WHO Specialized Health Mission to the Gaza strip

As mandated by the Executive Board of WHO
in its *Resolution EB124.R4* adopted on 21 January 2009

Extended report [1]

Geneva 21 May 2009

[1] A short version of this report has been submitted to the 62nd World Health Assembly (A62/24/Add.1)

Contents list

List of Abbreviations

CDS	Central Drug Store
CD	Communicable disease
COGAT	Coordinator of Government Activities in the Territories, Israeli Ministry of Defence
CERF	Central Emergency Response Fund
DIME	Dense Inert Metal Explosive
DDG	Deputy Director General
DG	Director General
EB	Executive Board
EHA	Emergency Health Action
EMRO	WHO Regional Office for the Eastern Mediterranean
ERCS	Egyptian Red Crescent Society
GCMHP	Gaza Community Mental Health Programme
GP	General Practitioner
IAEA	International Atomic Energy Agency
IASC	Inter-Agency Standing Committee
ICRC	International Committee of the Red Cross
ICU	Intensive Care Unit
IDF	Israeli Defence Forces
IDPs	Internally Displaced Persons
IMO CL22	Israeli military operations: Is used when the text refers to the Israeli military operations (called *Cast Lead* by IDF) that took place 22 days from 27 December 2008 to 18 January 2009
IMO	Israeli military operations: Is used when the text refers to the Israeli military operations which took place before or after *IMO CL22*
HAC	Health Action in Crises
MAG	Mine Action Group
MCH	Maternal and Child Health
MNH	Mental Health
MoH	Ministry of Health
MSF	Médecins Sans Frontières
NCD	Non Communicable Disease
NGO	Non-Governmental Organization
OCHA	UN Office for the Coordination of Humanitarian Affairs
oPt	Occupied Palestinian territory
PalTrade	Palestine Trade Center
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PNA	Palestinian National Authority
PRCS	Palestinian Red Crescent Society
PTSD	Post-Traumatic Stress Disorder
SHM	Specialized Health Mission
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UNHCHR	UN Office of the High Commissioner on Human Rights
UNRWA	United Nations Relief and Works Agency for the Palestine Refugees in the Near East
UNSCO	Office of the United Nations Special Coordinator for the Middle East Peace Process
UXOs	Unexploded ordnances
WB	World Bank
WFP	World Food Programme
WHO	World Health Organization

Executive summary

On 21 January 2009 the Executive Board (EB) of the World Health Organization (WHO) passed *Resolution EB 124.R4.* This requested the Director General of WHO to dispatch a specialized health mission (SHM) to Gaza to identify urgent health and humanitarian needs from the 22 days of Israel's military operations (*IMO CL22*) that started on 27 December 2008. The Director General quickly nominated the SHM members. After studying a large number of reports on the issue, the SHM team visited Gaza during four days in March, observed the destruction on the ground, met with a large number of representatives of international and national organizations, and spoke by telephone with the Minister of Health of the Palestinian National Authority (PNA). The main findings of the SHM team are as follows:

The1.5 million people living in the Gaza strip have for a long time been subjected to a long-standing blockade by the occupying power, Israel; a blockade that has been particularly severe since 2007. As a consequence, the economic and social conditions for the civilian population have deteriorated, with increasing poverty and almost total dependency on external aid, leading to a worsening of the health conditions of the population.

When Israel attacked on 27 December 2008, the subsequent human toll inflicted by *IMO CL22* was severe indeed[2] ; 1 417 Palestinians were killed, 313 of whom were children and 116 women. Over 5,380 were physically injured, of whom 1,872 were children and 800 women. How many of the injured will be permanently disabled is not yet known, but it is expected to be a high number as the injuries often were very severe. The already worrisome mental health situation was made worse by the multiple deprivations caused by widespread damage to many sectors and the sharp increase in insecurity from the 22 days of attacks. This has since been further exacerbated by the more limited, but frequent, military incursions that Israel subsequently has continued to carry out[3]**.**

The consequences for many families were severe indeed: 1,700 households lost their breadwinner from death or injury, and over 15,000 homes were totally or partially destroyed. 100,000 people fled their homes and neighbourhoods due to the military attacks, half of whom were taken in by UNWRA-organized shelters. The remaining IDPs found refuge with other families, adding to the overcrowding that already characterized many apartments in the Gaza strip. The civilian population suffered further from damage to electricity, water and sewage systems. Damage to 15% of agricultural land, remnants of unexploded ordnance in ruins, destruction of many small industries and damage to essential public service infrastructures further added to the problems.

The health services also suffered from direct attacks. Fifteen of the 27 hospitals were damaged, some extensively. In addition, 43 Primary Care Centres were damaged or destroyed. Twenty-nine ambulances were damaged or destroyed; 16 health staff was killed and 25 injured[4].

---

[2] The Israeli Defence Forces (IDF) named the 22 day military operations "Cast Lead", and the abbreviation *IMO CL22* is used throughout this document to identify that particular attack. Any other IDF incursions – taking place before or after *IMO CL22* - will be labelled *IMO*.

[3] *Occupied Palestinian territory, Gaza, Situation Report No. 19 (29-30 January 2009), No.20 (31 January-5 February 2009), No. 21 (6-12 February 2009), No. 22 (13-19 February 2009),* Geneva, United Nations Office for the Coordination of Humanitarian Affairs, 2009; *Field update on Gaza from the Humanitarian Coordinator, Vol. 17-23 February 2009, Vol. 24 February 2009-2 March 2009, Vol. 2-9 March 2009, Vol. 10-16 March 2009, Vol. 17-23 March 2009, Vol. 24-30 March 2009,* East Jerusalem, United Nations Office for the Coordination of Humanitarian Affairs, 2009.

[4] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:2.

However, in spite of the damages to the health services infrastructure and the large number of seriously wounded arriving over a short time period, the health service institutions rallied rapidly and effectively to face the huge crisis. Hospitals were quickly reorganized to give room for the arrival of mass casualties, and all staff leave was cancelled. Through an efficient mobilization of the Egyptian Ministry of Health's *Rapid Response Team*, a good cooperation with the Egyptian Red Crescent Society, a strong action by the ambulance teams of the PRCS and the MoH ones, and with support from the ICRC a large number of seriously wounded patients were evacuated to Egypt (and some to third countries), thus relieving the workload at the Gaza hospitals.[5] Medical supplies from stocks in the West Bank and foreign donations (mainly coming via Egypt) were sent to Gaza to help with the acute rise in demand.

Both the Palestinian National Authority in Ramallah and the *de facto* local authorities in Gaza quickly organized emergency structures to help manage the situation. The Inter-Agency Standing Committee (IASC) mobilized the Cluster system, thus creating an organized mechanism for extensive information exchange and practical cooperation among UN agencies, NGOs, and local authorities that were interested in contributing to supporting a particular sector. Thus, the WHO-led *Health Cluster*, the UNICEF-led *WASH Cluster* and the WFP-led *Logistics Cluster* played important roles in helping to coordinate the external aid which poured in. WHO also contributed by making additional staff available from its Regional Office and the HAC Cluster in its Headquarter, and already on 16 February the Health Cluster had completed a *Gaza Strip Initial Health Needs Assessment* for the health sector.[6]

The crisis also revealed serious deficiencies in the health services in the Gaza strip. Some essential tertiary care level services were simply not available anywhere within the Gaza strip, a problem of increasing concern due to the Israeli blockade. While in general, emergency care for casualties at the frontline was admirable in view of the extremely difficult and dangerous situations confronting the ambulances and their teams, the often very serious injuries and other factors also meant that at times the emergency care could have been better. Overall coordination of the health sector suffered from the lack of a well thought-through disaster management plan and a more advanced communication system.

The SHM team has highlighted the unique nature of the crisis that affects the Gaza strip. Unlike most other disasters in the world, this is *not* one that follows the normal pattern of an initial *crisis*, which then is followed by *recovery* and *development*. Rather, the long standing, very severe blockade, the chronic insecurity from more limited IDF military incursions - interspersed by incidents of sudden large-scale attacks - the split in the internal political leadership in oPt, and the steadily worsening socio-economic environment have created a downward spiral that best can be characterized as a ***complex, chronic disaster of catastrophic proportions*.**

Since that situation also has direct negative effects not only on the health sector, but on the fundamental health determinants, a strategy to improve the health of the 1.5 million people living in the Gaza strip must also deal with the more fundamental ills of the current situation.

Therefore, the SHM team's recommendations (see *Annex I*) for improving the situation are of 2 types:

The first recommendations address the political imperatives of creating a stronger security arrangement with Israel and lifting the blockade, as well as reconciling the Palestinian political forces. If these recommendations are followed, the impact on health and health care for the civilian population of Gaza will be profound.

---

[5] *Humanitarian Assistance, Rehabilitation and Reconstruction of Health Infrastructure on the Gaza Strip: A Post-conflict Preliminary Assessment, Contribution by the Egyptian Ministry of Health and Population (MoHP),* Cairo, 2009: Chapter III.6.

[6] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009.

The remaining recommendations deal with the more health sector specific issues; some recommendations deal with more immediate actions, and the last ones address the somewhat longer term:

Immediate recommendations include the need for ensuring priority repairs of damaged hospitals and health centres and the reliable provision of equipment and supplies to re-establish a quality function. A systematic identification of the many injured from the Israeli military operations is necessary to ensure that they get the treatment and services they need. Although there have been no epidemics in the wake of the December/January attacks, it would be prudent to plan for such an eventuality as the season now changes towards warmer weather and brings a higher risk of epidemics from the damaged water/sanitation/food infrastructure. In view of the negative effects on mental health that the overall crisis creates, a special effort to alleviate this trend is called for. Investigations to clarify clinical and environmental effects of weaponry used should be undertaken. Finally, monitoring of health, health determinants and health care delivery needs improvement.

Longer term recommendations include the development of a disaster preparedness plan for Gaza, supported by institution-specific ones. Preparing for the increasing number of disabled requires a broader strategy for creating a *Handicap Friendly Society*, including a full complement of services for the handicapped. Finally, a more fundamental revision of the health service infrastructure and function of the Gaza strip could in all likelihood lead to a substantial improvement in competence, cost-effectiveness, and quality of health care – as well as a greater independence to rapidly meet the medical care needs, should another acute, large crisis strike in the future.

1. Introduction

The 124th session of the EB in January 2009 discussed the deteriorating health and humanitarian situation in the occupied Gaza strip, and on 21 January 2009 it passed Resolution EB 124.R4. The Resolution recognized the grave health and humanitarian consequences of the Israeli blockade and expressed deep concern about the consequences of the Israeli military operations that had started on 27 December 2008. Specifically, the EB 124.R4:

- *Welcomed the ceasefire from both parties and stressed the importance of avoiding targeting of civilians, residential areas and health services and personnel*
- *Called for protection for Palestinian people to live in security on their land, allowing them free movement and facilitate the tasks of emergency health services*
- *Called for contribution to the reconstruction of the health infrastructure in the Gaza strip*
- *Requested the Director General to dispatch an urgent specialized health mission to identify urgent health and humanitarian needs and to submit a report to the Sixty-second WHA on current, medium- and long-term needs on the direct and indirect effects on health of the Israeli military operations.*

The humanitarian crisis that today affects the 1.5 million people living in the Gaza strip cannot be fully comprehended by looking only at the Israeli military operations that started on 22 December 2008 and lasted for 22 days. Although the severe bombing and subsequent incursions of land forces caused heavy casualties and devastation of land, infrastructure, and economy, its effects - human and material - were so much worse since it came on the top of a long-standing blockade.

Following the 1st Intifada, the *Oslo Accords* (signed in Washington D.C. on 13 September 1993) were intended to be a framework for the future relations between Israel and the anticipated Palestinian state. The Accords provided for the creation of a Palestinian National Authority (PNA) to take over important functions of such an entity, and a period of relative calm and positive economic development followed the signature of the Accords.

However, with the 2nd Intifada the security situation and economic development again deteriorated. When in February 2006 Hamas won the local elections of the Palestinian Legislative Council many donors ceased economic support for Palestine, bringing serious economic hardship to the civilian population of Gaza.

Further worsening the situation, Israel launched the "*Summer Rain*" military operations in the summer of 2006, inflicting a large number of human casualties and destroying important economic infrastructures. A clash between Fatah and Hamas security forces followed, ending with Hamas taking effective control over Gaza, with Fatah controlling the Palestinian National Authority in Ramallah.

Since 2006 the Gaza strip has been subject to a very severe blockade by Israel, minimizing the movement of people, the means of transport, building material and other goods, food, medical supplies and equipment, and funds. This had severely weakened the functioning of all sectors of society in Gaza and worsened the mental and general health of its people by the time Israel launched *IMO CL 22*.

The Israeli military operations started suddenly on 27 December 2008 with intensive bombing, a naval blockade, and later ground attacks from the Israeli army. During the three weeks a large number of Palestinians were killed and injured and thousands of homes were destroyed, causing 100,000 to flee their homes and neighbourhoods. A significant part of Gaza's economic infrastructure was damaged. The military attacks also hit the health services infrastructure, damaging many hospitals, health centres and ambulances.

After the IDF ceased fire on 18 January, apart from some limited humanitarian aid and commercial food items, the blockade has been almost total with regard to building materials and essential spare parts, which is making repairs and recovery virtually impossible.

It was on this basis that the Executive Board asked the Director General of WHO to appoint a Specialized Health Mission to look into the matter. The Director-General quickly appointed three very experienced public health professionals as the Specialized Health Mission team[7]. After reviewing a large number of reports from a wide variety of sources on the situation in the oPt and the impact of the Israeli Military Operations, the SHM team visited Gaza for four days in March. There they observed the situation on the ground and met with a wide range of relevant national and international organizations (see Annex III and IV). In addition the team had a telephone conversation with the Minister of Health of the Palestinian Authority[8].

The current document is the full report of the SHM on its work. A short version has been submitted to the 62nd World Health Assembly (A62/24/Add.1).

2. Health impact on the population

2.1 The health situation before *IMO CL22*

After the 1994 Oslo Accords a period of development followed whereby the health status of the Palestinian population became typical of a middle income country, and relatively good by regional standards. However, since June 2006 Gaza has been subject to a very severe blockade by Israel, which has led to a severe deterioration in social and economic life, including rising unemployment and poverty. The health effects of this development have resulted in stagnating life expectancy for the 1.5 million people in Gaza. Infant and child mortality has risen, including evidence of childhood stunting, anaemia affecting nearly half the children under 5 years (and in child bearing women), and low birth weight increased from 4% in 2002 to 7.3% in 2006.[9] In addition, there is evidence of profound psychological distress and pathology from the many years of conflict and blockade, and that "the siege reached all facets of life, affected the whole society, and suspended people's life"[10].

2.2 The health impact of *IMO CL22*

People killed

Some 1,417 people died, including 313 children[11] and 116 women.[12] These are figures provided by the Palestinian Centre for Human Rights, collected on fatalities primarily from hospitals and other health care facilities and subsequently checked by field workers collecting

[7] Jo E. Asvall MD, MPH; Richard Alderslade MA, BM, BM.Ch, FRCP,FFPH; Hannu Vuori MD, Ph.D, MA.
[8] The team had an agreement with the Minister to meet with him in Ramallah, but the Israeli authorities did not provide the clearance for the team's travel to the West Bank.
9 Director General of Primary Health Care, personal communication.
[10] The effects of the Siege on the quality of life of citizens in Gaza, Psychology Department, Islamic University of Gaza, June 2008.
[11] PCHR uses the definition of children contained in the *UN Convention on the Rights of the Child*, which sets an age limit of 18 years.
[12] *Confirmed figures reveal the true extent of the destruction inflicted upon the Gaza Strip*, Palestinian Centre for Human Rights, Ramallah, 2009:1-2.

information about victims from families and obtaining affidavits from witnesses and families. IDF has provided other figures: 1,166 killed, of which 49 women and 89 under the age of 16.[13]

In addition to the immediate death from weaponry, collapsed buildings etc, hospital surgeons considered that there were a number of patients who died because at the beginning of the military attacks the hospital facilities were overwhelmed by the huge number of casualties, e.g. some 300 within the first hour at Shifa Hospital alone.[14]

People injured

Over 5,380 were physically injured, of whom 1,872 were children and 800 women.[15] Injuries were often serious, as there were many complicated traumas from exploding weaponry and fallen buildings. Injuries were further seriously aggravated because many adults and children remained within damaged and destroyed buildings for hours - and sometimes days - prior to their removal to hospital by ambulance. Patients suffering from burns from white phosphorus weaponry in a number of instances discovered that burning continued after initial medical care if phosphorus pieces remained and again were exposed to air.

Shifa Hospital's experienced war surgeons noted injuries and wound complications not seen previously by them (for example, patients who bled much more copiously than expected; large internal organ damage with no entry or exit wounds; magnetic metal pieces in wounds that did not look like bomb or shell debris; and in deteriorating patients at re-operation organs with unexpectedly changed appearances).[16] ICRC trauma surgeons at Shifa hospital were said to have noted the high degree of severity of the wounds observed.[17]

Among the many patients evacuated from Gaza through the Rafah crossing and taken care of by the Rapid Response Team of the Egyptian MoH, there were 11 children evacuated during the 2nd week of *IMO CL22* who showed a singular type of injury. These children (aged 4 – 15 years) had as the only injury a bullet wound to the head (in 10 cases one and in 1 case two bullets)[18].

