

# GAZA STRIP

## INITIAL HEALTH NEEDS ASSESSMENT



*Photo Shareef Sarhan/WHO*

**GAZA, 16 FEBRUARY, 2009**

**PREPARED BY THE HEALTH CLUSTER**



## 1. EXECUTIVE SUMMARY

The Gaza Strip has been the setting for a protracted political and socio-economic crisis. Recent events have resulted in a severe deterioration of the already precarious living conditions of the people in Gaza and have further eroded a weakened health system.

During the last Israeli military strike between 27 December and 18 January:

- 1380 Palestinians were killed, of whom 431 were children and 112 women.<sup>1</sup> At least 5380 people were injured, including 1872 children and 800 women. Among the casualties, 16 health staff were killed and 25 injured while on-duty<sup>2</sup>. Injuries were often multiple traumas with head injuries, thorax and abdominal wounds. Israeli fatalities were 14, and 183 were injured<sup>3</sup>.
- Vital infrastructure has been compromised or destroyed, resulting in a lack of shelter and energy sources, deterioration of water and sanitation services, food insecurity and overcrowding. An estimated 100 000 people were newly displaced; 49 693 of them were residing in 50 shelters organized by United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), the remaining being sheltered with host families. Fifteen hospitals and 41 primary health care (PHC) clinics in the Strip were damaged during the strike. Twenty-nine ambulances were damaged or destroyed. 21 out of 56 Ministry of Health (MoH) and three out of 17 UNRWA PHC centres were closed during part or all of the period of the crisis<sup>4</sup>.
- Access to health care was severely restricted and hampered by security constraints. Maternal and child health services at PHC level were disrupted. Despite the critical conditions, maternity assistance for normal deliveries was provided as well as specialized health care for obstetric and neonatal complications, though many times in improvised settings within health facilities where maternity wards and operating theatres were transformed into trauma units. The consequences are unclear in terms of maternal and child morbidity and mortality among the 3500 deliveries that were expected to have taken place during the 23 days of military operations. Findings from a recent UNFPA assessment indicate that, during that period, there was an increased number in miscarriage cases in the surveyed hospitals (Shifa, Al Aqsa, Naser, Rafah) and an increased neonatal mortality in Shifa Hospital, in Gaza City<sup>5</sup>.
- Specific concerns exist for the chronically sick. It is estimated that, during the military operation, 40% of the chronically ill interrupted their treatment. These concerns were exacerbated by the virtual halt of referrals of ordinary patients outside Gaza as life-threatening injuries had a higher priority in an overwhelmed system. Elective surgery and non-urgent routine medical interventions were delayed or interrupted during the crisis. This indicates that a growing number of patients, mainly with chronic conditions, are awaiting treatment.

The state of Gaza's health services was already precarious before the military strike. The strict closure of the Gaza Strip since mid-2007 resulted in intermittent shortages of fuel, electricity and water and led

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<sup>1</sup> MoH, Palestinian Health Information Center, Gaza.

<sup>2</sup> *ibid*

<sup>3</sup> OCHA oPt, Situation Report #205, February 2009.

<sup>4</sup> Also the 3 UNRWA sub centres were closed.

<sup>5</sup> UNFPA, Gaza crisis: Impact on reproductive health, especially maternal and newborn health and obstetric care. Summary report, 9 Feb 2009.

to reduced services at PHC and hospital level. Materials needed for rehabilitating and building health facilities were prevented from entering Gaza. Gaza's internal political turmoil and extensive health worker strikes added to the reduced health service delivery and public health programmes capacity.

The quality of health care has been further affected by deterioration in the functionality of medical equipment due to the lack of maintenance and spare parts, as well as by shortages of drugs and medical supplies and restricted training opportunities for medical staff that were already at poor levels pre-crisis. Routine operations were affected and many elective interventions suspended. Consequently, the need for referrals outside of Gaza grew, restricted by delays and denials of passage.

Today, 16 February, the situation can be summarized as follows:

#### **a. Status of health services**

- Most health facilities are operational and have resumed regular functions.
- Immunization and other public health programs have been fully resumed soon after the ceasefire.
- Large volumes of medical supplies has entered into the Gaza Strip and have been stored in the Central Drug Stores. These supplies cover most of current needs in regards to medicines and consumables. More than half of donations still need to be unpacked and documented. A surplus of many items is anticipated, although information on the quantity of received essential drugs and consumables, and for how long they will cover the needs, is not yet available.
- Full stocks of drugs are in place in most hospital facilities since the first week of the ceasefire. Distribution to PHC centres from the central drug store have occurred during the last two weeks to fill the PHC centre stocks, which were incomplete during the first week after the ceasefire. Psychotropic drugs have entered into the Gaza Strip, however they are not yet available at health facility level.
- Some medical equipment and spare parts have been received and the position is better now than before the crisis. But a comprehensive assessment of medical equipment, including maintenance systems and spare parts must be undertaken.
- Referral abroad of patients requiring specialized care, including the chronically sick, has resumed but at a lower level than before the crisis.
- Electricity is back to pre-emergency status, while water availability has improved but remains limited for a significant proportion of households.

#### **b. Enduring risks**

- Complications and permanent disabilities for people with traumatic injuries and hearing impairment caused by explosions due to inappropriate follow-up and treatment.
- Potential risks for women who went into labour during the crisis as well as infants born during the sae period associated with the lack of appropriate care during labor, delivery and post-partum.
- Complications and excess mortality in patients with chronic diseases due to suspension of treatment and delayed access to health care.
- Epidemic outbreaks of water and food-borne diseases due to limited access to clean water and sanitation and a weak public health surveillance system.
- Long-term mental health problems due to the effects of the conflict, on-going insecurity and lack of protective factors.
- Slow deterioration of health and nutritional status leading to increasing morbidity and mortality due to a further decline in socio-economic and security conditions and in the quality of health care.

- The existence of vulnerable groups or individuals severely affected by the emergency, having reduced coping mechanisms and limited access to appropriate services or support networks.
- Restricted access to specialized tertiary care.

### **c. Unlikely risks**

- Acute increase in mortality and morbidity.
- Outbreaks of vaccine-preventable diseases given Gaza's high immunization coverage.
- Global acute malnutrition. However, this should be further assessed considering vulnerable groups.
- Lack of access to primary and secondary health services, depending on security.

### **d. Priority interventions**

#### **d.1 Health service delivery**

- Provide follow up and rehabilitation care for traumatic injuries (including hearing, visual and physical injuries), burns and life-threatening surgical conditions.
- Ensure the continuation of treatment of patients requiring medicines for chronic conditions including hypertension, diabetes, kidney disease and epilepsy.
- Provide support for mental health and psychosocial disorders. In particular:
  - o include specific psychological and social interventions in the provision of general health care;
  - o provide psychological first aid to people with severe, acute anxiety;
  - o ensure continued access to care for people with severe mental disorders.
- Address gaps in health services delivery and critical threats through appropriate and quality PHC interventions and by strengthening secondary and tertiary care.
- Follow up of mothers and neonates born during the crisis in conditions lacking appropriate care during labour, delivery and post-partum.
- Address the health needs of internally displaced people.
- Strengthening existing internal and external referral systems.
- Rehabilitate damaged health facilities.

