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General Directorate of Primary Health Care  
Preventive Medicine - Epidemiology Department

# **Annual Epidemiological Report**

## **Gaza Strip, 2014**

**Prepared by:**

Dr. Majdi Dheir

Dr. Nedal Ghuneim

Mr. Khaled Abu Ali

**Supervised by:**

Dr. Fouad El-Eisawi

# Palestine Map



## PREFACE

With our pleasure, the fourth edition of the Annual Epidemiological Report about the communicable diseases in Gaza Strip became available. This report provides a comprehensive summary of surveillance data during the year 2014. It is intended to be a key reference document for organizations, individuals and researchers interested in the occurrence of these infectious diseases in Gaza.

Different challenges during that period were faced in Gaza Strip (one of the most crowded places in the world). The unjust siege, high unemployment rate, high poverty rate, difficult economy situation, frequent cut of electricity and frequent Israeli military attacks strongly influence the quality of life and health status and make Gaza Strip and all its inhabitants live in a dark tunnel. In the midst of this situation, the health system is suffering and offers emergency services to avoid a total collapse. Despite these challenges, the health system is still effective, efficient, viable and provides reasonable access to high-quality preventive and curative services for all Gazan's.

This report is the result of the effort of many governmental and non-governmental institutions from all governorates, who work seriously to ensure the continuous strong surveillance of communicable diseases. Without their efforts, this report could not have been prepared. We all acknowledge and greatly appreciate the hard work of medical, health and administrative teams.

We look forward to continue progress to achieve the main goal of MOH "Provide a comprehensive health services to Palestinian people to prevent morbidity and reduce mortality". This is not simply a slogan, it is something we believe in and we work every day trying to achieve.

**Deputy Assistant**

**Dr. Fouad El-Eisawi**





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## Acronyms and Abbreviations



AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
AIDS	Acquired immunodeficiency syndrome
BCG	Bacille Calmette and Guérin
BCP	Brucellosis Control Program
CFR	Case Fatality Rate
CRS	Congenital Rubella Syndrome
DT	Diphtheria-Tetanus
DTP	Diphtheria-Tetanus- Pertussis
ELISA	Enzyme-Linked Immunosorbent Assay
EMR	Eastern Mediterranean Region
EPI	Expanded Program of Immunization
GIVS	Global Immunization Vision and Strategy
GS	Gaza Strip
HAV	Hepatitis A Virus
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
Hib	Haemophilus influenza type b
HIV	Human Immunodeficiency Virus
IPV	Injectable polio vaccine
MCV	Measles Containing Vaccine
MMR	Measles-Mumps-Rubella
MNT	Maternal and Neonatal Tetanus
MOH	Ministry Of Health
MOI	Ministry Of Interior
NGOs	Non-Governmental Organizations
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Care
PPD	Protein Precipitate Derived
SIAs	Supplementary Immunization Activities

STD	Sexual Transmitted Diseases
TB	Tuberculosis
Td	Tetanus-adult diphtheria
TOPV	Trivalent oral polio vaccine
TT	Tetanus Toxoid
UN	United Nations
UNDP	United nations for development program
UNICEF	United Nations International Children's Emergency Fund
UNRWA	United Nations Relief and Works Agency for Palestinian Refugees
URTI	Upper Respiratory Tract Infection
WB	West Bank
WHO	World Health Organization





## Foreword

We are pleased to present this annual epidemiological report as another accomplishment of the epidemiology department. During the year 2014, online epidemiological bulletin ([www.moh.gov.ps](http://www.moh.gov.ps); [www.moh.gov.ps/care](http://www.moh.gov.ps/care)) continued publication and already has covered topics with epidemiological importance. 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 events in Gaza Strip. This annual report is a comprehensive report about the epidemiological situation of communicable diseases in Gaza strip and summarizes our prevention and control activities from January 1, 2014, through December 31, 2014.

We hope that this report will be an informative accurate reference and will positively contribute in helping national decision makers in health planning and international organizations in identifying health needs and for additional support.

This publication can be obtained from the above-mentioned web-sites. Please send any comments and feedback to the Epidemiology Department-Gaza;

Email: [epidept-phc@moh.gov.ps](mailto:epidept-phc@moh.gov.ps)

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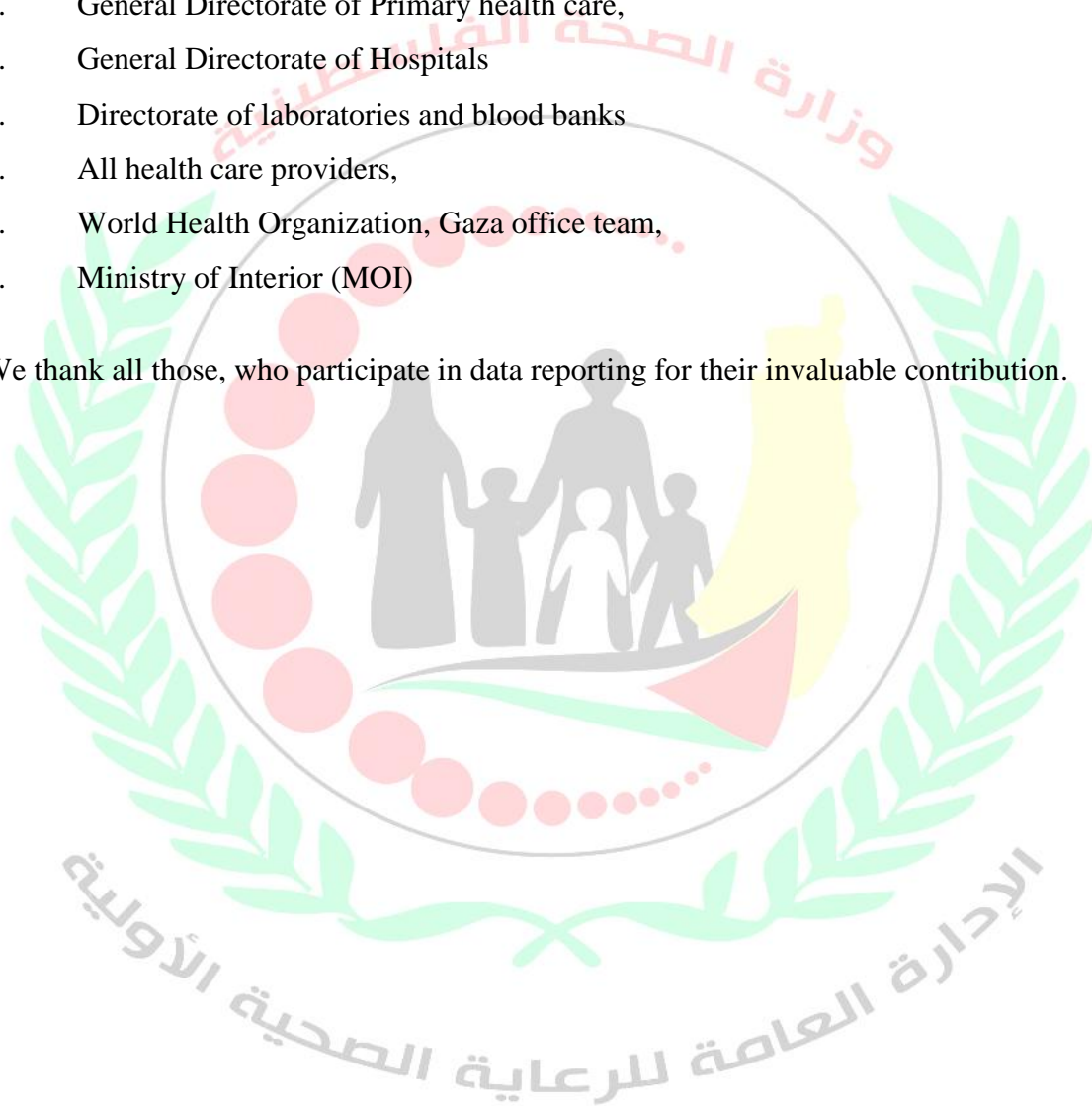
**Contributors' team**

## Acknowledgements

We wish to thank all the following people for their contributions to the success of this report:

1. All epidemiology departments staff,
2. Immunization department staff,
3. General Directorate of Primary health care,
4. General Directorate of Hospitals
5. Directorate of laboratories and blood banks
6. All health care providers,
7. World Health Organization, Gaza office team,
8. Ministry of Interior (MOI)

We thank all those, who participate in data reporting for their invaluable contribution.



## Introduction

The territories of the State of Palestine consist of two geographically separated areas West Bank (WB) and Gaza Strip (GS). GS 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. GS has a total area of 365 sq km with 46 kilometers long and 5–12 kilometers wide and constitute 6.1% of a total area of Palestinian territory land. The mid-year population of the year 2014 was 1.760.037 that represents about 38.7% of the total population in the Palestinian territories. GS is consider as one of the most overcrowded areas in the world with a population density of 4.822 inhabitants/sq.km.

Gaza strip consists of four cities, fourteen villages and eight refugees' camps and administratively divided into the following main five governorates:

**North-Gaza governorate** with an area of 61 sq. km, constitutes 16.7% of the total area of GS and 1.0% of the total Palestinian territory. The total number of population lived in North-Gaza governorate during 2014 was 348.808 individuals with 5718 inhabitants/sq.km.

**Gaza governorate** with an area of 74 sq. km, constitutes 20.3% of the total areas of GS and 1.2% of the total Palestinian territory. The total number of population lived in Gaza governorate during 2014 was 606.749 individuals with 8199 inhabitants/sq. km.

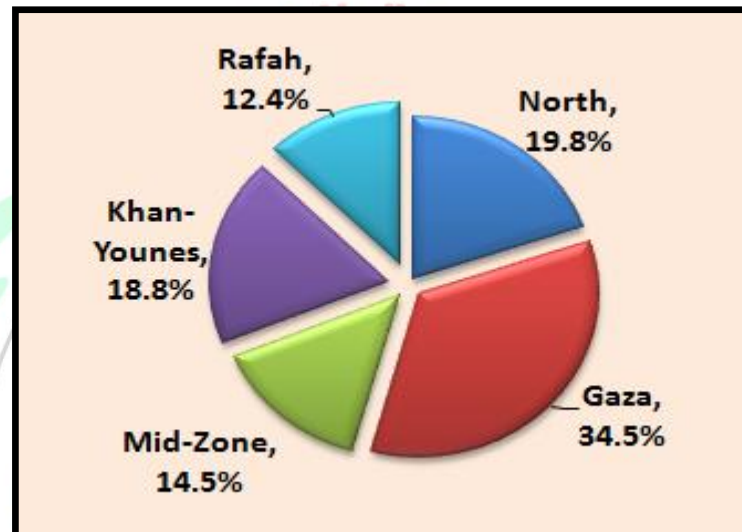
**Mid-Zone governorate** with an area of 58 sq. km, constitutes 15.9% of the total area of GS and 1.0% of the total Palestinian territory. The total number of population lived in Mid-Zone governorate during 2014 was 255.705 individuals with 4408 inhabitants/sq. km.

**Khan-Younes governorate** with an area of 108 sq. km, constitutes 29.6% of the total area of GS and 1.8% of the total Palestinian territory. The total number of population lived in Khan-Younes governorate during 2014 was 331.017 individuals with 3064 inhabitants/sq. km.

**Rafah governorate** with an area of 64 sq. km, constitutes 17.5% of the total area of GS and 1.1% of the total Palestinian territory. The total number of population lived in Rafah governorate during 2014 was 217.758 individuals with 3402 inhabitants/sq. km.

According to the distribution of the population by governorates during the year 2014 (graph 1), the most populated governorate was Gaza governorate with 34.5% of the total GS population followed by North-Gaza governorate with 19.8%. On the other hand, Rafah governorate had the lowest rate of population of 12.4%. The percentage of population under 15 years old was 43.3% of the total population in GS.

**Graph 1: Distribution of population by governorates in GS, 2014**



Gaza strip is a vital part of the Palestinian entity and identity and its place in the middle of the Palestinian territory makes it a prominent focus of global politics. In August 2005, the Israel evacuated the occupied GS, including all existing Israeli settlements and all military installations, which redeployed outside the GS. In reality, the Israeli unilateral disengagement imposed huge prison for the Palestinian people introduced by Israeli government. All these Israeli activities violate the United Nations (UN) human rights conventions and UN decisions. Since 2006, a strict siege was began on Gaza resulted in severe restriction of population movement, increased health risks and impede the delivery of health and social services. On December 2008, November 2012 and July 2014, Israeli army launched a devastating "Wars on Gaza" and large areas of GS had been razed to the ground, leaving many thousands homeless and the already dire economy in ruins. Economically, the GS continues to be totally dependent on the Israeli Occupation State, which is consider as its primary trading partner. As a result, unemployment increased and people were induced to migrate for work and create conditions conducive to illegal drug use that have expanded rapidly in GS in recent years. Israeli policy of limiting the daily amount of fuel and electricity to Gaza has not only made healthcare unreliable and



inadequate but also leaves entire health care facilities without electricity for 8 to 12 hours per day. Drinking water and sewage systems are strongly affected, leaving an estimated 25-30% of Gazans without running water, while 40-50 million liters of untreated sewage floods into the sea each day.

At the same time, there are important areas of concern including poor coordination and implementation of policies and programs across geographic areas and between the governmental and nongovernmental (NGOs) sectors of the health system; many under-qualified health care providers; and weak systems for continuing education.

The above-mentioned factors make GS susceptible for frequent outbreaks of communicable diseases from time to time. Therefore, the Ministry of Health (MOH) realizes this fact and provides continuous support to preventive medical activities in order to conduct more efforts to prevent and control communicable diseases. On other hand, this situation has led to adopt a changeable strategy according to the situation on the ground in order to guarantee the continuity of services.

### **Sources of data**

After the establishment of PNA (1994), epidemiology department has been developed in Al-Rimal martyr's clinic and communicable diseases surveillance programs have been designed in order to monitor, prevent and control communicable diseases in GS. In 1996, a second center was opened in Khan-Younes governorate to serve southern governorates. Now five epidemiology centers are functioning in all governorates.

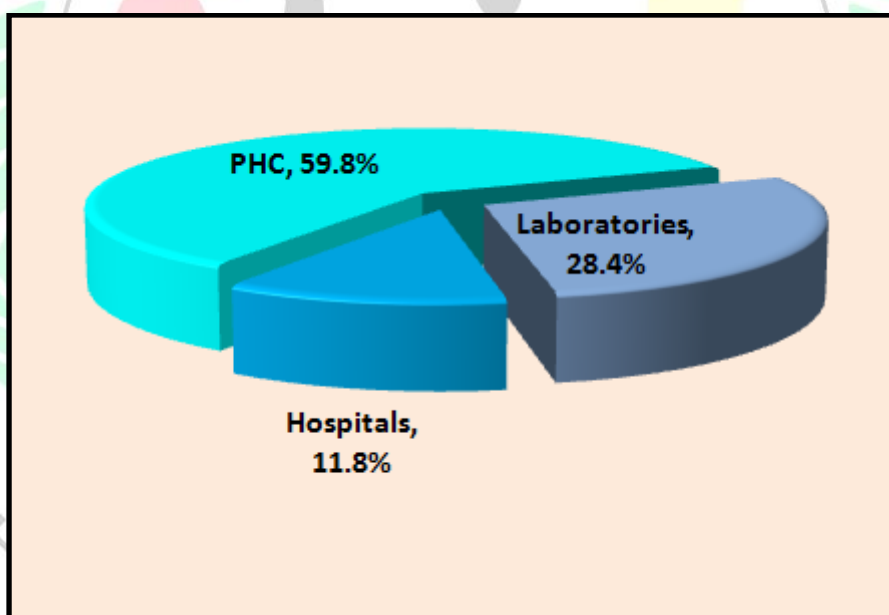
Data about communicable diseases are collected from all health providers and facilities participated in communicable diseases surveillance system. In GS, we apply disease specific approach of communicable disease surveillance, which depends essentially on passive surveillance system. Reporting is very important for detecting any unusual increase of the disease to take needed preventive measures. Despite the significant gap between real and reported data from all providers, all received data are routinely analyzed and interpreted to be part of the (monthly, quarterly and annually) reports on communicable diseases to control and prevent them and to help in decision-making.

### Health facilities participated in the notification

There are four health care providers (Governmental, United Nations Relief and Works Agency (UNRWA), NGO's and Private sector) in GS. The Governmental and UNRWA offer health services to the most population of GS. The NGO's and Private sector serve small part of the population so why we will include these providers under one item "NGO's".

During 2014, 126 (78.3%) health facilities out of 161 registered health facilities participated in reporting of registered communicable diseases. The main source of data are received from primary health care (PHC) centers that constitute more than 47% from all participation (graph 2).

**Graph 2: Distribution of health facilities participation in notification of communicable diseases in GS, 2014**



Among these facilities, there were 15 out of 20 hospitals (12 governmental and 8 NGOs), 76 out of 94 PHC centers (61 governmental, 20 UNRWA and 13 NGOs) and 36 out of 47 laboratories (31 governmental and 16 NGOs) participated in the notification (table 1).

As shown on table 1, the notification from UNRWA facilities was very significant (100%). The notification from NGOs (Laboratories and PHC) facilities was very poor (43.7% and 15.4% respectively). In fact, NGOs facilities serve a few quantity of people and more

effort should be paid at this level for better notification. An average of 75% of governmental hospitals participated in the notification process and also the participation of NGOs hospitals was 75%. The participation of governmental PHC centers was 88.5%, while NGOs Health care centers was 15.4%. This reflects that more efforts are needed to improve the participation of NGOs in notification and reporting of communicable diseases.

**Table 1: Percentage of notification by type of health providers in GS, 2014**

Type of Provider		No. of Participated facilities	Total no. of facilities	Percentage of notification
Hospitals	Gov	9	12	75%
	NGOs	6	8	75%
PHC	Gov	54	61	88.5%
	UNRWA	20	20	100%
	NGOs	2	13	15.4%
Laboratories	Gov	29	31	93.5%
	NGOs	7	16	31.2%

By the end of the year 2014, a total of 278.286 cases of notifiable diseases were reported to the epidemiology department in the five governorates with about 1% increase comparing with 2013 (275.585 cases). The majority of reported cases were from North governorate (35.5% of notifications), followed by Khan-Younes and Gaza governorates (about 20%). The lowest notification was reported from Rafah governorate (8%).

We are looking to improve the participation from health facilities in notification and reporting of communicable diseases through:

1. Increasing the awareness of the notification by all health providers,
2. Active collaboration between Epidemiology Department and health facilities,
3. Establishing the Feedback information from Epidemiology department to all health providers, who participated in notification of communicable diseases.

Communicable diseases and their related events in GS are divided into three groups according to their epidemiological importance (annexes 1-5):

**Group A diseases:** Diseases of this group are of high importance so they must be immediately notified with accuracy due to the urgency of investigation and intervention. This group includes Acute Flaccid Paralysis (AFP), Acute Poliomyelitis, Human immunodeficiency virus / Acquired immunodeficiency syndrome (HIV/AIDS), Cholera, Diphtheria, Food poisoning, Measles, Rubella, Meningococcal diseases, Hemophilus Influenza type b(Hib) Meningitis, Rabies, Tetanus and Adverse Events Following Immunization (AEFI).

**Group B diseases:** Diseases of this group are of the second highest of 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 Tract infection (URTI), Ascariasis, Amebiasis, Giardiasis, Strongyloidiasis, Enterobiasis, Trichuriasis, Hymenolepiasis, Toxoplasmosis and Leprosy.

