Health in Iraq

A Review of the Current Health Situation,
Challenges Facing Reconstruction of the Health Sector, and
our Vision for the Immediate Future

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Minister of Health

Ministry of Health
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Preface

Until two decades ago, the main indicators of the health status of Iraqi people were improving substantially and health care services were achieving high standards. However, the regime which ruled Iraq during the last three decades did not consider health a priority; the health system, therefore, suffered from continued neglect and budgetary allocations did not reflect population needs. As a result, the health sector witnessed progressive deterioration to the extent that health indicators fell to levels comparable to some of the least developed countries. Highly competent and experienced professionals left the country and serious gaps developed in the provision of health services. The decline was exacerbated by major wars, disastrous military adventures, and political and economic sanctions.

The country currently faces enormous health challenges. This document describes one of the initial steps in our mission to address these challenges and rebuild the health system. It provides a brief description of the health situation and assesses current trends; it also aims to establish a baseline for rehabilitation efforts, identify the key priorities for reconstruction, and offer strategies and a rationale for immediate action.

The views and strategies outlined in this document are based on the analysis of the current situation in Iraq and discussions with a large number of Ministry of Health officials and staff as well as members of the Advisory Committees who represent the leaders of the health professions in Iraq. The proposed short- and medium-term strategies were also discussed with partners, including UN agencies, the World Bank, and major donors in a seminar organised in Amman, Jordan in July 2004. The situation analysis and strategies were subsequently subjected to extensive discussion, during the “National Conference on the Current Health Situation and Future Strategies” organised by the Ministry of Health from 30-31 August 2004. The conclusions and recommendations of the National Conference, which was inaugurated by the Prime Minister, were discussed again and finalised in a meeting organised on 16 September 2004 and attended by key MOH officials in Baghdad and the governorates as well as a large number of health experts in public health and clinical specialities.

More than 450 participants attended the National Conference and I am grateful to the many colleagues, from the health profession and other sectors, who provided valuable input and important contributions during the plenary and working groups' sessions of the Conference.

I also wish to express my appreciation to the persons who assisted me during the preparation of the document. Drs Osama Abdul Azeez and Mohamed Jabor were very helpful in providing available data on several health programmes and updated reports from the Directorate of Public Health and other departments of the Ministry of Health. Mr Anthony Laurence, Dr Hadi Al Taie and Mrs Nidhal Al Kadhim helped me in the final production of the document.

Ala’din Al Alwan
Minister of Health
List of Abbreviations

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<tr>
<td>ACAI</td>
<td>Arab Company for Antibiotics Industries</td>
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<td>ACE</td>
<td>Angiotensin-Converting Enzyme</td>
</tr>
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<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<td>ARI</td>
<td>Acute Respiratory Infections</td>
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<td>BCG</td>
<td>Bacillus Calmette Guerin</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CDC</td>
<td>Centre for Disease Control</td>
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<td>CHD</td>
<td>Coronary Heart Disease</td>
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<td>CSO</td>
<td>Central Statistical Organisation</td>
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<td>CVD</td>
<td>Cardiovascular Diseases</td>
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<td>DOTS</td>
<td>Direct Observation Short Therapy for Tuberculosis</td>
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<tr>
<td>DPT</td>
<td>Diphtheria, Pertussis, Tetanus</td>
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<td>ECG</td>
<td>Electrocardiography</td>
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<tr>
<td>ESCWA</td>
<td>Economic and Social Commission for Western Asia</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>GCHS</td>
<td>Gulf Child Health Survey</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>HAV</td>
<td>Hepatitis A virus</td>
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<tr>
<td>HBsAG</td>
<td>Hepatitis B Surface Antigen</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficient virus</td>
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<td>IHSS</td>
<td>Iraq Health System Strengthening</td>
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<td>IMIRA</td>
<td>Iraq Multiple Indicator Rapid Assessment</td>
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<td>IMR</td>
<td>Infant Mortality Rate</td>
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<td>IRI</td>
<td>International Republican Institute</td>
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<td>IST</td>
<td>International Study Team</td>
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<td>LBW</td>
<td>Low Birth Weight</td>
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<td>MCH</td>
<td>Maternal and Child Health</td>
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<td>MICS</td>
<td>Multiple Indicator Cluster Survey</td>
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<td>MMR</td>
<td>Mumps, Measles, Rubella</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<td>MOPDC</td>
<td>Ministry of Planning and Development Corporation</td>
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<td>NBSD</td>
<td>National Board for the Selection of Drugs</td>
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<td>NPH</td>
<td>Neutral Protamine of Hagedorn</td>
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<td>OFFP</td>
<td>Oil for Food programme</td>
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<td>OGGT</td>
<td>Oral Glucose Tolerance Test</td>
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<td>OPV</td>
<td>Oral Polio vaccine</td>
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<td>PHC</td>
<td>Primary Health Care</td>
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<td>QC</td>
<td>Quality Control</td>
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<tr>
<td>RTA</td>
<td>Road Traffic Accidents</td>
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<td>SDI</td>
<td>Samara Drug Industries</td>
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<tr>
<td>STD</td>
<td>Sexually Transmitted diseases</td>
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<td>Abbreviation</td>
<td>Full Form</td>
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<td>U-5M</td>
<td>Under 5 Mortality</td>
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<td>UNDG</td>
<td>United Nations Development Group</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNHDR</td>
<td>United Nations Human Development Report</td>
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<td>UNICEF</td>
<td>United Nations Children's Emergency Fund</td>
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<td>VPD</td>
<td>Vaccine Preventable Disease</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Health in Iraq

Health development is a pre-requisite for the sustainable development of Iraq and an essential component of the task of reconstruction. This document charts the disastrous decline in the health of the population and in the standards of health services over the last two decades. It describes the challenges now facing the country in improving health and rebuilding its health services and it identifies the priorities for investment and development over the next few years.

Executive Summary

Health Status

The population of Iraq has more than doubled in the last 25 years. It now stands at 27.1 million and is growing at about 3% a year. The health of the population was steadily improving between 1960 and 1990. For example, during this period, infant mortality fell by about two-thirds (from 117 to 40 deaths per 1000 births) and child mortality fell by 70% (from 171 to 50 deaths per 1000 births). Life expectancy rose.

But since about 1990, there has been a disastrous decline in peoples' health. At a time when children's health was improving in the vast majority of countries, infant, child and maternal mortality rates in Iraq more than doubled. Adult mortality increased and life expectancy fell to under 60 years for men and women by 2000.

Iraq is currently rated by WHO as a country with high adult and child mortality alongside much poorer countries like Afghanistan, Djibouti, Sudan and Yemen.

A number of different factors have contributed to this decline. They include

- A sharp rise in poverty (around 27% of the population was living on less than $2 a day in 2003).
- Poor sanitation and water supplies (82% of the urban population and 40% of the rural population had access to safe drinking water in 2004).
- Poor nutrition (one in five children were underweight in 2000 and one in three were chronically malnourished).
- A decline in educational enrolment and attendance.
- Unhealthy life styles-high levels of smoking, unhealthy diet, lack of exercise.
- High numbers of injuries and deaths from road traffic accidents and violence.
- Deterioration of preventive health programmes.
- A serious decline in the accessibility and quality of health services

Communicable Diseases

Iraq currently suffers from a double burden of disease. Non-communicable diseases like cancer and cardiovascular disease are the leading causes of death but infectious diseases remain major causes of morbidity and mortality. Diarrhoeal diseases, acute respiratory infections (ARI), measles, mumps, typhoid and leishmaniasis are still leading conditions reported from health facilities and the main cause of morbidity and mortality in children.
ARI and diarrhoea account for 70% of deaths among children. Each child suffers an average of 8 episodes of ARI a year and 6 episodes of diarrhoea. The incidence of other diseases has increased:

- Typhoid has increased since the mid 1990s because of poor sanitation and water supplies. There were 29,000 cases in 2003 and 5460 in the first quarter of 2004.
- Measles increased sharply in 2004 (8253 cases in the first half of the year) after a previous decline.
- Mumps increased from 7051 cases in 2003 to 11,821 cases in the first four months of 2004.
- Hepatitis E outbreaks are increasingly reported.

Some other diseases including malaria, cholera and diphtheria have been declining. Importantly, there have been no epidemics since the war despite the disruption of services and interruption in programmes of immunisation. Efforts are currently being made to increase immunisation levels to halt the rise in vaccine preventable disease.

**Chronic Non-Communicable Diseases**

The epidemiological transition is well advanced in Iraq. Cardiovascular diseases (CVDs) are now the leading cause of death and cancer and diabetes have become major health issues. But standards of treatment and care are wholly inadequate. Between 1989 and 1999, there was a 65% increase in hospital admissions for CVDs and a five-fold increase in outpatient visits. Organised programmes for the prevention of CVD do not exist and management and secondary care are grossly inadequate. The average annual number of cancer cases reported between 1995 and 1997 was between 8000 to 9000, rising to nearly 11,000 in 2000 (though this may be due to improved registration). Most cases are detected at an advanced stage and treatment and care are seriously deficient. The prevalence of diabetes is unknown but it is thought to be a large-scale problem. Less than a quarter of cases are treated with insulin. No accurate data are available on mental illness but it also appears to be a problem of large dimensions, particularly post-traumatic stress disorder. There is a dearth of mental health services. Rates of death and injury from road traffic accidents are significantly higher than in neighbouring countries (an average 2186 deaths between 1998 and 2002). There are also currently high numbers of deaths and injuries from terrorist incidents and military action - more than 3000 deaths and 12000 injuries from April to August 2004 - putting a severe strain on over-worked and under-resourced hospital emergency services.

**Health services**

Iraq used to have one of the best health services in the region. But expenditure cuts, neglect and poor management over the last 15 years have taken a heavy toll. The budget was cut by 90% in the 1990s. Buildings and equipment were not maintained and fell into serious disrepair. Training of health professionals was neglected and they were cut off from the outside world, unable to keep up with modern knowledge and practice. Many left the country.

The looting and destruction of health facilities that took place after the war, the interruption of electricity and water supplies and the security problems have caused a further deterioration in services. About one-third of primary care clinics, more than 12% of hospitals, 30% of family planning clinics and 15% of child care clinics were looted or
damaged or both. The two main public health laboratories were destroyed and the Institute of Vaccines and Sera was stripped of equipment and furniture and lost its vaccine supplies. Four of the seven central warehouses for the storage of drugs and supplies were partially looted.

While renovation and rehabilitation has taken place over the last 18 months and nearly all facilities have re-opened, the work has been haphazard and most of the facilities remain in a very poor condition.

The Current Situation

There are 1285 primary healthcare centres in Iraq, each serving an average population of 35,000. About half are staffed by doctors, the rest by nurses and medical assistants. The distribution of PHCs and staff is unequal with some areas much better served than others. On average, each PHC sees 120 patients a day but the low doctor-patient ratio means consultation times are short.

Most of the buildings are in dire need of rehabilitation or expansion, about 60% according to a recent survey. Broken windows and doors are common-place and basic furniture and equipment (eg stethoscopes and thermometers) is often lacking. About 80% have no functional generator. 90% do not have running water (though they usually have water tanks). There are frequently severe shortages of medicines and basic supplies. Few PHCs keep proper medical records and the public have little confidence in them - 60% thought hospitals provided better care and 70% believed the private sector was better.

The picture is similar with secondary and tertiary services. There are 172 public hospitals with about 30,000 beds. One-third required urgent and extensive rehabilitation according to a recent survey the quality of care has progressively deteriorated as a result of poor leadership, lack of maintenance, shortages of drugs and supplies, inadequate staff training and depletion of staff at all levels. High mortality rates are reported - the case fatality rate was 2.03% in 2003. The average bed occupancy is low at only 53%.

The main strength of the service is the staff, especially the doctors of whom there are some 18,000. But they are unevenly distributed and too many (about one quarter) are specialists - not enough focus on primary care. While under-graduate and post-graduate education has expanded over the past decade, the quality of training has deteriorated. There are not enough nurses (about 17,734 in 2003 - but that may be an under-estimate) and they are inadequately trained, unequally distributed and poorly led. Standards of training and practice are far below the levels achieved in neighbouring countries. There are also critical shortages of midwives and other health professionals.

Poor management of the health sector has added to the problems. The system is highly centralised and management and financial skills are lacking. There is virtually no IT nor an effective health information system. Corruption is widespread and presents a major problem.

