

# Epidemiological Bulletin



From 1 July to 30 September, 2013

## 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.

## Communicable diseases in Gaza Strip,,,,, achievements and challenges

Communicable diseases (CD) are one of the main causes of morbidity, mortality and disability in the world. While these diseases present a large threat for the well-being of humans, there are well-known interventions that are available for controlling and preventing them. The development and strengthening of national surveillance system is a key for early detection of any unusual events or outbreaks of CD leading to early intervention for prevention and control. Such surveillance is will developed and implemented in Gaza Strip (GS) as a part of the national surveillance for prevention and control of CD. An annual report of CD-analytic situation for the year 2012 was issued by the Epidemiology department – Preventive Medicine at Primary Health Care (PHC). This annual report reflects the wonderful achievements in CD prevention and control. Important scientific improvement and progress in surveillance system was noticed through comparison of reports. Epidemiological data on frequency of the disease, its pattern, causes and risk factors supports the public health activities, sensitize the priorities to guide development of the health policy in general and public health in particular. The report offers useful information on sensitive and important areas of the health system providing basic statistical analysis of vital health indicators over the last few years, which is supported by the reports issued by the international organizations. About 40 communicable diseases are included under this surveillance system. During 2012, there was a total of 161 facilities participated in the surveillance of CD from all health providers by notification and reporting. The main source of data was received from PHC centers which constitute more than 57% from all participants. Among these facilities, there were 16 out of 20 hospitals (12 governmental and 8 NGOs), 77 out of 92 PHC centers (61 governmental, 18 UNRWA and

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## 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 importance 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 reported notifiable diseases by governorates: July, August and September, 2013.

Disease	North	Gaza	Mid-Zone	Khan-Younes	Rafah	Total Q3, 2013	Total 2013	5 Years Average, Q3
AFP	0	2	1	2	0	5	10	2.6
Meningococcal Disease	0	13	2	4	0	19	66	39.6
Bacterial Meningitis	27	58	0	18	0	103	250	75.4
Non Specific Meningitis	60	454	261	94	155	1024	2452	187
Hepatitis A	72	41	40	91	22	266	936	185
Hepatitis B	12	27	4	19	5	67	244	106
Hepatitis C	5	6	0	0	2	13	39	18
Mumps	26	34	31	178	25	294	748	26.6
TB Pulmonary	1	0	0	3	0	4	17	2.2
TB Extrapulmonary	0	0	0	0	0	0	5	2.6
Diarrhea <3 years	6973	3031	2748	4389	1431	18572	51087	12703
Diarrhea >3 years	3917	1586	1698	1415	767	9383	27995	7377
Bloody Diarrhea	587	123	848	520	102	2180	6898	1759
Upper Respiratory Tract Infection	12431	3541	5141	3877	1490	26480	94997	9437

## Epidemiological situation of reported notifiable communicable diseases

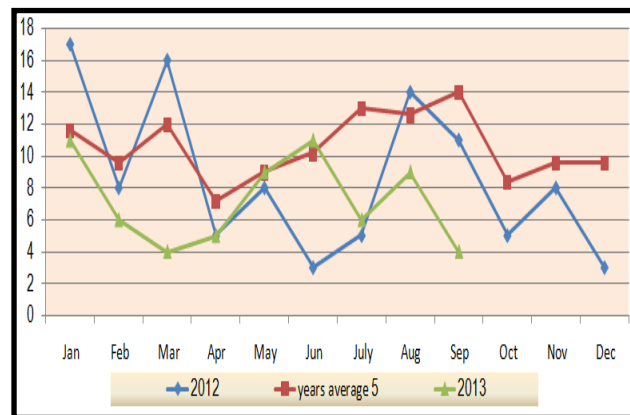
During the third quarter 2013, a total of 66.630 cases of notifiable diseases were notified to the epidemiology department which constitute about the same number comparing with the same quarter 2012 (65.106 cases). The top two diseases on the reporting form were upper respiratory tract infection (URTI) and diarrhea. These diseases constituted a total of more than 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 average notifications in the preceding five years; Mumps showed more than 11 fold increase; non-specific Meningitis showed more than five fold increase; Hepatitis A and URTI showed about 1.5 fold increase; and Bacterial Meningitis showed about 1.3 fold increase. Meningococcal diseases, Hepatitis B and C showed decrease compared with the five years average. During this period, none of the following infections were reported: Acute Poliomyelitis, HIV/AIDS, Whooping cough, Diphtheria, Measles, Tetanus, Rubella, Brucellosis and Malaria.