### **Morbidity of communicable diseases**

Communicable diseases 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. Good implementation of a national surveillance system of communicable diseases is a key part of detection, prevention and control of these diseases. Through comprehensive implementation of the national surveillance system of communicable diseases, Palestinian health authority had succeeded in prevention and complete control of many communicable diseases. There were no registered cases of poliomyelitis, rabies, diphtheria, plague, leprosy or schistosomiasis in the last years. Other communicable diseases, such as meningococcal meningitis, non-specific meningitis, HIV/AIDS, hepatitis, mumps, tuberculosis, diarrhea, pneumonia and parasitic infestation remain challenges. Continues improvement of regular notification, reporting, evaluation and interventions needed for more success in prevention and control of these diseases. Despite the amelioration of



reporting system, we still have under-reporting from some health providers. Therefore, the data presented in this report do not reflect the real situation of these diseases.

## **Vaccine Preventable Diseases**

Vaccination is one of the most important public health interventions for prevention and control of vaccine preventable diseases. Globally, their use had led to eradication of smallpox, partial eradication of poliomyelitis, elimination of tetanus, partial elimination of measles and Rubella and substantial reductions in the morbidity and mortality attributed to diphtheria, pertussis, and Haemophilus Influenza type B Meningitis. The targets of the Global Immunization Vision and Strategy (GIVS) set by World health organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) call for all countries to be immunizing by 2010 at least 90% of their total child population under five years old, and at least 80% of children under five in every district throughout the country. Each country has its own policies as to which vaccines to use. Immunization program performance is now increasingly measured not only by immunization coverage rates, but also, and more important, by measuring the reduction in the incidence of expanded program of immunization (EPI) target diseases. Surveillance data are crucial in assessing whether disease eradication, elimination and reduction targets are being met and where resources should be targeted for maximum cost-effectiveness.

Palestinian MOH adopted a comprehensive EPI to prevent 11 vaccine-preventable diseases that occur mainly in infants and children. The strength of the Palestinian immunization program plays an important role in improving child health through reduction of morbidity and mortality caused by targeted vaccine preventable diseases. The targeted vaccine preventable diseases through EPI are Tuberculosis (TB), Poliomyelitis (polio), Diphtheria-Tetanus- Pertussis (DTP), Measles-Mumps-Rubella and congenital rubella syndrome (MMR), Hepatitis B, Haemophilus influenza type b (Hib) and Pneumococcal Conjugate Vaccine (PCV).

Our target is that every child will receive a safe and effective vaccine for the targeted 11 vaccine-preventable diseases. So according to MOH policy, any infant from any governorate can receive his vaccine at any PHC center in any governorate. Table 2 shows the national immunization schedule for these diseases.

**Table 2: National immunization schedule in GS, 2013**

Age at vaccination	Type of vaccine
At birth	BCG, HB1
1 month	IPV1
2 months	DTP1, Hib1, HB2, IPV2, TOPV1, PCV1
4 months	DTP2, Hib2, HB3, TOPV2, PCV2
6 months	DTP3, Hib3, HB4, TOPV3
12 months	MMR1, PCV3
18 months	MMR2, TOPV4, DTP4
6 years	DT, TOPV5
15 years	Td

Based on the reports received from immunization department, the average coverage rates exceeded 99% for all vaccines (table 3), which had clear impact on eradication, elimination or reduction in morbidity, mortality and disability caused by vaccine preventable diseases.

**Table 3: Annual immunization coverage for all vaccines in GS, years 2005-2014**

Vaccine	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>BCG</b>	100%	100%	100%	100%	99.6%	100%	99%	98.9%	100%	99.5%
<b>HB3</b>	98.7%	97.9%	97.9%	98.9%	94.1%	98.9%	99%	99.3%	99.7%	99.6%
<b>TOPV3</b>	98.8%	98.5%	98.5%	98.7%	96.5%	100%	101.3%	99.3%	100%	99.8%
<b>DTP3</b>	97.8%	98.7%	98.7%	98.9%	99.1%	100%	101%	99.5%	100%	99.8%
<b>Hib3</b>	-	-	-	-	-	-	101%	99.5%	100%	99.8%
<b>PCV2</b>	-	-	-	-	-	-	-	99.5%	99.7%	99.6%
<b>MMR1</b>	95.1%	98.5%	98.5%	94.4%	98%	100%	98.2%	99%	98.1%	99.4%

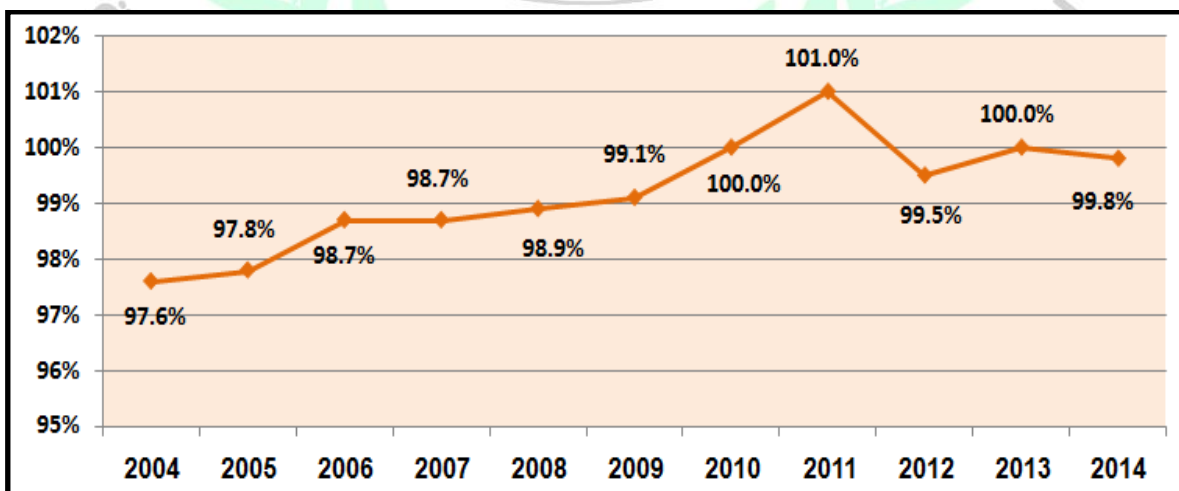
Immunization coverage is used in order to monitor progress in achieving and maintaining high levels of immunization. During 2014, according to table 3, the overall coverage for TOPV3, DTP3 and Hib3 was 99.8%, for HB3 and PCV2 was 99.6%, for BCG was 99.5% and for MMR1 was 99.4%.

The continuous supply and distribution of vaccines is one of the pillars that allow this program to be one of the best-implemented health programs in Palestine. This extraordinary achievement were accomplished because of a combination of different reasons like the availability of the vaccines throughout the year, efficient cold chain (including refrigerators powered by solar energy which located in each governorate), good appointment system, increase the awareness of Palestinians mothers regarding the importance of vaccines and continuous follow up of defaulters by the health center staff.

During 2014, 57430 infants received their vaccines, which constitute more than 99% from the total targeted population (57598). By convention, the success of routine immunization programs has been measured by the coverage achieved with the third dose of DTP3 among children aged 6 months. DTP3 coverage serves as the primary indicator of an immunization program's performance and in Gaza strip during 2014 it was 99.8%.

According to graph 3, since the year of 2004 until 2014 there was a continuous maintenance of the immunization coverage more than 97%. In spite of the sever isolation policy of the Gaza strip in the last seven years; restriction of the movement of people and goods; the increasing poverty rate, high unemployment rate and socio-economic hardship; wars on Gaza on 2009, 2012 and 2014 etc., the immunization coverage was not affected but still growing and was closed to about 100%.

**Graph 3: Annual DTP3 immunization coverage in GS, 2004-2014**



## Group A disease

By analyzing the reported data of diseases of this group, we realize that no cases of acute poliomyelitis, cholera, diphtheria, measles, rabies, rubella or tetanus were reported during year 2014 (Annex 5).

### Poliomyelitis and Acute Flaccid Paralysis

The WHO adopted a resolution to eradicate poliomyelitis from the world by year 2018. The pillars of polio eradication are routine immunization, supplementary immunization through national immunization days and “mopping-up” campaigns, surveillance for AFP cases and environmental surveillance of wild poliovirus. Palestine adopted these pillars and in Gaza Strip, since years there was a high coverage of poliomyelitis vaccination closed to 100% (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 cases was implemented; no cases of polio were reported since 1984 and regular environmental surveillance of sewage for the presence of wild poliovirus are conducted. So, in the year 2006, the regional committee for the Eastern Mediterranean Region (EMR) of the WHO certify that Palestine is free from poliomyelitis.

**Table 4: Polio immunization coverage in GS, 2014**

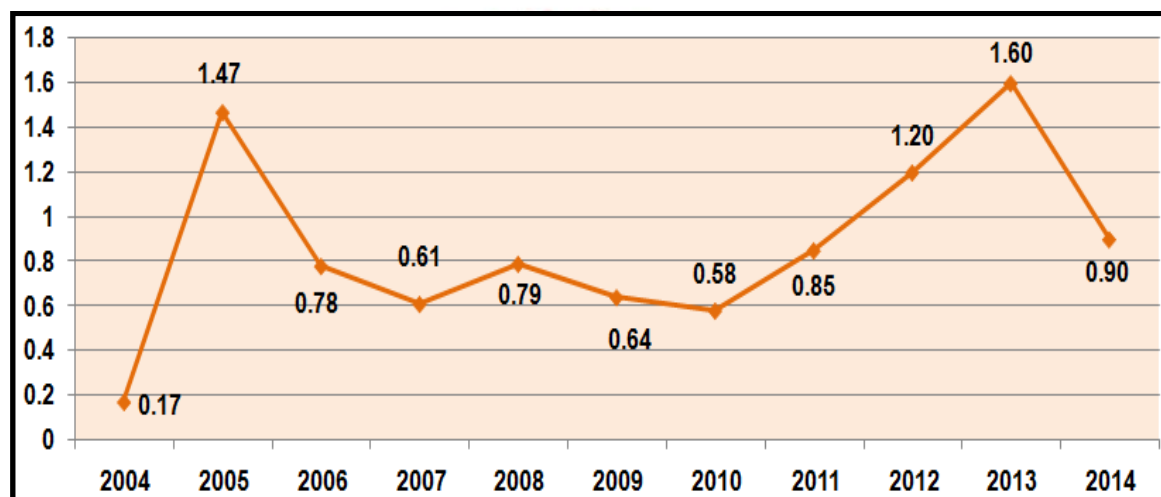
Type of vaccine	Vaccinated and registered	Total
IPV2	Total vaccinated	57260
	Total registered population	57286
	Coverage	99.9%
TOPV3	Total vaccinated	57325
	Total registered population	57448
	Coverage	99.8%

As seen on table 4, the total number of children received IPV2 vaccine was 57260 children constituting a coverage of about 99.9% from the total number of children, while the total number of children received TOPV3 vaccine was 57325 children constituting a coverage of 99.8% from the total number of children.



According to WHO estimation, the incidence rate for detected AFP cases must be at least one case for every 100.000 children aged under 15 years. During the year of 2014, only 7 cases of AFP were reported in GS (graph 4) with an incidence rate of 0.89 per 100,000 children under 15 years comparing to 1.6 per 100.000 population in the year 2013 (12 cases) and to 0.85 in the year 2012 (9 cases).

**Graph 4: Annual incidence rate per 100.000 of AFP in GS, years 2004-2014**



The registered cases in the year 2014 were reported from all governorates as the following: Gaza governorate (4 cases), Khan-Younes, Mid-Zone and North governorates (1 case in each). All these cases were free of Poliomyelitis.

During the first quarter 2014, a second round of national supplementary polio immunization campaign, using trivalent oral polio vaccine and targeting children up to five years of age, was conducted in Gaza Strip in response to the threat posed by wild Poliovirus (WPV1) isolated from sewage waters in the occupied territories in 1948 and Palestinian territory in West Bank and Gaza Strip. The vaccination coverage during this campaign reached about 99.2%. During this period in Palestinian territories, no cases of paralytic polio has been reported.

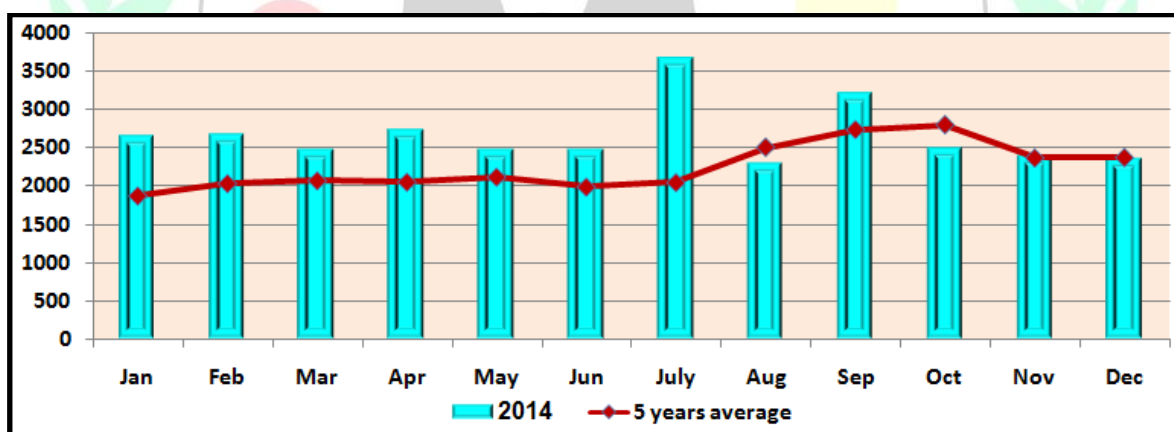
These results reflects the great effort of the epidemiology department team and all other involved health care providers in maintenance of Palestine as free country from Poliomyelitis.

## AIDS/HIV

The global HIV pandemic continues to remain a serious public health problem in spite of the advances in fighting this disease. According to recent reports, the number of HIV/AIDS patients has risen to surprising levels in Arab and Islamic countries over the last few years.

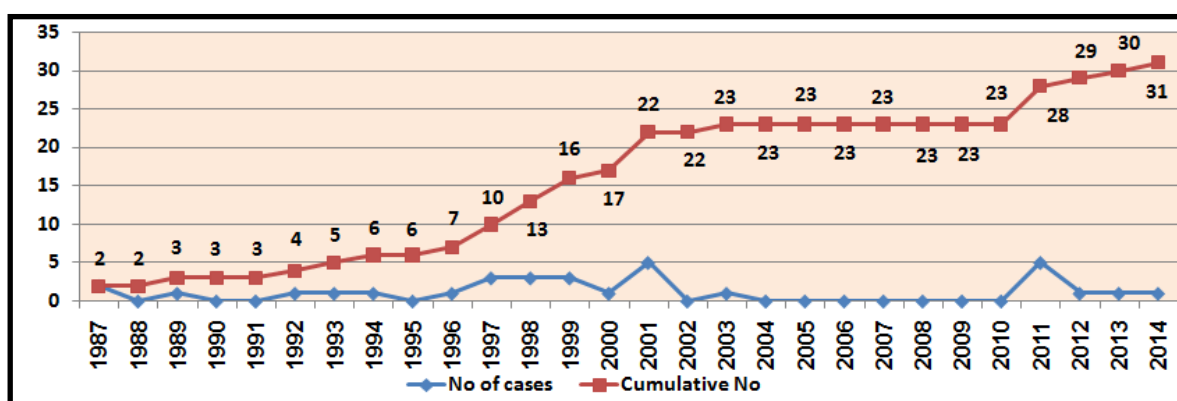
In Palestine, HIV screening was started in 1987 for blood donors. In 1996 screening was extended to include pre-employment investigation, external migrants, drug addicts, prostitutes, TB patients and close HIV contacts. Since 1997 blood donors' samples were screened using Abbott micro particles immunoassay (MEIA). Provisional testing of samples for HIV/AIDS for other purposes was carried out using Enzyme-Linked Immunosorbent Assay (ELISA) test. Positive screened samples are confirmed using Western Blot test (Annexes 7-11).

**Graph 5: Monthly tested blood samples for HIV from blood donors in GS, 2014**



In 2014, a total of 40776 blood samples were tested for HIV (Annex 11). Among these samples, 32052 (78.6%) were tested from blood donors (graph 5) and no positive samples were registered among them. Among the rest samples tested from different patient (8724 samples), only one case was positive with an overall incidence of 0.01%. In 2013, a total of 40790 blood samples were tested for HIV. Among these samples, about 77.4% (31585) were tested from blood donors. The rest (9205) were tested for different patients and only one positive sample was registered with an incidence of 0.01%. Although HIV infection is reported in most countries in the world, Gaza as other Arabic regions reports low incidence rate of HIV/AIDS.

**Graph 6: Annual new and cumulative HIV/AIDS reported cases in GS, 1987-2014**



Graph 6 shows that the cumulative reported cases in Gaza Strip from 1987 until 2014 was 31 cases. From these cases, 23 cases (74.2%) were male and 14 cases (45.2%) were married. The majority of cases 19 (61.3%) were from Gaza governorate. The main route of transmission 17 cases (54.8%) was heterosexual. At the date of diagnosis, 19 (61.3%) cases were diagnosed as having first stage (asymptomatic) according to WHO classification and 10 (32.3%) cases as having AIDS stage (severe). The majority of cases 24 (77.4%) were in their productive age. The majority of cases 20 (64.56%) were died due to lack of treatment.

During the year 2014, only one case was reported with an incidence rate of 0.06/100.000 population. The same incidence was reported in the years 2012 and 2013, while five cases were reported in the year 2011 with an incidence of 0.31/100.000 population. By the end of the year 2014 in Gaza Strip, there are a total of 11 cases living with HIV/AIDS with a prevalence of 0.62/100.000 population. According to national adopted treatment protocol, seven of them are under treatment and four are un-eligible for treatment. Of these 11 cases 6 (54.5%) are male, 6 (64.5%) cases are married and 6 (54.5%) cases from Gaza governorate. The majority of infections 8 (72.7%) were transmitted through heterosexual route and one case (9%) through homosexual route. Only 2 infections were attributed to maternal to child transmission. About half of these cases (45.5%) were diagnosed during the year of 2011. In GS since the introduction of treatment for these patients living with HIV in the year 2010, the case fatality rate is zero%. It is important to note that, given the strong “taboos surrounding the discourse on HIV”, the real mode of transmission is not likely to be documented in many instances. There are strong limitations about what patients living with HIV can tell us, so these data do not reflect the real transmission route.

## Measles

The state of Palestine adopted the WHO recommendations regarding elimination of measles based on the following strategy:

1. Strengthening routine infant immunization and achieving >90% coverage of first dose of a measles containing vaccine (MCV1) in all governorates.
2. Achieving high coverage (>90%) with a second dose of measles vaccine
3. Conducting catch-up supplementary immunization activities for all susceptible age groups.
4. Strengthening surveillance for measles
5. Optimal case management for children with measles

Before the introduction of measles vaccine at age of 9 months in 1980, the disease was endemic in Palestine. In 1986, a second-dose incorporated with mumps and rubella vaccine as a combined vaccine (MMR) was added at 15 months, and once again, a second dose of MMR was added to the immunization schedule since 2009 at 18 months instead of the nine months dose. The first dose of MMR now is given at 12 months.

In GS the current implemented strategy for elimination of Measles has led to a dramatic decline in measles cases in the last 30 years and no cases were reported in the last ten years. So GS is considered by WHO to be in the phase of eliminating of this disease as the WHO criteria are fulfilled. High immunization coverage (more than 98%) is sustained with two-vaccine doses (since 1985), added to the different supplementary national campaigns conducted at different times.

