childhood | — | — | — |
| 17.2 | Adult Neoplasms (<i>refer to Kabul hospital</i>) | — | — | — |

| 18. NUTRITIONAL & HEMATOLOGIC CONDITIONS | | DH | PH | RH |
|--|--|----|----|----|
| 18.1 | Anemia | X | X | X |
| 18.2 | Blood Transfusion | X | X | X |
| 18.3 | Failure to Thrive | X | X | X |
| 18.4 | Growth Monitoring & Nutrition | X | X | X |
| 18.5 | Malnutrition | X | X | X |
| 18.6 | Thalassaemia (<i>refer to Kabul</i>) | — | — | — |

| 19. OBSTETRICS | | DH | PH | RH |
|---|--|----|----|----|
| Ante-Natal Care & Complications (<i>at present, many conditions will have to be treated at the hospital level where they present due to lack of or poor transportation for referring patients</i>) | | | | |
| 19.1 | Ante-natal Care | X | X | X |
| 19.2 | High Risk Pregnancy | X | X | X |
| 19.3 | Anemia in Pregnancy | X | X | X |
| 19.4 | Antepartum Hemorrhage (APH) | X | X | X |
| 19.5 | Cardiac Disease in Pregnancy | | X | X |
| 19.6 | Diabetes in Pregnancy | | X | X |
| 19.7 | Drugs in Pregnancy | X | X | X |
| 19.8 | Malaria in Pregnancy | X | X | X |
| 19.9 | Multiple Pregnancy | X | X | X |
| 19.10 | Pre-eclampsia | X | X | X |
| 19.11 | Eclampsia | X | X | X |
| 19.12 | Rhesus (Rh) Incompatibility | | X | X |
| 19.13 | Urinary Tract Infection in Pregnancy | X | X | X |
| 19.14 | Ectopic pregnancy | X | X | X |
| Intrapartum Care & Complications | | | | |
| 19.15 | Normal Labor & Delivery | X | X | X |
| 19.16 | Complicated Labor & Delivery (<i>including CS and Uterus rupture</i>) | X | X | X |
| Postpartum Care & Complications | | | | |
| 19.17 | Post Natal Care | X | X | X |
| 19.18 | Complications of Puerperium | X | X | X |
| 19.19 | Postpartum Hemorrhage (PPH) | X | X | X |
| 19.20 | Puerperal Infections | X | X | X |
| 19.21 | Breast Conditions | X | X | X |
| 19.22 | Deep Vein Thrombosis (DVT) | X | X | X |
| 19.23 | Puerperal Psychosis (<i>rare condition--it is difficult to refer such patients so basic treatment would have to be done at all levels</i>) | X | X | X |
| 19.24 | Abortion (<i>due to medical indication: a special committee is necessary</i>) | | | X |
| 19.25 | Incomplete Abortion (<i>and complications of abortion</i>) | X | X | X |
| 19.26 | Destructive Operations | | X | X |

| 20. ORTHOPEDICS | | DH | PH | RH |
|--------------------------------|--|-----------|-----------|-----------|
| Orthopedic Trauma Cases | | | | |
| 20.1 | Closed fracture and dislocation of all of minor joints and bones | X | X | X |
| 20.2 | Supracondylar displaced fractures | X | X | X |
| 20.3 | Old condylar and epicondylar fractures (complicated cases) | FA | X | X |
| 20.4 | Volkman's ischemia and compartment syndrome | FA | X | X |
| 20.5 | V.I.C. | | | X |
| 20.6 | Soft tissue injuries and crush injuries | X | X | X |
| 20.7 | Spinal vertebrae fracture and trauma | FA | X | X |
| 20.8 | Pelvic fracture without complication | FA | X | X |
| 20.9 | Pelvic fracture with complication | FA | X | X |
| 20.10 | Hip joint dislocation | FA | X | X |
| 20.11 | Femur neck fracture | | | X |
| 20.12 | Femur fracture | | | X |
| 20.13 | Knee joint dislocation | | X | X |
| 20.14 | Knee joint inner lesion | | | X |
| 20.15 | Tibia and Fibula closed fracture | FA | X | X |
| 20.16 | Tibia open fractures | | | X |
| 20.17 | Ankle joint dislocation and fractures | | | X |
| 20.18 | Ankle bones open fractures | | | X |
| 20.19 | Tarsal bones fractures and dislocations | | X | X |
| 20.20 | Tarso-metatarsal joint dislocation | | X | X |
| 20.21 | Skin graft and tendon injuries | | X | X |
| Orthopedic Procedures | | | | |
| 20.22 | Acute osteomyelitis | FA | X | X |
| 20.23 | Chronic osteomyelitis | | | X |
| 20.24 | Pyogenic septic arthritis | | X | X |
| 20.25 | Tuberculosis of bones and joints | | X | X |
| 20.26 | Gout arthritis | | X | X |
| 20.27 | Rheumatoid arthritis | X | X | X |
| 20.28 | Congenital bone diseases | | X | X |
| 20.29 | Osteogenesis imperfecta | | | X |
| 20.30 | Bone tumors (benign and malignant) | | | X |
| 20.31 | Pott's disease | | | X |
| 20.32 | CDH, DDH | | | X |
| 20.33 | Bone cyst | | X | X |
| 20.34 | Carpal tunnel lesion | | | X |
| 20.35 | Hand flexors and extensors injuries | | X | X |
| 20.36 | Amputation (open amputation) | X | X | X |
| 20.37 | Scoliosis | | | X |
| 20.38 | Menopausal osteoporosis | X | X | X |
| 20.39 | Genu valgum and Genu varum | | | X |
| Note: FA = First Aid | | | | |

| 21. RESPIRATORY SYSTEM | | DH | PH | RH |
|---|--|-----------|-----------|-----------|
| Acute Upper Respiratory Tract Infections | | | | |
| 21.1 | Common Cold (Acute Rhinitis, Coryza) | X | X | X |
| 21.2 | Pharyngotonsillitis, Tonsillitis | X | X | X |
| 21.3 | Sore Throat | X | X | X |
| 21.4 | Sinusitis | X | X | X |
| Lower Respiratory Tract Conditions | | | | |
| 21.5 | Approach to Cough or Difficult Breathing in Children | X | X | X |
| 22.6 | Pneumonia--Infant age less than 2 months | X | X | X |
| 21.6 | Pneumonia--Child age 2 months to 5 years | X | X | X |
| 22.7 | Pneumonia--Adults | X | X | X |
| 21.7 | Acute Epiglottitis | X | X | X |
| 22.8 | Croup | X | X | X |
| 21.8 | Acute Bronchitis--Bronchitis (Tracheobronchitis) | X | X | X |
| 22.9 | Wheezing & Asthma--Children under 5 years | X | X | X |
| 21.9 | Bronchial Asthma--Adults | X | X | X |
| 21.10 | Chronic Obstructive Pulmonary Disease | X | X | X |

| 22. SIGNS & SYMPTOMS | | DH | PH | RH |
|----------------------|-------------------------|----|----|----|
| 22.1 | Coma | X | X | X |
| 22.2 | Fever | X | X | X |
| 22.3 | Fever of Unknown Origin | X | X | X |
| 22.4 | Hepatosplenomegaly | X | X | X |
| 22.5 | Jaundice | X | X | X |
| 22.6 | Lymphadenopathy | | X | X |

| 23. SKIN DISEASES | | DH | PH | RH |
|-------------------|------------------|----|----|----|
| 23.1 | Atopic Eczema | X | X | X |
| 23.2 | Impetigo | X | X | X |
| 23.3 | Ringworm (Tinea) | X | X | X |
| 23.4 | Scabies | X | X | X |
| 23.5 | Herpez Zoster | X | X | X |

| 24. SURGICAL CARE & CONDITIONS | | DH | PH | RH |
|--------------------------------|--|----|----|----|
| 24.1 | Acute abdomen and traumatic abdomen. Stabilize and refer. If a competent surgeon and anaesthetic service and appropriate equipment are available then laparotomy can be performed at DH. | | X | X |
| 24.2 | Thyroidectomy (Refer to center) | — | — | — |
| 24.3 | Mastectomy (Refer to center) | — | — | — |
| 24.4 | Chest conditions (Chest tube at all levels) | | | X |
| 24.5 | Hiatus hernia (Refer to center) | — | — | — |
| 24.6 | Oesophageal operations (Refer to center) | — | — | — |
| 24.7 | Biliary tract and liver operations | | | X |
| 24.8 | Pancreas operations (Refer to center) | — | — | — |
| 24.9 | Colon operations | | | X |
| 24.10 | Proctological operations (perianal abscess at DH) | | X | X |
| 24.11 | Hernioraphy (simple at DH) | | X | X |
| 24.12 | Rectal prolaps, Chron's disease, all malignancies (complicated cases refer to center) | | | X |
| 24.13 | Superficial abscesses, cysts and tumours (Refer to center if suspected malignancy) | X | X | X |
| 24.14 | Cavity abscesses | | | X |
| 24.15 | Cystostomy | X | X | X |
| 24.16 | Kidney stones and nephrectomy | | | X |
| 24.17 | Prostatectomy | | | X |
| 24.18 | Pyeloplasty (Refer to center) | — | — | — |
| 24.19 | Circumcision | X | X | X |
| 24.20 | Burns (pending distribution (%) and dept (°)) | X | X | X |
| 24.21 | Vascular and neurosurgery (Refer to center - life saving procedures can be done by competent surgeons at PH and RH level) | — | — | — |

| 25. URINARY TRACT & RENAL CONDITIONS | | DH | PH | RH |
|--------------------------------------|--|----|----|----|
| 25.1 | Urinary Tract Infections | X | X | X |
| 25.2 | Renal Disease Signs & Symptoms | X | X | X |
| 25.3 | Acute Glomerulonephritis | X | X | X |
| 25.4 | Acute Renal Failure | X | X | X |
| 25.5 | Chronic Renal Failure (only treatable at Regional Hospital level if services are upgraded there) | | | X |
| 25.6 | Hypokalemia | | X | X |
| 25.7 | Nephrotic Syndrome | | X | X |

3. Diagnostic Services Provided by Different Levels of the Hospital Sector

Supporting clinicians in their diagnosing of patient conditions are the laboratory and imaging department. The services provided by hospitals encompass diagnosis and treatment, based upon the diagnosis. The radiology, laboratory and other diagnostic services that should be provided by each type of hospital in the health system is identified in Table 7, “Diagnostic Services, by Hospital Level.”

