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Afghan Public Health Institute (APHI)

Surveillance Directorate

Disease Early Warning System (DEWS)

Surveillance and Early Detection of Communicable Diseases

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Abbreviations

ADD	Acute Diarrheal Diseases
ARI	Acute Respiratory Infection
ARI-CC	ARI- Cough and Cold
AWD	Acute Watery Diarrhea
BHC	Basic Health Center
CCHF	Crimean-Congo Hemorrhagic Fever
CFR	Case-fatality ratio
CHC	Comprehensive Health Center
CPHL	Central Public Health Laboratory
CSR	Communicable Diseases Surveillance and Response
DEWS	Disease Early Warning System
DH	District Hospital
HMIS	Health Management Information System
MoPH	Ministry of Public Health
PCR	Polymerase Chain Reaction
PH	Provincial Hospital
PHCC	Provincial Health Coordination Committee
Pn	Pneumonia
RH	Regional Hospital
SIC	Severe Ill Child
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

In Afghanistan, Disease Early Warning System (DEWS) with sentinel site surveillance approach was established in mid-December 2006, with technical support of WHO and financial support of the USAID. The aim of the system is to provide timely information about the targeted priority diseases and to detect early and respond to the potential outbreaks within 24-28 hours. By the end of 2009 there were 177 sentinel sites with 220 focal points and in 2010, DEWS expanded to 68 new sentinel sites with a total of 245 sentinel sites operating in all Public Hospitals(regional, provincial and district) and majority of basic and comprehensive health facilities in 34 provinces of the country and 210 districts. Weekly surveillance system collects reports on 15 diseases and conditions from all sentinel sites and analyze weekly at regional and central level to observe distribution and take appropriate action.

In 2010, sixteen diseases and conditions were targeted for DEWS including Pandemic Influenza H1N1 in Afghanistan. A total of 2,927,215 cases of these diseases and conditions, that represent 28.6% of total clients, were reported through all sentinel sites in the country. Between 2009 and 2010 there is significant decrease in the percentages of cases reported for individual diseases except for acute watery diarrhea that remain stable at 6.6%. Acute respiratory infections continued to comprise the larger proportion of total clients (18.2%). In particular, Cough and Cold contributed 15.2% and Pneumonia 2.9%. Diarrheal diseases remained the second most commonly reported illness with no significant change in proportions from last year. Malaria and Typhoid fever were the third most frequently reported diseases, each account for 0.6% of total clients in all ages.

There were 225 outbreaks reported and investigated in 2010 of which 206 (91.5%) were clinically or laboratory-confirmed. A total of 8,549 cases were associated with outbreaks with an average of 41 cases per outbreak. The highest number of outbreaks (48) was reported from South East region while the lowest number was from West and Central West regions (15 from each).

The number of monthly outbreaks ranged from six in November to 36 in March, with an average of 17 outbreaks per month and 4 outbreaks per week. Overall most outbreaks were reported in spring. Most of the outbreaks (130) were due to measles, accounted for

63.1% of all outbreaks. The next most common outbreak was of Cholera, accounted for 8.3% while pertussis and poisoning, each, accounted for 5.8% of outbreaks.

A total of 2,863 deaths were reported by all sentinel sites. Pneumonia remains with high number of deaths, followed by meningitis and acute diarrheal diseases. Pneumonia accounted for 56.8% of all deaths, meningitis for 21.9% and all others for the rest 21%. The highest Case Fatality Ratios were recorded for Tetanus/Neonatal Tetanus (146.9/1000) and Meningitis (94/1000).

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. However, some of the underlying causes are known.

Reporting and disease estimates from surveillance systems can be affected by changes in disease awareness, laboratory diagnostic tests and testing protocols, case definitions, and reporting practices over time. However, ongoing surveillance is important to detect outbreaks and respond on time and to identify changes in diseases trend and distribution to inform appropriate public health action.

Introduction

DEWS Annual Report 2010 is a surveillance report that provides an overview of the situation of priority diseases under surveillance in Afghanistan. The report is based on the weekly and outbreak reports for 2010 from all sentinel sites submitted to the Surveillance department, MoPH. However, data collected for 2008 and 2009 have been compared with 2010 in some instances. Data on emergency situations collected on daily basis are also included as a part of this report. This Annual Report will help and enable epidemiologists, public health experts and policymakers to make better evidence-based decisions to improve prevention and control programs.

In Afghanistan, Disease Early Warning System (DEWS) 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). The first sentinel sites were operating in provincial hospitals of eight provinces in the country, namely, Kabul, Nangarhar, Kandahar, Balkh, Badakhshan, Bamyan, Paktia and Hirat. Later on, when data collection extended to other provinces, these provinces considered as the relevant DEWS regions. At the end of 2010 there were 245 sentinel sites operate in regional, provincial and district hospitals and in basic and comprehensive health facilities in 34 provinces of the country. Weekly reports are collected from all sentinel sites to observe distribution of the targeted diseases for early response. The percentage of the reporting was increased to 99.4 % in 2010 compared to 99.2 % in 2009, 98.9 % in 2008 and 97.8 % in 2007.

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. This includes more than 28 outbreaks potential known diseases and unexplained deaths.