An overview of patients admitted to the Gaza hospitals during *IMO CL22* gives a pointer to the injuries sustained[19]:

Injury type	***No of injuries***	***Proportion***
Shrapnel (all body parts)	2 315	44%
Head/neck injuries	815	15%
Neurotrauma	321	6%
Extremities	918	18%
Gas inhalation	286	5%
Chest injuries	162	3.5%
Back injuries	143	3%
Abdominal injuries	117	2%

[13] Yaakov Lappin, *IDF releases Cast Lead casualty numbers*, Jerusalem Post, 26 March 2009 (http://www.jpost.com/servlet/Satellite?pagename=JPost/JPArticle/ShowFull&cid=1237727552054, accessed 2 April 2009).
[14] Senior Shifa hospital medical staff, personal communication.
[15] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010,* launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009:22.
[16] Senior Shifa hospital medical staff, personal communication.
[17] Senior Shifa hospital medical staff, personal communication.
[18] Dr Ayman El Hady, Team Leader of the *Rapid Response Team*, personal communication.
[19] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:13.

Amputations	78	1%
Burns	60	1%
Eye injuries	85	2 %
Total	***5 300***	

Discussion of the care given to all the injured – both in Gaza and those evacuated abroad – follows in Chapter 3.

People disabled by IMO CL22

At the time of writing of this report (mid-April 2009) the number of people who will suffer from different types of permanent disability (e.g. brain injury, limb amputations, spinal cord injuries, hearing deficiencies, disabling mental health problems etc) from the 22 days of military attacks is not known. One estimate speculates that there may be some 1000 amputees;[20] whatever the final figure may be, it is likely to be high, considering the many very serious injuries[21].

The emotional, social and economic impact from *IMO CL22* was severe indeed, e.g. some 1700 families lost their breadwinner due to the death or injury caused by the attacks.

IMO CL22 impact on Maternal and Child health

Immediately after *IMO CL22* UNFPA conducted a study of monthly service records and rapid assessments in 4 major hospitals, secondary analysis of MoH Operations Rooms reports, and feed-back from key informants in UNWRA shelters, hospitals and communities in North Gaza, Rafah and Khan Younis Governates[22]. There were some limitations to the assessments (unavailability of certain baseline data; time constraints, weak records in some institutions etc); nevertheless, some of the main findings were reported to be:

- A 40% increase in miscarriage cases admitted to maternities
- A 50% increase in neonatal deaths (data from Shifa hospital maternity)
- An increased prevalence of obstetric complications
- Qualitative and anecdotal data from communities about severe impact on mothers and infants including cases of maternal deaths occurring as pregnant women tried to reach hospital for delivery, e.g. one infant died in an IDP shelter where 8 women delivered babies without medical staff present.

An interview survey of 2000 households (conducted 3-12 March 2009) undertaken by the FAFO Institute[23], in cooperation with UNFPA, indicated that 12 per cent of all married women, aged 15-49, had been pregnant or had given birth during the three months before the survey. Most of these births, 77 per cent, took place at public hospitals, 8 per cent in private hospitals and 5 per cent in public clinics. 58% received pre-or post-natal care during *IMO CL22*; the others were prevented from doing so by the conditions prevailing (travel too dangerous, health facility stopped operating etc.).

Another UNFPA study[24] found that all women interviewed experienced extreme fears (and still felt that after the end of *IMO CL22*) and doing so even more for their loved ones than for

[20] Director of Al Wafa Rehabilitation Hospital, personal communication.
[21] Handicap International has begun a study to define the number of disabled from the *IMO CL22*.
[22] *Gaza Crisis: Impact on Reproductive Health, especially Maternal and Newborn Health and Obstetric Care, Draft Report*, Jerusalem, United Nations Population Fund, 10 February 2009.
[23] *Life in the Gaza Strip six weeks after the armed conflict 27 December 2008-17 January 2009 "Evidence from a household survey"*, The FAFO Institute for Applied International Studies, Oslo, 2009.
[24] *Gaza Crisis: Psycho-social Consequences on Women - Executive Summary*, prepared by: Culture and Free Thought Association (CFTA), funded by: United Nations Population Fund, Jerusalem, 2009.

themselves. Fear, anxiety, panic attacks, feelings of insecurity, sleeping and eating disturbances, depressions, sadness and fear of sudden death were common.

Communicable diseases during IMO CL22

Although more CDs were registered in some areas during the *IMO CL22* period than at a similar time in 2008, no real epidemic occurred during the period (although the risk has increased – see Chapter 4 below).

Non Communicable diseases impact of IMO CL22

Due to the difficulties in transportation, the priority given to the injured, and the fact that the MoH health services only distribute chronic disease drugs for 2 weeks at a time, care for NCD patients was interrupted for an estimated 40% of patients during the *IMO CL22* period[25]. Young insulin-dependent diabetic patients, those on renal dialysis and hypertensive patients were particularly threatened. The real impact of this situation in terms of related deaths or worsening of the chronic diseases is not known.

Mental health impact of IMO CL22

Already the long blockade of the Gaza strip in previous years had led to a profound effect on the mental health of the population. The multifaceted psychosocial trauma caused by the *IMO CL22* attacks added serious new burdens: loss of killed or wounded family members, neighbours and friends; constant threats to the physical security of self, family and friends; destruction of homes; sleep disturbances; food/electricity/water deprivation; sharply raised fears for future life and livelihoods etc.

The population (with the exception of 200 non-Palestinians permitted to enter Israel) was not allowed to flee from the military attacks zones - i.e. the whole Gaza strip. This was an unusual and profoundly important aspect of this particular conflict and its aftermath[26]. Furthermore, both children and adults fear a new war – a fear reinforced by frequent incursions by Israeli forces since the end of *IMO CL 22*. The civilian population therefore cannot think of themselves either as survivors or as entering a more usual societal phase of repair, rehabilitation and development – which in normal circumstances would be important coping mechanisms.

Adults demonstrated symptoms of profound fear and depression, whilst their children showed characteristics of disturbance such as insomnia and bed wetting. A UNFPA study indicated that the immediate psychological problems caused by the near-constant military attacks affected virtually the entire Gaza population**.**[27] Another study - a household interview study of some 2 000 households carried out 3-12 March 2009[28] - *inter alia* revealed that 15% of children started bed-wetting during the *IMO CL22*; some 20% of children had problems of concentration that started during the attacks; 55% of the population felt as if the war actions were still going on; some 40 % felt very nervous, very angry, depressed, and/or so deeply hopeless that they thought things would never get better. These signs of psychological distress were as prevalent in 18-24 year olds as in the rest of the population. The issues people were "quite worried" about were the economic situation

[25] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010*, launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009:23.

[26] As opposed to the *IMO* attacks on Lebanon in 2007, when almost 1 million people fled the war zone during the first week of that war.

[27] *Gaza Crisis: Psycho-social Consequences on Women - Executive Summary*, prepared by: Culture and Free Thought Association (CFTA), funded by: United Nations Population Fund, Jerusalem, 2009:2.

[28] *Life in the Gaza strip six weeks after the armed conflict 27 December 2008 – 17 January 2009*, "Evidence from a household survey", Fafo Institute for Applied International studies, Oslo, Norway.

(86 %), political situation (81%), security (68%), employment (64%), health (52%) and the family situation (49%).

UNWRA screened 25,000 children in UNWRA schools and found that some 30% of children and 20% of adults had mental health problems, while some 10% of children had experienced very serious loss (of kin or friends, or material losses such as their homes) during *IMO CL22*[29]. Ninety-eight per cent of children felt unsafe during the war, feeling that they had "lost their parents twice" – i.e. that their parents could not protect them from the conflict nor could they provide for them as breadwinners and thus role models.

Overall it is estimated that some 30,000 children will need continued psychological support, and some experts warn about the danger that the current generation of children may be prone to grow up with an attitude of hatred and aggressively violent behaviour. These mental health and psychological distress outcomes are among the most significant health consequences of the siege and *IMO CL22.*

There is, however, some uncertainty about the longer term mental health impact of the *IMO CL22*. While the cases of PTSD emerging from the conflict represent a significant mental health management issue, previous estimates of PTSD prevalence after emergencies and disasters have been reduced in populations with culturally specific good coping mechanisms and helped by appropriate treatment approaches.

To what extent this will apply in Gaza may be somewhat difficult to predict, due to the situation described above. Nevertheless, it may be that only in a smaller proportion of cases will profound disturbances occur requiring more extensive intervention and management. Based on previous experiences with emergencies WHO expects that the number of people with serious mental health disorders may increase by an average of 1% above the baseline, and those with mild and moderate mental health disorders by an average of 5-10% - provided that a protective environment is restored.[30]

The effect of the long blockade has worsened since *IMO CL 22*, as no building materials for repairs, generators etc are allowed passage. The resulting daily shortages in almost all walks of life, as well as a sharply rising lack of employment opportunities from the widespread destruction of industries, agricultural land and restricted fishing possibilities, further increases tensions in the whole population. The feeling of being deprived of the most basic human rights strongly affects the mental health through increase in depressions and despair, in a wide strata of the population in the Gaza strip.

3. Impact of the *IMO CL22* on health services and health care

3.1 The health services before the *IMO CL22*

The strengths of the Palestinian health system include a relatively healthy population; a high societal value placed on health; many qualified, experienced, and motivated health professionals; national plans for health system development; and a strong base of governmental and non-governmental organizations.[31]

[29] Dr Iyad Zaqout, community mental health programme, UNWRA, personal communication.
[30] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:14-15.
[31] *Building a Successful Palestinian State,* The RAND Palestinian State Study Team, Santa Monica, Arlington, Pittsburgh, The RAND Cooperation, 2007:223.

While this analysis by the Rand Corporation in 2007 still holds, the current system is weakened and is fragmented between four main providers of services: the Ministry of Health (MoH) of the Palestinian National Authority (PNA); UNRWA; nongovernmental organizations (NGO); and the private sector. It also reflects a long development through several phases:

First, the British Mandate built on services established by Christian missionaries in the 19th century. In 1949, UNRWA started providing services for registered Palestinian refugees. From 1959 to 1967, Jordan was in charge of health services for the West Bank and Egypt was in charge for the Gaza Strip. From 1967 to 1993 (until the signature on Washington of the Oslo Accords), the Israeli military administration was responsible.[32]

After the Oslo Accords, the PNA became responsible for the health system in oPt. The MoH of the PNA received large amounts of donor funds, but it was unable to develop a coherent health policy and plan, partly because many donors were more interested in infrastructure projects than planning and management of the services. The Ministry's efforts were also hampered by the increasingly difficult economic situation, poor management, corruption and restrictions imposed by Israel. Lack of control over water, land, environment and movement between Gaza and WB made a public health approach to health system development difficult.[33]

The blockade during the 2.5 years prior to *IMO CL22* accelerated the degeneration of the system. While the main factor has been the closure of the border crossings by Israel, the deteriorating economy, and a strike undertaken by Palestinian health workers from September to December 2008 also contributed. During this period, the maintenance of facilities and equipment and the supply of consumables have not met the needs, and the health personnel have not been able to keep up their skills and knowledge.

Secondary and tertiary care

Gaza has 24 hospitals, with a total of 2003 beds[34] of these 12 are MoH ones with 1587 beds, 10 are NGO owned (382 beds)and 2 are private (34 beds). In 2007, the bed density was 133 beds per 100,000 population; this is fairly low when compared to e.g. the average number of beds per 100,000 population in the WHO European Region (some 675) and in Israel (583.). The low bed density leads to overcrowding when there is any unusual increase in demand.

While MoH hospitals are often overcrowded, the non-governmental hospitals and mental hospitals tend to be under-used. The location and service profiles of the hospitals are not based on a rational plan. Some of the non-governmental hospitals may be too small or unnecessary; nevertheless, they do provide the private sector with access to hospitals.

The scarcity of tertiary services in Gaza is a major problem, particularly in cardiology, neurology, ophthalmology, oncology, radiology and haematology. While some hospitals (particularly Al Shifa) have the premises and equipment to provide at least parts of such services, they lack the necessary human resources and have also experienced great difficulties in getting spare parts and consumables for the high-tech equipment.

For this reason, a great number of patients (around 1000 per month during the first 6 months of 2008) were selected to be treated at institutions outside of, or to non-governmental hospitals within, the Gaza Strip. Of those Israel granted 6506 permits for treatment abroad, i.e.,

---

[32] *The Oslo Accords, 1993*, U.S. Department of State - Diplomacy in Action, 2009 (http://www.state.gov/r/pa/ho/time/pcw/97181.htm, accessed 5 May 2009).

[33] Giacaman R., Khatib R., Shabaneh L., Ramlawi A., Sabri B., Sabatinelli G., Khawaja M., Laurance T., *Health status and health services in the oPt*, The Lancet, 7 March 2009, Vol. 373:844-845.

[34] *WHO Country Cooperation Strategy Occupied Palestinian Territory 2009 - 2013 (Draft)*, 20 June 2007, World Health Organization, 2008.

some 65 % of the applications recommended.[35] Israel imposes tight restrictions on the exit of patients for treatment outside Gaza through the Erez crossing, with the result that a significant proportion has been unable to get out. The proportion of referred patients who were denied exit by Israel increased from 10% in 2006 to 44 % in the first 6 months of 2008.

The cost of the treatment abroad of most patients has been borne by the MoH. It has been the third highest expenditure in the Ministry's budget since 2005, seriously limiting the Ministry's capacity to further develop the health services. There is evidence that the referral system has functioned badly and that many unnecessary referrals have been requested, recommended and accepted. Clearer guidelines and criteria for the referral are needed.[36]

Given the size and density of the population of the Gaza strip, and the precarious communication between the Gaza strip and the West Bank, Gaza would seem to deserve a fully fledged tertiary care system.

Besides the tertiary care services, intensive care is a bottleneck. The intensive care unit in Gaza's biggest hospital Al Shifa can not cope with an unusual increase in the demand (such the one as seen during IMO CL22).

The proper functioning of all health services depends on the availability of spare parts and consumables, including drugs and reagents as well as of fuel and electricity. The border crossing closure has seriously limited this availability. Consequently, much of the health sector's medical equipment was in a dire state already before the *IMO CL22* due to the lack of spare parts and replacements, poor maintenance and the effects of frequent power cuts and unclean water supplies. In addition, many anticipated physical infrastructure projects, such as new hospitals or health centres have been postponed because of the restrictions on the import of building materials.[37]

Primary health care (PHC)

The MoH and UNRWA have established a large network of primary health care centres, with 56 MoH and 20 UNRWA centres (there are also some NGO onse).

The MoH operates with four categories of PHC centres. Category 1, intended for isolated areas, provides immunization and the most basic MCH and curative services and first aid. The other levels gradually add to them GP services, dentistry, laboratory, X-ray and medical specialists. Given Gaza's high population density and relatively short distances, the MoH PHC services do not have any Category 1 centres; five MoH centres (and some NGO and UNWRA ones) provide mental health services, and only two have physiotherapy services.[38]

The UNRWA centres provide family based preventive and curative care to the registered refugee population. UNRWA also has a well-functioning health information system covering both disease surveillance and family records.

While the MoH centres provide chronic patients with drugs for two weeks, UNRWA centres provide them for six weeks. The UNRWA centres also tend to have a more reliable supply of drugs, including a good buffer stock of essential drugs.

---

[35] *Health and economic situation in the oPt, including east Jerusalem, and in the occupied Syrian Golan - Fact-finding report - Report by the Secretariat,* Geneva, World Health Assembly (A62/24).

[36] Abed Y., *Joint Report on Health Sector Review,* A summary report, supported by the HRS Steering Committee, DFID, Department for International Environment, European Commission, Cooperazone Italiana, Palestinian National Authority, World Bank, World Health Organization, 2007:31; *Health and economic situation in the oPt, including east Jerusalem, and in the occupied Syrian Golan - Fact-finding report - Report by the Secretariat (Draft),* Geneva, World Health Assembly, 2009:3.

[37] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:2-3.

[38] Dr Fuad Elissawi, Director General, Primary Health Care, personal communication.

Access to health care, ambulance services and other transport

Because the Gaza Strip is the seventh most densely populated area in the world (3.881 people per square km) with mostly urban infrastructure, access to health facilities under the normal circumstances is relatively easy by ambulance or by public or private transport.
Before the *IMO CL22*, the MoH and the Palestinian Red Crescent Society (PRCS) had a total fleet of 148 ambulances. The government-owned ambulances are attached to the hospitals, some PHC centres and a central ambulance station in Gaza City. The PRCS also has a central ambulance station in Gaza City, and it has an agreement with the MoH to provide ambulance services.[39] A special problem is the fuel shortage due to the blockade, something that affects many types of transport that is important for the health sector.

