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Ministry of Public Health

Afghanistan National Public Health Institute

Surveillance Directorate

Disease Early Warning System (DEWS)

Surveillance, Early Detection and Response to Communicable Diseases

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Dr. Bashir Noormal, MD, MPH
Director General, ANPHI-MoPH

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Introduction

Afghanistan National Public Health Institute (ANPHI) is a key General Directorate of Ministry of Public Health (MoPH) consisting of five departments; Surveillance, Health Promotion, Research, Public Health Training and Central Public Health Laboratories. Surveillance Directorate is critical department of ANPHI which is mostly involved in routine reporting of priority diseases and outbreak investigation and response. In Afghanistan, Disease Early Warning System (DEWS)[1] was first established in mid-December 2006, with technical support of World Health Organization (WHO) and financial support of the United States Agency for International Development (USAID) as a project under Surveillance Directorate. DEWS is a sentinel site based surveillance system for weekly reporting of infectious diseases morbidity and mortality operating in public and private health facilities (so far major private hospitals included) while with daily reporting system for unusual events and suspected outbreaks reported by community and Provincial Public Health Directorates (PPHDs) through Codan Radio system and surveillance focal points of the area. In areas where there is no focal point so far community report the disease spread and unusual events through, Provincial Council, PPHDs, governors, parliamentarians and media. Since 2007 sentinel sites expanded from 8 provinces in 8 regions to all 34 provinces. In 2011, there were 283 sentinel sites operating in regional, provincial and district hospitals and in basic and comprehensive health facilities in 34 provinces of the country and covered 72 % of the districts nationwide. The function of this sentinel surveillance system is to detect not only known targeted diseases with established case definitions but also diseases, events or hazards that are not specifically included in the formal reporting system. Data on more than 28 outbreak potential diseases and unexplained events and deaths are also collected with taking appropriate and on time prevention and control measures.

[1] Disease Early Warning System (DEWS) is surveillance and response system for communicable diseases having a combined approach of indicator and event based surveillance and outbreak detection and response in Afghanistan.

Diseases of outbreak-potential in Afghanistan

According to the DEWS five years data from 2007 to 2011, outbreaks of infectious diseases such as Measles, Cholera, Acute gastroenteritis, ARIs, Pertussis, Chicken pox, Hepatitis, Typhoid fever and Malaria are more frequent in Afghanistan. Outbreaks of Meningitis, Crimean-Congo hemorrhagic fever, Mumps, Scabies, Pandemic Influenza H1N1, Leishmaniasis, Brucellosis, Q-fever and Food poisoning are reported less frequently. It is evident that most of these outbreaks are preventable with simple strategies and cheaply available vaccines. But, due to the widening insecurity and repeated population displacement and lack of sufficient resources outbreak of said diseases are still common in Afghanistan.

About this report

This report contains the official statistics in textual, tabular and graphic form, for the reported cases and deaths due to targeted priority diseases (mainly infectious) and outbreaks in Afghanistan for 2011. Unless otherwise noted, the data included in this report are from January 1, to December 31, 2011. Data collected for 2008, 2009 and 2010 have been compared with 2011 in some instances. Information for this report are collected and compiled from weekly morbidity & mortality reports from 283 sentinel sites and outbreaks reports sent by provincial and regional DEWS surveillance offices to the national surveillance directorate. DEWS Regional Offices (DEWS-ROs) receive reports from DEWS Provincial Offices (DEWS-POs) and DEWS-POs receive reports from DEWS Focal Points deployed in the sentinel site[1]. Information collected on daily basis by the department of Codan Radio, MoPH on other emergency events (bomb explosions, road traffic accidents, burns, natural disasters, etc.) are also included as a part in this report. This report will provide an overview of the situation of priority diseases under surveillance in Afghanistan. The report will help and enable epidemiologists, public health experts and policymakers to make better evidence-based decisions to improve prevention and control programs.

[1] Sentinel site for DEWS surveillance is based in Health Facilities in Afghanistan including Regional Hospitals, Provincial Hospitals, District hospitals, Polyclinics, CHCs and BHCs

DEWS Vision

Responsive and sustainable Disease Early Warning System in Afghanistan with systematic data collection, analyses, timely information dissemination and coordinated effective prevention and control activities to reduce morbidity and mortality mainly due to communicable diseases within the country and to control cross-border spread through better communication with global public health community and organizations.

Goal and objectives

The goal of Disease Early Warning System is to contribute to the reduction of the morbidity, mortality and disability of the people of Afghanistan through providing timely information about communicable diseases distribution and early detection and response to outbreaks.

The specific objectives of DEWS are:

- to monitor the distribution and seasonal trend of diseases
- to identify and rapidly respond to outbreaks within 24-48 hours of occurrence
- to identify and respond to emerging events and hazards that require immediate public health control measures
- to identify populations or geographic areas at high risk
- to assist in developing evidence-based policy and allocate resources appropriately
- to notify World Health Organization regarding Public Health Emergency of International Concern (PHEIC)
- to build the capacity of DEWS staff and those who are involved in outbreak detection and response

Surveillance methods

Sentinel sites

DEWS is a sentinel site surveillance system operating mainly in public health facilities countrywide. Initially regional/provincial hospitals in eight different geographical regions of the country were selected by DEWS team as sentinel sites in December 2006. By the end of 2010, there were 245 sentinel sites and in 2011 DEWS expanded to 283 sites by

establishing 38 new sentinel sites. These sentinel sites are operating in public regional, provincial and district hospitals, private hospitals, comprehensive and basic health centers and poly clinics in all 34 provinces and covered 72% of all districts in Afghanistan. The distribution of the sentinel sites by region, province and type of health facility are shown in Table 1 and Figure 1.

Selection of Sentinel Sites

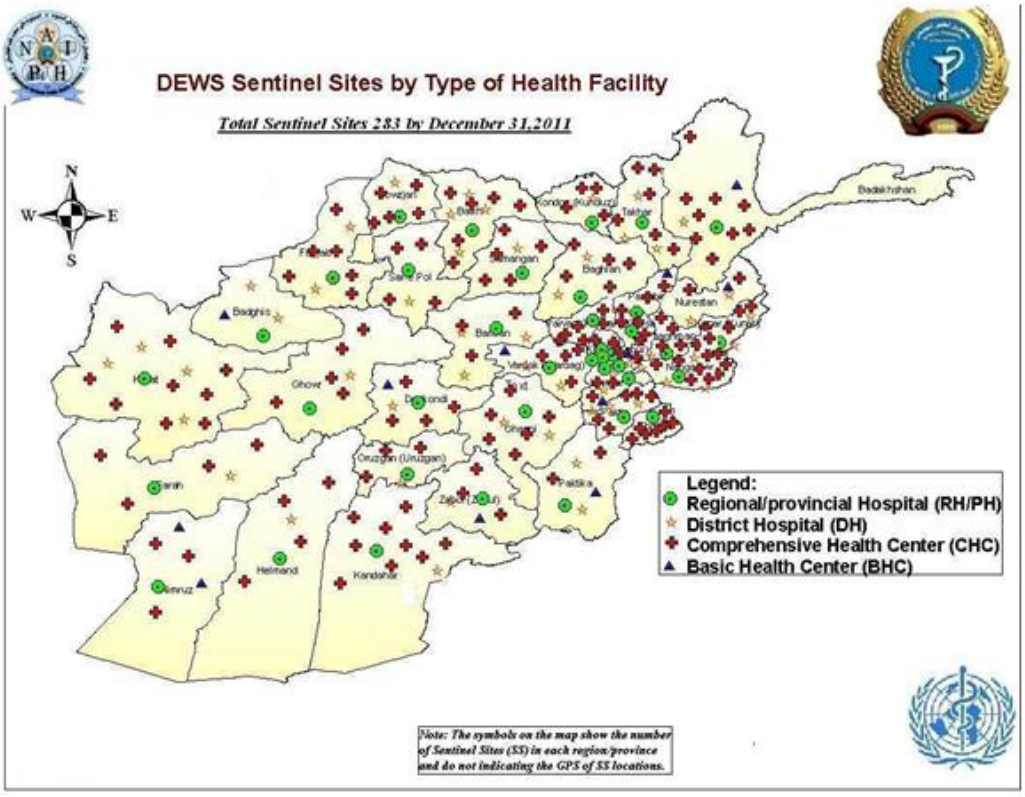
In 2011, the national target for the number of sentinel sites was 20 % increase from the 2010. The selection of these sites are based on the geographic location, burden of communicable diseases in the area, history of past outbreaks, availability of communication systems (internet/mobile phones) and population density. However, the selection is done after the Provincial Health Coordination Committee (PHCC) approval in the provinces.

Table 1: Number of sentinel sites by region and type of health facility, 2011

Type of H.F[1] / Region	RH/PH	DH	CHC/BHC	Polyclinic	Total
Central	14	12	21	2	**49**
Central West	4	7	19	0	**30**
North	5	9	27	0	**41**
North East	4	7	25	0	**36**
West	4	9	17	1	**31**
South	5	4	24	0	**33**
East	3	7	23	0	**33**
South East	22	4	4	0	**30**
Total	**61**	**59**	**160**	**3**	**283**

[1] RH: Regional hospital
PH: provincial hospital
DH: District hospital
CHC: Comprehensive Health Center
BHC: Basic Health Center

Figure 1: Distribution of sentinel sites in the country, 2011



Strengths and weaknesses of sentinel site surveillance

The current surveillance system generates evidence for policy and planning in terms of prevention and control of communicable diseases and conditions under surveillance. Since routine surveillance alone is not effective for early detection of disease outbreaks hence early warning component has been strengthened to detect outbreak alerts and respond to it. It is evident that incidence rate is ideally used for comparing disease frequency in different locations, at different times, or among different groups of persons with potentially different sized populations. But the true estimates of the incidence require further information than can be supplied by the sentinel surveillance system. To adjust for denominators DEWS surveillance system considers total consultations as denominator for calculations of rates and percentages. It is important to remember that this sentinel surveillance results are representative and generalizable for the population who have access to public health facilities while private sector and community representation will be enhanced in coming years through inclusion into surveillance system.

Diseases under surveillance

Currently DEWS collect weekly morbidity and mortality data by age and sex disaggregation from sentinel sites on fifteen agreed upon priority diseases and pregnancy related deaths in a standardized format (Annex 2). These diseases/conditions are recommended for surveillance because they are;

- Main causes of morbidity and mortality in Afghanistan
- Diseases with highly epidemic potential to cause serious public health impact due to their ability to spread rapidly
- Ministry of Public Health -Afghanistan priority diseases
- Diseases of internationally public health importance
- Diseases that can be prevented by public health measures

The list of priority diseases may vary from time to time depending on the epidemiological situation of diseases, health system needs and capacity. Public health officials at MoPH and WHO - Afghanistan collaborate in determining which diseases should be added or deleted from the priority list for DEWS.

Table 2 below shows the list of priority diseases and conditions under surveillance. Each priority disease is introduced with a case definition, the 'HMIS case definition'. These case definitions were agreed upon by HMIS department, MoPH to be implemented nationally by all health workers in the country (Annex 2).

Table 2: DEWS targeted diseases and conditions for surveillance -2011

S.No	Disease		S.No	Disease
1	Cough and Cold		9	Pertussis
2	Pneumonia		10	Diphtheria
3	Acute Watery Diarrhea(AWD)		11	Tetanus/ Neonatal Tetanus
4	Acute Bloody Diarrhea		12	Acute Flaccid Paralysis
5	AWD with Dehydration		13	Malaria
6	Meningitis/Severe Ill Child		14	Typhoid Fever
7	Acute Viral Hepatitis		15	Hemorrhagic Fever
8	Measles		16	Pregnancy-related deaths

Information on outbreak cases and deaths are also collected and analyzed by DEWS and specimens from each outbreak of diseases and unusual event are sent to Central Public

Health Laboratory (CPHL) as it is required by the surveillance system for confirmation. Meanwhile, DEWS is doing case-based surveillance for Measles and collect samples from each individual case and send to CPHL for confirmation.

How DEWS work

All levels of Disease Early Warning System, from sentinel-sites to national directorate of surveillance, are involved in surveillance activities to detect and respond to the recommended priority diseases or events (although the different levels do not perform identical functions). These activities include the following core functions in six steps. The steps listed below are presented in conceptual order; in practice, however, steps may be at different order. For example taking actions might come quite soon after identification of the cases in a health facility.