DEWS Vision

Responsive and sustainable Disease Early Warning System in Afghanistan with sensible data collection, analyses, timely information dissemination and coordinated effective prevention and control activities to reduce morbidity, mortality and disability 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 DEWS is to contribute to the improvement of health status through providing timely information about communicable diseases distributions and outbreaks and taking early response for control and prevention.

The specific objectives of DEWS are:

- to monitor the seasonal trend and distribution 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 build the capacity of DEWS team in Epidemiology and Public Health through offering trainings at regional, national and international level
- to monitor the impact of national disease control programs
- to assist in developing evidence-based policy and allocate resources appropriately

Surveillance Methods

How DEWS Work

All levels of DEWS, from field 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:

Step 1 - Detection of priority diseases and events using standard case definitions at field level (health facility level)

Step 2 - Reporting suspected outbreaks and weekly surveillance reports to the next level (provincial, regional and national)

Step 3 - Compilation, analyzes and interpretation of data for distribution by time, place and person

Step 4 - Investigation and confirmation of suspected outbreak alerts, outbreaks. Taking actions at various levels to bring preventive and control measures including laboratory confirmation to ensure that the outbreak is confirmed

Step 5 - Dissemination of the findings from the analyses of routine weekly reports and outbreaks to all departments of MoPH, Local NGOs, Donors, and other international organizations

Step 6 - Taking timely actions to implement the appropriate public health preventive and control measures

Diseases under Surveillance

DEWS collect weekly reports from selected sentinel sites on fifteen agreed upon priority diseases and pregnancy related deaths in a standardized format (Appendix I).

These diseases/conditions are recommended for surveillance because they are;

- Main causes of morbidity and mortality in Afghanistan (for example, pneumonia, diarrheal diseases and malaria)
- Diseases with highly epidemic potential to cause serious public health impact due to their ability to spread rapidly (for example, viral hemorrhagic fever)
- Diseases of MoPH-Afghanistan priority
- Diseases of internationally public health importance (for example, Acute Flaccid Paralysis)

The list of priority diseases may vary from time to time depending on the epidemiological situation, needs and health system. Table1 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 1: DEWS targeted diseases and conditions for surveillance and response -2010

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

All suspected cases of the priority diseases are measured by sentinel sites in routine weekly and outbreak reports. Specimens from each outbreak of disease and unusual event are sent to Central Public Health Laboratory (CPHL) as it is required by the surveillance system for confirmation.

Diseases of Outbreak-potential in Afghanistan

Outbreaks of infectious diseases such as measles, pertussis, hepatitis, chickenpox, typhoid, malaria and neonatal tetanus are frequent, though most are preventable with simple strategies and available vaccines. Due to the ongoing armed conflict, lack of sufficient resources and repeated forced migrations, outbreak of said diseases are still common in Afghanistan. However, with each outbreak mop-up vaccination campaigns are successfully carried out in collaboration with EPI, PHDs. Other diseases outbreaks include cholera, meningitis, Crimean-Congo- hemorrhagic fever, Pandemic Influenza H1N1, Leishmaniasis and school poisoning reported in 2010 by DEWS.

