

2.5 Assessment of Health and Nutrition

2.5.1 Child Health

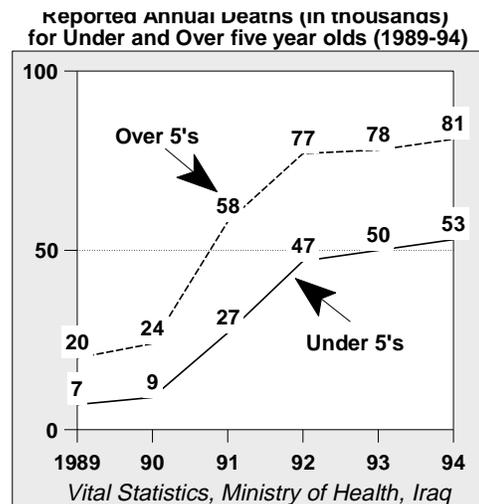
Many factors affecting child health are similar to those presented for nutrition (pp 39-44) - child and household food security, exposure and resistance to disease, care, health services, water/sanitation and basic factors such as economic status and education.

2.5.1.1 Mortality

The increase in mortality reported in public hospitals for children under five years of age (an excess of some 40,000 deaths yearly compared with 1989) is mainly due to diarrhea, pneumonia and malnutrition. In those over five years of age, the increase (an excess of some 50,000 deaths yearly compared with 1989) is associated with heart disease, hypertension, diabetes, cancer, liver or kidney diseases (**Box 3**). The different patterns between under- and over-fives require different foci of health care with their specific priorities when resources are scarce.

Box 3: Comparison of deaths between Under and Over fives/adults - Rates/1000

Vital Statistics of the Ministry of Health indicate that the mortality of children over five years of age and adults has increased since 1990 in a similar order of magnitude than that of under fives. However as U5s represent only one-sixth of the population of over 5s, the U5 rates are much higher than those older. Even so, it reflects the extent to which adults are affected, affecting their own constraints.



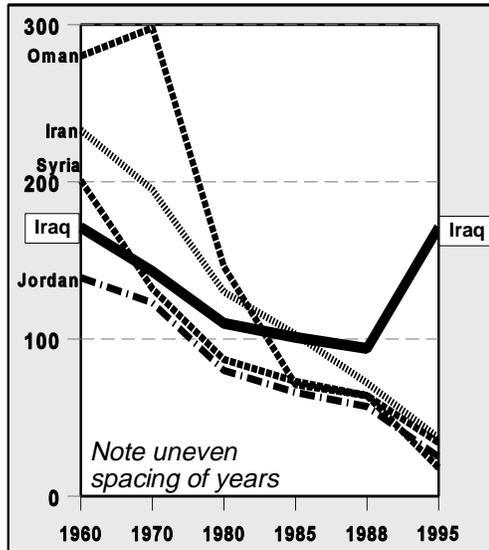
With the substantial increase in mortality, under-registration of deaths is a growing problem. For infants, reporting a death would entail cancellation of the due ration for that child.

A comparison of trends of Under Fives' Mortality rates (per 1000 live births) reported from selected Middle East countries (from 1960 to 1995), show a consistent and often dramatic reduction in all countries, apart from Iraq. From 1988 to 1995, there is a marked resurgence in the magnitude of mortality for Iraq in contrast to reduction in other countries. (Figure 2.14)

This is also demonstrated by a change in the direction of the global rank for each country from 1989 to 1996, where number 1 rank is the highest U5 mortality rate. Whereas Iraq in 1989 ranked 61st out of 121 countries reporting (i.e. at the mid-point of the scale), by 1996 Iraq ranked 39th of 191 countries (i.e. only about one-quarter of all countries in the world had a higher rate). This result can be compared with neighbouring countries, where in almost all cases, there is a marked relative improvement in ranking (Figure 2.15).

Figure 2.14

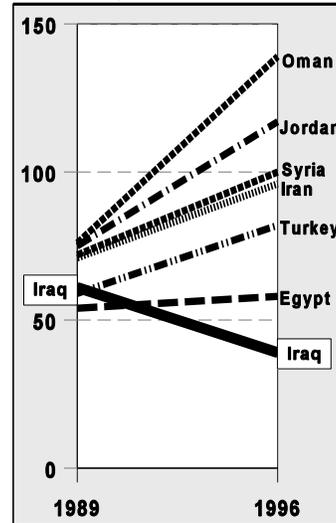
Under 5's Mortality Rates (1960-1995)
Selected Countries



Sources: State of the World's Children 1990, 1998; Statistics in UNICEF-assisted countries -1990

Figure 2.15

Under 5's Mortality Rates: Global Ranking - Selected Countries



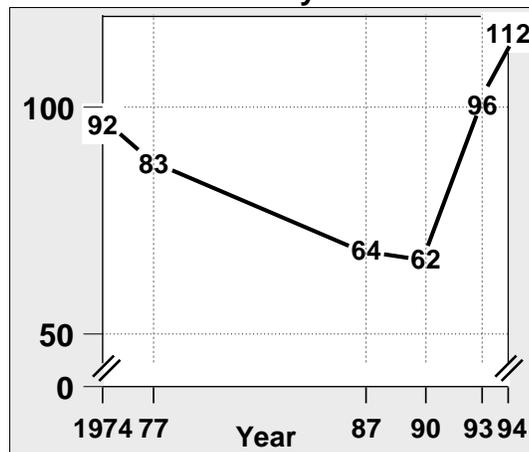
Trends in Infant Mortality for Iraq are shown in Box 4 below.

Box 4 Infant Mortality

The Infant Mortality Rate (IMR) is a key indicator for the implementation of CRC/Child Survival and one of the three components of the Human Development Index used by UNDP to rank countries. Different methods of estimation and the IMR sensitivities complicates comparison of time trends. Hence a single source which includes the 1977 and 1987 census estimates is used here.

The pre-sanction decline in IMR and its later rebound is consistent with other sources of information, such as Vital Statistics from the Ministry of Health. The extent of the change is debated.

Infant Mortality Rate - trends



Deaths in infants per 1,000 live births

Iraq Human Development Report - 1995 (p 19)
Iraqi Economists Association/UNDP, Baghdad

Mortality rates in Iraqi young children relevant to recent trends have been estimated from various

studies.⁸⁴ A common conclusion, summarized by WHO/Iraq in their 1996 report, was that the IMR (Infant Mortality Rate) and U5MR (Under 5 Mortality Rate) had increased substantially since 1990. Further, the trends are consistent with other sources, such as vital statistics and comparisons with neighbouring countries.

Several studies have documented the decline of child health since 1990.⁸⁵ Children as "hidden casualties of war" are denied their rights as expressed in the CRC. This increase in infant/child mortality has been associated with increased illness unattended by adequate health care, deteriorating living standards and compromised water/sanitation.

The current poor health situation is conducive to diarrheal episodes and acute respiratory infections, both leading causes of infant and child mortality and morbidity.

⁸⁴ **Ministry of Health/ ESCWA/ UNICEF/ WHO Maternal and Child Mortality Survey, 1990** - the IMR result using direct estimates was 25/1000 live births; for indirect estimates the IMR was 41/1000

Harvard Study Team "Special Report: The Effect of the Gulf Crisis on the Children of Iraq." *New England Journal of Medicine*, 1991, Vol. 325:977-80. This household survey conducted by an International Study Team in September 1991 covered the entire country, except for 2 of the 18 governorates. A sub-sample of 2,676 children under five years was assessed for nutritional status. The IMR rose from 32 before sanctions (1985-1990) to 93 afterwards. U5MR increased 3-fold from 43 to 129. This rise in mortality indicated excess deaths of 46,897 children under five years of age during the first eight months of 1991. There were no statistically significant gender differences.

Evaluation of Food and Nutrition Situation in Iraq. FAO, Rome, 1995 TCP/IRQ/4552 (data from Baghdad) This survey used recall to a pre-sanction reference period 1989-90 (for infant mortality) and 1985-90 (for under 5's mortality) and post-sanction for the 12 months preceding the survey (for infants) and 5 years preceding for under 5's. Results showed the IMR doubled and the U5MR increased almost 5 times. The survey was repeated in June 1996 and again in June 1997, but the results for mortality in either year were not reported.

⁸⁵ See, for example,

Alberto Arscherio, Robert Chase, Tim Cote et al "Special Article: Effect of the Gulf War on Infant and child Mortality in Iraq." *The New England Journal of Medicine* Vol 327(13), p.931-936, 1992;

"International Notes: Public Health Consequences of Acute Displacement of Iraqi Citizens-March-May 1991." *Morbidity and Mortality Weekly Review* Vol 40(26), p.443-446;

Physicians for Human rights "The Children of Iraq on the Brink of Disaster." Briefing Memorandum/revised. Somerville, MA, 1991.

Schaller and E. Nightingale, "Children and Childhoods: Hidden Casualties of War and Civil Unrest" *Journal of the American Medical Association* Vol. 268: 642-44, 1992.

Diarrhoea and ARI: The 1996 MICS for the northern governorates reports over one-quarter (28%) of all children under five years of age had diarrhoea during the two weeks prior to the time of the survey. The prevalence of diarrhoea in each governorate was much higher among children of 6-18 months of age (ranging from 40-70%), compared to those at other ages - *Figure 2.16*. This result is consistent with higher rates of acute malnutrition in the same age group.

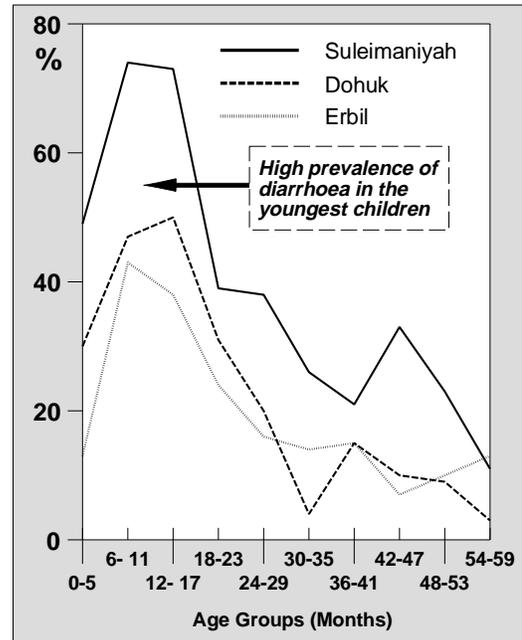
The high prevalence of diarrhoea (20-50%) among children aged 0-5 months reflects inadequate protection from contaminated fluids and food compounded by bottle use at a time when breast feeding alone should be provided.

For the South/Centre governorates⁸⁶ a recent survey by MOH/UNICEF/WHO shows an almost four-fold increase in the number of annual diarrhoeal episodes per child from an average of 3.8 for 1990 to 14.4 for 1994⁸⁷.

Although no survey data are available for the incidence of acute respiratory infections (ARI), statistics from the MOH show an increase of registered cases for ARI and pneumonia of some 50%. More important, the case fatality rates⁸⁸ for diarrhoeal episodes, ARI and pneumonia has increased from 5 to 10 times since 1990 (*see also page 24 relating to infections and mortality*). This is probably the result of a number of factors, including decreased resistance due to malnutrition, delayed or absent treatment due to lack of available health care and perhaps changes in methods of reporting.

The MOH programme for Control of Diarrhoeal Diseases or CDD, gained momentum from the mid-80's. The use of Oral Rehydration Therapy (ORT) increased from 9% in 1985 to 61% in 1987, with an even greater increase in the use of home prepared fluids. As a result, diarrhoea related deaths among U5 children fell from 8.5 per 1000 live births in 1985 to 1.7/1000 live births in 1987. The greatest decline was among infants and rural children. The public sector production of rehydration salt, marketed locally as "Dextroly", reached 15 million packets per year in 1989 covering the total local demand. Most of the population had access to the salt since it was freely distributed through over 900 ORT corners established in the different health institutions. The CDD programme was supported by effective social mobilization, education and communication activities where the general Federation of Iraqi Women (GFIW) together with primary school teachers, pharmacists, paramedicals and religious leaders all contributed effectively in these activities.

Figure 2.16:
Prevalence of Diarrhoea by Governorate and Age in Northern Governorates MICS 1996



⁸⁶ Corresponding information on diarrhoeal prevalence and its handling by mothers is absent from the MICS analysis for South/Central Iraq, although the data is available.

⁸⁷ KAP study on ORT and drug use for diarrhoea (Baghdad, Basrah Qadisiyah and Nineveh. MOH, April 1994.

⁸⁸ Case Fatality Rate - The percent cases with the condition who die from it (i.e., CFR for pneumonia = Number of deaths due to pneumonia X 100 ÷ Number of cases with pneumonia).

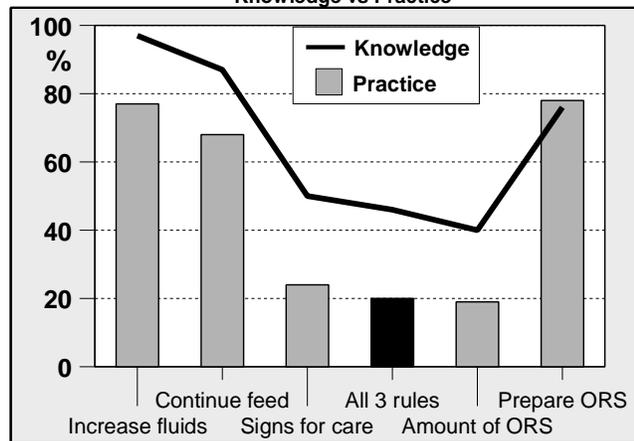
This programme was severely interrupted by the Gulf War through the effect on both the production of the Dextrolyte and the demise of the ORT corners. Combined with the lack of clean drinking water and adequate sanitation, this caused a resurgence of diarrhoea-related mortality.