## Immediately reported diseases during the third quarter, 2013

### Meningococcal Diseases:

A total number of 19 cases of meningococcal diseases were reported during the third quarter 2013 given a decrease trend compared to the previous quarter (25 cases), the same quarter 2012 (30 cases) and the five years average (39 cases). Out of the reported cases, 6 cases were diagnosed based on CSF and blood culture and all of them were caused by serogroup B *Neisseria Meningitidis*. The rest of cases (13 cases) were diagnosed based on gram stain. The majority of reported cases (13) were diagnosed as meningococcal meningitis constituting about 68% from all cases. Among these cases three child with meningococemia were died with a case fatality rate of 16%. The majority of cases were reported in Gaza governorate (13 cases constitute about 68% from the total number of reported cases).

## Distribution of Meningococcal diseases in Gaza strip, years 2012-2013



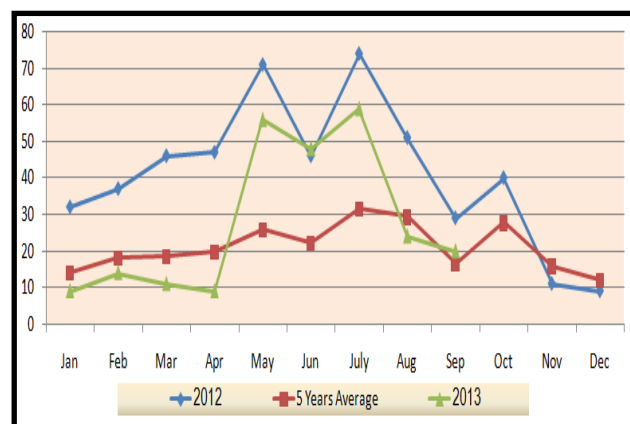
### Other bacterial Meningitis cases

There were a decrease of reported cases of other bacterial meningitis during the third quarter 2013 (103 cases were reported) comparing with the previous quarters 2013 (113 cases were reported). During the same quarter 2012, a total of 154 cases were reported suggesting a seasonal increase of the disease during this period. Comparing to the five years average, an increase of reported number of cases was noticed where a total of 75 cases were reported. The majority of cases (85) were reported mainly in Gaza and North governorates.

### Non Specific Meningitis cases:

The unusual increase in the number of cases of non specific meningitis (NSM) reported during the

## Distribution of other bacterial Meningitis cases in Gaza strip, years 2012-2013



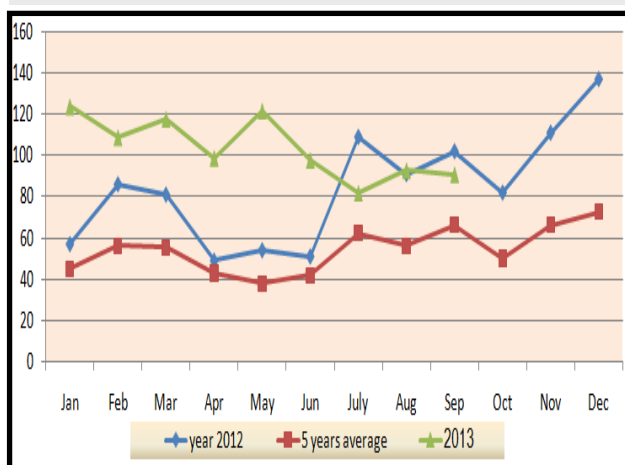
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## Weekly Reported Diseases during the third quarter, 2013

