

Epidemiological Bulletin



From 1 July to 30 September, 2012

Gaza Strip in Numbers:

The Palestinian territories consist of two geographically separated areas West Bank (WB) and Gaza Strip. Gaza strip is a narrow zone of land bounded of the south by Egypt, on the west by the Mediterranean Sea, and on the east and north by the occupied territories in 1948. Gaza strip is very crowded place with 46 kilometers long and 5 –12 kilometers wide and with a total area of 365 sq km. Gaza strip is administratively divided into five governorates: North, Gaza, Mid-zone, Khan-Younes and Rafah. It consists of four cities, fourteen villages and eight refugees' camps.

- * Gaza Strip has a population of 1.561.906 people (PCBS, 2010).
- * Male/Female ratio in general population is 103.100.
- * Population density is 4279 inhabitants per sq km. Gaza Strip has an extremely high population growth rate of over 3.3%, and as a result some 44.2% of the population is under the age of 15.
- * Infant Mortality Rate is 17.1 per 1000 live births.
- * Crude Birth Rate is 38.3/1000.
- * Crude Death Rate is 3.1/1000.
- * Average life expectancy is 70.2 years for males and 72.9 years for females.
- * Fertility rate is 5.7%.
- * Family size Average is 5.8.

Issuing of Epidemiological Annual Report 2011

Communicable diseases are one of the main causes of morbidity, mortality and disability in the world. The development and strengthening of national surveillance systems is a key part of communicable disease prevention and control.

One of the epidemiology department goals is to provide a yearly summary of communicable diseases incidence and outbreaks report in order to understand, monitor and prevent diseases and other health related illnesses in Gaza strip.

A comprehensive annual report about the epidemiological situation of communicable diseases in Gaza strip was done to summarize the epidemiological situation of communicable diseases from January 1, 2011 through December 31, 2011 in comparison with the last few years.

Continued on page 7

Arrival of Influenza vaccine

In Palestine, influenza viruses infection occur every year. Infections may be asymptomatic, or they may produce a spectrum of manifestations, ranging from mild upper respiratory tract infection to pneumonia and death. Efforts to prevent and control influenza have been aimed to protecting those at greatest risk of serious illness or death.

Recently a vaccine called "Inflvac 2012/2013" have been received. This vaccine is against seasonal influenza works by provoking the body's immune response to the influenza viruses included in the vaccine. This vaccine contains inactivated viruses and so cannot cause influenza. Protection against influenza usually occurs within two to three weeks after vaccination, and the length of the protection varies, but usually lasts 6 to 12 months.

Continued on page 7

Highlights of this issue:

Issuing of Epidemiological Annual report, 2011.....	1
Arrival of Influenza Vaccine 2012-2013.....	1
Communicable diseases surveillance system	2
Reports of notifiable communicable diseases	3
Dengue Fever.....	5

Communicable diseases surveillance system

In Gaza Strip, we apply a multi-disease approach of communicable disease surveillance, which depends essentially on passive surveillance system from health facilities of different health providers (Primary Health Care Centers, Hospitals and Laboratories), governmental and nongovernmental (MOH, UNRWA, NGOs and private sector). The collected data by this system are routinely analyzed and interpreted to help in making decision for prevention and control of communicable disease and to be part of the monthly, quarterly and annually reports on communicable diseases.

Communicable diseases and their related events in Palestine are divided into three groups according to their epidemiological importance:

Group A diseases: Diseases of this group are of high morbidity and mortality so they must be immediately notified with accuracy due the urgency of investigation and intervention. This group includes Acute Flaccid Paralysis, Acute Poliomyelitis, HIV/AIDS, Cholera, Diphtheria, Food poisoning, Measles, Rubella, Meningococcal diseases, Hemophilus Influenza B Meningitis, Rabies, Tetanus and Adverse Events Following Immunization.

Group B diseases: Diseases of this group are of the second highest importance and must be notified within one week. It includes other Bacterial and Viral Meningitis, Brucellosis, Hepatitis (A, B and C), Lishmaniasis, Influenza A H1N1, Malaria, Mumps, Sexual Transmitted Diseases (STD), Shigellosis, Tuberculosis, Salmonellosis, Typhoid and Paratyphoid fever, and Whooping Cough.