Step 1 - Identification of cases with priority diseases and events using standard case definitions at health facility level and early detection of the outbreaks at community level

Step 2 - Reporting morbidity and mortality data on a weekly basis and sharing outbreaks information at earliest, to the next administrative level through, SMS and phone call, meanwhile updating the hard and soft copies of data at health facility level and provincial level

Step 3 - Compilation, analyses and interpretation of data for distribution by time, place and person at multiple levels (sentinel-site, provincial, regional and national)

Step 4 - Investigation and confirmation of alerts and suspected outbreaks and response within 48 hours

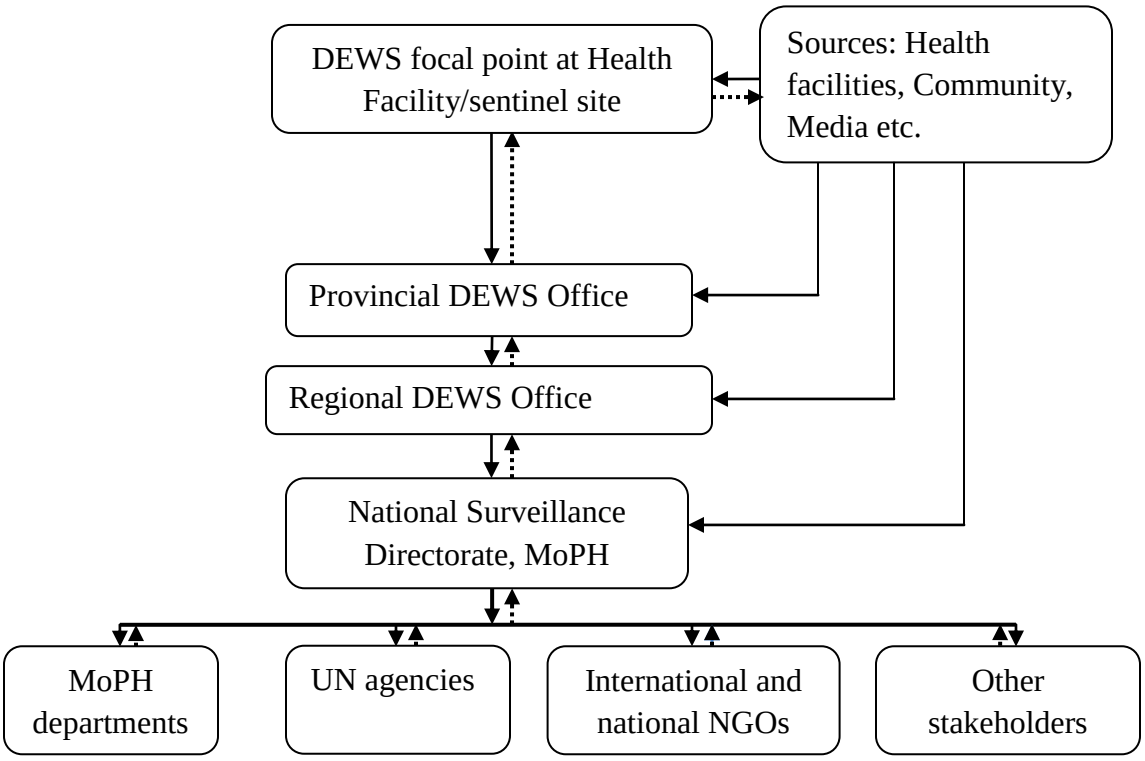
Step 5 - Dissemination of the findings from the analyses of morbidity and mortality weekly reports and outbreak reports to related MoPH departments, Local NGOs, Donors, and other international organizations

Step 6 - Taking timely actions (immediate and long term) to implement the appropriate public health preventive and control measures in coordination with stakeholders

Information flow

The illustration below shows a usual flow of surveillance reporting and feedback throughout the system. The solid arrows show the reporting channel of the system while feedbacks are indicated by dotted arrows.

Figure 2: Flow of DEWS reports and feedbacks



DEWS focal points share the weekly report with the DEWS Provincial Office through mobile phones and signed paper report also submitted later on. Sometime reports shared on daily bases. All DEWS Regional and Provincial offices have access to internet, mobile phone and Codan Radio to communicate with national surveillance/DEWS department in Kabul. At the early stage, outbreaks are usually reported by mobile phone or Codan Radio then initial, update and final reports are submitted by Regional Offices to National Surveillance Directorate. Morbidity & mortality and outbreaks information are then shared with related MoPH departments, United Nations agencies working in health and

humanitarian affairs, BPHS[1] and EPHS[2] implementing NGOs and other stakeholders i.e. the Ministry of Agriculture, Irrigation and Livestock (MAIL) and FAO[3], especially zoonotic diseases outbreaks.

[1] BPHS: The Basic Package of Health Services (BPHS) is a health service delivery strategy identifying a set of cost-effective primary health care interventions with particular attention to vulnerable group (e.g. women and children), and a strong focus on reaching out to the rural population and on ensuring equity

[2] EPHS: Essential Package of Hospital Services(EPHS) identifies a standardized package of hospital services at each level of hospital(district, provincial and regional)

[3] FAO: Food and Agriculture Organization of the United Nations

Morbidity and Mortality in 2011

During 2011, a total of 12,603,592 new cases from all diseases were reported by all sentinel sites. A total of 3,923,467 patients (31.13 % of total new consultations) were consulted for diseases targeted for DEWS of which half were children less than five years old and half more than five years. Table 3 indicates number of cases and their proportion among total consultations for each DEWS targeted disease. The percentage of children less than five years with DEWS targeted diseases as a proportion of total consultations for all ages was 15.7 %.

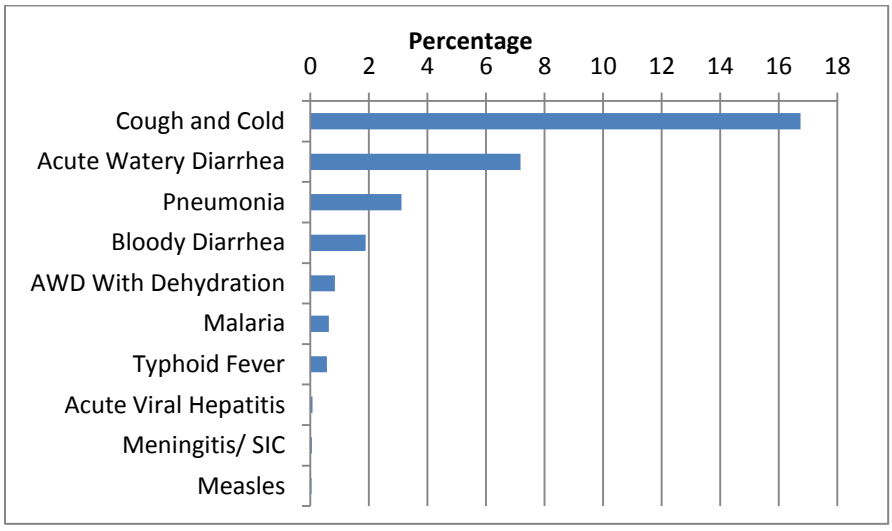
Table 3: Reported DEWS targeted diseases at national level by age, 2011

	<5 years		>=5 years		All Ages	
Disease/Condition	**n**	**%**	**n**	**%**	**n**	**%**
Cough and Cold	924,632	24.08	1,185,836	13.53	2,110,468	16.74
Pneumonia	268,983	7.00	123,015	1.40	391,998	3.11
Acute Watery Diarrhea	559,781	14.58	345,030	3.94	904,811	7.18
Acute Bloody Diarrhea	110,558	2.88	127,849	1.46	238,407	1.89
AWD With Dehydration	65,764	1.71	39,958	0.46	105,722	0.84
Meningitis/ SIC	3,799	0.10	2,682	0.03	6,481	0.05
Acute Viral Hepatitis	2,128	0.06	6,739	0.08	8,867	0.07
Measles	3,281	0.09	1,575	0.02	4,856	0.04
Pertussis	284	0.01	154	< 0.01	438	< 0.01
Diphtheria	8	< 0.01	7	< 0.01	15	< 0.01
Tetanus/ Neonatal Tetanus	88	< 0.01	36	< 0.01	124	< 0.01
Acute Flaccid Paralysis	374	0.01	200	< 0.01	574	< 0.01
Malaria	26,710	0.70	52,969	0.60	79,679	0.63
Typhoid Fever	13,657	0.36	56,939	0.65	70,596	0.56
Hemorrhagic Fever	74	< 0.01	283	< 0.01	357	< 0.01
Pregnancy-related deaths			74	< 0.01	74	< 0.01
Total DEWS	**1,980,121**	**51.57**	**1,943,346**	**22.18**	**3,923,467**	**31.13**
Total Consultations	3,839,999	100	8,763,593	100	12,603,592	100

Figure 3 depicts the distribution of most common DEWS targeted diseases reported from all sentinel sites in the country in 2011. Acute Respiratory Infections (Cough and cold and Pneumonia) remain the most commonly reported illness with an overall proportion of 19.86 % among total consultations in all ages. The proportion of cases with Cough & Cold among total consultations was 16.74 % (2110468 cases) while for pneumonia the proportion was 3.11 % (391,998 cases). Seven percent of children aged less than five years have experienced pneumonia this year. The percentage of children less than five years old with Cough and Cold and Pneumonia among the total cases of cough and cold and Pneumonia was 43.81% and 68.61% respectively. Acute Diarrheal Diseases (acute watery diarrhea, acute bloody diarrhea and AWD with dehydration) are the second most common conditions and accounted for 9.91 % of the reported total consultations in the year 2011. Acute watery diarrhea consisted 7.18 % of total consultations and 0.84% were with dehydration. The percent of children younger than 5 years with acute watery diarrhea was 14.5%.

ARIs, acute diarrheal diseases, malaria and typhoid fever are among the major morbidities followed by meningitis/Sever Ill Child, acute viral hepatitis and measles in all age groups in 2011. Cough and cold, acute bloody diarrhea, acute viral hepatitis, malaria, typhoid and hemorrhagic fever were mostly reported in age group more than five years while the rest of the diseases were reported in children less than five years old.

Figure 3: The most commonly reported DEWS targeted diseases, 2011



A total of 2,777 deaths due to DEWS targeted diseases were reported in 2011 that represent 23.2% of total reported OPD and IPD deaths. ARI-Pneumonia was the primary killer with 1,751 deaths followed by Diarrheal diseases (426 deaths) and suspected meningitis (396 deaths).

Cough and cold

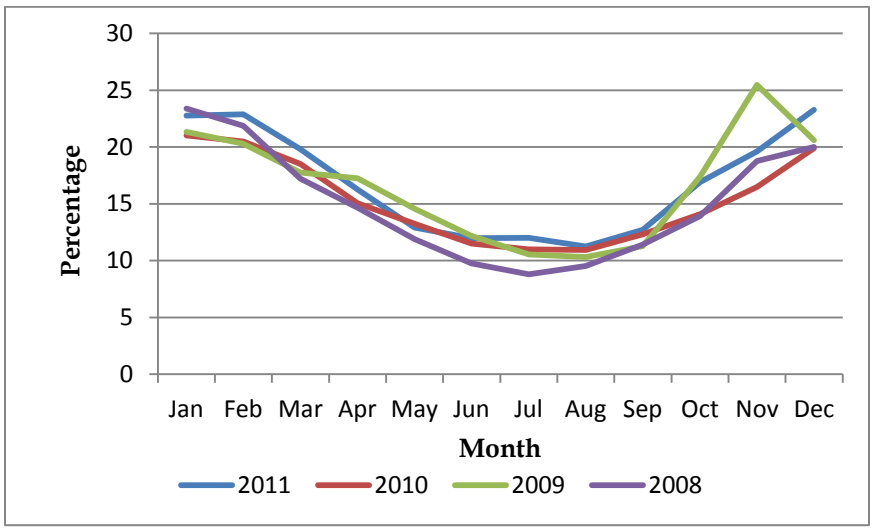
Cough and cold remains the most commonly reported illness in 2011. Figure 3 illustrates that greatest proportion of the total consultations is attributable to cough and cold cases (16.7 %). In total, 2,110,468 cases have been reported as cough and cold, of which 924,632 (43.81%) were in children younger than five years old. This year, 24% of consultations in children younger than five years were due to cough and cold. Compared with the previous years, there was significant increase in number of the cases reported countrywide, although this is most likely due to the expansion and improvements in the DEWS surveillance network.

Table 4: Cough and cold cases by region, 2011

Region	No. of cough and cold cases	% of cough and cold cases out of total consultations
Central west	169,705	19.3
East	369,432	18.8
North	318,746	17.7
North east	198,620	16.5
South east	173,359	16.4
West	215,685	16.0
Central	485,564	15.7
South	179,357	14.1
Total	**2,110,468**	

The 2011 proportion of the cough and cold cases among total consultations was highest in Central West region (19.3%), followed by East (18.8 %) and North (17.7 %) regions (Table 4). Logar (28.4%), Kapisa (25%), Nuristan (23%), Daikundi (21.7%) and Wardak (21%) provinces reported highest proportions for cough and cold at provincial level (Table 27). A clear seasonal trend by month for the last four years can be observed with peak in January, gradual decrease throughout summer months, and then increase throughout the winter at the end of the year (Figure 4).

Figure 4: Seasonal distribution of cough and cold cases, 2008-2011



Pneumonia

In 2011, out of total consultations, 391,998 (3.1%) were due to pneumonia. As usual, cases of pneumonia were mainly reported in children less than five years old, with 268,983 cases in 2011 (68.6% cases in children under five years as compared to 31.4% in age five years and old). In children younger than five years of age, 268,983 (7%) consultations were due to pneumonia while the percentage was 1.4% among age five years and above.