Table 7 Diagnostic Services by Type of Hospital

| Diagnostic Tests Performed | | Type of Hospital | | |
|-------------------------------|--|-------------------|---------------------|-------------------|
| | | District Hospital | Provincial Hospital | Regional Hospital |
| 1. LABORATORY SERVICES | | | | |
| HEMATOLOGY | | | | |
| 1.1 | Hemoglobin | X | X | X |
| 1.2 | Hematocrite | X | X | X |
| 1.3 | Bleeding time and coagulation time test | X | X | X |
| 1.4 | Prothrombine time | | X | X |
| 1.5 | White blood count (WBC and differential) manual | X | X | X |
| 1.6 | WBC automated | | | X |
| 1.7 | Erythrocyte sedimentation rate (ESR) | X | X | X |
| 1.8 | Plateletes and reticulocyte | | X | X |
| 1.9 | Malaria parasite smear (MPS) | X | X | X |
| 1.10 | Histopathology (<i>on Kabul level only in one institute</i>) | - | - | - |
| BIOCHEMISTRY | | | | |
| 1.11 | Blood sugar, glycometer | X | X | X |
| 1.12 | Blood sugar advanced automated | | | X |
| 1.13 | Electrolytes (Na+, K+, Ca++) | | | X |
| 1.14 | Liver function tests (LFT) & liver enzymatic test | | X | X |
| 1.15 | Kidney function tests | | | X |
| SEROLOGY | | | | |
| 1.16 | Creactive protein | | X | X |
| 1.17 | Toxoplasmosis (<i>Kabul tertiary Hospital level only</i>) | | | X |
| 1.18 | Anti-Streptolysine-O (ASLO) | | X | X |
| 1.19 | Rubeola AG | | | X |
| 1.20 | Typhoid AG (Widal) | | X | X |
| 1.21 | CD 4 cell count | | | X |
| 1.22 | Brucellosis | | X | X |
| CULTURE | | | | |
| 1.22 | Culture and sensitivity testing | | | X |
| GRAM STAIN | | | | |
| 1.23 | Body fluids | X | X | X |
| URINE TEST | | | | |
| 1.24 | Macroscopic | X | X | X |
| 1.25 | Chemical | X | X | X |
| 1.26 | Microscopic | X | X | X |
| 1.27 | Pregnancy test | X | X | X |

| | | DH | PH | RH |
|--|--|----|----|----|
| STOOL TESTS | | | | |
| 1.28 | Macroscopic | X | X | X |
| 1.29 | Microscopic | X | X | X |
| SPUTUM TESTS | | | | |
| 1.30 | Acid fast bacil (AFB) Ziehl-Nielson | X | X | X |
| BLOOD TRANSFUSION & BLOOD BANK SERVICES | | | | |
| 1.31 | Blood grouping (<i>Beth Vincent/Simonin</i>) | X | X | X |
| 1.32 | Cross matching | X | X | X |
| 1.33 | HIV antibody (I and II) testing | X | X | X |
| 1.34 | Hepatitis B surface antigene | X | X | X |
| 1.35 | Hepatitis C virus | X | X | X |
| 1.36 | VDRL testing (syphylis) | X | X | X |

| 2. IMAGING SERVICES | | DH | PH | RH |
|----------------------------|--|----|----|----|
| X-Ray | | | | |
| 2.1 | Chest | X | X | X |
| 2.2 | Abdomen | X | X | X |
| 2.3 | Skeletal | X | X | X |
| 2.4 | IVP (KUB) | | | X |
| 2.5 | Hystero salpyngography | | | X |
| 2.6 | Barium enema and Barium meal | | | X |
| ULTRASOUND | | | | |
| 2.7 | Ultrasound (simple portable at DH/PH, doppler at RH) | X | X | X |
| | | DH | PH | RH |

| 3. ELECTROCARDIOGRAPHY (ECG) | | DH | PH | RH |
|-------------------------------------|--|----|----|----|
| | | | X | X |

| 4. ELECTROENCEPHALOGRAPHY (EEG) | | DH | PH | RH |
|--|--|----|----|----|
| | | | | X |

| 5. ELECTROMYOGRAPHY (only in Kabul) | | DH | PH | RH |
|--|--|----|----|----|
| | | | | X |

| 6. ENDOSCOPY | | DH | PH | RH |
|---------------------|--|----|----|----|
| | | | | X |

4. Staffing of Hospitals by Type of Hospital

The human resources of a hospital are the most critical resource. But as the human resources for health are scarce in Afghanistan it is important to identify the critical skills needed based on the conditions that a hospital is expected to treat. The Hospital Management Task Force, in identifying the number and type of staff required found that identifying a single number of staff for each type of hospital was not possible because (1) within each type of hospital—district, provincial, and regional—the number of staff will vary by the number of beds at the hospital and services provided. (2) And there is a large difference between the number of staff “required” to operate and the number of staff that would be “ideal”, or “the best”. To address this quandary, Table 8, “Staffing for District, Provincial and Regional Hospitals” provides staffing figures within the following guidelines: (1) for each type of hospital the number of beds may vary, so the mid-point of beds was chosen to determine staffing. For instance, district hospitals may have from 25 to 75 beds. The staffing for district hospitals in Table 8 reflect staffing for a 50 bed hospital—the mid-point. While the range of beds is specified for each type of hospital, the allocation of those beds is not specified among the various clinical services (e.g. the number of surgical beds and pediatric beds is not specified). Rather it is expected that the hospital director will allocate the beds of the hospital to clinical services according to the needs of the community and situation. For instance, if there is an emergency, such as an earthquake, then many of the hospital’s beds would be shifted to serving as surgical beds for the duration of the emergency. (2) Two staffing levels are given for each type of hospital—the “minimum staffing” and the advised staffing”. The minimum staffing reflects the minimum staff required for that type of hospital, of that size and number of beds, to operate in a responsible manner. It is recognized that this may not be what is desired or the ideal number but it is what is required for the hospital to truly function as expected. The second staffing figure reflects the “best case” or ideal number of staff that is desired. This may be considered more of a mid-term goal for staffing. To reach such levels will take much effort to provide the necessary training institutions, the proper training programs and having an adequate intake of qualified candidates to such courses. This second staffing column for each type of hospital may be considered what Afghanistan is aspiring to in the medium term—5 to 10 years. (See annex B for the underlying assumptions related to the advised staffing patterns).

Table 8 Staffing of District, Provincial and Regional Hospitals
Minimum and advised staffing levels for hospital with mid-point number of beds in each hospital category

| Position | District Hospital (25-75 beds) | | Provincial Hospital (75-250 beds) | | Regional Hospital (300-450 beds) | |
|--|-----------------------------------|------------------|--------------------------------------|------------------|-------------------------------------|------------------|
| | Staffing for 50 Beds | | Staffing for 150 beds | | Staffing for 350 Beds | |
| | Minimum Staffing | Advised Staffing | Minimum Staffing | Advised Staffing | Minimum Staffing | Advised Staffing |
| 1. MANAGEMENT | | | | | | |
| Hospital Director | 1 | 1 | 1 | 1 | 1 | 1 |
| Medical Director (<i>duties performed by the hospital director at district and provincial hospitals</i>) | — | — | — | 1 | 1 | 1 |
| Nursing Director/Chief Nurse | 1 | 1 | 1 | 1 | 1 | 1 |
| Administrator | 1 | 1 | 1 | 1 | 1 | 1 |
| Sub-Total | 3 | 3 | 3 | 4 | 4 | 4 |
| 2. PHYSICIANS | | | | | | |
| Surgeons (<i>For regional hospital includes all other specialty surgeons</i>) | 2 | 2 | 2 | 5 | 4 | 8 |
| Ophthalmologist | — | — | — | — | 1 | 3 |
| ENT | — | — | — | — | 1 | 3 |
| Anesthesiologist doctor (<i>includes reanimation</i>) | — | 1 | 1 | 2 | 2 | 4 |
| Obstetrician & Gynecologist | 1 | 2 | 2 | 4 | 4 | 6 |
| Pediatrician | 1 | 1 | 2 | 2 | 4 | 4 |
| Medical Specialists (internal medicine, psychiatry, dermatology and cardiology) | — | 1 | 2 | 3 | 4 | 5 |
| General Practitioners (non-specialized— <i>malaige</i>) | 3 | 3 | 7 | 13 | 14 | 28 |
| Radiologist (medical imaging including X-ray and ultrasound) | — | — | — | 1 | 1 | 2 |
| Dentist | — | — | — | 1 | 1 | 3 |
| Sub-Total | 7 | 10 | 17 | 31 | 36 | 66 |
| 3. NURSES/MIDWIVES | | | | | | |
| Operating theater and sterilization | 2 | 3 | 5 | 6 | 10 | 12 |
| Midwives | 3 | 4 | 8 | 9 | 12 | 15 |
| Ward nurses | 8 | 8 | 12 | 24 | 28 | 58 |
| Anesthetic nurses | 2 | 2 | 2 | 3 | 4 | 5 |
| ER and OPD nurses (emergency room & outpatient department) | 2 | 2 | 4 | 7 | 8 | 12 |
| Sub-Total | 17 | 19 | 31 | 49 | 62 | 102 |
| 4. TECHNICAL STAFF | | | | | | |
| Psychologist | — | 1 | — | 2 | 1 | 4 |
| Physiotherapist | 1 | 1 | 1 | 4 | 2 | 6 |
| Pharmacist | 1 | 2 | 2 | 2 | 2 | 3 |
| X-Ray Technician | 1 | 2 | 2 | 2 | 2 | 4 |
| Laboratory Technician | 2 | 2 | 4 | 3 | 4 | 5 |
| Blood Bank Technician | — | 2 | — | 2 | — | 3 |
| Dental technician | 1 | 1 | 1 | 2 | 3 | 4 |
| Vaccinator | 2 | 2 | 2 | 2 | 2 | 2 |
| Nutritionist/Cook | — | 1 | — | 2 | — | 3 |
| Technical Assistants (<i>x-ray, lab, pharmacy, physiotherapy</i>) | — | — | 2 | 3 | 4 | 5 |
| Sub-Total | 8 | 14 | 14 | 24 | 20 | 39 |
| 5. SUPPORT STAFF | | | | | | |
| Administration (<i>procurement, accounting, human resources, medical records, clerks</i>) | 2 | 2 | 3 | 4 | 6 | 8 |
| Storekeeper | — | 1 | 1 | 2 | 2 | 3 |
| Maintenance | 1 | 2 | 2 | 4 | 4 | 6 |
| Cleaners, Waste Management, and Grounds (gardeners) | 5 | 8 | 16 | 20 | 20 | 34 |
| Laundry | 2 | 2 | 2 | 4 | 4 | 8 |
| Cook | 2 | 2 | 4 | 4 | 4 | 5 |
| Drivers | 1 | 1 | 2 | 2 | 3 | 4 |
| Guards (and Porters) | 4 | 5 | 5 | 10 | 8 | 15 |
| Tailor | — | — | — | 2 | — | 4 |
| Mullah | — | — | — | 1 | — | 1 |
| Sub-Total | 17 | 23 | 35 | 53 | 51 | 88 |
| TOTAL STAFF | | | | | | |
| Administration | 3 | 3 | 3 | 4 | 4 | 4 |
| Physicians | 7 | 10 | 17 | 31 | 36 | 66 |
| Nursing/Midwives | 17 | 19 | 31 | 49 | 62 | 102 |
| Technical | 8 | 14 | 14 | 24 | 20 | 39 |
| Support | 17 | 23 | 35 | 53 | 51 | 88 |
| TOTAL | 52 | 69 | 100 | 161 | 173 | 299 |

5. Equipment for Hospitals by Type of Hospital

If doctors and nurses do not have the necessary equipment for providing necessary patient care for inpatients and outpatients, their knowledge and skills will be wasted. It is important to clearly identify the basic equipment necessary for each level of hospital—district, provincial, and regional—if the quality of care is to improve. The necessary equipment and supplies needed by the different types of hospital is provided in Table 9, “Priority Equipment and Supplies, by Type of Hospital.” Specialized equipment, like for instance Ultrasound machines, needs to be accompanied by a maintenance and operational training plan.

