

The State of Nutrition West Bank and Gaza Strip

*A comprehensive review of nutrition
situation of West Bank and Gaza Strip*

June 2005

First Edition



**Palestinian National Authority
Ministry of Health**



World Health Organization



unicef

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Nutrition Department
Directorate General of Primary Health Care and Public Health
Ministry of Health
Palestinian National Authority


With the Financial and Technical Support of the World Health Organization (WHO)

Forward

It is with pleasure to introduce "The State of Nutrition Document of Palestine". This document was developed through a revision of the existing data and information on nutrition for Palestine and thorough discussions with key stakeholders. And as part of the project "Strengthening Nutrition Management in the Occupied Palestinian Territory, the WHO with support of the UNICEF and other stakeholders such as UNRWA, national and international NGOs provided technical assistance for the preparation of this document. Two technical committees, one in Northern Governorates and the other in Southern Governorates and under direct leadership and supervision of the nutrition departments of the Ministry of Health shared the task of developing this important document.

During recent years, many surveys and studies were undertaken by the Ministry of Health, international agencies and other academic institutions along with statistical reports on on-going programs implemented by the Palestinian Ministry of Health and other partner agencies on nutrition. As a result, there was a long-felt need for a unified document on nutrition situation to be used by policy planners and donor communities. We strongly believe that this document will serve that purpose.

We also are all confident that the Ministry of Health with support from its partners in development will update this document on regular basis to ensure availability of a ready-to-use technical document for future planning purposes on nutrition.


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Dr. Thehny Al-Wuhaidi
Minister of Health 13/7/16

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ACRONYMS

AEI	Ard El Insan
BFHI	Baby Friendly Hospital Initiative
BMI	Body Mass Index
DHS	Demographic and Health Survey
Hb	Haemoglobin
IEC	Information, Education and Communication
IMR	Infant Mortality Rate
MCH	Mother and Child Health
MoH	Ministry of Health
MOST	Micronutrient Operational Strategies and Technologies
ND	Nutrition Department
NGO	Non-Governmental Organisation
NCHS	National Centre for Health Statistics
NNP	Norwegian Nutrition Project
NSC	Nutrition Steering Committee
oPt	occupied Palestinian territory
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PHIC	Palestinian Health Information Center
SD	Standard Deviation
TFR	Total Fertility Rate
UN	United Nations
UNRWA	United Nations Relief Works Agency

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EXECUTIVE SUMMARY

The objective of the State of Nutrition report is to provide a consensus document about the state of nutrition in the occupied Palestinian territory (oPt). The available information on nutrition has been put together by the Ministry of Health (MoH) Nutrition Departments in the West Bank and the Gaza Strip. Though the Nutrition Departments are physically separate, they have worked together to agree the text and the conclusions reached. This joint activity is the first opportunity the ND has had to engage in work of this type and represents an important first step to increasing their capacity in nutrition co-ordination.

The findings of the report will be used to feed into a workshop that will develop a national plan of implementation for nutrition to be held in March 2005.

Section 1 identifies the major nutritional problems in the oPt. It is concluded that *iron-deficiency anaemia* is the major nutritional problem in the oPt today. About one third of children under-five and women of child-bearing age are anaemic. The reasons for this are likely to be multi-causal and contributory factors may include poverty and the pattern of childbirth in the oPt. Other micronutrient deficiencies of concern are:

- *sub-clinical vitamin A deficiency*
- *rickets*
- *iodine deficiency*

Whilst wasting in young children remains an insignificant problem, *stunting* levels appear to be slowly creeping up. In 2004, every ninth child in the oPt was found to be too small for their age. Poverty is strongly related to stunting. The causes of stunting need to be addressed, particularly among the youngest age group (0-3 year olds) while the cycle of stunting passed from mother to child needs to be broken.

There is little information on the nutritional problems of other potentially nutritionally vulnerable groups such as school-aged children and the elderly. However, *obesity* and *dietary-related chronic diseases* appear to be increasing, particularly in the older age group, and present a major challenge in nutrition in the oPt.

There is some evidence that dietary habits have been adversely affected by increasing levels of poverty. Despite this, there is no evidence that acute malnutrition (wasting) among children has increased significantly during recent years. There is some indication that stunting is increasing, however, especially in the Gaza Strip.

Section 2 examines the causes of nutrition problems in the oPt using a conceptual framework for malnutrition. Repeated infections are a major reason for stunting in children while underlying problems include household food insecurity, and certain care practices. A basic cause of malnutrition is *poverty* and *unemployment* in the oPt.

Section 3 describes the main nutrition-related programmes and the agencies that carry them out. Nutrition-related services are largely delivered by the *MoH* and *UNRWA* through a wide network of PHC services. There are very few community-based nutrition activities.

Since 2000, there has been increased emphasis on, and funding for, nutrition from the international community. USAID is the main donor for nutrition in the oPt providing

considerable support for fortification, maternal and child health and nutrition and for capacity development. The response to the humanitarian crisis has led to a greater focus on long-term nutrition programmes.

Programmes to prevent and address poor growth in children include:

- *Growth monitoring of under-fives*
- *Promotion of Infant and child feeding*
- *Management of malnutrition*
- *School nutrition programmes*

Growth monitoring is closely linked to vaccination schedules and therefore, children above two years of age are rarely in contact on a regular basis with the PHC system. In addition, the use of growth monitoring data is very limited. Breastfeeding is widely promoted although rates of exclusive breast feeding are low. Legislation for breast feeding substitutes is not yet in place.

Fortunately, severe acute malnutrition is not common in the oPt. Non Government Organisations (NGOs) provide nutrition rehabilitation for mildly and moderately underweight children as well as more serious cases although the effectiveness of these programmes is not clear.

Major gaps in programming are the absence of a national nutrition surveillance system and the lack of a national school meals programme.

Programmes to prevent and address micronutrient deficiencies among women and children through supplementation include:

- *Vitamin A and D supplementation*
- *Iron supplementation*
- *Micronutrient supplementation of school-age children*

MoH and UNRWA clinics are following different protocols on supplementation and the effectiveness and coverage of these programmes requires much closer examination in view of the high levels of anaemia, vitamin A deficiency and, possibly rickets.

Programmes to prevent and address micronutrient deficiencies through fortification include:

- *Flour fortification*
- *Salt iodisation*

Flour fortification is a new programme and the likely impact of this, particularly on reducing anaemia rates, is unclear. Moreover, through fortified flour the under-4 children will receive only a small proportion of their daily requirement of micronutrient (e.g. iron) compared to an adult. Uptake of iodised salt, although reported to be increasing, requires continued efforts to reach and maintain higher levels.

Programmes to prevent and address obesity and dietary-related chronic diseases include:

- Nutrition education in schools and health facilities.

There is no evidence of large-scale campaigns to increase public awareness of the problem.

Food aid is the main form of support for food insecure population groups and there are only limited non-food aid interventions. A massive *food aid* operation was launched after 2000 which is viewed as having been instrumental in preventing and lowering levels of

malnutrition. There is no evidence, however, that food aid has had any impact on child nutritional status.

Section 4 describes the structures, coordination and capacity of the nutrition sector within the oPt. The only formal nutrition structure in the government is the Nutrition Department (ND) which falls under the Primary Health Care Directorate of the MoH. The ND offices in the Gaza Strip and the West Bank are not functioning effectively and staff with appropriate capacity need to be employed in order to ensure that the ND can take a central role in policy development and coordination.

In the absence of a formal government structure to coordinate nutrition activities, a *Nutrition Steering Committee* (NSC) was formed by the MoH in 2004 with members from a broad range of agencies. Currently, the NSC is effectively filling the gap in nutrition coordination.

Capacity and availability of clinical nutrition services are not evenly distributed between the two parts of oPt, and are not sufficient to meet the need. There is also lack capacity in the area of public (preventative) nutrition.

Section 5 discusses existing nutrition policy and strategy in the oPt. Currently, there is no policy on nutrition in the oPt. There is a national nutrition strategy document that provides a broad framework for planning but lacks some details and omits some important priority areas for nutrition. A number of new protocols related to nutrition are being developed which overlap and need integration.

1. NUTRITION PROBLEMS

1.1 Malnutrition

Malnutrition in Young Children¹

Stunting among Palestinian children below the age of 5 years appears to be on the increase. As *graph 1* illustrates, stunting has increased from 7.2 per cent in 1996 to 9.4 per cent in 2004 (Palestinian Central Bureau of Statistics 1998; Palestinian Central Bureau of Statistics 2000; Palestinian Central Bureau of Statistics 2004). This trend is based on a series of three Demographic and Health Surveys which have been carried out by the Palestinian Central Bureau of Statistics using the same methodology and sampling frame. There have been a number of other national-level population-based surveys carried out in recent years. The results from all the surveys are presented in *graphs 8* and *9*. The same increase in stunting appears to hold when all survey data are presented. *Graph 2* shows that stunting levels are increasing at a faster rate in the Gaza Strip in comparison to the West Bank.

Wasting levels have declined slightly and remain insignificant at 1.9 per cent in 2004². See *graph 1*.

Underweight in children is also relatively low standing at 4 per cent in 2004. This represents a rise since the year 2000 but is unchanged when compared to the 1996 figure. See *graph 1*.

Comparative data, using the same internationally accepted methods and national sampling frames, in neighbouring countries show that the levels of malnutrition, including stunting, are relatively low in the occupied Palestinian territory (oPt). See *graph 3*.

¹ Malnutrition which causes growth failure in children results from either inadequate macronutrient (energy and protein) intake or from micronutrient (mineral and vitamin) deficiencies and/or infections. There are three measures of growth failure in children:

Stunting is when children are too short for their age. Stunting is evidence of chronic malnutrition and develops over a long period as a result of inadequate dietary intake and/or repeated infections. It is irreversible. Stunting is defined as *height for age* less than -2 standard deviations below the mean of the reference population.

Wasting is when children are too light for their height (too thin). Wasting is evidence of acute malnutrition as a result of recent rapid weight loss or a failure to gain weight. It can be reversed when conditions improve. Wasting is defined as *weight for height* less than -2 standard deviations below the mean of the reference population.

Underweight children are too light for their age. Children may become underweight either because of wasting or stunting or both. Underweight is defined as *weight for age* less than -2 standard deviations below the mean of the reference population.

Malnutrition in children is commonly assessed through carrying out *anthropometric* surveys where body measurements are taken on a random sample of children. There are two sources of anthropometric data available in the oPt:

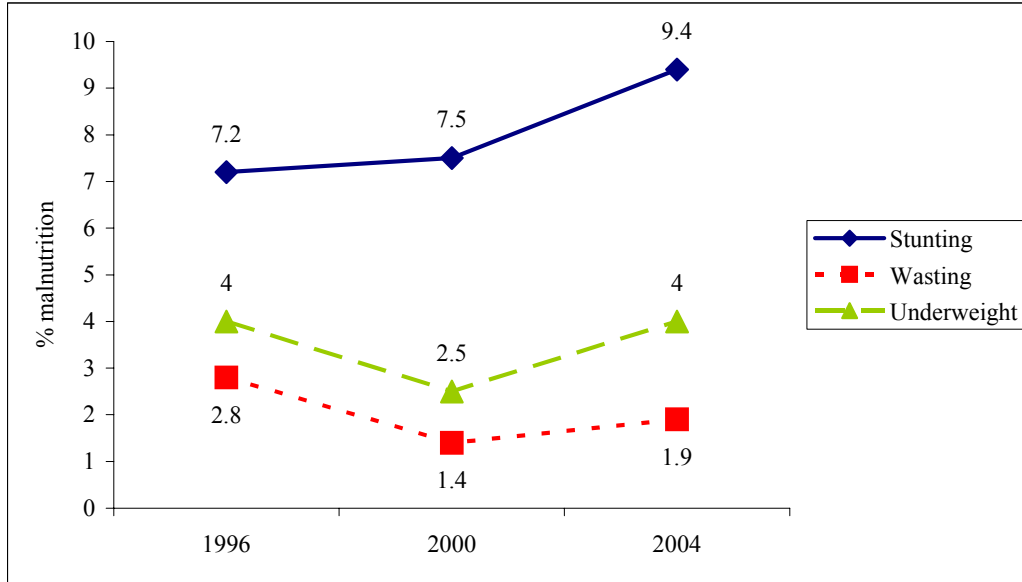
Demographic and Health Surveys carried out by the PCBS. Three household surveys have been carried out in 1996, 2000 and 2004. They provide a reliable source of information on demographic and health trends.

Nutrition Surveys carried out by different agencies using different methodologies (including sampling methods, population surveyed, staff used to carry out the measurements etc.). The results from these surveys are less easy to compare.

² 2.3 per cent of a normal population has a weight for height score that falls below -2 standard deviations of the mean.

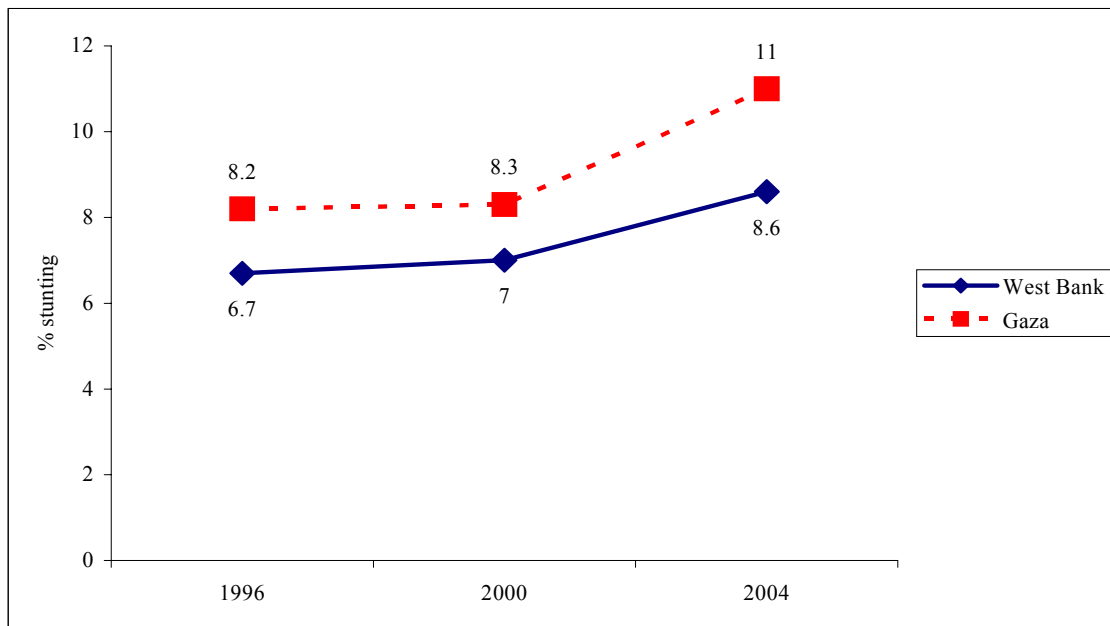
At the present time, stunting is considered at a level of low public health problem in the oPt (WHO consider that stunting <20 per cent is low mild public health problem), but if the economic and political situation deteriorates further, stunting levels are likely to increase.