**Table 5: Measles immunization coverage in GS, 2014**

Type of vaccine	Vaccinated and registered	Total
<b>MMR1</b>	Total vaccinated	55366
	Total registered population	55680
	<b>Coverage</b>	<b>99.4%</b>
<b>MMR2</b>	Total vaccinated	52034
	Total registered population	53557
	<b>Coverage</b>	<b>97.2%</b>



As seen on table 5, the total number of children received MMR1 vaccine were 55366 children constituting a coverage of more than 99% from the total number of children, while the total number of children received MMR2 vaccine were 52034 (with a coverage of 97.2%).

## **Tetanus**

Tetanus is an acute, often fatal disease caused by the spore-forming bacterium *Clostridium tetani*. Tetanus is almost entirely preventable through immunization. The WHO recommended strategies for achieving Maternal and Neonatal Tetanus (MNT) elimination include:

1. Strengthening routine immunization of pregnant women with tetanus toxoid vaccine (TT)
2. TT Supplementary Immunization Activities (SIAs) in selected high risk areas, targeting women of child bearing age with 3 properly-spaced doses of TT
3. Promotion of clean deliveries
4. Reliable NT surveillance

In Palestine, TT was introduced in the immunization schedule since 1957. It is incorporated with diphtheria and pertussis as a combined vaccine (DTP). Since June 2012, it was incorporated in Penta vaccine as DTP plus *Haemophilus Influenza* type B and Hepatitis B. Primary vaccination with the tetanus vaccine series consists of a four-doses, administered at ages 2, 4, 6 and 18 months. A fifth dose incorporating with diphtheria (DT) is given for children aged 6 years to confer continued protection against disease during the first year of schooling. In addition, a sixth dose incorporating with adult diphtheria (Td) vaccine is given for children aged 15 years, which prolonged the protection for at least 10 years. TT Supplementary Immunization Activities (SIAs) in selected high-risk areas, targeting pregnant women by two doses in the first pregnancy and third dose in the next pregnancy.

In GS, all WHO recommended strategies have been implemented: almost all deliveries were at public health institutions in hygienic circumstances; a high immunization coverage (more than 99%) against tetanus among infants is reached; six-dose vaccination policy is implemented according to EPI protocol and MNT elimination has been achieved. Since the last several years, neither cases of NT nor MT were reported in GS.

**Table 6: DTP3 immunization coverage in GS, 2014**

Type of vaccine	Vaccinated and registered	Total
<b>Penta3</b>	Total vaccinated	57320
	Total registered population	57448
	<b>Coverage</b>	<b>99.8%</b>

Table 6 shows that the total number of children received Penta3 vaccine in the year 2014 was 57320 children constituting a coverage of 99.8% from the total number of targeted children.

### **Meningitis**

Meningitis is an infection that involves the membranes overlying the brain and spinal cord (meninges) and the causative agents vary greatly among the different age groups. Meningitis has a high prevalence in developing countries, with associated mortality and risk of severe residual neurological problems. There are several different causes of meningitis like bacteria, virus or fungus infection.

### **Bacterial Meningitis**

Bacterial meningitis is an important serious illness worldwide; a range of different bacteria can cause it: Neisseria Meningitides, Haemophilus influenza type b, Streptococcus pneumoniae and others.

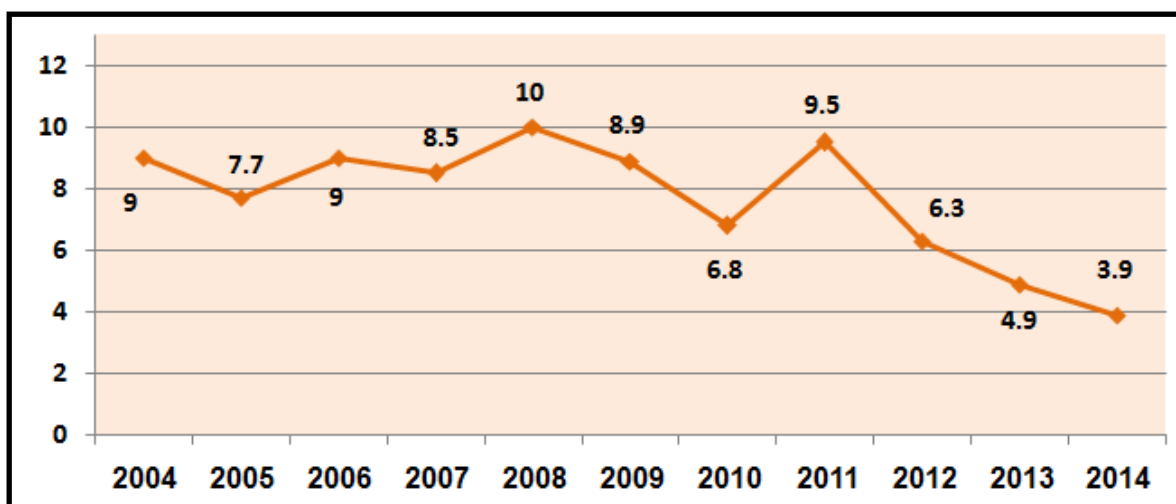
### ***Neisseria Meningitides Diseases:***

Diseases caused by Neisseria Meningitides are considered as life threatening illnesses and involve many organs causing meningitis and septicemia. These types should always be viewed as a medical emergency. These diseases remain a priority concern types because of the fatality they cause.

In GS these diseases are endemic with seasonal and governorate variations. As seen on graph 7, the yearly incidence of Neisseria Meningitides diseases in years 2004-2011 fluctuated between "6.8 to 10" per 100.000 population. In the years 2012-2014, the incidence rate registered a continuous decrease compared to the previous years. In the year 2014, a total of 68 cases were reported of Neisseria Meningitides diseases with an

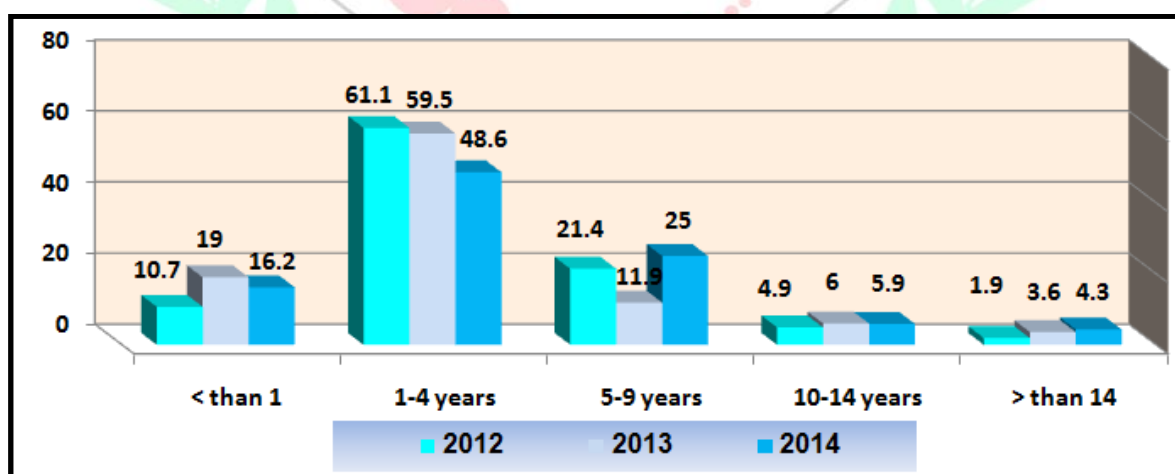
incidence of 3.9 per 100.000 population while in the year 2013, a total of 84 cases were reported with an incidence of 4.9 per 100.000 population.

**Graph 7: Annual incidence rate per 100.000 of Neisseria Meningitidis diseases in GS, years 2004-2014.**



There was a male predominance (40 cases representing 58.8%) than female. Age distribution as seen on graph 8 showed that the majority of cases were registered between infants and children aged less than 5 years (about 80%).

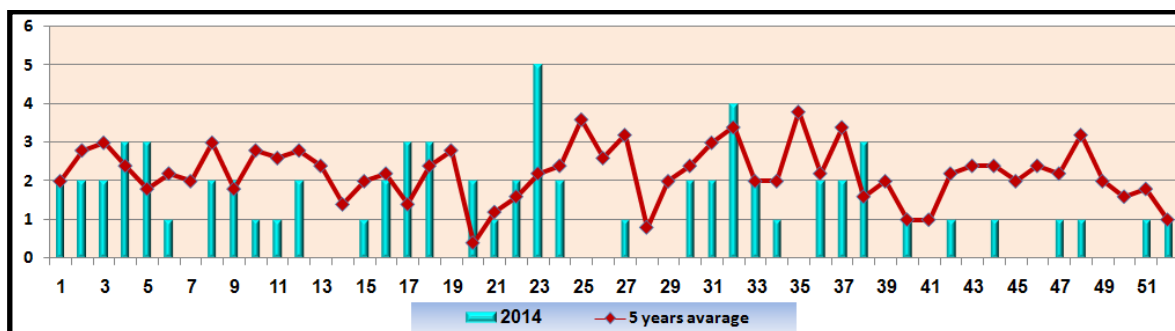
**Graph 8: Incidence rate of Neisseria Meningitidis Diseases by age group in GS, 2012-2014**



As shown on graph 9, according to weekly reported cases an increase of reported cases was observed during week 23 (5 cases) and week 32 (4 cases) while no reported cases were

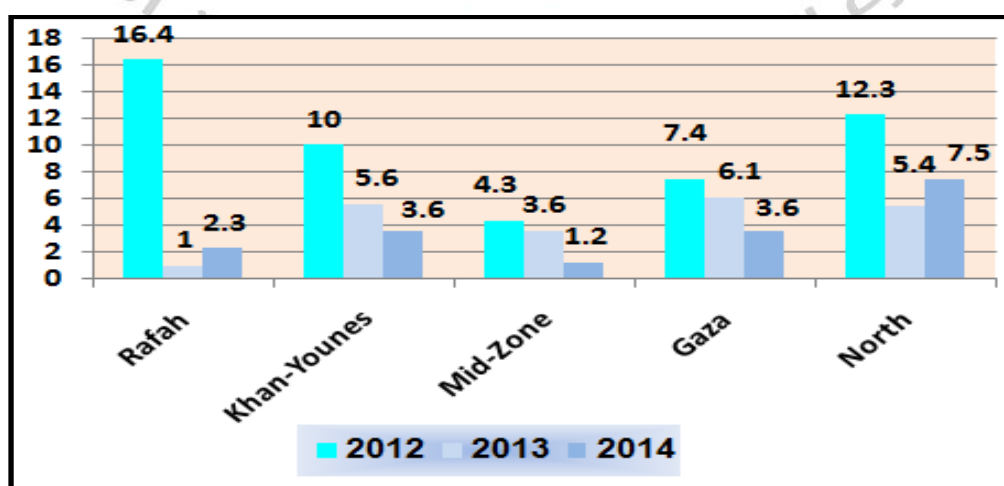
observed in some weeks throughout the year. It is reflected that there is a clear decrease of weekly reported cases in the year 2014 compared to the 5 years average (annex 6).

**Graph 9: Weekly reported cases of Neisseria Meningitides diseases in GS, 2014**



According to the geographical distribution as shown in graph 10, it is observed that during the year 2014 the highest incidence rate per 100.000 population was reported in North governorate (7.5). The reported incidence was similar in Gaza and Khan-Younes governorates (3.6 per 100.000 population), while in the Rafah it was 2.3 and in Mid-zone it was 1.2 per 100.000 population. In the year 2013, the geographical distribution was totally different, where Gazah Governorate reported a high incidence rate (6.1 per 100.000 population) followed by Khan-Younes governorate (5.6 per 100.000) while the lowest incidence rate was in Rafah (1 per 100.000 population). It is observed that significant changes were observed in the geographical distribution in the year 2013 and 2014 compared to the year 2012 especially in Rafah governorate, where the incidence rate dramatically declined from 16.4 to 1 and 2.3 per 100.000 population after the outbreak.

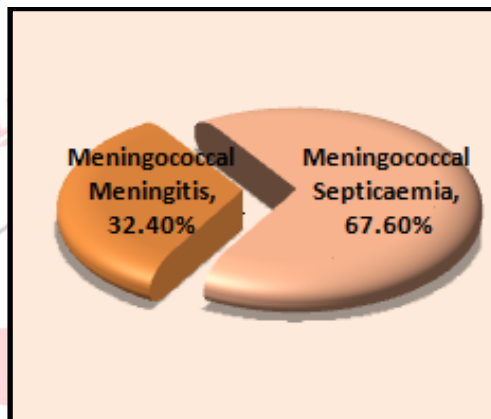
**Graph 10: Geographical distribution of Neisseria Meningitides diseases per 100.000 population, years 2012-2014**





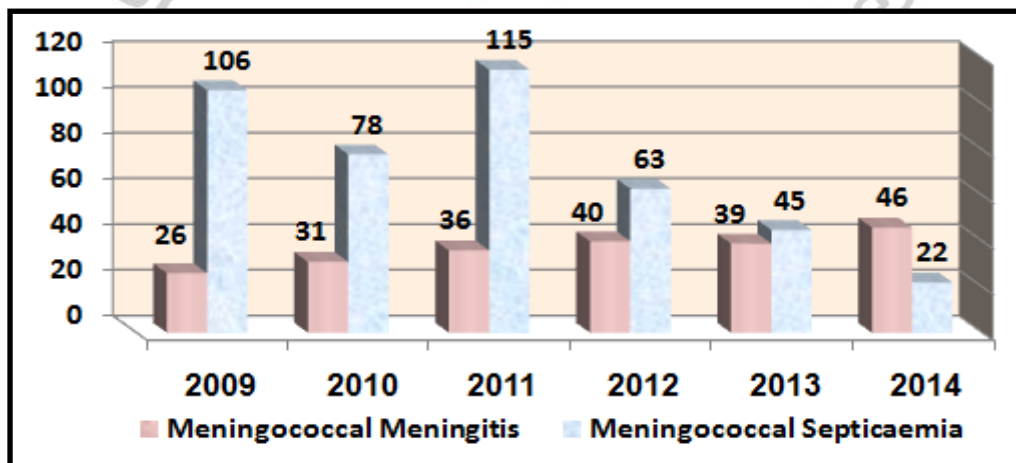
According to the type of clinical manifestation (graph 11), 47/68 cases (69.1%) were diagnosed as Meningococcal Septicemia (MC) and 21 cases (30.9%) as Meningococcal Meningitis (MM).

**Graph 11: Distribution of Neisseria Meningitides diseases by type of disease in GS, 2014**



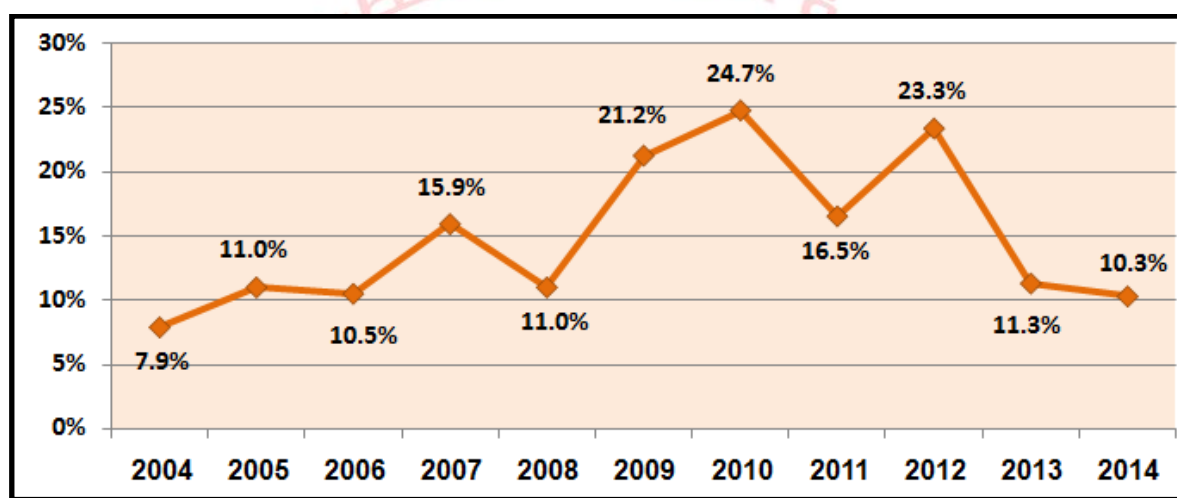
It is observed that there is a continuous increase of MM cases in the last years compared to MC cases (Graph 12). In the years 2009-2013, the incidence of MC cases was higher than the incidence of MM cases reported during these years while in the year 2014, the incidence of MM cases was higher which reflects more or less the international distribution of these types.

**Graph 12: Distribution of Neisseria Meningitides diseases by type of disease in GS, years 2009-2014**



During the year 2014, seven cases were died with a case fatality rate (CFR) of 10.3% reflecting a good decrease comparing to the last two years 2012 and 2013 where it was 23.3% and 11.3% respectively (graph 13). The highest case fatality rate reported among children aged less than 5 years. All deaths were registered among MC cases (CFR: 17.9%) and no deaths were registered among MM cases

**Graph 13: Annual Case Fatality Rate of Neisseria Meningitides diseases in GS, 2004-2014**



### **Haemophilus influenza Type b meningitis (Hib)**

Haemophilus influenza type b bacteria is a cause of bacterial infections that are often severe, particularly among infants. These bacteria can cause several diseases such as meningitis, pneumonia and others. Since the introduction of conjugate Hib vaccine in the routine immunization schedule in 2007 (three doses at 2, 4 and 6 months), Hib meningitis cases registered dramatically decrease and had nearly been eliminated. Since June 2012, vaccine against Hib was included in Penta vaccine.

As seen on graph 14, no cases was reported in GS in 2014 while in the year 2013 four cases were reported with an incidence of 0.23 per 100.000 population. In the years 2007-2012 the incidence ranged between 0 and 0.19 per 100.000 population. In the year 2005, the incidence was 1.46 per 100.000 population. This reflects the right decision of introducing the Hib vaccine in the EPI for children in Palestine.

**Graph 14: Annual incidence rate per 100.000 of Hib meningitis in GS, years 2004-2014**

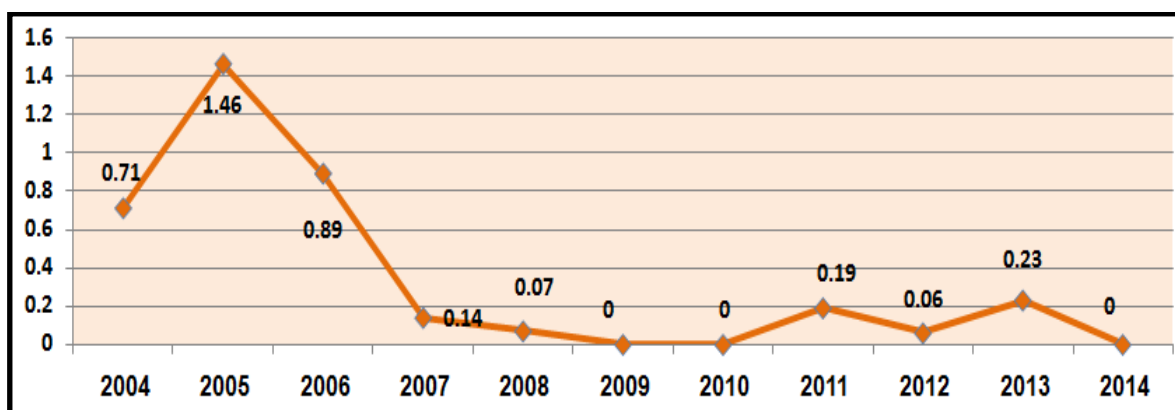


Table 7 shows that in 2014 a total of 57320 infants were vaccinated with a total coverage with Hib3 vaccine of 99.8%.