#### **d.2 Public health**

- Fully reactivate and strengthen an effective mechanism for communicable disease surveillance and response to detect and respond to outbreaks, with particular focus on diarrheal diseases.
- Reactivate and strengthen the nutrition surveillance system.
- Ensure sufficient electricity, safe water, sanitation and reinforced hygiene measures.

#### **d.3 Assessment, coordination and management**

- Strengthen the pharmaceutical management capacity through logistic and technical support.
- Ensure effective coordination of humanitarian response.
- Conduct in-depth assessments to further assess the impact of the crisis to identify vulnerable groups, and to assess the local response capacity and coping mechanisms. Main areas of assessment include:
  - o Injuries and disabilities (all types including physical, visual, hearing and intellectual);
  - o Food security and nutrition;
  - o Quality of health care, including the state of medical equipment.

## 2. BEFORE THE CRISIS: BASELINE HEALTH STATUS OF THE POPULATION IN GAZA<sup>6</sup>

The Gaza Strip has a population of 1.5 million with the sixth highest population density in the world, and a very young demographic with 18% of people aged under 5 years (274 000 children). Gaza's population has relatively low infant and under 5 mortality rates (IMR and U5MR) and a high fertility rate (FR), while life expectancy is increasing. During 1999-2003, IMR was 30.2 per 1000 live births, U5MR was 34.8 per 1000<sup>7</sup>. FR was 5.4 in 2005. Infectious disease incidence is decreasing while non-communicable diseases are rising.

Causes of mortality are the same as those of mid- and high-income countries. In 2005, the *leading causes of death* in the occupied Palestinian territory (oPt) (among all age groups) were cardiovascular diseases (38.2%), perinatal conditions (9.7%), cancer (9%) and accidents (8.9%).

There is evidence that some *chronic diseases* are on the increase, although available data are only related to surveys and a national register is missing. There was a 31.1% increase in the detected prevalence of chronic diseases between 2004 and 2006. For all ages, 8.2% of the surveyed persons in Gaza reported suffering from at least one diagnosed chronic disease. Diabetes and hypertension prevalence in people aged over 65 years was reported at 18.5% and 24.2% in 2000 and at 21.1% and 33.7% in 2004. Cardiovascular disease prevalence doubled from 7% to 15.8 % in Palestinians over 65 between 2000 and 2004.

*Disability* prevalence appears to be low, according to the available data. In 2006, the prevalence of disability in Gaza was reported to be 2.3%, which is much lower than the expected prevalence of 7-10%, as estimated by WHO in a standard general population. The measured prevalence is therefore likely to be underestimated.

*Infant deaths* are mostly concentrated within the neonatal period, and many neonatal deaths occurring within the first week of life. This is a typical pattern of middle- and high-income countries with low infant mortality rates. However, the neonatal mortality rate in Gaza Strip can still be substantially reduced and a high proportion of early neonatal deaths -and of permanent outcomes from complications- avoided by an improved quality of perinatal care. The main causes of neonatal mortality are asphyxia, infections and low birth weights. On maternal mortality, the main causes of deaths are haemorrhage during and after delivery, infections, eclampsia, anaemia and obstructed labor<sup>8</sup>.

*Acute malnutrition* is low, but stunting is increasing and levels of (mild) anaemia remain very high, as it is in the whole region. *Low birth weight* is worryingly increasing. In 2006, wasting levels in children aged 6-59 months remained insignificant at 1.2% and *stunting* levels were at 13.2%, slightly above the threshold of 10% that is considered a (mild) public health problem, according to WHO standards<sup>9</sup>. Anaemia increased from 37.9% in 2002 to 47.9% in 2007, affecting nearly half of children aged under

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<sup>6</sup> Most data in paragraph 2.1 refer to PCBS-DHS/Palestinian Family Health Survey, 2006, 2004, 2000, 1996. When a different source is used, this is indicated by a specific footnote.

<sup>7</sup> In 2005-2006 in Gaza the IMR was 28.8 and the U5MR was 31.8 per 1000 LB, According to the Palestinian Family Survey, PSBS 2007.

<sup>8</sup> Indicated by UNICEF/UNFPA.

<sup>9</sup> From feedback on the UNICEF Rapid Nutritional Assessment of Children 6-59 months in the Gaza Strip –April 2008, wasting in Gaza was at 2.4% (still low) and stunting was at 10.3%

5<sup>10</sup>. Low birth weight has increased from 4% in 2002 to 7.3% in 2006. The proportion of children exclusively breastfed at 5 months in Gaza is 26.6%, although the proportion of children ever breastfed is as high as 97%.

**Table 1. Selected health indicators and trends in oPt (and Gaza when available)**

	2000	2001	2002	2003	2005	2006**
<b>Total population size*</b>	3150056	3298951	3464550	3737895	3700000	3888292
<i>Gaza</i>	36.13%	36.30%	36.4%	36.7%	37%	37%
<b>Refugee population*</b>	1428891	1483394	1532589	1592189	1649187	1705131
<i>Gaza</i>	833043	865242	893141	896943	961645	996232
<b>Life expectancy at birth*</b> (years)	71.8	71.82	71.8	72.3	71.7M 73F	71.7M, 73.2 F
<b>Total fertility rate **</b>	5.9			4.6		4.6
<i>Gaza</i>	6.8			5.8		5.4
<b>Crude death rate*</b>	3.2/1000	2.8/1000	3.1 /1000	2.7/1000	2.7/1000	
<b>Infant mortality rate**</b>	25.5/1000			25.2/1000		25.3/1,000
	(1999-1995)			(2003-1999)		(2006-2004)
<i>Gaza</i>	27.3/1000			30.2/1000		28.8/1,000
<b>Under 5 mortality rate**</b>	28.7/1000			28.3/1000		28.2/1,000
	(1999-1995)			(2003-1999)		(2006-2004)
<i>Gaza</i>	30.2/1000			34.8/1000		31.7/1,000

\* The Status of Health in Palestine 2000, Annual Report. HMIS/MoH, 2001; 2002; 2003; 2004; 2006

\*\* Palestinian Central Bureau of Statistics 1996; 2000; 2004, 2006

### 3. DURING THE CRISIS: HEALTH CARE PROVISION IN EMERGENCY<sup>11</sup>

#### 3.1 Health service delivery response

##### 3.1.1 Emergency medical care

On 27 December, all MoH hospitals in Gaza declared a state of emergency, meaning that:

- Only emergency surgeries were carried out; elective surgeries were suspended;
- All hospital out-patient clinics were closed, except those equipped to address urgent cases;
- All health personnel had to report to duty and all leave cancelled;
- Emergency and operation rooms were organized to serve casualties;
- All ambulances were considered on call;
- All hospital pharmacies were functioning 24 hours;

<sup>10</sup> PCBS, unpublished data from a National Nutrition Survey, 2007.

<sup>11</sup> In the Gaza Strip, the health facility network is well developed and distributed. There are five major health care providers: MoH, UNRWA, NGOs, private sector, and hospitals outside oPt. The MoH is the main provider for both primary and referral care. UNRWA provides PHC services to the refugee population, and contracts out referral care. In the Gaza Strip, there are 129 comprehensive PHC centres and 27 hospitals. Of the PHC centres, 56 are run by the MoH, 17 by UNRWA and about 50 by NGOs. Of the hospitals, 13 are managed by the MoH, with a bed capacity of around 1500 beds. The other 14 are private hospitals (both NGOs and for-profit) and have a capacity of about 500 beds. In Gaza, human resources in health are relatively well developed compared to regional standards, and include 3759 physicians, 4200 nurses, 204 midwives, 1600 pharmacists and 3100 paramedics. (MoH, 2006)

- Relevant health specialists working at the PHC centres were redeployed to hospitals.