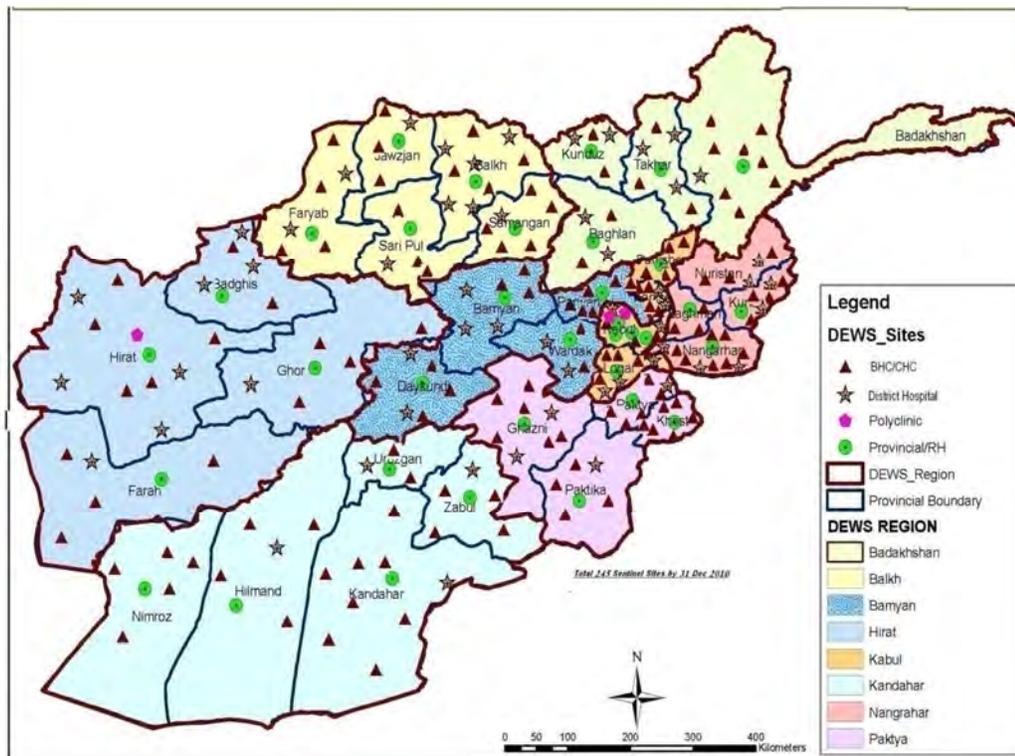
Sentinel Sites

Initially eight regional/provincial hospitals in different geographical regions of the country and a polyclinic in Kabul city were selected by DEWS as sentinel sites in December 2006. By the end of 2009, there were 177 sentinel sites and in 2010 DEWS expanded to 68 new sentinel sites by establishing 245 sentinel sites operating in regional, provincial and district hospitals, comprehensive and basic health centers and poly clinics in all 34 provinces. The distribution of the sentinel sites by region, province and type of health facility are shown in Table 2 and Figure 1. In 2010, the target for the number of sentinel sites was establishment of one sentinel site per 200,000 populations. 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 (e mail/mobile phones) and population density. However, the selection is done after the Provincial Health Coordination Committee (PHCC) approval in the provinces.

Table 2: Number of sentinel sites by region and type of health facility, 2010

REGION	RH/PH	DH	CHC/BHC	Polyclinic	Total
Central East (Kabul)	13	12	19	2	46
Central West (Bamyan)	4	7	13	0	24
North (Balkh)	5	9	18	0	32
North East (Kunduz)	4	7	16	0	27
West (Hirat)	4	9	14	1	28
South (Kandahar)	5	4	22	0	31
East (Nangarhar)	3	5	20	0	28
South East (Paktia)	4	4	21	0	29
Total	42	59	141	3	245

Figure 1: Distribution of sentinel sites in the country, 2010



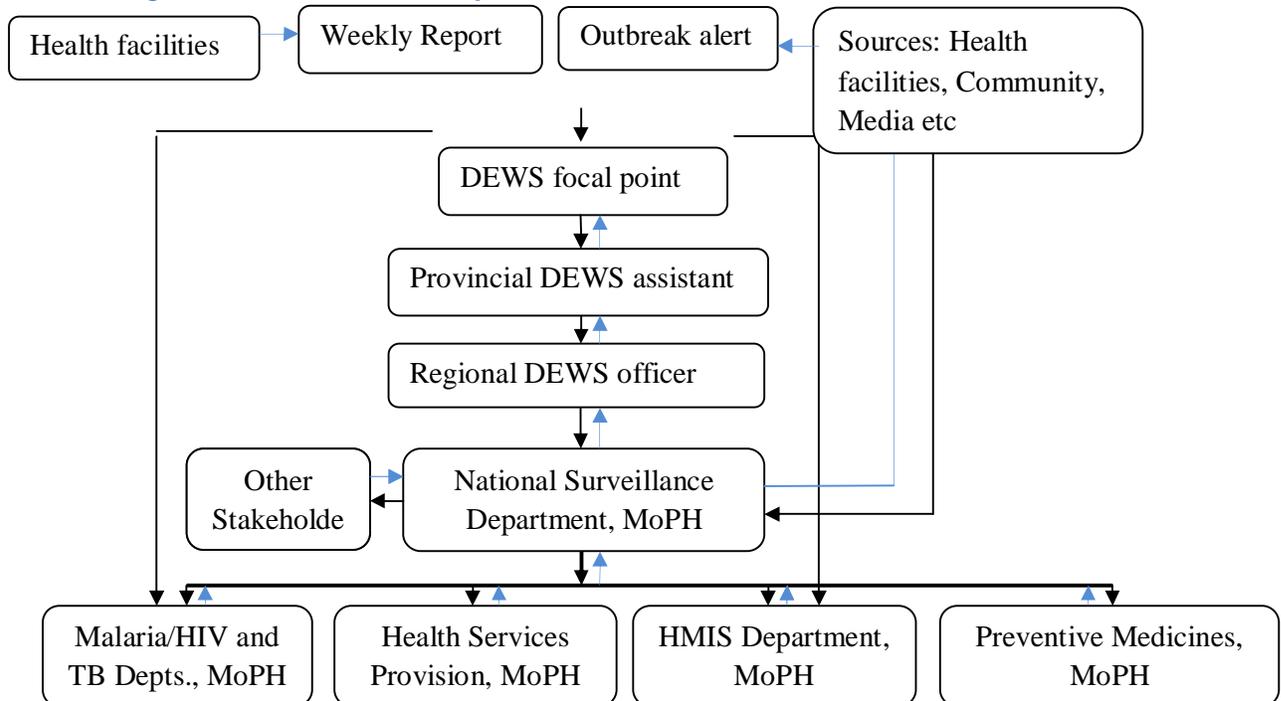
Limitation of Sentinel Site Surveillance

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 only 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.

Information Flow

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

Figure 2: Flow of DEWS reports and feedbacks



All regional DEWS officers and provincial DEWS assistants have access to internet, mobile phone and Codan radio to communicate with national DEWS department in

Kabul. At the early stage, outbreaks are usually reported by mobile phone or Codan radio.