To reactivate the programme, the MOH conducted CDD campaigns in 1993 and 1994 with UNICEF and WHO support. Imported ORT, improvement of food hygiene, training of various cadres of health workers and NGOs and rehabilitation of the ORT corners followed. In 1994, MOH issued the National Policy on Drugs and Antibiotic Usage for Diarrhoea, as per WHO regulations to prohibit the production and prescription of potentially harmful drugs for diarrhoea treatment in children.

A KAP study by the MOH, in Baghdad, Qadisiyah, Nineveh and Basrah of 3000 mothers revealed progress in the use of ORS (Oral Rehydration Salt, used in home-prepared solution) - from 57% in 1990 to 70% in 1994; and ORT from 71% in 1990 to 78% in 1994. In the 1996 MICS however, about one-half of mothers provided appropriate fluids and solutions, and one-third provided continued or increased feeding for their child with diarrhoea.⁸⁹ A similar problem was found in a more recent survey (October 1997) in the Northern Governorates

Two major Health Facility Surveys in the South/Centre during 1997 - Management of Diarrhoea, and Maternal Child Health Services underlie the intent of the Ministry of Health to better understand health workers knowledge and practices for improved programmes. In the Diarrhoea Management survey, several problems were revealed in assessment, knowledge and practices.⁹⁰ One aspect was that, although ORS is readily available, it was not adequately used due to lack of training and a skepticism of both doctors and mothers about its value, especially when compared with the demand for drugs. The gaps between knowledge and practices with regards to home care and use of ORS shows weaknesses in explaining to the mother the signs for care and the amount of ORS to be used, even though the method of preparation was usually correct (Figure 2.17).

Figure 2.17:
Health Workers' Advice on Home Care and ORS
Knowledge vs Practice *



*% of workers who knew about the advice vs. % who practiced it

Health Facility Survey on Management of Diarrhoea in Iraq, August 1997- MOH/WHO/UNICEF

ARI: The control of ARI programme was reinstated in 1991. It addressed three main problems: poor

⁸⁹ MICS - Northern Governorates, 1996

⁹⁰ **The Health Facility Survey on Management of Diarrhoea** was conducted in July/August, 1997 in 26 hospitals and 33 PHC's of six governorates. It consisted of observation of health workers' management of 294 children under five years with diarrhoea, re-examination by surveyors, and exit interviews with caretakers of the same children; interviews of 117 staff; assessment of supplies; review of 1090 case records; and qualitative data based on the observations and discussions with health staff. One-third of the children were dehydrated and about one-half malnourished (underweight-for-age).

Some key findings: Despite the regular availability of ORS in most facilities, only one child in eight was correctly managed (combining assessment, rehydration and giving correct advice on home care). Most malnourished children did not receive adequate care in part due to lack of assessment; most dehydrated cases were not rehydrated due to lack of awareness; those with persistent diarrhoea or dysentery were not managed properly, even though most were identified correctly.

application of WHO standard case management by health workers; shortage of drugs; and inadequate mothers' knowledge on home care and early identification of danger signs. The MOH (with UNICEF support), increased training of medical and paramedical staff and undertook a nationwide advocacy campaign to raise the awareness of mothers.

In 1994, the MOH conducted a KAP study at the national level (the three northern governorates excluded). This revealed that the average number of ARI episodes in Under5's per year was 5.7, with the highest in Baghdad (7.8) and the lowest in Thiqr Governorate (2.2). About one-quarter of the children had ARI at the time of the survey. Of these, one-half were treated with antibiotics, one-half with cough syrup and one-in-eight treated with home remedies. While 40% of mothers consider difficult breathing as an important sign for referral, only one-quarter recognized rapid respiration as a danger sign.

Further efforts related to ARI since 1994 are provision of essential drugs and pneumonia kits, promoting attitudinal change among practitioners and communication campaigns for mothers. However, in the 1996 MICS survey, still only one-third of mothers knew the danger signs (rapid or difficult breathing) for their child with ARI. A more recent survey (Oct 1997) in the Northern Governorates revealed the same problem.

The risk to Child Survival is compounded by inadequate health professional handling of children with diarrhoea or ARI and lack of proper communication to mothers about adequate care.

2.5.1.2 Communicable Diseases (Vaccine-preventable)

Since 1990, Iraq's immunization services were interrupted. The Expanded Programme on Immunization (EPI) coverage was affected, with disruption of vaccine supply, of the cold chain and in the health service upheaval in general. This compromised protection against preventable childhood diseases and their incidence rose steeply in 1991 and in some - measles and whooping cough - continued rising in 1992. Whereas only 10 laboratory confirmed cases of polio were reported in 1989 (with Oral Polio Vaccine coverage registered at 90%), this rose to 186 by 1991; neonatal tetanus rose from 42 to 936, diphtheria from 96 to 511 over the same time period (*Figure 2.18*). The decline in most conditions is a reflection on successful EPI efforts. Tuberculosis (occurrence shown for adults plus children) is an exception, in part due to the difficulty in treating this chronic disease.

Immunization coverage

After the MOH's revitalization of the Polio Eradication Programme in 1992-1993, polio cases reduced to 53 in 1993. More recent efforts towards Eradication include the organized campaigns of Polio National Immunization Days (PNID) which began in 1995, and repeated annually⁹⁰.

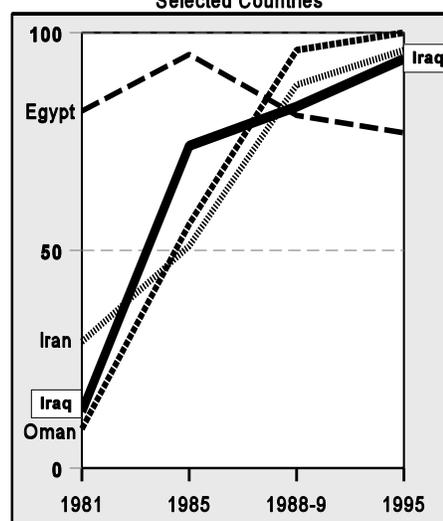
The efforts of the MOH extend to several infectious diseases among children, the incidence of which declined significantly after 1992. This change is attributed to the collective efforts of Iraq's health authorities, UNICEF and other U.N. agencies. Coordination was crucial in rehabilitating the cold chain of the Expanded Programme of Immunization (EPI) and ensuring the availability of vaccines. Consistent with the Mid-Decade Goals, this resulted in coverage exceeding 90% for the main vaccine preventable diseases in all governorates of Iraq by 1996.⁹¹

Using DPT coverage as an example, trends for immunization in the whole of Iraq very compare favourably with neighbouring countries (Figure 2.19)

In November 1994, the final report of The Ministry of Health on the National EPI programme indicated the following results for EPI coverage of a sample of 3,150 children (12-23) months of age, 3,150 mothers who have children (0-11) months of age and 6,750 women in child bearing age:

Health card retention rate		79.5%
BCG coverage with positive scar	83.8%	
Regardless of scar		96.2%
Measles coverage		63.3%
DPT/OPV	I 82.3% II 76.1% III 70.1%	
TT for mothers with children 0-11 months of age:		
First dose	67.3%	Second 62.3% Third 35.1%
TT coverage for women in child bearing age :		
First dose	56.4%	Second 44.1% Third 25.3%
Newborn protected from NNT at birth		58.7%

Figure 2.19
DPT Coverage Rates (1981-1995)
Selected Countries

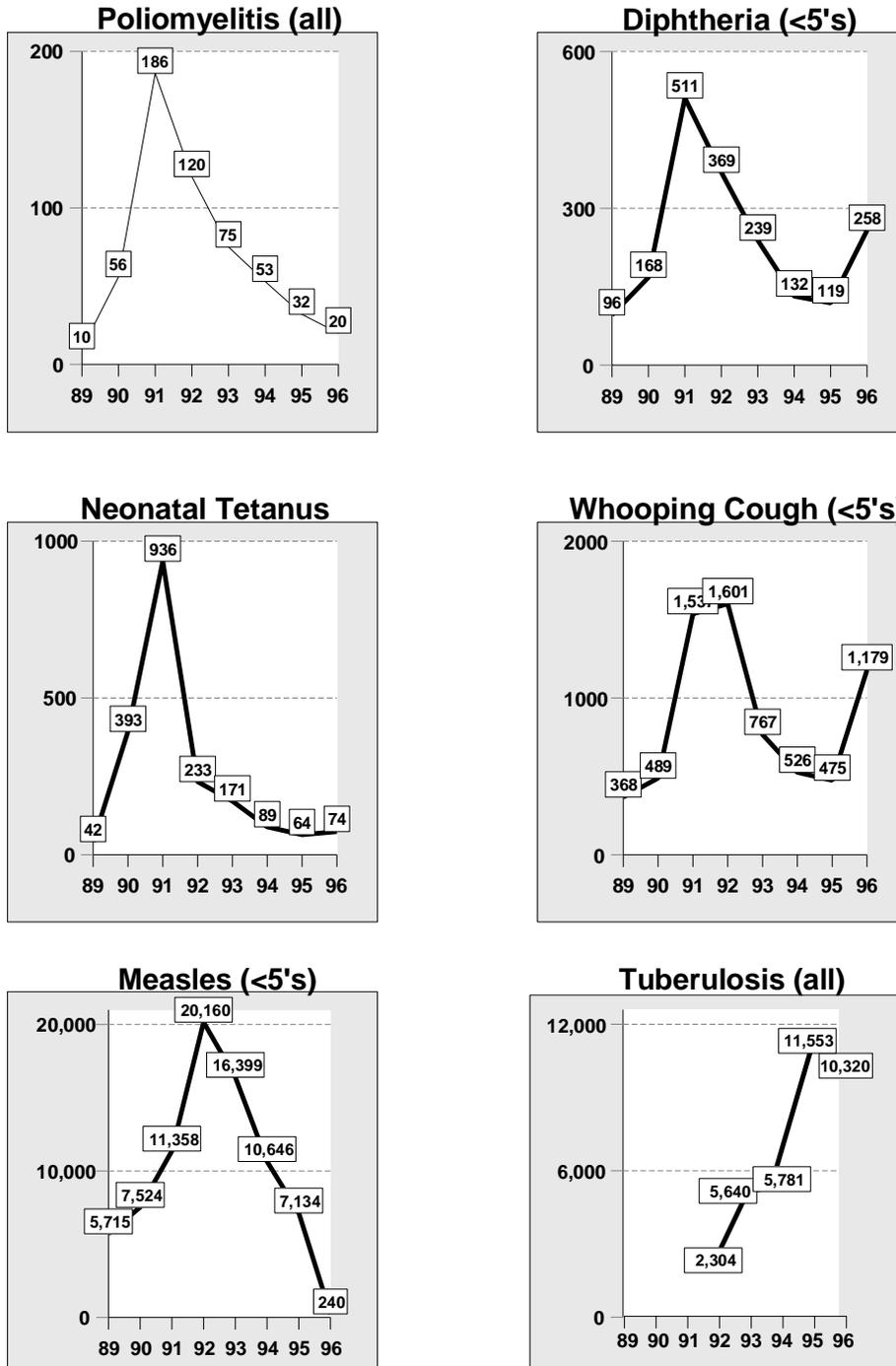


Sources: State of the World's Children 1990, 1998; Statistics in UNICEF-assisted countries - 1990

⁹⁰ Salah-Aldin Ahmad Raheem and Nawar Majied Aziz "Review of National Polio Immunization Days, Iraq- 1997." Ministry of Health, Republic of Iraq, 1997.

⁹¹ State of the World's Children of 1997, UNICEF.

Figure 2.18
Trends in Immunizable Preventive Diseases
Iraq (South/Centre) 1989 to 1996



Reported cases by year: *Statistical Department, MOH*

Increasing efforts are being made to address the issue of insufficient coverage, for polio, as well as a comprehensive measles campaign in late 1995, and campaigns for tetanus toxoid in high risk areas. In 1998, there has been a resurgence of measles, with a relatively larger number of people over five years affected.

A high EPI coverage has been particularly difficult for the northern governorates due to inter-factional fighting and displacement of the population. The Directorate of Health reports between January and June 1996, above 75% measles immunization coverage among children under one year was achieved only in ten of seventy-four sub-districts, coverage of 50-75% in nine sub-districts, with the remaining five districts at a level below 50%. The DPT immunization rates were marginally better than those reported for measles.⁹²

Results for the MICS (August 1996)⁹³ showed for governorates of South/Central Iraq that immunization coverage reported from children aged 12-23 months was very high for BCG (98%)⁹⁴ and intermediate for measles (80%) and DPT3/OPV3 (73-74%).⁹⁵ For the northern governorates immunization coverage was also very high for BCG (90%), and intermediate for measles (79%) and DPT3/OPV3 (72%). These results show a high level of immunization coverage which closely approximates that set for the Mid-Decade Goals of Iraq's NPA. Examples for BCG and measles coverage by governorate are shown in Figure 2.20 on the next page.

The immunization coverage for tetanus toxoid vaccination was 42% (in the Northern governorates) for mothers during their last pregnancy and 44% in the South/Centre.