Careful choices have been made related to choosing appropriate technology equipment for the various levels of hospitals. Choices have been informed by (1) grass root level experience in Afghanistan, (2) the necessity to offer appropriate technology to help lower the high maternal, neonatal, infant and child mortality in Afghanistan, (3) cost-effectiveness considerations and (4) recurrent cost considerations.

For instance, appropriate technology neonatal incubators have been added at all three levels. An example of such technology is the Van Hemel Neonatal Incubator.ⁱⁱ At the DH level (and quite frequently, at the PH level also), due to absence of 24-hour electricity supply, such an incubator can be used for short periods of time only, for instance during a delivery or a caesarean section, and other methods need to be used (for instance Kangaroo Care ⁱⁱⁱ) for a premature neonate.

Ultrasonography was judged an important technology at all levels. The type of ultrasound machine for each level of hospital would differ: for instance, portable ones for DH and PH levels, and a larger one, which might have echo doppler functions, for the RH level. Oxygen concentrators were deemed indispensable for all three levels of hospitals. Ventilators and anaesthetic machines, for use during operations, will be only available at the RH level: at the DH and PH levels, local, spinal and Ketamine anaesthesia will be practiced.

Table 9 Equipment and Supplies List by Type of Hospital

| Equipment and Supplies | | | | District Hospital | Provincial Hospital | Regional Hospital |
|--|--|-----------|-----------|-------------------|---------------------|-------------------|
| 1. NON-MEDICAL EQUIPMENT | | | | | | |
| 1.1 Administration | | DH | PH | RH | | |
| Office furniture | | X | X | X | | |
| Office equipment | | X | X | X | | |
| Computer | | X | X | X | | |
| Stationary | | X | X | X | | |
| 1.2 Communications | | DH | PH | RH | | |
| Radios | | X | X | X | | |
| Telephone (type depends on level) | | X | X | X | | |
| 1.3 Medical maintenance and power | | DH | PH | RH | | |
| Generator (including backup for OT, lab/blood bank and maternity) | | X | X | X | | |
| Solar | | X | X | X | | |
| Emergency lights (back up lighting in key areas) | | X | X | X | | |
| Voltage stabilizer for all electronic equipment | | X | X | X | | |
| Tools and spare parts | | X | X | X | | |
| Fuel and oil | | X | X | X | | |
| 1.4 Water Supply (24/7) | | DH | PH | RH | | |
| Water source for safe drinking water at 100 liters per patient per day | | X | X | X | | |
| Water pump | | X | X | X | | |
| Storage reservoir, holding tank | | X | X | X | | |
| Water purification chemicals/filters | | X | X | X | | |
| Utility sinks with taps | | X | X | X | | |
| Hand washing sinks with taps | | X | X | X | | |
| Surgical scrub sinks in Operating Theatre | | X | X | X | | |
| 1.5 Waste Disposal | | DH | PH | RH | | |
| Incinerator/burial pit | | X | X | X | | |
| Septic tanks | | X | X | X | | |
| Drainage systems | | X | X | X | | |
| Sanitation facilities for patients and families | | X | X | X | | |
| Sharps containers (in all locations where sharps are used) | | X | X | X | | |
| Rubbish bins (in all rooms) | | X | X | X | | |
| 1.6 Safety and Security | | DH | PH | RH | | |
| Fire extinguishers | | X | X | X | | |
| Water hoses and buckets | | X | X | X | | |
| Spotlights | | X | X | X | | |
| 1.7 Vehicles | | DH | PH | RH | | |
| Vehicle, 4 wheel-drive | | 1 | 1 | 2 | | |
| Ambulance, 4 wheel-drive | | 1 | 2 | 4 | | |
| Fuel and oil | | X | X | X | | |

| 1.8 Medical stores | DH | PH | RH |
|---------------------------|-----------|-----------|-----------|
| Refrigerators | X | X | X |
| Cool boxes | X | X | |
| Vaccine carriers | X | X | |
| Shelves | X | X | X |
| Padlocks | X | X | X |

| 1.9 Kitchen | | | |
|---------------------------|---|---|---|
| Ovens | X | X | X |
| Cooking stove | X | X | X |
| Cooking pots and utensils | X | X | X |
| Dishes, cups, cutlery | X | X | X |
| Dishwashing machine | | | X |
| Refrigerators | X | X | X |
| Shelves | X | X | X |

| 1.10 Laundry | DH | PH | RH |
|---------------------------------------|-----------|-----------|-----------|
| Washing equipment | X | X | X |
| Washing machine | | X | X |
| Basins | X | X | X |
| Irons | X | X | X |
| Water heater (electrical/diesel/wood) | X | X | X |
| Wash detergent/powder | X | X | X |
| Sewing/repair kits | X | X | X |

| 1.11 Housekeeping | DH | PH | RH |
|--------------------------|-----------|-----------|-----------|
| Mops | X | X | X |
| Brushes | X | X | X |
| Brooms | X | X | X |
| Soap and disinfectant | X | X | X |
| Buckets | X | X | X |

| 1.12 Mortuary | DH | PH | RH |
|----------------------|-----------|-----------|-----------|
| Mortuary fridge | | X | X |

MEDICAL EQUIPMENT

| 2.1 Basic Equipment Sets for Medical and Nursing Examinations | DH | PH | RH |
|--|-----------|-----------|-----------|
| Sphygmomanometer | X | X | X |
| Stethoscope | X | X | X |
| Vision chart | X | X | X |
| Thermometer | X | X | X |
| Dressing (Lister) scissors | X | X | X |
| Torch/flashlight | X | X | X |
| Adult scale | X | X | X |
| Pediatric scale | X | X | X |
| Height measuring scale | X | X | X |
| Fetal stethoscope Pinard (specifically for OB/GYN) | X | X | X |
| Ophthalmoscope and otoscope set (specifically for ER) | X | X | X |
| Reflex hammer (specifically for ER) | X | X | X |
| Tourniquet | X | X | X |
| Hand washing facilities (container or running water) | X | X | X |
| Sharps container (in all rooms) | X | X | X |
| Wall clock | X | X | X |

| 2.2 Emergency equipment | DH | PH | RH |
|--|-----------|-----------|-----------|
| Basic examination set (see 2.1) plus ophthalmoscope and otoscope set and reflex hammer | X | X | X |
| Defibrillator | | | X |
| Electrocardiography (ECG) | | X | X |
| Examination lamp | X | X | X |
| Patient Separators/dividers | X | X | X |
| Suction machine (foot/pedal operated) | X | X | X |
| Fetal stethoscope Pinard | X | X | X |
| Oxygen (concentrator) | X | X | X |
| Oxygen cylinder (various sizes) | X | X | X |
| Ambu bag & masks & guedel (oropharyngeal airway, adult & child) | X | X | X |
| Drip (IV) stands | X | X | X |
| Kramer splints different sizes | X | X | X |
| Suture set | X | X | X |
| Wound dressing set | X | X | X |
| Bowls and bassins | X | X | X |
| Examination trolleys, stretchers and wheelchairs | X | X | X |
| Dressings trolley | X | X | X |
| Bed pan | X | X | X |

| 2.3 Operating Theater/Room | DH | PH | RH |
|--|-----------|-----------|-----------|
| Operating table with accessories (lithotomy poles--stirrups & arm rests) | 2 | 2 | 4 |
| Instrument sets for each operating table, consisting of | | | |
| o wound set: | 5 | 10 | 15 |
| o minor set: | 1 | 2 | 4 |
| o laparotomy set: | 2 | 4 | 6 |
| o caesarian section set/hysterectomy set: | 2 | 4 | 6 |
| o gynaecology set: | 1 | 2 | 4 |
| o obstructed labor set: | 1 | 1 | 1 |
| o episiotomy set: | 1 | 2 | 3 |
| o suture set: | 5 | 7 | 10 |
| o amputation set: | 1 | 1 | 2 |
| o arm and leg pneumatic tourniquet | | | X |
| o diathermy set | | X | X |
| Suction machine (Foot/pedal operated) one per OR table | X | X | X |
| Bucket for decontamination, 1 for each table | X | X | X |
| Heating and cooling equipment | X | X | X |

| 2.4 Anesthesia | DH | PH | RH |
|---|-----------|-----------|-----------|
| Basic examination equipment (see 2.1) | X | X | X |
| Oxygen (concentrator)–if oxygen, then oxygen saturation monitor advisable | X | X | X |
| Ventilator machine | | X | X |
| Anesthetic machine | | X | X |
| Laryngoscope set (handle & different size blades & spare bulbs) | X | X | X |
| Magill forceps | X | X | X |
| Non-toothed artery forceps | X | X | X |
| Endotracheal introducer (malleable) | X | X | X |
| Ambu bag & masks (0-5) & guedel (oropharyngeal airway), adult & child | X | X | X |
| Suction machine (foot operated) | X | X | X |
| Refrigerator, lockable | X | X | X |
| Pedal waste bin | X | X | X |

| 2.5 Sterilization equipment | DH | PH | RH |
|--|-----------|-----------|-----------|
| Autoclave (approximately 60-70 L per OT/OR table), electric or gas heated team / pressure autoclaves | X | X | X |
| <i>Each autoclave (high pressure steam sterilizer) with:</i> | | | |
| Autoclave carts | X | X | X |
| Metal instruments trays (rigid containers/perforated trays or pans) | X | X | X |
| Metal wire baskets | X | X | X |
| Cloth/linen for surgical wraps (woven textiles) | X | X | X |
| Dry steriliser Poupinel (electric) | | X | X |
| Metal instrument containers with lid for dry sterilizer | | X | X |
| Sterilisation drums & boxes | X | X | X |
| <i>Indicators for both steam and dry heat (consumables)</i> | | | |
| Indicator tape | X | X | X |
| Chemical indicators (time/temperature/pressure and time/temperature) | X | X | X |
| Biological indicators | X | X | X |
| <i>High level disinfection:</i> | | | |
| Boilers for boiling items (electric) or pots with lids | X | X | X |
| Electric/gas/kerosene stoves | X | X | X |
| Plastic containers with lids for chemical HLD and rinsing (endoscopes) | | | X |
| Tables for instrument preparation and for wrapping (dedicated) | X | X | X |
| Shelves/cabinets for with doors for storage | X | X | X |

| 2.6 Obstetrics and Gynecology | DH | PH | RH |
|---|-----------|-----------|-----------|
| OB/GYN examination table | X | X | X |
| Basic examination equipment (see 2.1) | X | X | X |
| Doppler (small portable battery operated) | X | X | X |
| Fetal heart monitoring machine | | | X |
| Dilatation & curettage set | X | X | X |
| Delivery table | X | X | X |
| Dressing trolley | X | X | X |
| Examination lamp | X | X | X |
| Bed pan | X | X | X |
| Manual vacuum aspirator (for D&C) | X | X | X |
| Vacuum extractor (for child birth) | X | X | X |
| Infant mucus aspiration pear | X | X | X |
| Infant cot | X | X | X |
| Infant warmer | X | X | X |
| Incubator, neonatal, Van Hemel | X | X | X |
| Nebulizer | X | X | X |
| Infant emergency resuscitation equipment | X | X | X |
| Speculum (all sizes)-retractor vaginal | X | X | X |
| Intravenous (IV) poles | X | X | X |
| Scale, infant, with tray | X | X | X |
| Apron and boots (and masks and caps) | X | X | X |