Drug supply and pharmacies

The government drug warehouse in Gaza (Central Drug Store, CDS) is the key distribution point for drugs. WHO's monitoring of the availability of medicines has shown constant shortages during 2008. At the start of the *IMO CL22*, over 100 items on the list of 459 essential drugs and 236 consumable items were out of stock. The CDS has not been able to maintain a buffer stock of minimum six months supplies. The stocks will therefore be quickly depleted if there is an unusual increase in the demand.[40]

Another pre-*IMO CL22* concern was the concentration of all activities in the central warehouse as there were no subunits other than pharmacy stores in individual hospitals and primary care districts in other parts of the Gaza Strip.

Preventive medicine

The MoH and UNRWA PHC centres provide a comprehensive vaccination programme with high coverage rate.

Health education is the responsibility of the Department of PHC. In addition, UNRWA and some NGOs carry out some health education activities. Special emphasis has been placed on the recognition of symptoms of mental health problems by both health personnel and by the general public.

Besides cultural tradition, the stressful life situation may explain the high prevalence of smoking among the men. The same factors may explain also the increase in obesity particularly among older people in spite of the poor nutrition status.[41]

Environmental hygiene

Environmental hygiene is the responsibility of the Department of Environmental Health of the MoH and the municipalities. The long-standing restrictions, siege and *IMO CL22* have resulted in great under-investment in the water and sanitation infrastructure of the Gaza Strip and serious difficulty to maintain adequate service and public health standards.

The main problems in wastewater treatment are inadequate treatment, overload, and inadequate discharge capacity, compounded by lack of investment and inability to import the equipment needed to carry out repairs to existing infrastructure. As a result, raw sewage has been discharged directly to the Mediterranean along the coast of the Gaza Strip. This practice is assumed

[39] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:12.
[40] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:11.
[41] Mendis S., *Prevention and Control of Non-communicable Diseases in Palestine, Report of a technical assessment mission 7 July - 11 July 2008,* Geneva, World Health Organization, 2008.

to have already caused significant environmental damage. The largest population centres are at particular public health risk if wastewater networks fail, are poorly maintained or are damaged.[42] Because the blockade has rendered essential repairs and maintenance to existing systems virtually impossible and because the supply of electricity has not been sufficient, the water supply was already intermittent before the *IMO CL22*.

The hospitals and PHC centres have introduced waste separation and sharps collection. The Al Shifa hospital has an incinerator but its capacity is not sufficient to treat the waste from all health care facilities; in addition, the incinerator is old-fashioned and produces potentially toxic fumes. Much of the waste has therefore ended up in general landfills as general household waste.[43]

Health manpower

Table 1. Different categories of health personnel in the Gaza strip in 2007[44]

Profession	Number	Per 100,000 population
Physicians	3,482	271
Dentists	700	49
Pharmacists	1,595	113
Nurses	4.277	302
Midwives	2.34	17
Paramedics	3.245	229
Total	13.893	981

The number of health personnel per population is low; for instance the European Region of the WHO has 335 doctors and 713 nurses per 100,000 population; in Israel the corresponding figures are 353 and 579[45]. Particularly in primary health care there is a shortage of nurses, and they tend to be underrepresented in relation to the doctors.

Gaza has 2 medical faculties (with an annual average of 65 Students) and 3 nursing colleges (with an annual average of 200 Students). Medical faculty enrolments are increasing, but quality of medical education is deteriorating somewhat because of lack of certain training materials.

While many members of the older generation of doctors in Gaza are well-trained - many with specializations obtained abroad, - their skills are getting “rusty” because of lack of continuing education. The younger generation lacks both specialization possibilities and continuing education, since - due to the blockade - it has been very difficult indeed to travel abroad for study or to import guest lecturers from abroad.

[42] *A brief outline of the sewage infrastructure and public health risks in the Gaza Strip for the World Health Organization*, Wash Cluster, Geneva, World Health Organization, 2009:1.
[43] Mr Henrik Slotte, Chief of Branch, Post Conflict and Disaster Management, personal communication.
[44] *WHO Country Cooperation Strategy Occupied Palestinian Territory 2009 - 2013 (Draft)*, 20 June 2007, World Health Organization, 2008:17.
[45] HFA database, WHO Regional Office for Europe.

3.2 Impact of the *IMO CL22* on health care infrastructure and services

On 27 December, the first day of the *IMO CL22*, all MoH hospitals declared a state of emergency, meaning that:[46]

- Only emergency surgeries were carried out; elective surgeries were suspended;
- All hospital out-patient clinics were closed, except those equipped to address emergencies;
- All health personnel had to report to duty and all leave was cancelled;
- Emergency and operation rooms were organized to serve casualties;
- All ambulances were considered on call;
- All hospital pharmacies were functioning 24 hours; and
- Relevant health specialists working at the PHC centers were redeployed to hospitals.

The state of emergency ended on 22 January when MoH allowed the health facilities to resume their regular functions.

Damage to hospitals

The *IMO CL22* seriously impacted the hospitals, and 15 (including 9 government hospitals) were damaged[47].

Table 2. Hospitals most damaged by the *IMO CL22*

Hospital	No. beds	Type	Damage
Al Wafa	50	Rehabilitation	A new building to be soon opened to expand services was destroyed; main building hit
Paediatric Al Nasser	150	Paediatric	Damaged windows
Al Quds	100	General	Two top floors completely destroyed; adjacent administrative building and warehouse completely destroyed
European Hospital	207		Artillery damage to walls, water mains and electricity
Al Awda	77	General	Damaged by 2 shells near emergency room
Al Dorah	64	Paediatric	Emergency room hit twice

In spite of the damage almost, all hospitals remained open during most of the *IMO CL22* and provided at least partial services. The only repairs in the damaged hospitals after the *IMO*

[46] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:6-7.
[47] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:12; *Heath Situation in the Gaza Strip, 4 February 2009,* Geneva, World Health Organization, 2009:5.

CL22 have been the replacement of broken windows with plastic sheets - because of lack of construction materials resulting from the blockade.

The brunt of the effects of *IMO CL22* was borne by the public sector hospitals, but the private sector helped by accepting patients from the public sector; in general, the communication and coordination between the public and private sector improved during IMO CL22[48].

Hospitals visited by the SHM

The SHM visited two of the most severely damaged hospitals, Al Wafa and Al Quds, as well as the main hospital of the Gaza strip, Al Shifa.

Al Wafa is the only rehabilitation hospital in the Gaza Strip. It had been hit by 8 tank shells, 2 missiles and thousands of bullets. During the attack, the hospital had been in continuous contact with the ICRC requesting the shelling to be stopped, and the ICRC in turn had been in direct contact with the IDF. Having anticipated an attack, the hospital had discharged some patients and had moved the remaining 25 patients to the safest parts of the building. The attack wounded two staff, destroyed a new building intended to expand the capacity of the hospital and caused minor damage to the main building. The remaining patients had to be evacuated.[49]

The damage suffered by the Al Wafa hospital and its precarious location close to the border will be major impediments to the effective rehabilitation of the many disabled patients needing clinical rehabilitation. There are currently no accurate figures for the distribution of the type of permanent disabilities. Handicap International expects to conduct a survey on the availability of rehabilitation services in the Gaza Strip; they are also trying to collect information on the numbers and type of disabilities and handicaps. Given the seriousness of the injuries (see Chapter 2), the needs are likely to be great. The *IMO CL22* also interrupted the training activities carried out by the hospital, including a WHO supported Masters Programme in Rehabilitation Sciences and training of vocational therapists.

Al Quds is a general hospital owned by the PRCS. The complex also contains a socio-cultural centre, an administrative building, an ambulance station and a warehouse. The administrative building was heavily damaged by tank fire from close range, and the two top floors of the hospital itself were completely destroyed by fire assumed to be from phosphorous shell landing on the roof. The socio-cultural centre suffered severe damage, and the children's play room, the largest meeting hall in Gaza (a movie theatre), and a staff restaurant were destroyed. The warehouse that had been recently stocked with medical supplies was destroyed, and the ambulance station was hit. Like the situation in Al Wafa, Al Quds staff had been repeatedly in contact (through the ICRC and WHO) with the IDF, requesting the shelling to be stopped. The 500 civilians who had sought refuge in the hospital and some 50 patients had to be evacuated.[50]

Although Gaza's main hospital *Al Shifa* did not suffer major damage (windows were blown out when a nearby mosque was destroyed) by the *IMO CL22*, the SHM could witness the impact of the long blockade. The unfinished new surgical building that would have provided much-needed additional capacity stood as a skeleton on the building site, as there had been no construction since 2006 because of restrictions on the import of building material.

The beginning of the *IMO CL22* stretched the resources of Al Shifa to the extreme. Some 300 patients (dead and wounded) arrived within the first hour of the *IMO CL22*. The entire hospital was turned into a surgical hospital and operations were being performed wherever possible.

---

[48] Dr Mohammad R. Al-Kashif, Director General of Hospitals, personal communication.

[49] Dr Khamis El-Essi, Director of medical rehabilitation teams, Al Wafa Hospital, personal communication.

[50] *Israel/Occupied Palestinian Territories, Rain of Fire, Israel's Unlawful Use of White Phosphorus in Gaza*, New York, Human Rights Watch, 2009:39. Also: Dr Khalil Abu Fool, Director of Emergency and Relief Units PRCS, personal communication.

Operating theatres normally containing one table had two additional makeshift tables, and operations were also performed in the maternity suites, and even in corridors. The number of ICU beds was increased from 12 to 31.[51] The surgeons worked back to back, literally wading in blood flowing on the floors.

This experience revealed an insufficient capacity of operating theatres, intensive care beds and certain laboratory services (particularly forensic). The staff would have wanted to store samples of the unusual wounds and organ damage (see Chapter 2) for later forensic analysis, but the lack of know-how and appropriate laboratory facilities prevented this.

It also highlighted the deleterious impact of the previous on-going siege, since much equipment was non-operational because of poor condition and lack of spare parts.

Coping with the patient load

Despite the large influx of casualties throughout the *IMO CL22*, the bed occupancy rate in the MoH hospitals did not exceed 75 %, and it was much lower in most cases. The reason was the concern that there should, at all times, be free capacity to receive sudden influx of new wounded. Steps were therefore taken to prepare for this. Those steps included discharge of as many patients as possible before IMO CL22 started; the MoH policy to discharge patients early (for instance Al Shifa hospital discharged patients three times a day to make space for new casualties); the sending of a large number of seriously wounded abroad for care; suspension of routine and elective interventions etc. The difficult access to hospitals for the population due to the great travel insecurity probably also contributed to reducing the number of new patients.[52]

Referral abroad

A major relief to the Gaza hospitals - particularly to the Al Shifa hospital - was the opportunity to refer serious cases to Egypt for further treatment through an arrangement negotiated between the PNA and the Egyptian authorities at the outset of the *IMO CL22*. That meant opening the previously closed Rafah border post, whereto Gaza ambulance teams - (with considerable risk to themselves – they were fired on at least once) - transported the wounded and handed them over to the Egyptians. Egypt thus received 1053 injured patients during IMO CL 22 and its aftermath (out of whom 96 were further referred to third countries) and 885 accompanying persons.

As from the Rafah border crossing they were taken care of by the Egyptian MoH Medical *Rapid Response Team* which had been sent to El Arish. This team consisted of specialists (in general surgery, vascular surgery, neurosurgery, plastic surgery, orthopedic surgery et al.) with extensive training in disaster medicine, medical evacuation etc. During the *IMO CL22*, some 75 doctors and the requisite supporting staff participated in the operation.[53] An Egyptian NGO gave each patient and the accompanying family members a "kit" with basic necessities, including a mobile phone to keep in contact with relatives.

After initial treatment or triage in Gaza, PCRS ambulances took the patients to the Rafah border crossing from where they were transported - after a triage by the Rapid Response Team members - in Egyptian ambulances to either the North Sinai University Hospital in Al Arish for immediate treatment or direct to selected other hospitals in Egypt (some were sent onwards to other countries for treatment). The Ministry of Health daily informed the Rapid Response Team about the availability of beds in the participating hospitals. Some 40-50 patients arrived per day, of

[51] Dr Hussain Ashour, Director General of Shifa Medical Complex, personal communication.
[52] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:8.
[53] Dr Ayman Al Hady, Head, *Rapid Medical Response Team*, personal communication.

whom on average 15 required intensive care. The Rapid Response Team was impressed by the quality of care given to the patients in Gaza before their evacuation.

Twice, Egyptian ambulances drove into Gaza, proceeding all the way to the Al Shifa Hospital, from where they evacuated some 50 patients.

In addition 30 patients were evacuated to Israel for care.[54]

Mental health

There are almost 40 organizations providing mental health services in Gaza, often in an uncoordinated fashion. The newly established, WHO-led Mental Health Sub-cluster helps to coordinate their work under the umbrella of the *national mental health policy and implementation plan* developed by the MoH of the PNA with WHO support and the recently published *Inter-Agency Standing Committee (IASC) guidelines*. The foci are preschool children and community mental health programmes that help to strengthen family and community networks. They also try to include sports, youth clubs, and family associations. A specific problem is to counter the use of psychotropic drugs which arrive "through the tunnels".[55]

One of the most profound and long-lasting consequence of the long blockade and the *IMO CL22* is a chronic mental health malaise that affects the whole of society, particularly children (see Chapter 2).

During the *IMO CL22*, UNRWA provided basic services including counsellors for the people in UNRWA shelters. Some 200 psychotic patients in the shelters received necessary medication, while the rest of the population were largely deprived of such services due to the overriding priority given to care for the wounded.

UNRWA had already before IMO CL22 taken important initiatives to meet the growing need for mental health services, integrating mental and psychological services into primary care in their health centres and providing counsellors in kindergartens and schools. Thus, UNWRA's emphasis has been shifting away from individual, one-on-one therapy, to family - and group therapy, including helping parents developing their parenting skills. UNWRA also plans to start training their 7,500 teachers in community-based mental health and psychological support work, as well as in self-management and self care. There will be a mental health committee within each UNRWA school to develop, for example, sports and arts activities and to help to re-motivate the students, many of whom have lost their interest in school.[56]

Other affected health services

The *IMO CL22* affected *obstetric and perinatal care* (see also Chapter 2). The insecure situation prevented many pregnant women from seeking antenatal care, and 38 deliveries took place at the mother's home or in a shelter, often unattended by skilled personnel[57]. Gaza's main maternity departments were transformed into surgical departments to cope with the large number of casualties. While there was no significant drop in the use of maternity services in the maternity units, mothers were discharged as soon as 30 minutes after the delivery. Electricity interruptions may have affected the survival of newborns needing intensive care.

The quality of *medical records* fell during the *IMO CL22* hampering the assessment of the impact of the *IMO CL22*.

---

[54] *Health Situation in the Gaza Strip, 4 February 2009*, Geneva, World Health Organization, 2009:3.
[55] Dr Ahmed Abu Tawahina, Director General, Gaza Community Mental Health Programme, personal communication.
[56] Dr Iyad Zaqout, Director, UNRWA Community Mental Health Programme, personal communication.
[57] *Gaza Crisis: Impact on Reproductive Health, especially Maternal and Newborn Health and Obstetric Care, Draft Report*, Programme of Assistance to the Palestinian People, Jerusalem, United Nations Population Fund, 2009:4; *Gaza Strip, Initial Health Needs Assessment*, Prepared by the Health Cluster, Gaza, World Health Organization, 2009:9.

During the *IMO CL22*, the care of patients with *non-communicable diseases* was neglected for many reasons. The Referral Abroad Department was closed from 27 December until 18 January, and the referral abroad programme for non-emergency patients was stopped; access to PHC was limited; and the hospitals had to devote all their capacities to acute, injured patients. The frequency of the *dialysis* session of some 400 dialysis patients had to be reduced or the duration of the sessions shortened because of lack of consumables and power cuts. There was a sizeable back-log of chronic patients who needed urgent treatment, part of which is not available in Gaza. An additional 600 patients who used to be treated for their chronic conditions in either Israeli or West Bank hospitals are now (with a few exceptions) deprived of this possibility (partly due to a payment dispute between the PNA and Israel). The MoH estimates that treatment for around 40% of chronically ill patients was interrupted during *IMO CL22*, and that a number of them may have died as a consequence[58].

Primary Health Care

At least 43 PHC centres were damaged or destroyed (27 MoH, 7 UNRWA and 9 NGO centres), and 21 out of 56 MoH centres and 3 out of 20 UNRWA ones were closed during part or all of the period of the *IMO CL22*.[59] In addition, the transformation of 10 MoH and 4 UNRWA centres to emergency centres reduced their primary health capacity.

During the first days of the *IMO CL22*, a large number of the PHC staff could not report to work because of insecurity and difficult access. The same problem reduced the utilization by the population of the PHC centres by 90 per cent during the entire *IMO CL22*. About 40 % of the patients could not get their drugs.[60] While the UNRWA centres managed to keep normal patient records, it was not possible in the government centres.

By 23 March, PHC services had been reactivated in 54 of the 56 MoH facilities, including the partially damaged facilities; only the two completely destroyed centres were not functioning. All 20 UNRWA PHC centres were functioning and providing a full range of services. Since IMO CL22 there have been hardly any repairs beyond the replacement of broken windows with plastic sheets in any of the damaged PHC centres because of lack of construction materials. In some damaged centres, Medécins du Monde has erected tents to replace the damaged buildings or the services are being provided in private houses.

Public Health

Most public health functions, including the monitoring of communicable diseases, were suspended on 27 December and resumed on 20 January.