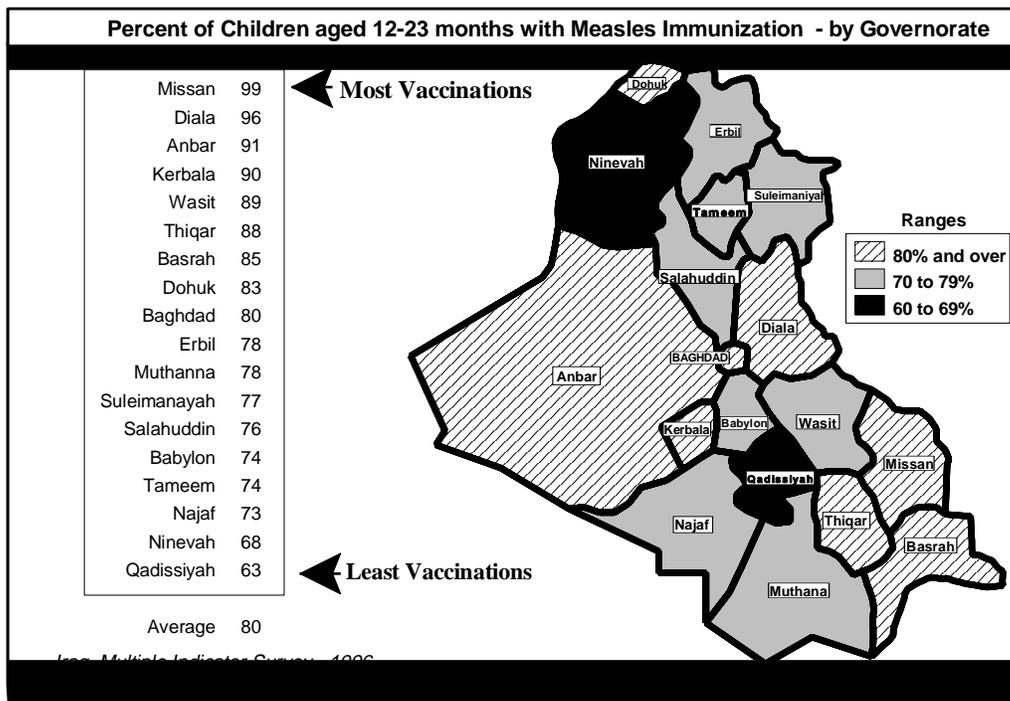
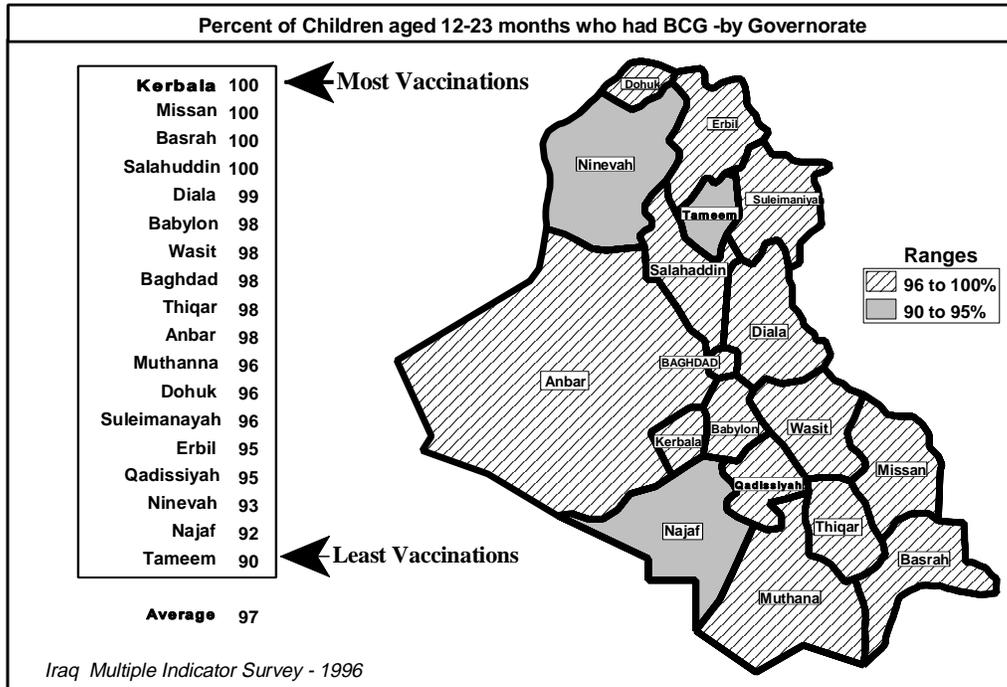
⁹² During 1997, coverage in the north has improved as shown by official records and preliminary results from a recent EPI cluster survey.

⁹³ Data collection for this survey took place over a period of 24 days (August 10-September 5) in the south/center governorates and initially in the northern Autonomous region. But because of the fighting in the latter areas there was a temporary suspension of fieldwork. This was resumed in September where it was completed in Erbil on September 19 and in Suleimaniyah on September 30.

⁹⁴ In both the South/Centre and North, evidence of BCG must be provided for registration of ID in infants and the added milk formula ration.

⁹⁵ The results for DPT/OPV3 are probably under-estimates, due to methodological problems in the survey, e.g., under-reporting by mothers/respondents about the recent introduction of polio vaccine combined with BCG at birth and that received at the Polio National Immunization Days conducted during 1995 and 1996

Figure 2.20: BCG and measles vaccination coverage - Iraq 1996



Trends in the reporting of selected infectious and transmissible diseases (meningitis, malaria, kalazar, brucellosis, viral hepatitis and giardiasis) from 1989 to 1996 are shown in Figure 2.21⁹⁶

Viral Hepatitis

One vaccine-preventable disease with an incidence which continues to climb is Viral Hepatitis. The vast majority are probably Type A, which is generally water borne and results in jaundice and liver dysfunction. The incidence in 1989 was 1,816 reported cases, rising to 16,801 by 1993 and after a dip, rose to 29,803 in 1996. Due to a lack of laboratory reagents to detect sub-clinical cases, it is likely the results are under-estimates. Further, the reports are for all ages, thus it is unclear what major age groups are affected.

Enteric Infections

Inadequate water and sanitation, overcrowding and constraints for personal hygiene has led to steep rises in cholera and typhoid fever. No cholera was reported in 1989 nor 1990; in 1991, 1217 cases were reported, remaining at a similar level yearly through 1994. There were about 1,700 cases of typhoid in 1989 and 1990. This increased 10 times by 1991 and 15 times by 1994. In that year one person in about 700 had typhoid (or three people on average for each of the 10,000 villages in Iraq). The distribution of typhoid by governorate during October 1997, shows the variation throughout Iraq for that particular month (*Figure 2.22*). Results must also be interpreted according to completeness in reporting.

Other diseases

Trends for **meningitis** show an increase in reported cases from 1190 (1,810 cases) to 1991 (5,792), then a consistent decrease up to 1996 (*Figure 2.21*). The reason for this is not clear.

KalaAzar (or Leishmaniasis) is a parasite which is transmitted by a sandfly, resulting in severe anaemia and liver disease. It also has a skin variety. Shortage of proper pesticides and spraying equipment and the increase in rodents and stray dogs (as reservoir hosts) are responsible for the continued higher incidence from 1991 to 1996. Shortage of drugs precludes adequate treatment.

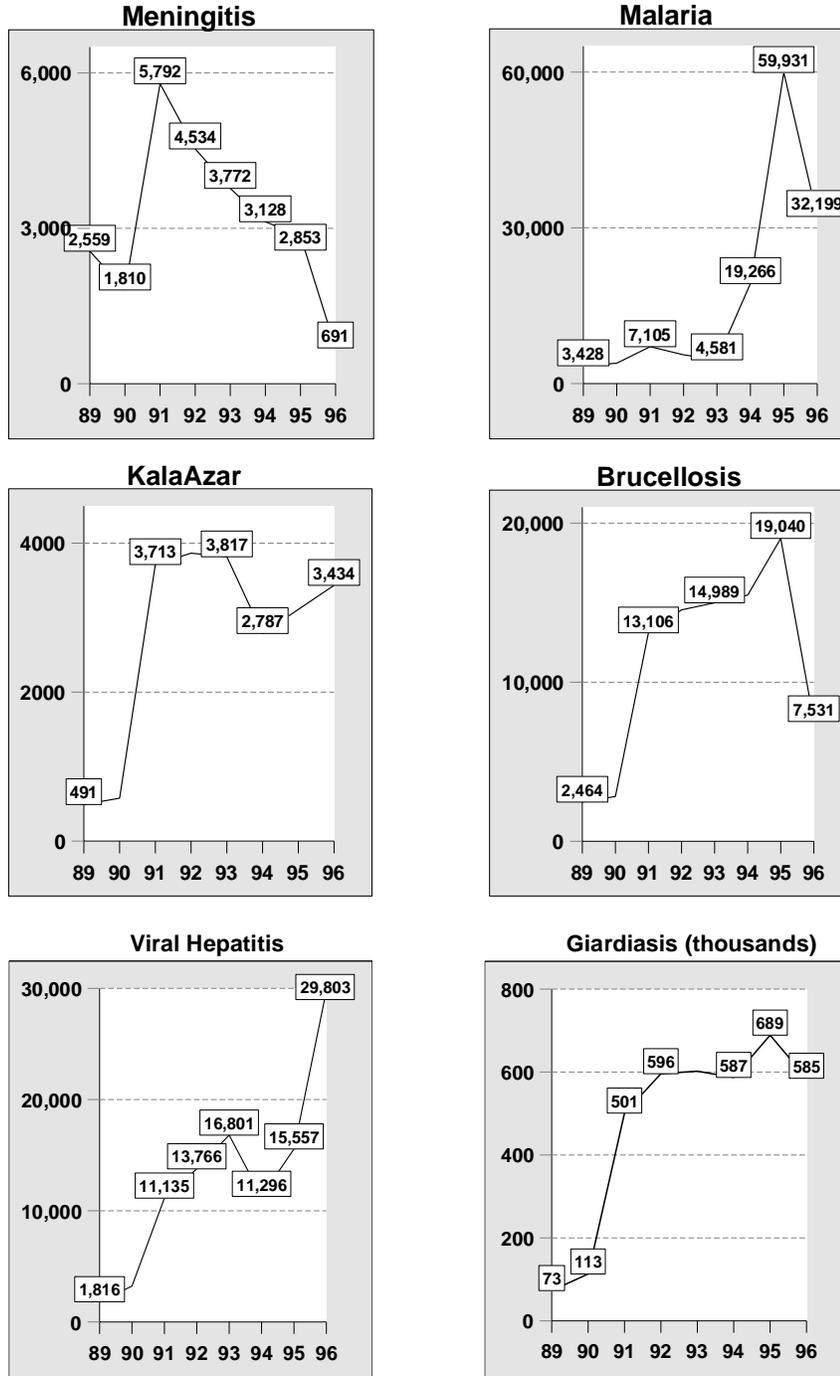
Brucellosis results from exposure to infected milk from cows. It's rise is due in part to lack of proper sterilization of the udder, especially during milking, and to lack of control of the disease in cows.

Giardia is an intestinal parasite which causes chronic diarrhoea, especially in children, when the worm load is high. This results in malabsorption of food and nutrients, with resulting malnutrition. It's incidence has risen tenfold since 1989 and continues high. If it is assumed most of the cases are children under 5 years of age, then up to 20% (600,000 of 3 million) have giardia; probably more, as many will not be diagnosed microscopically. The incidence of **Amoebiasis** has also greatly increased. It causes severe diarrhoea and may result in abscesses in the liver and elsewhere. Incidence rates for other intestinal parasites detrimental to children, such as **roundworm** and **hookworm** (a potent cause of anaemia), are unavailable but are likely to be high.

Malaria deserves special mention. Almost eradicated prior to the sanctions, malaria has increased up 10-20 times since 1989, including serious epidemics in certain areas of the country. It is not limited to the north (see *Figure 2.22* on page 54). This is due to a combination of water stagnation (e.g. near human habitation), lack of insecticides for vector control and scarcity of drugs for treatment. Malaria, potentially fatal, is an important cause of anaemia in children and mothers; it also results in low birth weight of the newborn due to placental involvement.

⁹⁶ See: The Health Conditions of the Population in Iraq since the Gulf Crisis. WHO. March 1996 WHO/EHA/96.1

Figure 2.21
Trends in selected diseases
Iraq (South/Centre) 1989 to 1996



Reported cases by year (all ages)
 Source: Statistical Department, MOH

2.5.2 Maternal Health and Safe Motherhood

Maternal health and nutrition is relevant to the CRC and CEDAW for both survival and welfare. A mother is especially vulnerable in her multiple roles as care-giver, household and wife duties and at times, farmer and income earner. Increased pressure on her resources occurred in the Iraq-Iran war and again since the embargo. Of concern is her increased food and nutrient requirements during pregnancy and lactation. Of special risk are widows and the very poor, whose problems are often compounded by multiple young children.

The health service delivery problems presented earlier in this chapter affect women and in particular in relation to the risk of morbidity and mortality associated with childbirth. Lack of resources for care and anaesthesia makes childbirth, especially if complicated, very hazardous and increases the incidence of post-partum bleeding and sepsis. Further, problems with emergency care and absence of functioning ambulances are likely to increase maternal mortality since last estimated at 117/100,000 births in 1989. No recent data is available.