Group C diseases: Diseases of this group are of low importance and monthly notification is needed. This group includes Animal Bites, Chicken Pox, Diarrhea, Upper respiratory infection, Ascariasis, Amebiasis, Giardiasis, Strongyloidiasis, Enterobiasis, Trichuriasis, Hymenolepiasis, Toxoplasmosis and Leprosy.

Each issue of Epidemiological Bulletin will include information about the time of notification, number and distribution of cases of notifiable communicable diseases under surveillance system.

Some selected notifiable diseases by governorates, July, August and September 2012.

Disease	North	Gaza	Mid-Zone	Khan-Younes	Rafah	Total Q3, 2012	Total 2012	Total 5 Years Average, Q3
AFP	0	3	1	2	0	6	8	1.8
AIDS/HIV	0	0	0	0	0	0	0	0.8
Meningococcal Disease	3	12	6	5	4	30	87	40
Food poisoning	36	0	0	0	0	36	56	10.8
Hepatitis A	99	62	60	64	17	302	680	146
Hepatitis B	34	31	12	12	12	101	272	106
Hepatitis C	14	6	0	2	1	23	57	15.6
Mumps	2	5	1	3	0	11	35	27
TB Pulmonary	1	2	0	0	1	4	12	1.6
TB Extrapulmonary	0	1	0	0	0	1	2	2.4
Diarrhea <3 years	5603	3433	3151	5030	2153	19370	48367	10795
Diarrhea >3 years	4505	1403	2449	1998	1081	11436	29505	6063
Bloody Diarrhea	800	277	915	406	151	2549	6806	1573
Upper Respiratory Tract Infection	10926	2091	3677	3752	1458	21904	70976	6068

Reports of notifiable communicable diseases

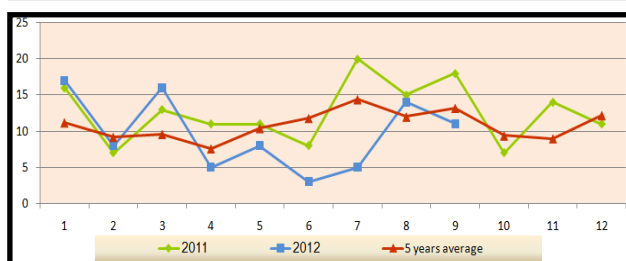
During the third quarter 2012 a total of 65.106 cases of notifiable diseases were notified to the epidemiology department which constitute more than 34% increase comparing with the same quarter 2011 (42.998 cases). This increase was mainly related to the increase in the number of cases of upper respiratory tract infection (URTI) and diarrhea. These diseases only were the top two diseases on the reporting form, constituting a total of about 85% of all notifications. The five years average (during the third quarter) for URTI was very low because only influenza cases were reported. Recently, URTI was added to the notification list which explain the high number of notifications. When compared with the total average notifications in the preceding five years, AFP, food poisoning, hepatitis A and pulmonary TB showed more than 50% increase. While AIDS/HIV, meningococcal Disease, hepatitis B, mumps and extrapulmonary TB showed a decrease comparing with the five years average. During this period, none of the following communicable diseases were recorded: acute poliomyelitis, AIDS/HIV, diphtheria, measles, tetanus, influenza H1N1, brucellosis and malaria.