Morbidity in 2010

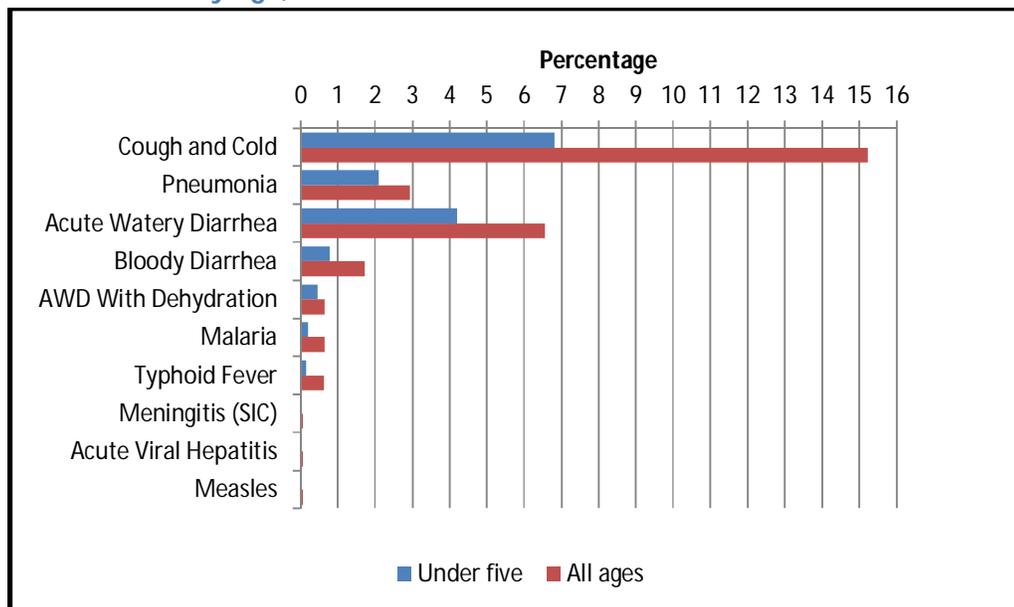
Table 3 indicates number of cases and their proportion among total clients, by age categories for DEWS targeted diseases. During 2010, a total of 10,242,476 new morbidity cases were reported by all sentinel sites. A total of 2,927,215 patients (28.6%) were consulted for diseases targeted for DEWS of which 51.7% were children less than five years old. The proportion of DEWS targeted diseases was 19.3% among the total clients of age five years and older.

Table 3: Reported DEWS targeted diseases at national level by age, 2010

Disease/Condition	<5 years		≥5 years		Total	
	n	%	n	%	n	%
Cough and Cold	697,239	23.8	862,576	11.8	1,559,815	15.2
Pneumonia	214,379	7.3	87,300	1.2	301,679	2.9
Acute Watery Diarrhea	430,504	14.7	241,053	3.3	671,557	6.6
Bloody Diarrhea	79,581	2.7	97,023	1.3	176,604	1.7
AWD With Dehydration	46,081	1.6	19,930	0.3	66,011	0.6
Meningitis/ SIC	4,043	0.1	2,618	<0.1	6,661	0.1
Acute Viral Hepatitis	1,705	0.1	5,006	0.1	6,711	0.1
Measles	3,936	0.1	2,479	<0.1	6,415	0.1
Pertussis	126	<0.1	92	<0.1	218	<0.1
Probable Diphtheria	1	<0.1	9	<0.1	10	<0.1
Tetanus/ Neonatal Tetanus	63	<0.1	80	<0.1	143	<0.1
Acute Flaccid Paralysis	344	<0.1	178	<0.1	522	<0.1
Malaria	20,287	0.7	44,892	0.6	65,179	0.6
Typhoid Fever	14,406	0.5	50,590	0.7	64,996	0.6
Suspected Hemorrhagic Fever	87	<0.1	481	<0.1	568	<0.1
Pregnancy-related deaths			89	<0.1	89	<0.1
DEWS	1,512,782	51.7	1,414,433	19.3	2,927,215	28.6
Total Clients	2,928,380	100.0	7,314,096	100.0	10,242,476	100.0

Figure 3 shows the distribution of most common DEWS targeted diseases reported from all sentinel sites in the country in 2010. In general, acute respiratory infections (ARI) remain the most commonly reported illness with an overall proportion of 18.2% of total clients in all ages. The proportion of the ARI- Cough and Cold (ARI-CC) patients among total clients was 15.2% while the proportion was less than three percent (2.9%) for ARI-Pneumonia. The percent of the children less than five years old as a proportion of all age ARI for Cough and Cold and Pneumonia are 44.7 and 71 respectively. The proportion of ARI-Pneumonia among total <5 clients dropped from 8 % during the year 2009 to 7.3 % during year 2010. Diarrheal diseases are the second most common condition and accounted for around 9% of the reported total clients in the year 2010. The percent of all categories of diarrheal diseases as proportion of total clients remained the same as in 2009. ARIs, diarrheal diseases, malaria, typhoid fever are among the major morbidities followed by meningitis/SIC, acute viral hepatitis and measles in all age groups in 2010. The proportions of almost all DEWS targeted diseases are higher in the children less than five years old as compared to the age of five years and older (Table 3).

Figure 3: Percentage of most common DEWS targeted diseases among total clients by age, 2010



ARI-Cough and Cold

Cough and Cold remains the most commonly reported illness in DEWS. Figure 3 illustrates that 1,559,815 patients (15.2% of total clients) were reported as ARI-CC of which 44.7 % were children less than five years old. The Central West (Bamyan) region remained with the highest reported proportion of the ARI-CC (18.4% of total clients) followed by North (Balkh) and North East (Kundoz) regions with 15.6% and 15.4%, respectively.

