

# Quarterly Epidemiological Report-Gaza

## Epidemiological Bulletin



From 1 January to 31 March 2014

### 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 constituting about 1.35% from the historical Palestine. 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 mid-year population of 1.644.289 people (PCBS, 2012).
- \* Male/Female ratio in general population is 103.100 (PHIC, 2012).
- \* Population density is 4583 inhabitants per sq km.
- \* Population growth rate is very high of over 3.5%.
- \* Population under the age of 15 is 45.7%.
- \* Infant Mortality Rate is 17.8 per 1000 live births.
- \* Crude Birth Rate is 34.4/1000.
- \* Crude Death Rate is 3.3/1000.
- \* Average life expectancy is 70.7 years for males and 73.5 years for females.
- \* Fertility rate is 6.3%.
- \* Family size Average is 6.1.
- \* Median age (years) is 17.6

### Response to Measles outbreak in neighboring countries

Measles is a highly contagious viral disease, caused by a virus in the paramyxovirus family, which affects mostly children. It is transmitted via droplets from the nose, mouth or throat of infected persons. Initial symptoms, which usually appear 10–12 days after infection, include high fever, runny nose, bloodshot eyes, and tiny white spots on the inside of the mouth. Several days later, a rash develops, starting on the face and upper neck and gradually spreading downwards.

There is no specific treatment for measles and most people recover within 2–3 weeks. However, particularly in malnourished children and people with reduced immunity, measles can cause serious complications, including blindness, encephalitis, severe diarrhoea, ear infection and pneumonia. Measles can be prevented by immunization.

In 2012, the Measles-Rubella Initiative launched a new Global Measles and Rubella Strategic Plan which covers the period 2012-2020. The Plan includes new global goals for 2015 and 2020:

**By the end of 2015:** To reduce global measles deaths by at least 95% compared with 2000 levels and to achieve regional measles and rubella/congenital rubella syndrome (CRS) elimination goals.

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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 (AFP), Acute Poliomyelitis, HIV/AIDS, Cholera, Diphtheria, Food poisoning, Measles, Rubella, Meningococcal diseases, Hemophilus Influenza B Meningitis (HiB), 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.

### Reported notifiable diseases by governorates: January, February and March 2014.

Disease	North	Gaza	Mid-Zone	Khan-Younes	Rafah	Total Q1, 2014	Total 2014	5 Years Average, Q1
<b>Group A diseases</b>								
AFP	1	3	0	0	0	4	4	1.4
AIDS/HIV	0	1	0	0	0	1	1	0.2
Cholera	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0
Measles	0	0	0	0	0	0	0	0
Meningococcal Disease	9	4	2	4	2	21	21	31.8
HiB Meningitis	0	0	0	0	0	0	0	0.6
Bacterial Meningitis	8	13	36	49	0	106	106	55
Non Specific Meningitis	32	65	11	104	0	212	212	162.6
Vaccine Adverse Events	0	1	0	1	0	2	2	3
Food Poisoning	0	0	0	0	0	0	0	23.8
Rabies	0	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0	0	0

**Reported notifiable diseases by governorates: January, February and March 2014.**

Disease	North	Gaza	Mid-Zone	Khan-Younes	Rafah	Total Q1, 2014	Total 2014	5 Years Average, Q1
<b>Group B diseases</b>								
Brucellosis	0	2	0	0	0	2	2	2
Hepatitis A	80	64	37	84	16	281	281	183.4
Hepatitis B	21	33	8	17	8	87	87	95.4
Hepatitis C	16	3	3	2	0	24	24	13.4
Lishmaniasis	0	0	0	0	0	0	0	0
Influenza A H1N1	0	0	0	0	0	0	0	29.6
Malaria	0	0	0	0	0	0	0	0
Mumps	466	1154	1178	1978	1208	5984	5984	10.4
Whooping Cough	0	0	0	0	0	0	0	0.2
STD	0	0	0	0	0	0	0	0
Shigellosis	0	0	0	0	0	0	0	0
TB Pulmonary	3	2	2	1	1	9	9	4.2
TB Extrapulmonary	0	0	0	1	0	1	1	1.4
Salmonellosis	0	0	0	0	0	0	0	1
Typhoid Fever	0	6	0	17	0	23	23	35.4
Typhus fever (OX19)	1	15	0	27	0	43	43	35.2
<b>Group C diseases</b>								
Animal Bites	25	12	12	12	9	70	70	69
Chicken Pox	172	170	158	315	24	839	839	684.4
Diarrhea <3 years	5099	2232	2165	4508	895	14899	14899	8863
Diarrhea >3 years	4002	981	1532	1560	562	8637	8637	6549
Bloody Diarrhea	479	140	664	408	39	1730	1730	1538
Upper respiratory infection	13708	5449	4558	4781	2025	30521	30521	16693
Scabies	0	65	8	0	0	73	73	14.2
Ascariasis	10	3	1	2	1	17	17	52.8
Amebiasis	280	859	73	237	188	1637	1637	1436
Giardiasis	119	153	33	66	106	477	477	618
Enterobiasis	1	0	0	9	2	12	12	12
Hymenolepiasis	4	1	2	1	1	9	9	17