The state of emergency ended 22 January when all MoH health facilities resumed regular functions. About 6000 MoH staff provided health care during the emergency, although there were periods when some could not reach work for security reasons (MoH). Some 89 health staff were redeployed from their hospitals to others closer to their homes (MoH). Sixteen health staff were killed during the military operations and other 25 were injured while on duty (MoH).

Ten MoH PHC centres provided emergency medical services during the crisis. UNRWA's 14 functioning PHC centres also shifted to an emergency status. Most health personnel were redeployed to work at UNRWA shelters providing PHC services to the internally displaced. Of the five MoH community mental health centres (CMHC), two did not function during the crisis. They were Sourani in Gaza City, which was partially damaged, and Jabalia in North Gaza, which was located in a high-risk area. The three remaining CMHCs and the psychiatric hospital opened from 8am-11am providing regular clinical services<sup>12</sup>. Follow-up visits for chronic patients, family association activities, community awareness-raising activities and in-service trainings were suspended. Outreach activities were conducted after 11am by mental health teams that visited general hospitals and provided psychological first aid for wounded patients and their families<sup>13</sup>.

Gaza's pre-hospital emergency services were relatively well organized. Despite the waves of casualties, many of whom had multiple injuries, and the extremely difficult security conditions, most of the injured were rapidly transported from the incident site to emergency rooms where urgent medical interventions were provided. Still, given the general context (reduced staffing, overwhelmed emergency rooms, interruption in electricity and limited water supplies) the risk of wound infection was high. Tetanus is of particular concern as vaccination coverage among adults is low.

**Table 2. Number of injured patients admitted for in-patient care to Gaza's main hospitals**

Hospitals	No. of admitted injured
Yosif Najar	63
Tal Sultan	0
Nasser	117
Gaza European	119
Aqsa Martyrs	132
Shifa	1180
Gaza Pediatrics'	217
Gaza Ophthalmic	51
Dorah	78
Kamal Edwan	164
Beit Hanun	21
<b>Total</b>	<b>2142</b>

Once stabilized, most patients were either early discharged or referred abroad to ensure that there were sufficient empty beds for further casualties. Those referred abroad for specialized care were evacuated through the Rafah border crossing, which was open to evacuate injured patients and import medical supplies. The MoH reported that from 29 December-22 January, 608 injured patients were evacuated through Rafah.

Of the 5380 injured, 2142 (39.8%) were admitted to Gaza's main hospitals, mainly Shifa. Despite the large influx of casualties, the bed occupancy rate in

<sup>12</sup> The main factors indicated by the staff for their inability to provide the mental health (MH) services at the functioning facilities were: a) shortage of staff; b) shortage of psycho tropic medications; c) The lack of trained MH professionals on crisis management and the urgency of providing crisis intervention services in the field which affects the delivery of regular programs and services

<sup>13</sup> The Mental Health (MH) department at the MoH provides services in Gaza Strip through five community MH centres and one psychiatric hospital.

MoH hospitals did not exceed 75%, and was much lower in most cases<sup>14</sup>. The reasons included: the MoH policy to discharge patients early or refer them abroad; suspension of routine and elective interventions; and the difficult access to hospitals for the population due to insecurity (confirmed by an acute drop in PHC consultations<sup>15</sup>). As a result, it can be reasonably assumed that a large number of patients will seek care during the coming weeks, lengthening waiting lists and adding to the burdens on an already shaken health system.

**Table 3. Bed capacity/occupancy rate during the crisis and number of operation rooms**

Hospitals	Bed capacity	Occupancy rate	No. of operation rooms
Yosif Najar	59	66%	1
Tal Sultan	50	75%	2
Nasser	321	37%	6
Gaza European	207	58%	6
Aqsa Martyrs	103	75%	2
Shifa	596	75%	11
Gaza Paediatrics'	150	65%	0
Gaza Ophthalmic	40	38%	2
Dorah	64	36%	0
Kamal Edwan	71	60%	2
Beit Hanun	42	17%	2
<b>Total</b>	<b>1703</b>	Not available	<b>34</b>

During the crisis, health sector coordination by international agencies and local NGOs was mainly carried out through the MoH/WHO operation rooms in Ramallah and Gaza for the coordination of emergency medical supplies, and through the Health Cluster coordination mechanism. Since the onset of the crisis, information about the situation on the ground was provided by WHO officers in Gaza and, later on, by other teams of information officers<sup>16</sup> collecting from hospitals data on injuries and deaths, reporting on unfolding needs and on the emergency response.

International Committee of the Red Cross (ICRC) and Médecins Sans Frontières (MSF) France teams contributed to physical rehabilitation care at hospital level. Several Health Cluster partners<sup>17</sup> carried out community-based rehabilitation activities related to the identification of new injuries, locating displaced disabled people and their families and distributing nutritional supplementary parcels, hygiene kits and diapers for families with children aged under 5, new mothers or for adults with disabilities.

Some agencies<sup>18</sup> 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 providing home-based post-operative care (dressing and physiotherapy) through mobile and/or out patient clinics. Furthermore, the local production of orthosis and prosthesis devices was enhanced at the Artificial Limb and Polio centre. Training of two orthopaedist technicians was carried out to ensure the sustainability of the orthosis and

<sup>14</sup> There are about 2000 hospital beds in Gaza: 1500 in 13 MoH hospitals and 500 in 14 private hospitals.

<sup>15</sup> WHO Health situation in the Gaza Strip, 7 Jan 2009 "The director of PHC reported that since 27 December, the use of PHC activities had declined by about 90%"

<sup>16</sup> Map UK, ICRC, WHO

<sup>17</sup> DIAKONIA/NAD, MAP UK, Welfare Association

<sup>18</sup> DIAKONIA, ICRC, HI, HAGAR, MDM, MSFF, PRCS, UNHWC/HWC UNRWA



prosthesis production. The provision of medical rehabilitation services has been supported by three national rehabilitation centres in the West Bank and Jerusalem. Some emergency equipment and spare parts were also provided by international agencies<sup>19</sup>, as well as some training to nurses working in the operation theatre of Nasser Hospital.<sup>20</sup>

At least 300 medical staff entered the Gaza Strip (mainly from Arab countries, Norway, Switzerland and France) to provide clinical assistance during and after the emergency. Most left after the cease-fires were declared. Many did not have the necessary experience of the local health system to make a useful contribution. The MoH emphasized the importance of coordinating with it before medical staff arrived, but this often did not happen.

### **3.1.2 Perinatal care**

Gaza's main maternity departments were transformed into surgical departments to cope with the large number of casualties. Priority was given to transporting and treating injured over any other service, including obstetric care. Data from key maternity units did not show significant variation in use of maternity services in the before, during and after the crisis. However, in large maternity units, women were discharged as soon as 30 minutes post-partum so to vacate beds for potential needs during the emergency with hospital. Electricity interruptions may have affected survival of newborns needing intensive care.