| 2.7 Medical | DH | PH | RH |
|--|-----------|-----------|-----------|
| Electrocardiogram (ECG) machine | | X | X |
| Basic examination equipment (see 2.1) | X | X | X |
| Examination table | X | X | X |
| Examination lamp | X | X | X |
| Medicine storage cabinets or cupboards | X | X | X |
| Table and chairs | X | X | X |

| 2.8 Pediatrics | DH | PH | RH |
|-----------------------------------|-----------|-----------|-----------|
| Infant scale | X | X | X |
| Photo therapy equipment | | | X |
| Circumference measurement tape | X | X | X |
| Height measurement mat | X | X | X |
| Children height measurement board | X | X | X |

| 2.9 Specialist (ENT, Ophthalmology, etc.) | DH | PH | RH |
|--|-----------|-----------|-----------|
| Highly specialised equipment | | | X |
| Bronchoscopes and endoscopes | | | X |
| ENT mirror or lamp | X | X | X |
| Nasal speculum | X | X | X |
| Ear speculum | X | X | X |
| Dental specialized equipment | | X | X |

| 2.10 Nursing wards | DH | PH | RH |
|---|-----------|-----------|-----------|
| Ventilators/AC/Bukharies (where appropriate) | X | X | X |
| Basic examination equipment (see 2.1) | X | X | X |
| Beds with mattresses and pillows & bedside tables | X | X | X |
| Stretchers on wheels | X | X | X |
| Intravenous (IV) stands | X | X | X |
| Medicine storage cabinets or cupboards | X | X | X |
| Dressing trolleys | X | X | X |
| Bedpans & urinals | X | X | X |
| Pedal waste bin | X | X | X |
| Patient and bed linen | X | X | X |

| 2.11 Outpatient Department (OPD) | DH | PH | RH |
|---|-----------|-----------|-----------|
| Basic examination equipment (see 2.1) | X | X | X |
| Examination table | X | X | X |
| X-ray viewer | X | X | X |
| Examination lamp | X | X | X |
| Scales, infant and adult | X | X | X |
| Medicine storage cabinets or cupboards | X | X | X |
| Pedal waste bin | X | X | X |
| Table and chairs | X | X | X |

| 2.12 Orthopedics and Physiotherapy (equipment only if physiotherapist present) | DH | PH | RH |
|---|-----------|-----------|-----------|
| Brown frame with pulleys and weights | X | X | X |
| Weights for traction | X | X | X |
| Thomas splint | | X | X |
| Blocks fo relevating beds | X | X | X |
| Pillows (various sizes and shapes) | X | X | X |
| Bed frames for traction | | X | X |
| Walking frames | X | X | X |
| Treatment bench | X | X | X |
| Measuring tape & goniometer | X | X | X |
| Pulley system | X | X | X |
| Floor mattress | X | X | X |
| Weights: 0.25 - 5kg | X | X | X |
| Dumb bells: ½ - 5kg | X | X | X |
| Walking bars | X | X | X |
| Steps | X | X | X |
| Crutches | X | X | X |
| Wheelchairs | X | X | X |

| 2.13 X-Ray/Radiology | DH | PH | RH |
|--|-----------|-----------|-----------|
| X-ray machine (fixed and/or mobile) | X | X | X |
| X-ray developing machine (manual) and dark room equipment | X | X | X |
| X-ray protection material e.g. lead aprons and protective walls | X | X | X |
| X-ray wall viewer | X | X | X |
| Ultrasound machine (small portable with voltage stabilizer at DH and RH leve | X | X | X |
| Voltage stabilizer for x-ray machine | X | X | X |

| 2.14 Laboratory | DH | PH | RH |
|---|-----------|-----------|-----------|
| Microscope (electric where electricity through grid available) | X | X | X |
| Distiller machine | X | X | X |
| Hemoglobinometer (Sali method at DH and PH and Haemacue and RH) | X | X | X |
| Hermatocry+D290t (HCT) centrifuge (electric) | X | X | X |
| Centrifuge (hand and electric) | X | X | X |
| Glucometer | | X | X |
| Glycostrips | X | | |
| Urine strips | X | X | X |
| Pregnancy test | X | X | X |
| Water bath | X | X | X |
| Counting chamber | X | X | X |
| ESR rack, (automated) pipette & tube | X | X | X |
| Spirit lamp | X | X | X |
| Timer/stop watch | X | X | X |
| Slide rack | X | X | X |
| Measuring jug & cilinders | X | X | X |
| Fridge (absorption type) | X | X | X |
| Rotator for syphilis test | X | X | X |
| Sterilizer (dry heat) | X | X | X |
| Balance | X | X | X |
| Spectrophotometer (colorimeter on PH level) | | | X |

| 2.15 Blood Bank/Transfusion Service | DH | PH | RH |
|--|-----------|-----------|-----------|
| Examination table | X | X | X |
| Blood donor beds | | X | X |
| Refrigerator | | X | X |
| Deep fridge | | | X |
| Water bath | | X | X |
| Autoclave | | X | X |
| Automated pipette, adjustable, (10-100 micro liter) | X | X | X |
| Stethoscope | | X | X |
| Sphygomanometer | | X | X |
| Adult scale | X | X | X |
| Crystallizing dish | X | X | X |
| Cool box | X | X | X |
| Lens mirror | X | X | X |
| Shaking machine (vs 1-2 kg scale for manual stirring of blood bag) | X | X | X |
| Transfusion bags | X | X | X |
| Cross match test | X | X | X |
| HIV tests | X | X | X |
| Hepatitis B & C tests | X | X | X |
| VDRL test | X | X | X |

| 2.16 Infection Prevention | DH | PH | RH |
|---|-----------|-----------|-----------|
| Buckets for general waste, one for each treatment area | X | X | X |
| Buckets for contaminated waste, 1 for each tr area, 1 for each bed in DR | X | X | X |
| Buckets for decontam instr, 1 for each tr area, OT table and Delivery bed | X | X | X |
| Sharps containers | X | X | X |
| Impermeable aprons | X | X | X |
| Utility gloves (for housekeeping staff) | X | X | X |
| Eye protection or face shield | X | X | X |

6. Essential Drugs for Hospitals by Type of Hospital

Drugs are necessary for treating most patients in hospitals. They can be very expensive. Thus it is important that hospitals have the necessary drugs but not those that are not absolutely necessary for the types of conditions diagnosed and treated at each level of hospital. This creates a need for rational use of drugs. In 2003 the Ministry of Health defined the National Essential Drug List (NEDL) for Afghanistan. Rational drug selection. Table 10, “Essential Drugs for Hospitals by Type of Hospital” is taken as a subset of the complete NEDL. It is important that this list be adhered to by all hospitals and additional expensive and “exotic” drugs that benefit very few patients are not added to a hospital’s drug formulary. Table 10 identifies the basic drugs needed based upon the conditions diagnosed and treated by each level of hospital (see Table 6).

Table 10 Essential Drugs for Hospitals by Type of Hospital

| Drug | Dosage | | | |
|--|--|-------------------|---------------------|-------------------|
| | | District Hospital | Provincial Hospital | Regional Hospital |
| 1. Anesthetics and Oxygen | | DH | PH | RH |
| 1.1 General Anesthetics and Oxygen | | | | |
| | Halothane | | | X |
| | Ketamine | X | X | X |
| | Sodium thiopental | | | X |
| | Oxygen | X | X | X |
| 1.2 Local Anaesthetics | | | | |
| | Lidocaine | X | X | X |
| | Lidocaine | X | X | X |
| | Lidocaine + Adrenaline | X | X | X |
| | Lidocaine | X | X | X |
| | Bupivacain (not in EDL but critical for hospitals) | X | X | X |
| 2: Analgesics, Antipyretics, Non-Steroidal Anti-Inflammatory Drugs (NSAID) Medicines Used to Treat Gout | | DH | PH | RH |
| 2.1 Non-Opioid Analgesics / Antipyretics / NSAID | | | | |
| | Acetaminophen | X | X | X |
| | Acetaminophen (Paracetamol) | X | X | X |
| | Acetyl Salicylic Acid | X | X | X |
| | Ibuprofen | X | X | X |
| 2.2 Opioid Analgesics | | | | |
| | Morphine | X | X | X |
| | Pethidine | X | X | X |
| | Pethidine | | X | X |
| 2.3 Medicines Used to Treat Gout | | | | |
| | Allopurinol | | | X |
| | Colchicine | | | X |
| 3: Anti Convulsant /Anti epileptics | | DH | PH | RH |
| | Carbamazepin | | | X |
| | Diazepam | X | X | X |
| | Ethosuxamid | | | X |
| | Magnesium Sulphate | X | X | X |
| | Phenobarbital | X | X | X |
| | Phenobarbital (Sodium Salt) | X | X | X |
| | (Complementary) | | | |
| | Valproic acid | | | X |
| 4: Antidotes and Other Substances Used in Poisonings | | DH | PH | RH |
| 4.1 Non-Specific Antidotes | | | | |
| | Activated Charcoal | X | X | X |
| 4.2 Specific Antidotes | | | | |
| | Acetyl Cystein | | | X |
| | Atropine Sulphate | X | X | X |
| | BAL (Dimercaprol) | | | X |
| | Deferoxamine | | | X |
| | Diphenhydramine | X | X | X |
| | Methylen Blue (Methylthionium) | | | X |
| | Naloxone | X | X | X |
| | Calcium gluconate | X | X | X |
| | Protamine Sulphate | | X | X |
| | (Complementary) | | | |
| | Flumazenil | X | X | X |

| 5: Anti Histamines | | | DH | PH | RH |
|------------------------------------|----------------------------|---|----|----|----|
| 5.1 H1 Receptor Antagonists | | | | | |
| | Chlorpheniramine Maleate | Tablet 4mg, Injection 10mg/1ml | X | X | X |
| | Promethazine | Tablet 25mg, Injection 25mg/ml | | | X |
| | Promethazine Hydrochloride | Syrup 5mg/5ml | | | X |
| 5.2 H2 Receptor Antagonists | | | | | |
| | Ranitidine | Tablet 150 mg, 300mg, Injection 50mg/2ml Ampule | X | X | X |