Graph 1: Trends in malnutrition among under fives (PCBS surveys)



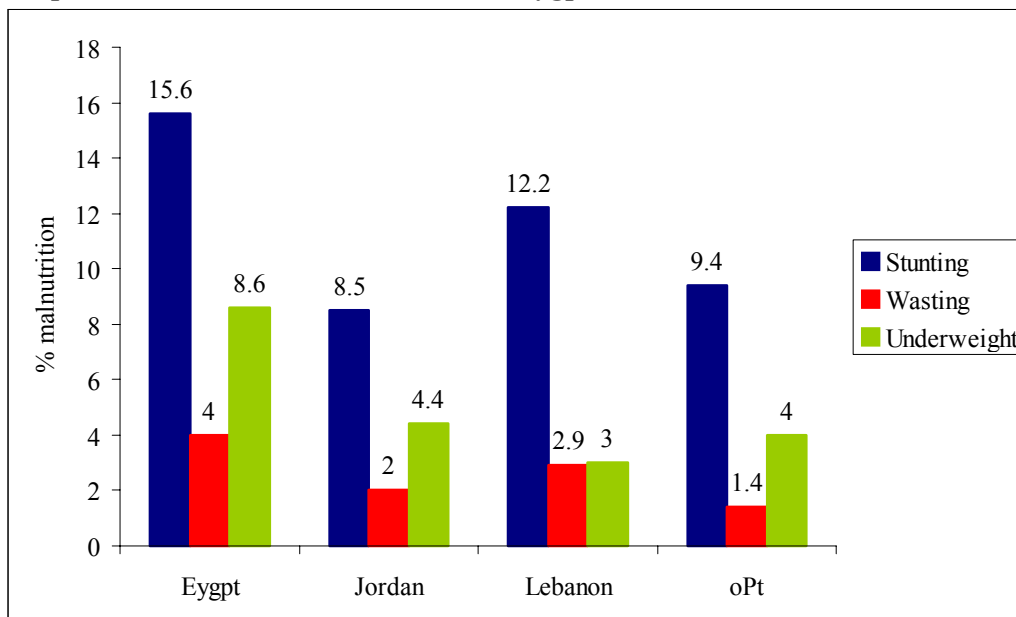
Source: (Palestinian Central Bureau of Statistics 1998; Palestinian Central Bureau of Statistics 2000; Palestinian Central Bureau of Statistics 2004)

Graph 2: Trends in stunting in under fives in West Bank and Gaza Strip (PCBS survey)



Source: (Palestinian Central Bureau of Statistics 1998; Palestinian Central Bureau of Statistics 2000; Palestinian Central Bureau of Statistics 2004)

Graph 3: Malnutrition in under fives in Egypt, Jordan, the Lebanon and oPt



Source: WHO Global Database on Child Growth and Malnutrition

Who is most vulnerable to stunting?

Stunting is strongly related to poverty in the oPt.

- Children in households with wage earners working less than 20 hours per week are statistically more likely to be both wasted and stunted than those in households that are employed (Al Quds University *et al.* 2004).
- Children living in crowded households are more likely to be stunted (Palestinian Central Bureau of Statistics *et al.* 2003).
- Children of mothers with no education are more likely to be stunted (Palestinian Central Bureau of Statistics 2000).

Refugee children were found to be statistically more stunted than non-refugee children in 2003 in both the West Bank (12.4 per cent compared to 9.4 per cent) and the Gaza Strip (13.2 per cent compared to 10.6 per cent) (Al Quds University *et al.* 2004). This is probably related to higher levels of poverty and overcrowded conditions among refugee families. Rates of stunting are higher in the Gaza Strip (11.0 per cent) compared to the West Bank (8.6 per cent) (Palestinian Central Bureau of Statistics 2004). This is related to the higher percentage of refugees living in the Gaza Strip (65.5 per cent) compared to the West Bank (29.4 per cent)

Children are more likely to be stunted from rural areas, probably due to greater poverty in the rural areas plus greater difficulties in accessing markets (Palestinian Central Bureau of Statistics *et al.* 2003).

Stunting is largely irreversible beyond the second to third year of a child's life³ and a number of adverse outcomes are associated with stunting including increased morbidity and mortality.

³ There is some evidence that children can catch-up in terms of growth if their environment improves (Frongillo 1999).

Stunted girls become short women who are at greater risk of complications during pregnancy and birth. Furthermore they are more likely to deliver low birth weight babies, who in turn are more likely to be stunted and so the cycle turns.

The negative outcomes associated with stunting underline the need to address the causes of stunting among the youngest children (0-3 year olds). It is also essential to ensure that women of child bearing age, especially young mothers, receive optimal nutrition in order to reduce the risk of low birth weight and break the cycle of stunting⁴.

Conclusions

- *Stunting is a problem in the oPt and appears to be increasing.*
- *Wasting is not a significant problem.*
- *Stunting is related to poverty and unemployment as a consequence of political instability.*
- *Refugee children are more likely to be stunted than non-refugee children probably as a result of higher poverty among refugees.*
- *Stunting is higher in the Gaza Strip, where there are more refugees, than in the West Bank.*
- *Stunting is higher in rural areas compared to urban areas.*

Malnutrition in School-aged Children

Table 1: Distribution of children attending schools by type

	% of school-aged children		
	Gaza Strip	West Bank	Total
Government	216,566 (52.1%)	489,621 (81.3%)	706,187 (69.4%)
UNRWA	191,675 (46.2%)	59,909 (10.0%)	251,584 (24.7%)
Private	7,161 (1.7%)	52,411 (8.7%)	59,672 (5.9%)
Total	415,502 (100%)	601,941 (100%)	1,017,443 (100%)

Source: Ministry of Education and Higher Education. Statistics About General Education in Palestine 2004-2005.

Data is only available on the nutritional status of school children attending government schools. Malnutrition is assessed through the Ministry of Health (MoH) school health programme, which measures the weights and heights of first elementary grade students aged 6-7 years of age. NCHS growth charts are used as the reference standards. Before 2003, percentile scores were used to categorise malnutrition. In 2003, Z scores (standard deviations – SD) were introduced in place of percentile scores.

The MoH school health annual report of 1996 showed that 1.6 per cent of school children in first grade were wasted (< -2 SD weight for height), while 2.1 per cent were stunted (< -2 SD height for age). Only 1.1 per cent were categorised as obese (> +3 SD weight for height). In 2003-2004, levels of wasting and stunting were 2.5 per cent and 2.4 per cent respectively⁵.

⁴ This is commonly known as the ‘life cycle approach’ to nutrition.

⁵ This apparent increase in prevalence may have been partly to the change from using percentiles in 1996 to Z scores in 2003.

These levels of wasting and stunting are insignificant⁶ and suggest that undernutrition among school children is not a problem.

There is no information available on the nutritional status of adolescents or children from school grades other than first grade. This area requires further research.

Eating habits of school children

School meals are not routinely provided in schools. Many schools have school canteens, however, that are largely run by private businesses who allocate part of their profit to the Ministry of Education. A study was conducted by the School Health Unit of the MoH in the West Bank on foods sold at school canteens. More than 70 per cent of the products sold in the canteens were foods with poor nutritional value such as 'bamba' (cheese puffs), sweets and chips. This sets an unhealthy pattern of behaviour and attitude toward the consumption of food on the school premises and may lead to nutritional problems such as obesity and micronutrient deficiency.

Members of the West Bank School Health Unit report that many children in oPt do not receive breakfast before arriving in school. There is very strong evidence that hungry children do not concentrate well which may ultimately have a damaging effect on their educational achievement (Partnership for Child Development *et al.* 2002).

Conclusions

- *There is limited information on the nutritional status and dietary habits of school children.*
- *It appears that food sold at some school canteens is of low nutritional value and that regulations on the quality of food sold to students are not enforced.*

Malnutrition in Adults and the Elderly

There is no information readily available on malnutrition in adults or the elderly in the oPt. A survey carried out in 2002 measured non-pregnant women aged between 15 and 49 years. Only 1.7 per cent of the women were found to be underweight (Body Mass Index BMI<18.5) and there was little difference between Gaza (2.1 per cent) and the West Bank (1.6 per cent) (Al Quds University and Johns Hopkins University 2002). The same survey found high levels of obesity, however.

The elderly are metabolically vulnerable to malnutrition and can also suffer particularly in situations of crisis and conflict. Monitoring the nutritional status of the elderly is therefore important.

Low Birth Weight

Low birth weight (an indicator of maternal undernutrition) is not routinely reported in MoH annual reports though it was reported that of 2,257 births in the Gaza Strip during 2003, 5.3 per cent were low birth weight (<2,500 grams) (Ministry of Health 2004). UNRWA reports

⁶ 2.3 per cent of a normal population has a score that falls below – 2 standard deviations of the mean.

that among women who attend their clinics, 9.4 per cent had a low birth weight baby in the last quarter of 2003, compared to 7.8 per cent in the second quarter of 2004.

The DHS survey of 2000 found a similar level of low birth weight (8.6 per cent) (Palestinian Central Bureau of Statistics 2000). Mothers with no education were more likely to give birth to low birth weight babies (11.1 per cent) than mothers with some education. This is probably due to the fact that mothers with no education tend to have babies earlier, close together and are poorer. The DHS survey of 2002 found that low birth weight had risen to 12.2 per cent (Palestinian Central Bureau of Statistics *et al.* 2003). The rate was higher among girls (15.2 per cent) than boys (9.4 per cent).

Whilst there is limited information available on the causes of low birth weight, it may not be only related to maternal undernutrition but due to a number of factors including the young age of mothers, multi-parity, poverty and maternal anaemia.

Conclusions

- *The limited information available suggests that adult undernutrition is not a problem.*
- *The elderly are vulnerable to malnutrition particularly in situations of crisis and conflict.*
- *The reasons for low birth weight are unclear and are probably multi-causal.*

1.2 Micronutrient deficiencies

Anaemia

Children

Iron deficiency anaemia is reported by the MOH to affect nearly half of children under five years of age in the oPt. Children attending government clinics are routinely screened for haemoglobin (Hb) level at 9 months of age at the time of their measles vaccination. Of 53,662 children tested in 2003, 40.5 per cent were anaemic (Hb<11g/dl). The rate was higher in Gaza (46.5 per cent) than the West Bank (37.2 per cent) (Ministry of Health 2004). In UNRWA clinics, the rate of anaemia was recorded as 58.3 per cent among refugee children aged 6-36 months in 2003 (Ministry of Health 2004).

Recent population surveys have found slightly different levels of anaemia in children and the most recent survey suggests that anaemia levels may be dropping (The MARAM Project 2004). *See table 2.* Nevertheless all the surveys found levels in excess of 30 per cent (with the exception of the West Bank in 2004), confirming that anaemia remains a serious public health problem among young children in the oPt. The prevalence of anaemia in other countries in the region is also high, but the oPt appears to have the highest levels. *Graph 4* illustrates anaemia levels in other countries in the region using the most reliable and recent national survey data available.

Some surveys have found evidence that anaemia is higher among refugee children and the poor (Al Quds University and Johns Hopkins University 2002; Palestinian Central Bureau of Statistics *et al.* 2003). Others found no association (The MARAM Project 2004). Two studies found that anaemia declined with age (Al Quds University and Johns Hopkins University 2002; The MARAM Project 2004) suggesting that efforts to address anaemia should concentrate on the age group 12-36 months.

Anaemia is related to stunting and a study carried out over 10 years ago found reductions in stunting in the Gaza Strip due partly to the iron supplementation programme and subsequent reduction in anaemia levels (Tulchinsky *et al.* 1994).

Anaemia has associations with type of dwelling, crowding, economic status of the family, source of drinking water, type of sewage and toilet facilities, and household garden and livestock ownership. (Palestinian Central Bureau of Statistics *et al.* 2003).

A study carried out more than 10 years ago in the Gaza strip (Tulchinsky *et al.* 1994) found significant associations between anaemia and the following factors:

- Socio-economic status
 - family size
 - maternal education
 - paternal occupation
- Sanitation:
 - water supply
 - sewerage system
- Maternal health:
 - maternal Hb level
 - number of pregnancies
- Child feeding:
 - consumption of juice, fruit, vegetables
 - tea consumption
- Child health:
 - intestinal parasite infection

A more recent study (Al Quds University and Johns Hopkins University 2002) found no correlation between anaemia and:

- Multi vitamin supplementation
- Use of non-breast milk
- Age of introduction of other milk
- Low intake of liver, meat, eggs and fish
- High intake of sweets, legumes, green leafy vegetables, or other vegetables and fruits
- Tea drinking

Anaemia is a complex condition that probably cannot be explained by a single risk factor but results from interactions between a group of risk factors.