Charges for health services were introduced in the 1990s. By 2002, they accounted for 80% of total health spending of about $50m. They were abolished after the war (except for a very small charge for public health clinics) but the health budget was increased very substantially to nearly $1000m in 2004. Most of the increase has gone towards higher salaries and increased spending on pharmaceuticals.
Challenges

It is clear that Iraq faces enormous health challenges. These include rebuilding the infrastructure, strengthening management, re-organising the pharmaceutical sector and dealing with drugs shortages, reducing health risks in the population, retraining the workforce and tackling the main causes of the rise in communicable and non-communicable diseases. The overall aim is to achieve better health for all and to reduce health inequalities while providing high quality services that are affordable, accessible and responsive to the expectations of the population. This is not a task for the Ministry of Health and health services alone. It depends upon improvement in the economic and social well-being and in the lifestyles of the people. It requires investment in improved water and sanitation services, in better environmental health and in education. It involves collaboration across Government and the mobilisation of local communities.

Vision and Priorities

Our vision is that the health system in Iraq should promote health and improve access to quality healthcare irrespective of ethnic, religious or geographic origin or socio-economic status. Five areas have been identified as priorities for action over the next three and a half years:

- Meeting urgent needs and improving services.
- Strengthening management.
- Developing and implementing a four-year plan for reconstruction.
- Training and capacity building.
- Mobilising resources.

Plans for tackling these areas will be drawn up over the next three months while work continues to address the most pressing needs.
Chapter 1.

Main features of the current health situation

1.1. Demographic and Socio-Economic Trends

Demography

The area of Iraq covers 435,052 sq. km. The total population of Iraq is estimated to be 27.1 million\(^1\). Iraqi demographics are changing. The population was about 12 millions, according to the 1977 census, increased to 16.3 millions in 1987 and almost doubled in 20 years to 22 millions in 1997. The overall population growth has been around 3% annually during the period 1987-1997. Males constitute 50.2% of population while females constitute 49.8%. Those below 5 years of age represent about 17% of population, while adolescents (age 10-19 years) form about 23% of the population and children in general about 54.3%. Women of child bearing age constitute about 22% of the population. Those who are 60 years and 65 years of age and above form 3.8% and 2.8% of the total population respectively.

Two thirds of the population live in urban areas and one third in rural areas. More than 24% of the population lives in Baghdad, 9.5% in Mosul, 6.6% in Basra, 5.2% in Arbil, and 6.3% in Sulaimaniya.

Iraq has experienced population movements caused by the policies of the previous regime and two decades of wars. Iraq has also been experiencing a long-term population shift from rural to urban areas. Life expectancy at birth is estimated, according to the UNDP Human Development Report 2001, to be 59.2 years for males and 62.3 years for females\(^2\). However, the only set of figures available at the Ministry of Planning and Development Corporation of Iraq (MOPDC) are for the year 1997 and they are 58 years for males and 59 for females.

Socio-economic status

The Iraqi economy was previously dominated by the State, through the many state-owned enterprises. There was little entrepreneurship in the culture and little government encouragement of private enterprises to flourish. The per capita gross domestic product (GDP) was reported to be $1083 in 2000 dropping to $866 in 2001\(^3\). Iraq's economic situation is currently difficult after two decades of wars, more than 13 years of severe sanctions and three decades of inappropriate policies. However, the macroeconomic outlook will be positive when the security situation improves.

Poverty rates vary according to the definition of the poverty line and reliable data is scarce. The United Nations Economic and Social Commission for Western Asia (ESCWA) reports in a study prepared in 1996 that severe poverty affected 3.2% of the urban population and 8.3% in rural areas in 1988 and that the rates increased sharply to 21% of urban and 22% of rural populations in 1993. Absolute poverty increased from 25% in urban areas and 33% in rural areas in 1988 to 72% and 66% in urban and rural areas respectively in 1993. This means that almost three quarters of the Iraqi population became poor despite the food rationing system which was established in 1991\(^4\).

\(^3\) Ministry of Planning and Development Cooperation. Figures and Indicators 2004.
\(^4\) Economic and Social Commission for Western Asia (ESCWA). Poverty in Iraq Before and After the Gulf War (Original Report in Arabic); Poverty Reduction Series – 4. 1997.
The World Bank estimates that 27.2% of the population was living on less than US $ 2.00 per day in 2001\textsuperscript{5}.

An extensive baseline survey conducted, between July and December 2003, by the World Food Programme in collaboration with the Central Statistical Organisation (CSO) and the Nutrition Research Institute of the Ministry of Health revealed that 13.4% of households (representing a population of about 2.7 million) were “extremely poor”. “Extremely poor” was defined by the survey as a household spending less than US $ 5.80 per month\textsuperscript{6}.

According to the survey, the 95 districts involved were classified into four clusters, based on the prevalence of the extremely poor status and the observed degree of vulnerability of the extremely poor in each district. Cluster 1 (a population of about 5.8 million) is characterised by high levels of extreme poverty (an average of 26% of households), a high degree of reliance on the public distribution system (PDS) ration and a prevalence of chronic malnutrition higher than the national average among the extremely poor. Clusters 2 to 4 (18.6 million) have a lower prevalence of extreme poverty (8.4-10.9%) and decreasing levels of vulnerability.

Based on the same survey, which involved 16 governorates, almost 60% of the population was either extremely poor or poor\textsuperscript{7}.

The public food distribution system which provides monthly food rations to the entire population at a heavily subsidised price was put in place in 1991 to provide a form of a blanket budgetary assistance to Iraqi households. It, however, represents a considerable burden on Iraqi finances, monopolising 26% of planned public expenditure in 2004\textsuperscript{8,9}.

According to the 2003 Needs Assessment Report of the United Nations Development Group (UNDG) and the World Bank, the unemployment rate rose to around 50% after the second Gulf War, with the collapse of government-based employment, state-owned industries, the dismissal of civil servants and the demobilisation of the army\textsuperscript{10}.

A recent survey conducted by the Ministry of Planning in October 2003 revealed a lower unemployment rate among age groups 15 years and over of 28.1% (30.2% in males and 16% in females)\textsuperscript{11}. The highest unemployment rate was found in Nasiriya (46.2%) followed by Ramadi (33.3%).

The 2004 WFP survey also provides information on employment status of adults. About 80% of adult males were employed compared to about 13% for females\textsuperscript{7}.

Household poverty has prompted children to leave schools and seek jobs to support their families. Regional surveys indicate rising numbers of working children and those who live or work on the streets.

Demographic indicators for the year 2004 are shown in Table 1.

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<th>Table 1: Demographic and Socio-Economic Indicators</th>
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<td>Demographic Indicators</td>
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\textsuperscript{6} World Food Programme. WFP Household Survey 2004.
\textsuperscript{7} World Food Programme. WFP Household Survey 2004.
\textsuperscript{8} Coalition Provisional Authority. Iraq Budget for 2004, released October 2003.
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<table>
<thead>
<tr>
<th>Total Population (000)</th>
<th>2004</th>
<th>27, 139,585*</th>
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<tr>
<td>Population growth rate</td>
<td>2004</td>
<td>2.99%*</td>
</tr>
<tr>
<td>Average household size</td>
<td>2004</td>
<td>7.8* (see comments below)</td>
</tr>
<tr>
<td>Average life expectancy</td>
<td>1997</td>
<td>58 Males (CSO)*</td>
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<tr>
<td></td>
<td></td>
<td>59Females (CSO)*</td>
</tr>
<tr>
<td>Total fertility rate</td>
<td>2000</td>
<td>5.7***</td>
</tr>
<tr>
<td>Crude birth rate /1000</td>
<td>1997</td>
<td>39.4*</td>
</tr>
<tr>
<td>Crude death rate/1000</td>
<td>1997</td>
<td>10.6*</td>
</tr>
<tr>
<td>Socio-Economic Indicators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult literacy ratio: both sexes</td>
<td>1997</td>
<td>76.6%*</td>
</tr>
<tr>
<td>Males</td>
<td>1997</td>
<td>85.1%*</td>
</tr>
<tr>
<td>Females</td>
<td>1997</td>
<td>68.3%*</td>
</tr>
<tr>
<td>Per Capita GDP (US $)</td>
<td>2001</td>
<td>865.6*</td>
</tr>
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*** CSO & UNICEF. Multiple Indicators Cluster Survey (MICS). 2000

1The Iraq Multiple Indicator Rapid Assessment Survey 2004 reports a mean household size of 6.4 (7.4 and 6.1 for rural and urban areas respectively). Al Anbar and Al Muthana governorates reported the highest figures (8 and 8.2 respectively)12. This is not consistent with the figure in the table.

The UNDP Human Development Report classified countries by their human development index rankings. Iraq's ranking dropped from 76 in 1991 to 127 in 2001. The international sanctions caused a worsening of the humanitarian situation and the overall quality of life deteriorated with a marked increase in vulnerability.

**Education**

The education system in Iraq was highly-regarded and high-performing until the early 1980s. In the preceding years, the country had continued to improve at all levels of education and had achieved nearly universal primary enrolment in 1980. Thereafter, following more than two decades of major wars, disastrous military adventures and irrational policies the system went into a steady decline, driven by a combination of lack of resources and the politicisation of the education system, which influenced the curriculum, the teaching staff and admission policies.

Enrolment rates have declined progressively and attendance rates have decreased to alarmingly low levels, including a rate of only 50% of girls attending in rural areas. Systems development came to a standstill with serious consequences for management and governance. Family poverty emerged as a major cause of drop-outs, with girls being particularly vulnerable. Despite these reductions in enrolment, which are troubling by themselves, the school physical infrastructure has so deteriorated that it has an increasingly negative effect on the quality of education and attendance rates; too many students must now be educated in double or triple shifts. It will take about 4,500 new schools to meet the needs of the current student population.

Out of nearly 15,000 existing school buildings, 80% now require significant reconstruction. More than 1,000 schools need to be demolished and completely rebuilt. Another 4,600 require major repair. Hundreds of schools are built of mud or reeds particularly in the southern governorates and thousands of school buildings nationwide do not meet minimally acceptable health standards.

The damage inflicted on the education system from years of conflicts, oppression, injustice, lack of maintenance, weak technical and management capacity, lack of training and neglect has resulted in a very serious degradation of the system and has magnified the negative impact on the life and morale of the Iraqi people. The Ministry of Education has identified four major priorities in its four year strategy for 2004-2007: reconstructing the physical infrastructure, training and capacity building of teachers, curriculum reform and development, and restructuring of the educational system and improving its management.

A new educational philosophy and a set of 6 major policy directions, endorsed through a process of national dialogue, will guide the rebuilding of the Iraqi education system. Already promising achievements have been made.

Iraq's qualified and trained human resources have been depleted because of repeated wars and the sanctions. A very large proportion of highly qualified people including physicians and other health professionals have left the country over the last three decades for political or economic reasons. With improved salaries for government employees, a large proportion who left their jobs during the last ten years are applying for reinstatement in their previous positions.

1.2. Health status

Prior to 1990, Iraq was advancing through the epidemiological transition from infectious diseases to chronic and degenerative disorders. The country currently suffers from a double burden. While the magnitude of non-communicable diseases continues to increase, the incidence of common communicable diseases has also increased during the last 14 years.

Reliable and high-quality epidemiological data is generally scarce. The health information system is weak. However, health outcomes in Iraq are generally among the poorest in the region and well below the levels found in comparable income countries.

The factors contributing to the deteriorating health status include poor investment in health development, poorly maintained health infrastructure, inappropriate management of the health sector, very low purchasing power, poor sanitation and water supply, unsafe food storage, smoking, unhealthy dietary patterns, and lack of exercise.

1.2.1 Mortality trends

All deaths should be registered according to law. However, registration is not universal and death certification by cause is not accurate. Strengthening mortality statistics is an area that should receive a high priority in short- and medium-term plans.

The crude death rate was estimated to be 10.6 per 1000 population in 1997. The MOH reports the leading causes of death for age groups 5 years and over; they are cardiovascular disease (CVD), cancer, renal diseases, respiratory disease and diabetes. For age groups under 5 years, diarrhoeal diseases, respiratory infections, other communicable diseases, and congenital malformations represent major causes of death. Despite the inaccuracy of death certification by cause, there is clear evidence that cardiovascular diseases have been the leading causes of death since the 1970s.

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Major achievements were made in reducing child mortality during the sixties and seventies. The infant mortality rate (IMR) fell from about 117 per 1000 live births in 1960 to 90 in 1970, 80 in 1974 to around 40 deaths per 1000 live births in 1989.

The Gulf Child Health Survey (GCHS) conducted in Iraq in 1989 and the survey on Immunisation, Maternal and Childhood Mortality carried out, in 1990, by the Ministry of Health in collaboration with UN agencies provides reliable information on mortality. Information is also available from the International Study Team (IST) survey conducted in 1991 and the 1999 Morbidity and Mortality Survey although the accuracy of some of the data reported during the sanction years may need to be interpreted with caution. However, the general trend indicates that mortality continued to decline until 1990 when it began to rise progressively.