During the 10 first days of the *IMO CL22*, there were virtually no *vaccinations* because the closure of the clinics, unavailability of electricity and fuel, shortage of staff and movement restrictions affected distribution of vaccines. The vaccination rate therefore initially dropped to 30 % but started to increase towards the end of *IMO CL22* thanks to good cooperation between the MoH and UNRWA. Children were vaccinated at any MoH PHC centre they could reach. UNRWA, in turn, vaccinated not only displaced children but any child living near their shelters and unable to reach a MoH centre. The full immunization programme has resumed since

[58] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010*, launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009.
[59] *Gaza Strip, Initial Health Needs Assessment*, Prepared by the Health Cluster, Gaza, World Health Organization, 2009; *WHO brief to OHCHR, War on Gaza*, Geneva, World Health Organization, 2009:2-3.
[60] Dr Fuad Elissawi, Director General, Primary Health Care, personal communication.

the ceasefire.[61] Given the good vaccination coverage before the *IMO CL22*, the relatively short duration of the interruption, and the quick restoration of the vaccination programmes, the risk of vaccine-preventable diseases should be low.

The *public health laboratory* has resumed its activities in water, food and sewage control. The epidemiological surveillance programme has been reactivated.

Health Personnel

During the *IMO CL22*, about 6,000 MoH staff provided health care; some 90 of whom were redeployed from their hospitals to others closer to their homes. They paid a high price during *IMO CL22:* 16 health workers were killed and 25 injured, many of them in the line of duty[62].

There were periods when some could not reach work because of security reasons and lack of transport. The long working hours, time and emotional pressure in treating emergencies and the feeling of vulnerability to military action aggravated the situation of the health staff, already precarious because of the difficult working conditions during the long blockade. The result was an increase in different levels of stress, including burn-out.

The already limited continuing education programmes and quality assurance activities completely stopped during the *IMO CL22*.

During the *IMO CL22* more than 500 foreign doctors entered Gaza through the Rafah border crossing to help out[63]. While some of them provided excellent service, such as the Jordanian and Moroccan teams who shared the same language and culture, others were less successfully adapted to the local conditions and/or lacked the skills required for war surgery. However, they may have reduced the need for referrals abroad as some of them also treated less urgent, non-casualty cases.[64]

Access to health care, ambulance services and other transport

During the *IMO CL22*, 29 of Gaza's 148 ambulances and two ambulance stations were damaged or destroyed. At 23 March, there were 35 functioning ambulances at the MoH hospitals and 14 at Gaza's main ambulance stations; PRCS operated an additional 40 ambulances[65], and, furthermore, there were many new, donated ones to be entered into service.

During the entire *IMO CL22*, the ambulance teams experienced difficulties in movement, and this was particularly bad during the first four days (3-7 January 2009) of the ground operations by the IDF. In spite of attempted coordination between the ICRC, the PRCS and the IDF, it often took hours to reach the victims and many attempts by the ICRS and the PRCS to coordinate with the IDF to obtain a green light were unsuccessful or it took up to 24 hours or even longer to get it. If the emergency team did not get a green light, it usually still decided to retrieve and transport the sick and wounded anyway, but of course doing so at a much greater personal security risk.

---

[61] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009; *WHO brief to OHCHR, War on Gaza,* Geneva, World Health Organization, 2009:9,16.

[62] Shaqoura, W. (Director for International Cooperation, Ministry of Health, Palestinian National Authority), *Health Situation in Gaza Strip,* Palestinian National Authority, 2009:4; *The Targeting of Medical Centers, Ambulance Teams and Civil Defense Teams during the Israeli Offensive "Operation Cast Lead" against the Gaza Strip (27 December 2008 - 18 January 2009),* Al Mezen Centre for Human Rights, 2009:12.

[63] General Mohamed Shousha, Governor of Northern Sinai, personal communication.

[64] Dr Fathi Abdullah Abu Moghli, Minister of Health, PNA, personal communication.

[65] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:12.

Coordination between the Palestinian Department of Coordination and Liaison and the Israeli authorities was slow.

The operation of the ambulances was hampered by the damage caused to the access roads by bombardment and the debris from destroyed and damaged houses; in some cases the ambulances were forced to take long detours. In spite of the damage to the ambulance fleet, the large numbers of casualties and the difficult security conditions, most of the injured were rapidly transported from the incident site to emergency rooms.[66] According to many locals, "The emergency teams and ambulance drivers were the real heroes of the crisis."

A less centralized dispatch system might have alleviated some of the problems the ambulances encountered.

Lack of security and fuel completely stopped transport by private cars or public buses. During and immediately after the *IMO CL22*, 172 donated ambulances (given by different donors) entered Gaza through the Rafah crossing point[67].

Equipment and Supplies

There was a complete lack in CDS of over 100 items on the essential drug list before the *IMO CL22* and no buffer stocks for the rest. As the number of casualties mounted, the MoH and donors responded rapidly by delivering large volumes of supplies within days to address immediate shortages. Further supplies were delivered as the *IMO CL22* continued, including large volumes of donations. The volume of donated supplies was so big that the Central Drug Store had to find 36 temporary warehouses to store them. In spite of the rapidly improving stock situation, the distribution of drugs to the hospitals was difficult because of lack of freedom of movement and insecurity.[68]

By 5 January, a MoH emergency operations room, set up in Ramallah with WHO's support, started coordinating the health and logistics response. It maintained on-going contact with the CDS in Gaza assessing their immediate needs and mapping the supplies that had been delivered or were in the pipeline. WHO assumed the responsibility for organizing and delivering all supplies from the West Bank and Israel via the Kharem Salom border crossing from the start of *IMO CL22*.

As so often in the case of a crisis, the donors did not always respect the donor guidelines and priority lists but supplied what they had in their stocks. The majority of donations were delivered through Rafah, without any coordination with the MoH or WHO. Many items were non-essential. The quantities of some items greatly exceeded the needs of Gaza (e.g. 50 % of the donated drugs were antibiotics). The problem was compounded by the fact that the MoH in Ramallah and the *de facto* health authorities in Gaza sometimes had different priority lists. Furthermore, some donors made direct contact with health care facilities and received yet another list of priorities. The control and coordination of the donations was further complicated by the fact that UNRWA and many NGOs received drugs that did not pass through the CDS. Finally, although the CDS had a well-functioning stock-keeping programme before the *IMO CL22*, the large quantity of incoming donations and the need to deliver large volumes of supplies very rapidly to the health care facilities exceeded their capacity to track them. WHO, UNWRA and other partners provided assistance with transport and logistics both during and after *IMO CL22*. The CDS had to repopulate their database after the *IMO CL22*.[69]

---

[66] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009; *WHO brief to OHCHR, War on Gaza,* Geneva, World Health Organization, 2009:9,7.
[67] General Mohamed Shousha, Governor of Northern Sinai, personal communication.
[68] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009:11.
[69] Dr Mohammad Al Najjar, Deputy Director of Medical Stores, personal communication.

Some of the supplies donated during the IMO CL22 were still awaiting unpacking and registration in the CDS when the SHM team visited on 25 March 2009. While the CDS has done a good job in recording the contents of the donations, their capacity to do so was hampered by lack of warehouse space, staff and equipment and by donations that do not meet the guidelines (shipments without lists of contents, strange languages, very small quantities, etc.)

There were at end of March 2009 an estimated 20,000 tons of donations, mostly food items, on the Egyptian and Israeli side of the border in temporary warehouses waiting for Israeli clearance. Supported by the UN Logistics Cluster, the Egyptian Red Crescent Society coordinated the transport of drugs and other medical items to Gaza.[70] .

To obtain from the Israeli *COGAT* (Coordination of Government Activities in the Territories, Ministry of Defence) a clearance to import goods into Gaza is a long and complicated process – sometimes because of administrative reasons (the goods lack documents normally expected for customs clearance), sometimes because COGAT considers humanitarian goods as non-essential or as non-humanitarian. COGAT has, for instance, refused to grant import permission to dolls that UNICEF would like to import "because they are not a humanitarian priority and because of inclusion of lead in the paint".[71]

The donations did, in fact, improve the position in comparison with the pre-*IMO CL22* situation – at least for the time being. Within a week from the end of the *IMO CL22*, 96 % of priority drugs were either delivered or committed, and some 81 % of the priority disposables were either delivered or in the pipeline. The CDS's stock of 206 items in the essential drug list will last for over 6 months and there is up to one year's supplies of certain items. On March 25, the CDS finalized a list of its out-of-stock items, as well as those items that will be out of stock within 3 months. The list contains 144 items in total, 52 of which are already out of stock (including e.g., anticonvulsive drugs to treat children's epilepsy). The pressure on the CDS as the provider of the essential drugs has grown also because the private sector pharmacies cannot import drugs.

Many donated items will expire within the next few months. Currently, the CDS has 5,000 tons of drugs in its warehouse that have already expired or will expire before they can be used. Although the CDS has given some such items to the NGOs and private sector, lots of drugs will have to be disposed of, draining the resources of the Central Drug Store. Due to the limited capacity of the Al Shifa incinerator, these drugs will have to be encapsulated and dumped at a general landfill.[72]

Much equipment was donated during *IMO CL22* resulting in some cases in a better situation than before. However, if the severe blockade continues, this benefit will be short-lived because of lack of maintenance and unavailability of spare parts. As in the case of drugs, some equipment received was useless. WHO has started an assessment of equipment needs, including the maintenance chain.

4. Impact of the *IMO CL22* on other health determinants

The *IMO CL22* has highlighted the importance of such determinants of health as quantity and quality of food and water, sanitation, socioeconomic conditions (particularly unemployment, poverty and social exclusion) and stress. The negative impact of these factors has been present in the Gaza Strip for a long time, but the *IMO CL22* aggravated it. Before the *IMO*

[70] Professor Mamdouh Gabr, Secretary General, Egyptian Red Crescent, personal communication.
[71] *Operational Overview*, Gaza Logistics Cluster, 2009:1,3.
[72] Dr Mohammad Al Najjar, Deputy Director of Medical Stores, personal communication; *Gaza Ministry of Health Central Drug Store, Inventory and Stock Management Plan,* Ramallah, Palestinian National Authority, 2009.

CL22, both the poverty and unemployment rates in Gaza were about 50 %, and about 80 % of the population was receiving aid of some kind (although not all on a regular basis).[73]

4.1 Social factors

Shelter

During the *IMO CL22* over 4,000 housing units were totally destroyed leaving 26,000 people without homes, and over 11,500 housing units were damaged, resulting in a further 75,000 people either displaced or living in very difficult conditions.[74] In total, an estimated 100,000 persons were displaced. Although by 1 April only 20,000 of them were still left in temporary shelters,[75] many of these newly internally displaced persons have to live with relatives or friends. They therefore contribute to the already serious overcrowding and increase the risk of both communicable diseases and mental health problems. By hampering the maintenance of personal hygiene, the lack of such simple everyday items as soap, detergents, washing powder and cooking gas further aggravates the situation.

Social support

Although almost half of the casualties were children, women and elderly persons; the remaining being working age men, most with families. Their death has increased the number of one-parent families, which, in turn, increases the need for social and economic support and may worsen the health situation, particularly of children. At the same time, the ability of the Government and of aid agencies to provide support has decreased, partly because of the limitation on cash allowed into Gaza[76], partly as a result of the disastrous economic development in Gaza. A World Bank Group analysis of October 2008 underlines the paralytic effects of the of movement and access restrictions for the economy and outlines 3 categories of economic restrictions that need to be dealt with if the Palestinian economy is going to become a viable one[77].

Food

Because of poverty and the siege, the quality and quantity of the food intake of the Gazans have been reduced. The situation is worst among the unemployed, the displaced and one-parent families. Over half of the households (56 %) are food insecure and spend about two thirds of their income on food.[78] UNRWA's food programme has been able to provide only about 60 % of the daily calorie needs to the one million refugees. After the *IMO CL22* rapidly increasing food prices have aggravated the situation, and 88% of the population were registered to receive food aid from UNWRA or WFP[79].

According to a World Food Programme survey, Palestinians are eating less, many parents reducing their intake to allow their children to eat more. Half the surveyed population had decreased their spending on food, 89% had reduced the quality of food they buy, while

---

[73] *Health and economic situation in the oPt, including east Jerusalem, and in the occupied Syrian Golan - Fact-finding report - Report by the Secretariat (Draft),* Geneva, World Health Assembly 2009:1.
[74] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010*, launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009:29.
[75] Ms Karen Abu Zaid, Commissioner General, UNRWA, personal communication.
[76] Ms Karen Abu Zaid, Commissioner General, UNRWA, personal communication.
[77] *West Bank and Gaza update*, October 2008, The World Bank Group.
[78] *West Bank and Gaza update*, October 2008, The World Bank Group:16.
[79] *UNRWA Fact Sheet, Consequences of the conflict in the Gaza Strip 27 December 2008 - 18 January 2009*,Amman, February 2009.

75% had reduced the quantity since January 2008. Almost all people have reduced their consumption of fresh fruit, vegetables and animal protein to save money. This could have health consequences considering the already high prevalence of anaemia and other micronutrient deficiencies in the oPt.[80]

Before the blockade, about one third of children under five and women of child-bearing age had iron deficiency anaemia. Whilst wasting remains an insignificant problem, about 10 % of children under five show signs of stunting[81].

As the nutrition surveillance programme was interrupted during the *IMO CL22* and the time frame is too short, it is not yet possible to assess the impact of the *IMO CL22* on the nutrition status of the population.

4.2 Economic factors

Between 2003 and 2005 there was some economic recovery, but the trend reversed in 2006, when the gross domestic product fell by 8.8 %.

The strong blockade imposed in 2007 has been the major reason why the situation in Gaza has continued to strongly deteriorate as from that period.[82] It is estimated by the Palestine Trade Center (*PalTrade*) that the 1.5 million people living in Gaza need imports of various goods corresponding to some *850 truckloads per day* (some 800 for the private sector alone, according to the Palestinian Private Sector Coordinating Council), i.e. some *5 950 per week* or some *25 500 per month*. A World Bank analysis of October 2008[83] gives revealing comparisons of the development of June 2005 to June 2008. There was a dramatic reduction in the number of trucks allowed for exports, with very severe effect on the local economy. In addition the blockade severely restricted the type and amount of goods which could be imported and the overall effect on the economy on Gaza was disastrous. Of the 3900 industrial working establishments operating in June 2005 only 90 remained in June 2008. Of the 35000 industrial employees working in June 2005 only 860 were still working in June 2008. 748 truckloads (exports from Gaza) left the Gaza Strip in June 2005, none were leaving from July 2007 to June 2008. Unemployment rose in Gaza to some 70% at the second quarter of 2008. If remittances and food aid are excluded and poverty is based only on household income, the poverty rate in Gaza would be some 80%. Furthermore, because of the blockade, some 120,000 Gazans who used to be gainfully employed in Israel, no longer could cross the border and lost their income.

The damage caused by *IMO CL22* will greatly hamper future economic recovery as many industrial facilities as well as large areas of the best agricultural land and many roads and bridges were destroyed during the attacks. Some 700 private sector establishments were either totally destroyed or damaged by *IMO CL22*; about 40 % of them were small and medium size industrial establishments, while the rest were in the areas of commerce, contracting, tourism and

[80] *Vulnerability Analysis and Mapping (VAM), Food Security and Market Monitoring Report, occupied Palestinian territory - oPt*, July 2008, No 19, Geneva, United Nations World Food Programme, 2008.
[81] *The State of Nutrition situation of West Bank and Gaza Strip*, Palestinian National Authority, World Health Organization and UNICEF, June 2005.
[82] *Health and economic situation in the oPt, including east Jerusalem, and in the occupied Syrian Golan - Report by the Secretariat (Draft)*, Geneva, World Health Assembly.
[83] *Palestinian Economic Prospects: Aid, Access and Reform*, Economic Monitoring Report to the Ad Hoc Liaison Committee, The World Bank, 22 September 2008:15.

fuel establishments[84]. The bombardments, the movement of military vehicles etc destroyed totally some 15% of the cultivated land [85]

After the *IMO CL22*, the blockade continues; the weekly report of COGAT for 26 April – 2 May lists the total no of trucks allowed into Gaza that *week to be 438* (as opposed to an estimated pre-war needs of 5950, see above) mostly food and hygiene products, and one was allowed out for export[86].

Thus, the blockade has caused the near strangulation of economic life, with an embargo stricter than any of the 11 sanction regimes currently imposed by the UN Security Council[87] .

In addition, the imposition by Israel of a much reduced limit for fishing instead of the wider limits stipulated in the Oslo Accords seriously hampers fishing, the source of livelihood of some 3,000 families. Similarly, IDF has unilaterally widened the buffer zone at the border making the cultivation of that area of land very difficult indeed.

4.3 Water and Sanitation

Once again, the *IMO CL22* worsened a situation made already bad by the long preceding blockade. Before the *IMO CL22*, the water supply provided only 80.5 liters per capita per day, which is only half the international standard. In addition, eighty per cent of the water supplied in Gaza did not meet the WHO standards for drinking.