Under-nutrition of mothers is reflected by newborn low birth weight (LBW).. Up to 1990, the 5% prevalence of LBW and average birth weight of 3.4 kg were similar to industrialized countries. Since then, the MOH reports a marked increase to 22% in 1995⁹⁷. A recent survey in Baghdad revealed that 16% of young mothers had a Body Mass Index of less than 18.5, indicating chronic energy malnutrition⁹⁸. Anaemia in surveys is consistently found in 60% or more of pregnant women attending the PHC. Anaemia affects health and physical capacity, submitting a further drain on the mother's scarce resources. When severe, it is a potentially fatal condition associated with childbirth, both for the mother and her newborn. Anaemia is difficult to control under the current system of iron/folate supplementation at PHC's.. Malaria is of special concern, not only in terms of the mother's health and anaemia, but also as a cause of low birth weight.

Tuberculosis (TB) is increasing, especially in women. WHO reports that registered TB cases rose in the 90's by almost five times: from 2304 registered cases in 1992 to 10,030 in 1996. In 1992, TB in women numbered about one-half that of men; by 1996 the sex incidence was roughly equal. In other words, whereas TB in men has increased three times, that for women has increased almost eight times since 1992.

Antenatal, birthing and postnatal care of women is of special importance both to mother and child. Since 1991, hospital delivery care and its adequacy has deteriorated, although mothers would still prefer to attend the hospital for delivery, because of the trained staff based on a recent MOH survey.⁹⁹ The same survey reported about 50% of mothers deliver at home, mostly at the hands of a midwife (35%). A smaller proportion (26%) are assisted by trained TBA's, followed by health cadres (20%) and physicians in hospitals¹⁰⁰.

Over 90% of the birth attendants were trained, reflecting the adequacy of Iraq's earlier maternal health programs. Knowledge and practices of most of the birth attendants (midwives or trained TBAs)

⁹⁷ The GOI Initial CRC Report, 1996.

⁹⁸ WFP/FAO Assessment Team Report, June 1997

⁹⁹ Survey of Family Planning, Delivery Practices and Birth Attendants in Iraq (MOH, WHO, Iraqi Family Planning Association, UNICEF) This facility-based and household survey was conducted by the TBA Programme of the Ministry of Health in December 1996 to provide information to improve the design and implementation of these programmes such as Reproductive Health and Family Planning, also the Safe Motherhood strategy and concerns. The survey had three major components: family planning services for married women of child bearing age (15-49 years); antenatal and home delivery services for married women who had delivered a child within the past two years or were currently pregnant; and knowledge/practices of birth attendants who delivered their children at home

¹⁰⁰In the Autonomous region, coverage by ante-natal care and TBA services was 48% in 1996, far less than in the South/Centre.

appeared adequate, apart from lack of proper attention to the cord and non-referral of key problems during delivery, failure to visit the mother after delivery and incomplete advice to the mother. Key items in birth kits were commonly missing.

During antenatal visits, advice from PHC staff, such as for nutrition seems rare. The level of TT during pregnancy of 70% and reaching 64% lifetime for at least 3 doses appears consistent with other reporting sources. Adequate provision of iron tablets (only one-quarter of women) is far below the need.

Potential sources such as the media, birth attendants and local agencies seem underutilized to influence the women's decision to seek family planning or antenatal care. Further, advice from birth attendants on child care and breast feeding is rarely given.

About one in eight deliveries are complicated. The most common problems - bleeding and prolonged labour. One-third of all complications were referred.

The survey further found that about 1/3rd of currently married women use family planning, most beginning within the past two years and 3/4ths know about contraceptive loops and pills. These were the major methods used beside breast feeding. The most common reasons for not using family planning were that husbands refuse to use any and the desire for more children. Recommendations related to need for advocacy; family planning programme expansion to PHC's; improved training; supervision and monitoring and to strengthen communication and counseling.

Another recent survey by the Ministry of Health, South/Centre in 1997 provides results which overlap with and confirm that just presented¹⁰¹. It also provides valuable information about women's satisfaction of the services.

Pertinent findings: On observation, about 2/3rds of the PHCs had sufficient basic supplies and 1/3rd sufficient medicines. Only 1/4th of the staff were satisfied with the available resources. Of those dissatisfied, lack of drugs was the major problem.

The staff weighed some 3/4ths of the mothers, done correctly about 2/3rds of the time. Plotting of the child's weight on the growth chart was done correctly in about half of the observations. Most of the 51 medical staff (86%) tested blood pressure, but only one-half checked for anaemia and one-third for oedema. Of the 9% of registered mothers referred, few (12%) had feedback.

Only 20% of the staff were aware of the value of breast feeding for family planning; while most (81%) knew about the link between maternal malnutrition and low birth weight, but few (17%) responded about the need for adequate birth spacing.

Most (83%) of the mothers were satisfied with the services provided. Anaemia prevalence was high (61%) in pregnant women. Although 90% received iron/folate, only one-half had sufficient amounts. Most (87%) were instructed on its use.

Discussant groups of pregnant mothers and birth attendants revealed that most mothers are aware of the major contraceptive methods (including breast feeding) and the need for birth spacing over 2 years. Many have no opportunity to rest nor buy nourishing food. They prefer the hospital for delivery, identify the most common illnesses of infants (excluding malnutrition) and are aware of methods of caring for their newborn. The survey report recommends the need for training, especially to identify pregnant mothers with risk factors; for improved education in curricula and improve awareness for mothers and staff.

¹⁰¹ The Rapid Evaluation Methodology (REM) in the Mother and Child Health and Family Health Programme, was conducted in six governorates of the Centre/South in February/March 3, 1997 in 43 PHC's. Surveyors interviewed and observed a total of 574 staff; conducted exit interviews of 600 pregnant mothers and audited of selected equipment/supplies and requirements

2.5.3 Health Programs: Re-Defining Health Development and Meeting Decade Goals

The economic crisis has by necessity influenced the prevailing drug dependent, high technology, curative-oriented health development model¹⁰². A positive aspect is the greater focus on prevention, which is increasingly perceived as an efficient approach to addressing child and women's rights and the health goals of the NPA. Constraints still abound, such as personnel, supplies and equipment, communication and transport. However, there is strong positive evidence that the GOI clearly promotes excellent quality preventive health and nutrition services, coupled with the willingness to improve the performance of the health cadre and developing the services throughout the existing structure. .

The MOH has developed several plans (eg National Plan of Action for the Preventive Health Department, the National EPI Plan, the National Plan for Nutrition) conferences (eg Midwifery and safe delivery, Nutrition and Health Education Conferences) with regular central and local workshops; all strengthening the coordination between the centre and directorate staff. Several focused surveys and studies on PHC facilities, quality of health care and client satisfaction, and KAP of caretakers has provided a valuable basis for effective implementation.

The Ministry has revitalized several programmes, such as EPI, control of ARI, CDD, MCH care and addressing malnutrition. There is an evolving perception of the relationship between health and nutrition as a dominant factor in young child mortality¹⁰³. Further, linkage across projects is developing. One example is the Integrated Management of Childhood Illnesses (IMCI) initiative, adopted by the Ministry of Health, with UNICEF/WHO cooperation. This combines common strategies and programme elements (eg training, supervision and service delivery) for ARI, CDD, breastfeeding promotion, measles immunization and malaria treatment/control). The Mother-Baby package reinforces the connection between family planning, care of pregnancy, delivery and post-partum, including the neonate. Linked strategies which combine methods of delivery (eg EPI and vitamin A distribution) are being implemented.

The care element in the health-nutrition dyad is gradually being integrated - for improved practices at the service, community and household levels. However, inappropriate practices continue. Although breastfeeding prevalence has increased since the embargo, that of exclusivity in the first 6 months and provision of appropriate foods after then is often lacking. The MICS reports that only about one-third of mothers interviewed state the two major warning signs associated with serious respiratory infections (rapid and difficult breathing). Doctors maintain a lingering reliance on drugs for diarrhoea, despite the recent MOH policy on restricting these. ORT is almost universally available, but its is underutilized. However, there is more awareness of appropriate practices for the management of diarrhoea (ORS or ORT, fluids, and feeding) and its priority in programmes.

The Ministry of Health will continue to pursue the goals for the year 2000 to reach the following: eradication of Polio, elimination of TT, and control of measles; reduction of children under five mortality and morbidity due to diarrhea, ARI and pneumonia; reduction of maternal mortality especially at giving birth due to incorrect practices; expand utilization of family planning services; promotion of breast-feeding, strengthening nutrition rehabilitation project and reduction of malnutrition especially among children under five; promote school health, prevent and control communicable diseases and promote environmental and personal hygiene

¹⁰² The interpretation of Health For All is limited to equitable distribution of health infrastructure, staff and medical supplies without the community participation thrust of Primary Health Care.

¹⁰³ WHO reports that malnutrition is responsible for at least half the deaths in young children, especially related to diarrhoea and ARI.

Decentralization, involvement of local government, effective leadership, supervision and coordination are evolving, at different paces according to the type of project and its support. as well as active, willing and informed community participation are integral elements of achieving goals and objectives and adoption of new initiatives

Beyond disease specific campaigns, the recent creation of Community Child Care Units (CCCU's) is a move towards decentralization and health promotion as social development, integral to the spirit of the CRC. Further, the involvement of officials at the level of administrative units below that of national structures in 1994-1995 helped to monitor the realization of Mid-Decade goals.

The influence of Local People Councils (LPC) has been enhanced within the national structure since 1996. These councils, with local chapters of the General Federation of Iraqi Women (GFIW), the General Federation of Iraqi Youth (GFIY), the Farmers' Union and the Trade Unions have the potential to mobilize local popular support and involve the community in activities conducive to children's well-being. They need material and specialized support. Due to budget constraints, the continuing support for health education and promotion programs in rural areas stopped. Those developed by the GFIW which once covered about one-quarter of rural areas, were terminated in 1996, confining their activities to urban areas.

Shortage of drugs, medical supplies and equipment will be addressed through the implementation of the Oil-for-Food programme. More than US\$ 630,000,000 is allocated for the Phases I, II and III. An additional US\$ 200,000,000 is expected if the supplementary distribution plan is finalized.

However, recent studies and surveys carried out by GOI, supported by UNICEF and WHO, revealed the sizeable gap in the knowledge and practices of service providers reflecting the depleted health infrastructure status. The same surveys indicated poor registration/recording/reporting and data use with inadequate supervision activities attributed mainly to transport difficulties as well as shortage of properly trained supervisors. Hence, upgrading technical skills and knowledge of service providers and child care takers is a priority. Further, an efficient monitoring and data collection system is required, to identify pockets of low immunization coverage and high disease and malnutrition prevalence for a better targeted programme implementation and ensure optimal utilization of resources. Such information use must also extend to the community through the CCCU's.

2.5.4 Malnutrition

Prior to 1990, severe clinical malnutrition was rarely seen in Iraq and studies suggested a low prevalence of underweight even in poorer areas¹⁰⁴. There was probably regional variations in nutritional status. For example, the rural population is generally worse off economically with higher literacy rates than the urban, and certain governorates, such as Basrah are traditionally food-deficient. But none of the pre-1990 nutrition assessment studies showed malnutrition of the severity reported later.¹⁰⁵

The current situation: The most recent household survey throughout Iraq to assess the nutritional status of young children was the 1996 Multiple Indicator Cluster Survey (MICS) done by Iraq's Central Statistical Organization, in collaboration with UNICEF.¹⁰⁶ Combining the results for each report (taking into account the different populations), the prevalence of underweight was 22.9%; of chronic malnutrition (stunting) 31.3% and acute malnutrition (wasting) was 10.1% (Table 2.3).- *for an explanation of these terms see Box 5.* These levels indicate that Iraq has a serious problem of malnutrition in young children, equivalent to that encountered in very needy countries of the world. Such levels reflect not only the current danger to Child Survival and Development of the Children of Iraq, but also the adverse impact on future generations due to the lifetime consequences.

Table 2.3 : Prevalence % of Malnutrition (moderate/severe) - MICS 1996

MALNUTRITION	IRAQ	South/ Centre	North
Underweight	22.9	23.4	19.3
Chronic (Stunting)	31.3	32.0	26.3
Acute (Wasting)	10.1	11.0	3.8

¹⁰⁴ For example, Beradi, 1989 from a cross-sectional survey of 4153 children aged 0-8 years in Central Iraq reported results similar to the international reference data - i.e. to industrial countries, with even a tendency to obesity (reported in Nutritional Status Assessment Mission to Iraq, p 21 - FAO. November, 1993)

¹⁰⁵ Noriko Sato, Omar Obeid and Thierry Brun, "Malnutrition in Southern Iraq." Letter to the Editor, The Lancet Vol 338, 1991, p.1202.

¹⁰⁶ **The purpose of the MICS** was to assess the progress towards the Mid-Decade goals of the National Plan of Action for children, drafted by the GOI after the World Summit for Children. The MICS covers health, nutrition, education, and the water and sanitation sector. **Another purpose of the survey** was to have baseline data against which the impact of the implementation of SCR 986/1111 could be assessed. It was conducted throughout Iraq's 18 governorates during August and September 1996. The household sample yielded 1,799 children under five years in the Northern Governorates and 6,392 in the South/Centre for assessment, including that for nutritional status.

The report for the Northern Governorates was released in May, 1997; that for the South/Centre not until October, 1997 soon after permission was obtained from the GOI.