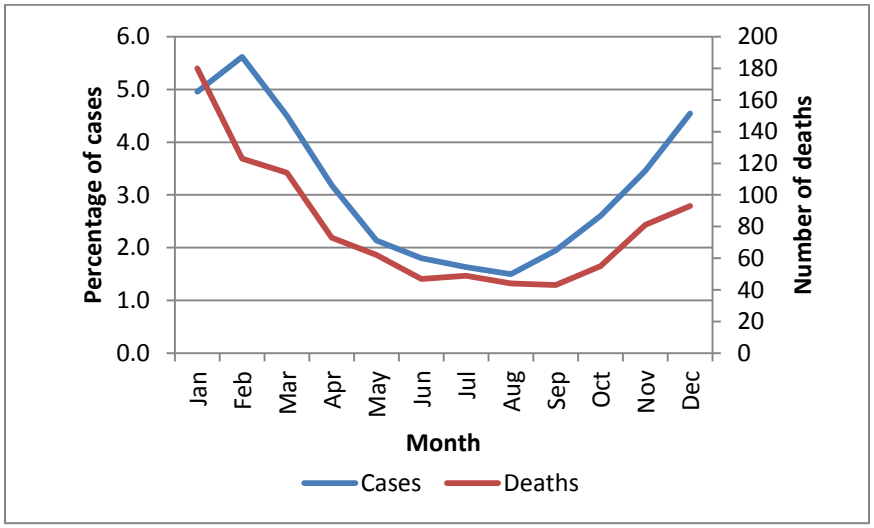
Table 5: Pneumonia cases by region, 2011

Region	No. of pneumonia cases	% of pneumonia cases out of total consultations
North	89,921	5.0
North east	51,050	4.2
East	68,677	3.5
Central west	27,822	3.2
Central	95,769	3.1
South east	18,685	1.8
West	23,214	1.7
South	16,860	1.3
Total	**391,998**	

Table 5 indicates the proportion of pneumonia consultations among total consultations. High in North region (5%), followed by Northeast (4.2%) and East (3.5%). The provinces with highest percentage of consultations due to pneumonia are Jawzjan (7.9%), Saripul (7.8%), Baghlan (6.1%), Kunar (4.7%), Balkh (4.4%), Nuristan (4.4%), Badakhshan (4.3%), Daikundi (4.3%) and Bamyan (4.2%) (Table28).

The 2011 trend of the pneumonia cases and deaths by month can be observed with peak in January and February in Figure 5.

Figure 5: Trend of pneumonia cases and deaths by month, 2011



Among total reported deaths due to DEWS targeted diseases, 1751 (63%) were due to pneumonia. The associated case-fatality rate was 4.46 per 1000. Majority of the deaths (95%) were reported in children under the age of five years.

Acute Watery Diarrhea (AWD)

In 2011, acute diarrheal diseases (ADDs) remain the second most frequent illness (1,248,940 cases) accounted for 9.1% of total consultations. Among total ADDs, the number of AWD cases was 904,811 (7.2% of total consultations). Most of the cases of acute watery diarrhea have been reported among children less than five years old (61.8%). The percentage of acute watery diarrheal cases increased significantly from 6.6% in 2009 and 2010 to 7.2% in 2011. Around 14.5% children aged less than five years, among total consultations in this age group, consulted for acute watery diarrhea.

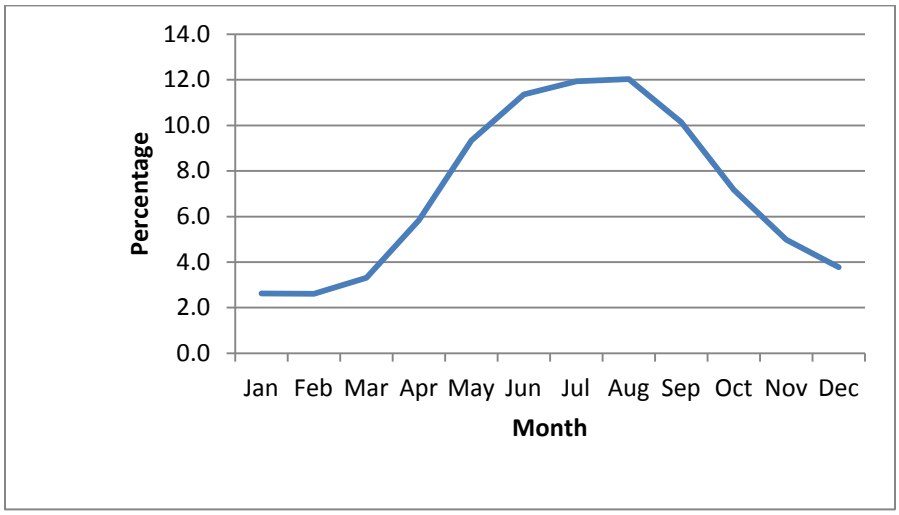
Table 6: cases of AWD by region, 2011

Region	No. of AWD cases	% of AWD out of total consultations
North east	102,160	8.5
South	104,905	8.3
North	143,321	8
West	105,229	7.8
South east	82,560	7.8
East	141,839	7.2
Central west	59,680	6.8
Central	165,117	5.3
Total	**904,811**	

The high acute watery diarrhea percentages were reported from Northeast (8.5%), South (8.3%), and North (8%) regions (Table 6). While lowest percentages for AWD were reported from Central west (6.8%) and Central regions (5.3%). At provincial level, high percentages for AWD among total consultations were reported from Nimroz (13.4%), Baghlan (11.1%), and Samangan (11%) provinces (Table 29). However, the number of AWD cases was highest in Kabul (114,552), Nangarhar (76032) and Herat (55419). The provinces with lowest percentages were Kabul (4.8%), Panjshir and Urozgan (4.5%) (Table 29)

There is a clear seasonal trend for acute watery diarrhea cases (Figure 6), with percentages increasing over the summer months, peaking in August (12%) and then decreasing gradually.

Figure 6: Seasonal trend of AWD cases, by month, 2011



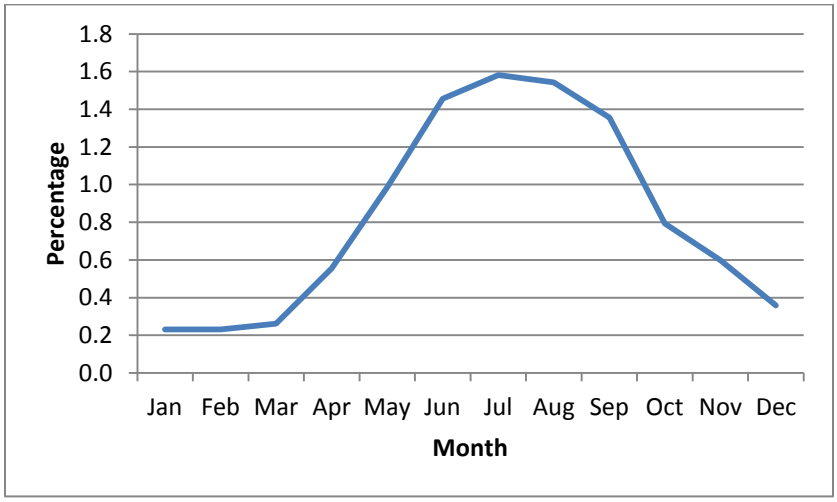
Acute Watery Diarrhea (AWD) with Dehydration

This year, 105,722 AWD with dehydration cases were reported in all age groups accounted for 0.84 % of the total consultations. Among total cases, 62.2% were reported in age less than five years. Higher percentage of AWD with dehydration was reported in children less than age of five as compared to age five and above (1.7% among total under five consultations versus 0.5% among total over five year consultations). The highest percentage (1.5%) for AWD with dehydration cases out of total consultations was reported from South region. East region reported the second highest percentage (1.2%), followed by Southeast (1%) and Central (0.8%) regions (Table 7). At provincial level, high percentage of cases were reported from Helmand province (1.9%) followed by Kandahar and Zabul (1.6%) provinces (Table 30). Figure 7 illustrates a clear seasonal trend similar to AWD with peak in summer especially in the months from June to August.

Table 7: AWD with dehydration cases by region, 2011

Region	No. of AWD with Dehydration cases	% of AWD w Dehyd cases out of total consultations
South	19,319	1.5
East	22,685	1.2
South east	10,465	1.0
Central	24,369	0.8
North	12,508	0.7
North east	7,788	0.6
Central west	3,818	0.4
West	4,770	0.4
Total	**105,722**	

Figure 7: Seasonal trend of AWD with dehydration cases by month, 2011



In 2011, a total of 404 deaths due to acute watery diarrheal diseases (with and without dehydrations) were reported countrywide, of which 386 (95.5%) were reported in children younger than age of five years.

Acute Bloody Diarrhea

Countrywide, 238,407 cases (1.9% among total consultations) of acute bloody diarrhea and 22 related deaths were reported in 2011. The percentage was slightly higher compared to 1.7% of 2010. In children under five years of age 2.9% of consultations (among total under five consultations) were attributed to acute bloody diarrhea while this

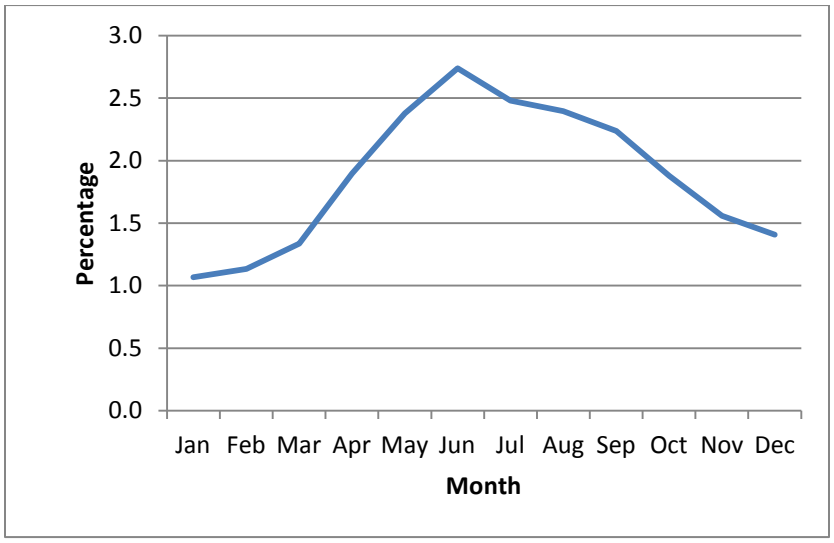
percentage was 1.5% among age five years and above (denominator is total over five years consultations).

Table 8: Acute bloody diarrhea by region, 2011

Region	No. of acute bloody diarrhea cases	% out of total consultations
East	56,873	2.9
Central west	20,856	2.4
North	37,806	2.1
South	24,773	1.9
South east	20,565	1.9
North east	23,151	1.9
West	16,978	1.3
Central	37,405	1.2
Total	**238,407**	

Table 8 indicates that high percentages of cases among total consultations were reported from East (2.9%), Central west (2.4%) and North (2.1%). Nuristan (4.6%), Kunar (3.3%), Jawzjan (3%), and Wardak (3%) are the provinces with highest percentage of acute bloody diarrhea cases among total provincial new consultations (Table 31).

Figure 8: Seasonal trend of acute bloody diarrhea by month, 2011



Similar to acute watery diarrheal diseases the burden of acute bloody diarrhea is high in summer months with peak in June (2.7%) (Figure 8).

Malaria

The out of total consultations percentage for reported malaria cases in Afghanistan declined substantially from 2008 onwards (Figure 9). Bed net distribution program may have contributed to this reduction. The percentage remained lower at 0.65% (79,679 cases) in 2011. Among the cases, 52,969 (65.5%) were in age group five years and above. Around 0.7% of children under age five were reported with malaria compared to 0.6% malaria cases in age five and above.

Table 9: Suspected malaria cases by region, 2011

Region	No. of malaria cases	% of malaria cases out of total consultations
East	44,965	2.3
South east	8,998	0.9
South	9,968	0.8
North east	5,240	0.4
North	4,646	0.3
Central	3,941	0.1
Central west	943	0.1
West	978	0.1
Total	**79,679**	

East (2.3%), Southeast (0.9%) and South (0.8%) were the regions with highest percentages of malaria cases among total consultations (Table 9). Kunar (3.1%), Nangarhar (2.4%), Zabul (2.1%) and Paktika (1.9%) reported high percentages of malaria cases among total consultations, at provincial level (Table 32). There is a clear seasonal trend with percentages increasing over the summer months, peaking from June to October and then decreasing gradually (Figure 10). The information on the species of malaria parasite is not collected by DEWS. A total of 55 malaria deaths were reported of which 35 were in children under the age of five. The corresponding malaria CFR was 0.7 per 1000 in 2011.