During the *IMO CL22*, ten of Gaza's 155 wells were severely damaged. Some 10 % of Gaza's households had no access to water through the water network, which was severely damaged, and they had to rely on water stored in tanks. During *IMO CL 22* over half of the population had access to water only several hours once a week. Many people in high rise buildings did not have water at all as the water supply in them depends on electrical pumps and electricity failures were frequent during the attacks.

In spite of the initial suspension of public health laboratory functions, water samples started to be collected from some water networks, water wells and water treatment plants for microbiological and chemical analyses during the *IMO CL22*.

Insecurity and lack of fuel for the garbage collection trucks interrupted garbage collection, and garbage is now being collected partly by donkey-drawn carts. The inaccessibility of waste disposal sites overwhelmed the solid waste management sector. The result was a great number of informal dumping grounds and indiscriminate burning of rubbish. Due to the lack of equipment, landfills now simply act as dump sites. Sewage networks and pumping stations at four locations and an emergency sewage treatment plant were damaged resulting in wastewater contaminating several areas.

---

[84] *The Humanitarian Monitor*, occupied Palestinian territory, No 34, February 2009, Gaza, United Nations Office for the Coordination of Humanitarian Affairs, 2009.

[85] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010,* launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009.

[86] Merchandise Traffic and Humanitarian Aid Report; The Gaza strip – weekly report 26.04 – 02-05.09, Coordination of Government Activities in the Territories, Ministry of Defence, Israel.

[87] *The Palestinian National Early Recovery and Reconstruction Plan for Gaza 2009 - 2010,* launched by the Palestinian National Authority at the International Conference in Support of the Palestinian Economy for the Reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009.

UNEP carried out some initial sampling in connection with the UNDP assessment of damage. Preliminary results showed that much of the rubble is contaminated with asbestos; damage to the waste treatment system had contaminated the aquifer; the health waste handling system had completely broken down, with such waste going into domestic waste. The results on heavy metal contamination are so far inconclusive. The projected (May 2009) UNEP mission will also look at the handling of expired drugs.[88]

At the household level, many households experienced damage to water storage tanks, solar panels and sanitary installations.

Environmental damage and the possible use of unconventional weapons are a source of great concern for the local population who are asking "How safe is the environment we are living in; can we eat our vegetables and fruits?" The projected UNEP and IAEA Missions are expected to answer that question.[89]

Environmental pollution, particularly the contamination of soil and ground water by sewage, may increase the risk of epidemics, particularly during the approaching hot summer season.

4.4 Other related factors, including unexploded ordnances

Some of the immediate reconstruction tasks will be the clearance of debris of the destroyed houses and industrial sites. The agricultural land destroyed by the tanks and shelling will have to be reclaimed. The potential presence of unexploded ordnances (UXO) renders these tasks hazardous.

The Mine Action Group (MAG) arrived on 4 February to start the clearance operation but Hamas blocked their work. MAG has, however, assessed the potential risk and concluded that the surface threat is relatively low and that there are no particularly high-risk areas. Clearing collapsed buildings and removing the rubble will be the greatest hazards. While they have seen clear evidence of the use of white phosphorus and of the use of anti-tank mines as demolition charges, their preliminary findings do not confirm the use of DIME or cluster bombs, but the work is continuing[90]. ICRC and the initial UNEP mission confirm the use of white phosphorus in densely populated areas.[91]

UNICEF is conducting awareness training concerning the dangers of UXOs among children, but the adult population does not seem to receive sufficient training. A UNDP survey found that 32 % of the respondents had detected remnants of war and more than 25 % know of someone injured by an UXO.[92] That UXOs remain a real risk, was evinced during the SHM team's visit by the death of two children playing with an UXO.

[88] *Terms of Reference: Post-Conflict Assessment of the Environmental Situation in Gaza Strip 2009 (Draft),* Geneva, United Nations Environment Programme, 2009.
[89] *Terms of Reference: Post-Conflict Assessment of the Environmental Situation in Gaza Strip 2009 (Draft),* Geneva, United Nations Environment Programme, 2009.
[90] Mr Mark Russel, Teamleader Mine Action Group, personal communication.
[91] Ms Marianne Whittington, Delegate, ICRC, personal communication; Mr Henrik Slotte, Chief of Branch, Post Conflict and Disaster Management, personal communication.
[92] *Inside Gaza, Attitudes and perceptions of the Gaza Strip residents in the aftermath of the Israeli military operations,* United Nations Development Programme, 2009:28-30.

5. Impact on health sector management

Due to the internal split in the Palestinian political leadership, there were effectively three layers involved in managing the crisis: The Minister of Health of the Palestinian National Authority in Ramallah (West Bank); the Hamas-controlled local administration in the Gaza strip, and the institutional managers in individual health institutions. In addition, support for coordination was given by the UN Health and other Clusters and their partners.

5.1 Management of individual health service institutions

At the level of individual hospitals most made a remarkably swift change to the aforementioned emergency mode, staffed as they were by clinicians and managers who had experienced complex emergencies and war wounds before – although never on a scale and intensity as this time.

In addition to quickly mobilizing all their staff, an important detail of the institutional response to the sudden arrival at health care institutions of large number of wounded children, women and men was the constant concern for having free capacity for new sudden arrivals. Several initiatives were taken to ensure this flexibility and readiness for unforeseeable events. One was the sending of a large number of seriously wounded patients, once stabilized, onwards for more extensive care in Egypt (see "*Referral abroad"*, page 20). The second initiative was to send postoperative patients onward to less specialized hospitals in the Gaza strip for follow-up care, and the third was to discharge patients quickly home whenever that was possible.

Overall, the clinical management at the levels of hospitals seems to have functioned remarkably well, as did hospital management within institutions.

What may not have functioned quite so well in all cases was clinical management of seriously wounded at the frontline by ambulance crews and health centre staff. Civilians, and sometimes ambulance crews/health centre staff who found themselves giving first aid to the most seriously wounded did not (not surprisingly) always know what to do[93].

5.2 Management of Preventive Health Services

The disease surveillance system continued in the UNWRA health centres during *IMO CL22* and thus covered some 70% of the population.[94] This then permitted to have a reasonable idea of the communicable disease situation, in spite of the fact that the disease surveillance system more or less collapsed in other health care institutions.

Vaccinations were interrupted, but after a week UNWRA started offering vaccinations to *all* children – whether they had official refugee status or not. After the ceasefire vaccination programmes were quickly re-established in all MoH health centres, supported by UNICEF and (on a smaller scale) MSF.

Food hygiene inspection, water quality control and other environmental health risk surveillance were much weakened during *IMO CL22*, as staff were drafted to help in other priorities (e.g. to assist the 50 000 in the temporary shelters). However, services were quickly restored after the ceasefire took hold, although still not to a fully satisfactory level.

---

[93] Shifa hospital senior medical staff, personal communication.

[94] *Why an Epidemiological Bulletin for Gaza Strip? Cover letter by the UNRWA Director of Health Dr Guido Sabatinelli*, UNRWA, Amman, February 2009; *Epidemiological Bulletin for Gaza Strip*, Volume 1, Issue 2, 19 February 2009; *Epidemiological Bulletin for Gaza Strip*, Volume 1, Issue 1, 15 February 2009.

5.3 Overall management of Gaza health sector

As already mentioned previously (chapter 3.2 refers) **t**he local health authorities in Gaza quickly declared a *state of emergency* already on the first day of the attack, and this lasted until 22 January 2009[95]. The details of this are described in chapter 3.2. Furthermore, 10 MoH PHC centres were designated for the first "triage" of the injured and emergency medical services for the wounded. Likewise, 4 of the 14 UNWRA health centres shifted to emergency mode of operations, and many staff were redeployed to help the 50 000 IDPs in the UNWRA shelters.

Patient flows to hospitals were shifted when IDF cut Gaza into 3 separate geographical entities.

Overall coordination *among* health service institutions could perhaps have functioned better, e.g. regarding information coming in on new wounded and their needs; the degree of vacant capacity at any moment in each health institutions; the level of supplies and equipment in each institution etc[96].

Already in the early phase of the attacks the PNA/MoH *Operations Room* in Ramallah released stocks of medical supplies from the MoH warehouses in the West Bank and sent them to the Gaza central store.

In Gaza the authority responsible for hospitals ran daily coordination meetings of an emergency committee, as well as weekly meetings with all hospital directors in the Gaza strip, with technical liaison to the WHO Gaza office.

The lack of working relations between the PNA in Ramallah and the Hamas controlled organization in Gaza did not create too many difficulties during *IMO CL22*, but it did so afterwards, most notably as regards the administration of the system for referring patients for treatment abroad.

WHO played a key role as the main coordinator of international support to the health sector, working closely with the MoH, donors and other partners, liaising with COGAT and the MFA. NGOs and health personnel coming from abroad to help were asked to first coordinate with WHO in Rafah and Jerusalem, as well as with the MoH operations room in Ramallah, before deployment into Gaza. This was done in order to ensure that the specialities being offered really *were* needed by the health services there[97]

The IASC *Health Cluster*, *WASH Cluster*, *MNH "Sub-cluster"*, the *Logistics Cluster etc* were all mobilized to lend support to the overall needs assessment and coordination efforts.

In an attempt to gain better oversight and stricter management of the international assistance to oPt, the Health Cluster is now in the process of adapting – and then systematically use - the OCHA management benchmarks and indicators for the particular specificities of the Gaza situation.

In view of the very difficult, constantly shifting situation created by *IMO CL22*, the overall management of the health sector response – including the international support to it - seems to have functioned well indeed, taking firm steps to direct resources to places of highest needs, looking for imaginative solutions and mobilizing and effective implementation of the most important management decisions.

[95] Dr M. Daher, WHO/Gaza, *personal communication.*
[96] Shifa hospital senior medical staff, *personal communication.*
[97] WHO, Health Situation in the Gaza strip, 4 February 2009.

6. Assistance from UN agencies, NGOs and donors

6.1. The United Nations system

United Nations

The United Nations has a long standing presence in the occupied Palestinian territory. A *UN Country Team* (chaired by the *UN Resident Coordinator*) coordinates the work of all UN agencies, and a *UN Humanitarian Country Team* (chaired by the *Humanitarian Coordinator*) coordinates the UN and NGO humanitarian response

The United Nations and aid agencies have indicated that rebuilding Gaza will be problematic so long as border crossings with Gaza remained closed for essential building material etc. This is a major outstanding issue in terms of protection and humanitarian access for the population, and creating an environment for reconstruction and development. The U.N. Secretary-General Ban Ki-Moon told donors at the Sharm El Sheikh conference: "*The situation at the border crossings is intolerable. Aid workers do not have access. Essential commodities cannot get in. Our first and indispensable goal, therefore, is open crossings. By the same token, however, it is therefore essential to ensure that illegal weapons do not enter Gaza".*

During and immediately after *IMO CL22* international humanitarian assistance has been focused on the work of the Humanitarian Country Team and the IASC Clusters

In the case of Gaza and *IMO CL22* the Health Cluster started to function in mid-January (in Jerusalem and Ramallah) providing the key focus and coordination mechanism for health related assessment and action. The Cluster consisted of all UN and NGO entities working in the field of health in Gaza, working together with the Ministry of Health and the Gaza health authorities. The *WASH* (Water, Sanitation, Hygiene) and *Logistics Clusters*, as well as the *Mental Health "subcluster"*, also provided much important input to the work, WHO, with support from the *Health Cluster*, already on 16 February 2009 issued an "*Initial Health Needs Assessment*" of the Gaza strip, a document that gave a thorough analysis of the situation and identified a broad range of measures needed to alleviate a wide range of problems[98].

On 1 February 2009 the UN – having decided not to update the *2009 Consolidated Appeal* [99] - produced a *Gaza Flash Appeal*, requesting some 613 $ million (around 46 million for the health sector) to help the population over the coming 9 months.

The World Health Organization (WHO)

WHO has had a long standing presence in the occupied Palestinian territory, with office both in Jerusalem and in Gaza City, directly subordinated to the Eastern Mediterranean Regional Office of WHO in Cairo.

During *IMO CL22* WHO staff in Gaza were confined to their homes under UN security rules; only the local officer in charge of the office and one other member of staff were able to work. After the conflict, WHO increased its capacity in Gaza by providing additional staff from other offices. As the lead agency of the Health Cluster, WHO convened bi-weekly meetings in Ramallah and Jerusalem, bringing together representatives of UN agencies, national and international NGOs and donors.

---

[98] *Gaza Strip, Initial Health Needs Assessment,* Prepared by the Health Cluster, Gaza, World Health Organization, 2009.

[99] *Occupied Palestinian territory, Gaza Flash Appeal,* Consolidated Appeal Process, Geneva, United Nations Office for the Coordination of Humanitarian Affairs, 2009.

In Gaza health assistance in the field was also coordinated by WHO which chaired the Health Cluster there, and as such led the development of the health sector part of the above mentioned *Flash Appeal* . WHO prepared and disseminated a table tracking all health sector activities (the "Who is doing What, Where and When" matrix), and it also prepared a first draft of the health sector input for the "UN Early Recovery Rapid Damage and Needs Assessment Report". WHO also gave health related input to the PNA document for the Sharm El-Sheik conference 2 March 2009.

The United Nations Relief and Works Agency (UNRWA)

UNWRA is responsible for the welfare of the Palestinian refugees from the 1948 war (and their descendants) living in the oPt and neighbouring countries. In Gaza, it presently has five main program areas: health, education, social services, micro finance, and infrastructure and development. During *IMO CL22* UNWRA could mobilize a large staff of teachers, doctors, nurses, social workers, community mental health counsellors etc.

IMO CL22 inflicted heavy damage on UNWRA infrastructure; 36 schools (6 serving as emergency shelters), 7 health centres, 4 distribution centres, 2 warehouses, an UNWRA field office etc were damaged. 15 staff or UNWRA contractors were killed and 21 injured, most while not on duty[100].

During *IMO CL22* some 20 UNWRA health centres continued to operate, and UNWRA's emergency mandate was extended to cover the whole population It played an important role in running IDP shelters in UNWRA schools etc (reaching some 50 000 IDPs at its peak).

UNRWA has a completely separate drug supply system from that of the Ministry of Health, currently well supplied (with 6 months running stock). During *IMO CL22* redeployments of stock took place from the West Bank and Jordan.

As already mentioned UNWRA had the only well functioning monitoring and surveillance system during *IMO CL 22*. Intended developments in the system include further development of this health information system, as well as the possible future development of a clinical health information system. This system is based on WHO standards and could well be expanded to non-UNWRA health services in order to provide the Gaza strip with a unified system.

UNWRA considers the long lasting blockade of Gaza to be the major current and long term issue. It would wish to improve the conditions of the refugee populations living in camps, but due to the paucity of building materials it is prevented from improving infrastructure and the building stock, much of which is old and dilapidated. The blockade also diminishes the availability of wide variety of essential household items, as well as a more diversified food supply.

The UN Special Coordinator for the Middle East Process (UNSCO)

UNSCO has 2 important roles. One is a *political role*; here UNSCO reports to the UN Department of Political Affairs and reports directly to the UN Security Council - as was done on 18 December 2008, when he gave a thorough analysis of the situation in oPt. However, UNSCO also has a *humanitarian* role, working closely with the United Nations Office for the Coordination of Humanitarian Assistance (OCHA). In fact, the Head of OCHA is the Deputy Head of UNSCO and reports to the UN Humanitarian Coordinator.

United Nations Office for the Coordination of Humanitarian Assistance (OCHA)

The OCHA office in the occupied Palestinian territory was established in 2000 in response to the then deteriorating humanitarian situation in the West Bank and Gaza. During *IMO*

[100] *UNRWA Fact Sheet, Consequences of the conflict in the Gaza Strip 27 December 2008 - 18 January 2009*,Amman, February 2009.

CL22 OCHA played an important function in issuing weekly *Situation Reports* that gave factual information on IMOs, humanitarian needs and responses, funding regarding the *Flash Appeal* etc. OCHA was also the organization primarily responsible for the Consolidated Appeals process.

OCHA's monthly "*The Humanitarian Monitor for the occupied Palestinian territory*" provides overviews of the general situation and how it develops.

World Food Program (WFP)

During IMO CL22 the WFP continued to deliver food to the civilian population in Gaza, distributing two-month rations to more than 222,000 people. Standard rations include wheat flour, cooking oil and chick peas, and also one-off emergency packages (including date bars, bread, high energy biscuits and canned goods). Following the reopening of schools in Gaza, WFP started a school feeding program targeting 40,000 school children in 48 schools in Gaza. During *IMO CL22* the WFP also played an important role as the main coordinator of the *Logistics Cluster* that also did very valuable work for the health sector.

The United Nations Development Program (UNDP)

During the *IMO CL22,* UNDP distributed food packages to over 30,000 Palestinians not served by UNRWA. The program was funded by the Khalifa Bin Zayed Al Nehayan Foundation, in partnership with the Palestinian Association for Development and Reconstruction (PADR/Gaza), the food aid programme delivered US$ 500,000 in emergency relief.

As co-lead of the UN Early Recovery Cluster team, UNDP worked with the Palestinian Authority, and national and international partners to assess damages and needs, and devise plans for rebuilding. These assessments set the basis for recovery and reconstruction and contributed to the Palestinian Authority's Gaza Early Recovery and Reconstruction Plan.