Immediately Reported Diseases during the third quarter, 2012

Meningococcal Diseases:

The situation of meningococcal diseases during the third quarter 2012 was improved comparing with the first quarter 2012 and the same quarter 2011. The number of meningococcal disease cases decreased and following the annual distribution. During this quarter, only 30 cases of meningococcal diseases were reported compared with 53 cases were reported during the same

Distribution of Meningococcal diseases in Gaza strip, years 2011-2012

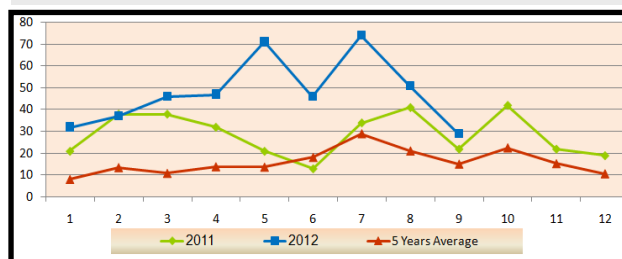


quarter 2011 which means that the incidence was decreases during this quarter. The majority of cases were reported in Gaza governorate (12 cases constitute about 40% from the total number of cases). According to collected data during previous years, the number of cases of meningococcal meningitis decreased in the warmest months.

Other bacterial Meningitis cases

The situation of other bacterial meningitis during the third quarter was improved comparing to the second quarter 2012. During august and September, there was an obvious decrease of reported cases. At the end of this quarter the

Distribution of other bacterial Meningitis cases in Gaza strip, years 2011-2012



number of cases returned to the reported level during the previous year. A total of 154 cases of other bacterial meningitis were reported during this quarter 2012 compared with 165 and 115 cases were reported during the second and first quarters 2012 respectively, while a total of 97 cases were reported during the same quarter 2011 (about 60% increase). This increase was mainly in Gaza and North governorates and all cases were diagnosed clinically with high CSF cells (more than 1000 and mainly neutrophilia), high protein level and low glucose concentration but all cultures were negative. In spite of the preliminary approval for using Latex test to identify the causative agent of the disease, till now no tests are available.

Non Specific Meningitis cases:

The unusual increase in the number of cases of non specific meningitis (NSM) reported during the first and second quarters 2012 began to decrease during the third quarter but still higher than the reported number during the same quarter 2011. During this quarter, a total of 406 cases of NSM were reported while a total of 416 cases were

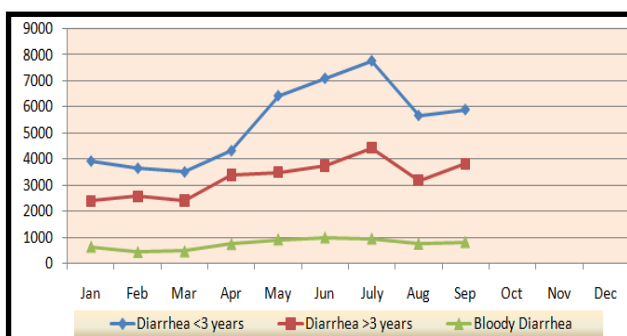
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Weekly Reported Diseases during the third quarter, 2012

Diarrheal diseases:

During the third quarter 2012, the diarrheal disease situation was improved, in spite of the higher number reported, comparing with the previous quarter but was higher than the reported number during the previous year. A total of 33,355 cases of diarrhea were notified during this period, representing almost about 30% increase comparing with the same quarter 2011 (23,481 cases were reported). This increase was mainly in North governorate and among age group less the three years.

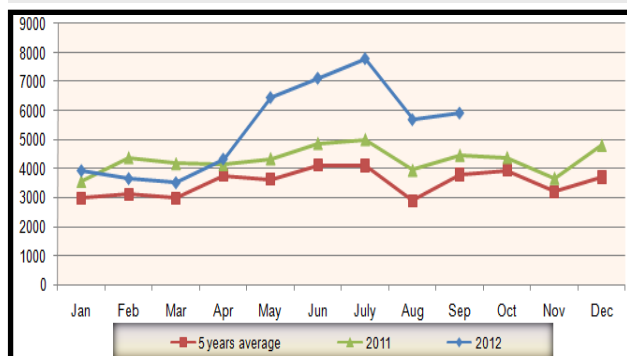
Distribution of all types of diarrheal diseases in Gaza strip, 2012



Diarrhea < 3 years:

There was a slightly decrease in incidence during the third quarter 2012, where a total of 19,370 cases were reported while a total of 17,881 cases were reported in the previous quarter. During the same quarter 2011, a total of 13,394 cases were reported. The majority of cases were reported mainly in North governorate.