Box 5

Nutritional Implications for the Anthropometric Indicators

Chronic malnutrition (or stunting) results in poor physical child growth, often accompanied by sub-standard capacity for development and education. It reflects the cumulated detrimental effect on child growth by adverse economic conditions, poor health, feeding and care. Chronic malnutrition is difficult to reverse after the child reaches 2-3 years of age. Often stunted children grow up to be stunted adults, with a continuation of the same detrimental process on their children.

Acute malnutrition (or wasting) reflects more recent onset adversities, such as diarrhoea and acute respiratory infections compounded by inadequate feeding. It is most easily reversed, but often recurs due to repetition of this cycle. This type of malnutrition is the most readily recognized by mothers, due to a child appearing thin.

Underweight implies a composite of chronic and acute malnutrition - either or both of these can result in underweight. It is the most widely understood indicator for nutritional status and is used in UNICEF's Progress of Nations report to monitor nutrition.

Whereas chronic malnutrition and underweight are measured by a low height and weight for age respectively, acute malnutrition is assessed by a low weight for height.

Results for Iraq will mainly reflect those of the South/Centre population due to its much larger population than that of the Autonomous Northern Region. Also, it would appear that the rates for underweight and chronic malnutrition are a little greater in the South/Centre compared with the North and that of acute malnutrition much greater (11.0 vs 3.8%). This suggests at the time of the survey there was still a progressive deterioration in nutritional status in the South/Centre.

Urban/rural comparisons: Due to the dominance of the population in the South/Centre compared with the North, these and further results will be presented separately for each. There was no difference in malnutrition rates between urban and rural areas for the South/Centre. In the North¹⁰⁷, there were distinct and statistically significant differences in underweight and stunting prevalence.

Table 2.4: Prevalence % of Malnutrition (moderate/severe) by Urban/rural - MICS 1996

MALNUTRITION	South/Centre		North	
	Urban	Rural	Urban	Rural
Underweight	23.1	24.1	17.3	23.1
Chronic (Stunting)	31.7	32.7	24.8	29.5
Acute (Wasting)	10.2	11.7	3.4	4.8

¹⁰⁷ Lack of an urban/rural difference for the South/Centre was also reported in two later nutritional status surveys based in PHC's throughout all 15 governorates; the same results applied for lack of any sex difference.

There were no significant differences by sex (Table 2.5)

Table 2.5 : Prevalence % of Malnutrition (moderate/severe) by Sex - MICS 1996

MALNUTRITION	South/Centre		North	
	Male	Female	Male	Female
Underweight	23.5	23.3	20.3	18.1
Chronic (Stunting)	30.8	33.2	26.9	25.7
Acute (Wasting)	11.7	10.3	4.3	3.4

In order to consider the variation within Iraq, malnutrition results for governorates are presented in the following maps and tables:

For Underweight, the highest prevalence is in the south, the lowest in a belt north and east of Baghdad. (Figure 2.23)

Figure 2.23
Prevalence of Underweight (or General Malnutrition) by Governorate - Iraq 1996

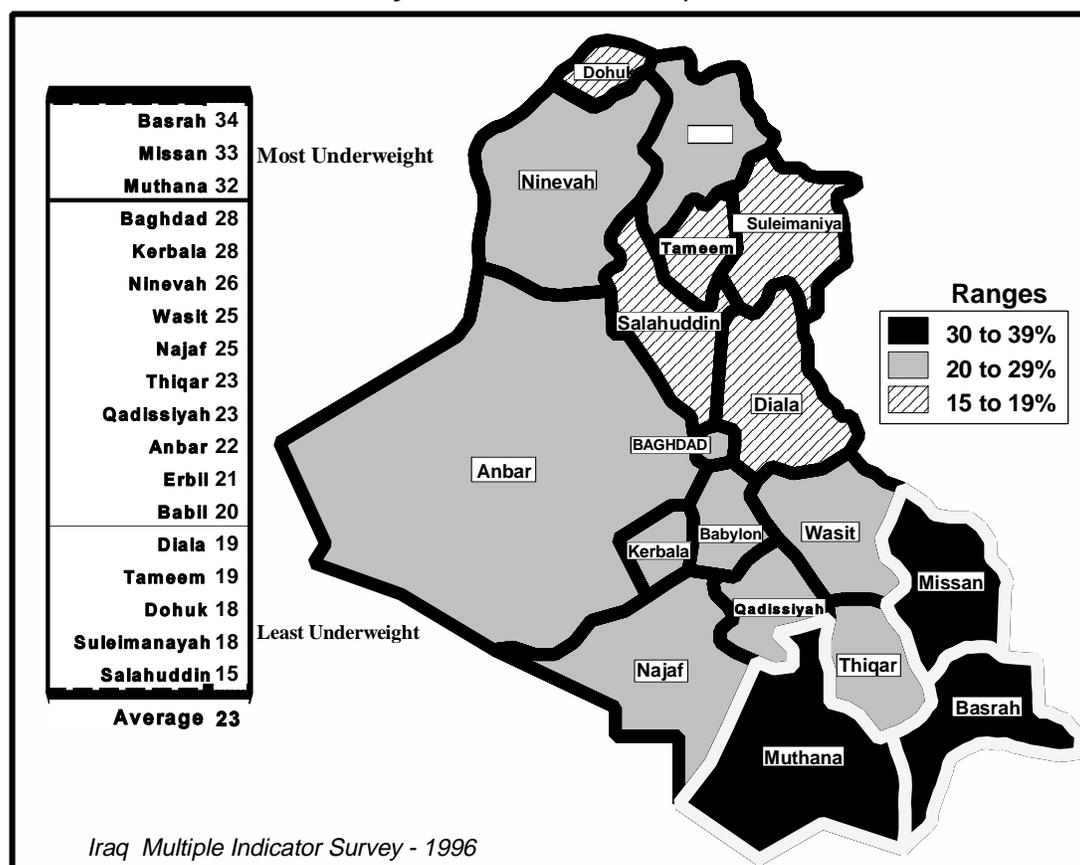


Figure 2.24

Prevalence of Stunting (Chronic Malnutrition) by Governorate - Iraq 1996

With regards to Chronic Malnutrition, a similar pattern to underweight is apparent. The very high result for Missan governorate may be in part related to its especially severe experiences during the two wars. From which it has not yet recovered. Interpretation of the results should take into account the internal migration of hundreds of thousands from the south to governorates such as Najaf and Kerbala. (Figure 2.24)

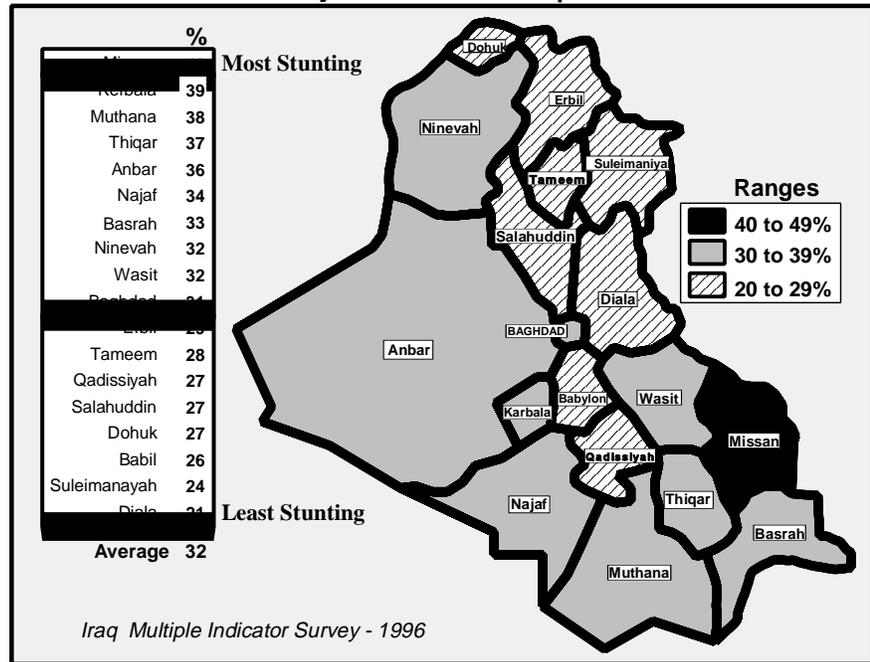
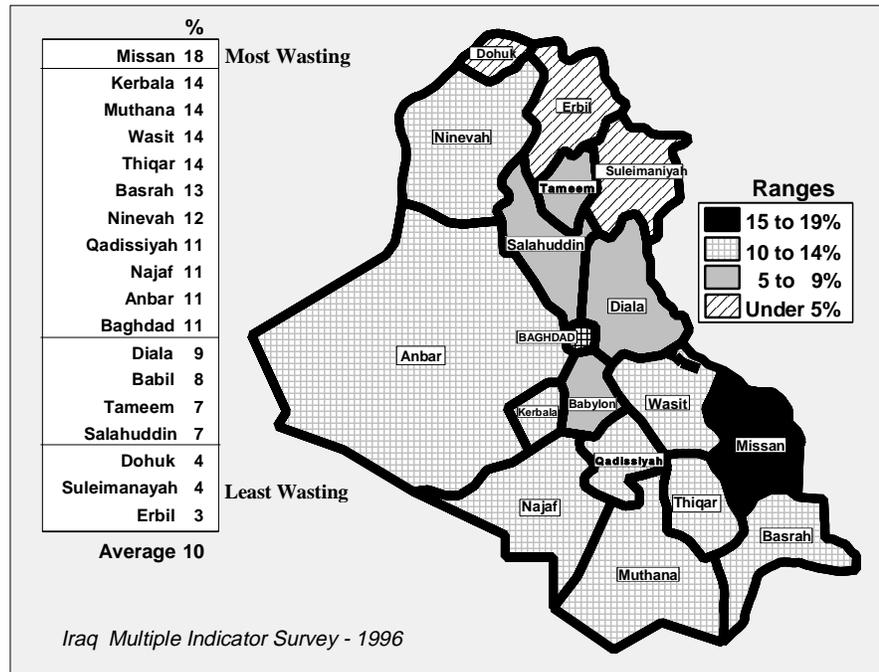


Figure 2.25

Prevalence of Wasting (Acute Malnutrition) by Governorate - 1996

Wasting prevalence shows the most striking variations by governorate. It ranges from under 5% in the Northern Region to 5-9% in parts of Central Iraq (excluding Baghdad) and its immediate governorates to the north. Again, Missan (18%) fares the worst. (Figure 2.25)



Malnutrition and age: The pattern of malnutrition as the child ages shows a steep rise in general (underweight) and chronic malnutrition up to 2 years of age and then tends to level off (Figures 2.26, 2.27). The typical pattern of steep rise in wasting prevalence from 6 to 24 months (due to high exposure to infections and inadequate feeding) is shown for the Northern Governorates. The prevalence of wasting is so low after 2 years of age (1% or less) that the underweight dips also after 2 years¹⁰⁸. The high prevalence of wasting in children aged 0-5 months for the South/Centre especially, is suggestive of seriously compromised breast feeding.

Figure 2.26
Malnutrition by Age
South/Centre governorates

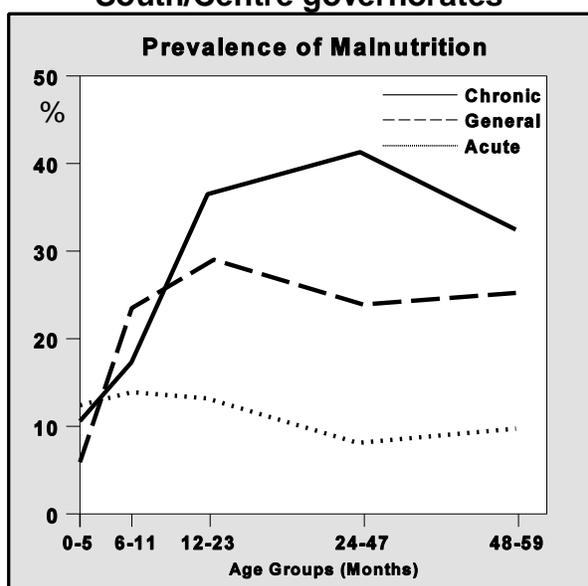
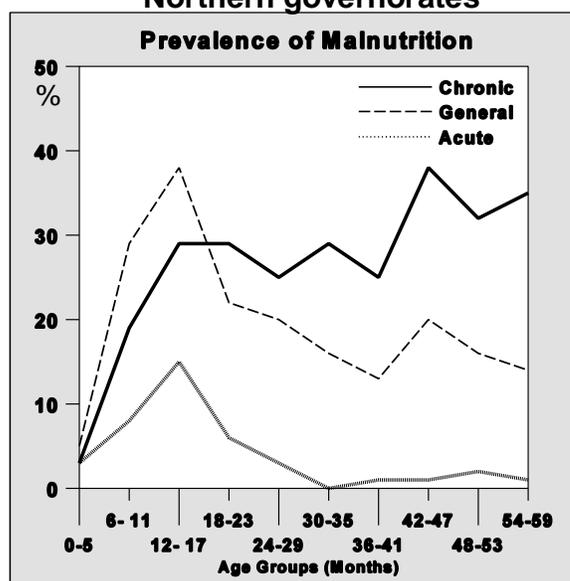


Figure 2.27
Malnutrition by Age
Northern governorates



Source for each: MICS (1996)

¹⁰⁸ For some reason, the timing of the survey (in August/September) may have differentially affected the North less than the South/Central with regards to wasting and underweight; i.e. produced a lesser prevalence from 2 years of age, when rates for younger children were about the same for the two regions. This does not affect stunting, where the patterns for each region are similar.