A clear trend in monthly data can be observed with peak in January, gradual decrease throughout summer months, and then increasing throughout the winter at the end of the year. Seasonality and age distributions of cases are similar to those observed in previous years (Figure 5).

Figure 4: Percentage of ARI-CC cases as proportion of total clients by region, 2010

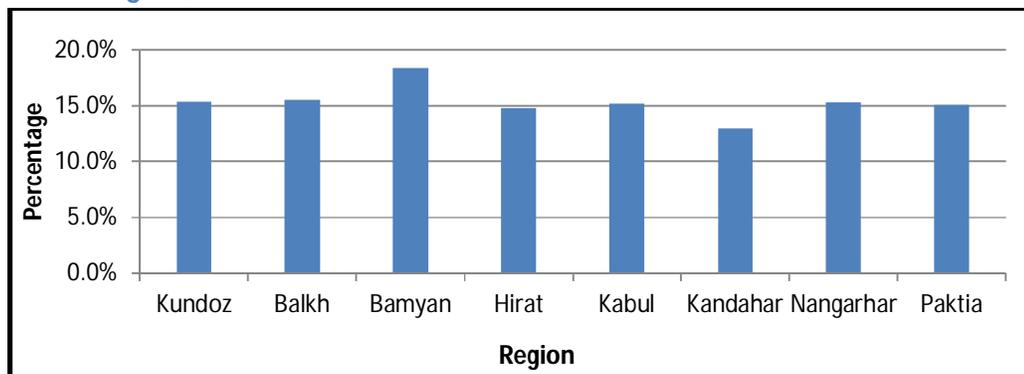
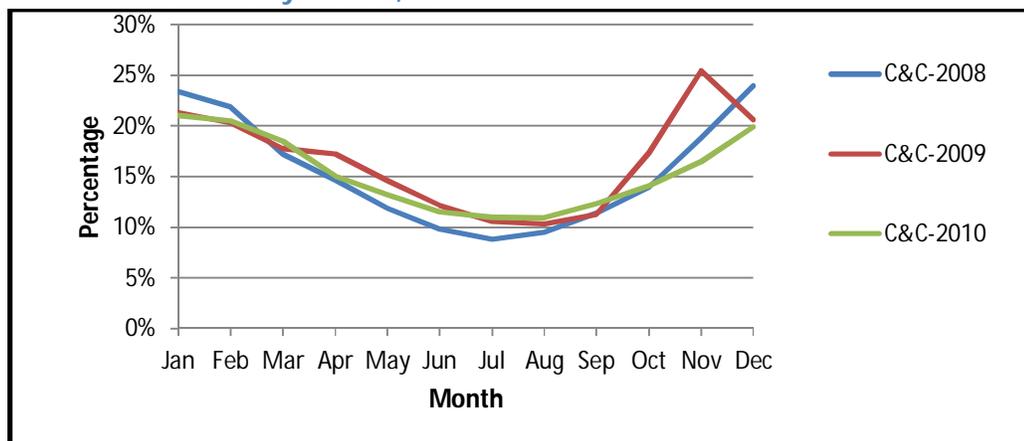


Figure 5: Percentage of ARI-Cough and Cold (CC) cases as a proportion of total clients by month, 2010



ARI- Pneumonia

Pneumonia, the leading cause of death in children worldwide, is a common public health problem in Afghanistan. In 2010, the overall reported percentage of the Pneumonia cases among total clients was 2.9%. As usual, cases of Pneumonia were mainly reported in children less than five years old, with 214,379 cases (71%). Figure 6 indicates that the highest percentage of Pneumonia was reported by North region (4.7%), followed by Central West (3.4%) and Eastern Region (3.3%). A clear trend can be observed with peak in both edges of the year and low percentage in summer months as expected and coherent trend is visible for the last three years (Figure 7).

Figure 6: Percentage of ARI-Pneumonia cases as proportion of total clients by region, 2010