Immediately after *IMO CL22* UNDP commissioned a large-scale public opinion survey of over 1 800 households in order to understand the recovery priorities of the Palestinian people living in Gaza[101]. Initial findings indicate that Gaza's economy will require significant aid and will take years to fully recover; two thirds of the population of Gaza are currently living below the poverty threshold; and *IMO CL22* has further exacerbated this situation.

In February 2009, UNDP signed an agreement with the Palestinian Authority and is providing a total contribution of US$50 million to fund cash assistance packages to the population of Gaza. The initial phase of the package has already been implemented at the cost of US$ 20.3 million. In addition, UNDP has recently signed an agreement with the Palestinian National Authority with total contribution of US$ 270 million to fund compensations for damaged agricultural property in Gaza. With its initial phase, totalling US$ 109 million, the project aims at compensating farmers in the Gaza Strip for their direct losses as a result of the 22 days of *IMO CL22*; fourteen thousand farmers will benefit from the initial phase of the agreement.

Overall UNDP's goal in the occupied Palestinian territory is to catalyse sustainable development opportunities, aiming to generate self sustaining, locally owned, resilient processes for post crisis recovery. Early recovery aims in Gaza are to restore access, movement and basic services; reduce additional risk and vulnerability; reconstruct and restore infrastructure, livelihoods; decontaminate the environment; and rebuild social cohesion, including through the return of displaced people.

[101] "*Inside Gaza: Attitudes and perceptions of the Gaza strip residents in the aftermath of the Israeli military operations*", UNDP.

The United Nations Population Fund (UNFPA)

During *IMO CL22* UNFPA provided medicines, intravenous fluids and disposable medical supplies to major hospitals in Gaza, in addition to supporting displaced women and their families. Along with partners in Gaza, UNFPA is also working to restore reproductive health care, including maternal and infant services, and providing psychosocial support to traumatized survivors.

As described in chapter 2.2 UNFPA also undertook studies immediately after the *IMO CL22.* One was on its impact on reproductive health (in particular on maternal and newborn health and on obstetric care), and the second dealt with the psychosocial consequences on women (give ref). In cooperation with Norwegian NGO it also made a survey on the "Life in the Gaza strip 6 weeks after *IMO CL22"*, a study that, *inter alia*, looked at miscarriages during the 22 days of attack. .

The UN High Commissioner for Human Rights

UNHCHR is the Coordinator for the *Protection Cluster*. Some of the main issues of concern to UNHCHR following IMO CL22 are [102]:

- Access to Palestinian land and sea. While the Oslo Accords specified a 20 nautical miles limit for fishing, today the reality is more like 3 miles. Likewise, the Oslo Accord set 150 m on both sides of the border as "no-go" area, while today IDF seems to expand that more to something like 700 m. This is a serious economic issue as e.g. 3000 families live by fishing; a group further hit by the *IMO CL22* damages to their equipment - FAO reported that at least 78 boats were partly or totally destroyed and that damage to equipment and buildings are at about US $ 1.52 million[103].
- The widespread destruction of public buildings and their archives has harmed essential public functions, e.g. the issuance of birth and death certificates. Thus, if a man is killed or injured the family cannot get his salary or pension - affecting around 3 000 families.
- The Gaza prisons were destroyed during *IMO CL22*, and there is currently uncertainty - and anxiety in the families – as to where many of the prisoners now are and by whom they may be held.
- People are still missing - some 100 - after the *IMO CL22*. Are they buried under the rubble, in hiding, or in prison?

The United Nations Children's Fund (UNICEF)

To help the treatment of children in hospitals UNICEF provided first aid, resuscitation and emergency kits, and it also contributed to the vaccination campaigns. Health promotion/education activities for breastfeeding was undertaken to promote healthy nutrition for infants, and it conducted hygiene promotion in close to 300 schools and 30 hard-hit communities. UNICEF also has undertaken public education efforts as regards the danger – not least to children - of UXOs.

As part of its WASH Cluster work UNICEF made significant amounts of prepositioned supplies (water purification tablets, large water tanks, family water kits and hygiene items, as well as back-up generators for water pumps and clinics) available, and the organization also supported the Coastal Municipalities Water Utility (CMWU) carrying out emergency repairs[104].

---

[102] Nirmine El Sarraj, Human Rights National Officer, UNHCHR, personal communication.
[103] *Occupied Palestinian territory, Gaza, Situation Report, No. 22 (13-19 February 2009),* Geneva, United Nations Office for the Coordination of Humanitarian Affairs, 2009:3.
[104] *Gaza Crisis, UNICEF oPt External Information Note,* UNICEF, OPT, Geneva, New York, 24 February 2009.

UNICEF provided a Fact Sheet on the effect of *IMO CL22* in relation to key Child Protection Facts, and after *IMO CL22* it set up 30 youth and protection centres to support children and to help their families rebuild their lives after *IMO CL 22*. UNICEF is emphasizing that the physical and psychological impact of the crisis on children has been immense, and it is focusing its resources to provide psychological support to vulnerable families and children. Thus, it has e.g. supported psychosocial work in 30 Government schools, and it has also – in partnership with TAMER – helped over 600 adolescents with remedial and recreational sessions to alleviate their experiences during *IMO CL22*.

The above list does not include all UNICEF actions relative to *IMO CL22.*

6.2 NGOs

There were very many NGOs – both Palestinian and coming from abroad – that helped out during *IMO CL22* and its aftermath, and only a short overview of some of the main ones will be given here.

The Palestinian Red Crescent Society (PRCS)

The PCRS was the main NGO coordinating ambulance transport and the recovery of dead and wounded civilians, coordinating with the ICRC and the Israeli military on negotiating access for evacuation. It also coordinated with the Egyptian Red Crescent Society the evacuation of wounded patients to Egypt through the Rafah crossing point. PRCS also provided hospital services directly through its Al Qud's Hospital and two other hospitals; furthermore, it has been involved in the provision of relief supplies to families, and with plans for reconstruction (using prefabricated housing from Turkey).

The Egyptian Red Crescent Society (ERCS)

The ERCS played a strong role in providing international humanitarian assistance throughout the conflict,[105] supporting the delivery to Gaza of Egyptian Government donations as well as many donations given by international humanitarian organizations. As already mentioned it also supported actively the transfer of a large number of wounded Palestinians to hospitals in Egypt or third countries.

The International Committee of the Red Cross (ICRC)

ICRC provided a war surgery team to assist the surgeons at Shifa Hospital treat the complicated injuries presenting at the hospital. It also provided very important coordination with the Israeli authorities to arrange safe passage for ambulances. ICRC also assisted the Sister of Mother Teresa Centre for the mentally handicapped, providing hygiene articles and drinking water.

Other NGOs

Médecins Sans Frontières (MSF) France teams contributed to physical rehabilitation care at hospital level.

Several Health Cluster partner NGOs carried out community-based activities related to the identification of new injured, locating displaced disabled people and their families, and distributing nutritional supplementary parcels, hygiene kits for families with children aged under 5, new mothers, or for adults with disabilities. Agencies contributed to the assessment and registration of injured patients for home-based follow-up after discharge, providing first aid and dressing kits to health personnel for home-based care, distributing mobility devices to individual beneficiaries and

[105] Professor Mamdouh Gaber, Secretary General Egyptian Red Cross, personal communication.

providing home-based post-operative care (dressing and physiotherapy) through mobile and/or out-patient clinics.

6.3 Donors

The European Union

The European Union supported the preparation of the Palestinian Authority's Gaza Early Recovery Plan, in cooperation with the United Nations and the World Bank. At the conference itself 436 million Euros were pledged for 2009 by the European Commission to support early recovery, and particularly for providing assistance to traumatised children. The EU also supported a "cash for work" scheme as well as small repairs of damaged shelters.[106]

Other donors

Important donations were received from some 80 countries, including the Governments of France, Qatar, Saudi Arabia, the United States, and the United Kingdom.

7. Future needs

EB resolution 124.R4 asks for a report on the urgent health and humanitarian needs and on current, medium- and long-term needs on the direct and indirect effects on health of the Israeli military operations. In the text that follows one has chosen to describe the *current needs* in one subchapter and the *medium- and long term needs* in another, as the distinction between the categories are not always clear and also overlap.

7.1. Current needs

The current situation in oPt can only be characterized as a chronic, huge disaster of tragic proportions. It differs profoundly from other similar humanitarian disasters by its continuous, long-term downward spiralling trend and by the pervasive fear and lack of hope that grips the whole civilian population. The situation is a *continuing Complex Emergency*, not a recovery phase after a disaster. *Peace, security and a normal life* are the overwhelming priorities on everyone's lips when the SHM team asked about their current needs.

Furthermore, this crisis is not following the normal pattern of going from a *crisis/relief phase*, to *recovery* and onwards to *development*. Due to the virtually total blockade of its land, sea and air borders the Gaza population continues to be cut off from the materials, experts and financial means required for entering a recovery phase, and the crisis is only steadily deepening.

Against this background the SHM team believes that the most important current needs are:

Protection of the Civilian population

The 1.5 million people in Gaza live as in a cage from which they cannot escape, powerless to protect themselves against sudden air, sea and land attacks from IDF. Although Israel declared a ceasefire on 18 January 2009, more limited IDF incursions continue to occur almost

[106] Speech by Commissioner Benita Ferrero-Waldner, European Commissioner for External Relations and Neighbourhood Policy, Sharm El-Sheik Conference in Support of the Palestinian Economy for the Reconstruction of Gaza, 2 March 2009.

daily.[107] The SHM team was much disturbed to hear the many statements from civilians and health professionals indicating a profound fear that a major new attack from IDF might soon occur.

Creating a stronger security agreement with Israel is a top and urgent priority for the health of the Palestinian people.

Lifting the blockade

As mentioned in chapter 4.1 over 4000 homes were totally destroyed and more than 11 000 damaged by *IMO CL22* – and their many thousands of families continue to live in temporary dwelling arrangements. Hospitals and health centres are damaged or destroyed; 15% of the agricultural land is destroyed; there is widespread destruction of smaller industries; there are damaged water pipes, sanitation infrastructure, roads, fishing boats, public service buildings etc. Nothing of all that can be repaired in the current situation as there is a virtually total blockade of building materials, equipment, experts and funds of the borders to Israel and Egypt that prevents import.

Lifting of this blockade is therefore an urgent and indispensable prerequisite to help the 1.5 million civilian population of Gaza to solve most of the problems in the health sector.

Reconciling Palestinian political forces

The current infighting among the Palestinian National Authority in Ramallah and the Hamas administration in Gaza is very detrimental to the prospects for a meaningful recovery of the health and health sector in the Gaza strip. Lack of national/local coordination and non-cooperation over a broad range of practical issues, currently impairs the day-to-day leadership and management of the health sector, prevents the broad mobilization of society, deflects political attention away from the blockade issue, and severely hampers the indispensable foreign assistance.

Finding a pragmatic way to re-establish a working relationship between the two major political Palestinian factions is an urgent priority for a health sector recovery.

Providing priority equipment and supplies for the health sector

Currently (end March 2009) the Gaza MoH Central Drug Store lack 65 of the 459 essential drugs on the *oPt official Essential Drugs list*[108]. As a minimum, drugs (vaccines included) should have a buffer supply of 6 months consumption in stock at any one time. Although the substantial influx of pharmaceuticals during the 3 weeks of war helped the availability of drugs for the health sector, very important gaps still remain.

A substantial amount of lifesaving equipment (e.g. stents for acute cardiac emergencies) and spare parts for essential medical equipment (e.g. laboratory equipment) currently deprive the health services of important tools for patient care. Furthermore, there is a serious lack of systematic maintenance of medical equipment in the health institutions, due to the long-standing blockade of essential supplies, exacerbated by the intensified medical activities caused by the increased patient load from the *IMO CL22*. To begin to address these deficiencies, medical engineers need to be allowed out of Gaza for training and expert engineers from suppliers need to

[107] *Occupied Palestinian territory, Gaza, Situation Report No. 19 (29-30 January 2009), No.20 (31 January-5 February 2009), No. 21 (6-12 February 2009), No. 22 (13-19 February 2009),* Geneva, United Nations Office for the Coordination of Humanitarian Affairs, 2009; *Field update on Gaza from the Humanitarian Coordinator, Vol. 17-23 February 2009, Vol. 24 February 2009-2 March 2009, Vol. 2-9 March 2009, Vol. 10-16 March 2009, Vol. 17-23 March 2009, Vol. 24-30 March 2009,* East Jerusalem, United Nations Office for the Coordination of Humanitarian Affairs, 2009.

[108] Many of the 65 items create serious health problems, e.g. anti-convulsion drugs for children with Epilepsy.

be allowed in to carry out maintenance and train local staff. Equipment for testing the safety and proper functioning of specialized medical equipment also need to be provided and upgraded.

Filling the current gaps and establishing a six months buffer for medical drugs, supplies and equipment is a clear priority. There is a need for rapidly establishing a list for such essential humanitarian aid, raise donor support for their purchase, and ensure Israeli agreement for the urgent importation of these humanitarian aid goods.

Priority repair of damaged/destroyed health institutions

Due to the long-standing blockade of general building materials and the destruction of important parts of the health service infrastructure from *IMO CL 22*, there is a great need for repair of the hospitals and PHC infrastructure in the Gaza strip. The SHM team was impressed by the statement uttered by a number of interlocutors during their Gaza mission – "*import of cement would alone solve half of the problems of the health services!"* A number of assessments of damage and repair needs have already been undertaken by different organizations and authorities[109].

Thus, a detailed list of building materials – type and amount – required specifically for the health services repair should be developed and presented to the Israeli authorities for priority clearance earmarked for the health services needs, within the framework of humanitarian assistance.

Ensuring systematic follow-up and care of war wounded

The sudden massive influx of wounded that started to overflow the various health service institutions in the Gaza strip from the first hour of the *IMO CL22*, further weakened the existing information collection and analysis regarding the affected individuals: their type of wounds, the treatment received, what happened to them (sent home, sent to hospitals of PHC centres for follow-up, evacuated to Egypt or Israel etc), and their need for after-care, including the long term specialized care for the disabled.

It can safely be predicted that a substantial number of the close to 5 400 physically wounded are not currently receiving the follow-up and after care that they need. Furthermore, there seems to be some lack of information with regard to what happened to the patients who were sent abroad for treatment (over 1000 in total during and after *IMO CL22*) – what care did they receive, what continued care do they need, when were they returned to Gaza, with what needs, to be taken care of by whom?

While ample patient information is available for those treated at UNWRA facilities and a fair level of information at government and Red Crescent health institutions, the situation seems less adequate with other Gaza health institutions, and an overall monitoring of needs and systematic referral of individual patients seems to be lacking.

There is a need for revising the current data collection of the wounded, their present needs, and whether/how those needs have been taken care of. This analysis should be done with the help of a standardized and integrated reporting for all the registered wounded (and possible non-registered ones, to be found through a public information campaign if need be). The analysis should lead to a systematic follow-up for all individual patients who have not yet received the after-care that they require.

[109] Including a Palestinian Authority assessment presented at the *Sharm El Sheikh* donor meeting of 2 March 2009, estimating US $ 1 445 000 000 to reconstruct & rehabilitate totally destroyed clinics and US $ 3 800 000 000 to rehabilitate the partially destroyed clinics & hospitals and restore health service delivery.

Planning for possible enhanced risk of epidemics

By 1 April there had been a significant increase in cases of diarrhoeal disease at UNWRA clinics over the last 2 months, although not at the level of an outbreak. However, as the spring and summer arrives with higher temperatures, the current risk factors (defective water and sanitation infrastructure, pollution of aquifers, the crowded homes where IDPs still live with host families) increase the risk of epidemics[110]. There seems as yet (end March) to be no specific preparations for the public health response to this situation.

There appears to be a need for a concerted effort, by local authorities – with technical support from the WASH and Health Clusters - to develop a plan for a professional response and public information to enhance the preventive shield against possible future epidemics.

Relieving mental health problems

The current mental health problems in the Gaza strip are very serious, as already described in *Chapter 2 (Mental health impact of IMO CL22).* The whole population suffers from the accumulated effects of many years of periodic clashes with IDF and a longstanding blockade of its land, sea and airspace. The large number of people killed and wounded during *IMO CL22*, as well as the widespread destruction of homes, has resulted in many families having had extremely serious personal losses, with consequent depressions, anger and alienation.

IMO CL22, and its aftermath (constantly drones passing overhead and frequent limited IDF incursions) has created a pervasive feeling of life-threatening insecurity. Coupled with no possibilities for escape, and a steadily worsening standard of living this has led to a large part of the population feeling a deep-seated despair and lack of hope for a better future.

Supported by substantial WHO cooperation the Palestinian National Authority in 2004 adopted a new *Strategic Mental Health Plan*.[111] That plan outlines a comprehensive Mental Health services development (strengthening community MNF through 5 MNH PHC centres, modernizing hospital MNH infrastructure etc); some implementation was started before IMO CL22. Recently, some new pilot projects have been started in UNWRA schools and others by the Gaza Community Mental Health Programme, supported by the local authorities.