Two key questions need addressing. What was the extent of the nutrition change prior to 1990 up to 1996 and what has been the situation since August 1996 when the MICS was done, with special reference to the period of the Oil-for-Food inputs.

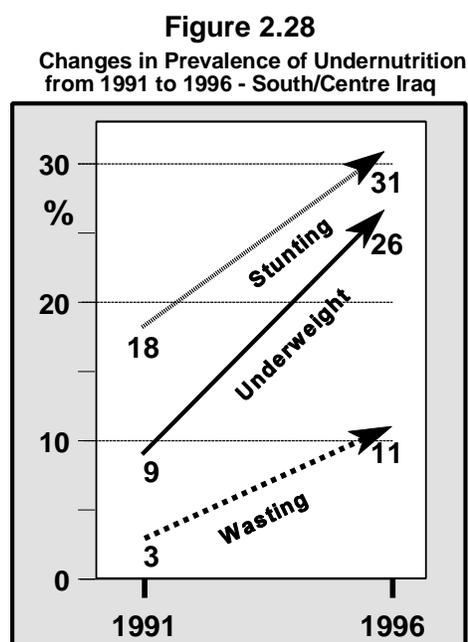
Trends from pre-1990

The first comprehensive nutritional status survey in Iraq was done in August/September 1991, just one year after the embargo began, conducted by an International Study Team¹⁰⁹. The sub-sample of 2,676 children aged under five allowed a description of total urban/rural, sex and age groups; selected regions but not governorates. Results showed that 11.9% were underweight, 21.8% stunted, and 3.4% wasted¹¹⁰.

Trends: Comparison of the results for the August 1991 survey by the International Team with that of the Multiple Indicator Cluster Survey is valid as each was a random household sample of similar population groups and the methods of measurement and analysis for nutritional status were the same. There has been a serious increase in prevalence rates in the South/Centre since that time - stunting 18% increased to 31%; underweight 9% to 26%, and wasting 3% to 11% (1991 results listed first)¹¹¹. The most striking increase has been with wasting (over 200%) - *Figure 2.28*

Recently, a method to interpret the severity in the extent of malnutrition in young children has been proposed, according to prevalence rates¹¹². In countries with low prevalence, malnutrition would not be considered an important problem, those with medium prevalence would have a problem of malnutrition and with high prevalence a serious problem.

Based on these criteria, Iraq has moved from a country in 1991 having a low prevalence of all three indicators (wasting, stunting and underweight), with malnutrition not an important problem, to high prevalence rates in 1996, matching the serious extent encountered in the very needy countries of the world. It should be noted that the 1991 survey was done one year after the start of the sanctions, when the adverse effects on nutrition had already begun.



Prevalence - less than -2 SD reference in children under five years of age
Household surveys - August 1991, 1996

¹⁰⁹ Harvard Study Team "Special Report: The Effect of the Gulf Crisis on the Children of Iraq." New England Journal of Medicine, 1991, Vol. 325:977-80.

¹¹⁰ The report suggested that survival bias (due to the large number of child who died, who were likely to be wasted) may have been partly due to the low prevalence of wasting.

Other pertinent findings: A strong relationship between maternal education and underweight and stunting (but not wasting); a similar strong correlation between diarrhoea and malnutrition for all indicators; no major urban/rural nor sex differences in malnutrition

¹¹¹ The corresponding changes for the whole of Iraq (including Northern Governorates) are: for stunting 22% to 31%, underweight 12% to 23% and wasting 3% to 10%, from 1991 to 1996.

¹¹² Quoted in K. Sullivan trip report, Baghdad (January 1997)

Further, there are important differences for regional changes in Iraq between 1991 and 1996. Results show a marked increase in prevalence in all regions of the South/Centre. Whereas the North started with a high prevalence of stunting (30%) and has remained high; the other regions have increased greatly in extent. (*Figure 2.29 on page 65*). Stunting is the preferred indicator for longer-term changes as it is the most stable.

Other more limited surveys in the South/Centre, primarily Baghdad, have confirmed the deteriorating nutritional status among children. For example, in June 1995, FAO reported 28% of children under five were stunted, 29% underweight and 12% wasted, based on a survey conducted with the Nutrition Research Institute, Ministry of Health.¹¹³

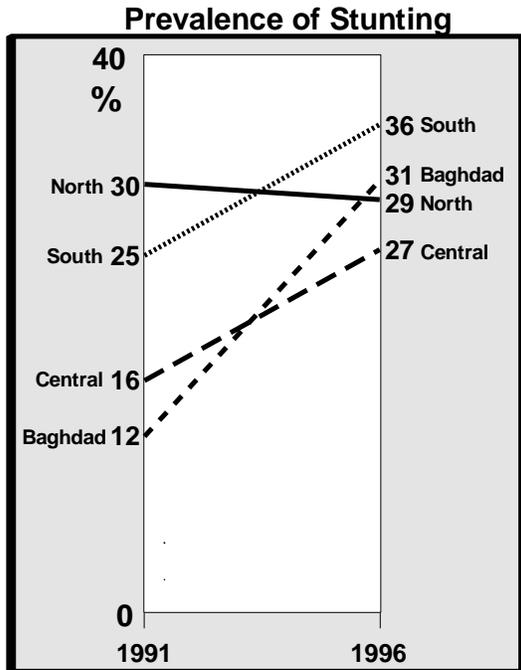
The lack of dramatic increases in nutritional status for the North (compared with the South/Centre) does not indicate the need is less. The levels of stunting are almost the same, that of underweight depends greatly on wasting, which can fluctuate rapidly¹¹⁴.

¹¹³ The household survey was conducted in the poorer areas of Baghdad which had been covered by the 1991 International Study Team's survey; with a sample size of 594 children from 25 clusters. Malnutrition rates had increased from 2-4 times that in 1991.

¹¹⁴ Stunting, initially registered at 29.5% remains at the comparable level of 26.3% documented in the 1996 MICS. Corresponding figures for underweight are 19.1% compared to 19.3%, and for wasting 4.5% vs 4.8%. The higher levels in stunting during 1991 may reflect more the severity of the situation in the North at the time. It is important also to emphasize that during the five year interval between 1991 and 1996, variations are likely to occur. Further, a low total prevalence does not preclude pockets of high malnutrition rates.

Figure 2.29

Changes in Nutrition Status - Iraq (1991 to 1996)

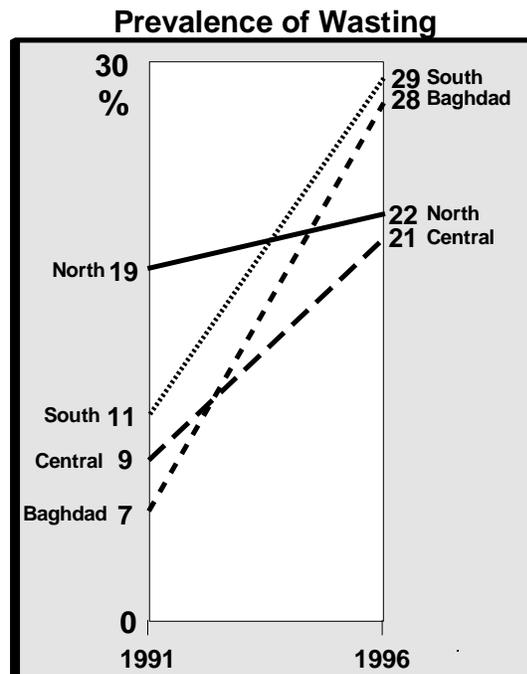
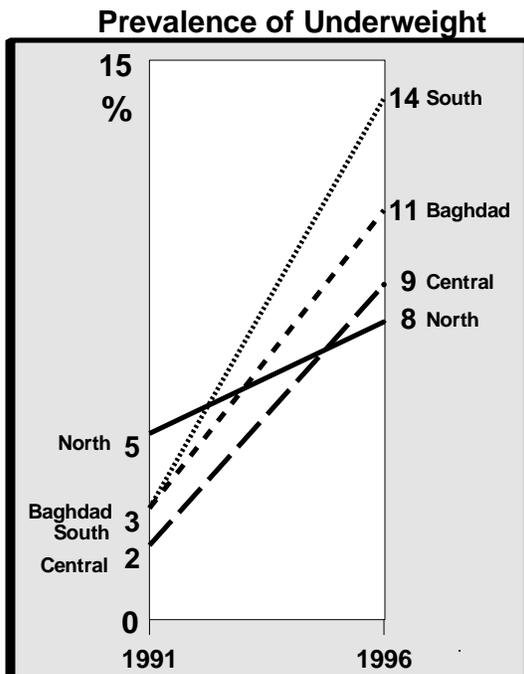


In September 1991 (about one year after the start of sanctions) a random sample of 2676 Iraqi children under 5 years were measured for nutritional status. In September 1996 (five years later) a repeat random survey was conducted on 8,191 Iraqi children using the same procedures and analytic criteria (WHO reference data).

The change in nutrition is based on the 1991 designated areas of the country: Baghdad (urban and rural); Central (Anbar, Babil, Diala and Salahuddin); South (Basrah, Kerbala, Missan, Muthana, Najaf and Qadissiyah); North (Erbil, Dohuk, Ninevah, Suleimaniyah and Tameem). Wasit and Thiqr governorates could not be included as they were not surveyed in 1991.

Stunting is the most stable indicator over time. Results show a marked increase of prevalence in the South, Central and Baghdad with no change in the North group.

Similar trends are noted for Underweight. For wasting, an indicator of acute malnutrition, there was an increase in all groups.



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Trends from 1996 to 1997

Surveys were undertaken throughout the South/Centre during 1997 by the Nutrition Research Institute/MOH supported by UNICEF, with WFP as additional observers. The first (in April), was for a further baseline to the MICS, closer to the onset of SCR986 ("oil for food") implementation. The second (in October), was to determine if there was any significant change in nutritional status of young children after implementation.

In April 1997, a survey was conducted in 87 Primary Health Centres throughout the 15 governorates of Iraq during the three Polio National Immunization Days, when 15,466 children under five years of age were measured.¹¹⁵ The result of 24.7% underweight, 27.5% stunting and 8.9% wasting in under fives was similar to the MICS' findings in August 1996, confirmed the continuing nutritional problems in Iraq. The same lack of change was found for infants. (Table 2.3, page 58)

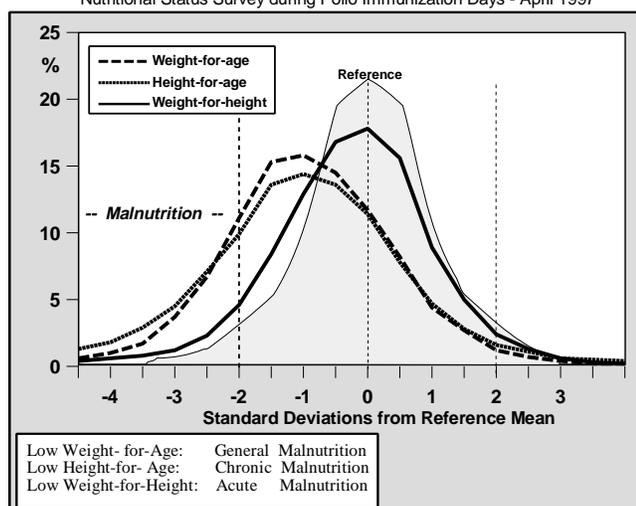
From October 27 to November 2, 1997, the same 87 Primary Health Centres were re-surveyed, where 3,153 infants attending routine immunization sessions were measured for weight and length¹¹⁶. Results indicate that underweight in 14.6% of infants, chronic malnutrition in slightly less (12.2%) and acute malnutrition in 7.5%.

Results for infant general and chronic malnutrition are at least 10% less than would be expected for children aged under five years, based on data analysis comparing the two age groups from the two prior surveys (August 1996 and April 1997) in the South/Centre governorates (see also Table 2.6 for differences). This is because the process for these types of malnutrition is cumulative over time; i.e., increases with the child's age. On the other hand the prevalence of wasting tends to peak at 6-23 months of age and then declines, so the results for infants (which includes those aged 6-11 months) tends to be of similar magnitude as that for the under fives.

In the South/Centre April 1997 survey, malnutrition is so pervasive that every governorate in South/Central Iraq had a prevalence of chronic malnutrition of at least 20%, as was reported in the MICS, 1996. Further, not only were the prevalence rates high, but there was a shift in the whole population towards poorer nutrition. Even those with prior assumed much better status have become worse, although not yet severe enough to be classified as malnourished (Figure 2.30).

Figure 2.30

Distribution of Nutritional Status - Total Sample
Nutritional Status Survey during Polio Immunization Days - April 1997



¹¹⁵ Nutritional status survey at Primary Health Centres during Polio National Immunization Days (PNID) in Iraq. April 12-14, 1997 MOH/UNICEF/WFP

¹¹⁶ Nutritional status survey of Infants in Iraq attending immunization sessions. November, 1997. MOH/UNICEF The survey was careful to select only those children with current documented appointments for immunizations (BCG, Polio, DPT, OPV and Measles) and to exclude any mothers whose children came for screening for food..