**Table 7: Hib3 immunization coverage in GS, 2014**

Type of vaccine	Vaccinated and registered	Total
Hib3	Total vaccinated	57320
	Total registered population	57448
	Coverage	99.8%

## Rabies

Rabies is an acute infection of the nervous system caused by rabies virus that is usually transmitted by bites from infected animals. After recognition of a rabies exposure, rabies can be prevented with initiation of appropriate steps including active and passive immunization. After a known animal bites a human, the animal should be captured, confined, and observed for a period of at least 10 days. If an animal escapes after an exposure, it should be considered as infected animals unless proved otherwise and rabies prophylaxis should be initiated using a regimen of four doses of rabies given on days 0, 3, 7, and 14. Since many years, no cases of rabies were reported in GS.

## Diphtheria

Diphtheria was one of the most common causes of illness and death among children. Since the introduction and widespread use of vaccines containing diphtheria toxoid beginning in

the 1957 through the infant EPI program, diphtheria has been well control. In Palestine, the available diphtheria vaccine is combined with tetanus toxoids and pertussis (DTP). Primary vaccination with the DTP series consists of four-doses, administered at ages 2, 4, 6 and 18 months. A fifth dose incorporating with tetanus toxoid (DT) is given for children aged 6 years and a sixth dose having adult diphtheria incorporating with tetanus toxoid (dT) vaccine is given for children aged 15 years. Since June 2012, vaccine against Diphtheria was included in Penta vaccine.

Table 6 shows that a total of 57320 children received DTP3 vaccine with a total coverage of 99.8%.

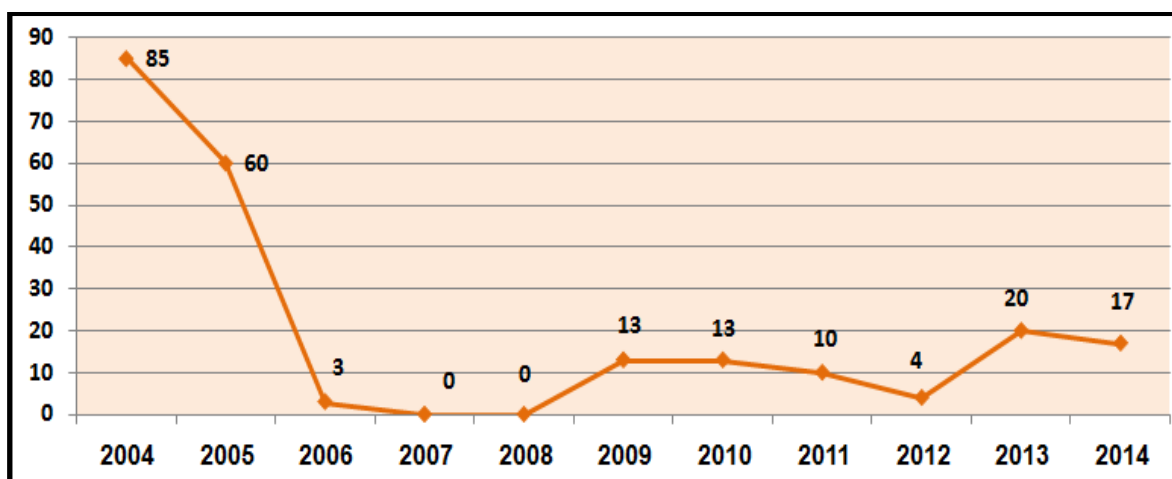
### **Adverse events following immunization**

Adverse events following immunization (AEFI) defined as medical incidence that take place after an immunization and believed to be caused by the immunization within four weeks of a vaccine administration. The main AEFI are divided into local adverse events (injection site hot and cold abscess, lymphadenitis and sever local reaction) and general adverse events (fever, vaccine associated paralytic poliomyelitis, encephalitis, meningitis, allergic reaction, anaphylactic shock). It is observed that there is no reporting of AEFI cases from health facilities in the last few years except for post Bacille Calmette and Guerin (BCG) axillary lymphadenitis cases. This means, there was a serious under reporting of AEFI that needs more efforts in the future to convince the health providers to report other types of vaccine adverse events.

In the year 2014, a total of 17 cases of post-BCG lymphadenitis were reported, while in the year 201 a total of 20 cases were reported (graph 15) and in the year 2012 only 4 cases were reported. The significant decrease of reported post-BCG lymphadenitis since 2004 could be explained by using high quality of BCG vaccine and highly qualified health care providers. The slightly increase in the year 2013 could be attributed to technical errors.



**Graph 15: Annual reported cases of post-BCG lymphadenitis in GS, years 2004-2014**



### **Malaria**

Malaria is a mosquito-borne disease caused by a parasites of the Plasmodium spp. Four species of Plasmodium (P.) can infect humans: P. vivax, P. ovale, P. malariae and P. falciparum . Infection is most commonly caused by P. vivax or P. falciparum , the latter causing the most severe form of malaria.

Since many years, no cases of malaria were reported in GS. In the year 2014, one case was reported in Mid-Zone governorate with a student returning from Sudan.

### **Group B diseases**

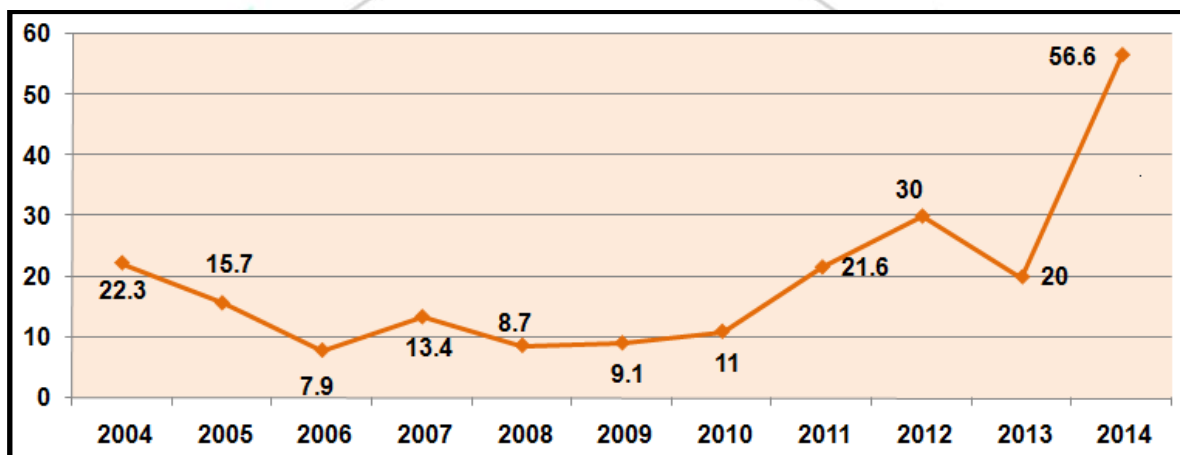
An obvious decrease of reported cases of the majority of group B diseases was registered in the last years, while a serious increase of other diseases like Mumps and Non-specific Meningitis was registered. The registered decrease was due to adoption of special programs for controlling of some diseases (Brucellosis and Tuberculosis) and adoption of other preventive (vaccination) activities for other diseases (pertussis, rubella and hepatitis B vaccines).

### **Other Bacterial Meningitis**

Other bacterial meningitis are caused by variety of bacterial infection including mainly gram-negative rods (especially Escherichia coli) and gram-positive rods. According to adopted case definition of bacterial Meningitis, all meningitis cases caused by bacterial infection are included except Neisseria Meningitidis and Hib.

As shown on the graph 16, during 2014, a total of 997 cases were reported with an incidence rate of 56.6 per 100.000 population representing a clear increase compared to the previous 10 years where the incidence varied from 7.8 to 30 per 100.000 population. During the year 2013, a total of 342 cases were reported with an incidence rate of 20 per 100.000 population. The notification and reporting of Bacterial Meningitis cases was based on clinical manifestations and lab investigations other than isolation of causative agents that is strongly recommended.

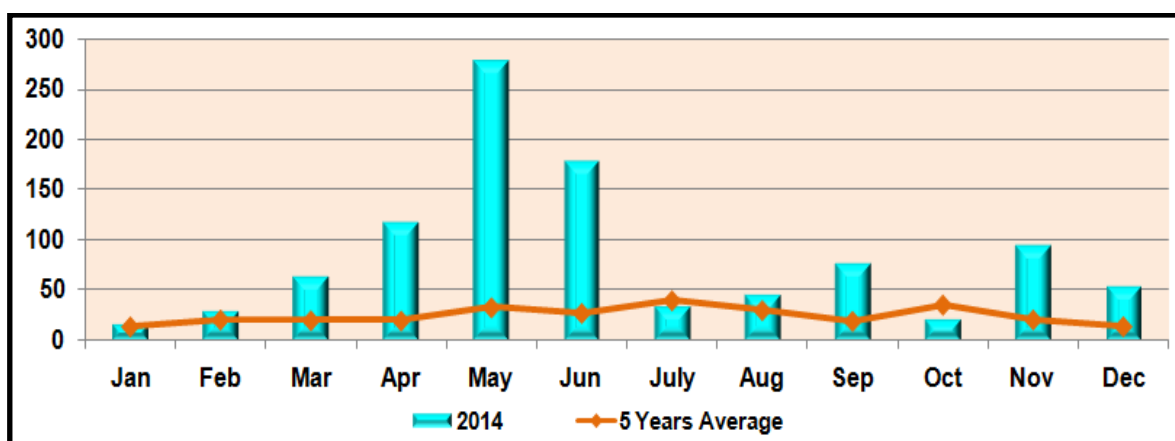
**Graph 16: Annual incidence rate per 100.000 of Other Bacterial Meningitis in GS, years 2004-2014**



As the notification and reporting of bacterial meningitis cases is not depending on isolation of causative agents, the presented figure of incidence rates does not reflect the real situation of the disease.

Comparing to the five years average, it is observed that there is an increase of reported cases of bacterial meningitis in the year 2014 in the spring months, while in the winter months (during the war on Gaza) a mild decrease of reported cases was observed (graph 17).

**Graph 17: Monthly distribution of Other Bacterial Meningitis cases in GS, 2014**



### Pneumococcal Disease

Pneumococcal disease is a disease caused by *Streptococcus pneumonia* bacteria, constituting a public health problem. This bacterium is commonly found in the nose and throat of healthy people without causing disease but sometimes it can cause a variety of diseases mainly meningitis and pneumonia. By the beginning of the year 2012, a Pneumococcal vaccine that protects against different forms of pneumococcal diseases was introduced in the EPI schedule. All infants born on 1<sup>st</sup> January 2012 received a series of three doses of PCV at ages of 2, 4 and 12 months.

There is no available accurate data about the incidence of Pneumococcal diseases in Gaza Strip. During the year 2014, no cases with Pneumococcal diseases were reported to the epidemiology department. Based on laboratory reports during the year 2013, a total of 12 samples (Blood and CSF) revealed culture positive for Pneumococcal bacteria. Starting by the year 2014 a strong recommendation was distributed to health facilities for notification and reporting of Pneumococcal Meningitis to the epidemiology department.

As seen on table 8, the total number of children received PCV1 vaccine were 57260 children constituting a coverage of about 99.9% from the total number of children, while the total number of children received PCV2 vaccine were 55366 constituting a coverage of 99.4%.

**Table 8: PCV immunization coverage in GS, 2014**

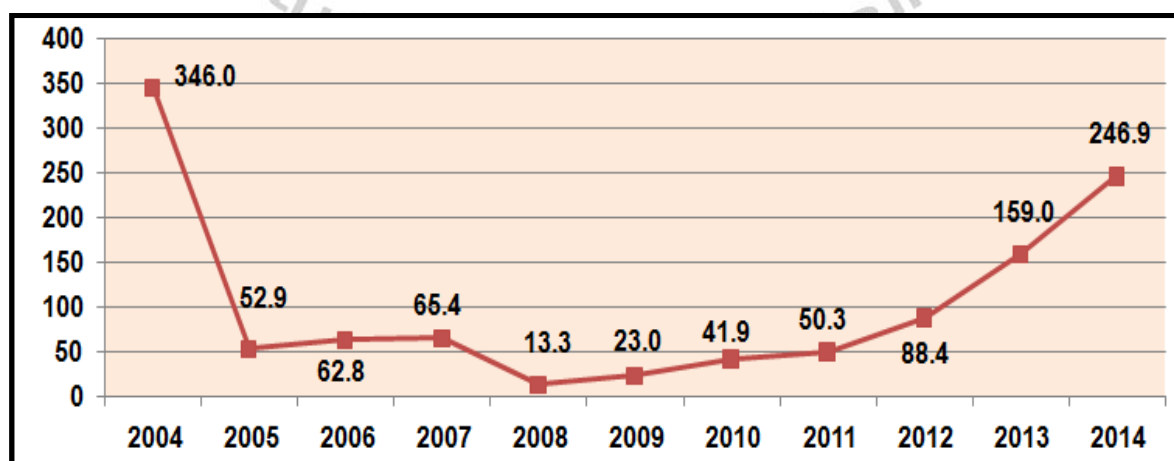
Type of vaccine	Vaccinated and registered	Total
<b>PCV1</b>	Total vaccinated	57260
	Total registered population	57286
	<b>Coverage</b>	<b>99.9%</b>
<b>PCV2</b>	Total vaccinated	55366
	Total registered population	55680
	<b>Coverage</b>	<b>99.4%</b>

### Non Specific Meningitis

One of the most important causes of non-specific meningitis is viral meningitis, which is serious but rarely fatal disease. In Palestine, non-specific meningitis is considered as one of the endemic diseases with some seasonal variation.

During 2014, the reported epidemic in 2013 was continue to be increased. A total of 4345 cases were reported with an incidence rate of 246.9 per 100.000 population comparing to 2707 cases were reported in 2013 with an incidence rate of 159 per 100.000 population (Graph 18). Between the years 2005 and 2011 the incidence rate ranged between 13.3 and 65.4 per 100.000 population. The two previous outbreaks in GS were reported in years 1997 (with an incidence rate of 276/100.000 population) and 2004 (with an incidence rate of 346 /100.000 population), Enterovirus was isolated from small amount of CSF samples analyzed outside GS in all these outbreaks.

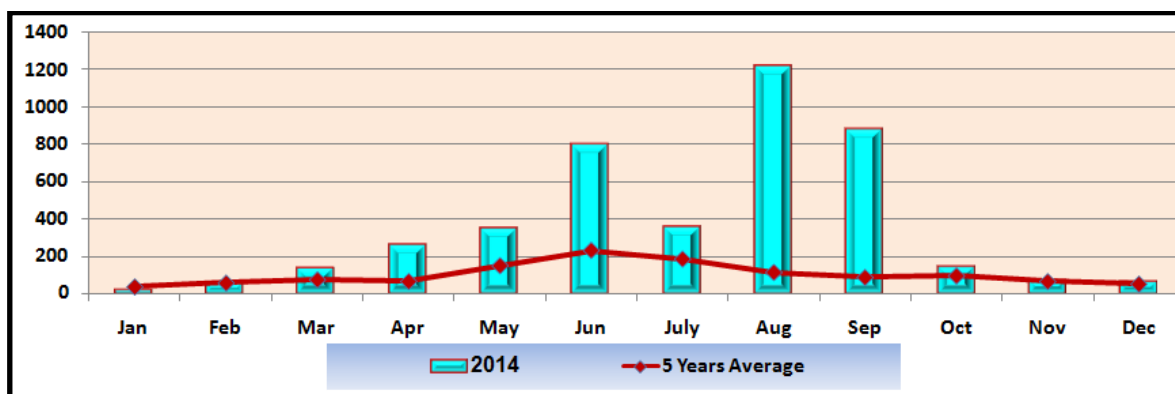
**Graph 18: Annual incidence rate per 100.000 of Non-Specific Meningitis in GS, years 2004-2014**





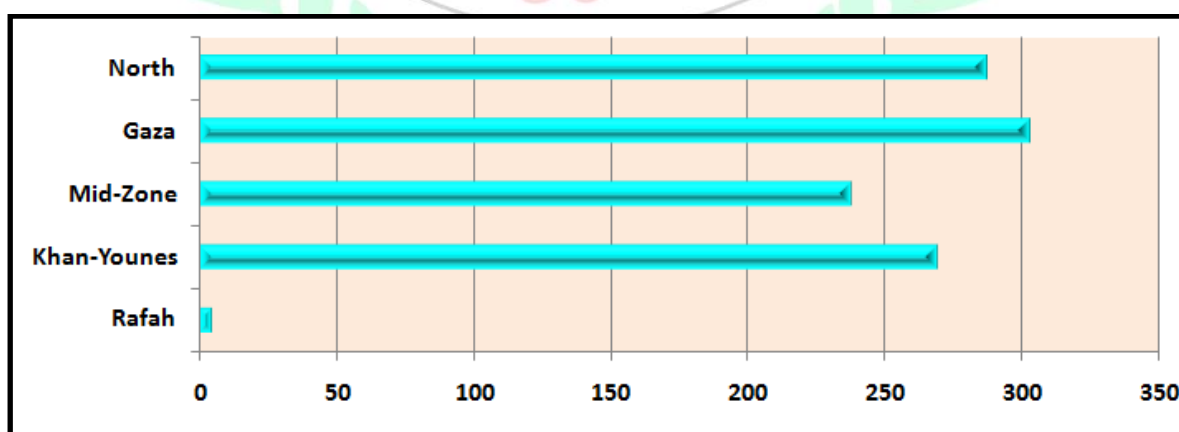
It is observed that the registered increase started by May until September reaching more than 8 folds increase than the five years average registered cases (graph 19).

**Graph 19: Monthly distribution of Non-Specific Meningitis cases in GS, 2014**



As seen on Graph 20, the highest incidence rate of reported cases was in Gaza governorate (303/100.000) followed by North governorate (287/100.000), Khan-Younes governorate (269/100.000) and Mid-Zone governorate (238/100.000). While Rafah governorate registered low incidence rate (5/100.000).

**Graph 20: Geographical distribution of Non-specific Meningitis per 100.000 population during the year 2014**

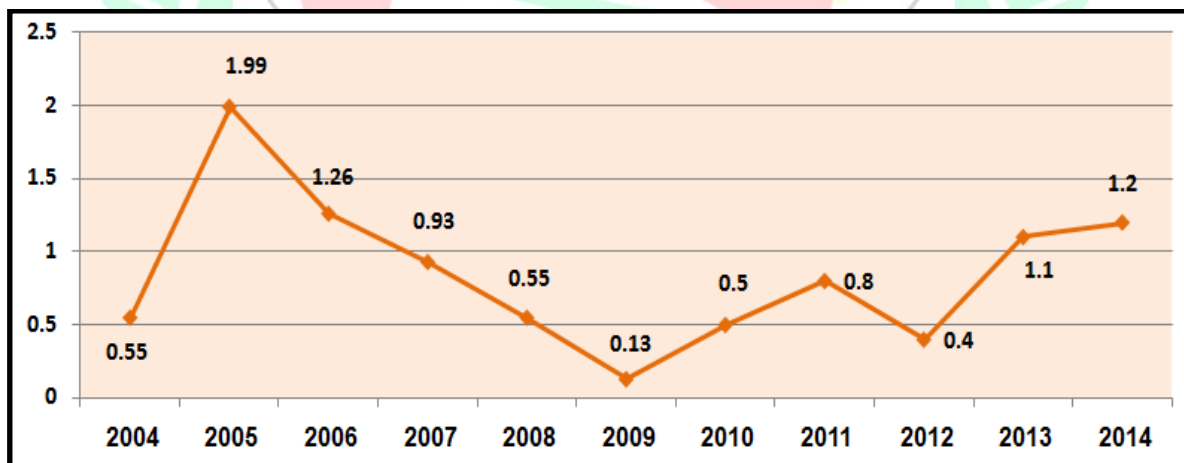


## Brucellosis

Brucellosis is an endemic disease worldwide, especially in developing countries. As zoonotic diseases, it cannot be adequately controlled only by monitoring the disease in human populations. In Palestine, the disease is contagious of domestic animals. In 1998, PNA adopted the Brucellosis Control Program (BCP) in cooperation with WHO and UNDP. The BCP focused on animal health through comprehensive animal testing, vaccination and depopulation of affected animals and human health by focusing on good management of cases and health education for at risk population. Because of this strategy, control and near-elimination of the disease in animals was achieved until now.