Table 2: Recent surveys of anaemia in children 12-59 months

Date	Sample size	% Anaemic < 11gm/dl		
		West Bank	Gaza	Total
2002 ¹	3,257	33.5	38.7	37.9
2002 ²	936	43.8	44.0	43.9
2004 ³	1,106	17.4	31.2	23.0
2004 ⁴	2,240	34.5 (refugees)		

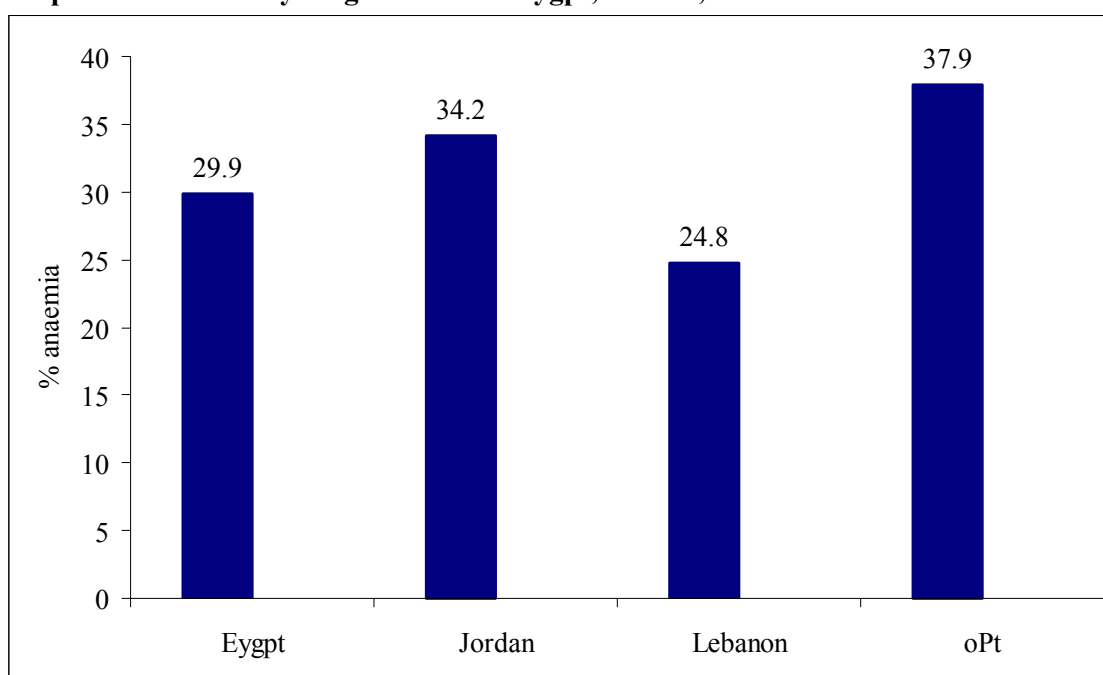
Sources: ¹(Palestinian Central Bureau of Statistics *et al.* 2003)

²(Al Quds University and Johns Hopkins University 2002)

³(The MARAM Project 2004)

³(UNRWA 2004)

Graph 4: Anaemia in young children in Egypt, Jordan, the Lebanon and oPt



Sources: *(Department of Statistics 2003; El Zanaty and Way 2001; Hwalla and Adra 1998; Palestinian Central Bureau of Statistics 2003)

Women

In the Gaza Strip, iron deficiency anaemia (Hb<11g/dl) among pregnant women who attended government MCH clinics in 2003 was reported to be 20.9 per cent. Among pregnant women attending UNRWA antenatal clinics, it was 38.3 per cent (Ministry of Health 2004). As *graph 5* illustrates, anaemia among women in the oPt is around average for the region.

Anaemia has been shown to increase with age. Women aged 40-49 are four times more likely to suffer from anaemia than adolescent women (Al Quds University and Johns Hopkins University 2002). This is probably related to childbirth and close birth spacing. In one study it was found that a middle child born within 18 months of an older and a younger sibling was significantly more likely to be anaemic (Palestinian Central Bureau of Statistics *et al.* 2003). Anaemia was also found to increase with number of pregnancies, reaching 48 per cent in women with 11 or more pregnancies. However, the percentage of women aged 15-49 years taking iron was only 7.1 per cent (Palestinian Central Bureau of Statistics *et al.* 2003).

Table 3: Recent surveys of anaemia in women

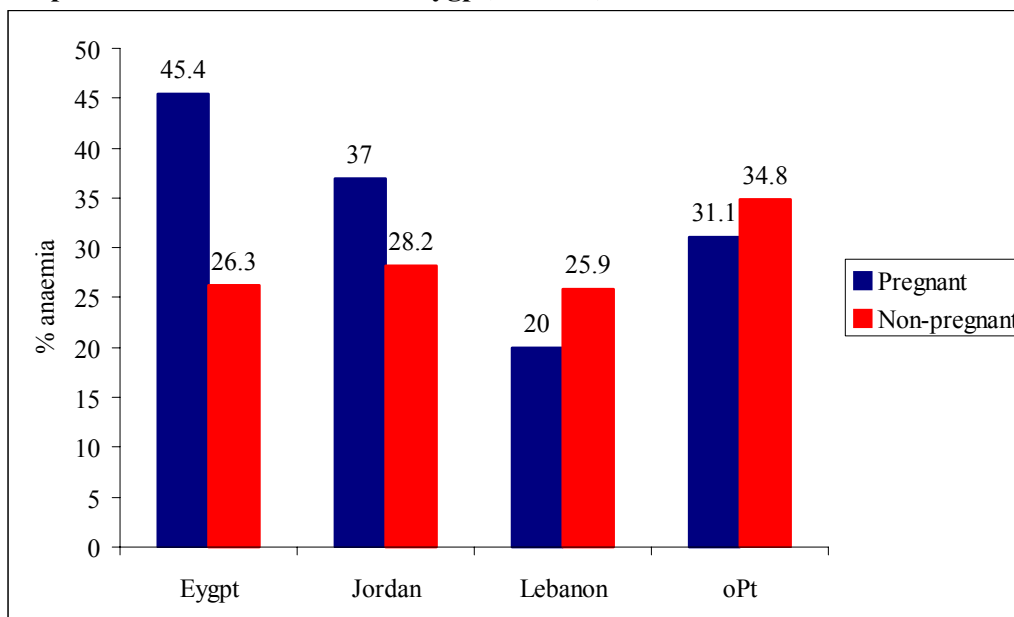
Date	Sam ple size	% Anaemic				
		Pregnant <11 mg/dl	Non-pregnant <12 mg/dl	West Bank	Gaza	Total
2002 ¹	3,257	Pregnant				31.1
		Non-pregnant	32.8	38.5		34.8
2002 ²	1,534	Non-pregnant	43.9	52.8		47.0
2004 ³ West Bank Refugees	801	Pregnant	29.5			
	680	Lactating	23.0			

Sources: ¹(Palestinian Central Bureau of Statistics *et al.* 2003)

²(Al Quds University and Johns Hopkins University 2002)

³(UNRWA 2004)

Graph 5: Anaemia in women in Egypt, Jordan, the Lebanon and oPt



Sources: *(Department of Statistics 2003; El Zanaty and Way 2001; Hwalla and Adra 1998; Palestinian Central Bureau of Statistics *et al.* 2003)

Anaemia continues to be a major public health problem in the oPt (WHO consider that anaemia above 40 per cent in women and young children is a severe and between 20-39.9 per cent as moderate public health problem), despite the fact that the MOH has protocols on the management of iron deficiency anaemia and provides iron supplements free of charge to women and young children.

Anaemia has widespread effects both in the short- and long-term. An individual who is anaemic may be pale and suffer from breathlessness, fatigue and be less able to carry out physical work. Among school-age children who suffer from iron-deficiency anemia, it has been shown to reduce cognitive abilities.

Conclusions

- *Anaemia is a public health problem in the oPt, affecting one third of children and women.*
- *The reasons for anaemia are multi-causal*
- *There is a lack of clarity as to changing trends in the prevalence of anaemia (increasing, decreasing or static).*

Vitamin A Deficiency

Clinical signs of vitamin A deficiency (night blindness and xerophthalmia) are not reported in the oPt. A recent and only survey on sub-clinical vitamin A deficiency found that 22 per cent of children aged 12-59 months had serum retinol levels <200ug/l (The MARAM Project 2004). According to WHO, a level \Rightarrow 20 per cent constitutes a severe public health problem. Over half of all the remaining children (53.9 per cent) were on the borderline of being vitamin A deficient. This means that a total of 75.9 per cent of Palestinian children are showing signs of being, or becoming vitamin A deficient.

The results showed a significant difference between the prevalence of vitamin A deficiency in the West Bank (18.9 per cent) compared to the Gaza Strip (26.5 per cent), but no difference with respect to gender, age groups or refugee status.

The results of this survey must be treated with some caution, however. Infection depresses retinol levels and therefore falsely increases the apparent prevalence of vitamin A deficiency. Low retinol values were only found in 8.9 per cent of children without signs of infection in the West Bank and 15.6 per cent of children with no infections in the Gaza Strip (WHO define \leq 2 to <10 per cent as a mild public health problem and \Rightarrow 10 to <20 per cent as a moderate problem). These findings strongly suggest that a major reason for sub-clinical vitamin A deficiency is infection/inflammation rather than inadequate dietary intake of vitamin A-rich foods.

Vitamin A deficiency is not an insignificant problem in the oPt. Given the current climate of food insecurity, particular among the poorest and most vulnerable, and the level of infection in children, there needs to be continued focus on both short-term (e.g. supplementation) and long-term (e.g. dietary and health) solutions.

Severe vitamin A deficiency causes visual impairment and eventually blindness. At sub-clinical level, it is a significant contributor to increased morbidity and mortality. Vitamin A deficiency also increases vulnerability to other illnesses in women and children such as iron deficiency anaemia, more frequent episodes of diarrhoea and measles, and growth failure in children.

Conclusions

- *According to one study, sub-clinical vitamin A deficiency is a serious public health problem in the oPt. This requires further investigation.*
- *The reasons for low retinol levels in young children is highly related to infections (mainly coughs and fever), and may also be related to low vitamin A intake.*

Iodine Deficiency

A study conducted by the MOH in 1997 found that of 2,535 school children aged 8-10 years, 14.9 per cent had grade 1 and 2 goitre (14.3 per cent among boys and 15.5 per cent among girls) (Al Quds University and Palestinian Ministry of Health 1997). The peak incidence was found in Jericho and south of the West Bank. Other pocket studies conducted in 2004 showed that iodine deficiency is around 15 per cent and remains a public health problem that requires attention (WHO defines a level of goitre above 5 per cent as a severe public health problem).

The latest DHS survey (Palestinian Central Bureau of Statistics 2004) found that 65.3 per cent of households consumed iodised salt (56.5 per cent in the West Bank and 82.7 per cent in Gaza) which showed an increase since the 2000 survey when only 37.4 per cent of households consumed iodised salt (47.3 per cent in the West Bank and 16.6 per cent in Gaza).

These figures suggest that iodine deficiency potentially remains a problem in the oPt. The prevalence of goitre increases with age and reaches a peak during adolescence. Goitre tends to affect girls more than boys. Iodine deficiency can cause cretinism (severe physical and mental disability) in children born of mothers who were iodine deficient in the first trimester of pregnancy. It is also associated with stillbirths, low birth weight, and with mild cognitive and motor deficits in school-age children.

Conclusions

- *Iodine deficiency potentially remains a problem in the oPt.*

Rickets

Whilst rickets is rarely reported in the West Bank, it is widely reported in the Gaza Strip. In 2003, the number of reported new cases of rickets was 444 compared to 308 new cases in 2002 in MoH clinics (Ministry of Health 2004). In UNRWA clinics, 370 new cases of rickets were reported in 2001, 261 in 2002 and 376 in 2003. These figures suggest that rickets may be a widespread problem in the Gaza Strip.

The prevalence of rickets in both the Gaza Strip and the West Bank requires greater scrutiny. It may be that rickets is being over-reported in the Gaza Strip due to misdiagnosis. Alternatively, it may be being under-reported in the West Bank. An in-depth investigation of the problem is clearly warranted.

Rickets is endemic in the Middle East. Lack of exposure to the sun in combination with a diet low in pre-formed vitamin D and high in phytic acid (e.g. bread) can cause rickets. Populations living in desert areas where atmospheric dust acts as a filter for ultra-violet light

are susceptible, particularly when people stay inside to avoid the heat of the day and wear extensive clothing.

Conclusions

- *In the Gaza Strip, rickets appears to be a problem.*
- *It is unclear whether rickets is being over-reported in the Gaza Strip or under-reported in the West Bank, and an immediate in-depth investigation of the problem is warranted.*

1.3 Chronic diseases

Obesity

There is limited information on obesity in the oPt. Three recent surveys have found alarmingly high levels of obesity (defined as BMI ≥ 30), however. *See table 4.*

The first survey measured a random sample of mothers of under five children from both the Gaza Strip and West Bank as part of a population-based survey (Al Quds University and Johns Hopkins University 2002). The second survey was carried out in rural and urban communities of the West Bank only and included adults aged 30-65 years (Abdul-Rahim *et al.* 2003). This survey found that obesity was associated with older age and residence in urban areas. The third survey was carried out among women aged 40-65 years in Palestinian refugee camps in the West Bank and found a prevalence of obesity in this group of 70 per cent (Rizkallah 2005). Though there is no information available on trends in obesity, it is possible that obesity is on the increase especially among older adults.

Table 4: Obesity among adults in the oPt

	Sample sized		% obese (BMI ≥ 30)		
			Rural	Urban	Total
2002 ¹ (Women)	1,534	Gaza Strip			11.9
		West Bank			10.9
2003 ²	988	Women	36.8	49.1	
		Men	18.1	30.6	
		Total	28.2	41.5	
2005 ³ (Women)	550	West Bank			70

Source: ¹(Al Quds University and Johns Hopkins University 2002)

²(Abdul-Rahim *et al.* 2003)

³(Rizkallah 2005)

One reason commonly given for obesity is the increasingly poor ‘quality’ of the diet. The suggestion is that adults are eating a greater quantity of cheaper starchy foods in place of fresh vegetables and meat. There is some evidence to support this view (*see below*). Evidence from a survey of refugee women in the West Bank found a strong association with parity (Rizkallah 2005).

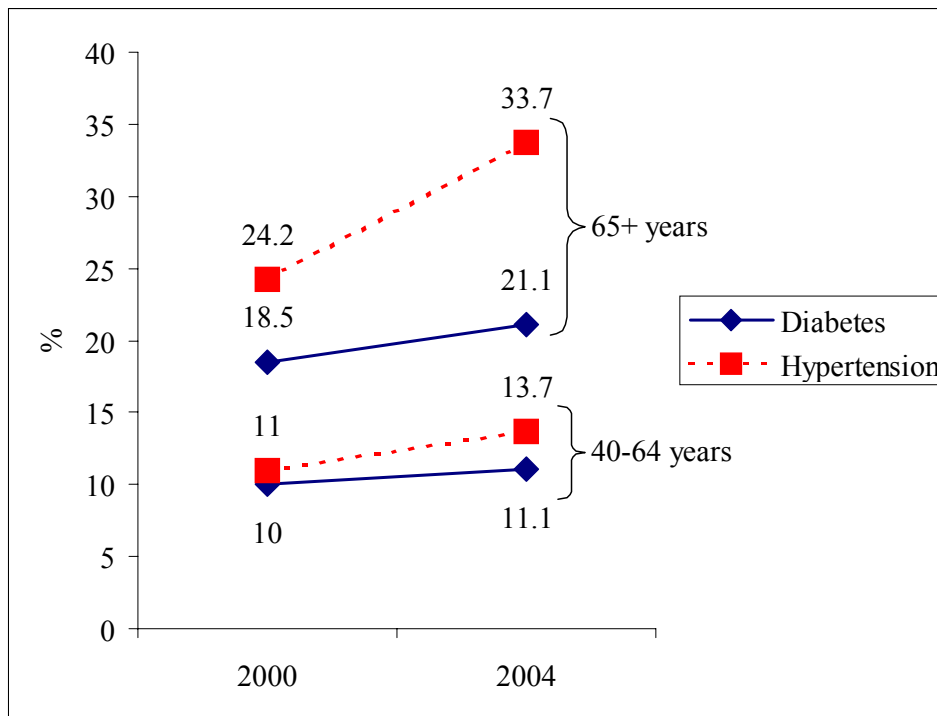
Clearly better nutritional surveillance of adults would help to clarify whether obesity is on the increase, at what rate and the role played by dietary changes.