According to an assessment carried out by the United Nations Population Fund (UNFPA)<sup>21</sup>, five of 37 women were identified as having experienced during the crisis severe problems in access and quality of care during their delivery. These women had to deliver in extremely unsafe conditions, either at home or on their way to hospital. Eight women delivered under the supervision of untrained women in a shelter in Khan Younis. In the same shelter, one infant requiring resuscitation died due to lack of access to a hospital. Findings from the same UNFPA assessment indicate that, in the surveyed hospitals (Shifa, Al Aqsa, Naser, Rafah) during the crisis, there was an increased number of cases of miscarriage and, in Shifa Hospital, in Gaza City, an increased neonatal mortality.

### **3.1.3 Suspension of public health programmes**

Most public health functions were suspended on 27 December and resumed 20 January. The epidemiological surveillance system was disrupted during the crisis<sup>22</sup>. In both MoH and UNRWA facilities, information on communicable diseases was not collected. Most vaccination programmes (EPI and adult vaccinations) were interrupted at the MoH and UNRWA PHC centres from 27 December due to the closure of clinics, unavailability of electricity or fuel at clinics equipped with generators, movement restrictions affecting distribution of vaccines and shortage of staff. This resulted in vaccination coverage of under 30%. This coverage started to increase to 45-50% during the crisis due to strong coordination among MoH and UNRWA PHC facilities. Children were vaccinated at any PHC centre they could reach, no matter their refugee status. In addition, UNRWA provided vaccinations at shelters for displaced children and any child living near the shelters and unable to reach a PHC facility.

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<sup>19</sup> ICRC and the Italian Cooperation

<sup>20</sup> MDM France

<sup>21</sup> UNFPA, Gaza crisis: Impact on reproductive health, especially maternal and newborn health and obstetric care, Draft summary report, 9 February 2009.

<sup>22</sup> The MoH Epidemiology department is in charge of the communicable disease surveillance system. One epidemiology unit is available at each district and is responsible for receiving the information from each MoH PHC facility, sent to the central department in Gaza. The MoH central epidemiology department receives the information from UNRWA facilities.

The public health laboratory functions related to food security were suspended during the crisis, and partially resumed on 20 January<sup>23</sup>. Water samples started to be collected from some water networks, water wells and water treatment for microbiology and chemistry analyses.

### 3.1.4 Referrals abroad<sup>24</sup>

Injured patients needing referral outside of Gaza for specialized care were evacuated exclusively through the Rafah border crossing into Egypt following an agreement between the MoH and Egyptian authorities. The crossing was opened to evacuate patients and import medical supplies. Facilities in nearby El-Arish were upgraded to receive patients and transfer them rapidly to hospitals elsewhere in Egypt and neighbouring countries. The MoH reported that from 29 December-22 January, 608 injured were evacuated through Rafah.

**Table 4. Distribution of injured patients referred to different hospitals during 29 Dec-22 Jan**

Country	No. of injured	No. of discharged	No. of deaths
<b>Egypt</b>	<b>512</b>	<b>17</b>	<b>26</b>
<b>Saudi Arabia</b>	61	-	1
<b>Jordan</b>	8	-	-
<b>Morocco</b>	4	-	-
<b>Libya</b>	8	-	-
<b>Turkey</b>	9	-	-
<b>Belgium</b>	6	-	-
<b>Total</b>	<b>608</b>	<b>17</b>	<b>27</b>

ICRC, the Palestinian Red Crescent Society (PRCS) and some local NGOs<sup>25</sup> were instrumental in the referral and evacuation of casualties through Rafah. WHO assigned for this purpose a coordination officer to Rafah. ICRC also supported the MoH Emergency Medical Service by upgrading 10 ambulances for emergency transportation.

The Referral Abroad Department (RAD) was closed from 27 December and the referral of other (ordinary) patients was suspended. On 18 January, the department reopened and started issuing referral documents for all categories of patients.

<sup>23</sup> The role of the public health laboratory is to collect random water samples from water networks, water wells and water treatment plant on a daily basis for microbiology testing to ensure water quality; and testing food samples from agricultural areas, open markets and grocery store.

<sup>24</sup> Due to the closure, the quality of health services had steadily declined and the number of patients needing referral to facilities outside the Gaza Strip increased. In 2007, the MoH referred 700-1000 patients per month.

<sup>25</sup> Among which the Union of Health Worker Committee

**Table 5. Number of patients evacuated through Erez during 27 Dec-31 Jan**

Date	No. of patients
28 December	7
31 December	7
1 January	8
20 January	4
22 January	3
25 January	1
26 January	3
27 January	4
28 January	2
29 January	8
30 January	1
<b>Total</b>	<b>48</b>

The Israeli Directorate of Coordination and Liaison (DCL) continued functioning to process patients with referral documents. However, Erez crossing was frequently closed during most of January 2009, according to the Palestinian Liaison Officer at Erez. Only 48 patients exited through Erez between 27 December-31 January. Of the 113 permit applications submitted during 1-31 January, 31 (27.4%) patients had their permits granted in a timely manner; 74 (65.4%) had their applications delayed; one had his application denied and another 7 (6.2%) were interviewed by the General Security Service and are still awaiting an exit permit.

**Table 6. Status of patients' requests for permits to cross Erez during 1-31 January 2009**

Request status	Females		Males		Total	
	No.	(%)	No.	(%)	No.	(%)
Approved	12	30%	19	26%	31	27.4%
Denied	0	0%	1	1.4%	1	1%
Delayed	27	67.5%	47	64.4%	74	65.4%
To be interviewed by the GSS	1	2.5%	6	8.2%	7	6.2%
<b>Total no. of requests</b>	<b>40</b>	<b>35.4%</b>	<b>73</b>	<b>64.6%</b>	<b>113</b>	<b>100%</b>

### 3.2 Medical supplies and equipment

There were severe shortages of drugs and consumables at the start of the military campaign. More than 20% of drugs on the essentials list and 236 consumable items were out of stock at the Central Drug Store. This was a matter of grave and immediate concern due to the very high demand for many of the items to treat casualties. The MoH and health partners responded rapidly by delivering large volumes of supplies within days to address immediate shortages. Further supplies were delivered as the crisis continued, including large volumes of donations from various countries, mostly arriving via Rafah.

On 5 January, the MoH, with WHO support, set up an emergency operations room in Ramallah to coordinate the response to the health crisis. The room maintained on-going contact with the central stores in Gaza to assess their immediate needs (pharmaceuticals, consumables, equipments and spare parts), mapped the supplies that had been delivered or were in the pipeline from the international community, and issued daily updates of current needs. WHO resumed responsibility for organising and delivering all supplies from the West Bank and Israel via the Karem Shalom border crossing.

While supplies entering via Karem Shalom were mostly well coordinated and accounted, that was not true of the supplies arriving via Rafah. Rarely were lists provided of the content of deliveries, meaning the central stores had no idea what they contained. Some 4500 tons of supplies arrived and overwhelmed the storage and delivery systems. Additional warehouse space was rented and support provided by WHO, UNWRA and MAP UK. Even now, most of the supplies have not been unpacked

and registered. Gaza's Central Drug Store staff have been given technical and operational support<sup>26</sup> to manage the large volumes of medical donations that entered Gaza during and soon after the crisis.