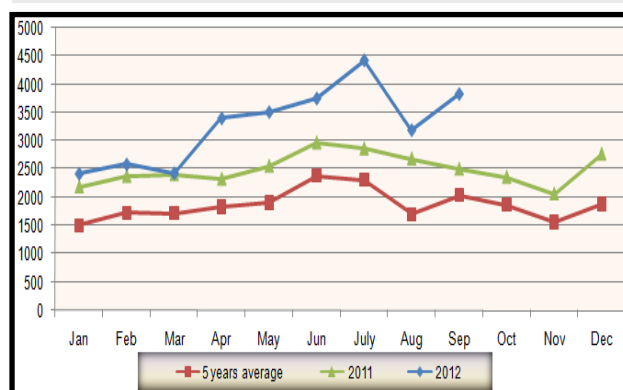
Distribution of diarrhea among children less than 3 years in Gaza strip, 2010-2012



Diarrhea > 3 years:

There was a slightly decrease in incidence during the third quarter 2012, where a total of 11,436 cases were reported while a total of 10,650 cases were reported in the previous quarter. During the same quarter 2011, a total of 8,043 cases were reported. The majority of cases were reported mainly in North governorate. The number of reported cases in Mid-Zone governorate decreased during this quarter.

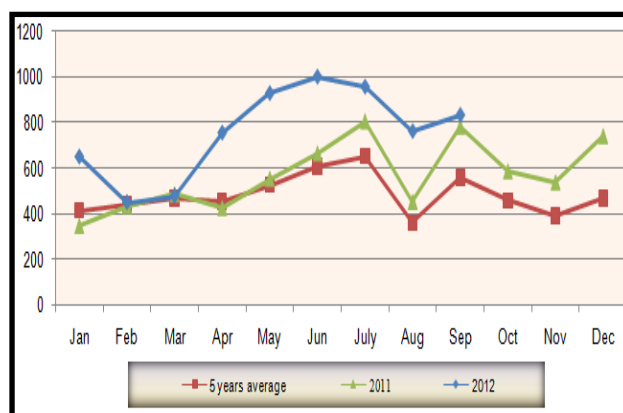
Distribution of diarrhea more than 3 years in Gaza strip, 2010-2012



Bloody Diarrhea:

There was a slightly decrease in incidence during the third quarter 2012. During the third quarter 2012, a total of 2,549 cases were reported while a total of 2,682 cases were reported in the previous quarter. During the same quarter 2011, a total of 2,044 cases were reported. The majority of cases were reported mainly in Mid-Zone and North governorate.

Distribution of bloody diarrhea in Gaza strip, 2010-2012



Case Definition for DF:

Suspect:

DF is an acute febrile illness defined by the presence of fever and two or more of the following: retro-orbital or ocular pain, headache, rash, myalgia, arthralgia, leukopenia, or hemorrhagic manifestations (e.g., positive tourniquet test, petechiae; purpura/ecchymosis; epistaxis; gum bleeding; blood in vomitus, urine or stool; or vaginal bleeding) but not meeting the case definition of dengue hemorrhagic fever (DHF). Anorexia, nausea, abdominal pain, and persistent vomiting may also occur but are not case-defining criteria for DF.

Probable:

A clinically compatible case of DF, DHF, or dengue shock syndrome (DSS) with laboratory results indicative of reciprocal hemagglutination-inhibition antibody titre greater than 1280 or positive IgM antibodies in serum.

Confirmed:

A clinically compatible case of DF, DHF, or DSS with confirmatory laboratory results:

- ◆ Isolation of virus by polymerase chain reaction (PCR) test, immunofluorescence, or immunohistochemistry, OR
- ◆ Demonstration of a ≥ 4 -fold rise in reciprocal IgG antibody titer or hemagglutination inhibition titer to dengue antigens in paired acute and convalescent serum samples, OR
- ◆ Demonstration of a ≥ 4 -fold rise in PRNT (plaque reduction neutralization test) end point titer, OR
- ◆ Virus-specific immunoglobulin M (IgM) antibodies demonstrated in CSF.