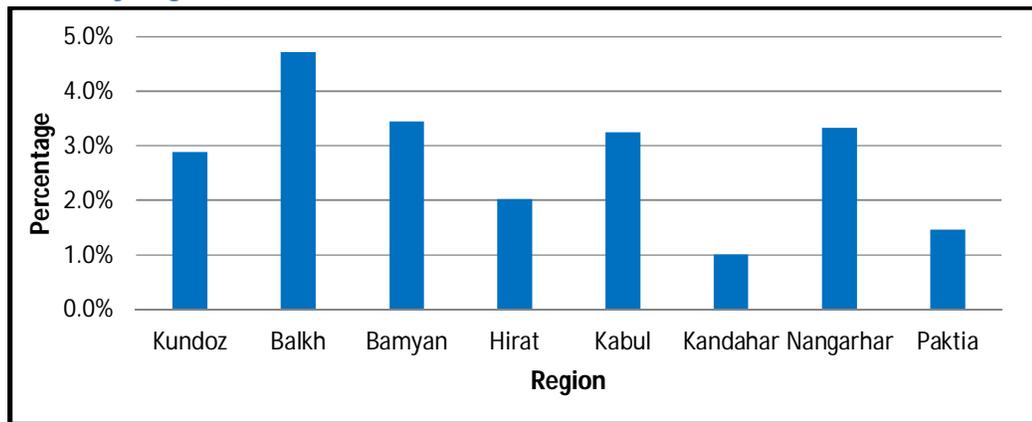
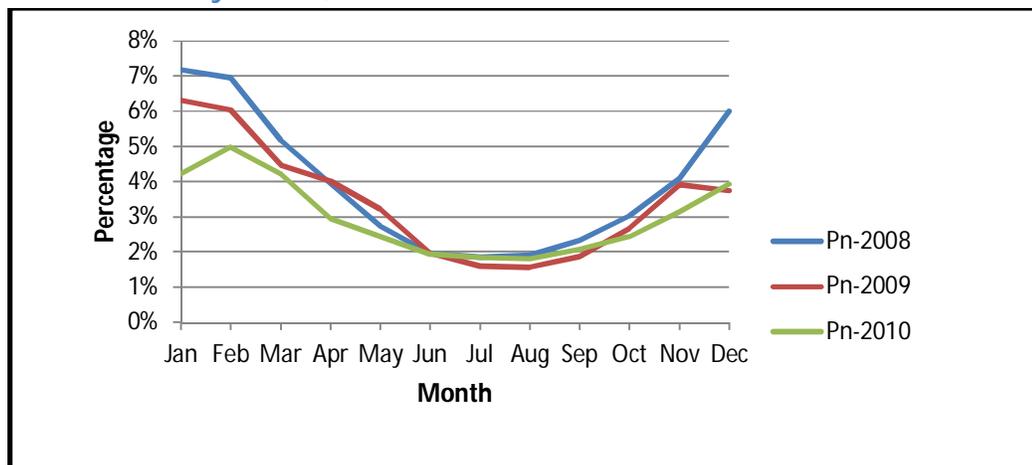


Figure 7: Percentage of ARI-Pneumonia cases as a proportion of total clients by month, 2010



Acute Watery Diarrhea

Acute watery diarrhea remains the second most frequent disease in 2010. The percentage of acute watery diarrhea cases seen among total clients was the same during the past two years (6.6 %). Most of the cases of watery diarrhea have been reported among children less than five years old (64% among all age cases). West and South East regions reported the highest percentages of acute watery diarrhea with 7.2 % each; whereas Central East region reported the lowest with 5.8% from total clients (Figure8). There is a clear seasonal trend for acute watery diarrhea cases (Figure 9), with percentages increasing over the summer months, peaking in July (10.8%) and then decreasing gradually. The exact same trend can be observed for last three years.

Figure 8: Percentage of Diarrheal Diseases cases as proportion of total clients by region, 2010

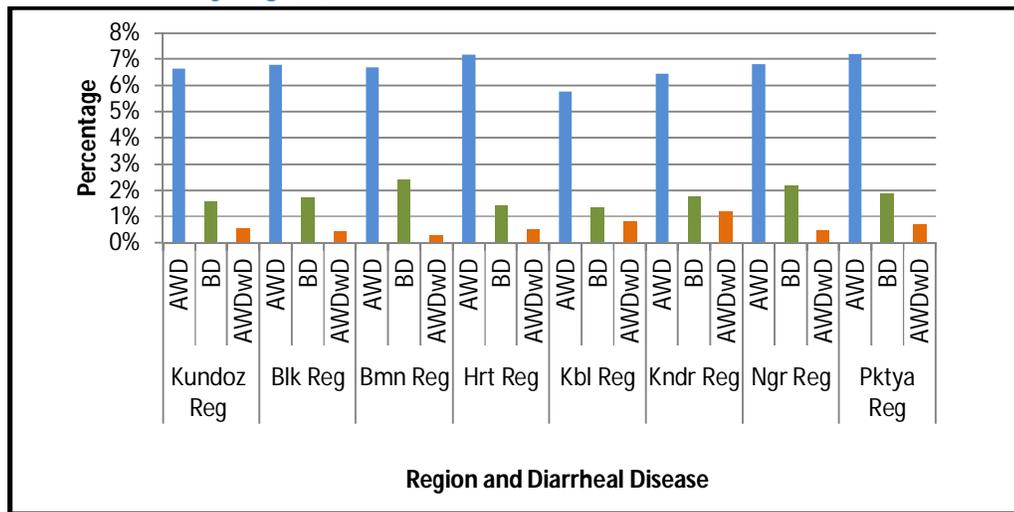
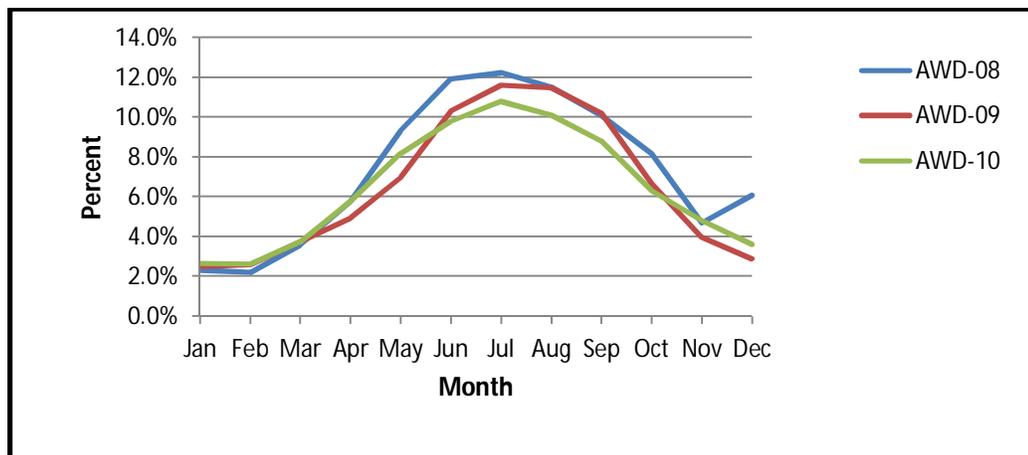