Dietary-related Chronic Diseases

Obesity is related to a number of dietary-related chronic diseases such as diabetes, hypertension and cardiovascular disease. For example, over half (58.3 per cent) of diabetic patients attending the central diabetic clinic in Gaza City in 2003 were obese (BMI=>30) (Ministry of Health 2004).

There is evidence that dietary-related chronic diseases are on the increase. See *graph 5*. Cardiovascular disease is also on the increase doubling from 7 to 15.8 per cent in Palestinians aged 65 and above between 2000 and 2004.

Graph 6: Trends in diabetes and hypertension



Source: (Palestinian Central Bureau of Statistics 2000; Palestinian Central Bureau of Statistics 2004)

A survey conducted in a typical rural village in the West Bank in 2000 found a similar prevalence rate for diabetes as reported above (Husseini *et al.* 2000). Type 2 diabetes mellitus was found to be closely associated with waist-to-hip ratio illustrating how central obesity can precipitate the onset of diabetes. The author concluded that the high prevalence of diabetes constituted a major public health problem in the oPt. Another study conducted among women aged 40-65 years in refugee camps in the West Bank found the prevalence of diabetes to be 21.9 per cent (Rizkallah 2005).

The oPt is currently going through an epidemiological transition. Life expectancy is increasing whilst infant mortality rates and communicable disease incidence are decreasing. At the same time, the traditional diet of Palestinians is changing towards higher consumption of more refined foods, sugar etc. and non-communicable diseases are increasing. Thus the oPt

faces problems linked with both communicable and non-communicable diseases at the same time.

Conclusions

- *It is possible that obesity is increasing in the general population of the oPt.*
- *From limited information, it appears that around one third of adults are currently obese.*
- *Dietary related chronic diseases are a significant and growing problem among older adults in the oPt.*
- *Obesity and dietary-related chronic diseases present a major challenge in nutrition in the oPt.*

1.4 Impact of the current ‘intifada’ on nutrition

Impact on Food Security and Coping Strategies

Since the start of the ‘intifada’ in 2000, the Palestinian people have had to face increasing poverty, unemployment and hardship. This has had a serious impact on household food security with households finding it more and more difficult to access food. WFP report that social safety nets and coping strategies employed by Palestinians are stretched to their limits (World Food Programme 2004). One survey found that two thirds (63.8 per cent) of households found difficulty in obtaining food during the ‘intifada’ (Palestinian Central Bureau of Statistics *et al.* 2003).

- Palestinians have had to employ various coping strategies in order to access food. *See table 5.*

Table 5: Coping strategies employed to maintain access to food in 2003

Food-related strategies	% households		Other strategies	% households
	West Bank	Gaza		West Bank and Gaza
Purchase food on credit	20.4	50.5	Decrease Eid giving	57.2
Decrease amount of food for consumption	20.0	32.5	Fail to pay or pay less utility bills	62.5
Rely on less preferred or cheaper foods	15.1	41.0	Buy less or buy cheaper children’s clothes	57.9
Adult consumption restricted	8.0	11.7	Reduce rent payments	33.0
Reduce no. of meals per day	7.6	11.9	Decrease payment for medicines	26.9
Borrow food	3.9	7.2	Sell non-productive assets	27.0

Source: (Al Quds University *et al.* 2004)

Whilst Palestinians are clearly having to rely on alternative sources of food, coping strategies that are traditionally adopted in developing countries during periods of extreme hardship have

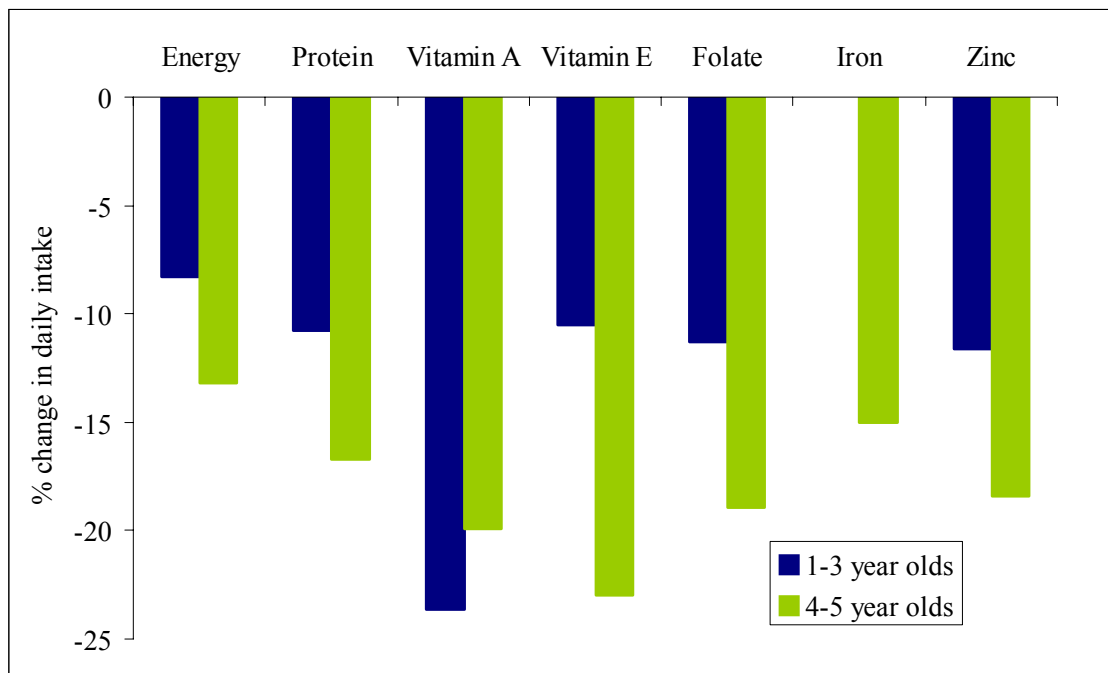
not been reported frequently. For example, a survey in 2003 found little evidence of households employing the following strategies:

- Growing food at home
- Killing farm animals for food
- Gathering wild foods
- Migration of household members
- Missing meals for an entire day
- Selling food rations (Al Quds University *et al.* 2004)

Impact on Dietary Intake

There is some indication that dietary intake has deteriorated both in terms of quantity and quality as a result of the ‘*intifada*’. Two surveys have collected data on the food intake of young children through 24 hour recall (Al Quds University *et al.* 2004; Al Quds University and Johns Hopkins University 2002). This type of data is notoriously difficult to collect⁷. Nevertheless the surveys provide some indication of change over time. The results suggest a drop in intake of all nutrients between 2002 and 2003. See graph 7. A further survey in 2002 also found that more than half (64.7 per cent) of households reduced the quality of their food during the ‘*intifada*’.

Graph 7: Percentage change in daily nutrient intake between 2002 and 2003



Source: (Al Quds University *et al.* 2004)

⁷ Twenty four hour recall methods are of limited value in determining accurate estimates of nutrient intake or ‘habitual’ intake. Errors in nutrient intakes estimated through 24 hour recall in comparison to observed intakes range from four to 400 per cent while greater variation in daily food intake has been noted than in weekly intake (Acheson *et al.* 1980; Bingham 1991; Bingham *et al.* 1994). Despite these constraints, a 24 hour recall of foods has the potential to provide some information on gross dietary changes and may be an appropriate method for monitoring change over time.

More recent information suggests that dietary intake may have improved for the economically better-off in the latter part of 2003 and first months of 2004 (Bocco *et al.* 2004). A survey of public perceptions found that 23 per cent of respondents reported that their consumption of dairy products had increased while 11 per cent reported that their consumption of meat had increased. Nevertheless, a greater proportion of respondents still reported that their dairy (36 per cent) and meat (49 per cent) consumption had dropped.

The same survey found that a higher percentage of respondents from areas in the West Bank crossed by the separation Wall reported decreased consumption of dairy (46 per cent) and meat (64 per cent) products underlining the impact of the Wall on dietary habits.

Impact on Access to Health

The decline in food security has been mirrored by a decline in access to health. In 2002, difficulties in obtaining health care was found to be more severe in the West Bank (41.6 per cent) compared to the Gaza Strip (32.2 per cent) due to its larger rural area which has been more affected by siege conditions (Palestinian Central Bureau of Statistics *et al.* 2003). However, more households in Gaza had difficulties in paying for health than in the West Bank (Palestinian Central Bureau of Statistics *et al.* 2003).

In the latter part of 2003 and first months of 2004, 7 per cent of Palestinians reported that they had been denied medical care while 17 per cent reported a delay in medical services (Bocco *et al.* 2004). Respondents in the West Bank faced the most restrictions, delays or denials of medical care.

Impact on Child Malnutrition

In light of the deterioration in food security and access to health services, there is concern about the impact of the '*intifada*' on the nutritional status of the population.

Table 6 presents data from all population-based surveys, including the PCBS surveys, which have been carried out since 1995 in the Gaza Strip and West Bank. More surveys have been carried out since the year 2000 when the '*intifada*' began and greater attention has been focused on nutrition. The data are presented graphically for the Gaza Strip (*graph 8*) and the West Bank (*graph 9*).

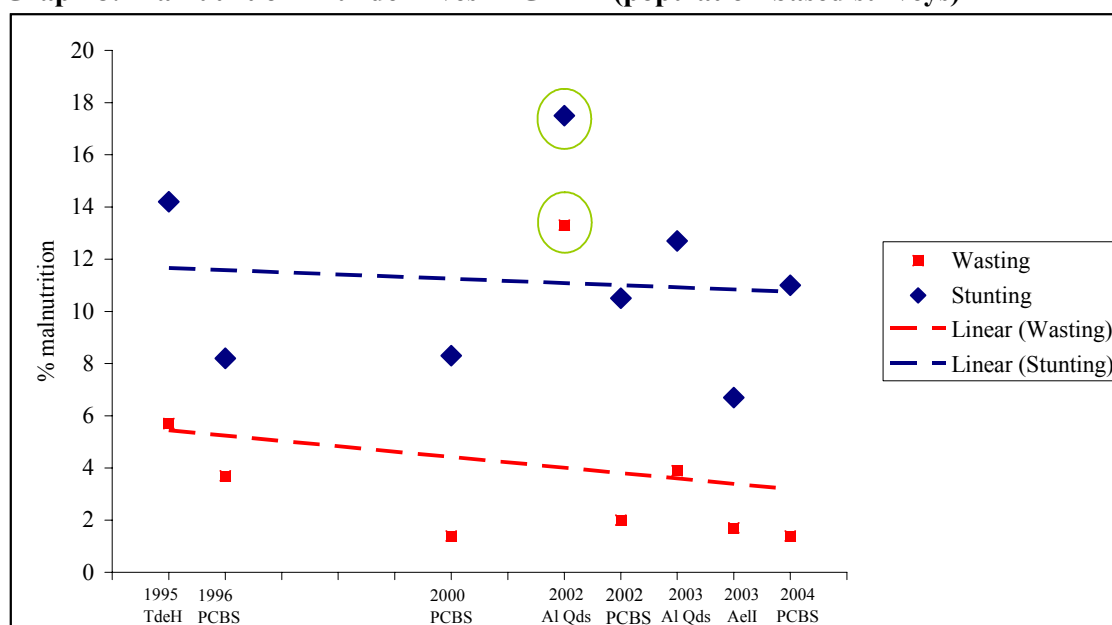
The trend lines in *graph 8* for the Gaza Strip show that both stunting and wasting levels have remained largely static throughout the '*intifada*' at around 12 per cent for stunting and less than 4 per cent wasting. There is even a suggestion of a slight decline over time. There are two unusual findings, however, from one survey carried out in 2002 which found a prevalence of wasting of 13.3 per cent and a stunting level of 17.5 per cent (Al Quds University and Johns Hopkins University 2002). These results have been circled in *graph 8* as they appear at odds with all other findings.

Table 6: Malnutrition in under fives (population-based surveys)

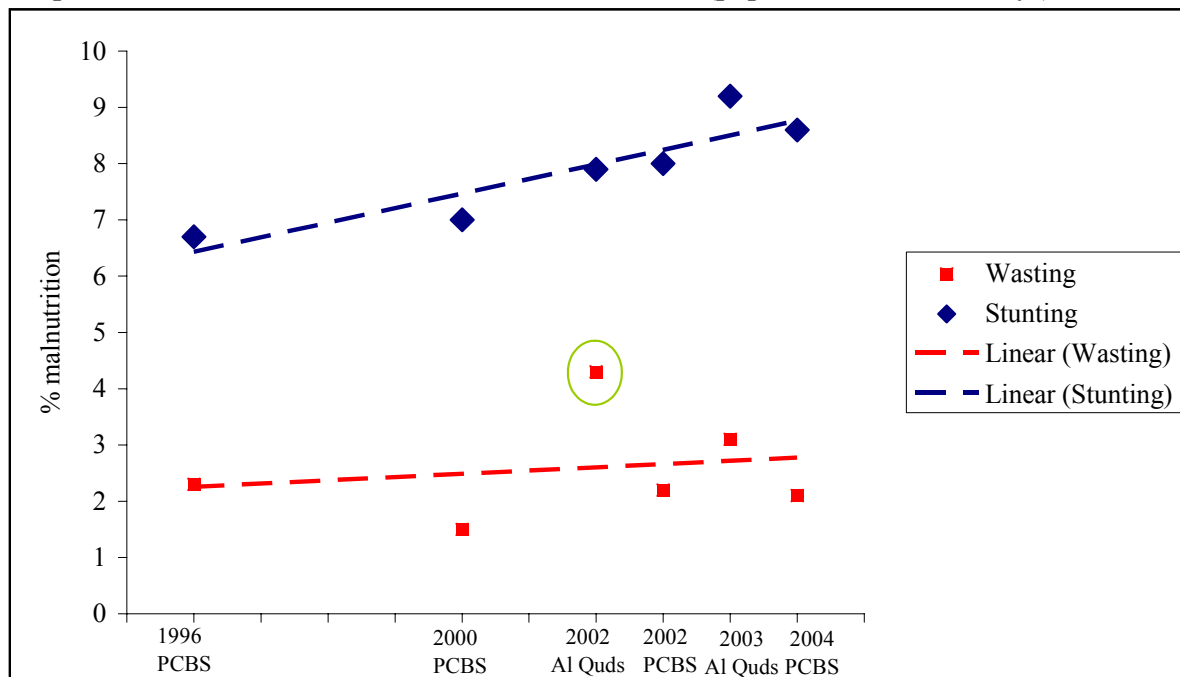
Date	Sample size		% Wasting < -2 SD	% Stunting < -2 SD	% Underweight < -2 SD
1995 ¹	1,500	Gaza	5.7	14.2	15.1
1996 ²		West Bank	2.3	6.7	
		Gaza	3.7	8.2	
		Total	2.8	7.2	4.0
2000 ³		West Bank	1.5	7.0	2.6
		Gaza	1.4	8.3	2.4
		Total	1.4	7.5	2.5
2002 ⁴	936	West Bank	4.3	7.9	7.8
		Gaza	13.3	17.5	11.7
		Total	7.8	11.7	43.9
2002 ⁵		West Bank	2.9	8.0	4.0
		Gaza	2.0	10.5	2.6
		Total	2.5	9.0	3.5
2003 ⁶	3,089	West Bank	3.1	9.2	
		Gaza	3.9	12.7	
		Total	3.4	10.7	
2003 ⁷	1,225	Gaza	1.7	6.7	5.2
2004 ⁸	4,824	West Bank	2.1	8.6	4.0
		Gaza	1.4	11.0	4.0
		Total	1.9	9.4	4.0