Before the conflict, much of the health sector's medical equipment was in a dire state due to a lack of spare parts and replacements, poor maintenance and the effects of frequent power cuts and unclean water supplies. There were significant amounts of equipment and spare parts waiting for delivery from the West Bank and Israel, but it was very difficult to get Israeli approval to bring it into Gaza. This improved when Israel began allowing essential humanitarian supplies into Gaza. Spare parts and equipment from the MoH, donors and international agencies were delivered during the following weeks, some in response to specific identified needs. As a result, the overall position regarding medical equipment improved although gaps remained – and the situation will need further appraisal once all donations have been registered.

### **3.3 Damage to the health services infrastructure**

Damage was reported to 15 of Gaza's 27 hospitals. Of the 15, nine were MoH facilities. Al-Wafa Rehabilitation Hospital, managed by a NGO, and Fata General Hospital were damaged. Al-Quds Hospital, managed by the PRCS, was severely damaged and all its patients were evacuated to Shifa Hospital<sup>27</sup>. At least three more hospitals managed by NGOs were damaged. However, with the exception of the Fata Hospital, all remained open for most of the crisis and continued to provide services, in some cases partially.

At least 43 PHC clinics were damaged or destroyed in direct or indirect shelling (27 MoH, 7 UNRWA and at least 9 PHC clinics run by NGOs). In Rafah, four out of five MoH PHC centres were damaged.

Of the Gaza Strip's 148 ambulances, at least 29 were damaged or destroyed. Two ambulance stations (Gaza and Jabalia) were also destroyed and replacements were provided. As of February 2009, there were at least 35 functioning ambulances at MoH hospitals and 14 at Gaza's main ambulance station. Forty more ambulances are functioning at the PRCS.

## **4. AFTER THE CRISIS: PRIORITY HEALTH ISSUES**

### **4.1 Excess morbidity and mortality**

The risk of excess morbidity and mortality relates primarily to traumatic injuries (including ears and sight trauma) and the discontinuation of treatment for chronic conditions due to poor access to health care services. Diarrheal diseases currently represent the most important risk of excess morbidity from communicable diseases. Distress caused by trauma, personal losses and precarious social and living conditions will have an effect on the mental health status, particularly of the most vulnerable.

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<sup>26</sup> By WHO, MDM, and MAP UK teams

<sup>27</sup> The hospital resumed its capacity to admit patients after the ceasefire, although at a lower capacity

#### 4.1.1 Treatment and follow-up of traumatic injuries, burns and acute surgical conditions

There are concerns about patients with injuries, burns and acute surgical conditions who may have been discharged too early. Inadequate follow-up care may have led to complications (e.g. later infections, burn scars, post-operative complications). In many cases, injuries have already resulted in permanent disabilities, such as amputation and disfigurement. Other people will be permanently disabled if they are not provided with immediate and appropriate rehabilitation and other specialized services, such as prosthetic fitting. Secondary complications such as infected wounds, contractures, or secondary amputations are also risk factors for permanent disability.

The current post-crisis priority is to provide access to proper follow-up care and rehabilitation for the severely injured. Early screening and referral for people with hearing and sight loss is also critical, as these outcomes may be overlooked, not being as visible as an amputation though with severe consequences in the mid- to longer-term.

Table 7 below contains information on the types of injuries recorded during the conflict, according to the MoH Physical Therapy and Rehabilitation Unit in Gaza<sup>28</sup>. Among the reported injures, 33% were inflicted in Northern Gaza Strip and 38% in Gaza City. A preliminary estimate on the basis of the type and severity of injury indicates that about 30% of the injured are expected to have long-term disabilities<sup>29</sup>.

**Table 7. Type of injury in patients admitted to all Gaza hospitals during the crisis**

Injury type	No. of injuries	Proportion
Shrapnel (all body parts)	2315	44%
Head/neck injuries	815	15%
Lower extremities	615	12%
Neuro trauma	321	6%
Upper extremities	303	6%
Gas inhalation	286	5%
Chest injuries	162	3%
Back injuries	143	3%
Abdomen injuries	117	2%
Amputations	78	1%
Burns	60	1%
Eye injuries	85	2%
<b>TOTAL (in 5380 patients)</b>	<b>5300</b>	<b>100%</b>

The vulnerability of the current context is likely to put constraints on an appropriate follow-up of those injured. Specialized tertiary care is likely to be urgently needed for a large number of severely injured patients. Access to referral abroad may be required for some and should be guaranteed by addressing financial and movement restrictions.

People with disabilities and other vulnerable groups, such as the elderly, generally face difficulties to reach proper care and support. Action should be taken to

ensure that people with injuries and disabilities can access relief, including cash support and psychosocial and mental health services.

The presence of unexploded ordnances (UXOs) presents a new risk to the population and is likely to result in injuries long after the conflict is over, adding an additional burden to Gaza health services.

<sup>28</sup> The Physical Therapy and Rehabilitation Unit in Gaza of the MoH has been reactivated one month before the war. Data on injured have been collected from the unit and made available by the Disability sub cluster within the Health Cluster.

<sup>29</sup> Estimate indicated by the Disability sub cluster.

Further information on people injured and disabled during the conflict would be important for the development of an appropriate response, including improved access to health and social services. A collection of data on this population group is recommended, including all kind of disabilities.

#### **4.1.2 Mental health and psychosocial problems**

The mental stress as well as person and property losses experienced by the population during the Gaza emergency are risk factors for a wide range of mental health and psychosocial problems, including mood and anxiety disorders (such as post-traumatic stress disorder).

Experience shows that human beings are resilient and have a great capacity to cope even when faced with severe adversity. Initial acute symptoms will disappear over time for more than 90-95% of the affected population if sufficient protective factors are present in their environment and if emergency-related stresses resolve<sup>30</sup>.

Only a relatively small percentage will continue to experience severe emotional and mental distress. Their functioning will be impaired even months later when a protective environment has been restored. WHO projects that the long-term effects of emergencies increase the number of people with severe mental disorders by an average of 1% above the baseline and those with mild and moderate mental disorders by an average of 5-10%. This population group requires more specialized and on-going interventions, e.g. through community mental health services.

According to these figures, the effects on the mental health of people during the recent emergency in Gaza can be roughly estimated. Even with a conservative approach, it is reasonable to assume that 25000 to 50000 people will need some form of psychological intervention to address long-term effects.

To promote resilience and prevent long-term effects, and at the same time provide appropriate mental health care to those in need, three levels of interventions are necessary: 1) Political action restoring normal socioeconomic and security life conditions; 2) psychosocial actions promoting protective factors; 3) interventions strengthening the health care system, to guarantee appropriate mental health care.

The implementation of the MoH strategic operational plan on mental health should be accelerated to strengthen the current mental health system, guarantee better access and increase equity of services after the crisis.

Providing psychosocial first aid for those showing acute distress should be carried out at PHC level, according to international standards and to the MoH plan. Therefore PHC centres should be strengthened in their capacity to screen and give a first response to these needs, as well as to appropriate referrals.

Some groups are more at risk of severe emotional distress than others, e.g. separated children, people with pre-existing neurological or mental disabilities, people with pre-existing or new physical disabilities, elderly people who have lost family member support, and women-headed households.