Table 2.6 : Comparison of Malnutrition Prevalence percentage in Infants and Under-fives for recent surveys in South/Centre Iraq

Malnutrition type	Indicator	Age	Aug 96*	April 97**	Oct 97***	Mar 98****
General (Underweight)	Weight-for-Age	Under 5's	23.4	24.7	_____	22.8
		Infants	14.1	14.7	14.6	13.2
Chronic (Stunting)	Height-for-Age	Under 5's	32.0	27.5	_____	26.7
		Infants	13.7	15.3	12.2	16.2
Acute (Wasting)	Weight-for-Height	Under 5's	11.0	8.9	_____	9.1
		Infants	13.1	9.0	7.5	8.3

All results in percentages

* Aug 96 - Multiple Indicator Cluster Survey (household)

** Apr 97 - Survey of Under fives with Polio Immunization days PHC's

*** Oct 97 - Survey of Infants with Regular Immunization at the same PHC's

**** Mar 98 - Survey of Under fives with Polio Immunization Days at the same PHC's

A comparison between results for the two PHC-based April and October 1997 surveys shows the level of underweight in infants has remained the same (14.7% in April vs. 14.6% in October). There are minor differences in acute malnutrition prevalence (from 9.0% to 7.5%) and in that for chronic malnutrition (from 15.3 to 12.2%). Results from a repeat survey in March 1998 indicates there is still no detectable real change in malnutrition rates of under fives and infants.

A nutritional status survey of 15,804 children under five years of age was conducted in 87 Primary Health Centres (PHC's) throughout the 15 South/Centre governorates in Iraq during (PNID) from March 14-16, 1998. This was done by the Nutrition Research Institute, MOH, supported by UNICEF and WFP. The methods and sampling procedures were the same as during the April 1997 survey, with the same PHC's visited. Results indicate that the prevalence of stunting (chronic malnutrition) in children under five years of age was 26.7%, of underweight was 22.8% and wasting (acute malnutrition) was 9.1%.

In the Northern Governorates a recent survey sheds more light on changes since 1996.

The random sample household survey was conducted by the Regional Ministry of Health and Social Welfare with UNICEF support from November 17th to December 8th 1997. A total of 90 clusters (30 per governorate) were included, each with 25 households. The survey included assessment of nutritional status of 2,328 children aged 0 to 5 years, using weight and height measures.

Results show that the nutritional status of children under five years of age continues to be serious, especially stunting (chronic malnutrition). At a level of 30.3%, this compares with the poorest countries of the world. Underweight prevalence at 15.9% appears less of a problem, and that of acute malnutrition (wasting) is relatively low at 3.1%. The highest prevalence of underweight and wasting is for children aged 6 to 24 months. Rural areas appeared to have more chronic malnutrition as compared with urban (35.5 vs 23.7%).

Since August 1996 when the Multiple Cluster Indicator Household Survey was conducted, there has been no reduction in stunting prevalence; indeed there may be a slight increase (26.3 to 30.3%). Underweight prevalence seems to have reduced from 19.3 to 15.9%, with wasting a marginal decrease from 3.8% to 3.1%. The two surveys had the same methods and each used the WHO definition of malnutrition (<2 SD of reference).

Although no strictly an evaluation of SCR986, due in part to lack of a survey in mid-1997, it is likely that attention to acute health problems (and perhaps added foods for children) has made a difference, but the basic infra-structural problems remain reflecting chronic malnutrition. Also chronic takes longer to reverse than acute, hence a survey in the near future may indicate some decrease in this problem.

2.5.2.1 Micro-Nutrient Deficiencies

Micro-nutrients refer to those nutrients which although required in small amounts have a profound influence on the health and survival of the young child. Those especially relevant to Iraq are Iodine, Vitamin A, Iron and Vitamin D.

Iodine Deficiency Disorder

Iodine Deficiency Disorder (IDD) results in a spectrum of afflictions ranging from stillbirth, reduction of intelligence (IQ) to mental retardation and deafness. The deficiency also affects animal rearing and growth resulting in further economic deprivation for nations, producers and consumers.

IDD is probably not new to Iraq, where leaching of iodine from the soil occurs especially in the mountains and foothills. However, the awareness to the deficiency is new, as in most Middle East countries. One study conducted in 1993 in the northern governorates of Dohuk and Erbil showed high incidence of goitre in primary school children (results to be included). In some districts such as Zakho, over one-half of the children had goitre. A further study in 1994 concluded "IDD is no longer limited to the Northern governorates; it exists even in the governorate of Basrah, a port in the southern part of the country where goiter had not been familiar in the past".¹¹⁷ The price of once abundant fish, an important source of iodine which used to be considered poor people's food, became unaffordable to most.

It is critical to prevent the problem before it starts to develop in the foetus¹¹⁸, hence iodized salt is the only effective long term strategy. UNICEF, in cooperation with the MOH and Ministry of Trade, advocated for iodized salt into the ration system and supported its production in seven salt plants. UNICEF-promoted social marketing includes mass media messages and posters on public transportation vehicles.

The MICS survey in late 1996 reported on the very limited distribution of iodized salt, if at all, especially throughout the South/Centre governorates. Only one in ten households had at least the minimal recommended 25ppm of iodine in their salt on testing, an unacceptable result (*Figure 2.32 Iodine, page 70*). The SCR986 ration for 1997 is meant to include the provision of iodized salt. However, because of erratic deliveries, the situation is still not much better, based on recent reports from the NRI/MOH.

In the North, the population is more sensitized to iodine deficiency and iodized salt is available through plants and across borders. Hence results for the MICS showed a much higher percent of households using iodized salt than in the South/Centre.

¹¹⁷ Study presented by Dr Amal Swaidan at the 1994 IDD National Workshop, Baghdad.

¹¹⁸ Making this foetal and new born right as well as a child right to survival and development

Figure 2.31 VitaminA:
Percent of Children 0-23 months who received Vitamin A - by Governorate

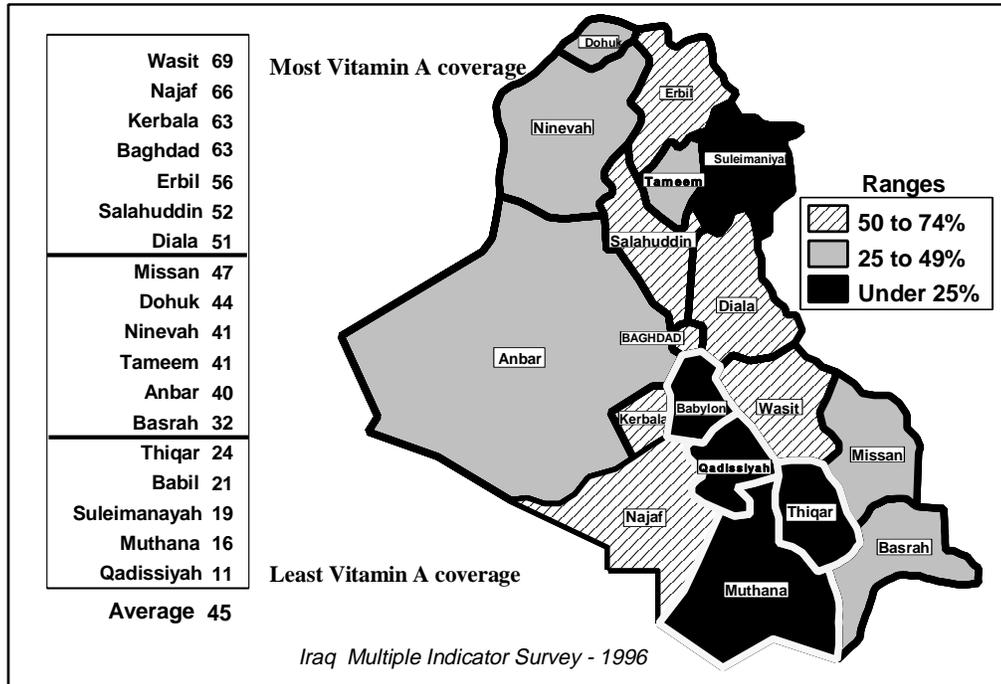
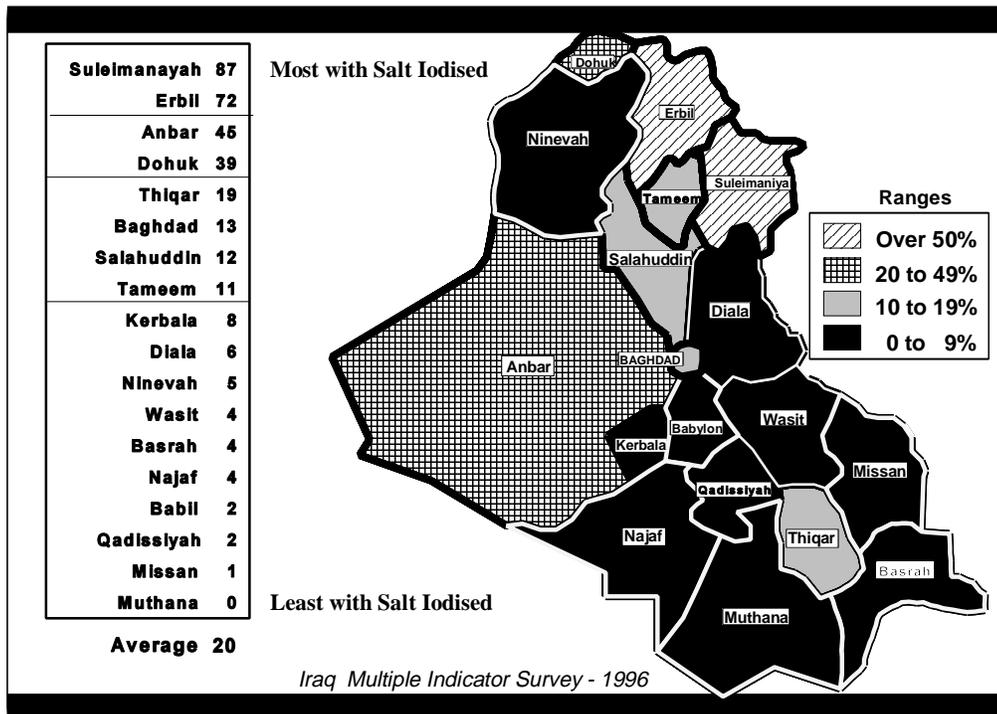


Figure 2.32 Iodine:
Percent of Households with Iodized Salt >25ppm - by Governorate



Vitamin A deficiency

In 1988, WHO classified Iraq as a country where Vitamin A deficiency was not a public health problem. This has now changed.

Results from the 1994 Vitamin A assessment survey of 9000 children under five years of age in governorates of the Northern and South Central part of Iraq, supported by UNICEF, brought attention to the problem of Vitamin A deficiency¹¹⁹. The prevalence of night blindness was 1.6%, surpassing WHO's level of 1% to indicate a moderate public health problem.

The deficiency is due to the lack of dairy products, meat and eggs in the diet; the ration distributed previously by the government; and more recently through the "oil for food". The prices of the needed foods is well beyond the reach of Iraqis, especially those most affected by economic hardship.

Recognizing the problem, the MOH supported by UNICEF introduced a supplementation program in late 1995 which focused on new mothers, and children of 9 and 18 months of age linked with measles immunization and the booster dose for DPT. The MICS survey showed that this programme was beginning to reach needy children (*Figure 2.31 Vitamin A, page 70*). However, the most effective feasible prevention is to improve the quality of the rations, with special reference to Vitamin A fortification of vegetable oil.

Vitamin A deficiency is especially important due to its proven link to morbidity and mortality, with relevance to Child Rights and Development¹²⁰. It increases the child's susceptibility to diarrhoea and respiratory infections, already rampant due to poor water quality and sanitation. Studies in several countries show that effective vitamin A distribution can reduce the mortality of young children by up to 30%, especially those with high rates of malnutrition.

Iron deficiency Anaemia

Anaemia due to iron deficiency is the most common nutritional disorder in Iraq, affecting more than one-half of pregnant mothers and probably a similar percent of young children. It is an important cause of maternal mortality and young child morbidity. Further, it can result in irreversible cognitive development in young children and limit education potential at schooling. Its effect on the economy is to reduce the work and labour efficiency.

It is due to non-replacement of iron loss during menstruation and pregnancy, depletion by illness (including malaria) and worms, with lack of adequate dietary replacement. In the diet, animal protein is especially important (even in relatively small amounts) to improve the utilization of iron from usual sources, such as cereals and leafy vegetables. Again, their expense and lack of inclusion in the rations precludes effective solutions to this pervasive problem.

¹¹⁹ There was no gender difference in the incidence of Vitamin A deficiency. A prior study in 1991 also reported about the problem in the South - Vitamin A deficiency and Malnutrition in Southern Iraq HKI/SCF/UNICEF, May 1991.

¹²⁰ It is also the leading global cause of blindness in young children .

The supplementation of iron and folate for three months during pregnancy done in the PHC's has a limited effect, mainly due to lack of compliance both in Iraq¹²¹ and in other countries. Apart from an improved diet, an effective alternative is fortification of iron in food (commonly wheat flour).

Vitamin D Deficiency

This causes rickets (an affliction of bone development and growth) in young children and is due to lack of Vitamin D in the diet or its precursors which are converted into the vitamin through exposure to sunlight. This lack of exposure for infants is a part of many cultures, including that of the Arab world. In the past, the diet for both the mother and child mainly through dairy products, was sufficient to prevent the deficiency. This has now changed.