Dengue is a mosquito-borne infection found in tropical and sub-tropical regions around the world. In recent years, transmission has increased predominantly in urban and semi-urban areas and has become a major international public health concern. There are four distinct, but closely related, serotypes of the virus that cause dengue (DEN-1, DEN-2, DEN-3 and DEN-4). Recovery from infection by one provides lifelong immunity against that particular serotype. However, cross-immunity to the other serotypes after recovery is only partial and temporary. Subsequent infections by other serotypes increase the risk of developing severe dengue.

Dengue viruses are transmitted primarily to humans through the bite of an infected *Aedes* species mosquito. Transmission may also occur through transfusion of infected blood or trans-



plantation of infected organs or tissues. The spectrum of illness can range from a mild, non-specific febrile syndrome of classic DF, to the severe forms of the disease (DHF and DSS). Severe forms manifest after a two to seven day febrile phase and are often heralded by clinical and laboratory warning signs.

DHF is characterized by all of the following:

Fever lasting from 2-7 days; evidence of hemorrhagic manifestation or a positive tourniquet test; thrombocytopenia ($\leq 100,000$ cells per mm^3); evidence of plasma leakage shown by hemoconcentration (an increase in hematocrit $\geq 20\%$ above average for age or a decrease in hematocrit $\geq 20\%$ of baseline following fluid replacement therapy), or pleural effusion, or ascites or hypoproteinemia. DSS has all of criteria for DHF plus circulatory failure as evidenced by:

- ◆ Rapid and weak pulse and narrow pulse pressure ($>20\text{mm Hg}$), or
- ◆ Age-specific hypotension and cold, clammy skin and restlessness.

While no therapeutic agents exist for dengue infections, the key to the successful management is timely and judicious use of supportive care, including administration of isotonic intravenous fluids or colloids, and close monitoring of vital signs and hemodynamic status, fluid balance, and hematologic parameters.

At this time, *Aedes aegypti* mosquitoes was found in West Bank. No cases of DF were reported. There are not yet any vaccines to prevent infection with dengue virus and the most effective protective measures are those to eliminate the places where the mosquito lays her eggs and to avoid mosquito bites.

As a seasonal pattern is evident in most places, the reporting of DF cases increase during the rainy season. Where *Aedes* species mosquito are present, monitoring of suspected cases,

Continued on page 6

case reporting and epidemiological investigation are required. Preventing or reducing dengue virus transmission depends entirely on control of the mosquito vectors or interruption of human–vector contact through:

Mosquito control: These measures are directed to eliminate infected mosquitoes and to break the transmission cycle by reducing mosquito populations to extremely low levels. As there are a large areas free of the vector, surveillance against infestation is of paramount importance. Special attention should be given to the surveillance of all points of entry. Ports that receive vessels from infested areas should have ongoing inspection program. Items that collect rainwater or used to store water should be covered or properly discarded regularly. Residents are responsible for keeping their yards and patios free of standing water where mosquitoes can be produced. Watering containers and vases with fresh flowers should be emptied and cleaned (to remove eggs) at least once a week. Emergency control measures are based primarily on application of insecticides and it is essential to monitor periodically the vector's susceptibility to the insecticides most widely used.

Areas where no dengue transmission has been detected but where *Aedes aegypti* occurs: surveillance of suspected cases is essential

Vector control: The most effective means of vector control is environmental management, which includes planning, organization, carrying out and monitoring activities for the modification or manipulation of environmental factors with a view to preventing or reducing vector propagation and human–vector–pathogen contact. Environmental management methods to control *Aedes* species mosquito and reduce human–vector contact include the improvement of water supply and storage, solid waste management and the modification of man-made larval habitats. This will eliminate the mosquito eggs and larvae and reduce the number of mosquitoes present in these areas.

Collaboration within the health sector and with other sectors: Dengue prevention and control necessitates an effective inter-sectoral approach, requiring coordination between the lead ministry (Ministry of Health), and other ministries and government agencies.