There is a need to intensify the implementation of the current new mental health initiatives so as to mobilize broadly the health and other relevant authorities, services and organizations in the Gaza strip, including the provision of good public information and an effective community mental health programme.

Investigating public worries regarding environmental and individual residual effects of weapons used

The medical staff at Shifa hospital – accustomed to seeing many patients with wounds from different types of weaponry and explosives over the years – reported (chapter 2.2 refers) that a number of the wounded they treated during *IMO CL22* showed symptoms they were not accustomed to see[112], and they wondered whether "unusual" weapons had been used. Furthermore, rumours of toxic chemicals and metals remaining in agricultural lands after the

[110] A preliminary investigation by UNEP in January/February 2009 showed, *inter alia*, impact of sewage on ground water in the vicinity of the damaged Gaza Waste Water Treatment Plant (Henrik Slotte, UNEP, personal communication).

[111] *Plan on the organization of mental health services in Palestine, By the Steering Committee on Mental Health, February 2004.*

[112] Extensive internal damage without external wounds, development of unusual postoperative changes (at re-operations due to deteriorating clinical conditions) in the liver ("grilled liver") and other organs; extensive postoperative internal bleedings; burn wounds with new burn damage continuing after wound cleaning, Senior Shifa Hospital Medical staff, personal communication.

military attacks circulate among farmers and consumers. This is raising fears that "unusual" weapons had been used, and that residues now may incur health risks when people move back to destroyed homes or eating produce from affected agricultural lands.

A short UNEP mission in February 2009 looked at some geographical sites, finding heavy asbestos contamination of destroyed buildings and ground water bacterial pollution, but no conclusive results when looking for heavy metals found in DIME[113] type of weapons.
There is an agreement that weapons containing white phosphorus were used by the IDF but whether the use was within the rules of the Geneva conventions or not is a matter of dispute.

In its talks with the Mine Action Group, the SHM team learned that this group had not yet found anything indicating the use of DIME or "unusual" weaponry, but their work is not finished yet.

In view of the importance of this issue for the health and overall anxiety level in the population, *it would seem wise to undertake a special investigation fairly soon to clarify what weapons were used, their implication for agricultural production and human consumption, as well as their significance for the care of wounded patients, and to inform the health services, the local authorities and the general population accordingly.*

Improving monitoring of health, health determinants and health care delivery

The data collection of communicable diseases, non-communicable diseases, and their determinants, as well as information on patient treatment and their outcomes, varies markedly among the various health care institutions in the oPt. Some, like UNWRA, have systematic extensive information in files on families and their individual members, while other organizations and institutions have less comprehensive and reliable information systems. One category of health monitoring data that would be particularly useful would be to institute periodic, standardized, stratified sampling analyses of well-being and mental health problems, in order to see overall longer term impact of risk factors and interventions.

Furthermore, comprehensive analytical reviews pulling together lifestyle and environmental risk factors and health care performance reviews – including patient care quality outcomes - are deficient. Part of this insufficiency is due to current data collection and analysis standards and performance, part is managerial confusion created since 2006 with the split in administrative authority and non-cooperation in the Gaza strip between the PNA and Hamas.

There is a need to review the current systems used by the various health care and preventive care partners for data collection and analysis, and to develop an up-to-date overall mandatory monitoring system applicable to all relevant health care providers and environmental health related agencies.

7.2 Medium- and long - term needs

Developing an up-to-date disaster preparedness plan for Gaza as a whole and for its individual health institutions

In 2008 a WHO consultant developed an emergency preparedness and response situation analysis framework for oPt[114] which was submitted to the MoH, but – due to the political situation and competing priorities – no follow-up action has been taken.

During *IMO CL22* most individual health institutions showed a remarkable ability to rise to the challenge, but it also revealed that things could have been done even better if a set of

[113] DIME = *Dense Inert Metal Explosive.*
[114] De Ville de Goyet C., *Emergency Preparedness and Response, Situation Analysis in Occupied Palestinian Territory,* Executive Report of a mission by Dr. Claude de Ville de Goyet, World Health Organization, 16-27 June 2008.

comprehensive disaster preparedness plans (for Gaza overall and for each individual health institutions), had been in place and extensively trained for throughout. In particular, reviewing the needs at PHC level - ambulance crews included - for better training in identification, information, triage, first aid and safe transport of the wounded could have diminished the consequences of the trauma received[115].

There is a need to develop an overall disaster management plan for the Gaza strip (with a comprehensive training programme to ensure its acceptance and functionality) – as well as for each individual health service institution; this should draw extensively on the lessons learned from IMO CL22.

Develop a plan for better care of the disabled, integrating medical, social and employment concerns with a strong local community program adapting dwellings, transport etc to the special needs of the disabled

Ensuring the full complement of a comprehensive medical, social and human environment for the disabled is a challenge for any society, but that challenge is even greater for oPt due to the sudden rise in disability that will result from the large number of seriously wounded during the *IMO CL22*. Studies are currently under way to try to quantify the number of disabled of different categories, and to elucidate the services available to them from various public and other service providers[116]. It is likely that the number of newly disabled – including paraplegics, amputees etc – will add substantially to the already existing number of disabled persons.

There will be a need for active follow-up to the studies now ongoing, in order to ensure that each individual disabled person is offered the full complement of specialized health and social services needed. No less important will be a study of the degree to which the homes of the disabled are tailored to their special needs; whether public transport, shops and public buildings are designed to be accessible for the disabled; and to what extent more can be done to facilitate the access to the labour market for the disabled.

There is a need for analysing in a comprehensive way the impact of the IMO CL22 on the amount of disability in Gaza, and to develop a more comprehensive approach – a Handicap Friendly Society - to facilitate the integration of the disabled into society.

Develop an area wide strategic health development plan for all of Gaza, enhancing tertiary care capacity, introducing a more regionalized, decentralized, and rational health service infrastructure, served by a management aiming at continuous quality development and cost effectiveness.

The population of Gaza is 1.5 million people, living within a densely populated area with short travel distances. Today, the population is served by a health infrastructure of hospitals and health centres owned and operated by the Government, UNWRA, the Red Crescent Society, other organizations and the private sector. The coordination among these many elements appears insufficient, not least as regards planning of new services for the population.

The population size and small territory makes Gaza eminently suitable for establishing a full complement of a regionalised health service system, with a complete set of regional tertiary level health care functions, supported by a limited number of potent secondary care level hospitals that are functionally closely linked to an integrated PHC for preventive and curative services. Such a PHC function would benefit from a strong management concentrated on the 5 districts, including

[115] Senior Shifa hospital staff, personal communication.

[116] *Handicap International* is currently undertaking such a survey, Samah Abulanthy, representative of Handicap International at the Health Cluster Coordination Meeting, 25 March 2009, WHO Gaza, Gaza Strip, personal communication.

also a complement of ambulance services and disaster preparedness capability (including improved communication systems) and having a stronger decentralized management capacity to respond to the unpredictability of any future complex acute emergencies.

Such a revision of the health service infrastructure and management in Gaza would enhance the level and quality of health care offered to the population, make those services much more independent and less vulnerable to outside help, permit a more rational spatial planning of services to fit the population's needs, and make the whole system more cost-effective and quality conscious. While the Government clearly must have the responsibility for planning the overall infrastructure to fit the needs of the population, this does not mean that ways can not be found for having other partners owning and running parts of the infrastructure. However, the precondition for that must be that the actions of all health care providers/partners take place within a common system that guarantees a rational planning of essential services based on the population's needs, a unified set of guidelines for ensuring quality of care, financial guidelines that ensures a cost-effective service compatible with the financial possibilities, and a health insurance system that guarantees essential care for the whole population.

Building a better structured, more unified, quality and cost conscious health care delivery system - interacting with a broad multi-sector partnership for health promotion and disease prevention - will require new competencies and skills for many categories of clinical and management staff.[117] A careful analysis of such needs should follow in the wake of the above mentioned health development plan for Gaza, and lead to corresponding adaptations of the teaching programmes of universities and other educational institutions. In that context there appears to be a "generational gap" in education as the possibilities for studies abroad were much better in the past than in recent years, and the exposure to world-wide professional interaction was therefore much better than now. Further strengthening such exposure should be sought through more twinning arrangements with foreign centres of clinical excellence and of quality teaching, including internet based learning facilities

There is a need for a thorough analysis of the future needs for a revised, regionalized health service infrastructure, management and health care financing system in Gaza. A strengthening of educational programmes for health service clinicians and managers should be part of that plan.

.

8. Conclusions

The present situation in the Gaza strip can best be described as a complex disaster of catastrophic proportions, getting steadily worse and with no prospect of improving as long as the present lack of basic security, the almost total blockade and the factitious internal strife among Palestinian political fractions continue. *Addressing these issues is a precondition for alleviating the many problems in the health sector.*

In the shorter term health sector specific priorities include rapid import of building materials specified for health institution repair and for priority drugs, supplies and equipment – all in order to bring the health care system back to normal function. Special surveys are required to elucidate health risks from damage to basic water and sanitation services and from possible risks from unexploded ordnance or dangerous residues from exploded ones. The current system for monitoring of health status, of risk factors to health, and of health services provision need

[117] *National Strategic Health Plan, Medium Term Development Plan (2008-2010),* Palestinian National Authority, Ministry of Health, Health Planning Unit, Ramallah, January 2008.

improvement. A more concerted planning to prevent possible increased risk of epidemics would seem prudent, as the climate changes in coming months will increase the risk factors. Mental health programmes need to be further strengthened, as the mental health impact of the long standing physical and economic insecurity continues to take an ever increasing toll among the civilian population in Gaza.

In the longer run a comprehensive review to streamline the health services infrastructure in the Gaza strip - and of its planning, management and human resources requirements - would in all likelihood result in a much more potent, self-sufficient, quality conscious and cost-effective system that is better suited for the population's current and future needs. In that context the special needs of the rising number of disabled should not be forgotten.

Last, but by no means least, a concerted effort to learn from the latest disaster caused by the IDF attacks should lead to the development of a Gaza-wide disaster preparedness plan, supported by similar efforts for all health institutions, following a standardized methodology.

Annex I gives a summary of individual recommendations, with indications of some of the main partners that should contribute to the developments.

Annex I: List of Recommendations[118]

1. Current needs:

Recommendation 1.1: Create a stronger security arrangement with Israel and lift the blockade.

Some negotiations are currently ongoing among the *PNA* and *Israel* on these issues, and obtaining a successful result is the highest priority of all recommendations.

Recommendation 1.2: Reconcile the main Palestinian political forces

Negotiations between the *PNA* in Ramallah and *Hamas* in Gaza are currently ongoing, and an agreement between them - that can break the current deadlock of stalled decisions and create a shared view on health development priorities for the Gaza strip - is an urgent issue. WHO could perhaps help in the meantime as a neutral facilitator to solve some of the most urgent issues - e.g. as it did in helping to facilitate a solution to the recent stoppage in referral abroad for selected patients needing care not currently available in Gaza hospitals.

Recommendation 1.3: Institute priority repairs of damaged/destroyed health institutions and secure the acquisition of priority equipment and supplies for the health sector

The *Local Health Authority of Gaza*[119] should develop detailed plans for the repairs and the subsequent need for import of building materials, as well as completing reviews of priority drugs and equipment efforts. Most drug information elements are available from the central drug store analyses, and a WHO planned assessment of needs for equipment requirements and of maintenance will help develop the overviews.

Speedy clearance of the above lists should be given by the *Israeli authorities* to these humanitarian needs.

Recommendation 1.4: Ensuring systematic follow-up and care of war wounded, including for the disabled

The *Public Health Administration of Gaza* should organize a follow-up study of the more seriously wounded patients, including collection of the relevant information regarding patients evacuated to Egypt and Israel. The necessary follow-up care for them should be organized in the health and social services, including special rehabilitation services for the disabled.

Recommendation 1.5: Planning for possible enhanced risk of epidemics

The *Public Health Administration of Gaza* should organize – supported by relevant partners from the *Health and WASH Clusters* – an assessment of likely risk factor development and make a plan for preventive measures - comprising both public action and preventive education for the general population.

Recommendation 1.6: Relieving mental health problems

The *Public Health Administration of Gaza* should continue the implementation of the 2004 *Strategic Operational Plan for Mental Health*, and the pilot projects supported by *UNWRA* and *GCMHP* (see chapter 7.1) should be strongly supported – and expanded to the whole territory, if resources permit. *External donors* should give particular attention to the mental health

[118] These are recommendations of the SHM team only and are not in any way binding for WHO.

[119] This term is used as a *temporary label* for the authority that will have the overall responsibility for the health services in Gaza, the details of which need to emerge from the forthcoming agreement between the PNA in Ramallah and the Hamas local administration in Gaza.

programme funding needs, both because of the size and long-term importance of the current mental health problems and because such programs often tend to get less attention in overall priority than they require.

Recommendation 1.7: Investigating worries regarding environmental and individual residual effects of weapons used

There is a need for field studies looking for any environmental weapons residue that may represent current or future health threats, and there is also a need for looking at certain clinical aspects of the wounds from weapon used. UNEP and IAEA are planning field studies and these may throw light on the problems. However, the SHM team believes WHO could make important supplement that, particularly as regards investigations of selected clinical reports of war wounded[120]. A joint assessment of these 3 investigations would be of advantage, addressing any special precautions that might be taken – should the results so indicate - regarding the clearing of rubble, use of agricultural land and treatment of wounded people.

The Public Health Administration of Gaza should ensure due information of the results to any relevant sectors and the general public – also, and *not least, if the investigations show that the current fears are without foundation.*

Recommendation 1.8: Improving monitoring of health, health determinants and health care delivery

The *Local Health Authority of Gaza* – supported by the health cluster organizations - with technical support from the *Health and the WASH Clusters* – should review the current monitoring systems, make recommendations for their improvement, and make a plan for the results to be adopted throughout the health and other sectors in the Gaza strip. One or more WHO consultants - recruited for the purpose and supported by a *Task Force* representing the public health authorities and the Health and the WASH Clusters – might be a cost-effective way of supporting this somewhat complicated task.

2. Medium – and long-term needs

Recommendation 2.1: Develop an up-to-date disaster preparedness plan for Gaza and for its individual health institutions

The *Public Health Administration of Gaza* should establish a *Task Force* of selected public health managers, health institution managers and clinicians, WHO experts and other relevant experts. The Task Force should draft an overall disaster preparedness plan for Gaza, develop guidelines for the elaboration of institution-specific preparedness guidelines, and provide the necessary training/guidance for the local staff charged with developing such institution specific plans.

Recommendation 2.2: Develop a plan for better care of the disabled

The *Public Health Administration of Gaza* should establish a *Task Force* of local rehabilitation specialists, Handicap International, WHO and other relevant UN agencies and NGOs. The Task Force should develop a comprehensive plan for health and social service inputs and local community interventions that together can improve the functional and employment opportunities of the disabled and thus facilitate their integration as full members of a *Handicap Friendly Society.*

[120] UNEP and IAEA already have such experts missions in the pipeline for May 2009; WHO should consider organizing a complementary mission.

Recommendation 2.3: Develop an area-wide strategic health development plan for all of Gaza

The *Public Health Administration of Gaza* should first develop – preferably with the support of a WHO expert team - a *preliminary plan* for how such a major planning should be organized: Its intended aims, fundamental principles, the scope of and methodology for the analysis, reporting and the decision – making process (including which stakeholders to be consulted, when and how) should be clarified before planning begins. This preliminary plan should be sent to stakeholders for hearing.

Only after having studied carefully the results of the hearings and considered ways to reduce possible important problems (technical, financial and political) should the main planning process itself commence.

The plan should start with an analysis of current and likely future needs for health care for the 1,5 million people in Gaza, outline a rational infrastructure of health care institutions capable of providing such services, and finally compare that to the existing infrastructure (hospitals, health centres etc) to see what modifications should be carried out, over which time period.

The plan should also indicate whether – and if so, which - modifications might be desirable regarding the current Human Resources component of the Health Service system. This could include defining educational objectives for categories of health professionals relevant to the task, identifying suitable educational institutions for developing the necessary educational programmes, and advicing on how a stronger network with international organizations and/or foreign centres of excellence could become a more permanent feature in the development of Human Resources for the Gaza Health Care system.

Annex II: Bibliography

In addition to **the many references identified throughout the text, the SHM team has looked at many other reports and information sources that are of relevance to the issue at hand:**

A/HRC/S-9/L.1 - *The Grave Violations of Human Rights in the Occupied Palestinian Territory, particularly due to the recent Israeli military attacks against the occupied Gaza Strip,* Human Rights Council, 12 January 2009.

A/HRC/10/20, Falk, Richard, *Human Rights Situation in Palestine and Other Occupied Arab Territories - Report of the Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967,* Human Rights Council, tenth Session, Agenda Item 7, 17 March 2009.

A61/18 Rev.1 - *Health conditions in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan - Report by the Secretariat (includes Fact-finding report),* Sixty-first World Health Assembly, Geneva, 13 May 2008.

A61/INF.DOC./2 - *Health conditions in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan - Information Document of the Director of Health, UNRWA,* Sixty-first World Health Assembly, Geneva, 24 April 2008.

A61/INF.DOC./3 - *Health conditions in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan* - Information Document of the Government of Israel, Sixty-first World Health Assembly, Geneva, 21 May 2008.