Sources: ¹(Kumar 1995)²(Palestinian Central Bureau of Statistics 1998)³(Palestinian Central Bureau of Statistics 2000)⁴(Al Quds University and Johns Hopkins University 2002)⁵(Palestinian Central Bureau of Statistics *et al.* 2003)⁶(Al Quds University *et al.* 2004)⁷(Ard El Insan and Accion contra el Hambre 2003)⁸(Palestinian Central Bureau of Statistics 2004)

Graph 8: Malnutrition in under fives in GAZA (population-based surveys)



Graph 9: Malnutrition in under fives in WEST BANK (population-based surveys)



The survey data for the West Bank show a relatively static trend in wasting at less than 3 per cent and a slightly increasing trend for stunting rising to around 8 per cent. This increase may be the effect of the closures and separation Wall on children living in the West Bank, particularly those in rural areas. The Al Quds/John Hopkins 2002 survey found a similar stunting level to other surveys and only a slightly elevated wasting level of 4.3 per cent.

Whilst the data from the West Bank did not show a huge variation from previous surveys, the Al Quds/John Hopkins 2002 survey found that the percentage of wasting in children from Gaza was extremely high and apparently reached 21.6 per cent in non-urban Gaza. This would suggest an extremely serious nutritional crisis which is unlikely to have occurred in the absence of an epidemic or acute food security crisis and clear rise in child mortality. Although there were anecdotal reports of increased numbers of malnourished children attending nutritional clinics, there is no evidence of significantly increased child mortality during this period. Furthermore, a survey carried out some months later in Gaza did not show the same alarming figures.

Although it is impossible in hindsight to provide an accurate analysis of the apparent nutritional crisis in Gaza reported by the Al Quds/John Hopkins 2002 survey, a possible explanation for these highly unusual findings is that there may have been measurement error introducing bias. Heights and lengths are notoriously difficult to measure accurately, and it is possible that errors did occur. This would have led to an exaggeration in the level of wasting. However, this would not explain the reported high levels of stunting which would be expected to be lower if heights and lengths were being systematically overestimated.

In the case of an extremely unusual result such as the findings from this survey, it would be appropriate to double check the exact measurements of the group of children in Gaza (particularly those in non-urban Gaza) who appeared to be moderately and severely wasted.

Clearly this is not always practically possible but is essential in order to ensure accurate information.

The Al Quds/Johns Hopkins 2002 survey triggered “*an aggressive food assistance response from the humanitarian community*” (Al Quds University *et al.* 2004). Whilst food assistance may not directly address the nutritional problems in the oPt, the survey has focused attention on the issue of nutrition and has provided an opportunity to seek long-term solutions to the chronic nutritional problems in existence.

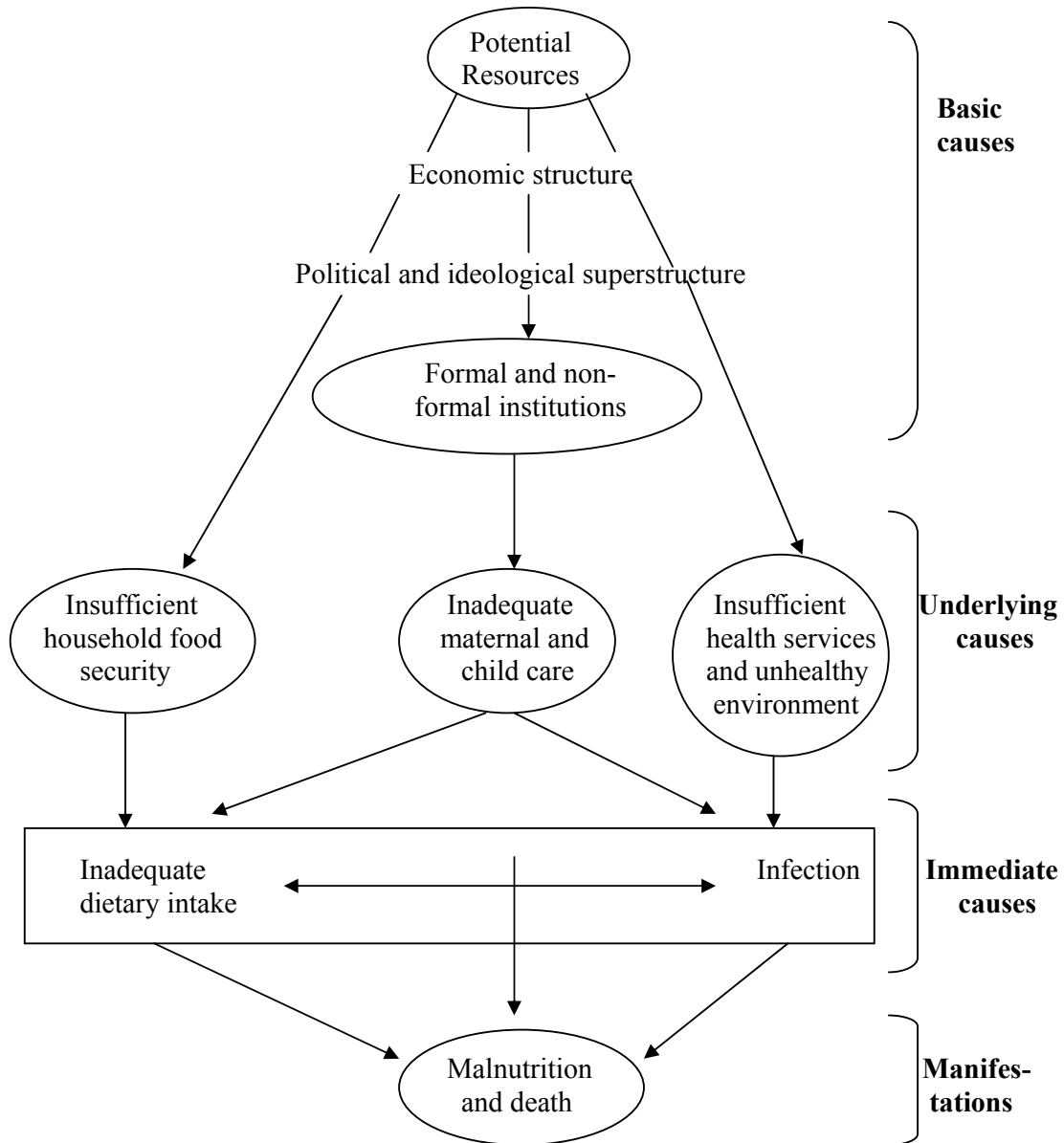
Conclusions

- *With the exception of one study, there is no evidence that the ‘intifada’ has dramatically influenced rates of malnutrition in children.*
- *There is some indication that stunting rates are increasing.*
- *There are reports that Palestinians have had to alter their diets towards cheaper, lower quality foods but the impact of this is not clear.*

2. CAUSES OF NUTRITION PROBLEMS

Figure 1 represents a framework that is commonly used to understand the immediate, underlying and basic causes of malnutrition. This section examines the causes of nutritional problems in the oPt using the conceptual framework for malnutrition.

Figure 1: Conceptual framework for malnutrition



Source: UNICEF conceptual framework for malnutrition

2.1 Immediate causes

Inadequate Dietary Intake

Adequate nutrient intake (of both macro and micronutrients) is essential to ensure good growth in children. Stunting will occur if macro and micronutrient intakes are lacking. Deficiencies in specific micronutrients also have a range of adverse effects.

There is limited data available on dietary intake. This is partly because of the difficulty, high cost and inaccuracy related to collecting dietary intake information. Dietary intake was estimated in two surveys in 2002 and 2003 (Al Quds University *et al.* 2004; Al Quds University and Johns Hopkins University 2002). These surveys suggested that very high percentages of children aged 6 to 59 months were taking in less than the Recommended Dietary Allowance for energy, protein, vitamin A and E, iron, folate and zinc. The studies also showed that nutrient intakes between 2002 and 2003 had declined, yet rates of wasting and stunting had improved. These findings appear contradictory.

There are some indications that poor nutrient status in mothers may be adversely affecting the nutrient status of infants. Mothers who are anaemic and have low vitamin A and D status may give birth to babies who have low micronutrient status. The breast milk of these mothers will also be lacking in nutrients. This may help to explain why anaemia is high in very young children who are dependent on breast milk but gradually decreases with age as the child's own iron intake through food increases.

Excess dietary intake causes obesity. A survey conducted in urban and rural areas of one West Bank community in 2003 found the mean energy consumption from 25 selected food items was 3,310 kcal per day in the rural area and 3,474 kcal per day in the urban area (Abdul-Rahim *et al.* 2003). This level of energy intake is extremely high especially for urban populations whose energy expenditure is generally light.

The lack of information and contradictory nature of the existing data on dietary intake makes it difficult to ascertain with any accuracy whether actual intakes are adequate in quantity and quality in the oPt. It is likely that whilst some portions of the population have inadequate intakes, other portions have excessive intakes.

Infection

There is a strong interaction between child malnutrition and infectious diseases. Repeated infections will cause stunting and there are recognised interactions between some micronutrients and particular infections (for example measles is associated with poor vitamin A status).

The most accurate recent data on infection rates among children was obtained from a survey carried out in 2004 to assess vitamin A status (The MARAM Project 2004). Through blood analysis, this survey found that half of the sampled children from 12-59 months showed signs of recent infection. Infection levels were higher among children from the Gaza Strip compared to children in the West Bank. The most common form of infections reported were cough and fever.

Infections in Palestinian children are likely to be a major cause of both stunting and low status of micronutrients.

Conclusions

- *There is little reliable information on the adequacy of dietary intake in terms of quality and quantity, and the role intake plays in causing malnutrition.*
- *Whilst some sections of the population have inadequate intakes, other sections have excessive intakes.*
- *Infections in Palestinian children are likely to be a major cause of both stunting and low micronutrient status.*

2.2 Underlying causes

Household Food Security

Food security is concerned with people's access to food and is defined as: “...*access by all people at all times to the food needed for an active and healthy life.*” For a household this equates with ability to secure adequate food to meet the dietary needs of all members, either through their own food production or food purchases. Food production depends on a wide range of factors, including, access to available fertile land, availability of labour and appropriate seeds and tools, and climatic conditions. Factors affecting food purchases include, household income and assets, and the availability and price, of foods in local markets. Israel's restrictions on movement (closures) within and around the West Bank and the Gaza Strip, and the erection of the Wall around the West Bank which has led to confiscation of Palestinian land and house demolitions, all serve to reduce physical access to food.

In the oPt, food insecurity is partly due to reduced *availability* of food but mainly due to reduced *access*. The quantity of *available* food has been reduced as a decline in agricultural and livestock production has occurred. The West Bank has been particularly affected by less access to agricultural land due to construction of the Wall. In addition, 1,600 fisher households from the Gaza Strip were adversely affected by the closure restrictions imposed by Israel and the value of catches has declined (United Nations 2004).

Access to food in the oPt is largely determined by the market. As their incomes have declined and savings have become exhausted, Palestinian households have resorted to purchasing food through credit with shopkeepers and neighbours, foregoing payment of utilities and selling assets. At the same time there has been a rise in consumer prices of fresh foods as well as basic food commodities (United Nations 2004).

WFP report that real food consumption per capita has fallen by 25-30 per cent since the ‘*intifada*’ began, as Palestinians have reduced the number of meals consumed. Many have substituted their normal diets with cheaper staples. Others cope through receiving assistance from relatives. In some instances, Palestinians have used extreme coping mechanisms such as withdrawing children from schools (World Food Programme 2004).

A food security assessment was carried out in 2003 by FAO and WFP (Food and Agriculture Organisation and World Food Programme 2003). This assessment estimated that of approximately 1.3 million people in the oPt, 40 per cent were food insecure, and a further 31 per cent were vulnerable to food insecurity. A follow-up assessment carried out in June 2004 found that 37 per cent were food insecure and a further 27 per cent were at risk of becoming food insecure (World Food Programme 2004). Slightly fewer refugees (43 per cent) were estimated to be food insecure compared to non-refugees (57 per cent).

It is unclear exactly how food insecurity has been defined in these assessments. If food insecure families are those who are unable to meet all their dietary requirements, malnutrition levels would certainly have been expected to rise over the period of some years. This has not occurred. It is therefore concluded that food insecurity has not been defined in terms of minimum dietary requirements in food security assessments of the oPt.

Nevertheless, a large-scale food assistance programme has been launched following the 'intifada' and in February 2004, 39 per cent of the population reported that they received some form of food aid (Bocco *et al.* 2004). Only 8 per cent of families were dependent on food aid as a primary source of food however.

The high level of food insecurity in the oPt is not reflected in malnutrition rates. This reason for this is that food insecurity has not been defined in terms of minimum dietary requirements, and it is not entirely clear what definition has been used. The lack of linkage between food security and nutrition is not helped by the fact that food security assessments and nutrition surveys are carried out independently and there is no way of correlating the findings.