Figure 9: Percentage of malaria cases out of total consultations by year, 2008-2011

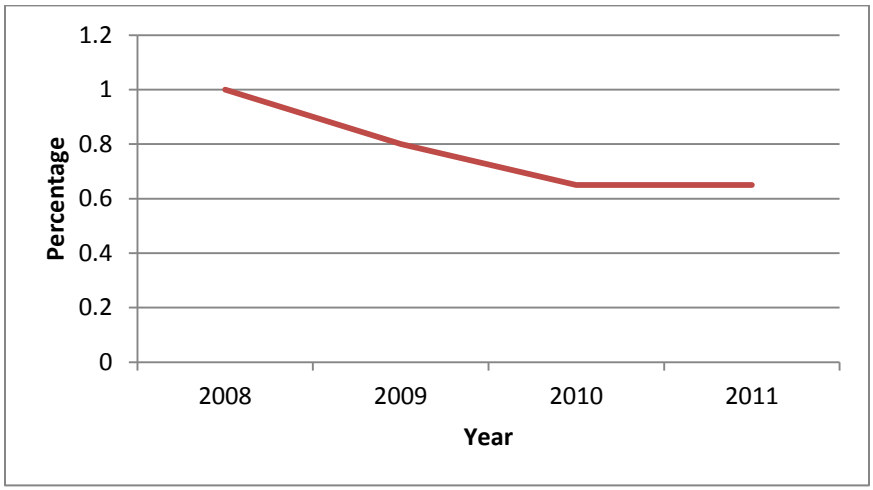
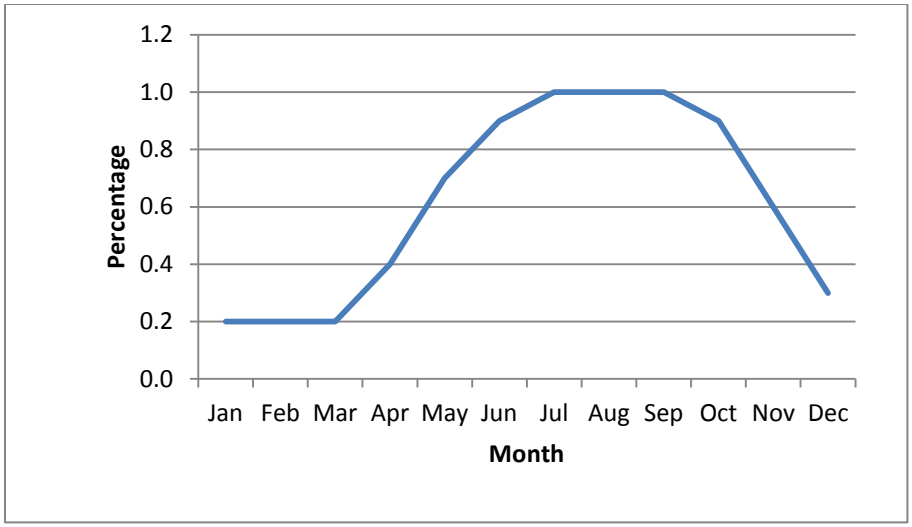


Figure 10: Malaria trend by month, 2011



Typhoid Fever

There were 70,596 cases of suspected typhoid fever notified in 2011 accounted for 0.6 % of total OPD and IPD consultations. The 2011 percentage was similar to the 2010 but was less than percentage of 2009 (0.8%). Figure 11 shows the percentage of suspected typhoid fever among total consultations by year since 2008.

Figure 11: Suspected Typhoid fever by year, 2008-2011

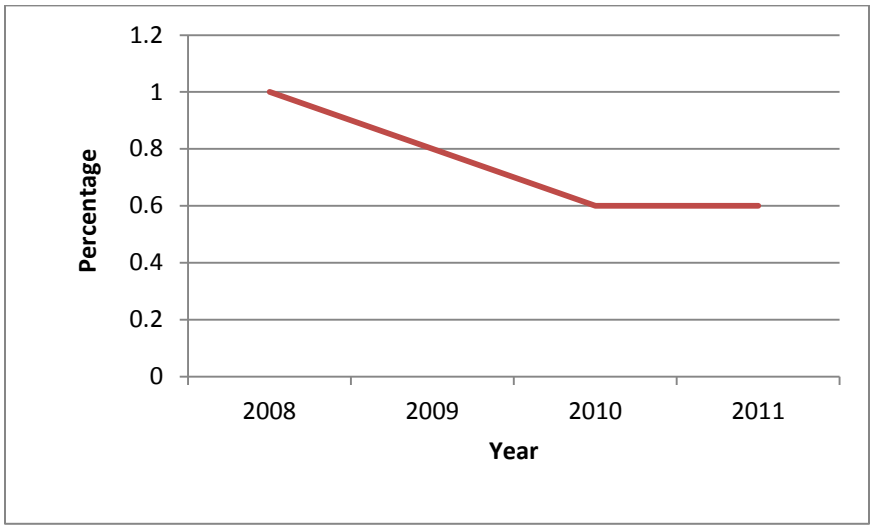


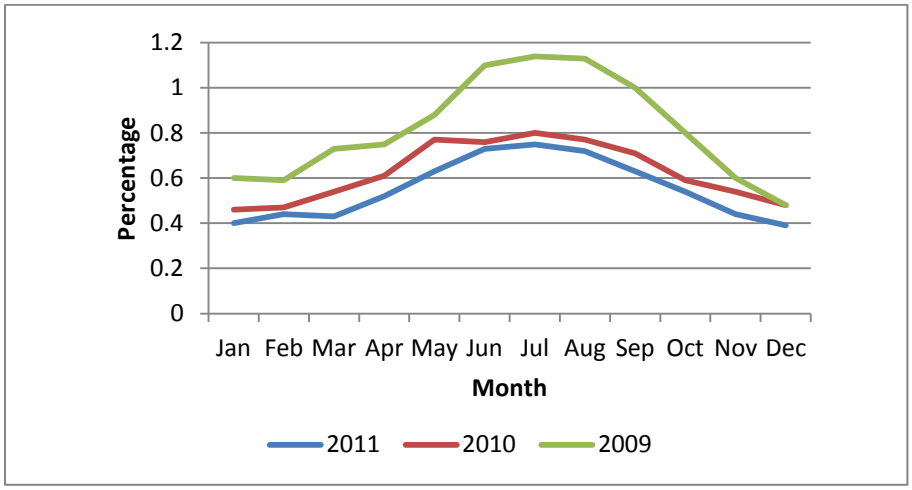
Table 10: Typhoid fever by region, 2011

Region	No. of typhoid fever cases	% of typhoid fever cases out of total consultations
South	14,783	1.2
South east	9,052	0.9
East	12,893	0.7
Central west	4,952	0.6
North	10,084	0.6
North east	4,809	0.4
West	4,947	0.4
Central	9,076	0.3
Total	**70,596**	

Age was recorded for all cases. Out of total cases 56,939(80%) were reported in age group five years and above. Age-specific percentage was higher in the ≥ 5 years age group (0.6%) as compared to age group <5 years (0.4%). The highest out of total consultations percentages for typhoid fever were reported from South (1.2%), Southeast (0.9%), and East (0.7%) regions (Table 10). At provincial level, the highest percentages were reported from Paktika (2.2%), Kandahar (1.6%), Helmand (1.6%) and Nuristan (1.3%). The percentage of reported typhoid cases in 2011 showed a peak in summer with the highest percentage in July. Similar trends were observed also in 2010 and 2009 (Figure 12).

In total 5 deaths due to typhoid fever were reported, 2 in the age group below five and 3 in age five and above.

Figure 12: Seasonal trend of typhoid fever cases by month, 2009- 2011



Meningitis/Severe Ill Child

In 2011, a total of 6,481cases of suspected meningitis/severe ill child were notified. Compared with previous years, there was slight decrease in the number and percentage of cases among total consultations (0.09% in 2009, 0.07% in 2010 and 0.05% in 2011). The national level percentage for the cases was 0.05 % (6,481 cases) with the highest percentages being reported by North (0.09%, 1640 cases), Central (0.06%, 1885 cases), Northeast (0.06%, 692 cases) and West (0.05%, 678 cases) regions (Table 11). Table 33 details the number of meningitis/SIC cases at provincial level. The most affected age group was the youngest (under five years) with an overall percentage of 0.1 among total under five OPD consultations compared to the age group (five years and above) with a percentage of 0.03. The large number of deaths (396) was reported due to meningitis/SIC corresponding to CFR of 61.1 per 1000. More deaths (291) were reported in age group less than five years.

Table 11: Suspected Meningitis/SIC cases by region, 2011

Region	No. of suspected meningitis/SIC cases	% of suspected meningitis/SIC cases out of total consultations
North	1640	0.09
Central	1885	0.06
North East	692	0.06
West	678	0.05
South	498	0.04
East	700	0.04
South East	280	0.03
Central West	108	0.01
Total	**6,481**	

Measles

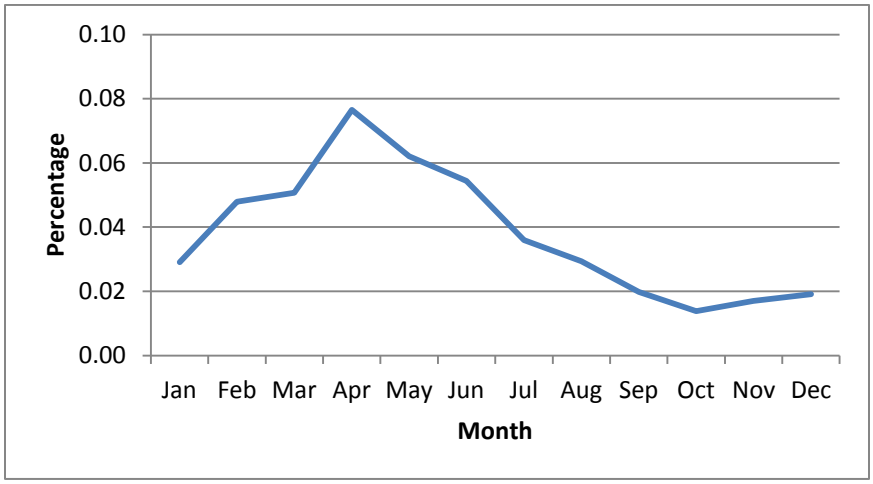
In 2011, there were 4,856 (0.04%) suspected measles notifications and samples were collected for laboratory confirmation from 2,187 cases, of which 1,472(67.3%) were laboratory-confirmed. There was a significant decrease in the number of cases from 2010 when there were 6,415 (0.06%) suspected cases. Age was recorded for all suspected cases. Majority of the cases 3281(67.6%) were reported in age group less than five years. The higher age specific percentage was seen in the under-five age group (0.09%), compared with age group five years and above (0.02%).

The highest percentages were reported from South (0.08%, 969 cases), East (0.05%, 957 cases) and Northeast (0.04%, 519 cases) regions (Table 12). At provincial level, highest percentages of measles cases among total OPD consultations were reported from Helmand (0.19%, 554 cases), Zabul (0.11%, 152 cases), Khost (0.08 %, 213 cases) and Bamyan (0.08%, 187 cases). Nonetheless, the high number of suspected measles cases was reported form Kabul (943), Nangarhar (689) and Helmand (554) provinces (Table 34). For 2011 there is a clear seasonal pattern of measles with a peak in spring (April–June) and lower cases in summer and especially in autumn (Figure 13). Overall 9 deaths due to measles were reported in 2011 with all deaths being reported in age less than five years (CFR= 1.9 /1000).

Table 12: Suspected measles cases by region, 2011

Region	No. of measles cases	% of measles cases out of total consultations
South	969	0.08
East	957	0.05
North east	519	0.04
Central west	366	0.04
South east	379	0.04
Central	1,102	0.04
North	415	0.02
West	149	0.01
Total	**4,856**	

Figure 13: Seasonal distribution of measles cases, 2011



Acute Viral Hepatitis

In 2011, a total of 8,867 cases (0.07%) of suspected acute viral hepatitis were reported, compared with 6, 711 cases (0.07%) in 2010 and 6,018 (0.08%) in 2009. The majority of the cases were reported in the age group five years and above (76% of total cases). The age-specific percentage was slightly higher in age group five years and above (0.08%) than age group below five years (0.06%). Southeast (0.16%, 1715 cases), Central (0.11%, 3411 cases) and East (0.11%, 2114 cases) regions had the highest reported cases in 2011(Table 13). Kabul reported the highest number of cases (3,122), followed by Nangarhar (1,967), Ghazni (551), Paktika (473), Khost (369) and Paktya (322). However, the highest percentages were reported from Paktika (0.26%), Ghazni (0.18%), Nangarhar (0.18%) and Khost (0.14%) respectively. No seasonal pattern can be observed for acute viral hepatitis. Data on the types of viral hepatitis are not collected by DEWS through

weekly surveillance system. However, data on the types of hepatitis are collected during hepatitis outbreaks.