| 6: Anti Infective Medicines | | | DH | PH | RH |
|--|---|---|----|----|----|
| 6.1 Anthelmintics | | | | | |
| 6.1.1 Intestinal Anthelmintics | | | | | |
| | Mebendazole | chewable Tablet 100mg | X | X | X |
| | (Complementary) | | | | |
| | Albendazol | chewable Tablet, 200mg, 400mg | X | X | X |
| 6.1.2 Antifilarials | | | | | |
| | Diethylcarbamazine | Tablet 50mg, 100mg (dihydrogen citrate) | X | X | X |
| 6.2 Antibacterials | | | | | |
| 6.2.1 Beta Lactam Medicine | | | | | |
| | Amoxicillin | Tablet 500mg and 250mg (anhydrous) | X | X | X |
| | Amoxicillin | Powder for Oral suspension, 125mg (anhydrous)/5-ml, & 250 mg/5m | X | X | X |
| | Amoxicillin | Syrup | X | X | X |
| | Ampicillin | powder for Injection 1gram and 500mg (as sodium salt) in vial | X | X | X |
| | Benzathine Benzyl | Powder for Injection, 1,2 million IU & 2.4 million IU in 5-ml vial | X | X | X |
| | Benzyl Penicillin G (Crystal) | Powder for Injection 1 million IU & 5 million IU (Sodium or Potassium salt) in vial | X | X | X |
| | Cloxacillin | vial 500mg for Injection | X | X | X |
| | Cloxacillin | Capsule / Tablet 500mg, 250mg (as sodium salt) | X | X | X |
| | Phenoxy Methyl Penicillin | Tablet 250mg & 500mg (as potassium salt), | X | X | X |
| | Procaine Penicillin | Powder for Injection, 2 million IU & 4 00.000 IU in vial | X | X | X |
| | (Complementary) | | | | |
| | Amoxicillin + Clavulanic Acid (restricted indication) | Tablet 500mg + 125 mg | | | X |
| | Amoxicillin + Clavulanic Acid (restricted indication) | For oral suspension 125mg & 31.25mg/5ml | | | X |
| | Ceftriaxone (restricted indication) | vial 1 gram, 500mg | | X | X |
| 6.2.2 Other Antibacterial | | | | | |
| | Chloramphenicol | capsule 250mg, | X | X | X |
| | Chloramphenicol | Oral Suspension 125mg (as Palmitate)/5ml, | X | X | X |
| | Chloramphenicol | Powder for Injection 1 gram & 500 mg (Sodium succinate) in vial | X | X | X |
| | Doxycycline | capsule / Tablet 100mg (hydrochloride) | X | X | X |
| | Erythromycin | Tablet 400mg/200mg (ethyl Succinate) | X | X | X |
| | Gentamicine | Injection 20mg, 40mg & 80mg (as sulfate)/ml in 2-ml vial | X | X | X |
| | (Complementary) | | | | |
| | Ciprofloxacin (restricted indication) | Tablet 500 mg 250mg (as hydrochloride) | | X | X |
| | Ciprofloxacin (restricted indication) | Injection 2mg/ml, 50ml bottle | | X | X |
| 6.2.3 Antileprosy medicines (in speciality facilities only) | | | | | |
| | Clofazimine | Capsule 50mg, 100mg | - | - | - |
| | Dapsone | Tablet 25mg, 50mg, 100mg | - | - | - |
| | Rifampicin | Capsule or Tablet 150mg, 300mg | - | - | - |

| 6.2.4 Anti Tuberculosis medicines | | | DH | PH | RH |
|--|--|---|----|----|----|
| | Ethambutol | Tablet 400mg | X | X | X |
| | INH | Tablet 100mg & 300mg | X | X | X |
| | Pyrazinamid | Tablet 500mg | X | X | X |
| | Rifampicin | Capsule or Tablet 150mg, 300 mg | X | X | X |
| | Rifampicin | Syrup 100mg/5ml | | | X |
| | Streptomycin | Powder for Injection 1 G (as Sulfate) in vial | X | X | X |
| | (Complementary) | | | | |
| | Thiacetazon + Isoniazid | Tablet 50mg+100mg & 150mg+300mg | | | X |
| 6.3 Anti Fungal medicines | | | | | |
| | Benzoic acid+ Salicylic | Cream or Ointment 6%+3% | X | X | X |
| | Griseofulvin | capsule or Tablet 125mg, 250mg | | X | X |
| | Ketoconazol | Tablet 200 mg, topical cream 2% | X | X | X |
| | Nystatin | Tablet 100 000,500 000 IU | X | X | X |
| | Nystatin | Vaginal Tablet 100 000 IU | X | X | X |
| 6.4 Antiviral Medicine | | | | | |
| | Aciclovir | Ophthalmic Ointment 3% | | X | X |
| 6.5 Antiprotozoal medicines | | | | | |
| 6.5.1 Anti Amoebic and Anti Giardiasis medicines | | | | | |
| | Metronidazol | Tablet 250mg, 400mg | X | X | X |
| | Metronidazol | Injection 500mg in 100 – ml vial, | X | X | X |
| | Metronidazol | Oral suspension, 200mg (as benzoate)/5 ml | | | X |
| 6.5.2 Anti-Leishmaniasis | | | | | |
| | Meglumine Antimonate | Injection, 30%, equivalent to approx. 8.1% antimony in 5-ml Ampoule | X | X | X |
| | Stibogluconate Sodium | Injection 100mg/ml Ampoule | X | X | X |
| 6.5.3 Anti Malarial | | | | | |
| | Chloroquine | Tablet, base 150mg (as phosphate or sulfate), | X | X | X |
| | Chloroquine | Syrup, base 50mg (as phosphate or sulfate) /5ml, | X | X | X |
| | Pyrimethamin + Sulfadoxine (Fansidar) | Tablet 25mg+ 500mg | X | X | X |
| | Quinine | Tablet 300mg (as bisulfate or sulfate), | X | X | X |
| | Quinine | Injection, 300mg (as dihydrochloride)/ml in 2-ml Ampule. | X | X | X |
| | (Complementary) | | | | |
| | Artesunate | Tablet 50 mg (Note: Provided only in malarial endemic areas) | X | X | X |
| | Artemether | 80mg/ml 2ml Ampule (for IM only) | X | X | X |
| 6.6 Sulfonamide/Related | | | | | |
| | Co-Trimoxazole (Sulfamethoxazole+Trimethoprim) | suspension 200mg+40mg/5ml, | X | X | X |
| | Co-Trimoxazole (Sulfamethoxazole+Trimethoprim) | Tablet 100mg +20mg & 400mg+80mg | X | X | X |
| 6.7 Urinary & intestinal antiseptics | | | | | |
| | Nalidixic Acid | Tablet 250mg 500mg, 250mg/5ml Syrup | | | X |
| | Nitrofurantoin | Tablet 100mg | X | X | X |
| | Furazolidon | Tablet 100mg, Syrup 125mg/5ml | | | X |
| 7: Antimigraine Medicines | | | DH | PH | RH |
| | Acetyl Salicylic Acid | Tablet, 300mg 500mg | X | X | X |
| | Acetaminophen | Tablet 325mg | X | X | X |
| | Ergotamine | Tablet 1mg (tartrate) | | | X |
| | Propranolol | Tablet 20mg 40mg (hydrochloride) | X | X | X |

| 8: Antiparkinsonism Medicines | | | DH | PH | RH |
|-------------------------------|--------------------|--|----|----|----|
| | Biperidin | Tablet 2mg (hydrochloride) | | | X |
| | Biperidin | Injection, 5mg (lactate) in 1-ml Ampoule | | | X |
| | Levodopa+Carbidopa | Tablet 100mg+ 10mg | | | X |
| | Levodopa+Carbidopa | 250mg+ 25mg | | | X |
| | Trihexylphenidyl | Tablet 2 mg | | | X |

| 9: Medicines Affecting the Autonomic System | | | DH | PH | RH |
|---|----------------------------------|---|----|----|----|
| 9.1 Parasympatomimetics | | | | | |
| | Pilocarpine | Solution (eye drop), 2%, 4% (Hydrochloride or Nitrate) | | | X |
| 9.2 Parasympatholytics | | | | | |
| | Atropine | Solution (eye drop) 0,1%, 0,5%, 1% (sulfate), | | | X |
| | Atropine | Tablet 1mg (sulfate), Injection 1mg (sulfate) in 1-ml Ampoule | X | X | X |
| | Hyoscine -N-butyl bromide | Tablet 10mg, Injection 20mg/ml | X | X | X |
| 9.3 Sympathomimetics | | | | | |
| | Adrenaline | Injection 1mg (as hydrochloride or Hydrogen tartrate) in 1-ml Ampoule | X | X | X |
| | Salbutamol | Tablet 2mg, 4mg (as sulfate) | X | X | X |
| | Salbutamol | Inhalation (aerosol), 100 microgram (as sulfate) per dose | | X | X |
| | Salbutamol | Respirator Solution for use in nebulizers 5mg (as sulfate)/ml | X | X | X |
| | Dopamine hydrochloride | Injection, 40 mg/ml, 5 ml ampoule | | | X |
| 9.4 Sympatholytics | | | | | |
| | Methyldopa | Tablet 250mg | X | X | X |
| | Atenolol | Tablet 50mg, 100mg | | | X |
| | Propranolol | Tablet 10mg, 40mg | X | X | X |
| | Timolol | Solution (eye drop), 0,25%, 0,5% (as maleate) | | | X |
| 9.5 Muscle Relaxants (Peripherally acting) and Cholinesterase inhibitors | | | | | |
| | Alcuronium | Injection, 5 mg/ml in 2 ml ampoule | | | X |
| | Suxamethonium (Succinyl Choline) | Injection, 50mg (chloride)/ml in 2-ml Ampoule | X | X | X |
| 9.6 Autonomic Agents, Other | | | | | |
| | Bromocriptine | Tablet 2.5 mg (as mesilate) | | | X |

| 10: Medicines Affecting the Blood | | | DH | PH | RH |
|---|--|--|----|----|----|
| 10.1 Drugs Used in Anemia | | | | | |
| | Ferrous Sulphate | Tablet, equivalent to 60 mg iron, Oral Solution, | X | X | X |
| | Folic Acid | Tablet, 1mg and 5 mg/tablet | X | X | X |
| | Ferrous Sulphat+Folic Acid (Nutritional Supplement for use during pregnancy) | Tablet, equivalent to 60 mg iron +400 Microgram Folic acid | X | X | X |
| | Hydroxocobalamine (Complementary) | Injection, 1mg in 1-ml Ampoule | | X | X |
| | Iron Dextran | Injection equivalent to 50mg iron/ml in 2-ml Ampoule | | | X |
| 10.2 Drugs Affecting Coagulation | | | | | |
| | Vit.K (Phytomenadione) | Injection 10mg/ml Ampoule, Tablet, 10mg | X | X | X |
| | Sodium Heparine | Injection 1000 iu/ml, 5 ml and 5000 iu/ml, 1 ml | | X | X |
| | Enoxaprin (low molecular weight Heparine) restricted indication only for DVT | sc injection | X | X | X |

| 11: Blood Products and Plasma Substitutes | | | DH | PH | RH |
|---|------------|------------------------|----|----|----|
| | Dextran 70 | Injectable Solution 6% | | | X |