## Epidemiological situation of reported communicable diseases during the first quarter, 2014

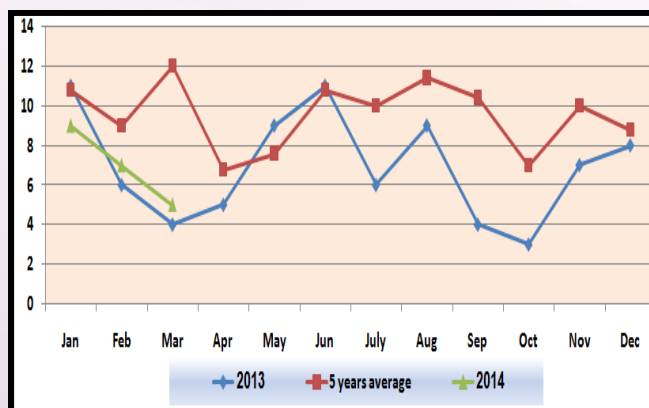
During the first quarter 2014 a total of 73.230 cases of notifiable diseases were reported to the epidemiology department which constitute about 16% increase comparing with the previous quarter (61.284 cases). The top three diseases on the reporting form were upper respiratory tract infection (URTI), diarrhea and mumps. These diseases are constituting a total of more than 85% of all notifications. The five years average (during the first 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. During this quarter an amelioration of AFP reporting were noticed where 4 cases were reported. When compared with the average notifications in the preceding five years; Mumps showed very high increase (reported as an epidemic); Bacterial Meningitis, Pulmonary TB, Diarrhea < 3 years and URTI showed about 2 folds increase; Hepatitis A and C showed more than 1.5 fold increase; Non-specific Meningitis showed slightly increase. Meningococcal diseases, HiB Meningitis, Hepatitis B and Extrapulmonary TB showed decrease compared with the five years average. Two cases of brucellosis were reported in Gaza governorate, the source of infection was found and appropriate treatment was done for the patients. During this period, none of the following infections were recorded: acute poliomyelitis, diphtheria, measles, tetanus, Cholera and malaria.

## Immediately reported diseases during the first quarter, 2014

### Meningococcal Diseases:

There was an increase of reporting cases of meningococcal diseases during the first quarter 2014 where a total of 21 cases were reported compared to the previous quarter (18 cases were reported). Comparing to the five years average, a decrease of reported number was noticed where a total of 31 cases were reported. During the same quarter 2013, the same number of cases (21) were reported. The majority of reported cases (17) were male with a male:female ratio of 100:23. The majority of reported cases (15) were diagnosed as meningococemia constituting about 71% from all cases. For meningococemia cases, 12 cases were diagnosed by skin smear and 2 of them were confirmed by blood culture. For meningococcal meningitis, 4 cases were diagnosed by CSF gram stain and 2 cases were diagnosed by CSF culture. Among these cases three male

## Distribution of Meningococcal diseases cases in Gaza strip, years 2013-2014

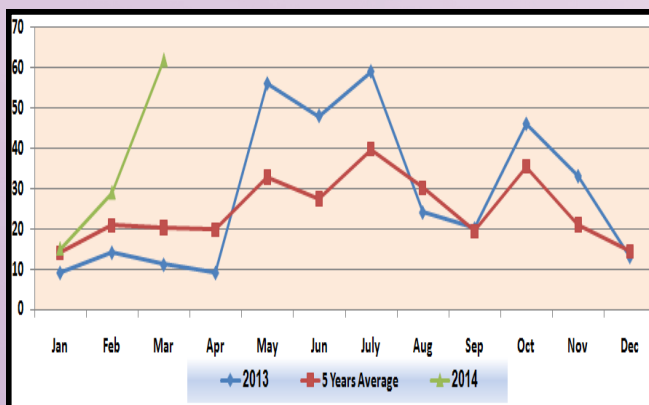


children with meningococemia were died with a case fatality rate of 14%. The majority of cases were reported in North (9 cases) governorate. All contacts (591 persons) were given prophylactic treatment.