A total of 34 deaths were reported countrywide corresponding to case-fatality rate of 3.8 deaths per 1000 cases at national level. More deaths (27 deaths, 79.5%) were reported in age group five years and old.

Table 13: Suspected acute viral hepatitis cases by region, 2011

Region	No. of acute viral hepatitis cases	% of acute viral hepatitis cases out of total consultations
South east	1,715	0.16
Central	3,411	0.11
East	2,114	0.11
North east	443	0.04
Central west	264	0.03
West	403	0.03
South	377	0.03
North	140	0.01
Total	**8,867**	

Pertussis

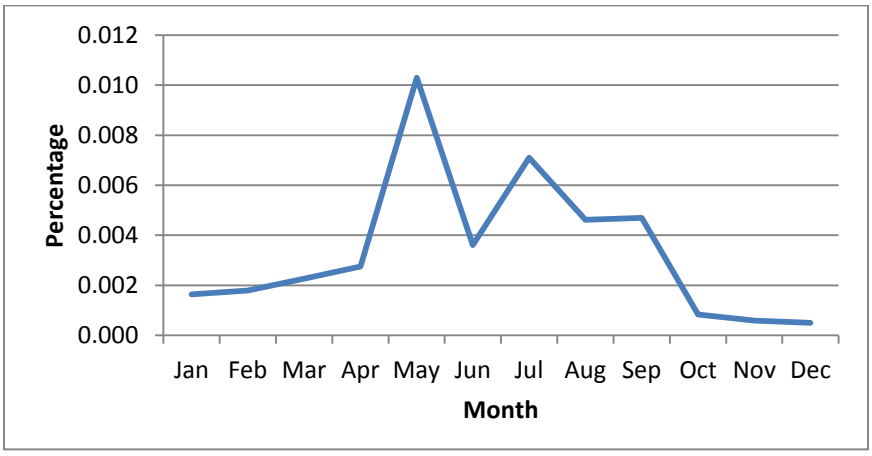
In 2011, 438 suspected pertussis cases were reported compared with 218 cases in 2010. The increase in the number of cases could be explained by the expansion of the sentinel sites. Among total cases, 284 (65%) were reported in age group less than five years.

The highest number for pertussis cases was reported from Central region (131 cases), followed by East (93 cases), South (80 cases), and North East (62 cases) regions. Table 14 shows the number of suspected pertussis cases at provincial level. In 2011, out of total OPD percentages for pertussis were higher during spring and summer (Figure 14). No deaths due to pertussis were reported in 2011.

Table 14: Provinces with reported number of suspected pertussis cases in 2011

S.No	Province	No. of Suspected pertussis cases		S.No	Province	No. of Suspected pertussis cases
1	Kabul	117		12	Paktya	7
2	Nangarhar	83		13	Kunar	7
3	Kandahar	68		14	Samangan	5
4	Kunduz	39		15	Wardak	5
5	Balkh	21		16	Zabul	5
6	Takhar	19		17	Daykundi	4
7	Panjsher	14		18	Baghlan	4
8	Badghis	8		19	Bamyan	3
9	Ghazni	7		20	Paktika	3
10	Helmand	7		21	Nuristan	3
11	Khost	7		22	Hirat	2
Total						**438**

Figure 14: Seasonal distribution of suspected pertussis cases, 2011



Diphtheria

A total of 15 probable diphtheria cases were reported countrywide in 2011 through sentinel sites. The number of this rare disease with epidemic potential is more than that for the last two years (2010: 10 cases, 2009: 8 cases). More than half of the cases were reported in the age group five years and above, 8 cases (53.3%). The majority of cases were reported by South (4), Northeast (3) and Central (3) regions. Two cases were reported from West while East, North and Central west each reported one diphtheria case in 2011. Table 15 shows the distribution of the probable diphtheria cases at provincial level. No seasonal trend can be observed from the small number of cases. No deaths due to diphtheria have been reported in 2011.

Table 15: Distribution of the probable diphtheria cases by province, 2011

Province	No. of probable diphtheria cases
Takhar	3
Kabul	3
Hilmand	2
Herat	2
Balkh	1
Kandahar	1
Nangarhar	1
Parwan	1
Nimroz	1
Total	**15**

Tetanus/ Neonatal Tetanus

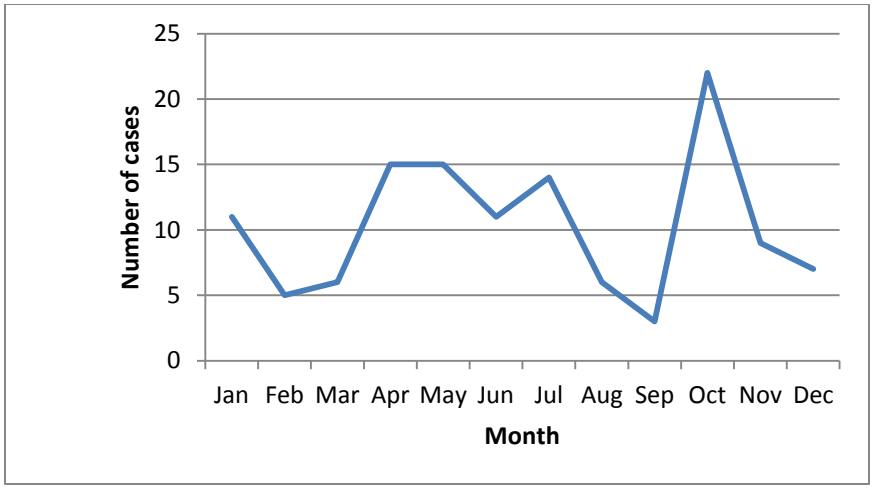
In 2011, 124 suspected cases were reported countrywide from the sentinel sites. This is a significant decrease from the 143 cases reported in 2010. The most affected age group was the children under the age of five with 88 (71 %) from the 124 reported cases. Data on vaccination status are not collected and analyzed by DEWS.

Table 16: Number of Tetanus/ Neonatal Tetanus cases by province, 2011

S.No	Province	No. of Tetanus/ Neonatal Tetanus cases	S.No	Province	No. of Tetanus/ Neonatal Tetanus cases
1	Hilmand	44	**9**	Nuristan	4
2	Kabul	18	**10**	Bamyan	3
3	Nangarhar	16	**11**	Daykundi	3
4	Kandahar	9	**12**	Khost	2
5	Laghman	7	**13**	Balkh	1
6	Herat	5	**14**	Paktika	1
7	Jawzjan	5	**15**	Parwan	1
8	Badghis	4	**16**	Takhar	1
Total					**124**

The highest number of cases was reported by South (53 cases) followed by East (27 cases), Central (18 cases), West (9 cases) and Central west (7 cases) regions. At provincial level, high number of cases was reported from Helmand (44 cases), Kabul (18 cases) and Nangarhar (16 cases). Table 16 details the locations of the cases and the number of suspected cases. A peak of tetanus cases is clearly evident in October (Figure 15). A total of 30 deaths due to tetanus were reported with corresponding case-fatality rate of 242 per thousand. Among deaths, 22 reported in age group less than five years.

Figure 15: Seasonal trend of tetanus/neonatal tetanus cases, by month, 2011



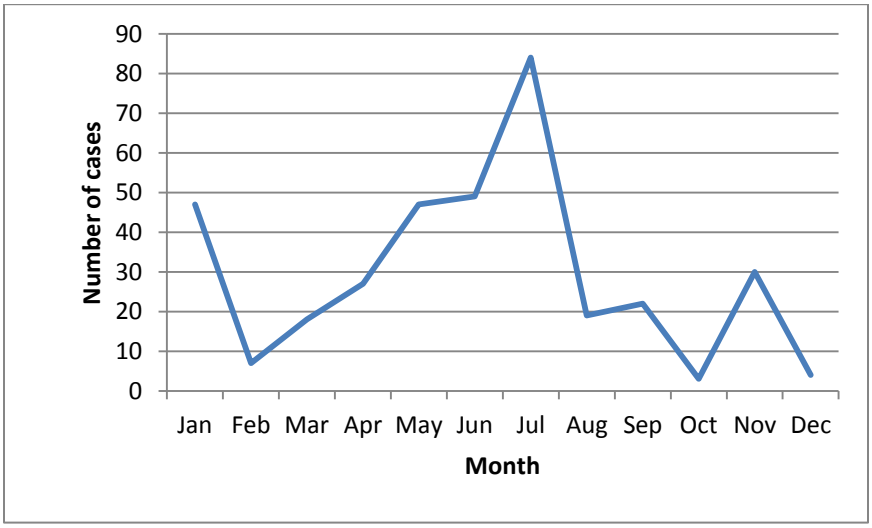
Hemorrhagic Fever

In 2011, 357 reports of suspected hemorrhagic fever were received from all over the country as compared with 568 cases in 2010. Among total cases, 283 (80%) were reported in age group five years and above. High numbers of cases were reported from North (176 cases), Northeast (69 cases), South (56 cases) and Central (35 cases) regions (Table 17). East and Central west regions reported no cases. Table 35 shows the provincial distribution of the suspected hemorrhagic fever in 2011. More than half of the cases, 180 (50.4%) were reported in May, June and July (Figure 16). There were no deaths due to hemorrhagic fever reported in 2011.

Table 17: Number of suspected hemorrhagic fever cases by region, 2011

Region	No. of Hemorrhagic Fever cases
North	176
North east	69
South	56
Central	35
South east	16
West	5
East	0
Central west	0
Total	**357**

Figure 16: Number of reported hemorrhagic cases, by month, 2011



Outbreak detection, verification, investigation and response

The outbreaks detection, verification, investigation and response is incorporated and carried out through Indicator based surveillance and disease & event alert notification mechanism established. Below both mechanisms are explained.

Indicator based surveillance within the national surveillance system for 15 priority and targeted diseases that collect data on weekly basis. Based on analysis the surveillance system investigates the alerts reported by focal points in sentinel sites (selected public health facilities), other public and private health facilities, community and local government officials. The system investigates the alerts and provides initial response to the disease outbreaks and shares the preliminary information at earliest with potential stakeholders. Besides other investigation steps, if necessary, samples are collected from the suspected cases and send to Central Public Health Laboratory (CPHL) for laboratory confirmation. The final outbreak report is prepared by investigation and response team and shared with central DEWS department through regional DEWS coordinators. All the outbreaks data are collated and analyzed by DEWS department, MoPH.

This report contains an analysis of data on outbreaks reported between 1st January and 31st December 2011. The available outbreak data are restricted to the outbreaks reported to DEWS. Outbreaks are more likely to be reported if they involve unusual event, a large number of cases and/or deaths, existing of active reporting channels and from area with better security situations. The differing accessibility to the health care facilities may also impact on outbreak reporting. For these reasons caution is advised when interpreting the data contained in this report.

Outbreaks in 2011

There were 355 outbreak alerts reported and investigated in 2011 compared with 225 outbreaks reported in 2010. Out of all investigated outbreaks, 325 (91.5%) were clinically or laboratory-confirmed and the rest were either rumors or sporadic cases.

A total of 9,835 cases were associated with outbreaks with an average of almost 30 cases per outbreak. However, the size of the outbreaks ranged from one case to 521 cases in Brucellosis outbreak in Bamyan. Samples from the 296 outbreaks were collected for the laboratory confirmation. The highest number of outbreaks (69) was reported from South East region that represents 21.2 % of all outbreaks in 2011. South region reported the second highest number of outbreaks, 55 (16.9%) followed by East with 54 outbreaks (16.6%), while the lowest number of outbreaks, 19 (5.8%) was reported from Central-West region (Table 18).

At provincial level, highest number of the outbreaks were reported from Kandahar province (8.9%, 29 outbreaks) followed by Khost (8%, 26 outbreaks), Paktya (8%, 26 outbreaks) and Nangarhar (6.8%, 22 outbreaks). One outbreak was reported from Faryab and Wardak provinces during 2011 (Table 36). Highest number of outbreaks was reported from Jaji Aryob district[1] (10 outbreaks), Alishir district[2] (8 outbreaks), Kandahar city (8 outbreaks) and Qalat city[3] (8 outbreaks). The complete list of outbreaks by province and district can be seen in Annex 1.