Table 2 shows the figures reported for IMR and under five mortality (U-5M) over the period 1960-1998. Figure 1 shows the same trend for the period 1974-1998.

Table 2: Infant and Child Mortality 1960-1998

<table>
<thead>
<tr>
<th>Year</th>
<th>Child Mortality Rate Under Age 5</th>
<th>Infant Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>171</td>
<td>117</td>
</tr>
<tr>
<td>1970</td>
<td>127</td>
<td>90</td>
</tr>
<tr>
<td>1980</td>
<td>83</td>
<td>63</td>
</tr>
<tr>
<td>1990</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>1995</td>
<td>117</td>
<td>98</td>
</tr>
<tr>
<td>1998</td>
<td>125</td>
<td>103</td>
</tr>
</tbody>
</table>

Source: UNICEF & International Study Team.

Figure 1
Mortality Rates among Young Children (all of Iraq, 1974-1998)

In the 8-month period following the 1991 war, mortality among children under five years of age rose from around 52/1000 to about 128.8/1000. The IST estimated excess mortality rates at 1.8 deaths per thousand during the first month of life, 4.3 deaths per thousand for the second to the eleventh month of life, and 5.2 deaths per thousand for one- to four-year-olds. Babies under one month of age were thus relatively protected.
Deaths reportedly due to diarrhoea rose fivefold. The rise in male infant deaths exceeded females and the rural death rate was about 30% higher than the urban rate.

Geographical distribution shows differences in rates. Figures 2 and 3 demonstrate the variation in IMR and U-5M between the three northern governorates and the south and centre. Based on the figures given for the 1999 cross-sectional household survey, childhood mortality was reported to be lower in the north compared to the centre and south\textsuperscript{14}. However, there is a need to conduct an in-depth review of the results of the survey before firm conclusions can be made.

**Figure 2**  
Mortality Rates among Under Five Year Olds (Centre and South of Iraq, 1974-1998.  

**Figure 3**  

Figure 4, also based on the same 1999 survey, provides information on the U-5 MR in the various governorates and suggests the same trend in the difference in child mortality between governorates in the north and those in the centre and south.

UNICEF and WHO’s Watching Brief reports that in the 1990s, 63 countries experienced a mortality decline of a third or more; an additional 100 countries had a decline of greater than 20%. Only 14 countries (Iraq included) had an overall mortality increase among young children during the 1990s. Nine were in Africa, where HIV infection was the predominant cause of elevated mortality.

The generally rising mortality trend in Iraq, over the last two decades, is particularly striking when compared to trends in other countries in the same region.

To assist cause of death and burden-of-disease analyses, WHO divided member states into five mortality strata on the basis of their levels of mortality in children under 5 years of age and in males 15-59 years old. Mortality stratum A are countries with very low child mortality and very low adult mortality, stratum B includes those with low child mortality and low adult mortality, stratum C are countries with low child mortality and high adult mortality, stratum D are those with high child and adult mortality and stratum E are countries with high child mortality and very high adult mortality.

Iraq currently falls in mortality stratum D, accompanied by Afghanistan, Djibouti, Somalia, Sudan, and Yemen. Neighbouring countries like Jordan, Kuwait, Iran and Syria fall in stratum B.\(^{15}\)

1.2.2 Morbidity data

**Communicable Diseases**

Although the disease profile in Iraq is changing, infectious diseases remain on the list of major causes of morbidity and mortality. According to reports of the Communicable Disease Control Centre in the Ministry of Health (MOH), diarrhoeal diseases, acute respiratory infections (ARI), leishmaniasis, measles, mumps, and typhoid are still leading conditions reported from health facilities.

The trend of vaccine preventable diseases (VPDs) has shown a disturbing increase in the last 10 years. One major exception is poliomyelitis; the last case was reported in Iraq in 2000.

According to the Multiple Indicator Cluster Survey (MICS) 2000, the immunisation coverage was 91.7% for BCG, and 85.5%, 78.1%, and 68.9% for the first, second and third dose of DPT respectively\(^{16}\). The routine immunisation rate reported for OPV was 73%, 93.5%, 89.5% and 81.8% for the four doses respectively in 2000. For measles, the coverage rate was 78.1%. About 61% of children were regarded fully immunised in 2000 and 2.6% of children 12-23 months were not immunised\(^{17}\).

Basic primary health care services were seriously affected by the looting, destruction and lack of electricity following the 2003 war. Immunisation coverage rates declined considerably in 2003. The Public Health and Primary Health Care Directorate reported significantly lower coverage rates in 2003 (BCG of 66%, OPV3 58%, DPT3 59%, hepatitis B 56%, and measles 68%). However, public health programmes were reactivated during the second half of 2003; one national immunisation campaign and several campaigns for defaulters were conducted. A national MMR immunisation campaign was launched by the MOH in March 2004 for school age children and coverage of 97% has been reported. Another national campaign for polio immunisation will be launched in September 2004. Major constraints include the lack of adequate equipment and poor maintenance for the cold chain, interrupted electricity supply, inadequate supply of vaccines, and the adverse security situation which impedes outreach efforts.

According to the March 2003 WHO Communicable Diseases Profile for Iraq, acute lower respiratory infections and diarrhoea account for an estimated 70% of deaths in children.

Acute respiratory infections (ARI) are still one of the leading causes of morbidity among children under 5. The MOH reports that the number of children diagnosed with ARI in 2003 was 1,804,374 (excluding the northern governorates). The case fatality rate was 0.14% in 2003\(^{17}\). According to a survey conducted in 1998 by the MOH in collaboration with WHO, there were 5-8 episodes of ARI per child per year. Available data indicates that only a third of Iraqi mothers were able to recognise the major warning signs of respiratory distress.

The total number of cases of diarrhoeal disease in children under 5 years of age was reported by the MOH to be 732,954 with a case fatality rate 0.08%. No doubt, reporting is incomplete and the available figures underestimate the size of the problem. There were 3.6 episodes of diarrhoeal disease per child per year according to the MOH/UNICEF/WHO survey conducted in 1997. A comparison of the percentage of children under 5 with diarrhoea in the two weeks prior to the survey shows that Iraq has one of the highest rates, only exceeded by Mauritania, Sudan and Yemen\(^{18}\), although country surveys were administered at different times rendering comparability of data difficult.

The high rates of preventable morbidity and mortality are unusual for a country like Iraq. Even after many years of sanctions, Iraq had a high rate of urbanisation, relatively high literacy rates, and good access to medical advice in a public system of care, and widespread mass media\(^{19}\). With appropriate policies, the health system should have adapted to the changes imposed by the sanctions and these resources could have been wisely used to address the major health needs of the population far more effectively by targeting families and communities with information/education. Instead, the main focus remained on a disorganised, poorly managed and interrupted supply of medicines and medical equipment for hospitals.

\(^{16}\) Central Statistical Organisation & UNICEF. Multiple Indicator Cluster Survey 2000.


Reduction of diarrhoeal diseases and ARI and prevention of complications require further improvement in health service delivery as well as more effective education of mothers on how to implement home care to affected children.

The number of diphtheria cases has been decreasing since 1998 while the incidence of pertussis has been increasing since 2002. The first six months of 2004 reported 2 deaths of diphtheria and 11 deaths of pertussis.20

The incidence of measles increased in 1997 with outbreaks in 1998-1999 when the cases started to decline. According to the MOH Disease Control Centre, the total number of reported cases was 454 in 2003. However a dramatic increase is reported in January-June 2004 (8253 cases), particularly in Basra and other southern governorates.

The total number of mumps cases reported in 2003 was 7051. There seems to be an increase in 2004. A total of 11821 cases were reported during the period January to April 2004. Nineva registered about 26% of the cases.

Outbreaks of cholera were reported during the period 1997-2000. The number of cases reported in 2001 and 2002 were 92 and 332 respectively. In 2003, the number of serologically confirmed cases was 6 despite the fact that a larger number of cases (195) was diagnosed clinically, mainly in the south. The number of confirmed cases reported during first seven months of 2004 was 17 and the number of carriers 16.21 No fatalities have been reported.

Because of the disruption of the water and sanitation systems following the second Gulf war, outbreaks of typhoid fever were reported during the 1990s. More than 29,000 cases were registered in 2003. During the first quarter of 2004, 5460 cases have been reported.

Both cutaneous and visceral leishmaniasis are increasing. The increase is much more pronounced for the visceral type. In 2002, 3218 cases of Kala-azar were reported compared to 2010 registered only in the first quarter of 2004.

A total of 11,656 cases of tuberculosis were reported in 2003. More than 60% are cases of pulmonary tuberculosis. MOH and WHO estimate an incidence of 130 cases per 100,000 putting the annual number of cases much higher than the reported figure.

Viral hepatitis is endemic in Iraq. Hepatitis A is highly endemic. The prevalence of anti-HAV in the Iraqi population is 95%. The prevalence of HBsAg is 2-3% in the normal population and slightly higher among health professionals. Hepatitis C is of low endemicity (0.5%). Hepatitis D was found in one study in more than 13% of HBsAg carriers. Sporadic cases of hepatitis E are seen.

There were 19,824 acute cases of jaundice reported in 2003, compared with 11,818 in 2002. The number of acute jaundice cases tested in 2003 was 14,820. Hepatitis A was diagnosed in 1046, B in 411, and C in 82 cases.

Malaria is endemic mainly in the North. An outbreak occurred in 1996. A decline in the number of cases was reported after 1998. The number of cases reported in 2003 was 307 compared to 1043 in 2002. Only 15 cases were reported during the first quarter of 2004. All cases are Pl. vivax. One imported case of falciparum malaria was reported in 2003.

The number of reported cases of schistosomiasis has been declining in recent years. The disease mainly exists in two foci, Al Qa'im in Anbar and Beldrouz in Diala. The total reported cases in 2003 were 132. The main age groups affected are 5-19 years. Completeness and accuracy of reporting is questionable and these figures may not reflect the true epidemiological situation.

Iraq is still among the low prevalence countries for HIV/AIDS. In 2003, there were 275 cumulative HIV/AIDS cases reported since 1986, mainly due to infected blood products imported from Europe for treating individuals with haematological conditions. Most patients died. There are currently 67 cases receiving care. Updated 2004 estimates of HIV infection rates are not available yet. As in other countries, the figures are underestimates and do not reflect the magnitude of the disease.

The programme currently provides free medical and social care for HIV/AIDS cases, financial support, provision of condoms, and provision of residence for those who have no place to live. Seventeen counselling centres are now providing services. The programme includes compulsory testing of travellers to prevent imported cases; more than 190 HIV positive cases have been discovered among foreigners since 1988. The majority were Indians, Egyptians, Libyans, and Yemenis seeking medical services in Iraq.

However, data on the current epidemiological pattern is lacking. HIV testing was disrupted during the 2003 war and the looting and destruction that followed. All programme activities were interrupted and communications with living AIDS patients were lost until recently. The counselling centre in Ibn-Zuhur hospital and the six centres in other governorates were completely looted.

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As a result of changes in risk factors, the presence of military troops from various nationalities, the influx of large numbers of foreigners, and the increased possibilities for drug abuse, the magnitude of the problem and the current epidemiological pattern need to be carefully examined. There is a pressing need to conduct a thorough assessment of the current situation and to review the guidelines and strategies adopted for HIV/AIDS prevention.

Precise information on other sexually transmitted diseases is not available. However, the total reported STD cases in 2003 were 64,428, compared with 75,405 in 2002. The difference is probably due to the interruption of the reporting system by the war. The most commonly reported diseases were: non-gonorrhoeal cervicitis, trichomoniasis, bacterial vaginitis and candidiasis.

Routine serological testing during pregnancy conducted during 2002-2003 revealed a positive VDRL in about 0.1% of pregnant women, a finding which requires further investigation. Based on the number of reported cases, the following table provides some information on the incidence of the various disorders. Because of under-reporting, the figures are not an accurate reflection of the true magnitude of STDs.

Table 3: Incidence of STDs based on the cases reported during 2003 (Source: Ministry of Health PHC Directorate)

<table>
<thead>
<tr>
<th>Disease</th>
<th>per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis</td>
<td>0.61</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>2.82</td>
</tr>
<tr>
<td>Non GC urethritis</td>
<td>14.74</td>
</tr>
<tr>
<td>Non GC cervicitis</td>
<td>210.33</td>
</tr>
<tr>
<td>M . Contagiosum</td>
<td>3.22</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>2.78</td>
</tr>
<tr>
<td>Chancroid</td>
<td>3.89</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>104.81</td>
</tr>
<tr>
<td>Candidiasis</td>
<td>76.73</td>
</tr>
<tr>
<td>Genital warts</td>
<td>6.05</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>99.98</td>
</tr>
</tbody>
</table>

There are some indications suggesting an increase in the magnitude of STDs. Contributing factors include population movements and overcrowding caused by internally displaced people as well as returnees, poverty, and lack of or incomplete treatment of STDs leading to increased possibilities for transmission.