### Other bacterial Meningitis cases

Despite the obvious decrease of reported cases during the previous quarter, there was an increase trend of reporting cases of other bacterial meningitis during the first quarter 2014 where a total of 106 cases were

## Distribution of other bacterial Meningitis cases in Gaza strip, years 2013-2014



reported comparing with the previous quarter (fourth quarter) 2013 where a total of 92 cases were reported. Comparing to the five years average, an increase of reported number was noticed where a total of 55 cases were reported. During the same quarter 2013, a total of 34 cases were reported. The majority of reported cases during this quarter were reported in Khan-Younes and mid-Zone governorates (a total of 49 (46%) and 36 (34%) cases were reported respectively) while no cases were reported in Rafah governorate.

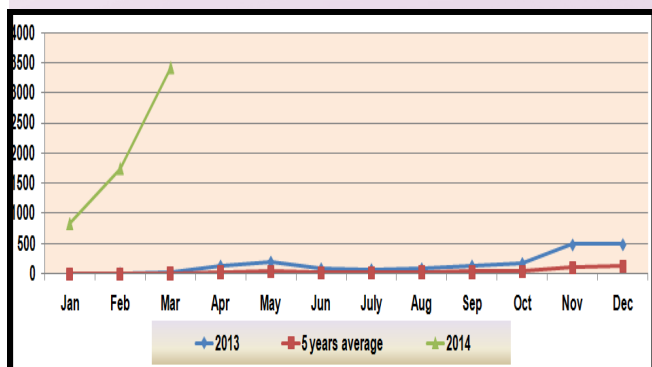
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## Weekly Reported Diseases during the first quarter, 2014

### Mumps:

Epidemiology department continues investigation of mumps outbreak that began since the end of April, 2013 in Khan-Younes governorate and mainly Ma'en area. The reported number of cases still increasing and there is an expansion of geographical area where the disease is reported.

### Distribution of Mumps cases in Gaza strip, years 2013-2014



During the first quarter 2014, a total of 5984 cases of clinically diagnosed mumps were reported in all Gaza governorates (anti mumps IgM was detecting from some cases). Comparing with the previous quarter where a total of 1143 cases were reported, there were about four fold increase. During the same quarter 2013, only 37 cases were reported and during the five years average, only 10 cases were reported. The mumps cases were reported from Khan-Younes (1978 cases), Rafah (1208 cases), Mid-Zone (1178 cases), Gaza (1154 cases) and North (466 cases) governorates.

According to the Palestinian schedule for immunization, MMR was mandatory introduced to the national schedule of expanded program of immunization in 1985 at 15 months. In 2009, a second doses of MMR vaccine was introduced for children at the age of 18 months and the first one was moved to 12 months. The immunization coverage of infants with the recommended schedule has ranged between 94% to 100%. Two doses of vaccine convey protection in more than 90% of vaccine recipients.

The epidemiology department is looking seriously at what happened in Gaza Strip. Is it a failure of the vaccination program, or a decrease of the total popu-

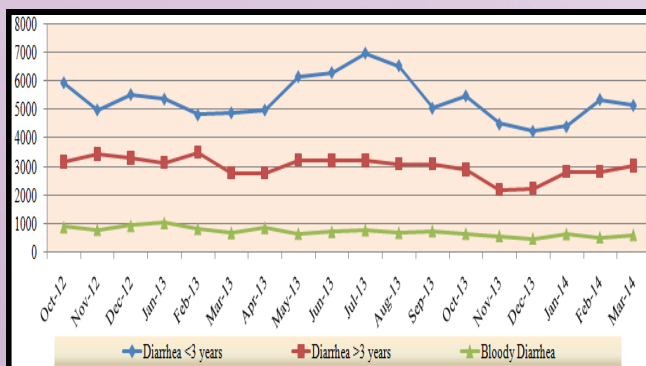
lation immunity? In order to keep very contagious diseases like mumps from spreading there has to be a fairly high level of population immunity (referred to as "herd immunity"). If the level is below a certain proportion, outbreaks can occur which could be one explanation for what happened in Gaza Strip?. The first suspicion that the most affected age group was from 6-15 years (who were taken only one MMR dose), was that a tendency towards waning immunity rates with time is responsible or only one dose doesn't offer a sufficient protective level of immunity. There were some cases among children who were taken two doses of MMR vaccines which highlighted that outbreaks can occur even in highly vaccinated populations. The disease affected also older age groups which could suggest that they had not been affected by the disease during their life.