Table 18: Outbreaks and associated cases by region, 2011

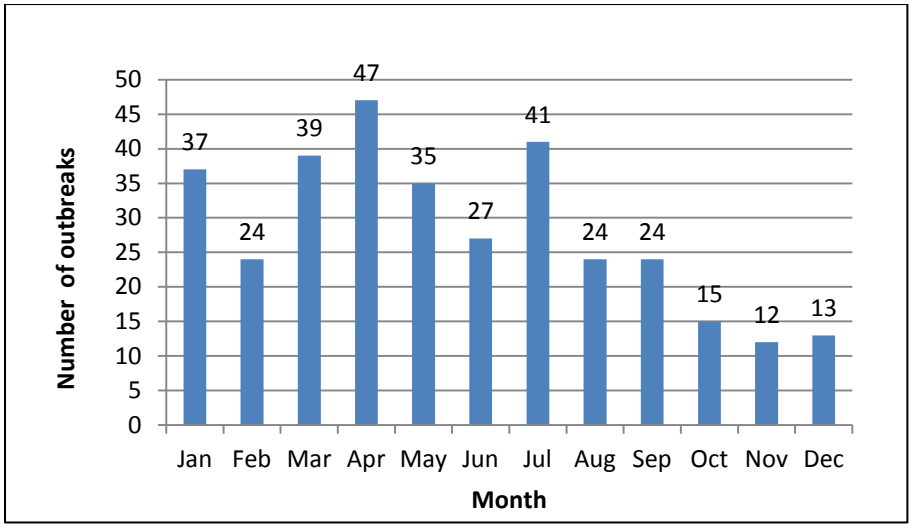
Region	No. of outbreaks	% of outbreaks	No. of cases	% of cases
Southeast	69	21.2	2,397	24.4
South	55	16.9	1,425	14.5
East	54	16.6	2,272	23.1
West	36	11.1	831	8.4
Northeast	35	10.8	636	6.5
North	30	9.2	896	9.1
Central	27	8.3	192	2.0
Centralwest	19	5.8	1,186	12.1
Total	**325**	**100**	**9,835**	**100**

[1] Paktya province
[2] Khost province
[3] Zabul province

In 2011, the number of monthly outbreaks ranged from 10 (in November) to 46 (in April), with an average of 27 outbreaks per month (almost one outbreak per day). And overall, most outbreaks were reported in spring (Figure 17).

The increase in number of outbreaks during months of March, April, May and July is due to a seasonal effect; as respiratory diseases and water-borne diseases occur during this period. In some parts of the country cold weather exist hence ARIs are occurring and in other parts where weather gets warmer ARIs are coming to decline and water-borne diseases (especially Cholera) start an overall rise in occurrence. Measles outbreaks that consists huge proportion of total outbreaks (44.9%) occurring in spring are also contribute into increased number of total outbreaks in spring.

Figure 17: Outbreaks by month, 2011



The most common causal agent for the outbreaks in 2011 was measles virus, which resulted in 44.9% (146) of total outbreaks. The next most common causal agent associated with outbreaks was Vibrio Cholera, accounted for 23.4% (76) of all outbreaks. Outbreaks due to Pertussis and Acute Viral Hepatitis had the third 14.2% (46) and fourth 2.8% (9) highest numbers respectively (Table 19).

This year, Q-fever outbreak with intercurrent infection of Brucellosis was reported for the first time from the Bamyan province (Central-west region).

Table 19: Reported outbreaks by disease during 2011

Disease	No. of outbreaks	% of outbreaks
Measles	146	44.9
Cholera	76	23.4
Pertussis	46	14.2
Acute Viral Hepatitis	9	2.8
Chicken Pox	7	2.2
Food poisoning	7	2.2
Malaria	5	1.5
CCHF	4	1.2
Diphtheria	3	0.9
Leishmaniasis	3	0.9
Pneumonia	3	0.9
Acute Gastroenteritis	2	0.6
ARI	2	0.6
Influenza A (H1N1)	2	0.6
Scabies	2	0.6
Tinea Capitis	2	0.6
Typhoid fever	2	0.6
Brucellosis	1	0.3
Meningitis	1	0.3
Mumps	1	0.3
Rabies	1	0.3
Total	**325**	**100**

Measles outbreak

The most common outbreak in 2011 was due to Measles (146 outbreaks), accounted for 44.9 % of all outbreaks associated with 2,211 measles cases and four reported deaths. There was a 10.9% increase in the number of Measles outbreaks compared to those reported during 2010. Measles cases were confirmed by laboratory testing for at least 90% of the outbreaks. Cases were labeled confirmed with positive serologic test for Measles IgM antibody. Samples were not collected for laboratory testing if outbreaks occurred in insecure and most remote areas. Southeast region reported 49 Measles outbreaks, (33.6%) of all Measles outbreaks. Table 20 shows the regions with the number of reported Measles outbreaks. At provincial level high number of Measles outbreaks was reported from Khost, Paktya (20 outbreaks from each), Herat (14 outbreaks), Laghman (9 outbreaks) and Zabul (9 outbreaks) provinces (Table 37). Districts with high number of reported Measles outbreaks in 2011 were, Jaji Aryob (9 outbreaks), Alishir (8 outbreaks), Qalat (8 outbreaks), Qala-e naw (5 outbreaks), Alishang (5 outbreaks), Chamkani (5 outbreaks) and Tani (5 outbreaks). Most of the Measles outbreaks (74.6%) were reported in the first five months of the year with peak in April (29 outbreaks) and March (25 outbreaks).

Table 20: Number of measles outbreaks by region, 2011

Region	No. of measles outbreaks	% of measles outbreaks
Southeast	49	33.6
West	26	17.8
East	22	15.1
South	22	15.1
Northeast	13	8.9
Centralwest	6	4.1
North	5	3.4
Central	3	2.1
Total	**146**	**100**

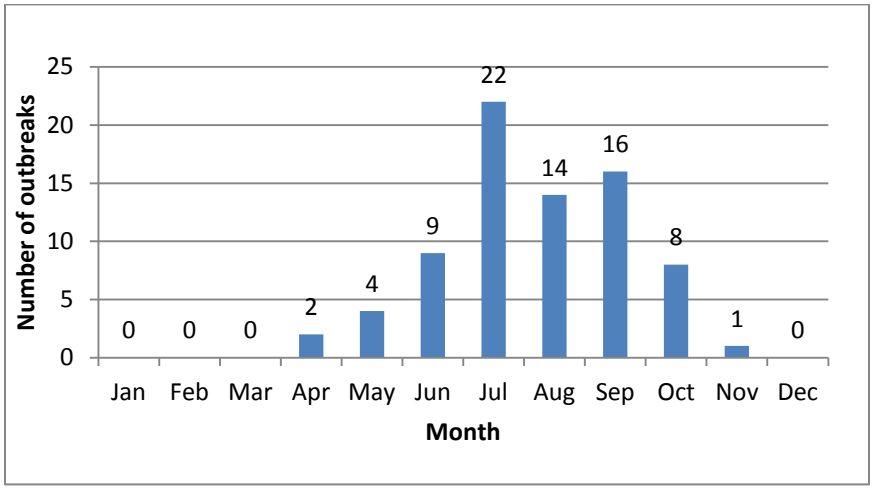
Cholera outbreak

The next most commonly reported outbreak after Measles during 2011 was of Cholera (76 outbreaks), accounted for 23.4 % of all reported outbreaks. There is an increase of 77.6 % in the number of Cholera outbreaks during 2011 as compared to 2010 and of 43.4% increase compared to 2009. A total of 3,733 cases and 44 reported deaths were associated with Cholera outbreaks this year. The number of cases during Cholera outbreaks ranged from one case (laboratory confirmed) to 272 cases (confirmed and probable in Chapa Dara, Kunar province). Almost 66% of the outbreaks were laboratory confirmed and Vibrio Cholera O1 Ogawa serotype was responsible for all the confirmed cases of the cholera. Regional variation in cholera outbreaks was observed with the highest number in South (20 outbreaks) followed by Southeast (15 outbreaks), East (13 outbreaks), and North (12 outbreaks). Kandahar (11 outbreaks), Helmand (6 outbreaks), Nangarhar (6 outbreaks), Ghazni (5 outbreaks), Kabul (5 outbreaks) and Khost (5 outbreaks) were the provinces with high number of cholera outbreaks. See Annex 1, table 38 and 39 for number of Cholera outbreaks by province and top 10 Cholera districts. Figure 18 indicates that Cholera outbreaks were start notifying from April to November with highest number during July, August and September (52 outbreaks, 68.4%).

Table 21: Number of Cholera outbreaks by region, 2011

Region	No. of outbreaks	% of outbreaks
South	20	26.3
Southeast	15	19.7
East	13	17.1
North	12	15.8
Central	9	11.8
Northeast	5	6.6
Central west	2	2.6
West	0	0.0
Total	**76**	**100**

Figure 18: Cholera outbreaks by month, 2011



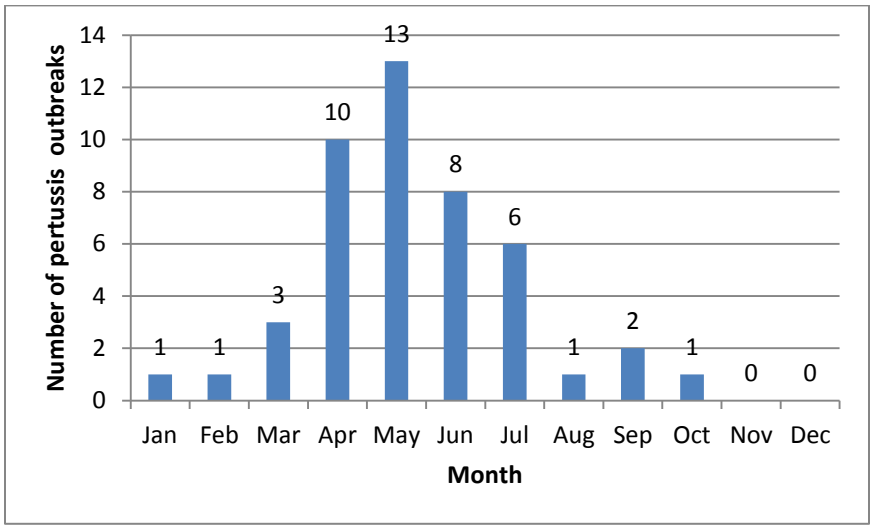
Pertussis outbreak

Pertussis outbreak was the third most common outbreak countrywide in 2011 with 46 outbreaks and 492 associated cases. All the outbreaks were clinically confirmed. There was an increase of 74% in pertussis outbreaks in 2011 as compared to 2010. Most of the outbreaks were reported from the Central (11 outbreaks), South (10 outbreaks), and North (9 outbreaks) regions (Table 22). Outbreaks in the South were only reported from Kandahar province. Kapisa and Kunduz were among the provinces with high number of reported Pertussis outbreaks after Kandahar; reported 6 and 5 outbreaks respectively. Districts with high number of reported pertussis outbreaks in 2011 were, Chardara (4 outbreaks), Kandahar city (3 outbreaks), Mahmood Raqi (3 outbreaks), and Spin Boldak (3 outbreaks). Most of the outbreaks (80%) were notified during April to July with peak in May, 13 outbreaks (Figure 19).

Table 22: Number of pertussis outbreaks by region, 2011

Region	No. of Pertussis outbreaks	% of Pertussis outbreaks
Central	11	23.9
South	10	21.7
Northeast	9	19.6
East	5	10.9
North	4	8.7
Southeast	3	6.5
West	3	6.5
Central West	1	2.2
Total	**46**	**100**

Figure 19: Pertussis outbreaks by month, 2011



Acute Viral Hepatitis

In 2011, a total of 9 outbreaks of acute viral hepatitis with associated 234 cases were reported; of which 3 reported from East, 2 from Northeast, 2 from Central west and one from each South and West regions. Laghman and Badakhshan provinces each, reported outbreaks from their two districts (Table 23). Hepatitis B Virus was confirmed by laboratory testing for 44.5 % (4) of the outbreaks. Use of contaminated needles for injecting and shared razors could be possible risk factors for the spread of HBV in these areas.

Table 23: Number of Acute Viral Hepatitis outbreaks by district, 2011

Province	District	No. of outbreaks	Laboratory confirmation
Badakhshan	Darayem	1	
	Tagab kishim	1	HBV Positive
Laghman	Qarghaee	1	
	Mehterlam	1	HBV Positive
Bamyan	Waras	1	
Daikundi	Shahrestan	1	
Nangarhar	Hesarak	1	
Kandahar	Kandahar city	1	HBV Positive
Farah	Posht-e-Koh	1	HBV Positive

Brucellosis outbreak

Brucellosis, transmitted to human from sheep and goats, has been eliminated from most developed countries. Nonetheless, in developing countries including Afghanistan brucellosis is still the most common zoonotic disease. In 2011, a brucellosis outbreak with more than 500 cases was reported in late May, 2011 from Yakawlang and Panjab districts of the Bamyan province. The affected villages of these two districts are located close to each other. There were 184 laboratory confirmed brucellosis cases including 27 samples positive for both Brucellosis and Q-fever. Q-fever was identified for the first time in the country. Two unconfirmed related deaths have also been reported from the area. Information on the cases was obtained from the health facilities in the affected areas. The mean age was 25.5 years and the most frequent symptoms were fever, chills, general malaise, arthralgia, and headache. The transmission in this outbreak is considered to be direct due to exposure to the sheep and goats. The sporadic cases of Brucellosis have also been reported from Waras and Shibar districts of Bamyan province.