### Viral Hepatitis A

During the third quarter 2013, there was a decrease of reported cases of hepatitis A comparing with the previous two quarters. A total of 266 cases were reported during this quarter comparing to 319 cases were reported during the previous (second) quarter 2013. During the third quarter 2012 a total of 302 cases were reported. Comparing with the five year average (185 cases were reported), an increase of reported cases was noticed. This increase still reporting mainly in Khan-Younes and North governorates. No cases of deaths were registered during this period.

**Distribution of Hepatitis A cases in Gaza strip, years 2012-2013**

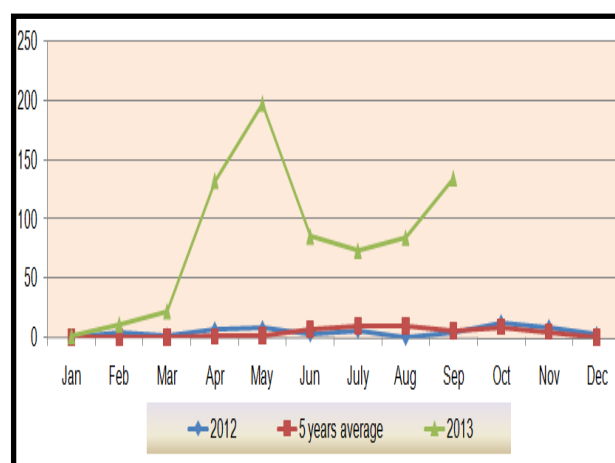


Strengthening of community health education regarding mode of transmission and prevention of this disease was conducted during the last period focusing on personal hygiene through hand washing especially after using toilet, before and after eating and restriction of movement of patients for the whole symptomatic period.

### Mumps

Epidemiology department continues investigation of the mumps outbreak that began since the end of April, 2013 in Khan-Younes governorate and mainly Ma'en area. During the third quarter, a total of 294 cases of clinically diagnosed mumps were reported in all Gaza governorates. The majority of Mumps cases (60%) were from Khan-Younes

## Distribution of Mumps in Gaza strip, Years 2012-2013



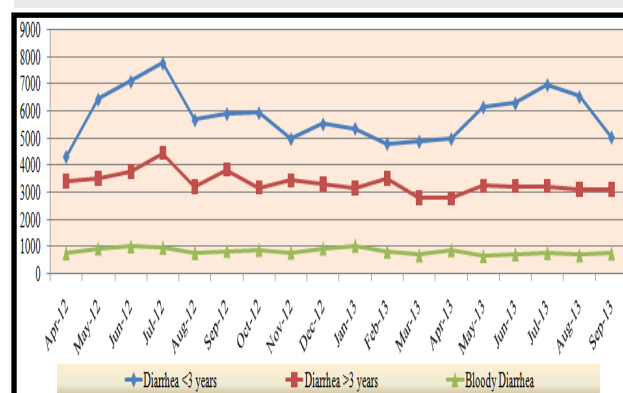
governorate but the disease is reported to be increased also in Gaza governorate. During the second quarter 2013, a total of 417 cases were reported. This situation represents a decrease comparing to the previous quarter. During the same quarter 2012, a total of 11 sporadic cases were reported comparing with the five year average where 26 cases were reported.

## Monthly Reported Diseases during the third quarter, 2013

### Diarrheal diseases:

During the third quarter 2013, the diarrheal disease situation reported mild increase comparing with the previous quarter but it was lower than the reported number during the same quarter of the previous year. A total of 30,135 cases of diarrheal diseases were reported during this period, representing about 4% increase comparing with the

**Distribution of all types of diarrheal diseases in Gaza strip, 2012-2013**



*Continued on page 7*



### Case definition for Polio:

**Suspected case:** any case of acute-onset of flaccid paralysis (AFP), in a person under 15 years of age.

**Confirmed case:** a case with acute paralytic illness, with or without residual paralysis, and isolation of wild poliovirus from the stools of either the case or its contacts.