**Chronic Non-communicable Diseases**

The second half of the twentieth century witnessed major global health transitions which profoundly altered life expectancy and disease patterns. Among these health transitions, the most important change has been the rising burden of cardiovascular diseases (CVDs) and other non-communicable diseases (NCDs) like cancer, chronic obstructive pulmonary disease and diabetes. In developing countries, the proportional and absolute burdens are sharply rising and are projected to soon become the leading contributors to death and disability. This epidemiological transition is already well advanced in Iraq. The available mortality statistics indicate that CVDs are the leading

cause of death and there are indications that cancer and diabetes are increasingly seen as major health problems.

The bulk of reports on the effects of wars and the sanctions on the health of the Iraqi population deals with childhood morbidity and mortality, infectious diseases, malnutrition, and inadequate treatment due to lack of medical supplies and drugs. With the exception of cancer, there are no published epidemiological reports on non-communicable diseases. The 2004 Multiple Indicator Rapid Assessment (IMIRA) household survey reports that 9% of the 19,800 households suffer from chronic illnesses. The large magnitude of the problem is compounded by lack of adequate health care. From hospital based data and information routinely collected by the MOH, it is certain that inadequate nutrition, low incomes, shortages of drugs and medical equipment, intellectual isolation and emigration of health personnel have seriously affected the prognosis of persons with chronic illnesses during the last two decades.

**Cardiovascular diseases**

Despite limitations in the mortality statistics available in Iraq, there is evidence to indicate that CVDs rank first as a cause of death in Iraq. Coronary heart disease (CHD) and stroke are the predominant types of CVD encountered in clinical practice. Hospital morbidity data provided by the MOH indicates a 65% increase in hospital admissions due to CHD and more than a five-fold increase in outpatient visits with the same diagnosis between 1989 and 1999. The average age of persons hospitalised with acute myocardial infarction seems to have shifted towards younger age groups.

The major modifiable cardiovascular risk factors are smoking, hypertension, and diabetes. The Smoking Control Committee reports a prevalence of smoking of 40% of males over the age of 16 years and less than 5% of females. Smoking among children under 16 years is reported to be 5% of males and 1% of females. Compared to neighbouring countries, these rates may be underestimates. The same report indicates that the cigarette consumption in Iraq was about one billion cigarettes in 1998, 90% of which were locally manufactured. Based on available data, annual consumption is estimated to be about 1200 cigarettes per adult.

There is a dearth of data on dietary patterns and published reports on the current blood lipid profile of the Iraqi population is scarce. Obesity among adults is one of the features of malnutrition seen today in the country. The report of the most recent FAO survey includes data on body mass index (BMI) from adult population samples from Baghdad, Diala and Kerbala. 4-6% of adults had a BMI of less than 18.5 (chronic energy deficiency) but 47-67% had a BMI of 25 or over.

The first population-based survey on hypertension was conducted in 1979. Using the cut-off levels of 160/90 a prevalence of about 12% was reported and only every fifth person with hypertension was aware of the diagnosis. No further epidemiological reports on hypertension have been published since then. Rheumatic heart disease had started to decline a few decades ago, but a recent study of 784 cases of rheumatic fever registered in 15 health centres in Baghdad from 1991-1996 reported an increase in cases in recent years. Ministry of Health data also indicate an increase in congenital heart disease.

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28. WHO Global Assessment, Tobacco or Health Programme WHO.
disease reported in the period 1989-1999 with the highest increase noted between 1991 and 1998.

Despite severe shortages for more than 14 years, most major anti-hypertensive drugs are currently available (diuretics, beta-blockers, calcium channel blockers, ACE inhibitors), although the supply is unreliable and frequently interrupted.

Treatment is usually prescribed and adjusted by specialists in internal medicine. In general, primary care physicians are inadequately trained in the management and follow up of chronic diseases. People with chronic diseases including cardiovascular diseases are provided with a special card which enables them to dispense their prescriptions from MOH's pharmacies with no significant cost. However, the availability of basic cardiovascular drugs through this effective system is obviously negatively influenced by the interrupted supply and shortages described above.

The clinicians also have the impression that the case-fatality ratio in hospitalised patients with myocardial infarction has increased because of lack of basic requirements for modern management in intensive care units. There are currently three major centres for open heart surgery in Baghdad. The centres are poorly equipped and basic supplies are interrupted. The number of surgical interventions performed is far below the actual needs resulting in long waiting lists.

In summary, organised programmes for the primary prevention of CVDs do not exist. Management and secondary prevention are grossly inadequate. There is a pressing need to improve the management of hypertension, coronary heart disease, and stroke. Simple, inexpensive interventions can reduce coronary end points and further vascular events.

**Diabetes**

A survey in 1979 revealed a diabetes prevalence of 5% in a small rural population in Basra, thus indicating that Iraq was already experiencing an epidemiological transition more than twenty years ago. The current prevalence of diabetes is unknown. Neighbouring countries report a prevalence of about 10% in adults, but the situation of Iraq is too unique for simple extrapolation. Physicians have the impression that diabetes is a large-scale problem in the Iraqi population.

Diabetes is diagnosed on the basis of the fasting plasma glucose value. The OGTT is performed very rarely. Due to lack of reagents, the hexokinase method is not always used, but glucose meters are used instead. They are not accurate enough for diagnostic purposes, neither are they cheap. Pregnant women are not systematically screened for glucose intolerance.

Before the sanctions, there were several specialised diabetes centres staffed with diabetes specialists, ophthalmologists and nurses trained in diabetes care. Since 1990, it became increasingly difficult to maintain the same level of services although two major centres are still operating in Baghdad.

Most people with diabetes are now treated by specialists in internal medicine working in either government or private clinics. Despite the small number of specialists,

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the role of primary health care physicians in the management of diabetes and its complications is very limited.

It is estimated that 20-25% of diagnosed diabetics are treated with insulin; more than 50% are treated with oral hypoglycaemic agents and the rest on diet alone. Insulin (short-acting, NPH, lente, and biphasic preparations) is available most of the time, but there have been frequent periods of shortage during the last 14 years and clinicians report a high frequency of diabetic ketoacidosis. Glibenclamide, the most frequently prescribed oral hypoglycaemic agent, is available in sufficient quantities most of the time. Metformin, however, is prescribed with increasing frequency, but its supply is intermittent. There are no programmes for patient education and possibilities for strengthening “self care” are limited because of inadequate patient education and lack of self-monitoring facilities.

Most people with diabetes have no access to optimal self-monitoring tests. Long-term complications are common and opportunities for their prevention and treatment like laser photocoagulation and renal replacement therapy are limited.

**Cancer**

The Iraqi cancer registry was established in 1976. A total 25,000 malignant cases were registered from 1995 to 1997, giving an average annual number of cases between 8000 and 9000.

The number of cases registered remained almost the same in 1998 (9052) and 1999 (8939) but increased to 10,888 in the year 2000. Because cancer registration is incomplete, it is difficult to attribute the increase to a rise in incidence since it could have resulted from improved registration.

The most common tumours are those of the breast followed by lung, bladder and cancer of the lymphatic system. Leukaemia was the fifth commonest cancer in 1998 responsible for 5.8% of all tumours (ranked 7th in 1989).

Childhood cancers are 8-10 times more common than in the west, with about 8% of the total cancers in Iraq compared to 0.5-1% in developed countries. The most common cancers in childhood are leukaemia, followed by lymphomas and brain and other nervous system tumours.

The Cancer Registry reports an increase in the number and proportion of cases of leukaemia in the southern governorates since 1993. For example in Basra, leukaemia constituted 8.5%, 9.1%, 8.4%, and 9.2% in 1993, 1995, 1997, and 1998 respectively compared to 5.4% in 1989. Corresponding figures for Maysan are 6.2%, 7.4%, 14.3% and 13% compared with 4.5% in 1989. Overall, the proportion of leukaemia cases was 5.8%, 6.5%, and 3.4% of all cancers in 1998, 1999, and 2000 respectively. The reportedly increasing trend of leukaemias requires further study. Strengthening of the cancer registry particularly in the South is a priority.

Generally, the future number of cancer cases is expected to rise, mainly due to the ageing of the population, widespread tobacco consumption and exposure to environmental factors.

Out of 5 common cancers that constitute over 50% of all cancers a large proportion of cases are preventable, half are eligible to early diagnosis, and if diagnosed in time, four are curable by standard therapies when available. Most incurable patients badly require palliative care.

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Table 4: The most common cancers: Priorities and Strategies for Control.

<table>
<thead>
<tr>
<th>Site of Tumour</th>
<th>Primary Prevention</th>
<th>Early Diagnosis</th>
<th>Therapy</th>
<th>Pain relief and Palliative Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>-</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Lung</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>++</td>
</tr>
<tr>
<td>Bladder</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Lymphatic/haemato-poetic</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Larynx</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
</tbody>
</table>

If early and adequate therapy could be offered to the exceptionally large number of children with tumours, up to two thirds may be cured.

However, the majority of cancer cases in Iraq (50-80%) are detected in advanced stages and are thus incurable even if the best therapies could be offered. It is therefore mandatory to link therapy with early detection initiatives adopting health education approaches for both the public and health professionals. Essential chemotherapy drugs, all existing in generic versions, are not regularly available for curative treatment.

The radiotherapy facilities which exist only in Baghdad and Mosul are outdated and grossly inadequate. There are currently no functioning linear accelerators. The equipment procured through the OFFP in recent years has not been used because of inappropriate technical specifications. The provision of chemotherapeutic agents is often interrupted.

There are currently 17 radiotherapy oncologists. Chemotherapy, when available, is given by either the radiotherapist or interested internal medicine specialists or surgeons. Many surgeons deal with cancer treatment but there are no full-time surgical oncologists. There is a pressing need to train full time oncology specialists. Also needed are specialists in needle cytology, trained oncology nurses, palliative care nurses, radiotherapy assistants, radiation physicists, dosimetrists and engineers for future linear accelerators services. Training of persons to allow an effective home care system is also necessary to reduce the cost of hospital care and to support the families that are presently the main care-givers to the great majority of incurable cancer patients.

In conclusion, the small cure rates must be credited to surgery alone. Close to a half of cancer patients could have been cured if detected early but now die unnecessarily because of late diagnosis and lack of standard curative therapy. Because of lack of palliative care, most of today’s cancer patients die with much avoidable pain and suffering.

**Mental disorders**

Accurate data on the magnitude of mental disorders are scarce. However, clinical impressions suggest a problem of large dimensions especially in relation to post-traumatic stress disorders. With a predicted affliction of more than 10% of any population with different psychiatric disorders, the people in Iraq are rendered more vulnerable for a number of well known reasons, one of which is the continuing violence, terrorist attacks, and military operations. Studies conducted in several residential areas in Baghdad where bombing and explosions took place revealed high rates of post-traumatic stress disorders particularly among children.

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37 Fakhraldine S. MOH Mental Health Programme. Personal Communication.
There is a dearth of mental health services. New approaches to community mental health are needed. The health system needs to include proper attention to psychosocial issues, mental health promotion at individual and community level, integration of mental health into primary care (via training, guidelines, support, data collection, effective medicines) and, in the general health sector reform plan, a package of essential health interventions and an essential medicines list.

The MOH conducted a national workshop in June 2004 to discuss priorities for mental health promotion and strengthening of services. The recommendations focused on recruiting multidisciplinary mental health teams in primary care, conducting training courses and developing clinical management guidelines for use in primary health centres. The recommendations also included strengthening of services in psychiatric hospitals and capacity building in areas like child psychiatry, forensic psychiatry, management of drug abuse and other specialised services.

**Injuries**

An average of 10,253 road traffic accidents (RTAs) was registered annually during the period 1998-2002. They resulted in an average of 2,186 deaths and 8,421 wounded every year. In 1998, the number of deaths per 10,000 automobiles (13.2) was high compared to other countries (2.1 in Austria and the USA, 1.7 in Canada and Germany, 1.5 in Japan, and 1.4 in Britain and Switzerland). Ministry of Health statistics indicate that number of deaths due to RTAs was 6.2 per 100,000 of population in 2002. During the same year, the number of deaths per 1,000 RTAs was 21.8, significantly higher than the figures reported from other neighbouring countries. The magnitude of the problem is increasing due to the adverse security situation, weak compliance with road traffic laws and regulations, and the rapidly rising number of cars.

In addition to RTAs, injuries and deaths due to the current military events, security situation and terrorist activities are now increasingly reported. During the 5 months period (April to August 2004) the MOH operation centre reported more than 3,000 deaths and 12,000 injuries resulting from terrorist activities and military operations.