## Monthly Reported Diseases during the first quarter, 2014

### Diarrheal diseases:

During the first quarter 2014, the diarrheal disease situation reported an increase comparing with the previous quarter. A total of 25,266 cases of diarrheal diseases were reported during this period, representing about 9% increase comparing with the previous quar-

### Distribution of all types of diarrheal diseases cases in Gaza strip, years 2013-2014



ter 2013. Comparing to the same quarter 2013, a decrease trend was reported where a total of 27,001 cases were reported representing about 7% decrease. This decrease was noticed among all types of diarrhea and the majority of reported cases were reported in North (9580 cases) and Khan-Younes (6476 cases) governorates. On the other hand there was an increase in reported number of cases comparing with the five years average where a total of 16,950 cases (about 33% increase) were reported.

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The Ebola virus disease (EVD) (one of the world's most deadly viruses) is a severe acute viral illness caused by Ebola virus; formerly known as Ebola haemorrhagic fever (EHF). The Ebola virus was first identified in the western equatorial province of Sudan and in a nearby region of Zaire (now Democratic Republic of the Congo) in 1976 after significant epidemics in Nzara, southern Sudan and Yambuku, northern Zaire. There are five distinct species of the Ebola vi-

rus: fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest. In Africa, fruit bats are considered possible natural hosts for Ebola virus.

Ebola then spreads in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environ-

counts and elevated liver enzymes.

People are infectious as long as their blood and secretions contain the virus. Ebola virus was isolated from semen 61 days after onset of illness in a man who was infected in a laboratory.

Ebola virus infections can be diagnosed definitively in a laboratory through several types of tests:

enzyme-linked immunosorbent assay (ELISA)

antigen detection tests

serum neutralization test

reverse transcriptase polymerase chain reaction (RT-PCR) assay

virus isolation by cell culture.

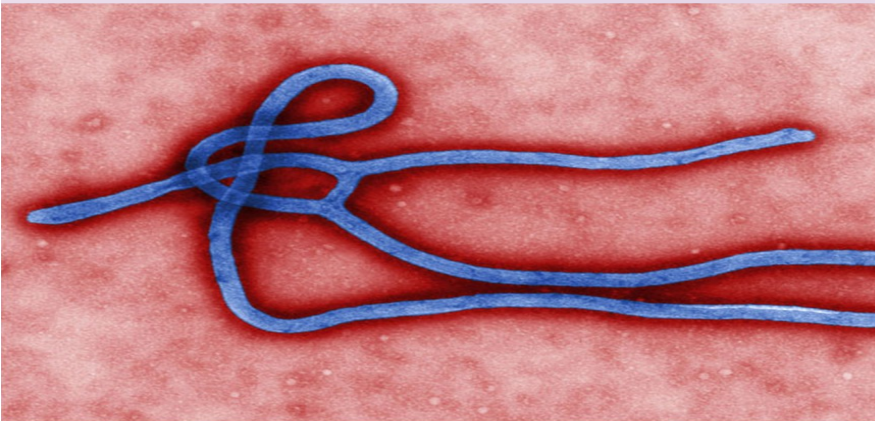
No specific treatment is available for EVD. Severely ill patients require intensive supportive care.

No vaccine for EVD is available. Several vaccines are being tested, but none are available for clinical use.

In the absence of effective treatment and a human vaccine, raising awareness of the risk factors for Ebola infection and the protective measures individuals can take is the only way to reduce human infection and death.

As of 28 March, the total number of suspected and confirmed cases in the on-going Ebola Haemorrhagic Fever (EHF) outbreak in Guinea has increased to 112, including 70 deaths (Case Fatality Rate 62.5%).

Two of the new suspected cases have been in health care workers indicating the need to further strengthen health facility-based infection prevention and control. Domestic infection prevention is being supported for patients managed in the community, in-



rus: Bundibugyo ebolavirus (BDBV), Zaire ebolavirus (EBOV), Reston ebolavirus (RESTV), Sudan ebolavirus (SUDV) and Tai Forest ebolavirus (TAFV).