Laboratory Report 2011

Central Public Health Laboratory (CPHL), a national reference laboratory, supports the surveillance/DEWS program in confirmation of the suspected outbreaks detected countrywide. In 2011, the laboratory performed a total of 3,424 tests of specimens received from all the DEWS regions. The number of specimens examined for Measles remained highest at 2,187 or 63.8 % of total specimens. Among all 1,866 positive specimens, 1472 were positive for Measles, 110 for Rota virus, 146 for Cholera and the rest for CCHF, Brucellosis, HBV, H1N1, Rubella and Flu. Table 24 details the number of tested and positive specimens by region and diseases.

Table 24: Number of investigated and positive specimens by region and disease, 2011

Region	No. of specimens/positive	Measles	Rota virus	Cholera	Typhoid	CCHF	HBV
East	No. of specimens	256	477	89	0	0	48
	No. tested positive	177	80	35	0	0	5
South	No. of specimens	260	0	52	0	1	5
	No. tested positive	187	0	24	0	0	3
South East	No. of specimens	203	0	60	0	0	0
	No. tested positive	141	0	19	0	0	0
Central	No. of specimens	493	0	73	0	7	0
	No. tested positive	352	0	27	0	0	0
West	No. of specimens	243	146	0	0	5	12
	No. tested positive	158	16	0	0	1	8
North	No. of specimens	176	58	56	0	5	8
	No. tested positive	126	14	27	0	0	0
Central West	No. of specimens	217	0	42	2	0	16
	No. tested positive	133	0	7	0	0	0
North East	No. of specimens	339	0	19	4	4	35
	No. tested positive	198	0	7	0	1	2
Total	**No. of specimens**	**2,187**	**681**	**391**	**6**	**22**	**124**
	No. tested positive	**1,472**	**110**	**146**	**0**	**2**	**18**

Daily Emergency Report 2011

All the country including 34 provinces is under the coverage of Codan Radio System used for communicating daily emergency health related events. The system was first established and equipped by WHO inside the ministry of public health and in eight regions in the year 2003. The system is governed by Central Codan Department located in the ministry of public health and receives daily reports from all over the country. All the received information is then shared with the surveillance directorate.

The role of Codan department at a national level includes;

- Receiving outbreak reports from the provinces
- Receiving seasonal diseases reports from all provinces
- Receiving daily reports on natural disasters, explosions, traffic accidents, and other criminal events
- Send and receive the official letters and documents from all provinces
- Sharing the information with other relevant directorates of the ministry of public health

Table 25 shows the reported number of injuries and deaths due to various unpleasant events in 2011.

Table 25: Number of injured and deaths by event, reported by Codan unit, 2011

Event	Total number of injured	Total number of deaths
Explosions	1473	410
Road traffic accident	25179	432
Natural disaster	40	69
Burns	8062	18
Criminal events	14980	405
Total	**49,734**	**1,334**

Capacity Building- Health System Strengthening

In addition to the early detection and response to the outbreaks, health system strengthening through providing quality trainings in laboratory procedures, epidemiology and other public health disciplines is one of the core objectives of DEWS. Trainings at various levels (international and national) have been provided to the DEWS team in 2011. The details of the all trainings have been provided below;

International Trainings

- Distance MPH course for 12 MoPH staff in Judah Pur University (India)
- Diarrheal and water born disease course for 2 MoPH staff in American University of Beirut-Lebanon
- IHR online course for 2 MoPH staff
- Participation of DEWS staff in different inter-country meetings.

National level Trainings

- Outbreak Investigation and Response Training for provincial DEWS and CDC officers, WHO polio staff and NGOs
- Water Quality Testing Training for DEWS and CDC provincial officers
- Nutrition Surveillance Training
- Brucellosis Case management Training in west region
- 6 Coordination meetings and DEWS refresher trainings

Tools, Guidelines and SOPs

In 2011, most of the DEWS existing tools were revised and some operational guidelines were newly developed for field staff. DEWS tools include outbreak investigation form, DEWS weekly surveillance form, Measles case reporting form, Codan daily reporting form, outbreak line list form, Lab request form, Influenza Lab request form and Influenza surveillance forms. Operational guidelines for Cholera and Measles epidemic response were newly developed.

Existing guidelines include DEWS Manual containing guidelines for 28 diseases on surveillance and response to outbreaks, fact sheets for health workers, health education material for each disease, Measles surveillance and response Guideline, influenza surveillance guidelines, toolkit for early detection and response to outbreaks of Influenza A (H1N1) and toolkit for early detection and control of human cases of Avian Influenza.

DEWS indicators

Table 26 indicates DEWS achievements based on the seven indicators on quarterly base for the whole year as well as the average calculation of the indicators, baseline at 2007 and target.

Table 26: DEWS achievements based on the indicators in 2011

S.No	Indicator	Q1	Q2	Q3	Q4	Total /Average	Base line 2007	Target
1	Percentage of weekly report arrived from sentinel sites to national level timely	99.2%	98.9%	98.8%	99.4%	**99.1%**	100%	>90%
2	Percentage of timely compilation, analysis and dissemination of weekly report at the national level	100.0%	100.0%	100.0%	100.0%	**100.0%**	95%	>90%
3	Percentage of outbreaks investigated within 48 hours of notification	96.3%	96.4%	92.5%	97.5%	**95.7%**	80-90%	>90%
4	Percentage of attendance of DEWS in monthly PHCC meetings	100.0%	99.0%	96.8%	99.0%	**98.7%**	NA	>90%
5	Number of DEWS coordination meeting hold at the national level	1	2	1	2	**6**	11	6
6	Percentage of serum specimens collected for measles/Rubella reached to CPHL in good condition (Adequate specimen)	90.8%	94.6%	96.5%	89.1%	**92.8%**	61%	>80%
7	Number of specimen confirmed by reference laboratory	41	41	18	0	**100**	NA	>10%

Conclusion

This report concludes that communicable diseases are still major health threat for the people of Afghanistan. Communicable diseases represent the larger portion of the OPD and IPD consultations that most of them can be easily prevented by cheaply available vaccines. For certain diseases there has been some reduction in the incidence and number of cases through concerted prevention and control strategies. The current high numbers of infectious diseases cases, outbreaks and deaths illustrate the need for research in local perspectives on the determinants of health and disease in the country. The current high burden of communicable diseases in Afghanistan may largely be due to the armed conflict, damaged health infrastructure, insufficient skilled health staff, poverty, illiteracy, inadequate housing and poor environmental conditions. Malnutrition in children less than five years old also plays an important role in sufferings from most communicable diseases. Inequity in health along is crucial impendent in combating the infectious disease. Inaccessibility to the primary health care and weak referral system also contribute to the persistence of the communicable disease. Children less than five years old accounted for more than half of the reported cases for the majority of the DEWS targeted diseases.

Annex1: Weekly Report Format and Case Definitions

Weekly Report Format

Surveillance Reporting Form for Morbidity and Mortality

Province Name/Code: District Name/Code:
Town/Village/Camp: Facility Name/Code: NGO/Donor:

Epidemiological Week___ from Saturday: _____/_____/ to Friday____/____/2011 Submission
Date: ___/____/____ Contact's Name & phone #…

Disease/Condition		<5 years				≥5 years			
		Male		Female		Male		Female	
		Case	Death	Case	Death	Case	Death	Case	Death
1	ARI- Cough and cold								
2	ARI- Pneumonia								
3	Acute Watery Diarrhea								
4	Acute Bloody Diarrhea								
5	AWD w Dehydration								
6	Susp. Meningitis /SIC								
7	Susp. Acute Viral Hepatitis								
8	Susp. Measles								
9	Susp. Pertussis								
10	Probable Diphtheria								
11	Tetanus/ Neonatal Tetanus								
12	Acute Flaccid Paralysis								
13	Susp. Malaria								
14	Susp. Typhoid Fever								
15	Susp. Hemorrhagic Fever								
16	Pregnancy-related deaths								
	DEWS Disease								
TOTAL New Clients/ Deaths									

- Please include only those cases that were examined / admitted during the surveillance week and deaths that occurred during the surveillance week. Each case should be counted only once.
- Write "0" (zero) if you had no case or death of any of the Health Events listed in the form.
- Deaths should be reported only under "Deaths", NOT under "Cases", and please fill the following table for each reported death.

S.N.	Name	Age	Sex	Cause	Residence/ Address
1					
2					
3					

Case Definitions

1. **Cough and Cold:** Acute onset of cough, cold, coryza (runny nose), pharyngitis, laryngitis, bronchitis, or bronchiolitis with or without fever.

   Influenza-Like Illness (ILI): Acute onset of fever >38deg C. with cough and/or sore throat. Patient should have measurable fever when sample is taken.

   Suspected Avian Influenza: Influenza-like illness in person who has had contact with birds/poultry in previous week, especially living or visiting an area with sickness or death in poultry. **Confirmed case**: Throat swab positive for H5 avian influenza.

2. **Pneumonia:** In adults: fever and crepitation or bronchial sounds on chest auscultation. In children <5 years old, cough with chest indrawing and/ or fast breathing: More than:

   60/min in infants <2 months, 50/min in infants 2-12 months, 40/min in children > 1 year.

3. **Acute Watery Diarrhea:** Three or more abnormally loose or fluid stools in the past 24 hours with or without fever or mucous, but without dehydration.
4. **Acute Bloody Diarrhea (Dysentery):** Acute Diarrhea with visible blood in the stool.

   Suspected Shigellosis: Bloody diarrhea, fever, stomach cramps in 5 or more connected cases. **Confirmed case:** Isolation of *Shigella dysenteriae* type 1 in stool sample.

5. **Acute Watery Diarrhea with dehydration:** Acute or Bloody Diarrhea with dehydration.

   Suspected Cholera: Anyone over 5 years old with severe dehydration or death from acute watery diarrhea with or without vomiting. **Confirmed case:** Isolation of *Vibrio cholera* O1 Inaba or 01 Ogawa or O139 from diarrheal stool sample.

6. **Suspected Meningitis:** Sudden onset of fever (>38.5) with stiff neck, and altered consciousness or other meningeal sign or petechial or purpural rash. See HMIS definition of Severely Ill Child (SIC). Signs of suspected meningitis in infants are fever and bulging fontanelle.
7. **Suspected Acute Viral Hepatitis:** Illness with acute onset of yellow skin and conjunctiva (jaundice), dark urine, and fatigue. Also anorexia, nausea, malaise, and right upper quadrant tenderness.
8. **Suspected Measles:** Maculopapular rash for at least 3 days, with fever and cough, runny nose or conjunctivitis or any person in whom a clinician suspects measles infection. **Confirmed case:** Suspected case with positive serum IgM and no measles vaccination in prior 28 days.
9. **Suspected Pertussis**: A person with a cough lasting at least two weeks with one of the following: Paroxysms (i.e. fits) of coughing; or inspiratory “whoop”; or post-tussive vomiting (i.e. vomiting immediately after coughing) AND without other apparent cause.

10. **Probable Diphtheria**: An acute illness characterized by an adherent membrane on the tonsils, pharynx and/ or nose and any one of the following: laryngitis, pharyngitis or tonsillitis.
11. **Tetanus:** One or more of the following signs: Trismus of the facial muscles (masseter) and neck/ risus sardonicus, painful muscular contractions.

    Suspected Neonatal Tetanus: Any neonatal death between 3-28 days of age in which the cause of death is unknown or not investigated. **Confirmed:** Any neonate with a normal ability to suck and cry during the first two days of life, and who between 3 and 28 days of age cannot suck normally and becomes stiff and/or has convulsions.
12. **Acute Flaccid Paralysis:** Sudden floppy paralysis in a child aged < 15 years, including Guillain Barré syndrome, or any person with paralytic illness at any age when polio is suspected.
13. **Suspected Malaria:** Fever or history of fever >38°C within the last 48 hours with at least one other symptom: chills, sweats, nausea, vomiting, headache, back pain, or myalgia. In uncomplicated falciparum malaria, diarrhea and cough are common.
14. **Suspected Typhoid Fever:** Continuous high fever with any of the following: relative bradycardia, rose spots, prostration, diarrhea or constipation, abdominal pain, splenomegaly, or leucopenia and positive Widal test on the 8^{th}-10^{th} day.
15. **Suspected Acute Hemorrhagic Fever:** Acute febrile illness of more than 72 hours and less than 10 days duration and any two of the following: Thrombocytopenia less than 100,000 / mm3, petechial or purpuric rash, epistaxis, hematemesis, hemoptysis, blood in stools, ecchymosis, gum bleeding, other hemorrhagic symptom AND no known predisposing host factors.
16. **Pregnancy-related Death:** Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Total New Clients: This is taken directly from the HMIS Tally Sheet and is used as a proxy for the population denominator when calculating rates.