| 12: Cardiovascular Medications | | | DH | PH | RH |
|---|---|--|----|----|----|
| 12.1 Anti Anginal Medicines | | | | | |
| | Atenolol | Tablet, 50mg, 100mg | | | X |
| | Glyceryl trinitrate | Tablet, (sublingual) 0.5 mg | | | X |
| | Isosorbide dinitrate | Tablet, (sublingual) , 5mg , 10 mg | X | X | X |
| | Verapamil | Tablet, 40 mg, 80 mg (hydrochloride) | | | X |
| 12.2 Anti Arrhythmic Drugs | | | | | |
| | Atenolol | Tablet 50mg, 100 mg | | | X |
| | Digoxin | Tablet 0.25 mg, Injection 0.5 mg / 2ml | X | X | X |
| | Lidocaine | Injection, 20 mg (hydrochloride) /ml in 5-ml Ampoule | | | X |
| | Procainamide | Injection 1000 mg /10 ml, Cap/tab 250mg | | | X |
| | Verapamil | tab 40mg, 80 mg, Injection, | | | X |
| | Verapamil | 2.5mg (hydrochloride)/ml in 2-ml Ampoule | | | X |
| 12.3 Anti Hypertensive Agents | | | | | |
| | Atenolol | tab 50mg, 100mg | | | X |
| | Captopril | Tablet 25mg | | | X |
| | Hydralazine | Tablet 25mg, 50 mg (hydrochloride), powder | | | X |
| | Hydralazine | For Injection, 20mg (hydrochloride) in Ampoule | X | X | X |
| | Methyl dopa | Tablet 250 mg | X | X | X |
| | Nifedipine | Capsule / Tablet 10mg | X | X | X |
| 12.4 Cardiotonics | | | | | |
| | Digoxin | Tablet 0.25mg, Injection 0.5 mg / 2ml | X | X | X |
| 12.5 Platelet Aggregation Inhibitors | | | | | |
| | Acetyl Salicylic Acid | Tablet 100mg | X | X | X |
| Section 13: Dermatological Medicines (topical) | | | DH | PH | RH |
| 13.1 Anti infective, Topical | | | | | |
| | Methyl Rosanilinium Chloride (Gentian Violet) | aqueous Solution, 0.5%, 1% | X | X | X |
| | Neomycine+Bacitracine | Ointment, 5mg Neomycin Sulfate + 500IU Bacitracin zinc/G | X | X | X |
| | Silver Sulfadiazine | Cream 1%, in 500-gram Container | X | X | X |
| 13.2 Anti Fungal, Topical | | | | | |
| | Benzoic Acid +Salicylic Acid | Ointment or cream 6% + 3% | X | X | X |
| | Nystatine | Ointment 100 000 U/Gram, Vaginal Tablet | X | X | X |
| | Nystatine | 100 000 U, Drop 100 000 U/ml, Coated Tablet 500 000 U | X | X | X |
| | Tolnaftate | Topical Cream 1%, Topical Solution 1% | | | X |
| 13.3 Anti Inflammatory & Anti Pruritics, Topical | | | | | |
| | Calamine-lotion | Lotion | X | X | X |
| | Hydrocortisone | Ointment or Cream, 1% (acetate) | | | X |
| 13.4 Anti Infective/Anti-Inflammatory Combination, Topical | | | | | |
| | Betamethasone-N | Topical Cream /Ointment Betamethason (as Valerate) 0.1%+ Neomycin Sulfate0, 5% | X | X | X |
| 13.5 Sun Protectants/Screen | | | | | |
| | Zinc Oxide | Topical Ointment 20%, powder | X | X | X |
| 13.6 Keratolytics/Caustics | | | | | |
| | Benzoyl Peroxide | lotion or cream, 5% | | | X |
| | Coal Tar | Solution, 5% | | | X |
| | Fluorouracil | Ointment, 5% | | | X |
| | Resorcinol-S | Topical cream Resorcinol 2%+Sulphur 8% | | | X |
| | Salicylic Acid | Solution, 5% | X | X | X |
| 13.7 Scabicides/Pediculocides | | | | | |
| | Lindane | Lotion 1% | X | X | X |
| 13.8 Local Anesthetics, Topical | | | | | |
| | Lidocaine | Gel 2%, 4% | X | X | X |

| Section 14: Diagnostic Agents | | | DH | PH | RH |
|----------------------------------|------------------------|--|----|----|----|
| 14.1 Radio contrast Media | | | | | |
| | Barium sulfate | aqueous suspension | | | X |
| | Meglumine Compound 76% | Injection 20 ml, 100ml (Meglumine diatrizoate 66%+ Sodium diatrizoate 10%) | | | X |
| | Meglumine Compound 76% | Oral Solution (Meglumine diatrizoate 66%+ Sodium diatrizoate 10%) | | | X |

| Section 15: Disinfectants and Antiseptics | | | DH | PH | RH |
|---|--------------------------|--|----|----|----|
| | Methanol | Solution, 70 % (denatured) | X | X | X |
| | Chlorhexidine | Solution, 5 % (digluconate) for dilution | X | X | X |
| | Chlorine releasing comp. | Powder for solution, 1 gram per liter | X | X | X |
| | Hydrogenperoxid | Solution 6 % (= approx.20 volume) | X | X | X |
| | Iodine Polyvidone | Solution, 10% | X | X | X |
| | Gentian Violet | Aqueous Solution 0, 5%, 1% | X | X | X |
| | Potassium Permanganate | Aqueous Solution, 1:10 000 | X | X | X |

| Section 16: Diuretics | | | DH | PH | RH |
|-----------------------|--------------------|-------------------------------------|----|----|----|
| | Furosemide | Tablet 40 mg, | X | X | X |
| | Furosemide | Injection, 10 mg/ml in 2-ml Ampoule | X | X | X |
| | Hydrochlorothiazid | Tablet 25 mg 50mg | X | X | X |
| | Mannitol | Injectable Solution, 10%, 20% | | | X |
| | Spirolactone | Tablet 25 mg | | | X |

| Section 17: Gastrointestinal Medicines | | | DH | PH | RH |
|--|---|---|----|----|----|
| 17. 1 Antacids | | | | | |
| | Aluminum hydroxide + Magnesium Hydroxide | Chewable Tablet Aluminum hydroxide 200mg +Magnesium hydroxide 200mg | X | X | X |
| 17. 2 Laxatives | | | | | |
| | Bisacodyl | Tablet 5mg | X | X | X |
| 17. 3 Drugs Used in Peptic Ulcer | | | | | |
| | Histamine H2 Receptor Antagonist Ranitidine | Tablet 150 mg, 300mg, Injection 50mg/2ml | X | X | X |
| | (Complementary) | | | | |
| | Omeprazol | capsule 20mg | | X | X |
| 17. 4 Anti Emetics | | | | | |
| | Metoclopramid | Tablet 10mg (hydrochloride), | X | X | X |
| | Metoclopramid | Injection 5mg (Hydrochloride)/ml in 2-ml Ampoule | X | X | X |
| 17. 5 Anti Muscarinics/Anti Spasmodic | | | | | |
| | Atropine | Injection 1 mg (Sulfate) in 1-ml Ampoule | X | X | X |
| | Hyoscine -N- Butyl Bromide | Tablet, 10 mg, | X | X | X |
| | Hyoscine -N- Butyl Bromide | Injection 4 mg/ml in 5-ml Ampoule | X | X | X |
| 17. 6 Anti Hemorrhoid Drugs | | | | | |
| | Anti-Inflammatory/Astringent/Local Anesthetic drugs | Ointment or Suppository | X | X | X |
| 17.7 Oral Rehydration Salts (ORS) | | | | | |
| | Oral Rehydration Salt | Powder, 27,9 g/l | X | X | X |
| | (for Glucose Electrolyte Solution) | Sodium chloride (3.5 G/L), Trisodium citrate dihydrate (2.9 G/L), Potassium chloride (1.5 G/L), Glucose (20 G/L); Trisodium Citrate | | | |

| 18: Hormones, other Endocrine medicines and Contraceptives | | | DH | PH | RH |
|--|---|--|----|----|----|
| 18.1. Adrenal Hormones and Synthetic Substitute | | | | | |
| | Hydrocortisone | powder for Injection, | X | X | X |
| | Prednisolone | Tablet 5mg | X | X | X |
| 18.3. Contraceptives | | | | | |
| Hormonal Contraceptives | | | | | |
| | Ethinylestradiol + Levonorgestrol | Tablet 30 microgram+150 microgram | X | X | X |
| | Ethinylestradiol + Levonorgestrol | Tablet 50 microgram+250 microgram | | | X |
| | Ethinylestradiol + Norethisterone | Tablet 35 microgram + 1.0mg | | | X |
| (Complementary) | | | | | |
| | Medroxy Progesterone | depot Injection, 150mg/ml in 1-ml vial | X | X | X |
| | | 50mg/ml in 3ml vial | | | |
| 18.4 Intrauterine Devices | | | | | |
| | Copper-containing device | | X | X | X |
| 18.5 Barrier Methods | | | | | |
| | Condoms with or without spermicide (Nonoxinol) | | X | X | X |
| 18.6 Estrogens | | | | | |
| | Ethinylestradiol | Tablet 10 microgram, 50 microgram | | | X |
| 18.7 Progestines | | | | | |
| 18.8 Ovulation inducers | | | | | |
| | Clomiphene (Clomifen) | Tablet 50 mg (Citrate) | | | X |
| 18.9 Insulin and Other Antidiabetic Agents | | | | | |
| | Glibenclamide | Tablet 5mg | | X | X |
| | Insulin Injection (Soluble) | Injection, 40 IU /ml in 10 – ml vial | | | X |
| | Insulin Injection (Soluble) | 100 IU/ml in 10 – ml vial | | X | X |
| | Intermediate-acting insulin | Injection, 40 IU/ml in 10-ml vial | | | X |
| | Intermediate-acting insulin | 100 IU/ml in 10-ml vial (as compound insulin zinc suspension or Isophane insulin) | | X | X |
| | Metformine | Tablet, 500mg (hydrochloride) | | X | X |
| 18.9.1 Thyroid Hormones and Anti Thyroid Medicines | | | | | |
| | Levothyroxine | Tablet, 50 microgram, 100 microgram (Sodium Salt) | | | X |
| | Potassium Iodide | Tablet, 60mg | | | X |
| | Carbimazole | Tablet, 5mg | | | X |
| Section 19: Immunologicals | | | DH | PH | RH |
| 19. 1 Diagnostic agents | | | | | |
| | Tuberculin, Purified Protein Derivative (PPD) | Injection | X | X | X |
| 19. 2 Sera and Immunoglobulins | | | | | |
| | Anti –D immunoglobulin (Human) | Injection, 250 microgram in single-dose vial | | X | X |
| | Antitetanus immunoglobulin (Human) | Injection, 500 IU, 1500 U, 3000 U Ampoule | X | X | X |
| | Pertussis Antitoxin | | | | X |
| | Diphtheria Antitoxin | Injection, 10 000 IU, 20 000 IU in vial | | X | X |
| | Rabies immunoglobulin | Injection, 150 IU/ml in vial | | X | X |
| 19. 3 Vaccines | | | | | |
| | BCG | | X | X | X |
| | DPT | | X | X | X |
| | Hepatitis –B | | X | X | X |
| | Measles | | X | X | X |
| | Poliomyelitis | | X | X | X |
| | Tetanus | | X | X | X |