**Disabilities**

The data available on the magnitude of blindness and low vision is based on surveys conducted in 1994 and 1997. Blindness is defined as inability to count figures at a distance of 3 meters with both eyes after correction with spectacles, while low vision is defined as inability to see at level of 6/18 in the Snellen’s chart after correction with both eyes. The overall prevalence for blindness was 0.5%.

More than 33% of blindness cases were caused by cataract and about 20% of cases were due to glaucoma. Another survey, conducted in 1997 on a cluster sample of 80,000, revealed prevalence for blindness & low vision at 0.64 & 0.68 respectively.

![Table 5: Major Causes of Blindness & Low Vision (Source: Ministry of Health PHC Directorate)](image-url)

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### Blindness

<table>
<thead>
<tr>
<th>Cause</th>
<th>% Both eyes</th>
<th>% One eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract</td>
<td>55.4%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>8.4%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Retinopathy (mostly diabetes)</td>
<td>6.4%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

### Low vision

<table>
<thead>
<tr>
<th>Cause</th>
<th>% Both eyes affected</th>
<th>% One eye affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract</td>
<td>53.8%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>3.3%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

More than 51% of cases of blindness occurred under the age of 60. About 6% of blindness occurred in children in the age group below 10 years and about 10% occurred in age group below 18 years.

### 1.3. Nutritional status

Reliable population-based data on nutrition prior to 1991 are scarce. Data from the International Study Team (IST) provides a post-war baseline.

The rates seen in Table 6, while lower than any other period in the 1990s, were higher than pre-war and pre-sanction levels in the late 1980s. Table 6 also shows rates of under-nutrition among children under the age of 5 years for the period 1991-2002.

Table 6: Proportion of under 5 children with under-nutrition.

<table>
<thead>
<tr>
<th>Year</th>
<th>1991</th>
<th>1996</th>
<th>2000</th>
<th>2002</th>
<th>Arab States Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Malnutrition</td>
<td>3.0</td>
<td>11.0</td>
<td>7.8</td>
<td>4.0***</td>
<td>9%</td>
</tr>
<tr>
<td>Underweight</td>
<td>9.0</td>
<td>23.4</td>
<td>19.5</td>
<td>9.4</td>
<td>20%</td>
</tr>
<tr>
<td>Chronic Malnutrition</td>
<td>18.7</td>
<td>32.0</td>
<td>30.0</td>
<td>20.1</td>
<td>28%</td>
</tr>
</tbody>
</table>

These figures, derived from several surveys, confirmed the serious nutritional status of young children in Iraq. About one in every five children was underweight (low weight for age) in 2000, and almost one third of children under 5 were chronically malnourished (low height for age).

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In 2002, UNICEF reported improvement. The findings of the 2002 survey suggested that the percentage of general malnutrition, stunting, and wasting had declined\textsuperscript{19}. According to the UNICEF report, rates that were higher in 1996 than the Arab country average, had declined to a level similar to Arab countries in 2000, and were again better than the Arab country average by 2002 though the rates are still higher than neighbouring countries. This favourable trend, however, is not confirmed by two recent studies. The IMIRA, conducted in 2004, shows higher malnutrition rates; malnutrition (weight for age - underweight) affects up to 13\% of children and malnutrition (height for age - stunting) affects 25\%\textsuperscript{12}. These figures are consistent with the findings of the WFP 2004 survey in which about 12\% of children were underweight and stunting was reported to affect about 28\%.

The UN Millennium Indicators Database gives a rate for moderate and severe child malnutrition in Iraq of 15.9\% and compares it to 8.7\% in Bahrain, 11.7\% in Egypt, 5.1\% in Jordan, 23.6\% in Oman, 14.3\% in Saudi Arabia, 12.9\% in Syria, 4\% in Tunisia, and 46.1\% in Yemen\textsuperscript{12,42}.

Available data on low birth weight provides high rates in Iraq. The national report on the follow up of the World Summit for Children gives a rate of 23\% of infants weighing less than 2.5 kg at birth in 1998. This compares to 10\% in Egypt, 9.8\% in Jordan, 6\% in Lebanon and Syria, 7.9\% in Oman and 3.3\% in Saudi Arabia. According to this figure, Iraq is one of only three Arab countries (with Yemen and Comoros) in which LBW incidence exceeds 10\%\textsuperscript{43}.

The adverse nutritional status of children in the northern governorates was evident since 1996. The 1996 Multiple Cluster Survey (MICS) revealed that about one in every five children (19\% or 95,000 children) was underweight (low weight for age), and 26\% of children under 5 (or 130,000 children) were chronically malnourished (low height for age), with children aged 6 to 24 months most at risk\textsuperscript{19}.

Following the onset of the economic sanctions, a trend of increasing breast-feeding was reported. Rates of ever-breast-fed children reportedly rose from 89\% in 1988 to 94.7\% in 1996. Breast-feeding at 6 months of age rose slightly from 60\% in 1988 to 65.4\% in 1996\textsuperscript{16}.

Although more than 40\% of adult males are overweight, chronic malnutrition is common, as is anaemia in children, adolescents and pregnant women. Better and more accessible pre and post-natal care and health/nutrition education and promotion are needed.

The ration provided by the OFFP, providing 2,215 k.cals/person/day, is low in some vitamins and minerals and supplementation of the ration by purchasing fruits, vegetables and meat is out of reach for many Iraqis. Food purchases were reported to consume 54\% of disposable income in 1972, declining to 43\% in 1985.

Food purchases rose to 50\% of family income during the Iran-Iraq war in 1988. Expenditure on food was about 62\% of total expenditure in 1993. It declined to 44\% in 2002\textsuperscript{44}.

According to the Human Development Report 2000, the per capita calorie availability was 1178, 1120, and 2030 in 1990, 1995, and 1997 respectively. The UNICEF/WHO Watching Brief provides similar figures and covers the period from pre-1990 to 2002\textsuperscript{19}.
### 1.4. Reproductive Health

Data on reproductive health is generally scarce and sometimes inconsistent. Forty-five per cent of births occur outside health institutions. The proportion of women delivering without trained assistance went up during the 1990s, to 30% in urban areas and 40% in rural areas. Some 15% -20% of deliveries are at high risk and need advanced medical support.

Maternal and child health (MCH) services represent a major function of PHC centres. However, access to such services is inadequate. Based on a survey conducted by the Ministry of Health in June 2003, a large proportion of centres lack basic requirements for MCH services. Examples of supplies and equipment which are not available in many centres include equipment as basic as stethoscopes, sphygmomanometers, weight scales, measuring tapes, and thermometers. Disposable gloves were not available in 53% of centres, antiseptics in 56%, and vaginal specula in 79%. More than 50% of PHCs are no longer providing regular family planning services.

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for reasons like the looting and destruction that affected some centres, lack of basic supplies, and inadequate training. Almost a quarter of physicians and health professionals providing MCH services\(^{48}\) did not receive any training. The survey results also suggest that a major proportion of physicians and other health professionals lack the basic knowledge, attitudes and skills required to provide optimal MCH care. Facilities for health education are very limited.

Caesarean section rates are high in most governorates. In 2002, the C-section rate for public hospitals in Baghdad was 30% of all births (compared to an acceptable standard of 5-10% in most countries)\(^{49}\). The rate was much higher at 48% in private hospitals. Reasons for these high rates include the financial incentives provided for surgical interventions.

There are referral institutions at district level to attend complicated births, but about half of these lack essential resources and trained staff to provide appropriate care. As a result, maternal mortality is extremely high. Estimates made by WHO, UNICEF and UNFPA for 1995 suggest a maternal mortality rate of 370 per 100,000 live births, compared to 41 in Jordan, 25 in Kuwait, 23 in Saudi Arabia, and 200 in Syria\(^{50}\). Based on a survey conducted in 1999 by the MOH in collaboration with UNICEF, the maternal mortality rate was estimated at 294/100,000 live births. The study involved interviewing about 24,000 households about maternal deaths from 1988 to 1998. Maternal mortality figures are available for 2001 and 2002 but they are thought to be inaccurate because of under-reporting. For example, while 31 maternal deaths were reported in one year in Baghdad, the estimated number at a maternal mortality rate of 290 is 458\(^{49}\). The gap between the estimated figure and the actually reported figures is enormous; another study on maternal mortality is a priority.

Maternal mortality began to rise following the Gulf war in 1990. It has more than doubled since then (maternal mortality ratio was 117 per 100,000 live births in 1989). Most maternal deaths (61%) occurred soon after delivery or during pregnancy (24%).

Inadequate access to family planning services and effective health care, poorly equipped health centres and lack of delivery rooms in most centres, maternal anaemia, misconceptions among women, critical shortage of trained midwives and skilled female nurses, and low quality of care in hospitals are factors contributing to the high maternal mortality.

Ongoing needs assessments of health institutions, of the quality of traditional birth assistance practices and the development of referral mechanisms and continuing education for physicians are needed. Less than one third of Iraq's hospitals and health centres are equipped with emergency obstetric care\(^{19}\).

There are 115 family planning clinics distributed over the various levels of health care. Almost 60% are based in hospitals, 24% in public clinics (Iyadat Sha'biya) and 16% in PHC centres.

A survey conducted by the Family Planning Association in 1999 revealed that the use of contraceptives by women of reproductive age is 32% compared to 37% in 1989\(^{51}\). The types of contraceptives used are mainly contraceptive pills (89%), condoms (6%), loops (2.8%) and injections (1.9%) in 2002.

Family planning services are frequently limited to supply of contraceptives with little attention to counselling.

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\(^{51}\) Family Planning Association and the Ministry of Health.
1.5 Environmental health

The water and sanitation sector was operating efficiently until the 1980s. Based on UN reports, safe potable water was accessible by over 95% of the urban and 75% of the rural populations\textsuperscript{10}. Sanitation service coverage was 75% for urban communities and 40% for rural areas.

The provision of clean water supplies declined in quantity and quality over the last two decades. Water supply and sewage treatment plants were damaged during the wars, and raw sewage is released into the rivers directly. The lack of safe water and the damaged water and sewage networks is creating a very serious source of water-borne disease.

Rehabilitating water networks and sewage collection networks and treatment plans is an enormous challenge in addressing the high child mortality and morbidity.

Eighty-five per cent of the population were reported to have access to safe drinking water in 2000. According to WHO & UNICEF\textsuperscript{19}, the rate was much higher in urban (92%) than in rural areas (48%).

The Iraq Multiple Indicator Rapid Assessment Survey (IMIRA) conducted in 2004 provides different figures: 85% of households have access to piped water (95% in urban and 46% in rural areas) with the highest rate in Baghdad (98%) and the lowest in the North (67%). However, only 72% are reported to have access to safe drinking water (82% in urban areas and 40% in rural areas). The survey gives alarmingly low rates for some governorates (18% in Basra) which require urgent validation and action.

The seriousness of the drinking water problem is also highlighted by recent surveys conducted, in June and September 2003 by the MOH. These surveys revealed low chlorination (free precipitated chlorine below 0.5 PPM) in 73% of districts in Baghdad where piped chlorinated water is available. In other governorates, low chlorination was found in 94% of surveyed districts.

Access to sanitation was estimated by the WHO & UNICEF report to be 79% (93% in urban and 31% in rural areas).

The Needs Assessment Report of the United Nations and the World Bank indicates that the sewerage collection and treatment system serving mainly the city of Baghdad it reaches approximately 80% of the population\textsuperscript{10}.

The IMIRA survey provides alarming figures here as well. Sixty-five per cent of the households reported they were not connected to functioning sewage systems. Of those who are connected, half reported frequent problems. In some urban areas outside Baghdad, only 9% of the population had access to functioning sewage systems.
According to data reported by WHO and UNICEF, Iraq ranks nine among 17 other Arab countries on access to an improved water source and 13th on access to improved sanitation.\textsuperscript{52}

As indicated before, the situation of food safety seems to be serious. In three quarters of districts, the local manufactured food stuff did not meet the standard specifications. In more than half of the districts there were imported food products which were considered unfit for human consumption. A survey conducted, by the MOH, on food processing factories revealed that only 58\% complied with food safety regulations.\textsuperscript{53}

Lack of proper and efficient systems of disposal of chemical and toxic effluents from factories have resulted in contamination of air, soil, water and plants with all the hazards of respiratory tract infections, chronic and acute chemical intoxication.\textsuperscript{19}

A major assessment of environmental health conditions, the re-equipping of laboratories and training of laboratory staff, and the identification of effective institutional and individual actions related to environmental health are needed. No reliable information is available on air pollution.

In conclusion, there is scarcity of data on many aspects of environmental health. Multidisciplinary and inter-sectoral work to address the serious environmental health problems should become a priority for health development in Iraq.