Figure 9: Percentage of AWD cases as a proportion of total clients by month-2008-2010

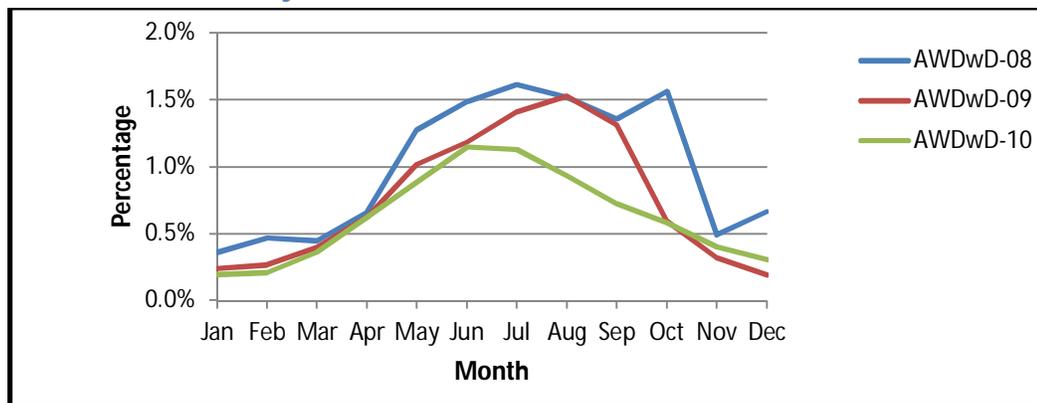


Acute Watery Diarrhea with Dehydration

In 2010, a total of 66,011 cases (0.6% of total clients) were reported by all sentinel sites. The most affected age group was children less than five years old (around 70% among all age cases). From all regions, South region reported the highest proportion among the total clients (1.2%), followed by Central East (0.8%) and South East (0.7%) regions (Figure 8).

Figure 10 illustrates a clear seasonal trend with peak in summer especially in the months of June and July (1.1%).

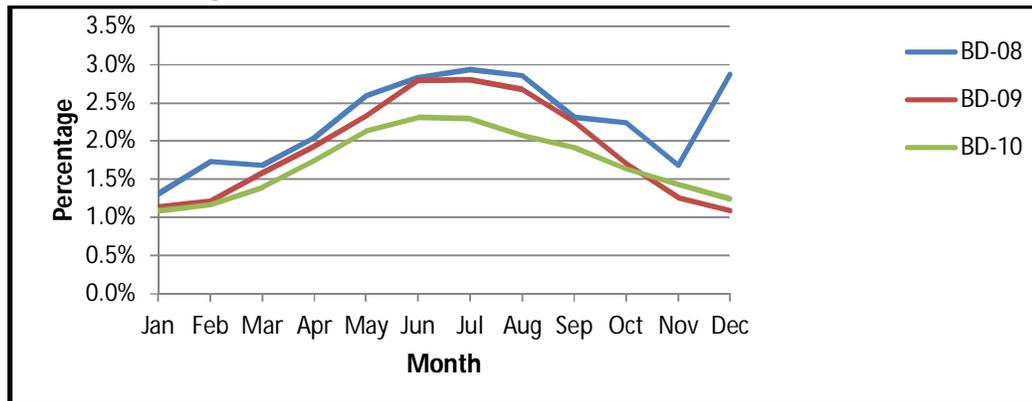
Figure 10: Percentage of AWD with Dehydration cases as proportion of total clients by month, 2008-2010



Bloody Diarrhea

At national level, the percentage of bloody diarrhea as a proportion of total clients was 1.7 in all ages in 2010. This was slightly lower compared to 1.9% of 2009. Bloody diarrhea cases are being reported mainly among persons more than five years old (55%). Central West, Eastern Region and South East regions reported the highest percentages of bloody diarrhea; 2.4%, 2.2% and 1.9% respectively (Figure 8). Similar to other diarrheal diseases the burden of the illness is high in summer months with peak in June (2.3%) (Figure 11).

Figure 11: Percentage of Bloody Diarrhea cases as a proportion of total clients by month, 2008-2010.



Malaria

Malaria is a prevalent tropical illness that causes many morbidity and deaths in Afghanistan. Control of malaria is one of the priorities of the Afghan Ministry of Public Health. Considerably high number of cases reported yearly to the HMIS and DEWS departments.