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<sup>30</sup> Guidelines on mental health and psychosocial support in emergency settings. Inter-Agency Standing Committee (IASC), 2007.

Children and adolescents are a particularly at-risk group for the additional consequences they may face during and after an emergency. Such consequences include loss of care and protection of parents or primary caregivers; loss of developmental opportunities such as schooling or playing; and loss of adequate nutrition. Additional specific psychosocial interventions for children and adolescents include interventions that preserve and reinforce family cohesion and promote community- and family-based care for separated children. It will be essential to restore normal schooling as soon as possible, making sure that the most vulnerable children have access.

Psycho-social support and mental health sector partners<sup>31</sup> are carrying out an assessment of mental health needs in medical, paramedical and frontline health workers. Discussions are being held on enhancing the national “guidelines on mental health and psychosocial support in Gaza: principles and responses” document.

#### **4.1.3 Continued treatment and care for chronic conditions**

Before recent events, non-communicable disease was the leading cause of death in the Gaza Strip. In 2006, 8.2% of surveyed people from all age groups reported suffering from at least one diagnosed chronic disease. Other surveys indicate a 9% prevalence of diabetes mellitus among adults. In 2007, UNRWA treated approximately 34000 hypertensive and 23000 diabetic patients in Gaza (a total of 45000 patients taking into consideration coexisting conditions in some patients) with a prevalence in the adult population of 17% and 12% respectively. Among these patients, about 7000 were receiving insulin therapy and 22000 were taking hypertension drugs; 23% of patients with hypertension and/or those with diabetes (10000) were considered to be at high risk of complications and death.

Among these patients, the two groups considered to be at highest risk were the young insulin-dependent diabetic patients, and those on renal dialysis. These patients can only tolerate an interruption of therapy for 4-5 days in the first case and a maximum of one week in the second. No information is available on how their health was affected during the crisis.

Even though all health facilities have now returned to regular operations, the risk of negative outcomes for chronic patients will be increased if they are unable to resume their treatment quickly due to a backlog of patients awaiting treatment.

#### **4.1.4 Communicable diseases**

Risk of diarrheal disease outbreaks may increase with protracted disruption to water and sanitation services. Risk of outbreaks of vaccine-preventable diseases is currently low, given reported high vaccine coverage, with the exception of tetanus vaccination among adults.

*Water-borne and food-borne diseases.* The risk of outbreaks of water-borne and food-borne diseases is currently high and will increase if water, sanitation and food control services are not fully restored, or deteriorate further. The main pathogens of concern are *Campylobacter*, *Salmonella*, *Shigella*, *Leptospira*, rotavirus, as well as other enteropathogens such as *Entamoeba histolytica* and hepatitis A and E. Typhoid fever, reports of which increased in the Gaza Strip in 2007<sup>32</sup>, is also a concern. Cholera has not been reported in Gaza since 1992. Some 10% of Gaza households still have no access to water

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<sup>31</sup> PRCS, MDM, WHO

<sup>32</sup> UNRWA Health Report 2007. [http://www.un.org/unrwa/publications/pdf/ar\\_health2007.pdf](http://www.un.org/unrwa/publications/pdf/ar_health2007.pdf)

through the water network, which was severely damaged, and rely on water stored in tanks.<sup>33</sup> Monitoring of water quality was suspended during the crisis but has been resumed.

*Vaccine-preventable diseases.* Vaccination programmes were suspended during the crisis. However, given the high reported routine vaccination coverage before then, with the notable exception of tetanus coverage in adults, the risk of measles, polio, diphtheria, and pertussis outbreaks is currently low. The main risk is from tetanus resulting from trauma (inadequately treated wounds and burns) and from maternal and neonatal tetanus (MNT) following unsafe deliveries. Tetanus vaccination coverage in adults is low and protection is known to wane with age. The incubation period is usually 3–21 days, and the case-fatality ratio (CFR) is 70–100%.

About 1200 births are recorded per week in the Gaza Strip<sup>34</sup>. During the crisis, many newborns did not receive routine vaccinations in line with Expanded Programme on Immunization (EPI) schedules. Un-immunized children will require catch-up vaccination doses once the EPI activities can resume. As disruption to EPI services was of a relatively short duration, it is unlikely that vaccination coverage will dip below the herd immunity thresholds. However, Gaza is a very densely populated area that requires greater levels of herd immunity and, therefore, higher vaccination coverage. If vaccination programmes are suspended for a protracted period, accumulating birth cohorts of un-immunized children will result in lowered vaccination coverage levels, placing the community at risk of outbreaks.

**Table 8. Routine vaccination coverage at one year of age, 2006, West Bank and Gaza\***

Antigen	% coverage in oPt	% coverage in Gaza
(BCG) Bacille Calmette–Guérin	99.1	100
Diphtheria–pertussis–tetanus, 3rd dose	98.7	100
Hepatitis B, 3rd dose	97	
MCV (measles-containing vaccine)	96.7	99.4
Polio, 3rd dose	98.9	100
Tetanus (women of childbearing age)	34.1	44.6

\*PCBS: Family Health Survey, 2006.

*Acute Respiratory Infections (ARI) including pneumonia.* Children and newborns are particularly at risk from ARI and have an increased risk of death from pneumonia. The main risk factors include crowding, poor ventilation, indoor smoke, malnutrition and lack of breast-feeding. The disruption of EPI services also means fewer babies receive vitamin A supplements, which are a highly effective preventive intervention against ARI. Micronutrient deficiencies, especially iron deficiency anaemia and vitamin A deficiency, remain public health problems in the Gaza Strip<sup>35</sup>.

*Tuberculosis (TB.)* 20-25 new TB cases are reported annually from the Gaza Strip. Untreated active pulmonary TB carries a case fatality ratio (CFR) of 65% within 5 years. In the acute phase of this emergency, the main concern for TB programmes is the continuation of treatment that is likely to be hampered by drug supply problems and loss of contact with patients.

*Avian influenza A(H5N1)* Highly pathogenic A(H5N1) was reported in poultry in the Gaza Strip in 2006. No human cases have been reported to date.

<sup>33</sup> Water Authority in Gaza, February 2009.

<sup>34</sup> UNFPA - OCHA Field Update 16/01/09

<sup>35</sup> UNRWA Health Report 2007. [http://www.un.org/unrwa/publications/pdf/ar\\_health2007.pdf](http://www.un.org/unrwa/publications/pdf/ar_health2007.pdf)



•*HIV/AIDS*. The prevalence of HIV in the Gaza Strip is low. No new AIDS cases were reported in 2007<sup>36</sup>.

#### **4.1.5 Risks of health deterioration**

Before the acute emergency, the oPt health status was relatively stable despite the deterioration of the socioeconomic situation. Currently available information, although scattered and still partial, does not show any acute decline in the health status of the general population. Pockets of vulnerable groups may be present and must be carefully followed up. However, there are reasons to think that it will be the long lasting deprived socioeconomic conditions that will have the biggest negative impact on people's health.

Special attention must be given to those determinants influencing health, which if not addressed can cause significant negative changes in health status. Quality of food, lack of clean water and sanitation, stress, unemployment, poverty and social exclusion are the most significant socioeconomic determinants that have been clearly demonstrated to have an impact on people's health during their early and adult lives<sup>37</sup>. Quality of health care is the other factor influencing health outcomes in specific conditions, like some obstetric and neonatal complications, low birth weight, diabetic complications, asthma, and other chronic diseases.