\textsuperscript{52} WHO & UNICEF. Global Water Supply and Sanitation Assessment 2000.
Chapter 2
Health System

The major provider of health care is the Ministry of Health. Until 2003, the military health services provided health care to military personnel and their families. The military medical facilities have now been absorbed by the MOH and most health professionals integrated into the MOH institutions. The private sector is composed of small private hospitals and a disconnected network of clinics.

The health care system does not currently provide equitable access to basic services. There is a health directorate in each of the 18 governorates. The system is too centralised with authority and decision making largely restricted to the central Ministry of Health and little authority given to governorates.

The system is also basically hospital-oriented with inadequate emphasis on sustainable health development. Services only partially match population health needs and there is lack of emphasis on cost-effective public health interventions. The levels and distribution of available human resources for health is inadequate.

The physical infrastructure has deteriorated as a result of over 20 years of underinvestment, poor management and conflict. The functional capacity of health care services was further weakened by widespread looting in April 2003, the subsequent unpredictability of electricity and water supply, and the general insecurity that created a difficult working environment for health personnel, particularly women. Although there have been scattered attempts at rehabilitating some health facilities, most of the health infrastructure continues to be in poor condition.

Excessive focus on clinical medicine has led to limited involvement of the government and the health system in tackling the underlying risks to health experienced by much of the population. The health services have a vital contribution to make but most health professionals need the skills to work in multidisciplinary groups. Health promotion and education, training of health professionals and the development of a PHC system can rapidly improve many health outcomes in Iraq.

2.1. Management of the health sector

Management of the health sector is characterised by several critical weaknesses. There is no formal health policy and no rational process of strategic planning and evidence-based decision making. There is no effective health information system and available data are frequently contradictory or inaccurate. Current capacity in information technology is severely limited. Thus, informed decision making, based on accurate information, is often missing.

The MOH also has limited capacity in management, budgeting and finance. Management practices are bureaucratic and often outdated. There is a top-down approach to decision-making with little consultation. Coordination between the various directorates tends to be weak. There are no clear guidelines for appraising the performance of staff. Incentives for good performance and innovative achievements are minimal or non-existent. Monitoring and evaluation is basically lacking. The Ministry budget is not based on a systematic process of situation analysis and accurate assessment of needs; allocation of funds is based primarily on past practice. The finance system is too bureaucratic and impedes proper and fast implementation of tasks. Part of the reason is the often unrealistic financial regulations.
Corruption is widespread and represents a major problem and an enormous challenge to any future health administration. Procurement processes, bidding procedures, and project management are areas where corruption is commonly encountered.

In conclusion, strengthening the management of the health sector and overcoming corruption are key to the reconstruction effort and are considered prerequisites for any meaningful change.

2.2 Primary Care

There are 1,285 primary health care (PHCs) centres in Iraq. About 55% (713) are staffed with at least one medical doctor. The rest are staffed by trained health workers (medical assistants and nurses). On average, each centre is responsible for providing primary care to a population of about 35,000. There is currently 0.4 PHC centre per 10,000 population.

Funds are allocated for the PHC system in each governorate but budgetary decisions and expenditures are made by the governorate Directorate General of Health. Centres do not manage their own budget and they have no financial flexibility or authority. Because working hours finish at 2.00 pm, the centres are used in the afternoons as public or health insurance clinics for a regulated fee. The revenue of these clinics partly goes to the government and partly to the staff.

The distribution of PHCs is inequitable. In the marshes (Governorates of Misan, Wasit, Nasiriya and Basra), the Primary Health care Directorate indicate that primary health care services are rudimentary or completely lacking in up to 37 districts (with almost 150,000 inhabitants) shared by the 4 governorates.

The Iraq Health System Strengthening (IHSS) Project conducted a survey covering a sample of 214 PHCs (47% in urban areas, 22% in suburban areas, and 31% in rural areas). The survey showed that health professionals are unevenly distributed. In Baghdad, for example, there are 925 physicians in 142 PHC centres compared to an actual need of 656 according to the MOH. In contrast, there are 74 physicians assigned to PHC centres in Nasiriya Governorate where the real needs according to MOH standards are 147.

Examples of governorates with shortage of PHC physicians include Najaf, Maysan, Wasit, Anbar, Babil and Arbil while Kirkuk, Suleimaniya, Dohuk, and Salahedine are considered comparatively overstaffed. Staffing of PHCs is variable. On average, a PHC with doctors has about 4 medical doctors, 11 nurses, and 1.5 dentists. In the catchment area of rural PHCs, the number of doctors, nurses and dentists were reported by the IHSS survey to be 0.16, 0.6, and 0.06 per 1000 population respectively. In the urban areas the figures were not very much different: 0.16, 0.5, and 0.05 respectively. Among the total number of 6,400 staff members of the 214 PHCs, 18% were medical assistants, 16% nurses, 11% general practitioners and 10% laboratory assistants. There were 64 specialists and only 2 trained family doctors. About 26% of staff belonged to other categories like security guards and cleaners.

There is a severe shortage of pharmacists and nurses (particularly females) in almost all governorates.

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There are too many people working in administration. For example, in Baghdad, there are 2038 administrative staff compared to 1310 staff actually needed. In Basra, the corresponding figure are 1738 and 359. Most of the administration personnel are poorly trained.

According to the results of the above-mentioned survey, 62% of pregnant women and 73% of infants were registered by the PHCs, more in urban and sub-urban areas than in rural areas.

The reported distance from the furthest village to a PHC was on average 14 km, which takes 30 minutes of travel using available means of transportation. However there is a significant variation between urban and rural areas. While only 5.4% of PHCs in urban areas reported that the distance between the furthest village and the PHC was greater than 30 km, the percentage was much higher in suburban (29%) and rural areas (26%). On average, each PHC had a workload of 120 patients per day. The number was much higher in urban (134) and suburban (144) than in rural centres (78).

In another survey conducted by the MOH to assess primary health care services in June 2003, an average of 21% of the population in catchment areas were displaced

There is currently no systematic patient record in most PHCs. Only 15% had a functional patient record system.

2.3. Secondary and tertiary care

There are 172 governmental hospitals in all 18 governorates, providing about 30,000 hospital beds. About 23% of hospitals are in Baghdad. Average bed occupancy rate was 52.9% in 2003 but it ranges between just over 30% in Dewania to 55% in Baghdad and about 70% in Diyala. Average in-hospital stay was 2.9 days. High mortality has been reported. Case fatality rate is very high at 2.03% in 2003. The number of private hospitals are 65 of which about two thirds are in Baghdad.

Quality of care has progressively deteriorated over the last two decades. The deterioration has been particularly severe during the last 13 years. In addition to the lack of maintenance, shortages of supplies, drugs and equipment, inadequate training of staff, there has also been a continuing depletion of experienced professionals at all levels. A large number of highly trained physicians, technicians and nurses have left the country to work abroad. Hospitals have to operate with severely limited budget in an environment of extreme bureaucracy and centralisation.

2.4. Brief Assessment of Infrastructure

Many health centres were built in the 1970s and 1980s and most hospitals were built earlier. The only exception is a limited number of health institutions built in the North with the support of the OFFP. Because of lack of funding for maintenance over the last two decades, the infrastructure has deteriorated. Broken windows, worn-out floors, deteriorated walls, dysfunctional air conditioning systems, and damaged drainage systems are features of most health institutions in Iraq today.

A recent report of a survey conducted by the Ministry of Health concluded that most buildings were in dire need of rehabilitation or expansion. Most hospitals had chronic problems with sewage and garbage disposal, water supply was inconsistent, and there

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was lack of emergency supplies and equipment. Most air-conditioning units were very old and not functioning and most elevators were out of work.\textsuperscript{61}

As part of the preparation for the Master Plan project, initiated by the Ministry of Health and the World Bank in 2004, a rapid assessment survey of 156 Iraqi hospitals used indicators to evaluate the need for rehabilitation. These indicators included the catchment area, bed occupancy rate, hospital stay, availability of basic equipment, and the condition of the physical structure. Hospitals were scored between 0 (requiring urgent and extensive rehabilitation) to 4 (not requiring urgent reconstruction). Less than 10\% scored 4 and more than one third scored zero.\textsuperscript{62}

The same rapid assessment exercise was conducted on PHC centres. Less than 14\% scored 4 and almost half scored zero.

Another rapid assessment survey of 737 PHC centres conducted by the MOH in collaboration with UNICEF and MERLIN in May-June 2003, revealed that more than 60\% of centres required rehabilitation or demolishing and rebuilding. More than one third had broken windows and almost 30\% had damaged doors. In most centres, the furniture was inadequate, too old or broken. Basic equipment like stethoscopes, sphygmomanometers, otoscopes, and thermometers were missing in more than 50\% of centres. Regular daily electricity cuts were a common problem. More than 80\% had no generators (16\%) or non-functioning generators (about 65\%). Chlorine content of water supplies was inadequate (less than 0.5 ppm) in 45\% of centres.

In the IHSS survey, less than one third of PHCs had functional and relatively clean toilets. Among functional toilets, only 15\% were supplied with soap. Less than one third of PHCs followed MOH instructions and consistently separated ordinary trash from medical waste and only 10\% disposed of medical waste with incinerators. About 20\% treated medical waste as ordinary trash posing the greatest threat to the health of the community. Regular water supply was not available in up to 90\% of centres. However the majority had a water tank. Electricity supply is irregular and only about 50\% of centres had generators that provide sufficient electricity to support medical practice. Here again, most of the equipment is old, dysfunctional and not well maintained. No equipment item was reported adequate by all PHCs. Basic requirements like cool boxes for immunisation were inadequate in one third of centres. Only 50\% reported adequacy for simple equipment like microscopes, thermometers, weighing scales and refrigerators. Gynaecological tables and ECG machines were not available in more than 95\% of PHC centres. MMR vaccine was available in only 4\% of centres and masks in 15\%\textsuperscript{56}.

Basic equipment is also lacking in tertiary care facilities. Even simple principles of aseptic management and emergency and critical care are sometime lacking. In most PHCs there is a serious shortage of essential medicines. Basic laboratory tests are not always available. Stool and urine analysis could be performed in 83\% of centres but only one third could perform cholera tests and one quarter could do blood grouping and Rh testing.

One third of the PHC centres included in the IHSS survey reported they were looted to some extent during and after the war. The rate was higher in urban (38\%) than in suburban (27\%) and in rural (24\%) areas. While 28\% of the PHC centres reported some renovation taking place during the last year, more than 30\% of walls, roofs, and floors


still needed rehabilitation. According to the same survey, about half of the rural PHC centres required major repairs.

The post-war looting and instability severely impacted upon the health sector. There have been persistent disruptions of electric power, water supply and sewage, widespread insecurity and a partial paralysis of financial, managerial, logistic and administrative systems.

About 12% of hospitals were partially damaged and 7% were looted in 2003. Large hospitals and medical centres were looted, burnt, and destroyed. Expensive multi-million dollar equipment was either stolen or damaged.

More than 30% of the facilities that provided family planning services were destroyed. About 15% of the Community Child Care Units were closed. The country's two major public health laboratories, in Baghdad and Basrah, were looted and destroyed. The Institute of Vaccines and Sera was stripped of most of its equipment and furniture; the long power outages resulted in the loss of vaccines. Two of the three rehabilitation hospitals in Baghdad were looted to the extent that they had to close. Health departments, hospitals and primary health centres lost furniture, refrigerators and air conditioners. Four of seven central Kimadia warehouses were partially looted.

The IHSS survey provides interesting information on the changes in PHCs during the last year. About 88% of PHCs reported improved staffing after the war but about 74% reported no change or worsening in the functional status of building compared to before the war. About 71% reported no change or worsening of furniture. More than 80% had no change or even worsening in the status of equipment. What is alarming is the finding on medicines; only 10% reported improvement in drug supply while about 67% reported worsening and 14% no change. The improved staffing status may be attributed to the considerable increase in salaries.
2.5. Health Care Utilisation

The consultation time is unacceptably short in primary care. Because services are over utilised, doctors are forced to see a large number of patients per hour. At health centres, most doctors work for 3 hours (9.00 -12.00) during which they could see between 30-100 patients. As a result, the consultation time is 2-6 minutes. The consultation time reflects the level of responsiveness of the health care system. If the time is too short, the risk of misdiagnosis and mistreatment will increase. In the IHSS survey which covered a sample of PHCs staffed by doctors, the average time spent by doctors with patients was 7 minutes and the time spent in suburban PHCs was the shorter (5.7 minutes). Compared to industrialised countries, the patient-doctor encounter is too short only about one third of the time in the United States and one half of the time in the United Kingdom.