During 2014, a total of 21 cases were registered in GS with an incidence rate of 1.2 per 100.000 population while in the year 2013, a total of 19 cases of brucellosis were reported in GS with an incidence of 1.1/100.000 population. The majority of cases were reported in Mid-Zone governorate (9 cases representing 42.8%) and Gaza governorate (7 cases representing 33.3%). It is important to mention that the mode of diagnoses of these cases depended on clinical picture and Rose-bengal test.

**Graph 21: Annual incidence rate per 100.000 of Brucellosis cases in GS, years 2004-2014**



In Gaza strip since 2005, a continuous decrease of reported cases was noticed (graph 21). The incidence rate in the year 2005 was 1.99/100.000 population decreased to 0.13/100.000 population in 2009. From 2010 to 2014, a slightly continuous increase of cases was observed. The increase of incidence could be explained by the poor control on

the tunnels with Egypt as many un-tested animals could be entered to Gaza strip. In addition, this increase indicates the need for revision of the implemented strategy of brucellosis prevention and control especially between animals.

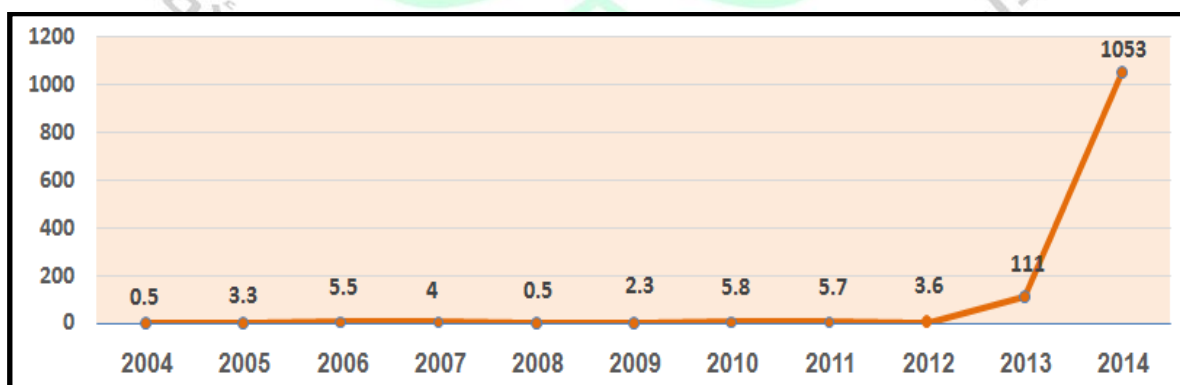
## Mumps

Mumps is a viral illness caused by a Paramyxovirus of the genus Rubulavirus. As a part of prevention and control activities of this illness, mumps vaccine was introduced in Palestine in 1985 using the combined MMR at age of 12 months. In 2009, children effectively began receiving two doses of mumps vaccine because of the implementation of a two-dose Mumps vaccination policy using the combined MMR vaccine at age of 18 months.

Table 5 shows that a total of 55366 children received MMR1 vaccine with a total coverage of 99.4% while the total number of children received MMR2 vaccine were 52034 with a total coverage of 97.2%.

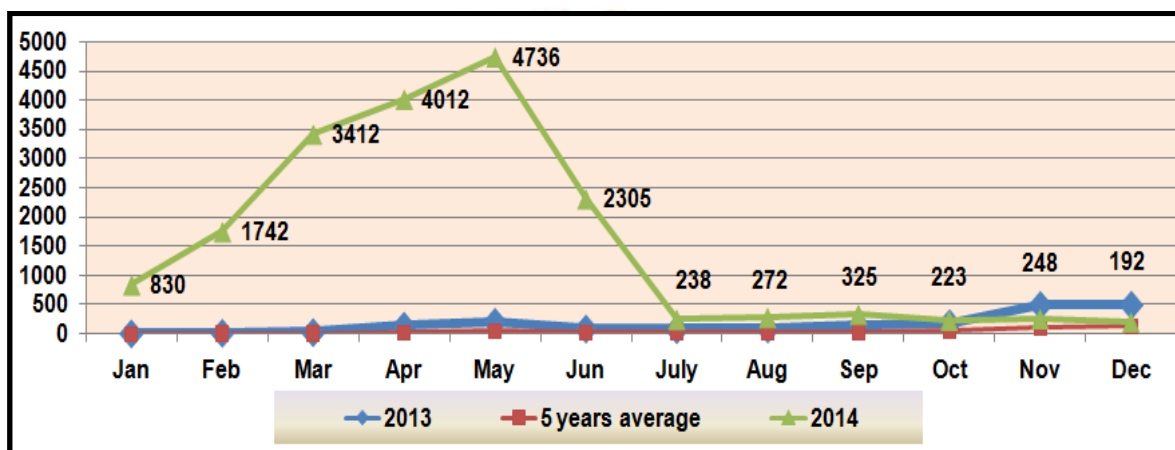
As shown in graph 22 during the year of 2014, a total of 18535 cases were reported with an incidence of 1053/100000 population compared to 1891 cases reported in the year 2013 with an incidence of 111/100000 population with a continuation of the epidemic in all Gaza governorates. The disease affected mainly children aged more than 6 years (those received only one dose of MMR vaccine through EPI program which gives 60 to 85% protection), while few cases were reported younger than this age. It could be attributed to waning immunity among children higher than 6 years.

**Graph 22: Number of reported Mumps cases in GS, years 2004-2014**



The epidemic started to be registered by April 2013 in Khan-Younis governorate (Ma'en area) and by the end of the year 2013, it was distributed to all Gaza governorates. The epidemic was confirmed by isolation of IgM antibodies from some clinical cases. As seen on Graph 23, there was an obvious decrease of reported cases since July, 2014. This decline was mainly from southern governorates.

**Graph 23: Monthly distribution of Mumps cases in GS, 2013-2014**



## Pertussis

Pertussis, a cough illness commonly known as whooping cough, is caused by the bacterium *Bordetella pertussis*. Severe disease is infrequent in healthy, vaccinated persons. In Palestine, the available pertussis vaccines combined with DTP. Primary vaccination with the DTP series consists of four-doses, administered at ages 2, 4, 6 and 18 months. Since June 2012, vaccine against Pertussis was included in Penta vaccine.

In Gaza strip, there are no confirmed reported cases of pertussis since more than 10 years, which reflect the good effect of high immunization coverage on controlling this disease. During 2014, the immunization coverage for the 4 doses of Pertussis ranged between 97.2% and 99.9% (table 6).

## Rubella

Rubella is a viral illness caused by a Togavirus of the genus Rubivirus. In 1985, live attenuated rubella vaccine was used in Palestine. The goal of the rubella vaccination program was to prevent congenital infections, including congenital rubella syndrome



(CRS). Live attenuated rubella virus vaccine is combined with MMR, recommended for infants 12 months of age. In 2009, a second dose of combined MMR vaccine was recommended at 18 months. Sixth grade girls in the Gaza Strip are receiving Rubella vaccine also. So, since many years no confirmed cases of Rubella or CRS were reported. During 2014, the total MMR1 coverage was 99.4% and MMR2 was 97.2% (table 5).

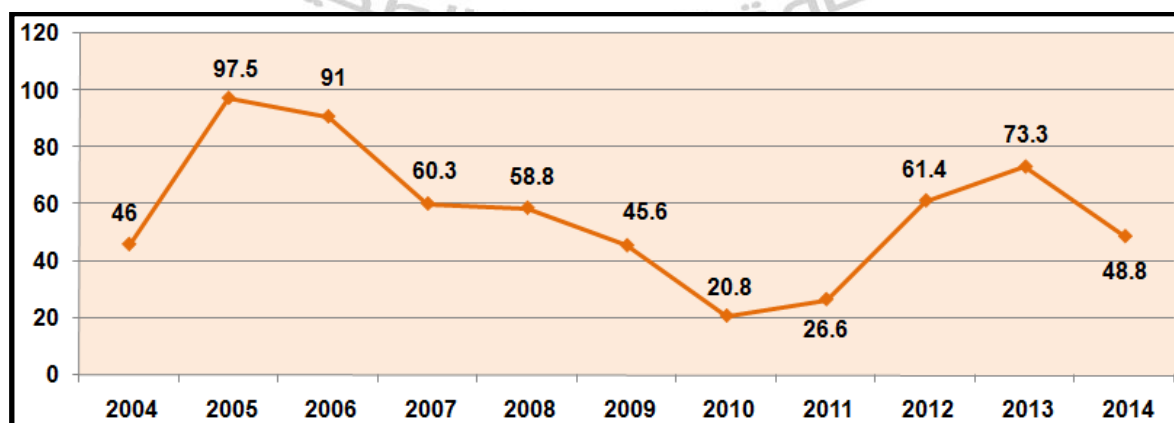
### **Viral Hepatitis infection**

Viral hepatitis is one of the most serious health problem worldwide, with some variation from one type to another and from country to another. It caused by several viruses that differ in clinical presentation, risk of chronicity, transmission, and means of prevention. In Palestine the most common are hepatitis A, hepatitis B and hepatitis C.

#### **Acute Hepatitis A**

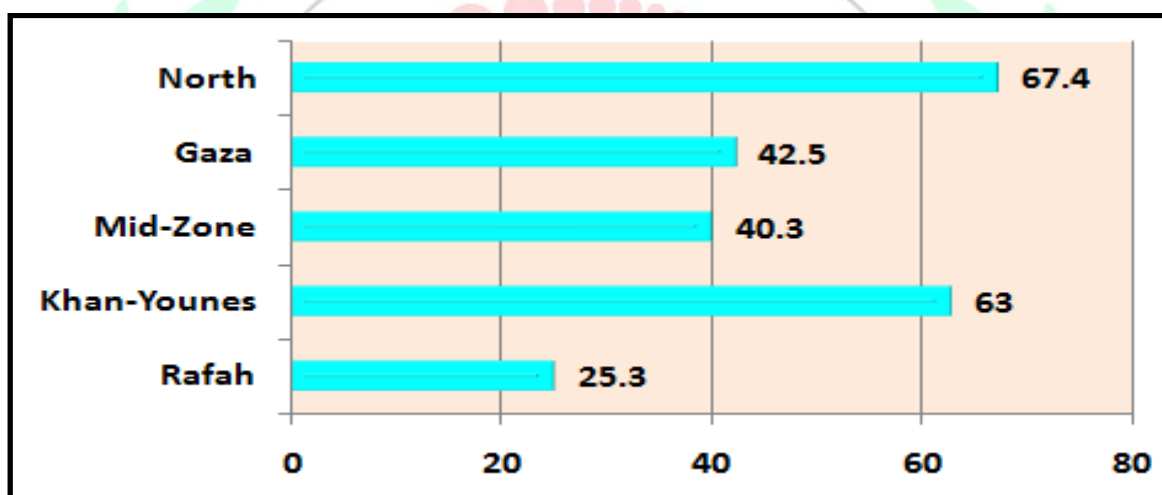
Acute Hepatitis A is considered as one of the most common communicable diseases and the leading cause of acute viral hepatitis worldwide. The majority of hepatitis A virus (HAV) infection still takes place in early childhood, where it is asymptomatic, self-limiting and leaves life-long immunity. Palestine as one of developing countries is still endemic for acute hepatitis A. In the year 2014, there was a decrease of reported number of cases compared to the previous two years. During 2014, a total of 860 cases were reported with an incidence of 48.8 per 100.000 population while during 2013, a total of 1248 cases (73.3 per 100.000 population) were reported and 1010 cases (61.4 per 100.000 population) were reported in the year 2012. This decrease could be explained by the underreporting during the war on Gaza during this year (graph 24).

**Graph 24: Annual incidence rate per 100.000 of HAV in GS, years 2004-2014**



The highest incidence rate per 100.000 population of reported cases in the year 2014 was reported in North governorate (67.4), followed by Khan-Younes governorate (63). In Gaza and Mid-Zone governorates, the incidence rate was 42.5 and 40.3 respectively and in Rafah governorate the incidence rate was 25.3 (graph 25). This geographical distribution could be explained by the variation of bad infrastructure in some governorates and bad personal hygiene.

**Graph 25: Geographical distribution of Acute Hepatitis A incidence rate per 100.000 population in GS, year 2014**

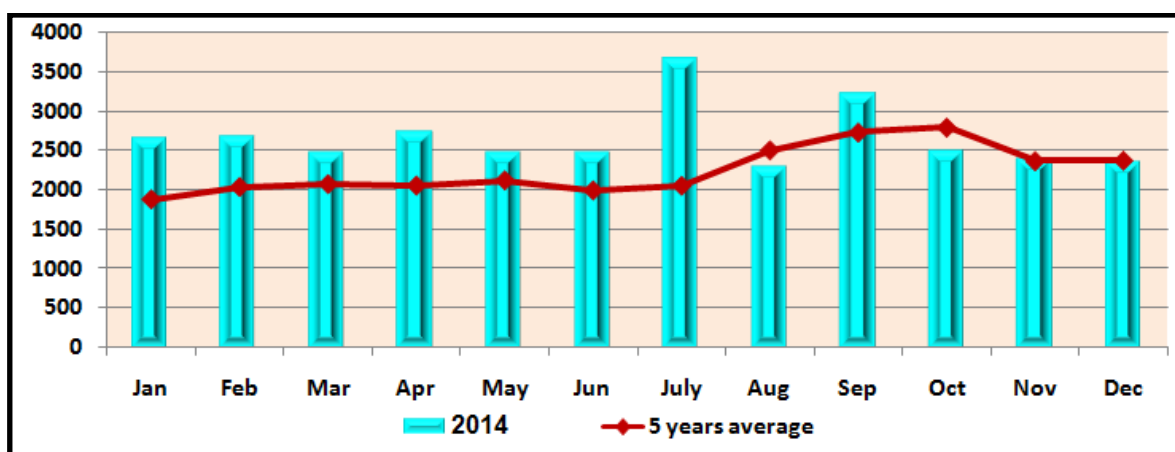


## Hepatitis B

Hepatitis B is caused by infection with the hepatitis B virus (HBV), a virus of the family Hepadnaviridae. HBV infection is a major public health problem in the Middle East. According to WHO classification, Palestine is considered as intermediate endemic area of hepatitis B.

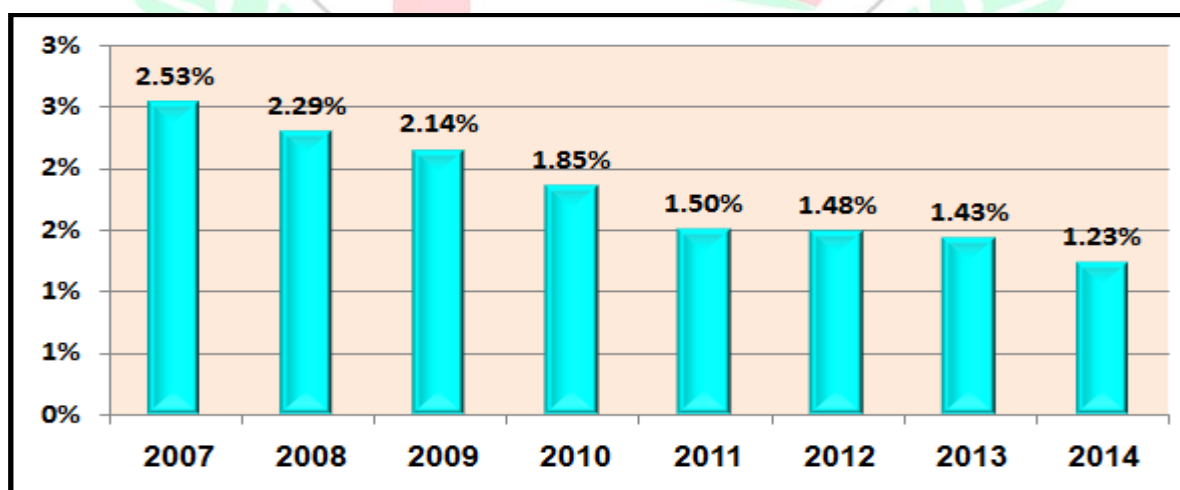
In Palestine, screening for Hepatitis B includes all blood samples from blood donors, pre-employment investigation, external migrants, drug addicts, prostitutes, TB patients and HIV patients. During 2014 among blood donors (Annex 11), a total of 32052 blood samples were tested for hepatitis B and 396 samples were positive with an incidence of 1.23% (graph 26).

**Graph 26: Monthly tested samples for HBV among blood donors in GS, 2014**



As seen on graph 27, the incidence of HBV infection among blood donors registered a continuous decrease since 2007 where the incidence was 2.53% to 2014 where the incidence decreased to 1.23%. This decrease could be due to strong prevention program adopted by MOH through blood screening, investigation of registered hepatitis B cases, administration of HB vaccine in EPI for all children and high-risk groups and increase the awareness among the population about the importance of vaccination.

**Graph 27: Annual incidence rate of HBV infection among blood donors in GS, years 2007-2014**



Hepatitis B vaccine (HBV) was integrated in EPI for children in the year 1993. Primary vaccination with the Hepatitis B series consists of a three-doses; the first dose is

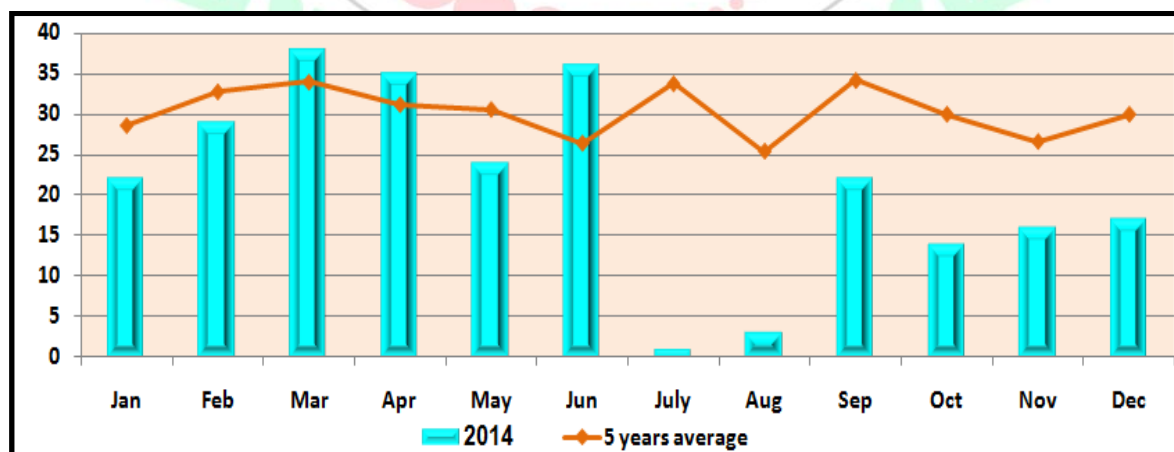
administered at birth; the second dose at the age of one month and the third dose at sixth month. Since June 2012, vaccine against Hepatitis B was included in Penta vaccine, so some changes of hepatitis B vaccine was implemented. The first dose is given at birth as a single dose and then three doses included in Penta vaccine are given at ages 2, 4 and 6 months. In the year 2014, a total of 57186 children were vaccinated with a total coverage with Hep3 vaccine of 99.6% (table 9).