**Polio-compatible case:** a case in which one adequate stool specimen was not collected from a case within 2 weeks of the onset of paralysis, and there is either an acute paralytic illness with polio-compatible residual paralysis at 60 days, or death takes place within 60 days, or the case is lost to follow-up.

**Vaccine-associated Paralytic Poliomyelitis case:** a case with acute paralytic illness in which vaccine-like poliovirus is isolated from stool samples. There are two possible types of vaccine-associated paralytic poliomyelitis (VAPP):

1. Recipient case: a person who has onset of AFP 4 to 40 days after receiving OPV and has neurological sequelae compatible with polio 60 days after the paralysis began.

2. Contact VAPP case: when a person who has residual paralysis 60 days after the onset of AFP had contact 4 to 40 days before the paralysis began with a person who received OPV somewhere between 4 and 85 days before the contact's paralysis began.

**Discarded (Not Poliomyelitis) case:** a case with acute paralytic illness for which two adequate stool specimen was obtained within 2 weeks after onset of paralysis and were negative for poliovirus.

Poliomyelitis is a highly fatal infectious disease caused by one of three related viruses "poliovirus types 1, 2 or 3". It invades the nervous system and can cause irreversible paralysis in a matter of hours. The only way to spread poliovirus is through the faeco-oral route. The incubation period is six to 20 days.

When a child is infected with wild poliovirus, the virus enters the body through the mouth and multiplies in the intestine. It is then shed into the environment through the faeces where it can spread rapidly through a community, especially in situations of poor hygiene and sanitation. The virus then enters the bloodstream, and may invade certain types of nerve cells, which it can be damaged or destroyed.

If a sufficient number of children are fully immunized against polio, the virus is unable to find susceptible children to infect, and dies out. Most people infected with the poliovirus have no signs of illness and are never aware they have been infected. These asymptomatic people carry the virus in their intestines and can "silently" spread the infection to thousands of others before the first case of polio paralysis emerges.

For this reason, WHO considers a single confirmed case of polio paralysis to be evidence of an epidemic.

Acute diseases caused by *wild poliomyelitis viruses* characterized by acute onset of a flaccid paralysis of one or more groups of muscles with decreased or absent tendon reflexes in the affected muscles, without other apparent cause,

and without sensory or cognitive loss. The majority of polio infections are either in-apparent or present as a non-specific febrile illness. The most characteristic feature of polio paralysis is its asymmetric distribution, which affects some muscle groups while sparing others. Fever and muscle pain are generally present at onset with the maximum extent of paralysis usually reached within three to four days. After 60 days the degree of existing paralysis is likely to be permanent. Sensory loss is very rare and its occurrence should strongly suggest some other diagnosis.

There is no cure, but polio can be prevented through safe and effective vaccines with oral polio vaccine (OPV) or inactivated polio vaccine (IPV). The strategy to eradicate polio (adopted by WHO to eradicate poliomyelitis from the world by 2015) is therefore based on:

- ◆ routine immunization, supplementary immunization,
- ◆ targeted "mopping-up" campaigns,
- ◆ surveillance for AFP cases and
- ◆ environmental surveillance (analysis of sewage).