In the same survey, among an average of 120 outpatients per day per PHC, up to 27% were seeking drugs only. Personal interviews revealed that patients usually received fewer drugs than they should have and in small quantities and they were therefore forced to visit the doctors more often for the drugs they needed. This results in an increase in the number of outpatients, waiting time, and consultation time in addition to the indirect costs associated with unnecessary visits.

Based on the same survey, the waiting time was on average 15 minutes which is considered acceptable. Overall about 19% of PHCs reported that their patients had to wait for 20 minutes or longer during peak hours.

In general, available assessments indicate that access to primary care is inadequate, the level of perceived quality of care is low, the state of physical infrastructure is not satisfactory and requires major repairs, equipment is grossly deficient, drug supply is very short and essential services are not always available.

2.6. Health Care Quality

A project funded by USAID organised field visits, in summer 2003, to assess the availability and accessibility of health services and to identify potential challenges for improving the performance of the system. Visits were made to most governorates and included interviews with health officials, health professionals of various levels, consumers (patients, community members, and tribal leaders), local non-governmental organizations (NGOs), and international organizations like WHO and UNICEF. The report of the field visits suggests that while the four essential inputs (health personnel, working space, drugs and other medical supplies, and basic equipment), which determine the availability of essential health care, are generally in place, people of Iraq do not receive health care with reasonable quality. Deteriorating buildings, old and non-functional equipment, poor facility sanitation, shortages of drugs and other basic supplies, short consultation time, poor standards of care, and poor referral systems characterise the situation in most institutions. Inputs are not balanced; hospitals may be provided with CT scans, MRIs, and ultrasound machines with no adequately trained personnel to operate them.

A rapid assessment of the quality of problems of the Iraqi Health care system has recently been made. The lack of accreditation and licensing systems constitutes a major constraint. There is no continuing education programme and no significant attempts to upgrade the knowledge and skills of health workers. Irrational drug use is

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common. The referral system is either rudimentary or practically non-existent. There is no system of general or family practice. Patients can visit any health centre or hospital without referrals. They may receive different prescriptions from several doctors. Medical records do not exist in health centres or hospital outpatients; they are inadequate and poorly maintained in hospital in-patient departments. Sanitation is poorly maintained almost every where.

Uncollected garbage, unclean and dysfunctional toilets, lack of functional sewage system is common. There is no treatment of medical waste. There are generally no guidelines or standards for the management of common conditions. If they exist, they are usually not adequately disseminated nor followed. Quality assurance programmes in hospitals and health centres are non-existent.

A plan for quality improvement in a proportion of hospitals and health centres has recently been prepared. However, there is a pressing need for consensus building, training of staff and capacity building as well as exposure to experiences in other countries.

2.7. People’s Views on Health

The Ministry of Health, assisted by Abt Associates, conducted a series of local health forums in different parts of Iraq in 2004\(^65\). The results highlight the need to improve the standards of care provided by PHC centres; nearly 60% of people interviewed believed that clinics cannot provide basic health care as well as a hospital can.

The public sector must improve its services since over 70% thought that private health care is better than public health care. Because trained general practitioners are scarce, more than 60% felt it was better to see a specialist when they were sick. More than 50% of respondents believed that the government should pay for the services delivered by private doctors and hospitals.

Despite the great interest shown by the public in health services, results of a recent poll conducted by the International Republican Institute (IRI) suggest that many Iraqis may currently have priorities higher than health care. The following figure, provided by IRI, shows that a small proportion (marked in yellow) have indicated healthcare as their first political priority\(^66\).

![People's views on Healthcare as a Political Priority](image)


2.8. Human Resources for Health

The complexity of the health care delivery system and the increasing role of the private sector require careful planning and management of human resources in order to achieve equitable provision of health care. While there are no absolute ideal ratios, the physician to population ratio is generally inadequate. The nurse to physician ratio is also low which may have implications for the cost and quality of care.

Accurate data on the medical workforce is scarce. The estimated number of physicians currently working in Iraq is about 18,000. The 2003 estimate includes about 14,500 physicians in the 14 central and southern governorates and about 2700 physicians in the northern governorates. About one quarter of the physicians in the south and centre are specialists. There is an estimated 6.3 physicians per 10,000 population. The reported distribution of physicians in 2003 varies from 3.1 in Nasiriya to 6.7 in Basra and 9.3 per 10,000 population in Baghdad.

There are 2182 dentists of which 151 are specialists. The reported number of pharmacists is 1634.

Data on the nursing workforce is not very accurate. The number of MOH nurses reported in the national nursing strategy document was 17,734 in 2003\textsuperscript{67}. Data available in the Human Resources Department of the MOH provides higher figures. About two thirds are males. The reported average nurse/population ratio is 11 per 10,000. The rates for nurses range between 7 in Salahedine and Baghdad to 20 per 10,000 populations in Dewaniya. MOH data includes more than 33,000 other health professionals (medical assistants and technicians).

Among different groups of health professionals, physicians are generally well represented, though the physician to population ratio in Iraq is below the regional average. In addition to the variable geographic distribution of physicians, there is an overall excess of specialists and insufficient physicians focusing on primary health care. The speciality of primary care or family medicine is almost non-existent. This speciality should be developed, with general practitioners having an equivalent status to hospital specialists.

Problems within the nursing workforce are even greater. There is an acute shortage of nurses. There is about one nursing staff per physician against the 3-6 nursing personnel per physician in most countries of the region. The document prepared by the MOH, Abt Associates, and WHO on nursing mentions an extreme example of a governorate of over 90,000 population having less than 30 qualified nurses.

Major gaps also exist in relation to the quality of nursing services. There are no reliable post descriptions. Many tasks that should normally be performed by nurses are taken by other health workers like physicians and nurses are assigned to “housekeeping” duties. Legislation is inadequate. There is no nursing practice act in Iraq. Generally, less than one third of the nursing professionals have received further education beyond high school. New allied health training programs in epidemiology, management, finance and planning are needed, as well as new models for health care delivery. Nursing specialities of community health, rehabilitation medicine, health education and promotion are in short supply and should be developed.

Iraq has a critical shortage of skilled midwives, who remain in far shorter supply than nurses.

There are 17 medical schools, seven colleges for Pharmacy, six for Dentistry and three Nursing colleges. In addition, there are three colleges that offer a 4-years training

program in health technology, and there are seven higher institutes for laboratory practice.

Medical education faces considerable challenges. The expansion which took place in the establishment of medical schools during the last decade has not been based on careful planning. Most schools lack basic requirements in trained staff and material resources. Postgraduate medical education has also expanded to respond to the increasing need created by the departure of large number of highly experienced specialists and consultants but the quality of training has deteriorated.

The quality of training for medical and other health science students needs to be reviewed. There is a need for major changes in curriculum and teaching methods that address the common health challenges in Iraq and take advantage of new technologies for distance learning and self-directed learning. Postgraduate education, study tours, and training for Iraqis in other countries should be encouraged. A National School of Public Health should be established. Professional associations of health workers should be strengthened.

The relationship between the teaching hospitals, which are owned and managed by the MOH, and the medical schools needs to be strengthened. A new mechanism of joint work and closer coordination should be developed. A national seminar on medical education was organised by the MOH and the Ministry of Higher Education and Scientific Research (MOHE) in August 2004. Recommendations on undergraduate medical education, postgraduate clinical speciality training and the teaching hospitals were made.

There are three levels of nursing education (skilled which is three years of training following 9 years of general schooling, technical which requires two and a half years of training after 12 years of general schooling, and the college level which requires 4 years of university education). The nursing colleges graduate about 250 annually, and the 30 nursing technical institutes graduate about 900 nurses every year. In addition there are 24 female and 43 nursing secondary schools graduating about 640 nurses. Midwifery schools are 9. There is no licensure procedure. There is limited coordination between the MOHE and MOH in the development and evaluation of the nursing education programmes. Post-basic programmes in nursing specialisation are not available. Most nursing teachers have limited qualifications and inadequate training particularly in terms of access to new technology, new information and skills.

2.9. Pharmaceuticals

Iraq had a highly organised drug regulatory system in the 1980s. The National Board for the Selection of Drugs (NBSD), which was established in the early 1980s, reviewed all pharmaceutical products marketed in Iraq and produced the national list of drugs in 1986 based on the principles of efficacy, safety, quality and need. The list contained about 1500 drug products and dosage forms. A primary health care list was also produced. The lists were endorsed in a national conference held in collaboration with WHO in 1987. NSBD continued to act as the scientific and technical agency regulating drug selection and supervising registration, drug information and post marketing surveillance. The first edition of the National Drug Guide (National Formulary) was prepared and published in 1990. Following the sanctions and the 1991 Gulf war, the NSBD authority and technical work became progressively weaker.

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Pharmaceuticals constitute a large proportion of the government health budget. In 1989, the Ministry of Health spent an estimated US$ 500 million in foreign exchange for imports. Funding for drugs was drastically reduced after 1990. A rationing system was initiated covering medicines for patients with chronic diseases. WHO estimates that from 1990-1997 approximately US$ 40 million per annum was spent on the procurement of medicines, covering about 15% of needs.

The State Company for the Marketing of Drugs (KIMADIA) is responsible for procurement, storage and distribution of medicines. Recent analyses by the Ministry of Health indicate that the KIMADIA medicine supply system was not designed for optimal performance. Specifically, procurement, inventory management and distribution systems were ineffective and inefficient. During the sanctions years, there was no adequate focus on quality in drug procurement. Decisions made during the previous regime were often based on political motivation or interests of the ruling regime.

Prior to 1990 the local industry produced about 30% of medicines consumed. Most local pharmaceutical production facilities like Samara Drugs Industries (SDI) reduced production for lack of investment or raw materials. The shortages of drugs reached a very critical stage before the onset of the OFFP. The Arab Company for Antibiotics Industries (ACAI) based in Baghdad produced part of the antibiotics needs. The Intravenous Fluids Plant in Mosul was reported to produce about 40% of national demand. The Syringe Factory in Hilla produced up to 80 million disposable syringes per year.

Shortages of essential and sometimes life-saving medicines have been a regular feature in Iraqi hospitals. A special card system was introduced for patients with chronic diseases but the rations were frequently inadequate. The total number of people with chronic disease cards in the Centre/South governorates in 1998 was 1,046,385 (with about 200,000 in Baghdad). Health centres patients typically received lower than recommended doses of drugs. Despite the scarcity of drugs irrational prescribing is common.

Availability of drugs did not improve during the past year despite the fact that a considerable sum of funds was allocated for medicines in the 2004 budget. A team of experts assessed the drug situation in June 2004 and reported alarming shortages. Out of 900 medicines which were regarded as essential, 401 had a zero stock at the time of the assessment. In June 2004, the government was not able to provide the monthly supplies of 20 chronic diseases medicines to the Public Clinics (Iyadat Sha'biya) patients carrying the chronic diseases cards. A large proportion of anaesthetics, narcotics, antibiotics, and anti-cancer medicines were completely missing. Reasons given for failure to procure essential drugs include the confusion created by a new MOH structure which removes the procurement function from KIMADIA, the delays in financial processing of orders within the MOH and between the MOH, Ministry of Finance, and the bank responsible for issuing letters of credit.

The Iraqi Drug Guide (Formulary) was never updated after the first edition was produced and disseminated in 1990.

Efforts are now being made to improve the quality and distribution of pharmaceuticals, medical supplies and equipment. Transparent tendering and auditing procedures, and quality monitoring, are needed. Furthermore, physicians need to be retrained in rational prescribing to reduce misuse and wastage of medicines.
2.10. Health Care Financing

The MOH provides services through its network of facilities. Traditionally, almost all services provided by PHCs and hospitals are free except for consultations at “public” clinics or “insurance” clinics which operate in the afternoons at low cost to patients. However, within the last decade per capita spending on health fell dramatically; current analysis by the Ministry of Health suggests that during the 1990s the funds available for health were reduced by 90%. According to the Human Development Report 2000, health expenditure was 3.72% of GDP in 1990, reduced to 0.9% in 1995 and 0.81 in 1997.

The health care system became increasingly politicised, centrally controlled, and poorly suited to respond to changing population health needs.

During the 1990s, a self-financing “auto-financing” system was introduced and implemented until 2003 when it was discontinued. The user charges were lowest in PHC, somewhat higher in popular clinics (Iyadat Shaabiya) and significantly higher in hospitals. In PHCs, patients paid on a fee-for-service basis predominantly for the cost of drugs. The limited public funding was earmarked for preventive care and public health activities. The self-financing system meant that the funds obtained came from household out-of-pocket expenditures. Most of the revenue was retained at the facility level and used to pay salary incentives for staff.