Conclusions

- *A high proportion of Palestinians are estimated to be food insecure.*
- *There is a lack of linkage between food security and nutrition, and assessments are carried out independently of one another.*

Health service Provision and Environment

The vast majority of Palestinians continue to have access to health services. Infant mortality rates have remained quite low over the last four years and a high level of access to key health services such as immunisation, antenatal care and safe delivery has been maintained.

Table 7: Trends in basic health statistics

	Gaza Strip			West Bank			Total		
	1996	2000	2004	1996	2000	2004	1996	2000	2004
IMR (per 1,000)	-	27.3	31.1	-	24.4	21.1	-	25.5	25.2
U5MR (per 1,000)	-	31.2	35.6	-	27.2	24.6	-	28.7	29.1
TFR (births)	-	6.8	6.6	-	5.5	5.2	-	5.9	5.6
Children (18-59 months) fully immunised	-	65.7	68.1	-	72.1	83.1	-	69.9	77.8

Source: DHS, Palestinian Central Bureau of Statistics 2004

Nevertheless, access to health services has been reduced during the *'intifada'*. A worrying trend is the increase in infant mortality rate in the Gaza Strip.

Table 8: Trends in access to health care

	Gaza Strip			West Bank			Total		
	1996	2000	2004	1996	2000	2004	1996	2000	2004
Health insurance	76.7	75.6	93.8	54.7	51.8	66.1	61.6	60.4	76.2
Ante-natal care	96.7	98.3	97.1	93.5	94.0	96.1	94.6	95.6	96.5
Birth in health institution	95.3	99.2	99.1	82.5	92.3	94.0	86.8	94.8	96.3

Source: DHS, Palestinian Central Bureau of Statistics 2004

Whilst the majority of Palestinians depend on mains water (86 per cent) (**Palestinian Central Bureau of Statistics *et al.* 2003**), bacterial contamination of piped water has increased by 39 per cent in some areas which increases the risk of diarrhoeal diseases. Closures have had a particularly negative impact on solid waste collection (**United Nations 2004**).

Conclusions

- *The infant mortality rate is around 25 per 1000 live births.*
- *Access to key health services have been maintained at a high level of coverage throughout the 'intifada'.*

Maternal and Child Care

Social and behavioural factors influence the use of resources and therefore nutrition. For example, at the household level, this may include practices that influence feeding, health, hygiene, and psycho-social areas.

The care of the child is affected by a wide range of factors that in turn affect child nutrition. There is the direct care of the child by members of the family, in particular the mother including breastfeeding, weaning, diagnosing illness, stimulating language and other cognitive capacities, providing emotional support. Other behaviours that indirectly affect care of the child such as intra-household food allocation, who is the care-taker, behaviours and attitudes that affect utilization of health services, water, and sanitation and hygiene practices. Cultural and traditional beliefs will also affect caring behaviours.

Infant and Child Feeding

In the oPt, direct caring behaviours such as infant and child feeding directly influence child nutrition. The latest DHS survey found that the majority of babies are breastfed (95.6 per cent) and that the majority of women continue to breast feed for 9-12 months (65.8 per cent) (**Palestinian Central Bureau of Statistics 2004**). However, only a quarter of women (25.4 per cent) exclusively breastfeed for the first 6 months. This represents an increase since 2000 when only 16.7 per cent of women exclusively breastfed for 6 months.

While low levels of exclusive breastfeeding may contribute to malnutrition in children, there are also some indications that mothers with low nutrient status may be unable to meet their infants' nutrient requirements through breast milk. This area would benefit from further examination.

There is some evidence to indicate that mothers tend to introduce protein and iron-rich foods relatively late. One survey found that only one third (31.6 per cent) of mothers introduced meat, chicken, or fish into their children's diet by the age of eight months and only 69.7 per cent by the age of one year. However, there is little information about the introduction of alternative sources of protein and iron-rich foods (e.g. pulses and green leafy vegetables).

Reproductive practices

The fertility rate among Palestinians is high. Women start having babies early and have large families often with short intervals between pregnancies. These practices are more pronounced in the poorer sections of the population. This pattern of reproduction can have adverse effects. Women who are constantly pregnant or lactating are likely to become nutrient depleted and to pass on this depletion to their children. There is evidence that reproductive practices are related to anaemia in women.

Conclusions

- *Breast feeding is widely practiced although only a quarter of women exclusively breast feed for the first 6 months of life.*
- *The high fertility rates and short intervals between births is linked to the high levels of anaemia in women.*

2.3 Basic causes of malnutrition

Poverty is the main causes of malnutrition at a basic level. Palestinians are currently facing one of the worst recessions in recent history and poverty levels are very high (United Nations 2004). In 2000, the year that the 'intifada' started, the World Bank estimated that 21 per cent of the population was living in poverty. By 2004, nearly half (47 per cent of the population) was living on less than \$2.1 per person per day. A total of 16 per cent of the population was living in 'deep poverty' on less than \$1.6 per person per day (United Nations 2004). Poverty levels remain highest in the Gaza Strip where around 64 per cent of Gazans live in poverty.

Unemployment is closely linked to poverty and has risen hugely during the 'intifada'. In 2004, 34 per cent of Palestinians (30 per cent in West Bank and 40 per cent in Gaza) were unemployed⁸. A major reason for the increase in employment has been a 67 per cent reduction in numbers of Palestinians employed in Israel and Israeli settlements. The rise in unemployment has been highest among the least skilled who are already more likely to be poor.

Poverty and unemployment are strongly related to the high levels of stunting in the oPt. Thus levels of stunting will continue to rise in conjunction with rising poverty and unemployment.

⁸ This definition of unemployment includes 'discouraged workers' – people without jobs who, because of their pessimism about finding work, have stopped looking.

Conclusions

- *Poverty has more than doubled the 'intifada' with the highest proportion of the poor living in the Gaza Strip.*
- *Poverty is a determinant of malnutrition and is closely linked to stunting in the oPt.*

3. NUTRITION PROGRAMMES

3.1 Agencies implementing programmes

The main players implementing nutrition-related programmes in the oPt are the MoH and UNRWA. Several other United Nations (UN) agencies and Non-Governmental Organisations (NGOs) are also involved in programming. *Table 9* summarises the main agencies and their areas of work. There are many other agencies (such as the Red Cross) and NGOs who carry out smaller nutrition-related programmes. These are not described in detail here though their efforts are recognised.

Ministry of Health

The MoH is the government body responsible for nutrition in the oPt and is the main provider of primary health care (PHC) services. It operates 391 PHC centres (54 in the Gaza Strip and 337 in the West Bank) through which essential preventive nutrition services are provided for non-refugees. Refugees can also access MoH services. Services include growth monitoring, micronutrient supplementation, nutrition education and counselling on breast feeding and complementary feeding. The MoH does not have facilities for the rehabilitation of severely malnourished children at clinic level but refers cases to hospitals and NGO clinics.

UNRWA

UNRWA is responsible for providing PHC services for the refugee population of over 1 million. It operates 51 PHC centres. UNRWA clinics provide growth monitoring, breast feeding and nutrition counselling services. All UNWRA maternity centres are classified as Baby Friendly Hospitals. UNRWA has always provided food aid to 'hardship cases' and significantly increased its food aid operation in 2001.

UNICEF

UNICEF supports the MoH in a number of core areas of nutrition. These include the development of nutrition awareness-raising campaigns on combating iron deficiency anaemia and on appropriate child feeding practices. It is also working on the development and implementation of national policy and guidelines for infant and child nutrition where the focus is on the promotion of breastfeeding and associated legislation. UNICEF promotes the Baby Friendly Hospital Initiative (BFHI). UNICEF is the main agency promoting salt

iodisation and is collaborating on flour fortification. In addition, UNICEF has provided partial support to various nutrition surveys.

WHO

WHO's aim in the oPt is to improve nutrition coordination and it is secretary of the Nutrition Steering Committee. A one-year nutrition project was initiated in late 2004. The purpose of the project is to address the nutritional needs of the oPt population by strengthening the capacity of the Palestinian MoH in policy and planning, management, follow up and coordination of nutrition related issues.

WFP

WFP is the main food aid provider to non-refugees in the oPt. WFP expanded their programme significantly in 2001.

FAO

In collaboration with the PCBS, FAO is working to establish a monitoring system (FIVIMS). This will monitor the food security and vulnerability situation in order to provide information to relevant partners. FAO is also supporting two food security projects (with Norwegian and Italian funding) to rehabilitate horticulture and agriculture over the next few years.

The MARAM Project

The MARAM project was initiated in 2001 and ran a three year project to improve the health and nutrition status of women and children. Nutrition-related achievements reported at the end of the project included finalising a population-based vitamin A survey, supporting the MoE on iron and vitamin supplementation for school children, developing nutrition protocols and nutrition Information Education and Communication (IEC) materials.

A follow-up project was launched in January 2005. This three year project aims to enhance the quality of health services available to 60 per cent of the non-refugee population of mothers and children in the West Bank and Gaza Strip. Activities will include promoting healthier lifestyles, disease prevention and birth spacing, and improving the skills of health care providers, educators and community leaders (Ministry of Health 2005).

CARE International

CARE started a new one year project in September 2004 with MOST (Micronutrient Operational Strategies and Technologies). The project will introduce fortified flour and develop a surveillance/inspection system. CARE supported two nutrition surveys in collaboration with Al Quds University in 2002 and 2003.

Ard El Insan

Ard El Insan (AEI) is the major NGO involved in nutrition rehabilitation in the Gaza Strip. It runs eight nutrition rehabilitation centres and is the main referral body for MoH clinics that detect child malnutrition. AEI also supports the development of nutrition protocols, research, IEC materials and undertakes nutrition surveys.

Table 9: Main agencies implementing nutrition-related programmes in the oPt

	MoH	UNRWA	UNICEF	WHO	WFP	MARAM	AEI
Growth monitoring	√	√					√
Infant feeding	√	√	√				√
Micronutrient supplementation	√	√	√				√
Micronutrient fortification	√		√				
Food aid		√			√		
Nutrition education	√	√	√			√	√
Protocol development	√	√	√			√	√
Policy, strategy and capacity development	√			√			
Nutrition surveys	√	√	√			√	√
Food security/ agriculture					√		

Table 9 (contd): Main agencies implementing nutrition-related programmes in the oPt

	FAO	CARE	UPMRC	UWHC	RCS
Growth monitoring					
Infant feeding					
Micronutrient supplementation					
Micronutrient fortification		√			
Food aid					
Nutrition education			√	√	√
Protocol development					
Policy, strategy and capacity development					
Nutrition surveys		√			
Food security/ agriculture	√				

Conclusions

- *Prior to 2000, the main agencies providing nutrition-related services were the MoH, UNRWA and some NGOs (e.g. Ard-El Insan) through their PHC services.*
- *Since 2000, there has been increased emphasis on, and funding for, nutrition from the international community.*
- *The response to the humanitarian crisis has led to greater focus on long-term nutrition programming.*

3.2 Nutrition programmes

Nutrition programmes in the oPt fall into the following general categories:

- 1. Programmes to prevent and address poor growth in children**
 - Growth monitoring of under-fives
 - Infant and child feeding
 - Management of malnutrition
 - School nutrition programmes
- 2. Programmes to prevent and address micronutrient deficiencies through supplementation**
 - Vitamin A and D supplementation
 - Iron supplementation
 - Micronutrient supplementation of school-age children
- 3. Programmes to prevent and address micronutrient deficiencies through fortification**
 - Flour fortification
 - Salt iodisation
- 4. Programmes to prevent and address obesity and dietary-related chronic diseases**
- 5. Food aid**

Programmes to Prevent and Address Poor Growth in Under Fives

Growth Monitoring of Under-Fives

Growth monitoring in MoH clinics includes measurement of weight, height and head circumference. Data on stunting, wasting and underweight is recorded on individual growth cards. Among the 0-18 month olds, growth-monitoring coverage is reported to be high at an estimated 80-90 per cent largely coinciding with the vaccine schedule of six visits. Coverage is much lower among children above two years of age and therefore there are fewer opportunities for uptake of PHC services and to monitor changes in the nutritional status of the 2-5 year age group. The main source of information on the growth of this age group is currently derived from national surveys.

The problems that are often inherent in growth monitoring programmes such as measurement error, inaccurate recording and interpretation are not thought to be particularly widespread in the MoH clinics. The major problem is the lack of analysis of growth monitoring data for trend analysis and coverage. Data is sent from the clinics to the district and central level

where it is collated but is not then fed back to clinic providers for monitoring and strengthening programme performance. There is no nutrition surveillance system in the oPt⁹.

UNRWA carries out growth monitoring in all their clinics and calculate weight for age. Growth monitoring data are not collated or analysed. Detected underweight cases are referred to the malnutrition clinic for appropriate management.

Infant and child feeding

Exclusive and prolonged breast feeding is widely promoted by all PHC providers. Nonetheless, the rate of exclusive breast feeding is low at 30 per cent¹⁰ and the MoH has responded by forming a Breast Feeding Committee. The objectives of the committee are to raise public awareness, to lobby for the endorsement and implementation of the International Code on Breast Milk Substitutes, and to develop a strategy to promote the BFHI. MOH clinics recently started to implement IMCI program, which includes infant and young child feeding practices. This will be adopted by all health providers in the oPt.

Management of malnutrition

A relatively small number of children become severely malnourished (weight for height <-2 SD) and most of these are managed in in-patient hospital facilities.

AEI is the only agency specialised in dealing with malnourished children in the Gaza Strip. They have been running out-patient nutrition rehabilitation centres for many years. In 2003, AEI treated over 7,000 children in six clinics. Few of these children are severely malnourished, however. In 2002, 72 per cent of children attending AEI centres were mildly underweight, 22 per cent were moderately underweight and 6 per cent were severely underweight. Severely malnourished children with complications are referred to hospital. Children attending the centres receive a cooked meal, take-home rations, appropriate supplements and medical care and mothers receive nutrition counselling. Some children are followed up at home.

Though the AEI centres are referred to as nutrition rehabilitation centres, they are unusual in that they treat many children who are not severely malnourished¹¹. The criteria for entry appears to be based on underweight rather than wasting, and mildly and moderately underweight children are accepted. It is unclear whether this form of nutritional support is effective.

School nutrition programmes

The MoH has a school health team who monitor the health status of school children at primary entry (age 6 years) and secondary entry (13 years). Height and weight measurements are taken at primary entry only. Children with nutritional problems are referred to health clinics for follow-up. Nutrition education is incorporated into the school curriculum as part of promoting healthy lifestyles.

⁹ A nutrition surveillance system should provide regular (usually monthly) information on nutrition in order that trends can be discerned and appropriate action taken.

¹⁰ Breast feeding is carried out by 90 per cent of women and early initiation (within one hour of birth) of breast feeding occurs in 57 per cent of cases (Palestinian Central Bureau of Statistics 2004).