In the occupied territories in 1948 during the epidemiological week 15 (from 7 to 13 April 2013), a wild poliovirus type 1 (WPV1) was isolated from routine samples collected from sewage treatment facilities in Beer Sheva and Rahat as a part of routine environmental surveillance. The isolates from Rahat and Beer Sheva were identified as non-Sabin poliovirus type 1 belonging to

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## Communicable diseases in Gaza Strip

*Continued from page 1*

13 NGOs) and 30 out of 49 laboratories (31 governmental and 18 NGOs) participated in the notification.

No single case of acute poliomyelitis was reported since 1984 and Palestine was declared as free country from poliomyelitis since the year 2006; no cases of cholera, diphtheria, measles, rabies, rubella or tetanus were reported during the year 2012; decreasing of other CD trends such as Brucellosis, Haemophilus Influenza type B Meningitis, Ascariasis, and Hepatitis B was achieved; maintenance of high level of immunization coverage about 99% or more and introducing new vaccines (HiB, second dose of MMR and PCV) reflect the great success achieved by the health system.

On the other hand, other CD remain a challenge for the health of the population. Meningococcal meningitis, aseptic meningitis, hepatitis, tuberculosis, diarrhea, acute respiratory illnesses, parasitic infestation and HIV/AIDS remain challenges. The spread of most of these diseases is directly related to deterioration of environment and personal hygiene. Strengthening of collaboration with other involved sectors in these issues needs to be implemented in order to overcome these obstacles.

A national conference titled "Communicable diseases in Gaza Strip — achievements and challenges" was held on 15 September 2013 in order to highlight these achievements and challenges.

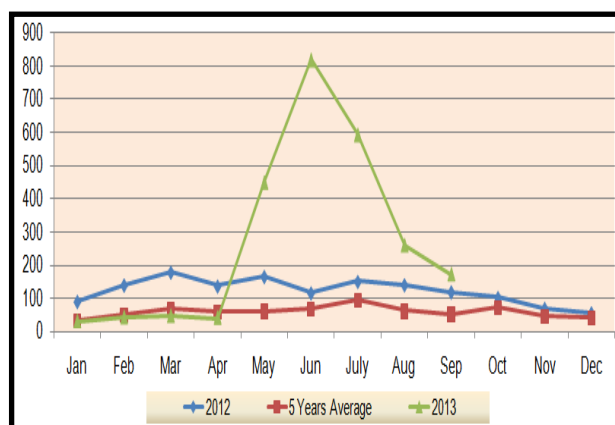
In spite of the amelioration of CD data reporting more improvement of regular notification and data reporting, analysis, interpretation, evaluation and intervention is still needed for more success of prevention and control of these diseases.

## Non Specific Meningitis cases

*Continued from page 3*

previous quarter began to decrease during this quarter but still higher than the reported number during the same quarter 2012. During this quarter, a total of 1024 cases of NSM were reported while a total of 1310 cases were reported during the previous (second) quarter 2013. Cases of NSM increased about more than two folds comparing with the same months of the previous year (from

## Distribution of non-specific Meningitis cases in Gaza strip, years 2012-2013



406 cases to 1024 cases) and about five fold comparing with the five year average (from 187 to 1024 cases). The high proportion of NSM is in need 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, some specimens were sent to Israeli hospitals for viral study and Enterovirus was identified (isolated). So doctors have been alerting on the emerging outbreaks of NSM and the results of cultures in order to reduce unnecessary prescription of antibiotics and duration of hospitalization. Here we emphasize on improvement of personal hygiene mainly hand washing as there are no other effective control measures to halt person-to-person transmission of viral infection.

### Acute Flaccid Paralysis/Acute Poliomyelitis:

During the third quarter 2013, a total of five cases of AFP were reported which rising the total reported AFP cases in this year to 10 cases with an incidence of 1.34 per 100.000 population under 15 years old. This reflects the amelioration of finding of these cases which was intensified after the isolation of wild poliovirus from the sewage samples from Rafah governorate (Tal-Sultan sewage station) in August 2013. After reporting a confirmed Polio case in Syria, the whole Middle East region is at risk and also the WHO program to eradicate poliomyelitis from the region by 2015. The risk of further international spread of wild poliovirus across the region is considered to be high. So improvement of the reporting process is needed regularly.