Annex 2: Supplementary data

Table 27: Cough and Cold cases by province, 2011

Province	No. of cough and cold cases	% of cough and cold cases out of total consultations
Logar	87,322	28.4
Kapisa	64,122	24.9
Nuristan	24,082	23.1
Daykundi	45,817	21.7
Wardak	49,805	21.1
Kunar	86,101	19.9
Baghlan	47,769	19.9
Herat	130,327	19.8
Faryab	88,295	19.5
Laghman	65,947	19.2
Jawzjan	73,006	18.4
Balkh	85,637	17.8
Nangarhar	193,302	17.8
Sari Pul	39,980	17.6
Bamyan	39,924	17.6
Paktya	55,308	17.6
Kunduz	44,478	17.4
Nimroz	25,731	16.8
Ghazni	50,110	16.8
Parwan	34,159	16.7
Panjsher	24,377	16.6
Hilmand	45,637	15.9
Khost	41,012	15.9
Takhar	50,561	15.3
Badakhshan	55,812	14.8
Farah	28,438	14.6
Paktika	26,929	14.6
Badghis	27,584	14.4
Kandahar	61,690	14.3
Samangan	31,828	13.2
Kabul	309,743	13.0
Uruzgan	31,385	12.0
Zabul	14,914	10.7
Ghor	29,336	9.8
Total	**2,110,468**	

Table 28: Pneumonia cases by province, 2011

Province	No. of pneumonia cases	% of pneumonia cases out of total consultations
Jawzjan	31,121	7.9
Sari Pul	17,723	7.8
Baghlan	14,735	6.1
Kunar	20,177	4.7
Balkh	20,960	4.4
Nuristan	4,543	4.4
Badakhshan	16,120	4.3
Daykundi	8,994	4.3
Bamyan	9,597	4.2
Samangan	9,916	4.1
Kunduz	10,084	3.9
Logar	11,932	3.9
Panjsher	5,125	3.5
Nangarhar	34,381	3.2
Takhar	10,111	3.1
Wardak	7,122	3.0
Kabul	71,286	3.0
Kapisa	7,426	2.9
Laghman	9,576	2.8
Badghis	4,541	2.4
Paktika	4,162	2.3
Faryab	10,201	2.3
Ghor	5,812	1.9
Paktya	6,040	1.9
Nimroz	2,842	1.9
Hilmand	5,211	1.8
Ghazni	5,033	1.7
Hirat	10,990	1.7
Kandahar	5,991	1.4
Khost	3,450	1.3
Parwan	2,109	1.0
Farah	1,871	1.0
Zabul	1,195	0.9
Uruzgan	1,621	0.6
Total	**391,998**	

Table 29: Acute Watery Diarrhea cases by province, 2011

Province	No. of AWD cases	% of ADW cases out of total consultations
Nimroz	20,418	13.4
Baghlan	26,713	11.1
Samangan	26,432	11.0
Nuristan	10,406	10.0
Kandahar	39,932	9.3
Parwan	18,610	9.1
Ghazni	26,821	9.0
Takhar	28,912	8.8
Jawzjan	34,617	8.7
Paktya	26,843	8.5
Hilmand	24,424	8.5
Hirat	55,419	8.4
Farah	16,158	8.3
Badghis	15,899	8.3
Kapisa	20,938	8.1
Sari Pul	18,385	8.1
Kunduz	20,246	7.9
Logar	22,974	7.5
Laghman	25,432	7.4
Faryab	32,103	7.1
Badakhshan	26,289	7.0
Nangarhar	76,032	7.0
Kunar	29,969	6.9
Bamyan	15,195	6.7
Balkh	31,784	6.6
Khost	17,065	6.6
Daykundi	14,013	6.6
Paktika	11,831	6.4
Zabul	8,384	6.0
Ghor	17,753	5.9
Wardak	11,862	5.0
Kabul	114,552	4.8
Panjsher	6,653	4.5
Uruzgan	11,747	4.5
Total	**904,811**	

Table 30: ADW with Dehydration cases by province, 2011

Province	No. of AWD with Dehydration cases	% of ADW with Dehydration cases out of total consultations
Hilmand	5520	1.9
Kandahar	6928	1.6
Zabul	2192	1.6
Laghman	5069	1.5
Kunduz	3664	1.4
Paktya	4060	1.3
Uruzgan	3255	1.2
Nangarhar	13425	1.2
Sari Pul	2599	1.1
Khost	2688	1.0
Nimroz	1424	0.9
Kabul	21464	0.9
Jawzjan	3412	0.9
Paktika	1579	0.9
Kunar	3615	0.8
Logar	2441	0.8
Ghazni	2138	0.7
Bamyan	1426	0.6
Balkh	2942	0.6
Farah	1190	0.6
Faryab	2533	0.6
Nuristan	576	0.6
Wardak	1147	0.5
Daykundi	1024	0.5
Baghlan	1159	0.5
Badakhshan	1632	0.4
Samangan	1022	0.4
Takhar	1333	0.4
Hirat	2584	0.4
Badghis	401	0.2
Ghor	595	0.2
Panjsher	184	0.1
Kapisa	280	0.1
Parwan	221	0.1
Total	**105,722**	

Table 31: Acute Bloody Diarrhea cases by province, 2011

Province	No. of acute bloody diarrhea cases	% of acute bloody diarrhea cases out of total consultations
Nuristan	4761	4.6
Kunar	14378	3.3
Jawzjan	12072	3.0
Wardak	7038	3.0
Kandahar	12337	2.9
Kunduz	7077	2.8
Nangarhar	29127	2.7
Laghman	8607	2.5
Logar	7460	2.4
Kapisa	6243	2.4
Daykundi	4961	2.3
Balkh	10772	2.2
Bamyan	5049	2.2
Baghlan	5252	2.2
Ghazni	6445	2.2
Badghis	3981	2.1
Sari Pul	4623	2.0
Khost	5135	2.0
Paktya	6093	1.9
Samangan	4488	1.9
Parwan	3808	1.9
Nimroz	2697	1.8
Hilmand	4903	1.7
Farah	3282	1.7
Paktika	2892	1.6
Badakhshan	5866	1.6
Takhar	4956	1.5
Faryab	5851	1.3
Uruzgan	3358	1.3
Hirat	8130	1.2
Panjsher	1683	1.1
Zabul	1478	1.1
Kabul	22019	0.9
Ghor	1585	0.5
Total	**238,407**	

Table 32: Suspected Malaria cases by province, 2011

Province	No. of suspected malaria cases	% of suspected malaria cases out of total consultations
Kunar	13466	3.11
Nangarhar	26348	2.42
Zabul	2891	2.07
Paktika	3570	1.94
Hilmand	3435	1.20
Laghman	4046	1.18
Badakhshan	4281	1.14
Nuristan	1105	1.06
Khost	2335	0.91
Paktya	1972	0.63
Kandahar	2367	0.55
Jawzjan	2114	0.53
Balkh	2324	0.48
Uruzgan	994	0.38
Ghazni	1121	0.38
Badghis	702	0.37
Takhar	872	0.26
Panjsher	360	0.24
Wardak	525	0.22
Logar	649	0.21
Nimroz	281	0.18
Daykundi	277	0.13
Kabul	2656	0.11
Kapisa	276	0.11
Sari Pul	134	0.06
Parwan	110	0.05
Hirat	232	0.04
Samangan	71	0.03
Kunduz	73	0.03
Farah	37	0.02
Bamyan	31	0.01
Baghlan	14	0.01
Ghor	7	< 0.01
Faryab	3	< 0.01
Total	**79,679**	

Table 33: Suspected Meningitis/Severely Ill Child cases by province, 2011

Province	No. of suspected meningitis/SIC cases	% of suspected meningitis/SIC cases out of total consultations
Jawzjan	623	0.16
Hilmand	289	0.10
Faryab	390	0.09
Kunduz	214	0.08
Hirat	521	0.08
Kabul	1825	0.08
Sari Pul	166	0.07
Ghazni	208	0.07
Balkh	324	0.07
Badghis	116	0.06
Takhar	193	0.06
Samangan	137	0.06
Badakhshan	195	0.05
Kunar	194	0.04
Nangarhar	485	0.04
Kandahar	167	0.04
Baghlan	90	0.04
Wardak	53	0.02
Farah	35	0.02
Daykundi	23	0.01
Logar	33	0.01
Uruzgan	27	0.01
Paktya	32	0.01
Panjsher	14	0.01
Paktika	17	0.01
Khost	23	0.01
Bamyan	20	0.01
Nuristan	9	0.01
Parwan	12	0.01
Nimroz	8	0.01
Kapisa	13	0.01
Zabul	7	0.01
Laghman	12	< 0.01
Ghor	6	< 0.01
Total	**64,81**	

Table 34: Suspected measles cases by province, 2011

Province	No. of measles cases	% of measles cases out of total consultations
Hilmand	554	0.19
Zabul	152	0.11
Khost	213	0.08
Bamyan	187	0.08
Kunduz	187	0.07
Nangarhar	689	0.06
Kunar	208	0.05
Takhar	154	0.05
Kandahar	197	0.05
Jawzjan	180	0.05
Kabul	943	0.04
Badakhshan	141	0.04
Badghis	70	0.04
Nimroz	53	0.03
Paktya	109	0.03
Daykundi	72	0.03
Logar	100	0.03
Wardak	64	0.03
Faryab	122	0.03
Parwan	43	0.02
Kapisa	45	0.02
Baghlan	37	0.02
Laghman	52	0.02
Balkh	70	0.01
Sari Pul	30	0.01
Ghazni	38	0.01
Paktika	19	0.01
Panjsher	14	0.01
Hirat	61	0.01
Nuristan	8	0.01
Samangan	13	0.01
Farah	10	0.01
Uruzgan	13	< 0.01
Ghor	8	< 0.01
Total	**4,856**	

Table 35: Provinces with the number of reported Hemorrhagic fever cases, 2011

Province	No. of Hemorrhagic Fever cases
Balkh	67
Sari Pul	35
Jawzjan	34
Takhar	33
Badakhshan	31
Faryab	23
Kabul	23
Nimroz	22
Samangan	17
Hilmand	12
Kandahar	11
Logar	11
Ghazni	9
Zabul	9
Paktya	7
Herat	5
Kunduz	5
Uruzgan	2
Kapisa	1
Total	**357**

Table 36: Number of outbreaks per province, 2011

S.N	Province	No. of outbreaks	% of outbreaks
1	Kandahar	29	8.9
2	Khost	26	8.0
3	Paktya	26	8.0
4	Nangarhar	22	6.8
5	Herat	20	6.2
6	Ghazni	15	4.6
7	Laghman	14	4.3
8	Kapisa	13	4.0
9	Badakhshan	12	3.7
10	Kunduz	12	3.7
11	Zabul	11	3.4
12	Helmand	9	2.8
13	Kunar	9	2.8
14	Nuristan	9	2.8
15	Badghis	8	2.5
16	Daikundi	8	2.5
17	Jawzjan	8	2.5
18	Kabul	8	2.5
19	Samangan	8	2.5
20	Balkh	7	2.2
21	Takhar	7	2.2
22	Bamyan	6	1.8
23	Farah	6	1.8
24	Saripul	6	1.8
25	Baghlan	4	1.2
26	Parwan	4	1.2
27	Logar	3	0.9
28	Nimroz	3	0.9
29	Panjshir	3	0.9
30	Urozgan	3	0.9
31	Ghor	2	0.6
32	Paktika	2	0.6
33	Faryab	1	0.3
34	Wardak	1	0.3
	Total	**325**	**100**

Table 37: Number of measles outbreaks by province, 2011

S.No	Province	No. of measles outbreaks		S.No	Province	No. of measles outbreaks
1	Khost	20		15	Helmand	3
2	Paktya	20		16	Bamyan	2
3	Herat	14		17	Ghor	2
4	Laghman	9		18	Jawzjan	2
5	Zabul	9		19	Kapisa	2
6	Ghazni	8		20	Kunduz	2
7	Badghis	7		21	Nimroz	2
8	Kandahar	6		22	Nuristan	2
9	Nangarhar	6		23	Saripul	2
10	Takhar	6		24	Urozgan	2
11	Badakhshan	5		25	Balkh	1
12	Kunar	5		26	Logar	1
13	Daikundi	3		27	Paktika	1
14	Farah	3		28	Parwan	1
Total						**146**

Table 38: Number of Cholera outbreaks by province, 2011

S.No	Province	No. of Cholera outbreaks		S.No	Province	No. of Cholera outbreaks
1	Kandahar	11		12	Nuristan	3
2	Helmand	6		13	Samangan	3
3	Nangarhar	6		14	Baghlan	2
4	Ghazni	5		15	Balkh	2
5	Kabul	5		16	Saripul	2
6	Khost	5		17	Zabul	2
7	Jawzjan	4		18	Bamyan	1
8	Kapisa	4		19	Faryab	1
9	Paktya	4		20	Laghman	1
10	Kunar	3		21	Paktika	1
11	Kunduz	3		22	Parwan	1
				23	Urozgan	1
Total						**76**

Table 39: Top ten districts for reported Cholera outbreaks, 2011

S.No	District	No. of Cholera outbreaks
1	Bost	4
2	Giro	3
3	Kandahar city	3
4	Ahmad khil	2
5	Aybak	2
6	Khan Abad	2
7	Shahwalikot	2
8	Takhtapol	2
9	Wama	2
10	Alingar	1