The Ebola virus is transmitted by direct contact with the blood, body fluids and tissues of infected persons. Transmission of the Ebola virus has also occurred by handling sick or dead infected wild animals (chimpanzees, gorillas, monkeys, forest antelope, fruit bats). Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas,

monkeys contaminated with such fluids. Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD. This has occurred through close contact with patients when infection control precautions are not strictly practiced.

The incubation period, that is, the time interval from infection with the virus to onset of symptoms, is 2 to 21 days.

EVD often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Laboratory findings include low white blood cell and platelet

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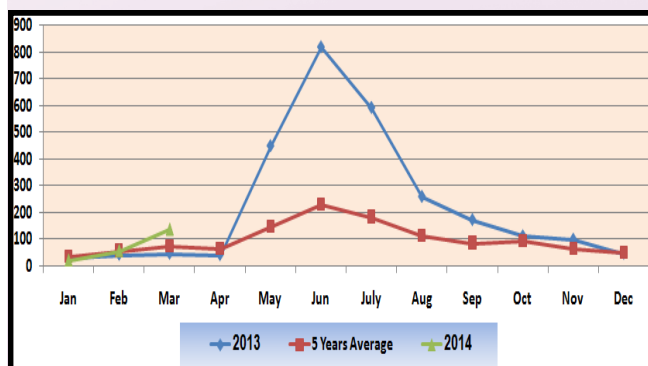
## Immediately reported diseases

*Continued from page 4*

### Non Specific Meningitis cases:

After the registered outbreak of non specific meningitis in the second quarter 2013, there was a continu-

#### Distribution of non-specific Meningitis cases in Gaza strip, years 2013-2014



ous decreasing trend of reported cases of during the third and fourth quarter 2013. During this quarter, a total of 212 cases of NSM were reported while a total of 255 cases were reported during the previous (third) quarter 2013. Comparing with the same quarter 2013, 118 cases were reported. Comparing with the five year average (162 cases), there is an increase of the reported number of cases. The majority of reported cases were reported mainly in Khan-Younes governorate where a total of 104 (49%) cases were reported.

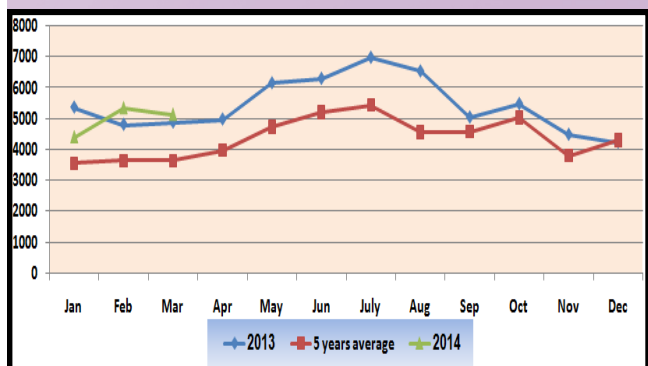
## Monthly Reported Diseases

*Continued from page 5*

### Diarrhea < 3 years:

There was an increase of reported cases during the first quarter 2014, where a total of 14.899 cases were

#### Distribution of diarrhea among children less than 3 years in Gaza strip, years 2013-2014

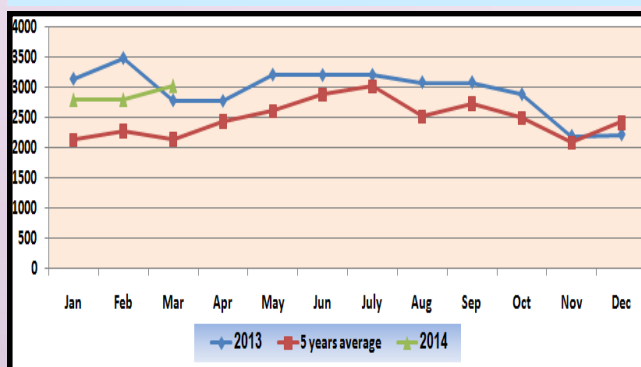


reported while a total of 14.209 cases were reported during the previous quarter (about 4% increase). On the other hand during the same quarter 2013, a total of 15.072 cases were reported. The majority of cases were reported mainly in North (5099 cases) and Khan-Younes (4508 cases) governorates.