A61/INF.DOC./4 - *Health conditions in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan* - Information Document of the Permanent Observer of Palestine to the UN and Other IOs at Geneva, Sixty-first World Health Assembly, Geneva, 21 May 2008.

Annual Report 2007: Middle East and North Africa - Israel, the occupied and autonomous territories, International Committee of the Red Cross, Geneva, 2007.

Briefing to the Security Council on the Situation in the Middle East, Jerusalem, UNSCO, 18 December 2008.

Commission to co-sponsor Palestinian Donors Conference and announces Euro436 million ($554 million) to the Palestinians for 2009, Brussels, Press Release European Union, 27 February 2009.

Consolidated Appeal Process 2009, Occupied Palestinian territory, United Nations, Geneva, New York, 2009.

Country Brief, Middle East & North Africa Region - West Bank and Gaza, The World Bank Group, September 2007.

Disease risk assessment and interventions, Gaza Strip, January 2009, Communicable Diseases Working Group on Emergencies, WHO headquarters, Communicable Disease Surveillance and Response, WHO Regional Office for the Eastern Mediterranean, WHO Office for West Bank and Gaza, World Health Organization.

Development Times - Unemployment in the oPt, Issue 2, March 2008, Jerusalem, UNDP.

EB124.R4 -*The grave health situation caused by Israeli military operations in the occupied Palestinian territory, particularly in the occupied Gaza Strip,* Executive Board, Geneva, World Health Organization, 21 January 2009.

EB 124/35 - *The health situation in the Gaza Strip - Report by the Secretariat,* Executive Board, Geneva, World Health Organization, 20 January 2009.

Fact-finding mission into medically-related violations in the Gaza Strip during 27.12.08 - 18.01.09 Abbreviated version, Physicians for Human Rights-Israel/Palestinian Medical relief Society, 6 April 2009.

Fact Sheet on the Gaza Crisis, Key Child Protection Facts from 27 December - 17 January, UNICEF, 6 February 2009.

Falk, Richard, *Israel's war crimes,* Le monde diplomatique, March 2009.

Gaza Health Flash, Internal daily update of health and WHO-related highlights from past 24 hours and issues for day ahead, 13 January 2009 and 14 January 2009, World Health Organization.

Gaza Humanitarian Situation Reports, Reports used between 17 November 2008 - 28 January 2009, United Nations Office for the Coordination of Humanitarian Affairs.

Gaza - ICRC Bulletin, No. 2, 3, 4, 7 of 2009, International Committee of the Red Cross, Geneva, 2009.

Gaza: Medical personnel unable to enter, Jerusalem, Gaza, Paris, 14 January 2009, Médecins Sans Frontière.

Gaza Situation: health facilities, road network, refugee camp and damaged area as of 23 January 2009, Map Production: Public Health Information and Geographic Information System (GIS), WHO, UNOSAT, 2009.

Gaza Strip Health Cluster, *Bulletin No. 2,* 4 February 2009 and *Bulletin No.1*, 20 January 2009, World Health Organization.

Gaza Strip Humanitarian Fact Sheet, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), FAO, UNICEF, UNRWA, WFP, WHO, December 2007.

Genocide carried out in Gaza Strip by Israeli military forces - Report of the 12th day of massacres- From 27-12-2008 to 07-01-2009, Palestinian National Authority, Ministry of Health, Health Management information Systems Unit, 7 January 2009.

Grave violations against children, update on the 22-day conflict in Gaza, UNICEF, 17 January 2009.

Haaretz, Harel, A., *Cast Lead expose / What did the IDF think would happen in Gaza?,* 28 March 2009.

Haaretz, Hass, A., *Driving the truth home,* 26 March 2009.

Haaretz, Miller, E., *Human rights are not the enemy,* 27 March 2009.

Haaretz, Pfeffer, A., *How IDF testimonies led to the 'Haaretz blood libel',* 27 March 2009.

Haaretz, Oppenheimer, Y., Kreimer, S., *Seeds of contention in King David's garden,* 27 March 2009.

Health Action in Crises - Highlights, No 246 - 9 to 15 February 2009 and *No 245* - 2 to 8 February 2009, World Health Organization.

Health Cluster, Brain Storming on Key Public Health Issues in Gaza, 17 February 2009, World Health Organization.

Health Cluster, Framework for the Provision of Humanitarian Assistance in Gaza (Draft), 23 February 2009, World Health Organization.

Health Cluster, Health Cluster Meeting in Gaza, Summary notes, 25 March 2009, World Health Organization.

Health Situation in the Gaza Strip, Volumes between *28 December 2008 - 20 January 2009,* World Health Organization.

Health situation in the occupied Syrian Golan, Information Document of the Syrian Arab Republic for the Sixty-second World Health Assembly, Geneva, May 2009.

Health Sector Surveillance Indicators, Monitoring health and health sector in the oPt, Report No. 15 - 20 June 2007, Report No. 17 - 30 August 2007, Report No. 20 October/November 2007, World Health Organization.

Humanitarian Action Update - oPt, 17 December 2007 and 14 January 2009, OPT, Geneva, New York, UNICEF.

Humanitarian Aid from Egypt to Gaza (Draft), Egyptian Red Crescent, 4 February 2009.

IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings, Inter-Agency Standing Committee, Geneva, 2007.
ICRC News Release No. 09/02, Gaza: as the conflict intensifies, the ICRC urges all parties to respect civilians, International Committee of the Red Cross, 4 January 2009.

IDF admits operational mishaps in Gaza, Palestinian Centre for Human Rights, 23 April 2009.

Israel-OPT: Water, sewage system "collapsing" in Gaza, says official, IRIN, 5 January 2009.

Israel-OPT: How Gaza gets power - analysis, IRIN, 3 December 2008.

Jerusalem Post, *Lappin, Y., Soldiers tell of assisting Palestinians,* 26 March 2009.

Joint Rapid Food Security Survey in the occupied Palestinian territory, WFP, FAO, UNRWA, May 2008.

Joint Statement of WHO/OCHA, Concern Over Halting of Gaza Medical Patient Referrals, World Health Organization, 30 March 2009.

Life in the Gaza Strip 6 weeks after Israel's attack (2009), Tabulation reports, The Fafo Institute for Applied International Studies, Oslo, Jerusalem, 2009.

Mental health and psychosocial support after the recent violence in Gaza, PowerPoint presentation by Christine Gale (UNICEF) and Raijah Abu Sway (WHO Jerusalem), 11 February 2009, IASC Weekly.

Merchandise Traffic and Humanitarian Aid Report, The Gaza Strip - Weekly Report 19-25 April 2009, Ministry of Defense, Coordination of Government Activities in the Territories.

MSF expands surgical activities in Gaza City, Gaza update, 26 January 2009, Médecins Sans Frontières.

MSF update, Gaza Strip, 12 January 2009, Médecins Sans Frontières.

Middle East Briefing No 24 - Round Two in Gaza, Gaza City, Ramallah, Brussels, International Crisis Group, 11 September 2008.

Ministry of Health Emergency Operation Room, Sitrep on Gaza 6 January 2009 (Local Time 16:00), Palestinian National Authority, 2009.

OCHA-oPt Protection of Civilians, Summary data tables, Reports to the End of October 2008, United Nations Office for the Coordination of Humanitarian Affairs.

Priorities and Needs of Health Sector in Gaza Governorates: Consequences of the Long Siege and the Last War on Gaza, Palestinian NGOs Network - PNGO, February 2009.

Proposal, Supporting the early recovery and reconstruction of the health sector in Gaza (Draft), Ministry of Health, Government of Egypt, March 2009.

Rapid Food Security Needs Assessment in Gaza Strip - Effect of Import Restrictions and Freeze on Exports on the Food Security in Gaza Strip, WFP, December 2007.

Rapport de la Mission d'Evaluation des Hopitaux de la Bande de Gaza, Ministère de la Santé et des Sports avec le centre de crise du Ministère des Affaires Etrangères et Européennes, France, Mission du Dimanche 18 janvier au mercredi 28 janvier 2009.

Reliefweb, Press conference on humanitarian situation in Gaza, 9 February 2009.

Reuters, *Palestinians: Final Gaza toll shows 960 civilians killed,* 12 March 2009.

S/RES/1860 (2009), *Resolution 1860,* Adopted by the Security Council at its 6063rd meeting, on 8 January 2009.

Statistics about referrals to Egypt, Palestinian National Authority, 8 April 2009.

The Humanitarian Monitor - occupied Palestinian territory, No. 2 (June 2006) - No. 33 (January 2009, United Nations Office for the Coordination of Humanitarian Affairs.

The Gaza Strip: A Humanitarian Implosion, Amnesty International, Christian aid, Cafod, Care, Médecins du Monde UK, Oxfam, Save the Children UK, Trocaire, March 2009.

The Lancet, *Gaza´s health and humanitarian situation remains fragile, Vol 373, 14* February 2009.

The Lancet, *Health in the oPt 2, Maternal and child health in the oPt,* 14 March 2009.

The Lancet, *Health in the oPt 3, Cardiovascular diseases, diabetes mellitus, and cancer in the oPt,* 5 March 2009.

The Lancet, *Health in the oPt 5, The health-care system: an assessment and reform agenda,* 5 March 2009.

The Lancet, *Teaching child health in the oPt, Vol 373,* 14 March 2009.

United Nations Press Release, *Richard J. Goldstone Appointed to Lead Human Rights Council Fact-Finding Mission on Gaza Conflict,* 3 April 2009.

UNRWA Health Programme, UNRWA, 2007.

Van Ommeren, Mark H., *Travel Report Summary - Mission to support the WHO Office in oPt in mental health humanitarian aid after the war in Gaza,* World Health Organization, 13 February 2009.

Vulnerability Analysis and Mapping (VAM), Food Security and Market Monitoring Report, occupied Palestinian territory - oPt, July 2008, No 17, Geneva, United Nations World Food Programme, January 2008.
.

Weekly Report: On Israeli Human Rights Violations in the Occupied Palestinian Territory No. 13/2009, Palestinian Centre for Human Rights, 26 March - 1 April 2009.

West Bank and Gaza, Health Policy Report, Reforming Prudently under Pressure, Health Financing Reform and the Rationalization of Public Sector Health Expenditures, The World Bank, Human Development Sector, Middle East and North Africa Region, January 2009 *(Draft)*.

WHA61.3 - *Health conditions in the occupied Palestinian territory, including East Jerusalem, and in the occupied Syrian Golan - Resolution,* World Health assembly, Geneva, 23 May 2009.

WHO Gaza FAQs/Talking points, World Health Organization, 20 August 2007.

Annex III: SHM programme of work

Wednesday 11 February 2009

Meeting by SHM Team Leader (Dr Jo E. Asvall) with DG WHO (Dr Margaret Chan), DDG WHO (Dr Anarfi Asamoa-Baah), ADG HAC (Dr Eric Laroche)

Thursday 5 March

SHM Team initial briefing in HAC

Saturday, 21 March 2009

Travel to Cairo

Sunday 22 March 2009

Meeting EMRO EHA staff
Meeting Deputy Regional Director, EMRO
Meeting Secretary General Egyptian Red Crescent Society
Meeting Head of Egyptian Rapid Response Team

Monday, 23 March 2009

Depart Cairo
Meeting Head of Egyptian Red Crescent Society North Sinai Branch
Meeting at Al Arish with Governor of North Sinai
Arrive Rafah boarder crossing
Arrive Gaza city (briefing on the way by the Head of WHO office Gaza)
Meeting with WHO Gaza office staff, revising of the agenda
Meeting with UNWRA Commissioner-General

Tuesday 24 March 2009

Meeting with Director Primary Care, Local Health Authority
Visit to Primary Care clinic
Visit to Shifa hospital, meeting with Director and senior medical staff
Visit to Al Wafa rehabilitation hospital
Tour of North Gaza (sites of destructions)
Meeting with Director General of Hospitals, Local Health Authority
Meeting with ICRC
Meeting with A/WHO Representative, oPt
Meeting with UNSCO
Meeting on mental health with representatives of the Local Health Authority, UNWRA and Gaza Community Mental Health Programme
Meeting with Professor Eyad Elsarraj (Gaza Community Mental Health Programme)

Wednesday 25 March 2009
Visit to Central Drug Store
Meeting with Palestinian Red Crescent Society and visit to Al Quds hospital
Meeting with Health Cluster
Meeting with UNHCHR Meeting with WHO Gaza staff

Thursday 26 March 2009
Meeting with WHO Gaza staff
Meeting with Mine Action Group (MAG)
Depart to Rafah
Arrive Cairo

Friday 27 March 2009
Report writing

Saturday 28 March 2009
Report writing

Sunday 29 March 2009
Return to Geneva

Monday 30 March 2009
Debriefing A/ADG HAC

Tuesday 31 March 2009
Teleconference with MOH Palestine
Teleconference with UNEP

Wednesday 1 April 2009
Teleconference with UNRWA

Thursday 2 April 2009
Meeting WHO Manager Mental Health

Monday 6 April
Teleconference among HAC and SHM team members

Friday 24 April
Teleconference among SHM members

Wednesday 20 May
Sixty-second World Health Assembly - Discussion by Committee B of Agenda item No 14 ("Health conditions in the occupied Palestinian territory, including east Jerusalem, and in the occupied Syrian Golan")

Thursday 21 May
Adoption by World Health Assembly of Resolution WHA62.2

Annex IV: List of persons interviewed

EMRO	
Dr Mohamed Jama	Deputy Regional Director
Mr Altaf Musani	Regional Adviser EHA
Dr Ahmed Elganainy	EHA Officer
EGYPT	
Prof. Mamdouh Gabr	Secretary General Egyptian Red Crescent Society
Dr Ayman El Hady	Head of the Egyptian Rapid Response Team
Eng. Ahmed Oraby	Head of ERCS North Sinai branch at Al Arish
General Mohamed Shousha	Governor of Northern Sinai
UNRWA	
Ms Karen Abu Zaid	Commissioner General
Dr Guido Sabatinelli	Director of Health Program
Dr Iyad Zaqout.	Director of UNRWA community mental health programme
Local Health Authority	
Primary Health Care:	
Dr Fuad Elissawi	Director General of PHC in Gaza
Dr Abdelrahman El Dahoudi	Director of doctors affairs, PHC
Dr Sawsan Hammad	Director of Women's Health, PHC
Dr Younis Awad allah	IMCI national coordinator
Dr Ayesh Samour.	Director of mental health
Shifa hospital	Director General of Hospitals in Gaza
Dr Mohammad R. Al-Kashif	Director General of Shifa Medical complex
Dr Hussain Ashour	Director of Surgical hospital at Shifa
Dr Sobhi Skaik	Medical director of Shifa
Dr Nasir El Tatar	Head of plastic surgery and burn department
Dr Nafez Abu Shaaban	Head of orthopedic department
Dr Abedrabbo Abu Hasheesh	
Mine Action Group (MAG)	
Mr Mark Russsel	Team Leader MAG

International Committee Red Cross

Marianne Whittington	Health Delegate, Gaza
Mr Mohammed Ramadan	Health Delegate Assistant

Gaza Community Mental Health Progr.

Dr Ahmed Abu Tawahina.	Director General Gaza Community Mental Health Programme
Dr Eyad El Sarraj	Chairman of the Board of GCMHP

El Wafa rehabilitation hospital

Dr. Khamis El-Essi:	Director of medical rehabilitation teams
Dr. Maher Shamya:	Medical director
Dr. Fadil Na'eem:	Orthopedic surgeon
Mr. Taiseer El-Biltaji:	General director of the hospital

Palestinian Red Crescent Society (PRCS)

Dr. Khalil Abu Fool	Director of Emergency and Relief units

Central Drug Stores, MoH

Dr Mohammad Al Najjar	Deputy director of medical stores

UNHCHR

Ms Nirmine El Sarraj	Human Rights National Officer

WHO Gaza

Mr Anthony Laurence	Acting Head of Office, WHO oPT
Mr Mahmoud Daher	Officer in Charge, Gaza sub-office
Dr Jorge Martinez	Health Cluster coordinator
Dr Silvia Pivetta	Public Health officer
Ms Dalia Salha	National epidemiology officer
Mr Abdelnasser Soboh	Information management assistant
Mr Dyaa Sayma	National Mental Health officer
Ms Amani Jouda	National nutritionist

UNSCO

Mr Alexei Maslov	Head of Gaza Office

Palestinian National Authority

H.E.Dr Fathi Abdullah Abu Moghli	Minister of Health

UNEP

Mr Henrik Slotte	Chief of Branch, Post Conflict and Disaster Management

WHO Geneva

Dr Margaret Chan	Director General
Dr Eric Laroche,	Assistant Director General, Health Action in Crises (HAC)
Dr Daniel Lopez Acuna	Director, Recovery and Transition Programs, HAC
Dr Nevio Zagaria	Coordinator, Recovery and Transition Programs, HAC
Dr Patricia Kormos	Technical Officer, HAC
Dr Inga Lohse	Technical Officer, HAC
Dr Khalid Shibib	Technical Officer, HAC
Dr Mark Van Ommeren	Manager, Mental Health Evidence and Research
Ms. Ivana Boko	Assistant, REC