## Diarrheal Diseases

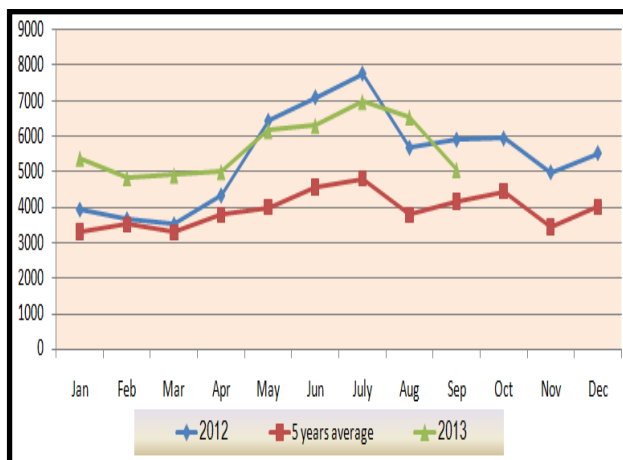
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previous quarter 2013 (28.844 cases were reported). This increase was mainly in North and Khan-Younes governorates and among age group less the three years. On the other hand there was an increase of reported number of cases comparing with the five years average where a total of 21.839 cases were reported.

### Diarrhea < 3 years:

There was an increase in incidence during the third quarter 2013, where a total of 18.572 cases were reported while a total of 17.443 cases were reported in the previous quarter. On the other hand during the same quarter 2012, a total of 19.370 cases were reported. Comparing with the five year

**Distribution of diarrhea among children less than 3 years in Gaza strip, 2012-2013**

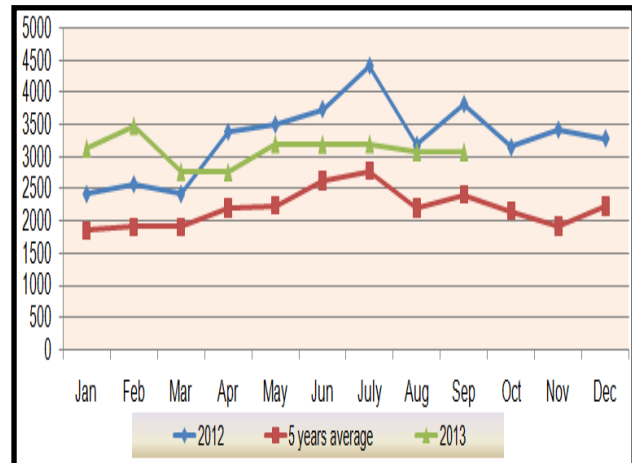


average (12.703 cases were reported), an increase of reported cases was noticed. The majority of cases were reported mainly in North and Khan-Younes governorates.

### Diarrhea > 3 years:

There was appropriately the same incidence of reported cases during the third and the second quarters 2013. During the third quarter 2013, a total of 9.383 cases were reported while a total of 9.193 cases were reported during the previous quarter. During the same quarter 2012, a total of 11.436 cases were reported. Comparing with the five year average (7.377 cases were reported), an increase of reported cases was noticed. The

**Distribution of diarrhea more than 3 years in Gaza strip, 2012-2013**



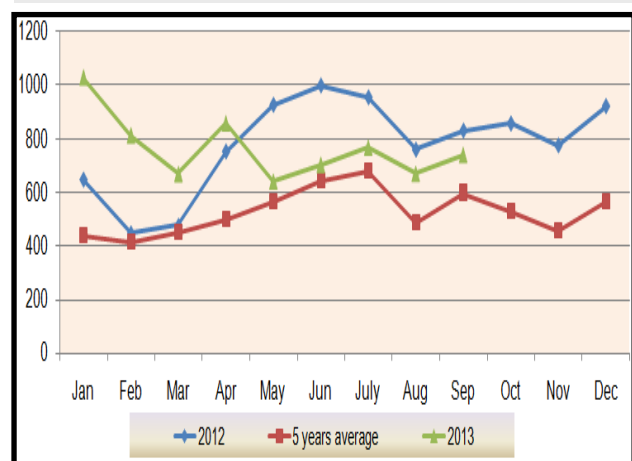
majority of cases were reported mainly in North governorate.