¹¹ Therapeutic feeding centres usually treat cases of severe malnutrition which refers to children who are severely wasted or showing signs of clinical malnutrition (kwashiorkor and marasmus). Supplementary feeding centres usually treat moderate malnutrition which refers to children who are moderately wasted.

There is no national school meal programme, though there have been small-scale initiatives to provide school children with milk or yogurt drinks during the school day.

Conclusions

- *Growth monitoring is carried out in both MoH and UNRWA clinics.*
- *A major problem is the lack of analysis of growth monitoring data and the absence of a national nutrition surveillance system.*
- *Breastfeeding is promoted by all service providers and the MoH is pushing for appropriate legislation.*
- *Severe malnutrition is rare in the oPt and NGO-run nutrition rehabilitation units care for mildly underweight children as well as more serious cases.*
- *There is no national school meal programme.*

Programmes to prevent and address micronutrient deficiencies through supplementation

Vitamin A and D supplementation

MoH clinics have been providing vitamin A and D supplements in the form of drops for many years. These should be administered to infants from 3 weeks to 12 months on a daily basis¹². UNRWA clinics do not routinely administer vitamin A and D supplements.

There is concern that as result of the current ‘*intifada*’, MoH coverage rates have reduced. The DHS survey in 2004, however, found an overall increase in coverage between 2000 and 2004 although coverage in the Gaza Strip is significantly lower than the West Bank as shown in *table 10*.

Table 10: Uptake of vitamin A and D from MoH clinics over the last 3 years

	% of children receiving vitamin A and D drops		
	Gaza Strip	West Bank	Total
2000	37.0	57.9	50.4
2004	47.9	72.8	61.8

Source: (Palestinian Central Bureau of Statistics 2004)

The nationwide vitamin A survey carried out in 2004 examined a small sub-sample (n=22) of children who were taking drops (The MARAM Project 2004). Of these, 4 were found to be sub-clinically vitamin A deficient. Mothers reported differences in the frequency and amount of drops given, highlighting problems of compliance.

In order to prevent further deterioration in vitamin A status, the MoH with UNICEF support conducted a mass vitamin A supplementation (capsules) distribution during a measles immunization campaign in June 2004. Around 540,000 children aged 9–59 months¹³ were covered. This was the first campaign of it’s type in the oPt.

¹² Note that the MoH intends to start supplementing all post partum women at 4 weeks after delivery with vitamin A. Development of a policy is underway.

¹³ Infants aged (6-11 months) were given a dose of 100,000 IU of vitamin A and Children aged (12-59 months) were given a dose of 200,000 IU of vitamin A.

Given that sub-clinical vitamin A deficiency and rickets continue to exist in the oPt, the coverage and effectiveness of the supplementation programme needs to be examined.

Iron supplementation

In MoH clinics, iron supplements are prescribed for all children aged 4-12 months in the form of iron syrup which mothers take home and administer daily. Pregnant women also receive iron supplements in the form of tablets to be taken on a daily basis. There are anecdotal reports that supplies are not always consistent.

The DHS 2004 survey reports that the majority of women received iron tablets during antenatal care sessions as shown in *table 11*. Compliance, however, is reported to be low and in one survey only 7.1 per cent of women aged 15-49 years were taking iron tablets (Palestinian Central Bureau of Statistics *et al.* 2003). This may partly explain the continuing high levels of maternal anaemia.

Table 11: Receipt of iron tablets by pregnant women

	% of pregnant women receiving iron supplements		
	Gaza Strip	West Bank	Total
2000	65.7	81.5	75.8
2004	71.8	78.9	75.7

Source: (Palestinian Central Bureau of Statistics 2004)

UNWRA clinics follow different protocols on iron supplementation. They do not currently provide iron prophylactics for infants and pregnant women (due to temporary funding constraints) but focus on the treatment of anaemia (defined as Hb <11 gm/dl) when it is detected in these groups.

The MARAM project has recently carried out Trials for Improving Practice (TIPS) research that aims to change women's behaviour with regard to iron deficiency anaemia (Rizkallah 2003).

Micronutrient supplementation of school age children

The Ministry of Education and Higher Education is developing a multi-micronutrient supplementation programme for school children. Currently, a pilot project is providing weekly supplements in 87 schools. The supplements aim to provide 50-100 per cent of needs for iron, zinc, vitamin B12, folic acid, B2 and vitamin A. The intention is to expand to 300,000 students in six districts of the Gaza Strip and West Bank from February 2005. This programme is not complemented by a national school meal programme and runs the risk of creating dependence on supplements rather than promoting better quality dietary intake.

Conclusions

- *The MoH provides vitamin A and D drops to infants while UNRWA clinics do not.*
- *The coverage and effectiveness of the vitamin A and D supplementation programme needs to be examined.*
- *The MoH and UNRWA follow different protocols with respect to iron supplementation of young children and pregnant women.*
- *Compliance in taking iron supplements appears to be poor.*
- *An MoH multi-micronutrient supplementation programme for schoolchildren is being piloted.*
- *The programme runs the risk of creating dependence on supplements rather than promoting better quality dietary intake.*

Programmes to prevent and address micronutrient deficiencies through fortification

Flour fortification

CARE international started a new one-year project in September 2004 with MOST. The project will support the introduction of fortified flour and a surveillance system to monitor impact. The flour fortificants (iron, folate, vit A, vit B12) should provide between 50 and 70 per cent of the daily micronutrient intake of which more than 80 per cent of the vitamins can be absorbed but only 10 per cent of the iron. Fortified flour will cost the consumer about 1 per cent more than non-fortified flour. The project aims to fortify all flour milled in the oPt within six months. This amounts to less than 50 per cent of flour sold. The project will also seek to work with flour producers in Israel who supply the majority of imported flour. This is currently unfortified.

A pilot efficacy trial is planned to study the impact of the flour consumption on micronutrient status. There are a number of uncertainties with the fortification project including the following:

- The degree to which micronutrient status can be improved in children as their intake of flour is lower than adults.
- The impact of fortification on anaemia levels. There is currently no evidence internationally, that iron status improves through fortification.
- Whether adequate attention will be paid to other ways of addressing the problem of anaemia such as supplementation.
- Whether flour imported as food aid by UNRWA and WFP will be similarly fortified.
- Whether consumers will be willing to pay the extra cost of fortified flour.

Salt fortification

Some salt is already fortified with iodine in the oPt. While policy and legislation is in place, it is not yet being properly implemented. According to the 2004 DHS, 65.3 per cent of households consumed adequately iodised salt (56.5% and 82.5% in West Bank and Gaza Strip respectively) which is a significant increase on consumption levels reported in the DHS of 2000 (Palestinian Central Bureau of Statistics 2000; Palestinian Central Bureau of Statistics 2004).

UNICEF is supporting the MOH to re-launch salt iodization. Salt fortification will be linked with the Care International flour fortification initiative.

Conclusions

- *A CARE International programme plans to fortify all flour milled in the oPt from 2005.*
- *There are questions as to the effectiveness of flour fortification on reducing anaemia levels and underlines the need to ensure anaemia is addressed through multiple interventions.*
- *UNICEF is supporting the promotion of universal salt iodisation and the uptake of iodised salt appears to be increasing.*

Programmes to prevent and address obesity and dietary-related chronic diseases

There is one centre in Ramallah and a number of centres at district levels in the West Bank that provide services, including dietary counselling, for obesity and dietary-related chronic diseases.

Within the health system, however, there is reported to be limited technical capacity to provide individual dietetic counselling for people with diabetes and obesity. The absence of dietetic support is viewed by the MoH as an important shortfall in both the Gaza Strip and West Bank.

UNRWA has a chronic diseases department within its health programme with its own strategy on case management including counselling on diet and life style. The MOH clinics have guidelines on non-communicable diseases management that includes advice on proper diet.

Food Aid

Food aid is seen as having been instrumental in preventing and lowering levels of malnutrition. For example the current CAP (United Nations 2004) states that “*the continued provision of food aid in 2004 has helped to limit the rise in malnutrition*” and according to the 2003 Al Quds survey, “*the prevalence of malnutrition amongst children 6-59 months improved since 2002 due to increased and sustained food assistance*”. Contrary to these reports, there is no evidence that food aid has had any direct impact on nutritional status in the oPt.

A humanitarian operation was launched at the start of the ‘*intifada*’ in 2000 which largely comprised food aid. The current CAP appeal for 2005 is for US\$302 million of which over one third (US\$98 million) is for food (United Nations 2004). UNRWA is the largest food aid provider in the oPt and is responsible for providing food aid to the refugee population while WFP is the largest food aid provider to non-refugees. In addition, the government, NGOs, ICRC and Trade unions distribute small quantities of food aid and in some instances, cash vouchers as an alternative to food aid.

At the beginning of 2004, 39 per cent of all Palestinian families reported receiving some form of food aid (Bocco *et al.* 2004). Only 13 per cent of refugees and 4 per cent of non-refugees

reported that they were dependent on food handouts, however. It would seem that the majority of Palestinians still rely on their own resources for food.

The target groups for food aid differ between UNRWA and WFP. UNRWA distributes food aid to the following groups (UNRWA 2005):

- Refugee hardship cases
- Pregnant and lactating women from the 3rd month of pregnancy until 6 months after the birth
- Emergency affected refugees

WFP on the other hand target:

- The ‘Old Poor’ (female headed households, orphans, elderly and the chronically ill)
- The ‘New Poor’ who have become poor because of restricted movement and increased unemployment.

In addition, WFP provide food aid via clinics, food for work and food for training activities.

The WFP food package provides 2,500 kcal per person per day i.e. a full ration every three months as it is assumed that recipients are unable to obtain food from other sources.

Conclusions

- *A massive food aid operation was launched after 2000 mainly by UNRWA and WFP which is viewed as having been instrumental in preventing and lowering levels of malnutrition.*
- *There is no evidence that food aid has had any impact on nutritional status.*
- *Food aid represents the main form of support for population groups defined as food insecure.*
- *The two main providers of food aid target different beneficiary groups.*
- *There are a very small number of projects providing non-food aid support such as cash.*

3.3 Main donors for nutrition programmes

USAID

USAID is the largest donor for the nutrition sector and supports three nutrition-related programmes in the oPt as described in *table 12*.

Table 12: USAID funding for nutrition in the oPt

	Time period	Amount (USD)	Description
MARAM	3 years	21 million	Package of health and nutrition services
Care International	1 year	500,000	Flour fortification
WHO	1 year	296,800	Technical support for leadership and capacity in nutrition
UNICEF	1 year	100,000	Salt iodization

Norwegian Government

Norwegian Government has been supporting the implementation of a Nutrition Project (NNP) since 2002 which seeks to develop “*institutional capacity within the Palestinian National authority in the area of food and nutrition policy development, implementation and monitoring*” through building the capacity of the ND. This project will be completed in April 2005. So far, the Norwegian project was able to utilize 296,000 USD out of the original proposed budget of 524,000 USD.

Norwegian Government through Norwegian Peoples’ Aid supports the Ard El Insan (AEI)’s nutrition related program.

4. NUTRITION STRUCTURES, COORDINATION AND CAPACITIES

4.1 Government Nutrition Structures

The only formal nutrition structure in the government is the Nutrition Department (ND) which falls under the Primary Health Care Directorate of the MoH. The intention to establish a Nutrition Department (ND) in the oPt was proposed by the MoH in 1996 following a consultative workshop to develop a food and nutrition plan for the country. It was intended that the department would act as the overall co-ordinating body for nutrition. In 1997, UNICEF provided modest funds to help establish the ND offices in the West Bank and Gaza Strip. At this time, the department was largely nominal and comprised a very small number of staff. In 2000, the ND staff in the West Bank established ten nutrition clinics to deal with patients referred with nutritional problems and to provide counselling and treatment. In 2002, the Norwegian funded Nutrition Project (NNP) was implemented which aimed to invest in building nutrition capacity in the MoH. This project supported a nutrition co-ordinator in the ND as well as supplies and resources for training.

Today, the ND offices in the Gaza Strip and the West Bank function largely as separate entities. For example, the West Bank ND staff's main area of activity is running nutrition clinics while staff in Gaza runs periodic training courses for health workers. This is perhaps unsurprising given the absence of an agreed structure for the ND, the absence of a mandate, strategic objectives, work plans or job descriptions. The separation of the two offices is exacerbated by the geographical distances and the restrictions to staff movement.

Furthermore, the ND has very little autonomy to carry out its activities and is constrained by the highly centralised nature of the MoH. This inhibits even day to day communication between the two ND offices. The need for reform is highlighted.

If the ND is to have a central role in both policy development and coordination in the future, it will need to employ staff with appropriate capacity. This implies that staff have an excellent knowledge of both public and clinical nutrition, strong analytical skills plus experience in policy and strategy development. Furthermore, the staff would need the appropriate skills to develop strategic objectives, work plans and job descriptions for the ND itself.

Conclusions

- *The ND offices in the Gaza Strip and the West Bank do not share common activities and appear to function independently.*
- *The ND does not have a clear structure, mandate, strategic objectives, work plan or job descriptions for staff members.*
- *If the ND is to have a central role in both policy development and coordination in the future, it will need to employ staff with appropriate capacity.*

4.2 Coordination bodies

The level of co-ordination on nutrition issues is generally understood to be poor. Though there still appears to be a lack of coordination within the MoH and between ministries, coordination between the MoH and non-government agencies has improved recently.

Nutrition Steering Committee

The *'intifada'* and the increase in humanitarian agencies working in the oPt prompted the formation of a Nutrition Steering Committee (NSC) in May 2004. This merged the previously existing nutrition co-ordination bodies: the Thematic Group and the Steering Committee. The NSC is officially mandated to *"facilitate and support the Palestinian Authority and stakeholders in the implementation of the national nutrition strategy, as well as to develop appropriate responses in case of emergency"*. The committee is chaired by the MOH and has technical and non-technical representation from UN, donors and NGO staff. The NSC meets regularly (every 2 to 3 months). *See annex 1 for NSC TORs.*

The NSC is mandated to co-ordinate nutrition interventions in oPt. For example, the NSC has developed an initial 'mapping' of strategic areas in nutrition. This sets out who is doing what in nutrition, the available budget and project timeframes (*See annex 2*). While the mapping is incomplete, it is nonetheless, a very positive indication of the level of consensus among stakeholders for greater nutrition co-ordination.

Membership of the NSC is being discussed to review whether other ministries who are implementing nutrition-related programmes such as the Ministry of Agriculture and of Social Affairs should be included.