Reports of Vitamin D deficiency are now appearing and are expected to increase with evolving recognition. Vitamin D ergocalciferol tablets for affected children and drops for infants, are provided by UNICEF and distributed through health centres. However, the only effective solution is improvement in the diet for mothers and young children as changing traditional ways is difficult.

2.5.2.4 Breast feeding

Breast feeding is a natural and crucial assurance to promote child survival rights and needs and to prevent malnutrition. The Koran decrees that Breast feeding be continued through the child's second year of life.

The prevalence of Breast feeding during 1988 to 1990 was about 60% in the first 3 months and 45% in the first year¹²². Although no data are available, it is likely that the extent of Breast feeding was higher in the past, before the economic boom. The first reported household survey since 1991 was in Baghdad during 1993 which reported that 61% of 253 children under one year of age were still breast-fed.

Another household survey in 1994 by MOH/GFIW covered 2650 families from 6 governorates showed that "total dependence" on breast feeding was 71% (85.5% in rural and 65.2% in urban areas), but the age for which this applies is not clearly indicated. Breast feeding was 71-75% in mothers with no education or primary/intermediate levels, 64% in secondary schoolers and 52%-58% in the more highly educated. Those few with Masters and Ph.D. degrees had rates from 73% and above, suggesting the elite had reverted to "traditional ways" in conformity with the trend in industrialized countries.

Multi-sectoral programming assumes that maternal education is conducive to health practices which protect/enhance child survival/well-being. This is not the case with breast-feeding and underscores the continued need for Health Education.

The MOH uses mass media to raise awareness about the importance of breast feeding, including exclusivity in the first six months of life and promotion of "Baby Friendly Hospitals". The social constraint to be countered is false perceptions of "progress" in modernizing societies of the non-western world, of which Iraq is one which emulate adverse practices and imports by western societies (including the misuse of infant

¹²¹ The TBA survey by the MOH/WHO/UNICEF in late 1996 showed that one-quarter of pregnant women who attended the PHC's received a full course of iron/folate, but whether they ingested this adequately is not known. The MCH Health Facility survey conducted by MOH/WHO/UNICEF in August 1997 had similar results, even though the tablets were readily available at the centres.

¹²² The State of Iraqi Children. 1991. Ministry of Health, Iraq
The data for 1991 are unclear - a further reduction of about 5% in the 3 month and one year groups. The apparent increase in the 6 months group of 15% is based on comparison with the 1990 data, with that of 1998 and 1989 there is a continued reduction.

formula)¹²³. The positive aspects of possible return to a Breast feeding-oriented culture by the elite in Iraq may be useful for role models in media messages¹²⁴.

The MICS in 1996 reported that almost all mothers (95% in the South/Centre and 99% in the North) at least started breastfeeding their last child¹²⁵ - *Table 2.7*. Just over one-half (62%) of the mothers breastfed their child from 12-15 months (reflecting infancy) and one-quarter (24%) from 20-23 months (reflecting up to the end of two years of age).¹²⁶ Bottle feeding is common (21%) during infancy, even in those breastfed. About three-quarters of children (72%) 6-9 months received solid or semi-solid foods.

It appears that young children in the North had a shorter duration of breastfeeding, a greater extent of bottle use and probably, a much lesser degree of complementary feeding - all factors related to appropriate feeding practices and child care.

Table 2.7 : Prevalence Percent of Feeding Indicators - MICS 1996

BREASTFEEDING	IRAQ	South/Centre	North
Ever Breastfed	95.5	94.9	99.3
Breastfed 0-11 months	-----	-----	68.5
Breastfed 12-15 months	62.0	64.2	47.4
Breastfed 20-23 months	23.9	24.9	17.3
BOTTLE FEEDING- 0-11m	21.0	19.7	29.4
ADDED FOODS 6-9 Mths	72.0	77.9	(32.9)

() result suspect --- no data available

There are insufficient data analysed to compare urban/rural and sex differences in breastfeeding for Iraq's 18 governorates as a whole. Bottle feeding is much more extensive in urban areas compared with rural (24% vs 17%), although equally practiced by sex.

The October 1997 MOH/UNICEF survey during immunization visits has a special advantage over the MICS and other surveys due to the ample sample size for infants; it allows a much fuller examination of key

¹²³ For a discussion of the relationship between consumption patterns and cultural orientation see Galal Amin "Some Economic and Cultural Aspects of Economic Liberalization in Egypt." *Social Problems* 28(4), 1981, p.430-441.

¹²⁴ Soheir Morsy "Health, Medicine and Social Science." *Proceedings of the Founding Meeting of the Arab Regional Chapter of the International Forum on Social Science and Health*, Beirut, Lebanon, 1996 (In Arabic).

¹²⁵ **In the 1996 MICS, no acceptable analysed data are available for breastfeeding by urban/rural, by sex and for each Governorate, due to low sample sizes.** The indicators for breastfeeding encouraged by UNICEF and used by countries for the Decade Goals are varied and at times inconsistent with the perceptions of national professionals - for example, instead of the prevalence of breastfeeding for a specified age or age group in the first year of life, that for 12-15 months is used to reflect attainment at the end of infancy and 20-23 months for that of the second year. These narrow age ranges, although specific are constrained when the more accurate estimate of current (rather than recall) is used.

¹²⁶ The results for exclusive breastfeeding in infants aged 0-4 months cannot be used as the methodology for acquiring the information was suspect. The prevalence of exclusivity (nothing except breast milk) was reported as 57% in the North.

relationships during important biological phases of infancy, such as urban/rural and by sex¹²⁷.

Key findings:

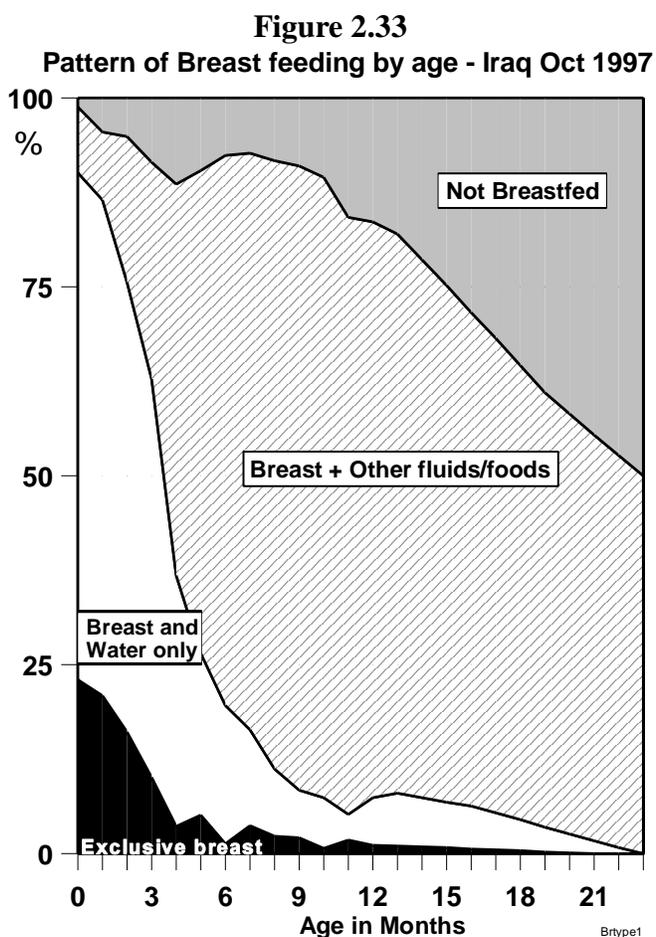
1. The prevalence of breastfeeding was 92.4% in infants (0-11 months), 81.4% at 12-15 months, and 50% at 21-23 months, all much higher than reported previously. This may be due mainly to economic reasons, although why this is related to the “oil for food” period is unclear.

2. Exclusive breastfeeding (only breast milk) was 13.3% and complete (only water added) 48.4% in infants 0-5 months of age (Figure 2.33 opposite)

3. Bottle feeding with milk for infants at 21.1% (similar to the MICS’s South/Centre results)

4. Complementary feeding (which does not consider quantity nor quality) from 6-8 months at 76.1% (also similar to the MICS).

The results highlight the problems of inappropriate breastfeeding, use of the bottle and lack of any complementary food in young children.



¹²⁷ The sample size for infants was 1,846 for the breastfeeding component of the survey and 2,524 for the added foods, as compared with the MICS (total) of about 800 for the same age group. The major problem is the sample from PHC’s, although there was no clear indication how this affected the results. Another issue is that mothers may respond to questions differently in the presence of PHC staff compared with responses at home.

2.5.2.3 Addressing Malnutrition

To address malnutrition efficiently, attention must be directed to all causal levels - direct (diet and health); underlying (household food security, care, water/sanitation, health services) and basic (education, resources - material, financial, human and organizational). This multi-sectoral approach is only just starting to be recognized, although there is still major emphasis on the direct areas through the health sector, which is necessary but insufficient on its own.

During the first National Nutrition Conference in April, 1996 a major conclusion was to develop two phases to counter malnutrition - a "short track" which relied mainly on screening and referring the malnourished to provide a more intense health care and the provision of complementary food¹²⁸. The "long" track was to integrate health and other services between the formal health system (principally PHC's) and communities with Community Child Care Units (CCCU's) and act as a focal point for local activities for nutrition.

The proposed "Healthy Growth Programme" of the Ministry of Health, supported by UNICEF, has now grown to 1300 CCU's¹²⁹ in almost all the South/Centre governorates and is starting in the North.

From September 1996 to late 1997, over 200,000 children were screened¹³⁰ with 30-40% malnourished for referral to their local PHC's for review and added care. After re-screening, the malnourished are further referred to a supplementary feeding centre (SFC) for special foods and when available, added rations for the mother. The Iraqi Red Crescent, supported by the International Federation, reached a "case load" of some 40,000 malnourished children (or less than 10% of those in need) by October 1997, where each child receives imported foods (such as wheat soy blend with sugar) and the mother gets wheat flour, oil, etc., monthly for three months¹³¹.

For those severely malnourished, Nutrition Rehabilitation Centres were established in major hospitals, more recently expanding to the districts. These have increased from ten in 1996 to a current 62, attending to about 1,500 children monthly where they receive therapeutic milk, supplementary food and nutrition education to complement the treatment of mainly diarrhoea and acute respiratory infections. On discharge, children receive added foods to be continued at the SFC¹³².

Although the initial priority has been the "short track", elements of a broader approach to nutrition is developing. In the Health Sector, the linking of Control of Diarrhoeal Disease (CDD) with that of Acute

¹²⁸ P. Greaves/UNICEF - Report on the Healthy Growth Programme, May 1996

¹²⁹ These are usually based in schools, facilitated by Ministry of Education support. The People Local Council (PLC) headed by the governor have a key role. Volunteers are teachers, village heads, Mukhtars, retired professionals and at times representatives of Iraqi NGO's.

Each PHC is responsible for supporting their 4-5 CCCU's, of which there are two major types - ones in urban areas catering for large numbers of under fives' (up to 1000) and in many rural areas those with a smaller number, which have more direct contact with specific communities.

¹³⁰ Screening uses WHO weight-for-age reference criteria. For this purpose UNICEF has provided its own developed electronic solar-powered scales (UNISCALE) to each CCCU and PHC, with stationary and training support.

¹³¹ The IRC support started in mid-1997. Prior to that time, a much more limited number were reached. There is no assurance that the IRC input will continue due to lack of food. Even so, the 40,000 is well below the estimated 750,000 malnourished children in the South/Centre in need (based on the MICS and confirmed by the April and October 1997 surveys)

¹³² Most NRC's cater for children under 2 years of age, usually with recent infections necessitating admission to hospital, for an average stay of about one week. In some district NRC's, mothers come daily so that their duties at home, including child rearing are not compromised.

Respiratory Infections (ARI), breast feeding and feeding during illness is an important start in which the CCCU's can reinforce through promotion, education and mobilization locally. In some governorates, CCCU's have played an important role in identifying immunization dropouts and assisting campaigns.

The lack of adequate assistance for nutrition by donors greatly limits the reach and support for the malnourished, especially for complementary feeding . This may be due to mis-perceptions about the positive effect of the increased rations on young child malnutrition or a "wait and see" approach while the "oil for food" evolves. Unlike the North, there are no funds available for the South/Centre in that programme.

The MOH (with UNICEF support), intensified efforts to improve breast feeding practices (a crucial element for Survival Rights) through campaigns, mass media and education materials. The Baby Friendly Hospital Initiative has resulted in 23 accredited hospitals and others awaiting recognition.

Iraq's established CDD programme was interrupted in 1990, stopping local production of Oral Rehydration Solution (ORS), a factor to counter the rising diarrhoea due to impaired WATSAN and health infrastructures. UNICEF provided ORS and helped CDD activities reactivate, especially through training and raising community awareness through mass media and campaigns. In 1994, to curtail the over-dependence on drugs in the case management of diarrhoeal episodes, the MOH (using WHO guidelines) issued a National Policy which prohibited the production of anti-diarrhoeal drugs and prescription of an anti-emetic drug for treatment of diarrhoea¹³³.

The MOH distributed micro-nutrients (Vitamin A, Vitamin D and Iron/folate) and promoted the production of iodized salt, although the oil-for-food programme now supplies this.

Attention to immunization, linked with Vitamin A distribution to both lactating mothers and young children, straddles CRC rights - those related to combating disease and malnutrition (articles 24 and 25), and that both parents and child are entitled to benefit from care services and facilities (article 18).

¹³³ However, the dependence continues according to the 1997 CDD Health Facility Survey.