**Table 9: Hepatitis B3 immunization coverage in GS, 2014**

Type of vaccine	Vaccinated and registered	Total
<b>Hep B3</b>	Total vaccinated	57186
	Total registered population	57421
	<b>Coverage</b>	<b>99.6%</b>

In 2014, a total of 257 cases (6 cases with acute Hepatitis B and 251 with Hepatitis B carriers) were reported to the epidemiology department with an incidence rate of 14.6/100.000 population reflecting a clear decrease compared to the five years reported average (graph 28). About 47.5% of cases were reported in Gaza governorate and 23% of cases were reported in North governorate. In 2013, a total of 325 cases were reported with an incidence of 19.1/100.000 population.

**Graph 28: Monthly reported cases of Hepatitis B carrier in GS, 2014**



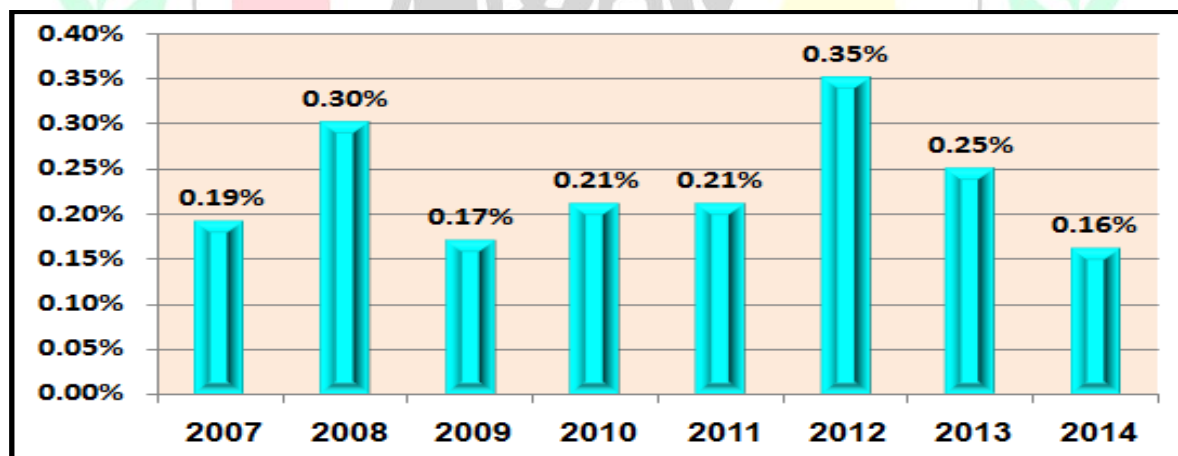


## Hepatitis C

Hepatitis C virus (HCV) is a single stranded RNA virus, a member of the family Flaviviridae. Hepatitis C is one of the major diseases causing public health problem in the Middle East. Palestine is considered as a low endemic country of Hepatitis C. Surveillance of hepatitis C in Palestine started in 1994 for all blood donors. The low burden of the disease in Palestine compared to the neighboring countries suggests that more attention should be paid to screen all patients transferred for treatment abroad.

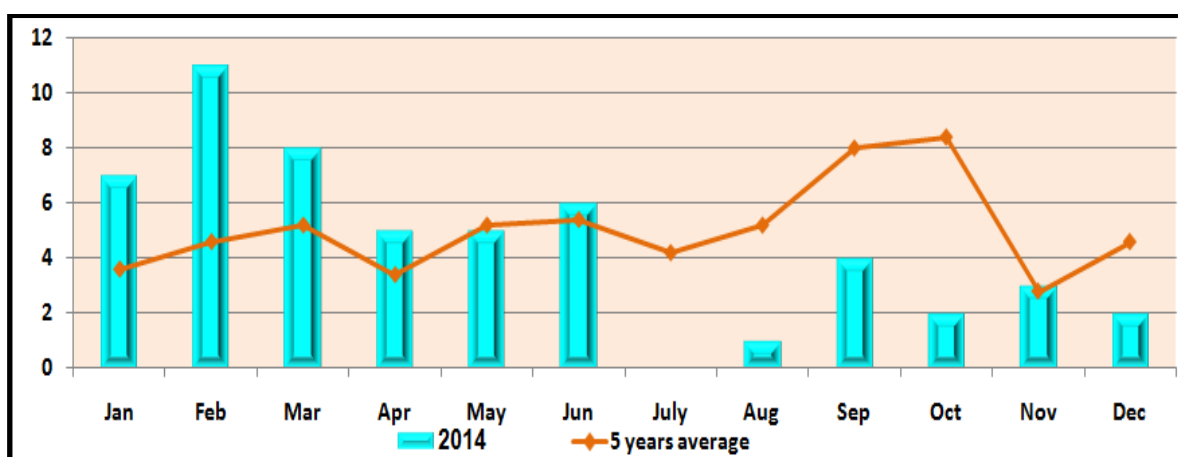
Among blood donors (Annex 11), a total of 32052 blood samples were tested for anti-hepatitis C and 51 samples were positive with an incidence of 0.16% (graph 29). In fact, this incidence is not representative as not all Anti-HCV positive samples in fact are infected. It is observed that a decrease of the incidence of Hepatitis C cases was registered in the year 2013 compared to the year 2012, where the incidence was 0.35%.

**Graph 29: The incidence of HCV infection among blood donors in GS, years 2007-2014**



In the year 2014, a total of 54 new cases were reported to epidemiology department having positive anti-HCV with an incidence of 3/100.000 population compared to 51 new cases reported in the year 2013 with the same incidence rate of 3/100.000 population (graph 30). About 53.7% of cases were reported in North governorate followed by Gaza governorate with 25.9% of cases.

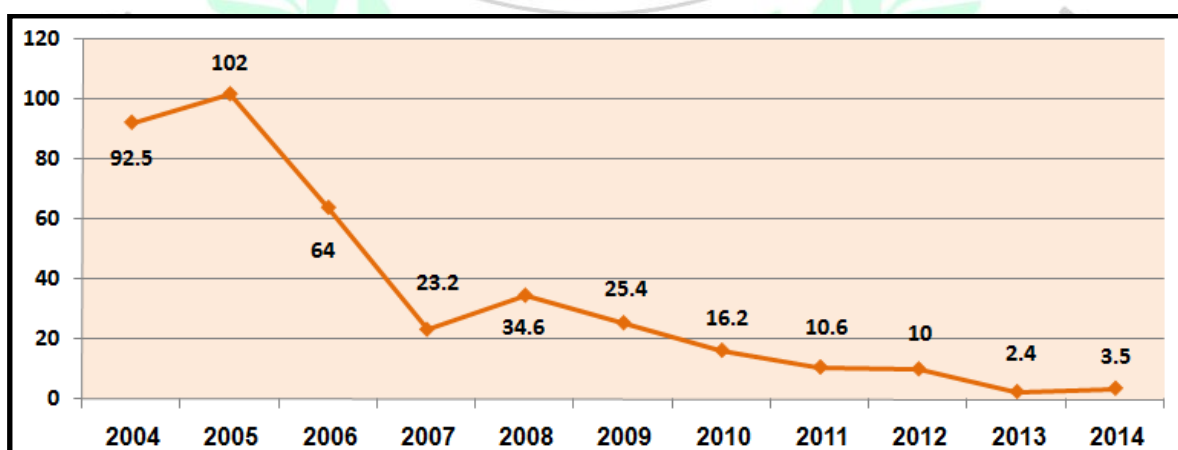
**Graph 30: Monthly reported cases of HCV carrier in GS, 2014**



### Typhoid fever

Typhoid fever (enteric fever) is a septicemic illness caused by *Salmonella typhi*. This disease is endemic in Palestine. Since the last several years, there are steadily decline of incidence (graph 31). In the year 2014, a total of 61 cases were reported to the epidemiology department with an incidence rate of 3.5 per 100.000 population. While in the year 2013, a total of 40 cases were reported with an incidence rate of 2.4 per 100.000 population and in the year 2012, a total of 166 cases were reported with an incidence of 10 per 100.000 population (graph 31).

**Graph 31: Annual incidence rate per 100.000 of Typhoid fever in GS, years 2004-2014**

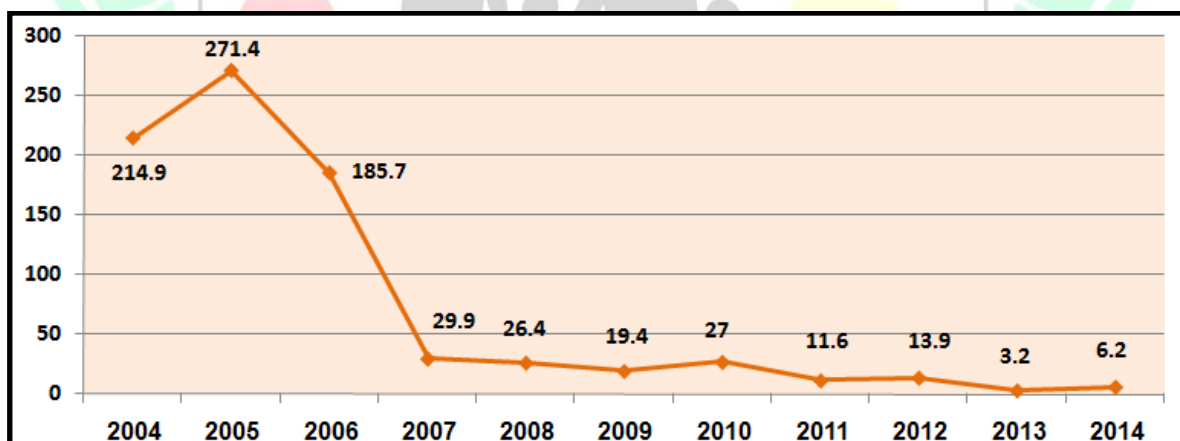


## Typhus (spotted) fever

Typhus fever is a disease caused by gram-negative cocco-bacilli and short bacilli. Epidemics are associated with conditions that prevent bathing and washing of clothes in hot water, such as war, poverty, displacement of populations and lack of hygiene. Despite that, the disease is endemic in Palestine but it is considered under control.

Since the last several years, there are steadily decline of incidence (graph 32). During the year 2014, a total of 109 cases were reported with an incidence of 6.2 per 100.000 population reflecting the same decrease since many years. During the year 2013, a total of 55 cases were reported with an incidence rate of 3.2 per 100.000 population, while in the year 2012, a total of 228 cases were reported with an incidence of 13.9 per 100.000 population. All reported cases were diagnosed based on Proteus OX19 test, which is not confirmatory test.

**Graph 32: Annual incidence rate per 100.000 of Typhus Fever in GS, years 2004-2014**



## Tuberculosis

Tuberculosis (TB) is an infectious disease caused mainly by *Mycobacterium tuberculosis*. Tuberculosis can affect most organs in the body, but the lung is the main organ affected. In spite of major advances in diagnosis, treatment and prevention of TB the disease still constitutes a major health problem throughout the world.

BCG is currently the only available TB vaccine, provides protection against TB meningitis and the disseminated form of the disease in infants and young children. The BCG vaccine

is one of the most widely used of all current vaccines and it is a part of the national childhood immunization program. The current coverage level for BCG is a good indicator of an immunization program's ability to reach newborns. In Palestine, BCG vaccine was introduced into the EPI in 1957 and is given to all infants as soon as possible after birth.

Table 10 shows that during 2014, a total of 57430 children were vaccinated with a total coverage with BCG vaccine of about 99.5%.

**Table 10: BCG immunization coverage in GS, 2014**

Type of vaccine	Vaccinated and registered	Total
BCG	Total vaccinated	57430
	Total registered population	57698
	Coverage	99.5%

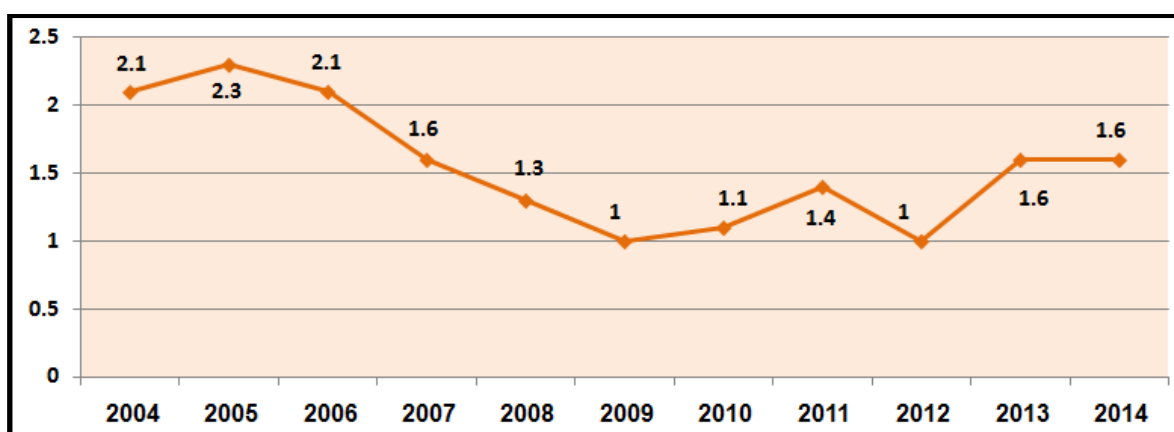
Globally, WHO conducts an international recommended strategy for TB prevention and control. The aim of this strategy is achieving 70% of case detection rate and more than 90% of treatment success rate.

Palestine is a low TB burden country with a low estimated incidence rate by WHO of 14 per 100,000 population. According to this estimation in the year 2014 the case detection rate was 9.7% which reflects a very low case detection rate. This issue could be due to over estimation of the incidence of TB by WHO or to real under diagnosis and under reporting of TB cases. An inventory study was conducted in Palestine on April-June 2013 under complete supervision of EMRO in order to estimate the real incidence of TB. The study concluded that the reported number of TB cases in Palestine reflects the real situation of TB burden in the country.

As seen in graph 33, the incidence rate of TB decreased dramatically from 2.3 per 100.000 in 2005 to 1 per 100.000 in 2009. This decrease of incidence could be explained by real decrease as Palestine considered as a low burden country or by under-diagnosis and under-reporting from health providers. Since 2010 till 2014, there was a mild increase of incidence (from 1,1 to 1.6 per 100.000 population respectively).

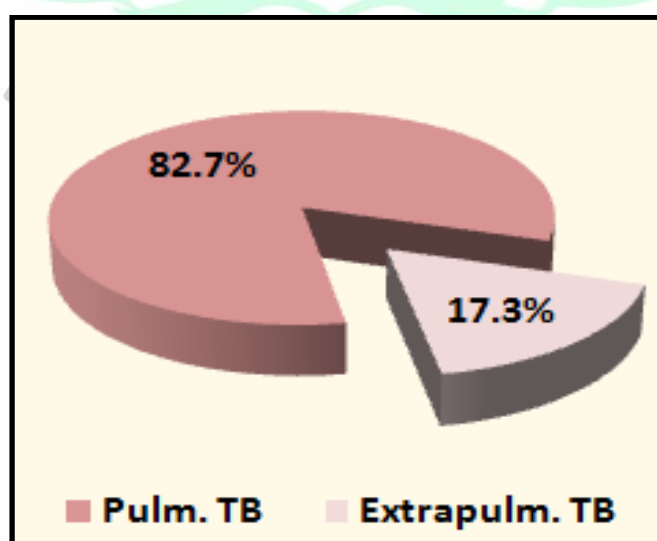


**Graph 33: Annual incidence rate per 100.000 of TB in GS, years 2004-2014**



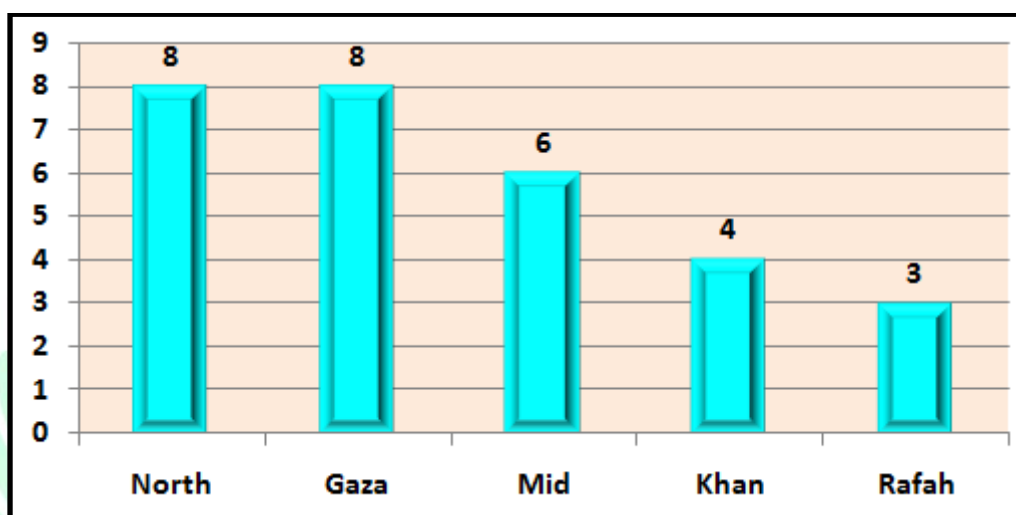
During 2014, a total of 29 cases of TB were reported in GS with an incidence rate of 1.6 per 100.000 population. Among these cases, 24 cases (82.7%) were pulmonary TB with an incidence rate of 1.36 per 100.000 population (Graph 34), while the incidence rate of extra-pulmonary males was 0.28 per 100.000. The majority of pulmonary TB cases were smear negative (62.5%). The treatment success rate was about 87.5%. While during 2013, a total of 27 cases of TB were reported in GS with an incidence rate of 1.6 per 100.000 population. Among these cases, 21 cases (77.7%) were pulmonary TB with an incidence rate of 1.23 per 100.000 population (Graph 34), while the incidence rate of extra-pulmonary males was 0.4 per 100.000. The majority of pulmonary TB cases were smear negative (66.6%). The treatment success rate was higher than 94%.

**Graph 34: Percentage of reported cases of TB by type of disease in GS, 2014**



According to the geographical distribution (graph 35), the majority of TB cases during 2014 were reported in Gaza and North governorates (8 cases in each) and Khan-Younes governorate (6 cases). In Mid-zone and Rafah governorates, a total of 4 and 3 cases were reported respectively.

**Graph 35: Geographical distribution of TB reported cases in GS, year 2014**



### **Group C diseases**

Some of diseases of this group registered a mild increase of incidence and other diseases remain under expected trend.