The costs of drugs accounted for the major share of aggregate operating costs in 2002: more than two thirds in PHC centres and in popular clinics. Income generated from drugs co-payment was used to purchase medicines from KIMADIA and for incentives to pharmacists. A survey on Family expenditures, conducted in 2002 by the CSO, suggested that expenditure on health care and services increased from 1.1% of overall expenditure in 1993 to 4.2% in 2002.

Available information suggests that in 2002, out of the $50 million operating expenditures more than $41 million came from the auto financing system and only $9 m from the Ministry of Finance.

About one half of the MOH operating expenditures went for salaries and incentives to staff. The funds used for operating expenditures including pharmaceuticals (outside the OFFP) were too small to cover any significant maintenance or operating function.

Also the OFFP did not have allocations for training, skill development, and management in the Centre and South of the country. Thus, it did not compensate for the limited development of human resource capacity within the national health sector during the 1990s.

Overall spending on health has increased considerably in 2004 to almost $1000m. Much of this has gone towards increased salaries for health professionals and civil servants and much higher spending on pharmaceuticals.

While the strength of the auto-financing system is that facilities managed themselves as autonomous entities providing staff incentives, the system resulted in a large burden on the patients since most of the revenue came from out-of-pocket funds. The current system, on the other hand, presents no financial barrier to accessing health care but poses questions of sustainability and requires a search for sources of future funding.

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70. Same reference.
In 2003, staff from the military medical services was absorbed into the MOH system. The majority of funding now comes from the MOF which covers all salaries, operating expenditures, and pharmaceuticals.
Chapter 3.

Key Issues and Main Challenges

It is clear that Iraq currently faces enormous health challenges. No country in the region has experienced such a worsening in health status during the last two decades. While most countries continued to make health gains, health in Iraq deteriorated from high levels to one of the worst in the region. The time has now come for Iraq to rebuild its health system. Great constraints and major problems face reconstruction but there are also great opportunities.

3.1. Challenges

A clear vision develops through good understanding of the current situation, analysis of existing problems, and adoption of sound, appropriate, and feasible strategies.

Based on the situation analysis, the following represent the major challenges which face rehabilitation and strengthening of the health sector in Iraq:

· Reconstructing the deteriorating infrastructure and improving the functioning of the health system.
· Responding to the severe shortages in pharmaceuticals and other basic supplies.
· Developing a balanced system of human resources for health, in terms of numbers, quality, distribution, and an optimal skill mix.
· Addressing the demographic changes represented by an increase in population, higher life expectancy, and population movements.
· Upgrading the currently inefficient management of the health sector; institutionalising evidence-based planning and decision making, performance-driven evaluation, and decentralised management, and overcoming corruption.
· Establishing an effective health information system and strengthening surveillance of health determinants, major risks, disease morbidity and mortality.
· Addressing the major changes in lifestyles to promote better health and reduce the risk factors for chronic diseases, accidents, injuries, and substance abuse.
· Responding effectively to the re-emergence and increasing magnitude of certain communicable diseases and developing effective policies to address the double burden of disease.
· Responding to the inefficiencies observed in the provision and financing of health services.
· Addressing the negative impact of poverty on accessibility to quality health care.
· Addressing the rapid advances in technology and rising health care costs.
· Improving the coordination between the public sector and the increasingly significant private sector and establishing effective systems for monitoring and auditing clinical practice.
· Developing and implementing a multi-sectoral plan for improving access to safe drinking water and sanitation, strengthening food safety and addressing other emerging environmental health issues.

In addition to the enormity of the above-mentioned challenges, the situation is compounded by factors which have an adverse effect on health and the provision of health services including:

· The adverse security situation which currently prevails in Baghdad and many other governorates.
· current deficiencies of basic services particularly electricity, communications, water and sanitation.
· Mass population movements and the return of large numbers of exiles and immigrants

3.2. Response to Challenges

These challenges highlight the need for change to more efficient, goal-oriented health services which are more responsive to the needs of the population. This involves:

· Moving from an emphasis on health care alone to a broader agenda that aims to promote and protect health and mobilise the communities and citizens to promote their own health.

· Adopting a new strategy for investing in health for socio-economic development particularly oriented to improving health standards of the poor and disadvantaged populations.

· Establishing effective mechanisms for multisectoral collaboration for health.

· Fostering programmes to educate and empower women and strengthen their role in health promotion and disease prevention.

· Improving the efficiency, effectiveness and economic sustainability of the health system with special attention to the cost-effectiveness of health interventions; institutionalising the national health accounts as a tool for health sector development.

· Strengthening human resource development, matching educational programmes for health professionals with the health needs of the country, developing continuing education and introducing clinical audit and accreditation as well as re-licensing of health professionals.

· Strengthening private-public partnerships and auditing clinical practice.

The overall objective of health development in Iraq is to achieve better health for all and to develop a healthcare system which is effective, affordable and fair.

While improving health is the main objective of a health system, it is not the only one. Good health means the best attainable average level of health (goodness) and the smallest feasible difference among individuals and groups (fairness). Goodness means a health system responding well to what people expect of it; fairness means it responds equally well to everyone, without discrimination. The ultimate responsibility for the overall performance of a country's health system lies with government, which, being the main steward of the health system, should involve all sectors of society. The careful and responsible management of the well-being of the population is the very essence of good government.

Health policy and strategies need to cover the private provision of services and private financing as well as state funding and activities. Oversight and regulation of private sector providers and insurers must be included on national policy agendas.

Consumers of health services (citizens) need to be better informed about what is good and bad for their health, the reason not all of their expectations can be met, and that they have rights which all providers should respect.

Chapter 4.

Our Vision and Strategies for the Immediate Future

A clear vision is needed to translate the objectives of the new health system into concrete policies and strategies. The MOH established for this purpose a process of ten working groups and a steering committee which operated from October 2003 to January 2004. The groups proposed a consolidated vision which describes the desired features of the future health system in Iraq.

The suggested overall vision is included in a document drafted in April 2004. It describes a system which is people-centred, giving citizens choice and making them responsible for their own health. Seven core elements are identified: population empowerment, community involvement, integrated health services with emphasis on primary health care, financial risk protection (equity), health provider management autonomy, quality improvement, and human resources development.

While the proposed vision provides the basis for wider and more in-depth discussion on the long-term strategies and the future shape of the Iraqi health system, there is a pressing need to focus on current needs and to adopt concrete strategies which address the enormous challenges currently facing the health sector in the reconstruction phase.

Our mission is to promote health and improve access to quality health care irrespective of ethnicity, religion or geographic origin or socio-economic status and to improve the management of the health sector.

The following are our immediate needs and strategies to enable us to start to fulfil this mission. They are based on the analysis of the current health situation and a series of meetings and discussion sessions with health officials, members of the health professions, other related sectors, and international partners.

Short- and medium-term strategies (covering the period 2004-2007)

Five areas for action:
1. Meeting urgent needs and improving services. 
2. Strengthening management. 
3. Developing and implementing a four year plan for reconstruction. 
4. Training and capacity building. 
5. Mobilising resources.

1. Meeting urgent needs

These needs represent urgent priorities requiring immediate action. In some of the areas mentioned below, action has already been initiated. In others, action should be taken as soon as possible in 2004. It is hoped that these urgent needs should be met by the end of 2005.

- Addressing shortages in medicines and urgent supplies 
- Upgrading emergency services including obstetric care 
- Increasing immunisation coverage 
- Upgrading blood transfusion services 
- Establishing a more efficient information system 
- Improving communications 
- Improving food safety measures 
- Re-organising the pharmaceutical sector

· Conducting an in-depth review of primary care
· Strengthening the disease surveillance system
· Intensifying communicable disease control activities
· Meeting the most urgent hospital rehabilitation needs
· Coordinating with other sectors to improve provision of safe water and sanitation
· Developing a plan for human resources development and attending to urgent organisational and coordination issues

2. Strengthening management

Reconstruction of the health system cannot be achieved without drastic changes in the management of the health sector. There is currently limited capacity in planning, budgeting, finance and management within the Ministry of Health. Management practices are often bureaucratic and generally outdated. Corruption and financial irregularities are widespread. Action should be initiated immediately. It will focus on:
· Restructuring the Ministry of Health so that it is fit for purpose.
· Identifying new leadership with an emphasis on increasing the proportion of women in senior positions.
· Reviewing the public health law and updating health legislation.
· Institutionalising the values of transparency, integrity, equality and participation.
· Strengthening capacity in planning, management and procurement; modernising budgeting and finance functions.
· Promoting decentralisation and leadership development.
· Introducing evidence-based decision-making, performance appraisal, monitoring and evaluation.
· Overcoming corruption.

3. Developing and implementing a four year plan of reconstruction of the health sector

The Needs Assessment report of the United Nations and the World Bank, developed in collaboration with Iraqi Ministries, provides an outline of reconstruction needs and financial requirements. However, careful analysis of available data and experience gained over the last few months demonstrated the need for a more reliable assessment of needs. The process has already begun and is currently providing a clearer vision on the physical infrastructure of the health sector. A four year plan is being developed and action has already been initiated in some areas. The plan focuses on:
· Re-visiting reconstruction requirements and prioritising urgent projects.
· Developing standards for rehabilitation and new construction.
· Strengthening capacity in project management and implementation.
· Encouraging private sector construction projects.
· Strengthening capacity in maintenance of medical equipment.
· Strengthening coordination with partners.

4. Training and capacity building

Training and capacity building of health professionals and management staff is a top priority. The four areas which require special emphasis are:
· Training and capacity building in management.
· Strengthening capacity in public health and related branches like health planning, economics, finance, and other areas.
· Training in clinical skills.
· Upgrading health professional education (basic, post-graduate, continuing).

A plan for human resources development will be developed. Strengthening nursing education is a major priority. Training will also aim to promoting capacity in epidemiological and health system research.

5. Mobilising resources

The regular budget of the Ministry of Health can only meet the cost of salaries, operating expenditure, and the medicines bill. There are very limited reconstruction funds. Policy makers must recognize that investment in health is a strategic priority for Iraq. It is a prerequisite to sustainable development. The current expenditure on health, as a proportion of GDP, is considerably lower than neighbouring countries like Jordan and Lebanon and must therefore increase. At the same time, much of our funding requirement for rehabilitating the physical infrastructure of the health sector will depend on donor funding. Thus, our strategy should focus on effective action to mobilise funds at the national, regional, and international levels.

The following represent basic areas of action:
· Raising commitment to the health sector.
· Improving information on current status and needs.
· Intensifying work with the media.
· Strengthening donor partnerships and coordination.
· Encouraging partnerships with non-governmental organisations and communities.

Progress

Significant progress has been made in addressing some of the most urgent priorities identified above. For example:

· With the help of partners, over 75 hospitals and nearly all of the primary health clinics that were looted have been partially refurbished, at least to enable them to reopen. Four public health laboratories (in Baghdad, Mosul, Najaf and Basra) have been completely refurbished and re-equipped. Four training centers and two blood transfusion centers have also been refurbished and the Ministry of Health Headquarters has been fully renovated following the extensive damage and looting after the war.
· The 15,000 healthcare staff and the health facilities of the previous Ministry of Defence have been integrated into the health service.
· Almost all public health programmes have been re-established. National immunisation campaigns have been organized. Four million children were vaccinated against polio in the summer of 2004 despite difficult security situation in some localities, achieving a coverage rate of 94%. Disease surveillance systems have been re-established and measures to ensure food safety re-enforced. Screening programmes for hepatitis B and HIV/AIDS has been re-instated. A major nutritional programme for primary school children has also been implemented.
· Under-graduate and post-graduate education for doctors and nurses has been sustained with better access to the international literature, information technology and the internet. More than three thousand staff have attended training courses at the training center in Baghdad. These include clinical programmes and courses in IT, management and administration and equipment maintenance. Many other programmes have been
run by governorates. In addition over 1,500 staff have attended training courses abroad.

- The procurement process for drugs and medical supplies has been greatly speeded up. The value of contracts prepared or let in the three month period from July to September 2004 was more than twice that in the previous six months. Access to drugs for chronically ill patients has significantly improved.

There are many other areas where planning and development work are underway.

**Next Steps**

Despite these achievements, most health facilities and equipment are still in very poor condition and patient care is inadequate. There is still a huge task ahead to bring services up to acceptable standards. The pace of progress will depend on many factors including the stability of the country, the resources which are made available for health and the capacity of the Ministry of Health itself. Over the next three months, the Ministry will draw up a plan to take forward the work, focusing on the action to be taken during 2005. The Director-Generals for Health and their staff in the governorates will be fully involved in this process and will be expected to draw up their own plans, against which they will be held to account, showing the improvements which they expect to achieve over the coming year. In this way, the skills and energies of all health service staff and of the communities they serve will be mobilised. Step by step, services will be improved bringing better health for all.