### Bloody Diarrhea:

There was appropriately the same incidence of reported cases during the third and the second quarters 2013. During the third quarter 2013, a total of 2.180 cases were reported while a total of 2.204 cases were reported during the previous quarter. This situation represents a clear decrease comparing to the same quarter 2012 where a total of 2.549 cases were reported. Comparing with the five year average (1.757 cases were reported), an increase of reported cases was noticed. The majority of cases were reported mainly in Mid-Zone and North governorates.

Continuous monitoring and evaluation of activities are essential to assure the progress and effectiveness of national diarrheal disease control programs.

**Distribution of bloody diarrhea in Gaza strip, 2012-2013**



the SOAS (South Asia) lineage of WPV1, which has been circulating in Pakistan in recent years, and which was also isolated from sewage samples in the Cairo region, Egypt, in December 2012. Subsequently, environmental surveillance was extended and intensified to cover more sewage sampling sites nationally. As of 1 September 2013, WPV1 has been detected in 87 of 220 samples tested that were obtained from 79 sewage sampling sites in Israel. Only IPV vaccine is used for childhood vaccination schedule since 2005 prescribes three IPV doses by the age of six months with two additional booster doses at 12 months and at seven years (second elementary grade). The vaccination coverage in Israel is estimated at about 90% in spite of that a lot of specific religious groups refused to vaccinate their children.

The following instant actions were carried out, following the detection of WPV1 in Israel.

In Rahat and the surrounding area, where substantial and continuous WPV1 circulation has been detected in samples collected since the first quarter of 2013, an IPV catch-up vaccination campaign was initiated in order to maximize the routine childhood IPV coverage and to administer a booster IPV to all adults who had no evidence of prior booster vaccination in adulthood (i.e. before travel to polio endemic countries), with special outreach to sewage facility workers and migrant communities whose members had migrated through Egypt since 2007.

A national hygiene campaign was initiated to raise public awareness of wild poliovirus circulation and hand-washing and personal hygiene and in preparation for a widespread OPV supplementary immunization activity.

In order to maximize OPV coverage, professional information concerning poliovirus and vaccination was made available to physicians throughout the country as well as to the public, using diverse communication channels – traditional media, social media, and the Internet.

After the isolation of WPV1 in sewage, surveillance for AFP was expanded in June 2013, to include all age groups.

The situation in Palestine is totally deferent. A high coverage of poliomyelitis vaccination is maintained and closed to 100% with 2 doses of IPV at ages 1 and 2 months in addition to 5 doses of TOPV at ages 2,4,6,18 months and 6 years; national immunization days were conducted targeting children under five years of age for three consecutive years (regardless of previous immunization status); mopping up campaigns were carried out as needed; active surveillance of AFP are implemented; no cases of polio were reported since 1984 and testing sewage for the presence of poliovirus are conducted. So in the year 2006, the regional committee for the Eastern Mediterranean Region (EMR) of the WHO certified that Palestine is free from poliomyelitis. Recently, WPV1 has been isolated from some sewage samples collected from Gaza Strip and West Bank. Responding to this threat, Palestinian authority responded by:

- ◆ Strengthening surveillance for Acute flaccid Paralysis (till now more than 30 cases were followed and no Polio cases were identified)
- ◆ Increased the frequency of environmental samples collection.
- ◆ A supplementary Immunization activity with trivalent oral polio vaccine was conducted in different areas and national immunization campaign will be conducted in Gaza Strip and West Bank in the near future targeting children up to five years of age.

As a consequence, the last environmental samples from the same infected areas were free from the virus.

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