### **Diarrheal diseases**

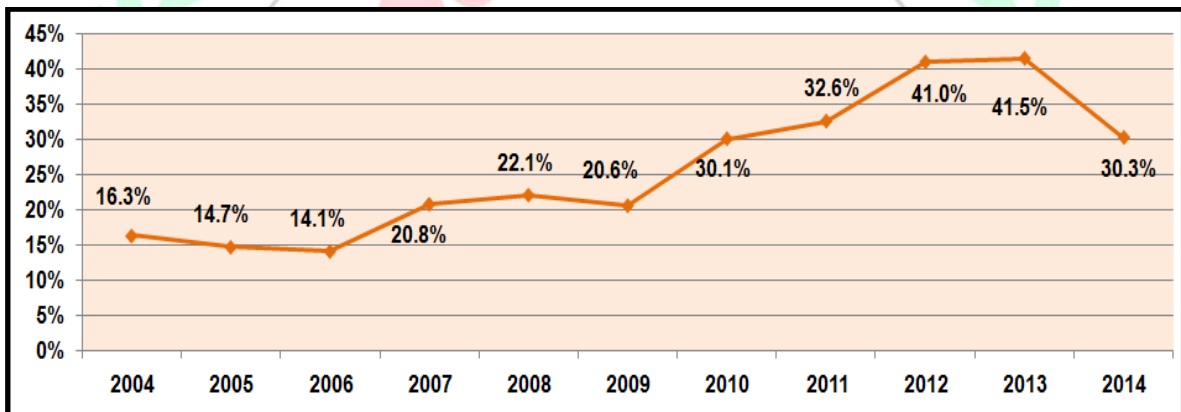
Diarrhea is a common problem that generally lasts for few days. In Gaza strip, acute diarrhea is one of the most common childhood illnesses and the main cause of outpatient visits and hospitalizations. Globally, the average of diarrhea among children under 3 years of age reaches one to three episodes annually and acute diarrhea accounts for almost 10% of all childhood hospital admissions. The high incidence of diarrheal disease in some governorates often linked to contaminated food, poor water quantity and quality and due to bad sanitation and hygiene. The most effective control measures to prevent diarrhea are maximizing access to sanitation, safe water, safe food supplies, and improving personal hygiene practices. According to the classification of Palestinian surveillance system, diarrhea is classified as syndromic disease into diarrhea less than 3 years, diarrhea more than 3 years and bloody diarrhea.

### Diarrhea less than 3 years

In Gaza strip, during the year 2014 the diarrhea among children less than three years old reported to the epidemiology department shows an obvious decline of the incidence rate to 27.9% comparing to the incidence rate reported during the year 2013 where it was 41.5%. This decline in the incidence could be attributed to the underreporting during the Israeli war on Gaza in July and August 2014.

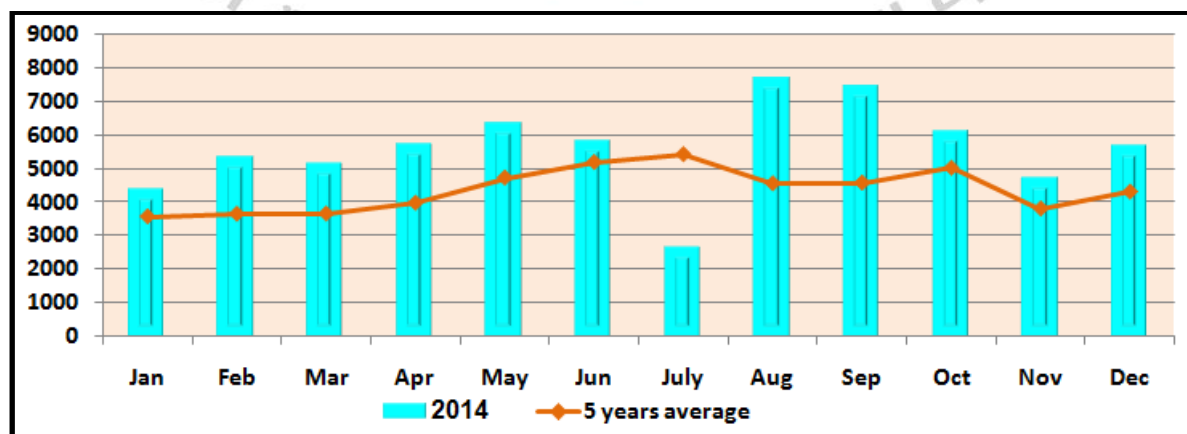
As shown on graph 36 since the year 2009 to 2013, there are a continuous increase in the incidence was noticed, which could be attributed to deterioration of infrastructure.

**Graph 36: Annual incidence rate of Diarrhea less than 3 years in GS, years 2004-2014**



As shown on graph 37, the incidence of diarrhea cases registered a significant increase of reported cases compared to five years average reported cases.

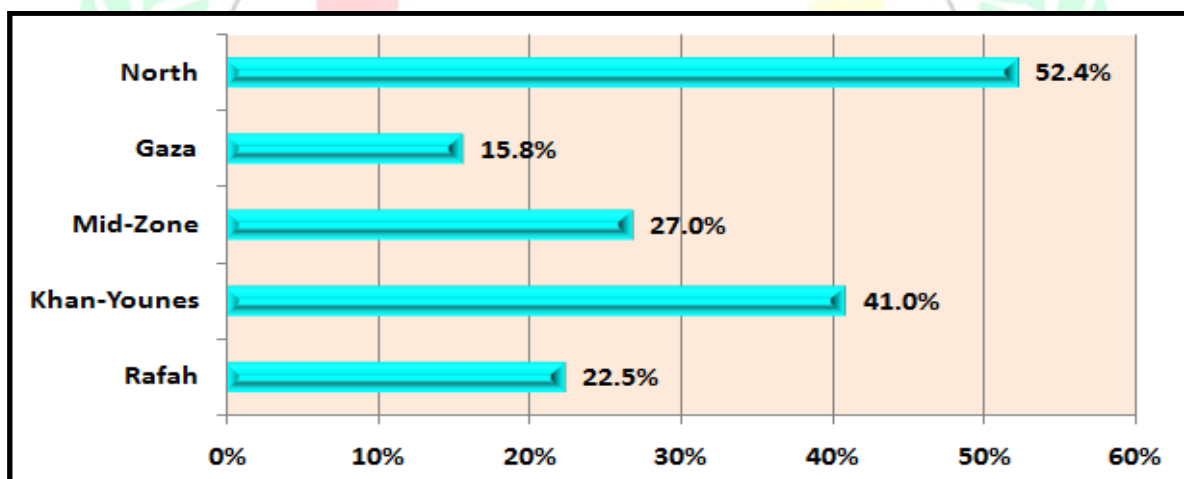
**Graph 37: Monthly reported cases of Diarrhea less than 3 years in GS, year 2014**



The highest incidence was reported in summer months and the lowest incidence was in the late autumn and winter months, which is going with the natural seasonality of the disease. During the war on Gaza, there was an obvious decrease of reported cases due to under-reporting.

According to graph 38, the highest incidence (52.4%) of reported cases was in North governorate followed by Khan-Younes governorate with an incidence of 41%. In the Mid-zone and Rafah governorates, the incidence was 27% and 22.5% while in Gaza governorate it was 15.8%. This geographical distribution could be related to infrastructure situation of each governorate.

**Graph 38: Geographical distribution of the incidence of Diarrhea less than three years in GS, year 2014**

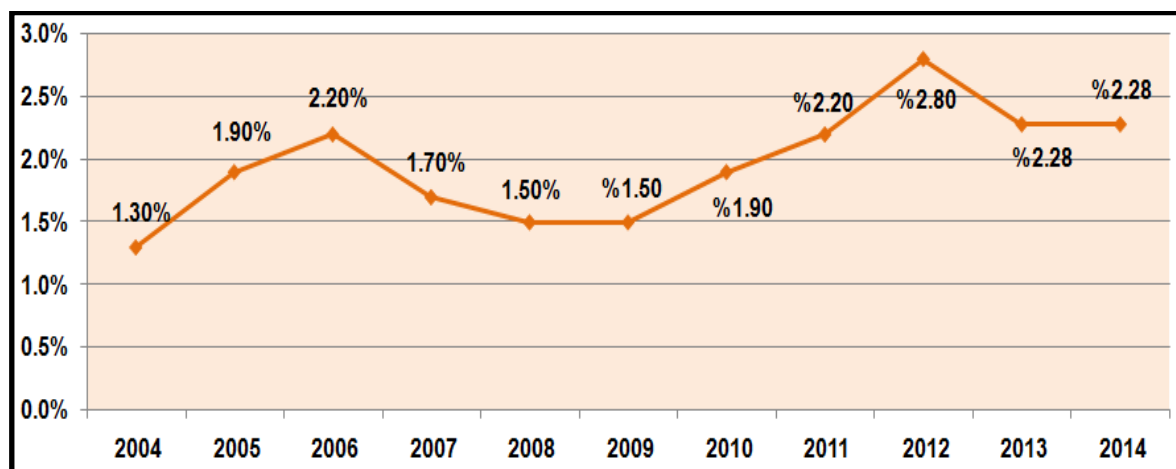


#### **Diarrhea more than 3 years**

As seen on graph 39, in the year 2014 the reported incidence of Diarrhea among patients more than 3 years was the same as during 2013. A decrease of the incidence of reported cases was observed during the last two years after a consecutive increase in the previous three years (2010-2012). A total of 35095 cases were reported during the year 2014 with an incidence rate of 2.28%, while a total of 35284 cases were reported during 2013.

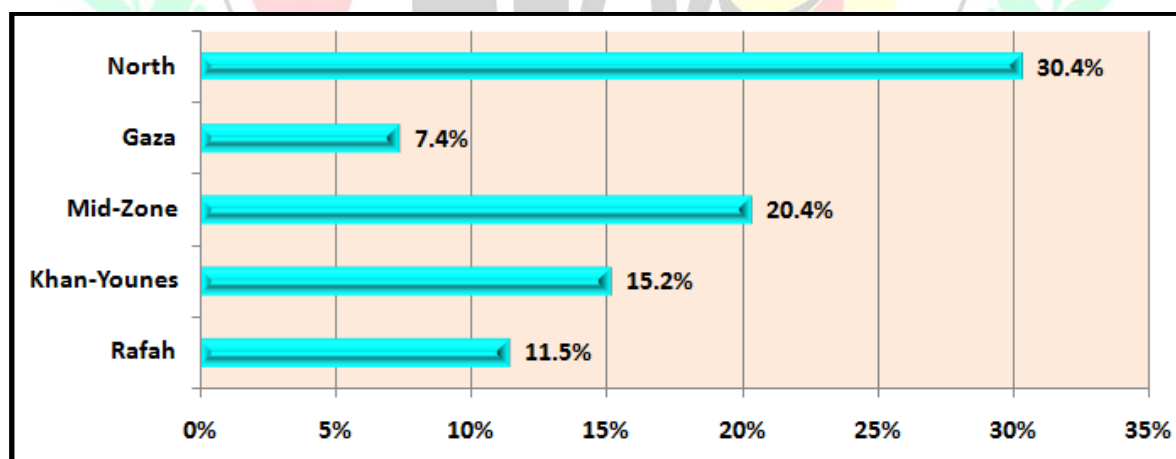


**Graph 39: Annual incidence rate of Diarrhea more than 3 years in GS, years 2004-2014**



As shown on graph 40, the highest notification of cases was from North governorate with an incidence of 30.4% compared to other governorates.

**Graph 40: Geographical distribution of the incidence of of Diarrhea more than three years in GS, 2014**

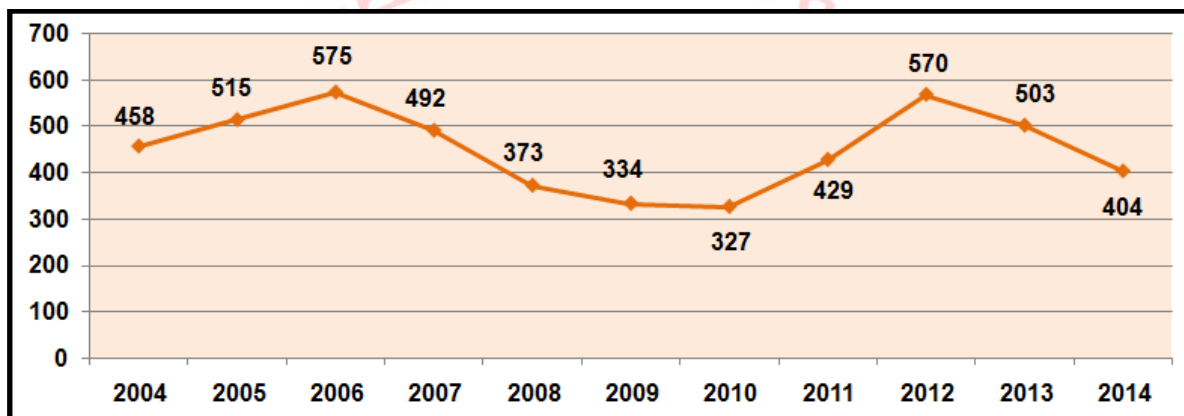


### Bloody Diarrhea

Bloody diarrhea is a potentially critical condition in which there is blood mixed with loose watery stools. Under this disease all cases with bloody diarrhea are included regardless the cause which could be bacterial infection or parasitic infestation.

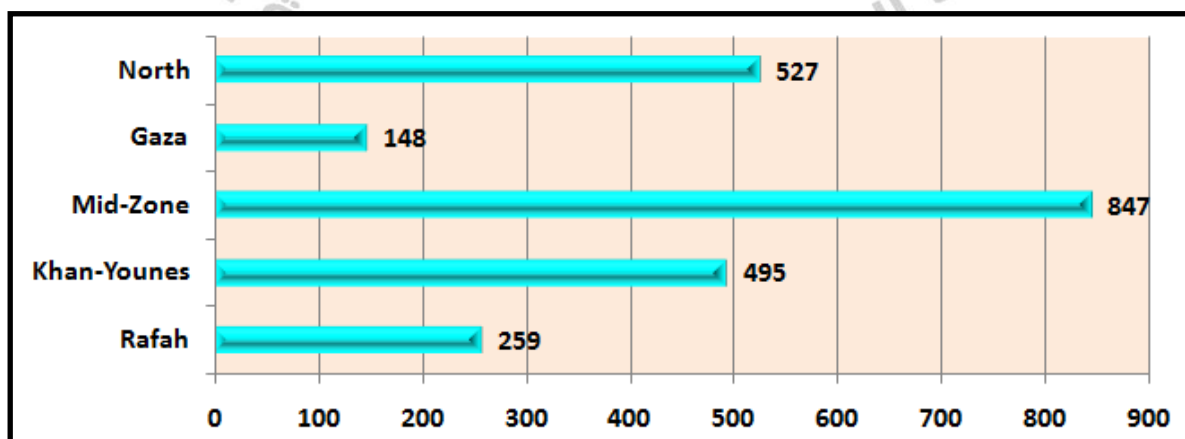
As seen on graph 41, during the year 2014 a total of 7112 cases of bloody diarrhea were reported with an incidence rate of 404/100.000 population representing a clear decrease compared to the year 2013 where a total of 8555 cases were reported with an incidence of 503/100.000. From the year 2006 to 2010, there was a continuous decrease of reported cases.

**Graph 41: Annual incidence of Bloody Diarrhea per 100.000 population in GS, years 2004-2014**



Geographically as shown in graph 42, the highest incidence (847/100000) of reported cases was in Mid-Zone governorate followed by North governorate with an incidence of 527/100000 population. In the Khan-Younes and Rafah governorates, the incidence was 495 and 259 per 10000 while in Gaza governorate it was 148 per 100000 population.

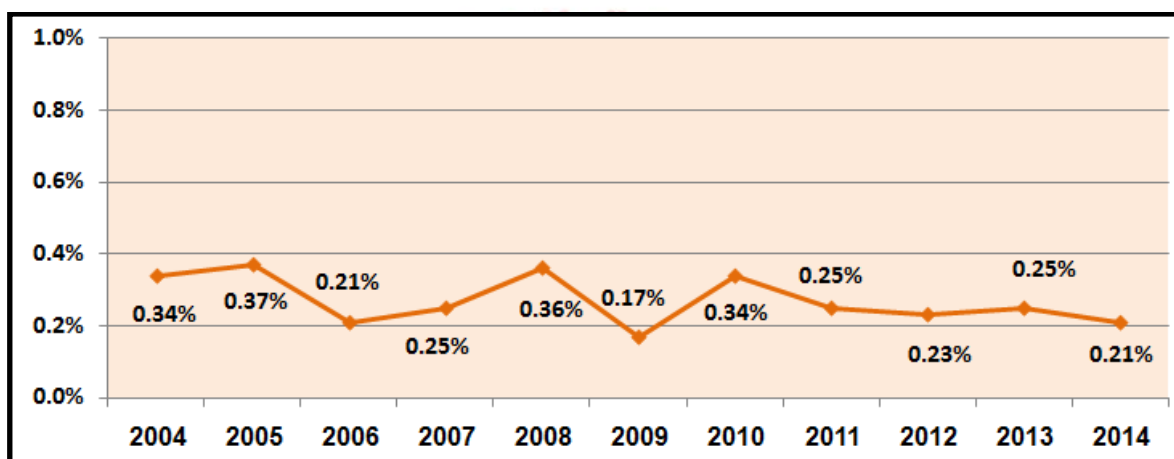
**Graph 42: Geographical distribution of the incidence per 10000 population of Bloody Diarrhea in GS, 2014**



## Varicella (Chickenpox)

An illness caused by varicella-zoster virus. This disease is endemic in Palestine especially between children and adolescents and considered of low importance. It is one of notified communicable disease monthly.

**Graph 43: Annual incidence rate of Chicken Pox in GS, years 2004-2014**



During the year 2014, a total of 3640 cases were reported with an incidence rate of 0.21%, while during 2013, a total of 4185 cases were reported with an incidence of 0.25%. As seen in graph 43, the annual incidence is fluctuating with some variation from year to year but this fluctuation does not have an epidemiological importance.

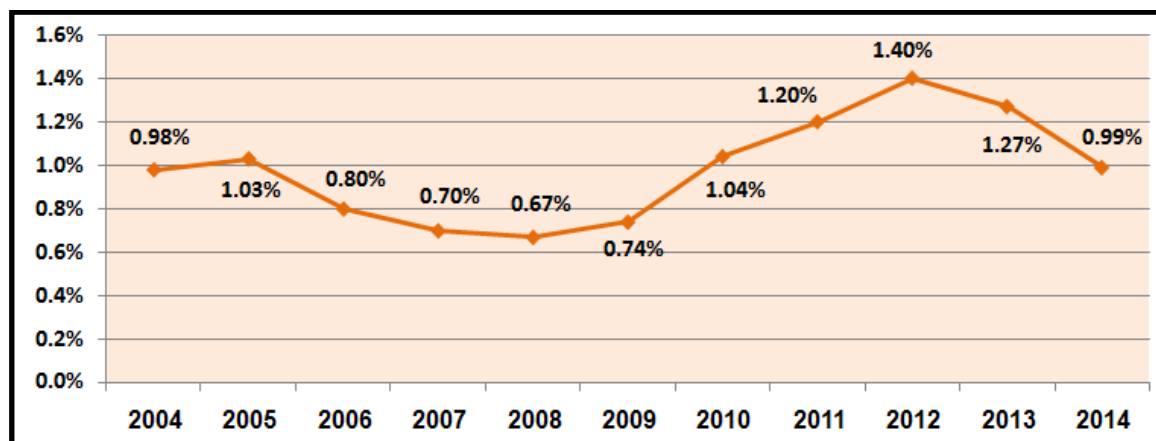
## Conjunctivitis

Conjunctivitis is an inflammation of the conjunctiva that can arise from a number of causes, with viral, bacterial and allergic being the commonest. Viral conjunctivitis is highly contagious and can cause epidemics in communities. Transmission is through direct or indirect contact with infected individuals. Seasonal allergic conjunctivitis occurs mainly in spring and summer. Conjunctivitis is an endemic disease in Palestine and is notified monthly.

As seen in graph 44, it was observed that after four years (2009-2012) of a gradually obvious increase of the incidence (from 0.74% in the year 2009 to 1.4% in the year 2012), an obvious decrease was observed in the years 2013-2014. During 2014, a total of 17440 cases were reported with an incidence of 0.99% while in 2013, a total of 21631 cases were

reported with an incidence of 1.27%. The majority of cases were reported from Khan-Younes and North governorates.