Conclusions

- *Nutrition activities have only recently been effectively coordinated through the NSC prompted by the increase in international humanitarian assistance.*
- *There is no formal government structure for coordinating nutrition.*

4.3 Nutrition Capacities

The MoH employs a total of eight staff to work in the ND¹⁴. Three of these staff are based in the Gaza Strip and five are based in the West Bank. Unlike the Gaza Strip staff who are located in one office, the West Bank staff are dispersed throughout the region with just one member of staff working in the ND office in Ramallah. This hinders communication and coordination among the West Bank staff.

¹⁴ A nutrition coordinator funded through the NNP currently sits in the Gaza ND. This position will cease in April 2005 when the NNP finishes.

The ND staff have medical and nursing backgrounds and are experienced in clinical nutrition. They have been exposed to various nutrition training courses overseas¹⁵. For example in 2004, six ND staff underwent a three-month training on clinical nutrition in Egypt in order to be trainers of trainers and a staff member in West Bank has done a masters in public health (MPH) course in the Lebanon. None of the staff have formal training in public nutrition and, therefore, incline towards clinical nutrition rather than public or preventative aspects of nutrition. There are no trained nutritionists working in other ministries and overall there is a lack of staff in the oPt who are experienced in public nutrition.

There are a number of nutritionists employed by national and international agencies. UNICEF and WFP bring in nutrition consultants to work on specific activities. WHO has recently engaged three nutritionists, one international and two nationals to assist the MoH in building national nutrition capacity for implementation and coordination.

At the health service level, some service providers (nurses, physicians, health promoters, educators, school health workers etc.) have received training in a broad range of maternal and child nutrition subjects. The promotion of breast feeding, general nutrition counselling, growth monitoring and nutrition surveillance and more recently, IMCI are among these. In-service training for service providers is coordinated by the Health Promotion and Education Directorate in the MoH.

The ND has trained a total of 80 MoH (and some NGO) staff in 1999 and 2000 for one month in maternal and child nutrition. In addition, health promoters and educators working in the schools and clinics have received six days training in nutrition, IEC and it is planned to replicate these courses with NNP support in early 2005. It should be noted that systems are not in place to evaluate the impact of the training and it is therefore not possible to judge the effectiveness of these courses.

Conclusions

- *There is a lack of staff in the oPt who are experienced in public (preventative) nutrition.*
- *The ND staff are well trained in clinical nutrition.*
- *In-service training courses are not evaluated to ascertain their effectiveness.*

¹⁵ There is no degree, diploma or masters level courses in public nutrition in the oPt.

5. NUTRITION POLICY AND STRATEGY

It is important to distinguish between policy, strategy, protocols and guidelines.

- A *policy* is a clear statement of intent. A nutrition policy for the oPt would refer to the government's intention to reduce malnutrition and maintain adequate nutrition among the population.
- A *strategy* sets out the how, who, when, where and resources for implementing policy.
- *Protocols* and *guidelines* set out in clear terms the practical steps to be taken to implement nutrition strategies.

5.1 Nutrition policy development

Currently, there is no policy on nutrition that clearly sets out the government's intention to address macro and micronutrient malnutrition among the Palestinian population. There have been some initiatives to develop a policy and plan of action, however.

In 1996, the MoH with support from the NNP, convened a workshop in Gaza to develop an outline of a National Food and Nutrition Policy. This was attended by a number of ministerial, international agency, UNRWA, academic and NGO staff and was supported by Terre Des Hommes (a Swiss-based NGO) and the Norwegian National Nutrition Council. The workshop generated an outline of a draft national food and nutrition plan and a task force was formed to move the plan forward (Ministry of Health 1996). Considerable delays, however, in the implementation of the NNP, meant that the plan was never finalised.

5.2 Nutrition strategies

The first Nutrition Strategy for Palestine was developed at a workshop widely attended by ministries, agencies, international and national experts in the field of nutrition in 2003 (Ministry of Health 2003). The strategy document was assembled by the MoH with considerable support from The MARAM Project.

The strategy is widely viewed as representing a very important first step towards rationalising and co-ordinating activities related to nutrition. The document outlines ten strategic areas for action as shown in *box 1*.

Box 1: Strategic priorities outlined in the National Nutrition Strategy 2003

- Managing malnutrition
- Communication strategies for behaviour change
- Support and encourage breast-feeding and appropriate complementary feeding
- Micronutrient supplementation for vulnerable groups
- Food fortification
- Development of protocols and guidelines
- Capacity building for health personnel and staff from other sectors
- Applied research
- Develop a nutrition surveillance system
- Advocacy for protecting food insecure households

The strategy provides a framework for the MoH for nutrition action, but does not incorporate the key actions that are needed to bring about nutrition improvements by other ministries. The strategic priorities appear to mix thematic technical areas with the tools and methods required for implementation. For example, the need for protocols and guidelines cut across all technical areas (micronutrient supplementation, managing malnutrition, infant feeding etc.).

Perhaps more importantly, detailed targets, time-scales and the resources (human and financial) that are needed to implement the strategy have yet to be formulated in a strategic and prioritised plan of action. Finally, the strategy does not include actions to address the widespread problem of obesity and dietary-related chronic diseases. There are also gaps with regard to addressing the problems of nutritionally vulnerable groups such as the elderly and school-aged children.

5.3 Nutrition protocols

A number of nutrition-related protocols have been, or are currently being developed on behalf of the MoH. These include the following:

- *Integrated Management of Childhood Illnesses* which covers many aspects of nutrition including breast feeding, complementary feeding, growth monitoring, iron deficiency anaemia, management of malnutrition, micronutrient supplementation and counselling mothers. This is currently at the stage of training of trainers and falls under the MoH with support from UNICEF.
- *National Reproductive Health Guidelines and Protocols* that include breastfeeding, adolescent nutrition and nutrition counselling for pregnant and lactating mothers.
- *MARAM and Ard El Insan* protocols on breast feeding, infant and young child feeding, growth monitoring and promotion, micronutrient supplementation and the management of maternal and child iron deficiency anaemia are also being developed.

The evident overlap and duplication between these new protocols has prompted the NSC to call for a unified version of the protocols for endorsement by the MoH. A major challenge once these are unified will be to ensure the necessary human and financial resources for implementation.

UNRWA has its own nutrition protocols that do not necessarily accord with the MoH protocols. Ard El Insan also has its own protocols for the treatment of moderate and severe malnutrition that do not accord with WHO guidelines.

Conclusions

- *Currently, there is no policy on nutrition in the oPt*
- *There is a national nutrition strategy document that provides a broad framework for planning but lacks detail and omits some important priority areas for nutrition.*
- *A number of new protocols related to nutrition are being developed which overlap.*

Annex 1: Terms of Reference for the Nutrition Steering Committee

1. BACKGROUND

In the context of the present reshaping and reactivation of the aid coordination mechanisms within the LACC structure, a review of the thematic group (TG) structure and activities¹⁶ was carried out, on behalf of the Sector Working Group (SWG) for health.

On the basis of the results of the review exercise, and according to the recommendations made during the SWG meeting on February 25th, 2004 and during following discussions, a revision of the terms of reference (ToR) of the Nutrition Thematic group/Steering Committee has been made.

The new ToR for Nutrition are developed in accordance with the following main issues:

- In the past year the priorities on nutrition have been identified and a MoH national policy has been formulated: “Nutrition Strategies in Palestine”;
- The crucial challenge is currently represented by the implementation of the national policy
- The two national coordinating bodies on nutrition represented by the Thematic Group and the Steering Committee will focus on the same aims and therefore they are merged into one body, the Nutrition Steering Committee.

2. MISSION

To facilitate and support the Palestinian Authority and stakeholders in the implementation of the national nutrition strategy, as well as to develop appropriate responses in case of emergency.

3. ROLE AND RESPONSIBILITIES

- a. To develop a strategic plan, based on the MoH national policy “Nutrition Strategies in Palestine”
- b. To produce a comprehensive plan of action/implementation
- c. To obtain donor compliance and commitment in funding the strategic plan
- d. To monitor and evaluate the implementation of the plan of action
- e. To report to the Sector Working Group
- f. To advise the MoH and the other stakeholders on technical issues related to the plan implementation
- g. To ensure early identification of and appropriate response to emergency needs
- h. To ensure effective coordination of nutrition interventions in emergencies
- i. The Steering Committee will be chaired by the Ministry of Health.
- l. The Steering Committee’s Secretariat and Technical Advisor is the World Health Organisation.

4. COMPOSITION

4.1 Member Agencies/Institutions

- Ministry of Health
- WHO

¹⁶ Thematic group review. WHO West Bank and Gaza office, January 2004

- UNRWA (WB and Gaza Field Offices)
- UNICEF
- FAO
- Care International
- Maram
- USAID
- Norwegian Representative Office
- Italian Cooperation
- Ard El Insan

4.2 MoH focal persons

- Chairman ¹⁷
- Two MoH senior policy makers, for WB and Gaza (NSC leaders)¹⁸
- Two MoH senior technical professionals, for WB and Gaza (NSC support leaders)¹⁹
- One MoH representative from the Int. Coop. Dept. (MoH focal point for coordination)²⁰

5. OPERATIONAL MODALITIES

- a. The Steering Committee meets every two months.
- b. In order to ensure the accomplishment of the different tasks, the Nutrition Steering Committee may appoint Task Forces (TF) in different strategic areas. The TFs will have a specific output and timeframe.
- c. When specific strategic areas with multisectoral implications are addressed, further key institutions/agencies may ad hoc be involved in the work of the NSC or TFs (e.g. WFP, Ministry of Agriculture, etc)
- d. In order to guarantee good communication and coordination between West Bank and Gaza, all possible efforts will be made in order to allow physical presence of all members in the same place (alternatively WB and Gaza). When these attempts fail, the NSC meetings will systematically make use of video conferencing.
- e. All documents and materials related to the Steering Committee will be systematically distributed to a defined mailing list (see above)
- f. Particular attention will be given to the quality and regularity of reporting, mainly under the responsibility of the MoH with technical support of WHO.
- g. In order to improve the visibility of the NSC work, Health Inforum will be used as a resource for information sharing and dissemination²¹

¹⁷ Dr Tibi, MoH

¹⁸ Dr Tibi and Dr Ramlawi, MoH

¹⁹ Dr Mustafa Khalil and Dr Osama Salah, MoH

²⁰ Mr. Walid Shaqura, MoH

²¹ A Thematic section on the HI website is being organized, archiving relevant local reports and international standards on nutrition subjects. A window for exposing announcements, SC meeting agendas and minutes and relevant documents related to the SC work, will be created.

6. MAILING LIST

Nutrition Steering Committee Members

Dr. Ali Quaider, Director General Primary Health Care in Gaza
Dr. As'ad Ramlawi, Director Preventive Medicine in West Bank
Dr. Adli Skaik, Dir. Nutrition Department, MoH, Gaza
Dr. Osama Salah, Dir. Nutrition Department, MoH, West Bank
Mr. Walid Shaqura, Director of International Cooperation Department in Gaza
Dr. Ahmad Lylli, Norwegian Nutrition Project/Nutrition Department-MoH
Dr. Silvia Pivetta , WHO
Dr. Hassan Radwan, UNRWA Gaza Field Office
Dr. Husam Syam , UNRWA West Bank Field office
Dr. Denisa Ionete, UNICEF
Mr. Luigi Damiani, FAO
Dr. Sherry Carling, USAID
Ms. Signe Marie Breivik, Norwegian Representative Office
Ms. Sawsan Batato, Italian Cooperation
Ms Iaátidal Al-Kathib, Ard El Insan
Ms. Na'ema Ma'bed, Care International - Gaza office
Ms. Salam Kanaan, Care International - West Bank office

CC to

Dr. Thehni Wahaidi, Minister of Health
Dr. Anan El Masri, Deputy Minister
Dr. Imad Taraweya, Assistant Deputy Minister
Dr. Abdul Rahman Barqawi, Director General of the MoH
Dr. Maged Abu Ramadan Dir Gen of International Cooperation Department, MoH
Mr. Quasem Máani, Dir of International Cooperation Department, MoH, West Bank
Dr. Nadim Tubasi, Dir General Primary Health Care in West Bank, MoH
Dr. Younis Awad Allah, IMCI National Coordinator, MoH
Dr. Dina Abu Shaaban, WHD, MoH
Ms. Jenevieve Wills, WFP
Dr. Rino Pappagallo, Italian Cooperation
Dr. May Kaileh, UNRWA, West Bank
Mr. Yousef Muhaisen, WHO – Health Inforum

Annex 2: Preliminary mapping of nutrition programmes by agency in 2004

Strategic area	Implementing agencies	Donor	Implementing period	Budget
Develop a strategic plan (Strengthening the MoH Nutrition Department)	WHO MoH MoH <i>MARAM</i>	USAID WHO-EMRO Norway <i>USAID</i>	Oct 2004 - Sept 2005 Jan 2004 – Dec 2005 Jan. 2002 – Dec.2004 <i>July - Dec 2002</i>	296,800 24,000 539,000 <i>10,000</i>
Develop protocols and guidelines (including breastfeeding, managing malnutrition)	MARAM + Ard El Insan UNFPA + WHDD-MoH IMCI-MoH WHO*	USAID ???	2003 – 2004 1997-2005 Regular Program	40,000 ???
Capacity building for health personnel	UNFPA+ WHDD-MoH IMCI-MoH WHO* <i>MoH</i>	??? WHO-EMRO, UNICEF <i>WHO-EMRO</i>	1997-2005 Regular Program <i>2001-2003</i>	??? 23,000 + 31,000 <i>57,000</i>
Managing malnutrition (Clinical Activities)	MoH/PHC Dept Ard El Insan UNRWA	Terre Des Hommes, Swiss Gov, IRFAN, ECHO Multidonor	Regular Program 85- on going Regular Program	346,310 Service Budget
Communication strategy	MARAM UNICEF MoH Health Education Dept	USAID ???	2003 – Feb 2005 ??? Regular program	242,900 ???
Micronutrients supplementation	UNFPA+ WHDD/ MoH UNICEF <i>MARAM</i>	??? ??? <i>USAID</i>	2001 – 1004 ??? <i>Jan 2004</i>	??? ??? <i>441,254</i>
Food fortification	Care International MARAM UNRWA	USAID USAID EC + Multidonor	Oct. 2004- Sept 2005 July 2002 – Feb 2005 Regular program	500,000 ??? Gaza: 1.5M+40M (04)
Research	MARAM WHO* J.Hopkins/Al Quds Univ. FAO/PCBS Care International	USAID	???	???
Nutrition surveillance System	FAO MARAM	AusAID USAID	2004 – 2005 2002 – 2003	300,000 60,000

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