| 19. 4 for Specific Group of Individuals | | | DH | PH | RH |
|---|--|---|----|----|----|
| | Mumps vaccine | | X | X | X |
| | Rabies vaccine (inactivated: prepared in cell culture) | | X | X | X |
| | Rubella Vaccine | | | | X |
| Section 20: Ophthalmological Preparations and Drugs used in ENT | | | DH | PH | RH |
| 20. 1 Anti Glaucoma and Miotics | | | | | |
| | Acetazolamid | Tablet, 250mg | | | X |
| | Pilocarpine | Solution (eye drop), 2%, 4% (Hydrochloride or nitrate) | | | X |
| | Timolol | Solution (eye drop), 0.25%, 0.5% (as maleate) | | | X |
| 20. 2 Anti Infective, Topical: | | | | | |
| | Aciclovir (Acyclovir) | ophthalmic ointment 3% | X | X | X |
| | Chloramphenicol | Solution (eye drop) 0.5% | X | X | X |
| | Gentamicine | Solution (eye drop) 0.3 % (as Sulfate) | | | X |
| | Sulfacetamide | Solution (eye drop) 10%, 20% | | | X |
| | Silver Nitrate | Solution (eye drop) 1% | | | X |
| | Tetracycline | Eye Ointment, 1% (hydrochloride) | X | X | X |
| 20. 3 Anti Inflammatory Topical agents | | | | | |
| | Prednisolone | Solution (eye drop), 0.5% | | | X |
| 20. 4 Local Anaesthetics | | | | | |
| | Tetracaine | Solution (eye drop), 0.5 % (hydrochloride) | X | X | X |
| 20. 5. Mydriatics | | | | | |
| | Atropine | Solution (eye drop), 0.1%, 0.5%, 1 % (Sulfate) | | | X |
| | Tropicamide | Solution (eye drop) 0.5%, 1% | | | X |
| 20. 6 Drugs Used in E.N.T | | | | | |
| 20.6.1 Decongestant | | | | | |
| | Naphazoline | Solution (Nasal Drop) 0.05% | X | X | X |
| 20.6.2 Removal of Ear Wax | | | | | |
| | Glycerin Boric | Solution 5% | | | X |
| Section 21: Oxytocics and Antioxytocics | | | DH | PH | RH |
| 21. 1 Oxytocics | | | | | |
| | Ergometrine | Tablet 200 microgram (hydrogen maleate), | X | X | X |
| | Ergometrine | Injection 200 microgram (hydrogen maleate) | X | X | X |
| | Oxytocin | Injection, 10 IU in 1-ml Ampoule | X | X | X |
| 21. 2 Antioxytocics | | | | | |
| | Salbutamol | Tablet 4mg (as Sulfate) | X | X | X |
| | Salbutamol | Injection, 50 microgram (as sulfate)/ml in 5-ml Ampoule | X | X | X |
| Section 22: Psychotherapeutic Medicines | | | DH | PH | RH |
| 22. 1 Medicines Used in Psychotic Disorders | | | | | |
| | Chlorpromazine | Tablet 100mg (hydrochloride), | | | X |
| | Chlorpromazine | Syrup 25mg (hydrochloride)/5ml, | | | X |
| | Chlorpromazine | Injection 25 mg (hydrochloride)/ml in 2-ml Ampoule | | | X |
| | Haloperidol | Tablet 2mg, 5mg, Injection 5mg /1-ml Ampoule | X | X | X |
| 22.2 Medicines Used in Depressive Disorders | | | | | |
| | Amitriptyline | Tablet, 25 mg (hydrochloride) | | | X |
| | Imipramine | Tablet 10mg/25mg | X | X | X |
| 22. 3 Medicines Used in Generalized Anxiety and Sleep disorders | | | | | |
| | Diazepam (Complementary) | Tablet 2mg, 5mg, 10mg, Injection 5mg/ml in 2-ml Ampoule | X | X | X |
| | Oxazepam | Tablet 10mg, 15mg | | X | X |
| 22. 4 Medicines Used in vertigo | | | | | |
| | Dimenhydrinate | Tablet 50mg | | | X |

| Section 23: Medicines acting on the Respiratory Tract | | | DH | PH | RH |
|---|---|--|----|----|----|
| 23. 1 Anti Asthmatic Medicines | | | | | |
| | Aminophylline | Injection, 25mg/ml in 10-ml Ampoule | X | X | X |
| | Aminophylline | Tablet 100mg | X | X | X |
| | Beclometasone | Inhalation (aerosol), 50 microgram, 250 microgram (dipropionate) per dose | | | X |
| | Epinephrine (Adrenaline) | Injection 1mg (as hydrochloride or Hydrogen tartrate) in 1-ml Ampoule | X | X | X |
| | Salbutamol | Tablet 2mg, 4mg (as sulfate) | X | X | X |
| | Salbutamol | Inhalation (aerosol), 100 microgram (as sulfate) per dose | | | X |
| | Salbutamol | Syrup, 2mg (as sulfate)/5ml | | | X |
| | Salbutamol | Injection, 50 microgram (as sulfate)/ml in 5-ml Ampoule | | | X |
| | Salbutamol | Respirator Solution for use in nebulizers, 5mg (as sulfate)/ml | X | X | X |
| Section 24: Solutions Correcting Water, Electrolyte and Acid-base Disturbances | | | DH | PH | RH |
| 24. 1 Oral | | | | | |
| | Oral Rehydration Salts (for Glucose-electrolyte Solution) | for composition see section 18. 7 | X | X | X |
| | Potassium Chloride | Powder for Solution | | | X |
| 24. 2 Parenteral | | | | | |
| | Glucose | Injectable Solution, 5% isotonic, 10%, 50% hypertonic | X | X | X |
| | Glucose with Sodium Chloride | Injectable Solution, 4% glucose, 0.18% Sodium chloride (Equivalent to Na+30mmol/l Cl-30mmol/l) | | X | X |
| | Potassium Chloride | 11.2 % Solution in 20-ml Ampoule, (Equivalent to K+1.5mmol/ml, cl-1.5mmol/ml) | | | X |
| | Sodium Chloride | Injectable Solution, 0.9% isotonic (Equivalent to Na+154 mmol/l, Cl- 154 mmol/l) | X | X | X |
| | Sodium Hydrogen Carbonate | Injectable Solution 1.4% isotonic (Equivalent to Na+167mmol/l, HCO3- 167 mmol/l) | | | X |
| | Sodium Hydrogen Carbonate | 8.4% Solution in 10-ml Ampoule (Equivalent to Na+ 1000 mmol/l, HCO3-1000 mmol/l) | | | X |
| | Compound Solution of Sodium Lactate (Ringer lactate) | Injectable Solution | X | X | X |
| 24. 3 Miscellaneous | | | | | |
| | Water for Injection | 5-ml, 10-ml Ampoule | X | X | X |
| 25: Vitamins and Minerals | | | DH | PH | RH |
| | Iodine | iodized Oil, 1 ml (480mg iodine), | | | X |
| | Iodine | 0.5 ml (240 mg iodine) in Ampoule (Oral or injectable) | | | X |
| | Iodine | 0.57 ml,(308 mg iodine) in dispenser bottle | | | X |
| | Iodine | Capsule, 200 mg | | | X |
| | Multimicronutrients | Capsule | X | X | X |
| | Pyridoxine | Tablets 25 and 40 mg, injection [dosage] | X | X | X |
| | Cholecalciferol | Ampoule 600,000 iu/ml | X | X | X |
| | Phytomenadione (Vitamin K) | Injection, 10mg/ml Ampoule, | X | X | X |
| | Phytomenadione (Vitamin K) | Tablet, 10mg | | | X |
| | Retinol | Sugarcoated Tablet, 10 000 IU (as palmitate)(5.5mg) | X | X | X |
| | Retinol | Capsule 200 000 IU (as palmitate)(110mg) | X | X | X |
| | Retinol | oral oily Solution, 100 000 IU/ml in multidose dispenser (as palmitate), | | | X |
| | Retinol | Injection, 100 000 IU (as palmitate) (55mg) in 2-ml Ampoule | | | X |

Annex A
Hospital Policy for Afghanistan's Health System



**Islamic Transitional Government of
Afghanistan
Ministry of Health**

Policy Statement

**Hospital Policy for
Afghanistan's Health
System**

February 2004

Ministry of Health Policy Statement

Hospital Policy for Afghanistan's Health System Approved by the MOH Executive Board, February 2004

The Basic Package of Health Services (BPHS) is being expanded throughout Afghanistan. The BPHS is an important element in the redevelopment of the health system because it deals with the priority health problems of the country. Hospitals have an important role in this PHC-focused strategy because district, provincial, and regional hospitals are required to form an integrated referral system providing a range of needed services: from health promotion to disease prevention to basic treatment to disability care to specialized inpatient care. This policy establishes the guidelines for the redevelopment of hospitals as a key element of the Afghan health system.

Issues: The Need for a Hospital Policy

The major problems facing Afghanistan's hospitals which must be addressed to ensure that hospitals are part of an integrated health system and providing quality patient care are:

- *The lack of standards for clinical patient care and management of hospitals.* The consequence is poor quality of care for patients.
- *The lack of equitable access to hospital services throughout the country.* People in many parts of the country have no access to a hospital and its services, while other areas, such as Kabul, have a disproportionate number of hospital beds relative to the population. The problem of the skewing of hospital beds and services toward certain areas is often compounded by donors.
- *The concentration of financial resources and health workers at hospitals.* The result is the potential for hospitals to be allocated a disproportionate share of new health workers and financial resources which will reduce the ability of the health system to address basic health problems.
- *The lack of hospital management skills for the operation of hospitals.* As a result, the hospitals are inefficient.
- *The lack of necessary staff, equipment, supplies and pharmaceuticals in many hospitals.* The result is the hospital is often ineffective in the treatment it provides.
- *The referral system does not work.* The hospital system is fragmented and uncoordinated.

As a consequence, there is a need to address the role of hospitals in the health system, the organization and management of hospitals, standards for hospitals and the financial and human resources allocated to hospitals so the Afghan health system is properly planned to address the health problems of the country for the long-term. That is the purpose of this policy.

MOH Hospital Policies

The hospitals of Afghanistan will provide a comprehensive referral network of secondary and tertiary health facilities. The policies guiding the hospital sector are:

1. Hospitals, as part of a unified national health system, will provide necessary curative and emergency services, which complement the Basic Package of Health Services, that includes disability care, offered at basic and comprehensive health centers.
2. Hospitals must be rationally distributed so their services are accessible on an equitable basis for the entire population.
3. The MOH will carefully plan the number of hospitals, their location, hospital beds, and types of hospital beds to ensure that the resources committed to hospitals result in the maximum impact on the population's health status. Because Afghanistan does not have unlimited resources to finance hospitals, so health planning, resource allocation and financial management of hospitals will be undertaken by MOH for the entire hospital sector as a means for maximizing the impact and effectiveness of hospitals on the country's health status.
4. Provision of hospital care must be based on need for hospital care and not on ability to pay.
5. Hospitals must be managed in an efficient manner that adheres to basic clinical and managerial standards that ensure the provision of quality care to all patients, including patients with disabilities.
6. The proportion of the government's annual operational budget for hospitals will not exceed 40% of the total health budget.
7. To ensure budgetary accountability and transparency, the MOH will develop the appropriate financial systems and develop proper mechanisms, such as empowering financial management of hospitals to their board of directors.
8. Equitable cost-sharing strategies which are appropriate for Afghanistan, will be developed to help make the operation of hospitals more financially sustainable.
9. Hospitals also have a role within the health system to provide supervision of lower level health facilities, a place for professional training of physicians, nurses, midwives and other health providers as well as supporting necessary national medical and health systems research.
10. Private hospitals are permitted and are part of the health system and must comply with all standards for providing good quality care, be accredited and adhere to all MOH policies.