### Diarrhea > 3 years:

There was an increase of reported cases during the first quarter 2014 where a total of 8.637 cases were reported while a total of 7.289 cases were reported during the previous quarter (about 18% increase). On

#### Distribution of diarrhea among children more than 3 years in Gaza strip, years 2013-2014

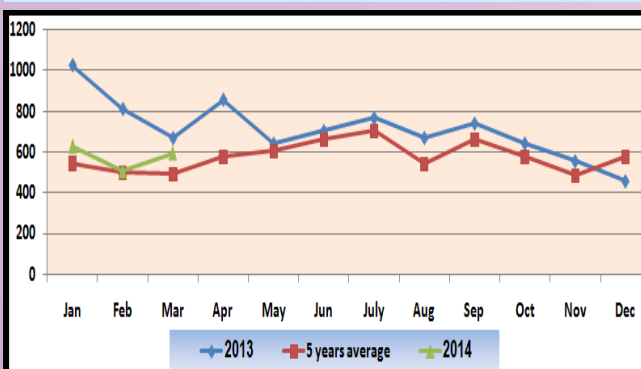


the other hand during the same quarter 2013, a total of 9.419 cases were reported (about 9% decrease). Comparing with the five years average, a decrease of about 24% of reported cases were reported (6549 cases). The majority of reported cases were reported mainly in North governorate (4002 cases constituting about 46% of all reported cases).

### Bloody Diarrhea:

There was a slightly increase of reported cases during the first quarter 2014 comparing to the previous quar-

#### Distribution of bloody diarrhea in Gaza strip, years 2013-2014



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## **Ebola virus disease**

*Continued from page 6*

cluding training carers in safe practices and the community in safe burials. In addition, 235 contacts have been traced of whom over 130 require continued follow-up. Active contact tracing is proceeding.

Both Sierra Leone and Liberia have revised down the number of suspected cases reported previously. Liberia reported that 3 persons from Guékédou developed symptoms and signs suggestive of EHF and died in Liberia. Pre-mortem samples collected from these cases tested positive for Ebolavirus at the Institut Pasteur (IP) Dakar mobile laboratory in Conakry.

Sierra Leone has identified 2 suspected cases, both of whom died. All of the confirmed and suspected cases reported by Liberia and Sierra Leone had travelled to Guinea before illness onset. Investigations into these suspected cases are on-going. No new suspected cases have been reported from either Liberia or Sierra Leone.

The national authorities of Guinea, Sierra Leone and Liberia have activated their national emergency committees, prepared EHF response plans and carried out needs assessments. WHO does not recommend that any travel or trade restrictions be applied to Guinea, Liberia or Sierra Leone based on the current information available for this event.

## **Response to Measles outbreak**

*Continued from page 1*

**By the end of 2020:** To achieve measles and rubella elimination in at least five WHO regions.

Recently in Syria, a breakdown in health services due to the ongoing conflict has led to a growing measles

crisis. New cases of measles have reappeared due to a drop in national vaccination coverage from 95% in 2010 to an estimated 45% in 2013. In the first quarter of 2014, the number of laboratory-confirmed measles cases in Syria reached 139, compared to zero cases in 2010 and 2011, and 71% of these cases were shown to be not vaccinated.

The disease was transmitted to neighboring countries (Lebanon, Jordan, Iraq, Turkey and Egypt). Prevention and control measures

by WHO and partners were implemented to respond to public health threats from measles by conducting an emergency mass vaccination campaigns both inside Syria and in neighboring countries.

In response to these emergency measures, Palestinian ministry of health in Gaza conducted a successful national immunization campaign of measles vaccination starting by November 2013 targeting children aged 6 to 12 years old, where a total of 274603 children (vaccination coverage was about 99.9%) were vaccinated. Then the campaign targeted children born on 2010 from 23/02/2014 to 06/03/2014 (about 53784 children with a vaccination coverage of 100.4%) followed by vaccination of children born on 2009 from 09/03/2014 to 20/03/2014 (about 50525 children with a vaccination coverage of 99%). And the campaign was completed by targeting children born on 2008 from 23/03/2014 to 03/04/2014 (about 33970 children with a vaccination coverage of 99.8%). The activity was carried out by all MOH and UNRWA health centers. The vaccination coverage during this campaign reached about 99.7%.

## **Bloody Diarrhea**

*Continued from page 7*

ter 2013. During the first quarter 2014, a total of 1.730 cases were reported while a total of 1.657 cases were reported during the previous quarter constituting about 4% increase. Comparing with the five years average, an increase of about 12% of reported cases were reported (1538 cases). The majority of cases were reported mainly in Mid-Zone (664 cases) and North (479 cases) governorates.

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

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