**Graph 44: Annual incidence rate of Conjunctivitis in GS, years 2004-2014**



### **Influenza and URTI**

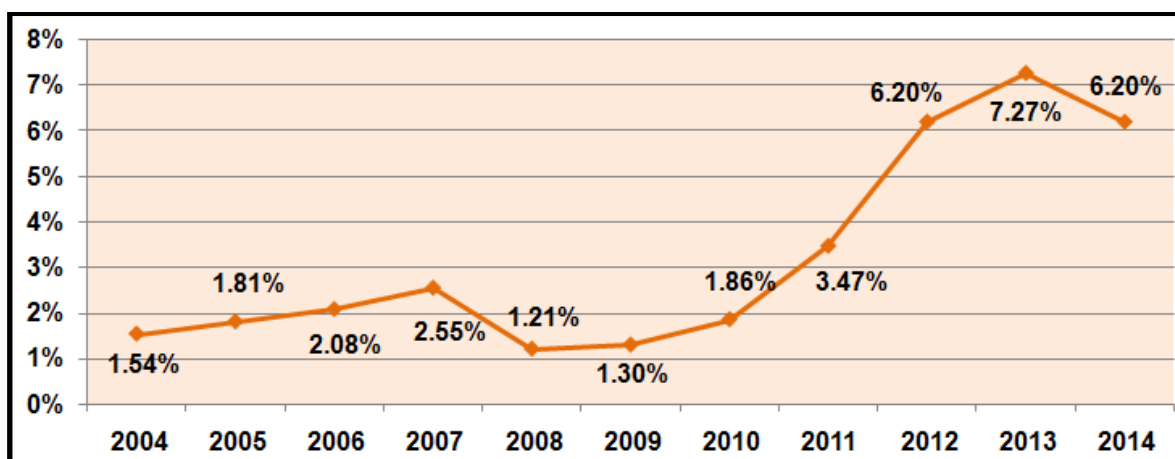
Influenza is a viral infection mainly caused by influenza group A viruses which is endemic in Palestine. It is diagnosed as a clinical syndrome. Seasonally Influenza vaccine is available in Palestine which is given to risky population.

URTIs are the illnesses caused by an acute infection that involves the upper respiratory tract. URTIs are the commonest acute problem dealt with in primary care caused by viruses or bacteria. URTIs range from mild self-limited to life-threatening illnesses. According to the revised surveillance of communicable diseases in Palestine in the year 2011, URTIs were included in notification with suspect influenza cases.

During the year 2014, a total of 109115 cases were reported with an incidence rate of 6.2%. While in the years 2013 and 2012, the incidence was 7.27 and 6.2% respectively. As seen in graph 45, the increase in incidence since in the last three years (2011-2013) could be attributed to the mentioned revision of the surveillance system.



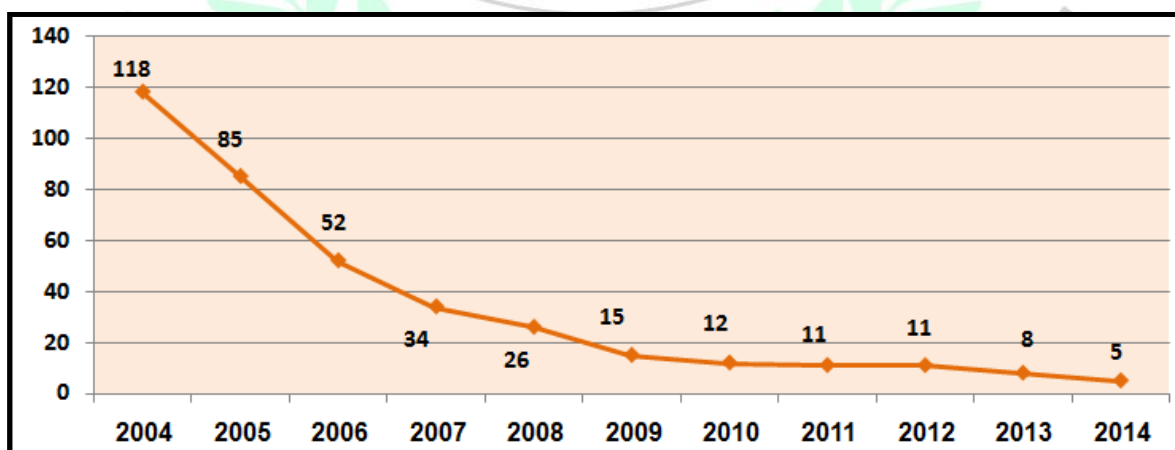
**Graph 45: Annual incidence rate of influenza and URTIs in GS, years 2004-2014**



### Ascariasis

Ascariasis is a human disease known as soil-transmitted helminthes caused by *Ascaris lumbricoides*, a large intestinal roundworm and *Ascarissuum*, a similar parasite primarily affecting pigs and occasionally humans. Ascariasis is an endemic disease in Palestine. During the year of 2014, a total of 80 cases were reported with an incidence of 5 per 100000 population. As seen on graph 46, there was a continuous decrease of reported incidence since the year 2004 (118 per 100000) until 2014 (5 per 100000).

**Graph 46: Annual incidence rate of ascariasis per 100.000 population in GS, years 2004-2014**

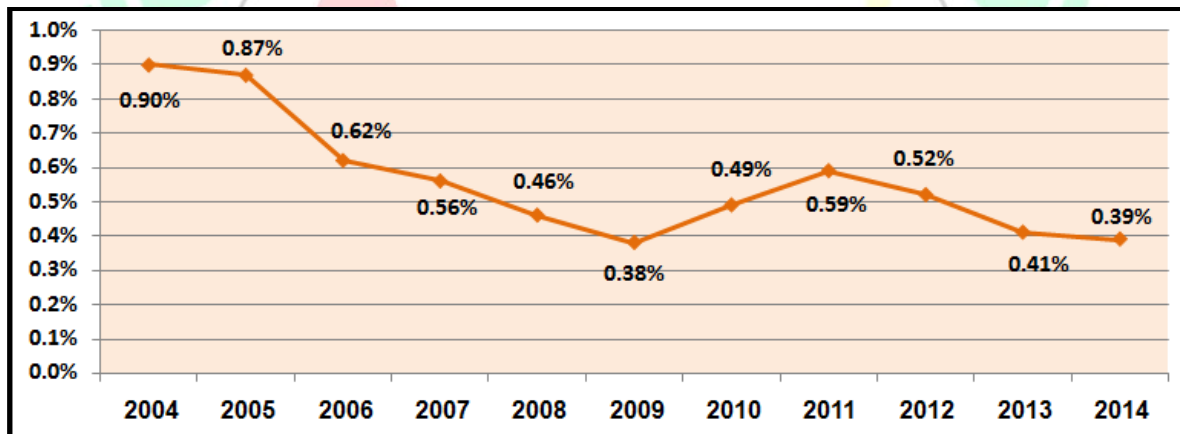


## Amebiasis

Amebiasis is an infection of the intestine (but there are extra-intestinal forms) caused by a protozoa called *Entamoeba histolytica*. In Palestine, the disease is endemic and confirmed cases were reported from the laboratories.

During the year 2014, a total of 6877 cases were reported with an incidence rate of 0.39%. This incidence represents a contentious decrease since the year 2011 where the incidence was 0.59%. In general, it was observed a continuous decrease since the year 2004 (0.90%) until the year 2013 (graph 47). This incidence represent only the laboratory confirmed cases and could not reflect the real situation because the disease is treated empirically.

**Graph 47: Annual incidence rate of Amebiasis in GS, years 2004-2014**

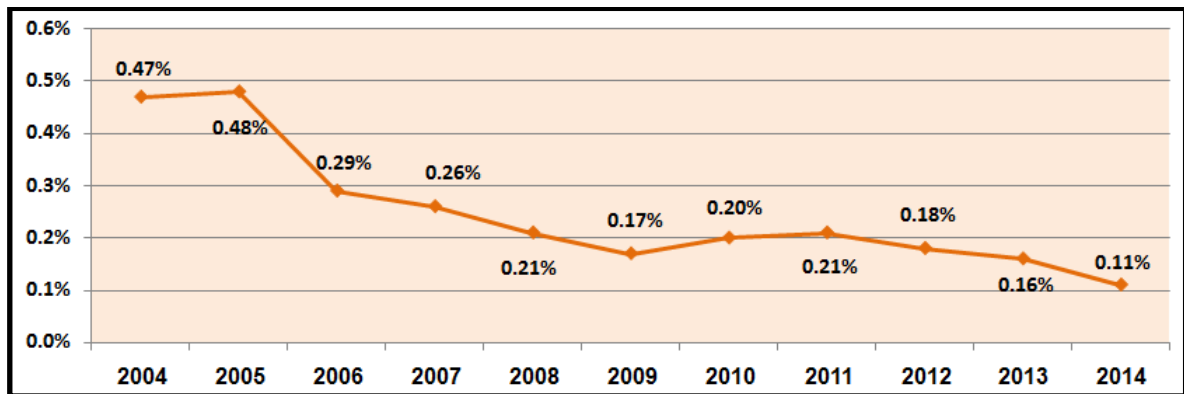


## Giardiasis

Giardiasis is an infection of the small intestine caused by protozoa called *Giardia lamblia*, which lives in the duodenum and jejunum. In Palestine, the disease is endemic and confirmed cases were reported from the laboratories.

During the year 2014, a total of 2012 cases were reported with an incidence of 0.11%. This incidence represents a mild decrease compared to the last year 2013 where the incidence was 0.16% and it shows a decreasing trend since 2004 where the incidence was 0.47% (graph 48). This incidence represents only the laboratory confirmed cases and could not reflect the real situation because the disease is treated empirically.

**Graph 48: Annual incidence rate of Giardiasis in GS, years 2004-2014**



Other diseases including parasitic infestation were registered during 2014 with low incidence and low epidemiological importance.



Annexes

## Annex 1: Monthly epidemiological report, 2010

[illegible]

[illegible]



## Annex 2: Monthly epidemiological report, 2011

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Group A													
AFP	1	0	0	2	0	1	0	0	1	0	1	0	6
AIDS/HIV	0	0	0	0	0	0	2	0	2	0	1	0	5
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningococcal Disease	16	7	13	11	11	8	20	15	18	7	14	11	151
HI Meningitis	1	0	1	0	0	0	0	0	0	0	0	1	3
Bacterial Meningitis	21	38	38	32	21	13	34	41	22	42	22	19	343
Non Specific Meningitis	31	74	89	59	7	53	58	71	64	137	68	88	799
Vaccine Adverse Events	0	3	0	1	0	0	1	1	2	0	0	2	10
Food poisoning	0	1	0	0	0	0	0	0	0	9	0	0	10
Influenza H1N1	20	11	2	0	0	0	0	0	0	0	0	0	33
Group B													
Brucellosis	0	2	2	2	0	2	3	2	0	0	0	0	13
hepatitis A	31	22	26	20	15	15	25	27	64	38	71	69	423
Hepatitis B	28	24	35	23	39	29	38	23	39	22	34	41	375
Hepatitis C	1	4	4	3	9	6	4	2	15	14	1	8	71
Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	1	1	0	2	3	31	17	1	2	23	10	0	91
Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonellosis	5	0	0	0	0	1	0	0	5	5	1	0	17
Septicemia	25	38	29	18	29	20	32	45	27	49	27	11	350
Shigellosis	0	1	6	1	0	1	2	1	3	0	1	1	17
TB Pulmonary	1	0	3	0	1	1	1	1	0	1	2	2	13
TB Extrapulmonary	0	0	1	0	0	4	0	1	1	1	1	1	10
Typhoid Fever	9	3	11	53	18	19	11	27	15	3	0	0	169

[illegible]

### Annex 3:Monthly epidemiological report, 2012

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Group A													
AFP	0	0	0	0	2	0	2	3	1	0	0	1	9
AIDS/HIV	0	0	0	0	0	0	0	0	0	1	0	0	1
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningococcal Disease	17	8	16	5	8	3	5	14	11	5	8	3	103
HI Meningitis	0	0	0	0	0	0	0	0	1	0	0	0	1
Bacterial Meningitis	32	37	46	47	71	46	74	51	29	40	11	9	493
Non Specific Meningitis	89	139	178	136	165	115	150	140	118	101	68	54	1453
Vaccine Adverse Events	0	0	1	0	0	0	0	0	1	1	0	1	4
Food poisoning	0	6	0	0	9	5	9	11	16	0	25	11	92
Influenza H1N1	0	0	0	0	0	0	0	0	0	0	0	0	0
Group B													
Brucellosis	0	0	0	2	0	0	0	0	2	1	2	0	7
hepatitis A	57	86	81	49	54	51	109	91	102	82	111	137	1010
Hepatitis B	44	28	30	26	31	12	27	21	53	29	22	31	354
Hepatitis C	5	11	6	4	5	3	8	2	13	7	3	4	71
Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	0	4	2	7	8	3	6	0	5	13	9	3	60
Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonellosis	0	0	0	0	2	0	0	0	0	0	0	0	2
Septicemia	52	13	35	48	34	20	46	41	55	56	44	39	483
Shigellosis	1	0	3	2	0	0	0	0	0	1	1	1	9
TB Pulmonary	6	1	1	0	0	0	2	0	2	0	0	0	12
TB Extrapulmonary	0	0	0	1	0	0	0	1	0	2	0	1	5
Typhoid Fever	7	3	0	22	35	24	28	3	13	5	13	13	166

[illegible]

#### Annex 4: Monthly epidemiological report, 2013

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Group A													
AFP	0	3	1	0	1	0	3	0	2	0	0	2	12
AIDS/HIV	0	0	1	0	0	0	0	0	0	0	0	0	1
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningococcal Disease	12	6	4	5	9	11	6	9	4	3	7	8	84
HI Meningitis	2	1	0	0	0	0	0	1	0	0	0	0	4
Bacterial Meningitis	9	14	11	9	56	48	59	24	20	46	33	13	342
Non Specific Meningitis	30	42	46	41	449	820	593	259	172	111	98	46	2707
Vaccine Adverse Events	3	1	1	0	5	2	2	1	2	1	0	2	20
Food poisoning	7	12	0	0	0	12	0	0	0	0	0	0	31
Influenza H1N1	66	13	0	0	0	0	0	0	0	0	0	0	79
Group B													
Brucellosis	1	0	1	0	4	1	1	1	3	4	3	0	19
hepatitis A	124	109	118	101	122	98	82	93	91	118	116	76	1248
Hepatitis B	32	42	24	38	26	15	32	14	21	21	32	23	320
Hepatitis C	5	5	8	4	1	3	2	5	6	6	4	2	51
Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	2	12	23	133	198	86	74	85	135	174	483	486	1891
Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
Septicemia	28	41	59	36	48	68	96	85	25	37	44	52	619
Shigellosis	0	1	2	0	0	0	2	0	0	0	1	0	6
TB Pulmonary	4	0	0	1	3	5	3	0	1	1	1	2	21
TB Extrapulmonary	0	1	0	2	2	0	0	0	0	0	1	0	6
Typhoid Fever	9	10	19	0	0	0	0	0	2	0	0	0	40



[illegible]

## Annex 5: Monthly epidemiological report, 2014

[illegible]

[illegible]

# Annex 6: Weekly Epidemiological situation of Meningeococcal Disease in Gaza Strip, 2010-2014

Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	Total
Total 2010	2	0	0	3	2	3	3	3	2	4	1	1	0	0	2	3	2	4	0	1	2	1	3	4	7	3	3	2	2	0	0	0	0	3	4	1	1	2	2	1	2	4	1	4	1	2	1	3	2	1	5	0	103
Total 2011	3	3	6	3	0	2	2	3	2	0	2	2	6	4	1	2	2	4	6	0	1	2	1	1	4	1	5	1	4	8	4	8	2	3	3	5	9	1	1	1	0	3	1	3	6	4	2	3	3	2	2	4	151
Total 2012	2	7	4	4	1	2	3	2	2	7	2	4	1	0	2	3	0	1	5	0	1	1	0	2	0	1	1	1	1	1	3	5	2	1	5	3	2	2	4	0	1	2	2	1	3	2	0	3	1	0	0	0	103
Total 2013	2	3	5	1	2	1	0	3	1	0	3	1	0	1	2	0	2	0	2	1	2	4	3	3	2	3	2	0	1	0	6	0	2	2	3	1	1	0	0	2	0	0	2	0	2	4	4	2	0	1	84		
Total 2014	2	2	2	3	3	1	0	2	2	1	1	2	0	0	1	2	3	3	0	2	1	2	5	2	0	0	1	0	0	2	2	4	2	1	0	2	2	3	0	1	0	1	0	1	1	0	0	1	1	1	68		

Annex 7: Blood screening in Gaza strip, 2010

Blood screening in Gaza Strip, 2010						
	HBsAg		HCV		HIV	
	Blood Bank	Laboratory	Blood Bank	Laboratory	Blood Bank	laboratory
<b>Total Number Of Examined Samples</b>	30086	17837	30086	13310	30086	12157
<b>Number of +ve sample</b>	559	618	63	278	0	0
<b>% of +ve samples</b>	1.85%	3.46%	0.20%	2.08%	0%	0%



Annex 8: Blood screening in Gaza strip, 2011

Blood screening in Gaza Strip, 2011						
	HBsAg		HCV		HIV	
	Blood Bank	Laboratory	Blood Bank	Laboratory	Blood Bank	laboratory
Total Number Of Examined Samples	30127	22494	30127	14226	30127	15389
Number of +ve sample	453	652	65	263	0	5
% of +ve samples	1.5%	2.9%	0.22%	1.8%	0%	0.03%

Annex 9: Blood screening in Gaza strip, 2012

Blood screening in Gaza Strip, 2012						
	HBsAg		HCV		HIV	
	Blood Bank	Laboratory	Blood Bank	Laboratory	Blood Bank	laboratory
Total Number Of Examined Samples	31709	19913	31709	16360	31709	12626
Number of +ve sample	472	614	102	329	0	1
% of +ve samples	1.48%	3.08%	0.32%	1.22%	0%	0%

Annex 10: Blood screening in Gaza strip, 2013

Blood screening in Gaza Strip, 2013						
	HBsAg		HCV		HIV	
	Blood Bank	Laboratory	Blood Bank	Laboratory	Blood Bank	laboratory
Total Number Of Examined Samples	31585	17108	31585	15187	31585	9205
Number of +ve sample	451	595	79	226	0	1
% of +ve samples	1.43	3.48	0.25	1.49	0%	1%

Annex 11: Blood screening in Gaza strip, 2014

Blood screening in Gaza Strip, 2014						
	HBsAg		HCV		HIV	
	Blood Bank	Laboratory	Blood Bank	Laboratory	Blood Bank	laboratory
<b>Total Number Of Examined Samples</b>	32052	16227	32052	13909	32052	8724
<b>Number of +ve sample</b>	396	587	51	231	0	1
<b>% of +ve samples</b>	1.23	3.6	0.16	1.6	0	0.11

**For more information, contact:**

Dr Majdi Dhair, MD, Master of infectious diseases, Director of preventive medicine department, PHC, MOH, Palestine. E-mail: [ibmajdi@hotmail.com](mailto:ibmajdi@hotmail.com)

Dr. Nedal I Ghuneim, MD MPH, Epidemiologist, Head of Epidemiology department, PHC, MOH, Palestine. E-mail: [ghuneimnedal@yahoo.com](mailto:ghuneimnedal@yahoo.com)

Mr. Khaled Abu Ali, Ph.D. can. MPH, BSN. Epidemiologist, Nursing supervisor of Epidemiology department, PHC, MOH. E-Mail: [khaled\\_abuali@yahoo.com](mailto:khaled_abuali@yahoo.com)

OR,

Epidemiology Department

Al-Rimal Martyrs Clinic

Al-Wehda st.

Palestine-Gaza

Telefax: 00 972 8 2837550

E-mail: [epidept-phc@moh.gov.ps](mailto:epidept-phc@moh.gov.ps)