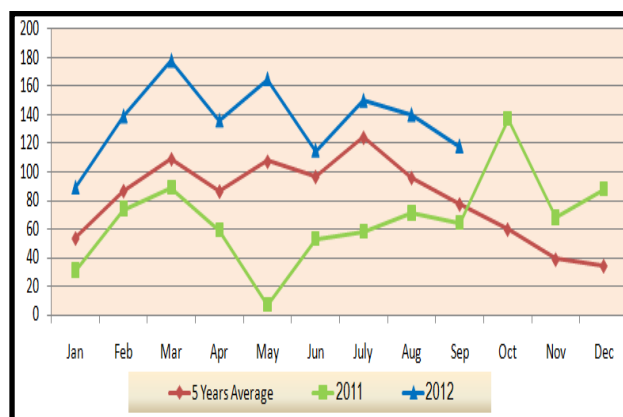
Preventing epidemic disease requires a coordinated community effort to increase awareness about dengue fever/DHF, how to recognize it, and how to control the mosquito that transmits it?

These programs should be conducted concurrently with health education programs and communications that encourage community participation in the planning, execution and evaluation of container-management programs (e.g. regular household sanitation or clean-up campaigns).

Non-Specific meningitis cases
Continued from page 3

reported during the second quarter 2012. Cases of NSM increased about more than two folds comparing with the same months of the previous year (from 193 cases to 406 cases) and about 25% comparing with the five year average (from 298 to 406 cases). The high proportion of NSM is in need

Distribution of non-specific Meningitis cases in Gaza strip, years 2011-2012



for more investigation to determine the causative species for all Non-specific meningitis cases.

As there is no confirmatory tests in Gaza strip for this disease, all cases were considered as probable non specific meningitis cases.

Issuing of Epidemiological Annual Report 2011

Continued from page 1

In spite of the amelioration of data reporting system, there is still under reporting from some health providers. So the data presented in this report does not reflect the real situation of these diseases.

According to the information presented in this annual report, it was observed the great achieved successes in prevention and control of many communicable diseases. No cases of polio-myelitis were registered since 1984 and Palestine was declared by WHO as free country from this disease in the year 2006. No cases of rabies, diphtheria, plague, leprosy, schistosomiasis or malaria had been reported in the last years. The excellent

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achievement of maintenance of childhood immunization coverage of vaccine preventable diseases more than 99% for many years represents a great success in prevention of these diseases. Other communicable diseases, such as meningococcal meningitis, HIV/AIDS, hepatitis, tuberculosis, diarrhea, pneumonia and parasitic infestation remain challenges. Improvement of regular notification, reporting, evaluation and intervention is needed for the success of their prevention and control.

The annual epidemiological report will be available on the Ministry of health and Primary Health Care websites in the near future.

Arrival of Influenza vaccine

Continued from page 1

All population at risk are advised to be vaccinated. The vaccine is distributed for free and it could be found in all central clinics in all governorates. A seasonal influenza vaccine is recommended for the following categories of patients, depending on national immunization policies:

- * Persons aged over 65 years, regardless their health condition.
- * Adults and children with chronic disorders of the pulmonary or cardiovascular systems, including asthma.
- * Adults and children with chronic metabolic diseases such as diabetes mellitus.



- * Adults and children with chronic renal dysfunction.
- * Adults and children with immunodeficiency due to disease or immunosuppressant medication (e.g., cytostatics or corticosteroids) or radiotherapy.
- * Children and teenagers (6 months-18 years) who receive long-term acetylsalicylic acid containing medications, and might therefore be at risk for developing Reye's syndrome following an influenza infection.

Influenza vaccine can cause some side effects, but these are rare. The following are some of the side effects that are known to be associated with this vaccine: Headache, sweating, pain in the muscles and joints, fever, general feeling of being unwell (malaise), shivering, fatigue, pain, swelling, redness and hardening of the skin at the injection site, small purplish blood spots in the skin (ecchymoses).

These reactions are due to the immune system response to the vaccine and are not influenza. They usually disappear within one to two days without treatment.

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