These determinants can influence health outcomes such as life expectancy, infant and child mortality rates, risk of developing chronic diseases and conditions resulting from an unhealthy lifestyle. Poor social circumstances are associated with chronic malnutrition in mothers and infections, especially during pregnancy and infancy. These can threaten the child's survival as well as his/her physical and intellectual development. Protective factors and coping mechanisms, such as social cohesion, education, effective health systems, measures promoting social equity and protection of the most vulnerable, can only temporarily prevent these outcomes, and only to a certain extent. Moreover, some groups are more likely to have less intrinsic resilience, including people with disabilities and the elderly.

Given the current situation, even before the conflict, there are reasons to predict a deterioration of Palestinian health standards if these determinants are not addressed. In oPt, poverty and unemployment have dramatically increased<sup>38</sup>. The degree of stress has increased as measured by some mental health indicators, and now aggravated by the recent conflict. Palestinians have reduced both the quality and quantity of their food intake and public sanitation has been degraded. Poverty and food insecurity have predominantly increased among some vulnerable groups. In 2008 before the crisis, the proportion of food insecure households in Gaza was 56%<sup>39</sup>.

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<sup>36</sup> UNRWA Health Report 2007. [http://www.un.org/unrwa/publications/pdf/ar\\_health2007.pdf](http://www.un.org/unrwa/publications/pdf/ar_health2007.pdf)

<sup>37</sup> Wilkinson, *Social Determinants of Health*, 2004

<sup>38</sup> World Bank, *West Bank and Gaza Update: The Preconditions for Palestinian Economic Recovery*, 2007

<sup>39</sup> FAO, UNRWA, WFP, *Quantitative and qualitative rapid socio-economic assessment in WB/GS*, 2008

## **4.2 Resumed functionality of the health care system**

### **4.2.1 Health care provision**

As of 20 January, PHC services have been reactivated in 54 of 56 MoH facilities, including the 25 facilities partially damaged, and normal attendance has resumed. Only the two completely destroyed clinics (Al-Attatra and Hala el-Shawwa) are not functioning. The other eight damaged facilities are partially functioning. PHC services gradually resumed, including antenatal and postnatal care, nutrition surveillance, EPI, curative treatment for chronic and other diseases. Laboratory and dental services have been also resumed after the electricity was restored, as well as health education and promotion activities. Internal referrals between PHC clinics and hospitals have been reactivated. All 20 UNWRA PHC clinics (17 comprehensive centres and three sub-clinics) are functioning and providing a full range of services.

Health Cluster partners have provided immediate support to health facilities through restoring medical and non-medical equipment and distributing 800 basic first aid and safe delivery kits to MoH PHC centres. In addition, support at an early stage has been given to the MoH to resume vaccinations and mother and child health services. Several partners have supported the MoH and NGO PHC centres in providing medical treatment for chronically sick patients and mother and child care. The Welfare Association has facilitated the emergency support to 16 Palestinian NGOs in refugee camps, such as medical equipment, fuel, medical supplies and emergency services delivery.

Hospital and PHC staff were asked about their most immediate needs. Most relate to developmental issues, including additional equipment and expanding the capacity of services and staff. Rapid health assessments at PHC level, including reassessment of medical material needs, have been carried out by the MoH and several international agencies<sup>40</sup>.

### **4.2.2 Public health programmes**

Immunization programmes have resumed since the ceasefire. A stock of vaccines is available at the Central Drug Store, covering the period until the end of March. UNICEF is expecting to receive a new stock of vaccines in March-April to be delivered to the MoH. UNRWA continued to vaccinate all eligible children at the shelters. UNICEF will launch an immunization campaign against measles, mumps and rubella at the MoH and UNRWA schools for 9<sup>th</sup> grade children. UNRWA is providing catch-up immunization sessions at their immunization centres to cover all the missing children

The public health laboratory is operating with some constraints in its planned activities, including:

- collecting water samples from all water networks and water wells, especially from areas with destroyed/damaged networks to investigate for microbiological and chemistry pollutants<sup>41</sup>
- testing for the level of residual free chlorine for the networks and water wells;
- collecting sewage samples to investigate for polio, typhoid and cholera;
- collecting food samples on agricultural lands to test for environmental hazards;

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<sup>40</sup> WHO, MAP, MDM, PRCS, UNICEF, UNFPA, MSFF, IMC, TDH-It, UNRWA

<sup>41</sup> The tests that have been carried out to some of the water samples from the water wells indicated the lack of microbiological pollutants. Microbiological pollution was detected in water samples collected from water networks in some of the damaged areas. Accordingly the networks have been opened from both sides to flush out all the water and a higher amount of chlorine level has been added to the water to ensure its safety. a second round of water samples have been collected from these networks for microbiology testing which indicated the lack of any microbiological pollutants.

- assessing the expiry date of all donated food items.

WHO will coordinate with Israeli authorities to send samples to laboratories outside of the Gaza Strip as the Gaza public health laboratories do not have the capacity to perform some tests.

According to the public health laboratory director, support is needed for transport, fuel for generators, medical supplies, kits and reagents. The environmental health department is coordinating with the public health laboratory for issues related to the quality of water, in addition to their role in insect and rodent control. This department has not yet resumed full insect and rodent control<sup>42</sup>.

Ten of Gaza's 155 wells have been severely damaged and are being repaired and the others are functional. Some 10% of Gaza households still have no access to water through the water network, which was severely damaged, and rely on water stored in tanks. These households are located in North Gaza (Ezbit Abdraboh, Eastern Jabalia area and Al-Attatra area); Gaza (Zaytoun area) and Khan Younis (Qarara area). About 50% of Gaza's population is receiving water once every second day; 30% once every third day; and 10% once every fifth day<sup>43</sup>.

The epidemiological surveillance system is now resumed, although with all pre-existing limitations, especially related to the fragmentation and limited population coverage of the system. MoH staff needs to strengthen their technical capacity and training at health facility level, as well as rational and standardized information tools. UNRWA's epidemiological surveillance system currently provides a reliable early warning system, although with limited coverage.

Nutrition surveillance activities have been gradually resumed. Two supplementary feeding centres, managed by a local NGO and supported by UNICEF, are currently providing services for 120 malnourished children.

#### **4.2.3 Medical supplies**

The prompt and robust response from donors and international agencies prevented major gaps in medical supplies during the conflict and allowed the rapid refilling of stocks at the MoH Central Drug Store in Gaza. The central warehouses in Ramallah also provided essential drugs and consumables. The Gaza Central Drug Store managed the distribution of supplies to health facilities, including NGOs.

On 29 January, 96% of priority drugs<sup>44</sup> were either delivered or committed (in process of purchase and delivery)<sup>45</sup>, according to the MoH/WHO Emergency Operations Room in Ramallah. Some 81% of the priority disposables were either delivered or in the pipeline: 21 of 108 items were still not addressed.

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<sup>42</sup> This department needs the following in order to resume full functionality: Transportation; Masks (200); Gloves (500); Spraying pumps (10 each with a capacity of 10 liters); Dizictol 25% (100 liters); Permethrol 20% (100 liters); Ratimon G bait (2,000 kilograms); Ratimon G liquid (50 liters); and Disinfectants

<sup>43</sup> Water Authority in Gaza, February 2009.