Standards for Hospitals

Standards are required to improve the clinical and managerial performance to attain an acceptable level of operations for hospitals. Standards establish what is expected of hospitals and their staff at all levels of operation. It is the establishment of such reasonable standards which permits the monitoring of hospital operations against which hospital performance can be measured. This is required to improve the standard of care and management of hospitals in Afghanistan. The following provide the framework of the basic standards. Specific details, elements and components of each standard must be developed and specified in greater detail by the MOH. The following provides a structure and direction for development of detailed standards for hospitals, which will be used for accreditation, ultimately.

7. Responsibilities to the Community:
 - 7.1. The hospital is responsive to the community's needs
 - 7.2. Hospital services will be accessible to the community.
 - 7.3. Hospitals will have a proper disaster preparedness plan so it can properly respond in the event of natural or man-made disasters.
8. Patient Care
 - 8.1. Patients will be treated with dignity and have a right to be treated in a respectful manner.
 - 8.2. Quality of clinical care to the patient that the hospital serves is high and appropriate for Afghanistan, including the proper staffing, equipment and supplies.
 - 8.3. Quality of care will be monitored and measured by agreed indicators (e.g. wound infections, length of hospital stay, operations per patient, mortality rates etc).
 - 8.4. Women and children will receive the basic package of health services at hospitals, including immunization, outpatient care for conditions, such as pneumonia and diarrhea, as well as appropriate assistance at the time of delivery.
 - 8.5. Hospitals will be "mother and baby friendly" and encourage "rooming-in" and immediate, exclusive breast feeding.
 - 8.6. Care delivery is monitored by the hospital's health care team to ensure that care meets the needs of patients and to assist in the improvement of care.
 - 8.7. Medical records are maintained for each patient and are kept confidential and secure.
9. Leadership and Management
 - 9.1. The hospital is effectively and efficiently governed, organized, supervised and managed to ensure the highest quality of care possible for patients.
 - 9.2. To ensure the responsiveness of hospitals to the community, a hospital board of directors or board of management will be established at each hospital to govern and oversee the proper operation and management of the hospital.
10. Human Resource Management
 - 10.1. Staff planning ensures the hospital is staffed with properly trained staff and the appropriate number of staff.
 - 10.2. Staff are appointed through a recruitment, selection and appointment procedure that is consistent with human resources policy of MOH.
 - 10.3. Staff will adhere to high ethical standards and code of conduct in performance of their duties.
 - 10.4. A comprehensive program of staff development and in-service training meets individual and hospital needs.
 - 10.5. Effective workplace relations are developed through use of teams
11. Management Systems
 - 11.1. Financial management policies and procedures are developed and adhered to in order to ensure accountability of the hospital's finances from all sources.
 - 11.2. Management information systems meet the hospital's internal and external needs
 - 11.3. Patient care, management of services, education and research are facilitated by the timely collection and analysis of data
 - 11.4. Information technology enhances the hospital's ability to gather, store and analyze information and to communicate.
 - 11.5. Appropriate logistics and purchasing systems are maintained to ensure clinicians have the proper equipment, supplies and pharmaceuticals to provide patient care.
 - 11.6. Buildings and grounds are maintained to ensure proper management.

12. Hospital Environment

- 12.1. Infection is effectively controlled throughout the hospital
- 12.2. The physical environment of the hospital and its equipment are properly maintained to ensure patient and staff safety and that there are no physical barriers for those with disabilities.
- 12.3. The hospital is accessible to all patients with including those with physical disabilities.
- 12.4. Buildings, grounds, plant and equipment are regularly maintained to ensure a safe environment for all persons in the hospital.
- 12.5. Waste from the hospital is handled, contained and disposed of safely and efficiently
- 12.6. Occupational health measures are adopted to ensure the safety of staff, especially those dealing with direct patient care.
- 12.7. Clean water of sufficient quantity and quality is available for patients and staff and for proper hospital functioning.
- 12.8. Toilets in the hospital are kept clean for use by patients, staff, and visitors.

Levels of Hospitals

There are three levels of hospitals: district (as a part of the BPHS), provincial, and regional, including specialized hospitals. Differentiation of hospital levels is based on the patient services offered. Five core clinical functions will exist in each level of hospital: medicine, surgery, pediatrics, obstetrics and gynecology, and mental health. An escalating level of sophistication will exist from district to urban hospitals. The health post, basic health center and comprehensive health center will offer basic curative and preventative services.

Hospitals in conjunction with the Provincial Coordination Committees (PCC) will ensure the enforcement of a well-functioning referral system. A two-way referral mechanism will be established maintaining a functional link between hospitals and primary health care facilities. First line referrals will stem from health centers to district hospital outpatient departments from where consultation will define whether patients need to be further referred to higher levels or treated at that level. Similarly patients are referred back to primary health care facilities for follow-up. The following general specification of services for various hospital levels will be supplemented by the Basic Package of Hospital Services, to be developed by MOH, will identify, in detail, the clinical services provided at each level, the equipment and supplies required and the minimum staffing required.

District Hospital

Each district hospital will have from 30 to 75 beds and serve a population of 100,000 to 300,000, covering from one to four districts. The basic services offered at a district hospital are:

- Surgery,
- Medicine,
- Pediatrics;
- Obstetrics and gynecology;
- Mental health (outpatient);
- Dental services;

The district hospital will also have nutrition, physical therapy, laboratory, radiology, blood transfusion, and pharmacy services.

Provincial Hospital

A provincial hospital serves a province and will have from 100 to 200 beds. In addition to the services offered at a district hospital, the provincial hospital has:

- Physical therapy and rehabilitation services
- Nutrition services
- Infectious disease medicine;

Regional Hospital

A regional hospital serves several provinces and will have from 200 to 400 beds. In addition to the services offered at a provincial hospital, the regional hospital has:

- Surgery with ENT, urology, neurosurgery, orthopedics, plastic surgery and physiotherapy
- Medicine with cardiovascular, pulmonary, endocrinology, and dermatology
- Forensic medicine

Diagnostic services include:

- a) Laboratory: hematology, parasitology, bacteriology, virology, allergy and immunology, biochemistry, toxicology, cytology, and pathology.
- b) Blood Bank/Transfusion Services: Provides for the taking, preserving, and distributing blood to patients and the diagnosis of blood related diseases (haemophilia, thalassemia, leukemia, and viral diseases—hepatitis, HIV/AIDS).
- c) Imaging: routine and specialized radiography, ultrasonography.

Rationalization of Hospital Services

There will be rationalization of services, such as polyclinics, where specialized diagnostic and curative services are provided on an outpatient basis. These facilities will be linked to regional and specialized hospitals for referral of complicated cases requiring inpatient care in order to reduce the burden on these hospitals and to give quality services at an outpatient level. They will not have beds as this duplicates what exists in hospitals and is expensive for the health system.

While there may be a need for some additional specialized diagnostic services for the country, these services are too expensive and for too few patients to be available at every regional hospitals. Further rationalization of services will occur at the urban level where specialized clinical and diagnostic services and equipment will be centralized. These include: pathology and forensic medicine, histology, bio-technical support, centralized statistics center, and research. Equipment and services such as CT-scan and radiotherapy will be located at only one hospital in the country to provide the services for the entire the country rather than being provided at each regional hospital.

Specialized hospitals will be combined into regional hospitals with multiple specialties, as much as possible. As current specialized hospitals are rehabilitated and new facilities planned, the MOH will seek to combine them with other major hospitals in order to rationalize the number and type of hospitals. The current specialized hospitals include eye, mental health, disabilities, tuberculosis, chest, oncology, orthopedic and prosthesis, maternity, pediatrics, and emergency hospitals.

Annex B

Staffing Assumptions for Advised Staffing Patterns

The assumptions related to the advised staffing patterns for the Hospitals are:

- Related to the % of beds per service based on (1) Mirwais Kandahar, (2) JPHH-1 Jalalabad and (3) Ghazni Hospitals, however modified: surgery to 40% (58%; 57%; 37%); medical to 25% (24%; 28%; 37%) and OB/GYN increased to 20% (5%; 5%; 9%) and pediatrics to 15% (10%; 8%; 15%).
- Staffing doctors: 1:5 (total MDs versus total Hospital beds: Regional (training()) Hospital Afghan standard)
- Staffing nurses 1:5 (with one head nurse/midwife in each ward/department)
- Staffing midwives 1:4
- Staffing psychiatry nurses/psychologists/anesthesiologists: guestimate, unexplored area in Afghanistan
- Staffing operation theatre 1 table: 2 nurses (OT tables 50 beds = 1 then 1 for every 100 beds)
- Staffing sterilization 1: table (OT tables 50 beds = 1 then 1 for every 100 beds)
- Staffing anesthesia 1: table + 1 night (OT tables 50 beds = 1 then 1 for every 100 beds)
- Staffing for Outpatient Department (morning shift only):
 - 50 beds: 1;
 - 100 beds: 1;
 - 150 beds: 2;
 - 200 beds: 2;
 - 250 beds: 3;
 - 300 beds: 4;
 - 350 beds: 4;
 - 400 beds: 4
- Staffing for Emergency Room (shifts: morning + night + sleep)
 - 50 beds: 1+0+0;
 - 100 beds: 1+1+1;
 - 150 beds: 2+1+1;
 - 200 beds: 3+2+2;
 - 250 beds: 3+2+2;
 - 300 beds: 4+2+2;
 - 350 beds: 4+2+2;
 - 400 beds: 5+3+3;
- Staffing laboratory and blood bank are based on recommendations of lab and BB experts
- Staffing X-ray technicians are per X-ray machine covering 24 hrs (not per bed). If mobile machines are used or fluoroscope in the OT an increase can be considered
- Staffing physiotherapists covering both OPD and IPD is a guestimate based on ICRC experience in Afghanistan
- Staffing dental technicians and vaccinators are guestimates

- Staffing technical assistants: important for physiotherapy, X-ray, sterilization/OT and pharmacy: preferable instead of using cleaners
- Staffing pharmacist: guestimate based on ICRC experience in Afghanistan
- Staffing administration: guestimate
- Staffing storekeeper: guestimate
- Staffing maintenance: as a minimum a plumber and an electrician are needed. When hospitals become bigger other professions may be needed e.g. a welder and a carpenter. In addition, the plumber and the electrician might be needed 24 hrs
- Staffing kitchen: both cooks and helpers are included in this guestimate
- Staffing laundry: depends quite a lot on if laundry machines are used or hand washing is practiced, whether staff uniforms are washed etc.
- Staffing drivers: guestimate
- Staffing guards: outside guards 24 hrs and inside (ward) guards
- Staffing cleaners: includes administration (1), wards (1-2 per ward), corridors (1:50 beds), OT (1: table) and waste management
- Staffing porters for ER and OT during day time and 1 per night (> 100 beds): added to guards

ⁱ A more rational staffing pattern will have to be worked out in the future. WISN (Workload Indicators of Staffing Needs) can be used for this. <http://www.who.int/hrh/tools/en/> (accessed 9 Sept 04).

ⁱⁱ The Van Hemel Neonatal Incubator costs about USD 385 and is easy to maintain <http://www.clinicalresearch.nl/incubator/INFO.HTM> (accessed 9 Sept 04).

ⁱⁱⁱ <http://www.prematurity.org/baby/kangaroo.html> (accessed 9 Sept 04).