<sup>44</sup> Note: even though some items were delivered, these were not deleted from the list as more quantities are still in need; the following items were deleted from the priority list as enough quantities are available in the CDS: Pethidene 500 mg, Saline 0.9% Bag of 500 ml, Dextrose 4.3% + saline 0.18% and Dextrose 5%, 500 ml. These items were heavily consumed during the crisis, however, due to the timely donor intervention, sufficient supply of these drugs is in place.

<sup>45</sup> The two items needed are: ENOXAPARIN 80 mg prefilled syringes and ISOSORBIDE DINITRATE 1 mg/ml 10ml

On the same date, a full stock of pharmaceuticals was available in 13 of 15 surveyed hospitals (all MoH except for two NGO facilities). Only a few items were missing at the two others. Several items were in short supply at some PHC centres, especially in North Gaza, Khan Younis and the Middle Zone<sup>46</sup>. Distribution to PHC centres from the central drug store have occurred during the last two weeks to fill the PHC centre stocks, which were incomplete during the first week after the ceasefire. Psychotropic drugs have entered into the Gaza Strip, however they are not yet available at health facility level.

At the moment, less than one half of supplies that entered Gaza had been opened and registered. Among them, about 40% of drugs and consumables were included in the essential drug and consumable lists, according to Central Drug Store in Gaza.

Some shortages of medical equipment remain, although not all items received have been registered. WHO is planning to conduct a comprehensive analysis of the status of medical equipment in MoH health facilities in Gaza within the next two months.

Following the crisis, the distribution of Breast-Milk-Substitutes (BMS) by humanitarian agencies has been reported<sup>47</sup> with minimal targeting and assurance for safe preparation and continued supply.

#### **4.2.4 Rehabilitation and specialized services for people with injury and disability**

In Gaza, there are numerous NGO health providers offering a range of services for people with all types of disabilities (physical, visual, hearing, intellectual) as well as a community-based rehabilitation and mobile rehabilitation team network. Services include providing assistive devices (prosthetics, mobility aids, hearing aids, etc), rehabilitation for people with physical, visual and hearing impairments both through facilities and at community level, and educational programs.

Of 21 surveyed centres (one hospital and 20 community-based rehabilitation (CBR) centres)<sup>48</sup>, all but one are operational, with several reporting small damage (shattered windows, etc). El Wafa Rehabilitation Hospital is now functioning despite the occurred damages.

However, uniform coverage of disability services across Gaza was lacking before the crisis, with a back-log of people waiting for specialized services, including rehabilitation and surgery. In Gaza, the system of specialized rehabilitation services for people with disabilities and injuries is primarily NGO-run. Rehabilitation services are not well-integrated into the MoH system. The needs of and services for people with disabilities and injuries are cross-cutting and reach across health, social and education sectors.

The capacity of the existing services, including facility-based and community-level, should be urgently reactivated and strengthened. Early detection and intervention for people with new injuries (including those with hearing, physical and visual injuries) is crucial. A range of CBR and other community level programs in Gaza could ensure the appropriate follow-up and rehabilitation of people and play a crucial role in identification and referral. Well-functioning services on physical rehabilitation are available in

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<sup>46</sup> Map UK, WHO, Rapid Health Facility Survey in Gaza Strip, 27 Jan 2009.

<sup>47</sup> By Save the Children team

<sup>48</sup> Handicap International rapid survey, 6 Feb 2009

the West Bank. Where the service is unavailable in Gaza, referral to the West Bank should be supported.

#### **4.2.5 Community Mental Health Services**

All mental health facilities resumed regular working hours after the ceasefire. Trauma counselling activities continue to be provided to injured patients and their families, as well as people living in the most affected areas. Other regular mental health services are being delivered regularly at community mental health centres and the psychiatric hospital.

To immediately respond to urgent needs, the following requirements are a priority:

- Develop a national intervention plan for crisis management led by the MoH with the support of the Ministries of Education and Social Affairs, as well as other national and international NGOs;
- Develop guidelines for interventions;
- Equip mental health facilities with three vehicles to conduct outreach activities;
- Establish an acute psychiatric in-patient unit at Nasser Hospital in Khan Younis to increase accessibility for those living in the southern area;
- Appoint 30 mental health professionals for six months: five at each MoH facility to provide crisis intervention activities;
- Raise the public awareness on trauma/crisis by producing educational materials;
- Train mental health professionals on trauma management;
- Renovate the damaged community mental health centre;
- Provide psychotropic medication to the mental health facilities;
- Support PHC staff to provide first level diagnosis and care by conducting crisis management training, thus helping to normalize the reactions of people from exposure to traumatic events.

#### **4.2.6 Reproductive health/ maternal and newborn health**

Special attention must be paid to pregnant women and newborn babies, who are the most vulnerable and often the first victims of any crisis. Perinatal mortality should be tackled with initiatives to improve the quality of care at both PHC and hospital level, including addressing technical capacity of the staff, hospital environment, equipment availability and functionality, appropriate use of drugs and access to specialized care in case of complications, especially for premature and low birth weight babies. The overarching theme in responding to the need in the post-crisis period is preserving and supporting the integrity and continuity of health care services from community towards secondary care facilities. In particular, the woman-to-child continuum must be preserved through safe pregnancy, delivery and care for the mother and newborn. Also, the community-to-hospital continuum should be ensured so basic capacity for care is available at each of the three levels (community, PHC and referral hospital).

Of critical importance will be accelerating and scaling up micronutrient supplementation programmes and concurrent guarantee of food security to correct the status of anaemia and stunting of children and women. This should be complemented by interventions aiming at improving and promoting the infant and young child feeding practices in regular and emergency programming. Strong advocacy addressing the importance of adhering to BMS distribution and to the Marketing ‘CODE’ is needed.

## **5. CONCLUSION**

The health system in Gaza Strip has been under continuous stress, which had started well before the three-week crisis that began 27 December, 2008. These strains had placed difficult burdens onto the structural and functional side of the health system, and had impacted on the wellbeing of the 1.5 million population of the Gaza Strip while leading to physical and mental exhaustion of the health staff. Under investment, inadequate management, and limited access to the region via border crossings had destructive consequences on Gaza's health system, which were only exacerbated by the military operation of late 2008 and early 2009.

Today, what Gaza's health system requires is sustained support and investment that ensures improvements in the quality of care provided to the people. Such support must also go towards improving the conditions in which medical staff work under, including a more secure environment. Access into or out of the Gaza Strip must be assured for patients, medical staff and medical supplies and equipment, to meet real-time needs of 1.5 million people living in challenging conditions.

Specific attention is needed in the areas of mental health, maternal and perinatal health, chronic diseases, rehabilitation of people with injuries and disabilities, and disease and environmental monitoring and surveillance.

The precondition for preserving the health of the population in Gaza is to tackle the main factors that constitute the overall determinants of health: low quality of food, lack of clean water and sanitation, stress, unemployment, poverty and social exclusion. Only if these factors are addressed, an improved health system will be relevant to prevent any deterioration in people's health and guarantee that any improvement will be sustained.

*Gaza Strip, 16 February 2009*