There were 65,179 cases of malaria (0.6 percent of total clients) in Afghanistan in 2010. The high proportion of malaria cases (69%) was in age group of five years and old. A clear seasonal trend is observed nationally, with percentage increasing during the summer with the highest proportion of reported cases from April to November (Figure 13). However, the proportion of suspected malaria cases out of the total clients was lower in 2010 compared to 2008 and 2009. The decrease in malaria cases may indicate that the bed net distribution for the control of malaria is being effective and the effects has started to show. Figure 12 indicates that Eastern region reported the highest percentage of the malaria among total clients (1.8%), followed by South and North East regions with 1% and 0.8% respectively.

Figure 12: Percentage of malaria cases as a proportion of total clients by region, 2010

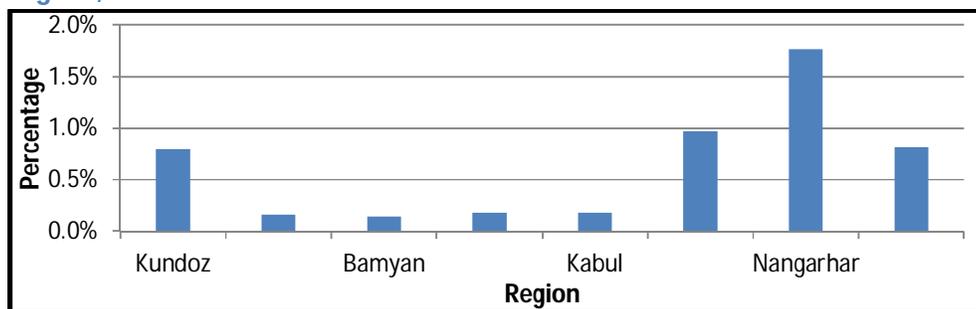
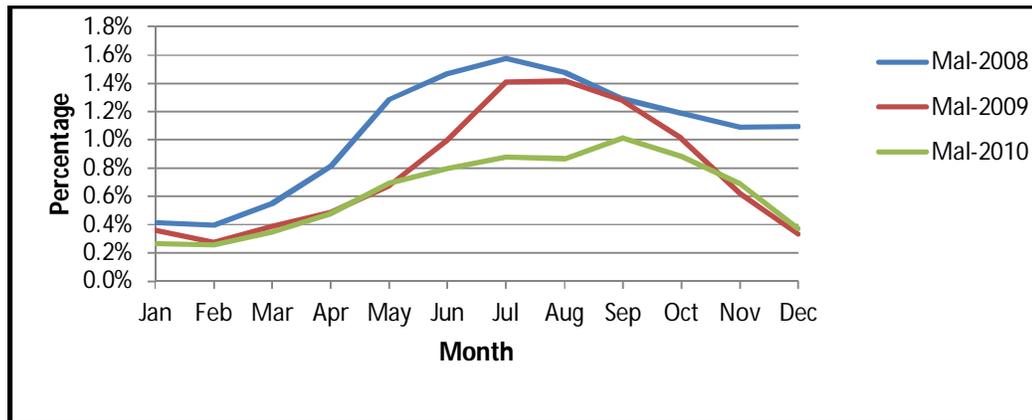


Figure 13: Percentage of malaria cases as a proportion of total clients by month, 2008 -2010



Typhoid Fever

Typhoid fever is a serious public health problem in developing countries including Afghanistan that cause many morbidity and mortality and has potential for outbreak.

In 2010, a total of 64,996 suspected typhoid cases (0.6% of total clients) were reported by all sentinel sites (Table 3). The percentage is slightly lower than that reported in 2009 (0.8%). From all regions, South region reported the highest proportion among the total clients, followed by South East and Eastern regions (Figure 14). The higher proportion among total cases of typhoid was reported for those aged five years and old (77.8%). The percent of reported cases shows a peak in summer season with the highest proportion of reported cases from May to September (Figure 15). The overall trend of the disease seems lower than the previous years but typhoid fever still remained among top ten DEWS diseases in 2010 (Figure 3).

Figure 14: Percentage of Typhoid Fever cases as a proportion of total clients by region, 2010

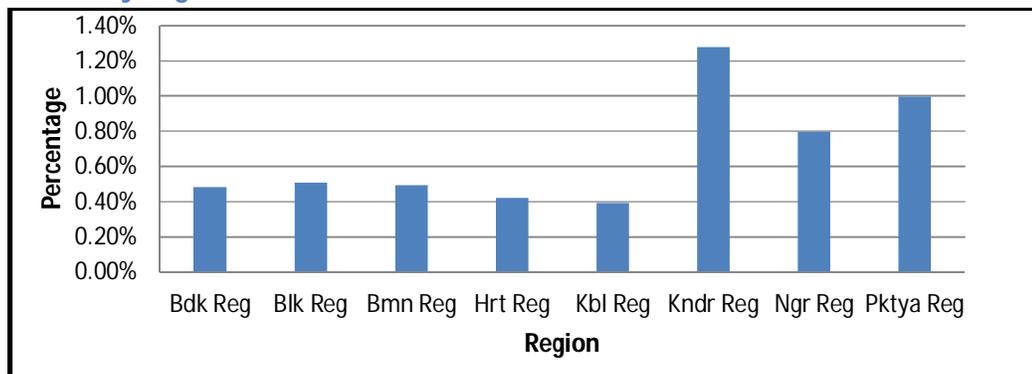
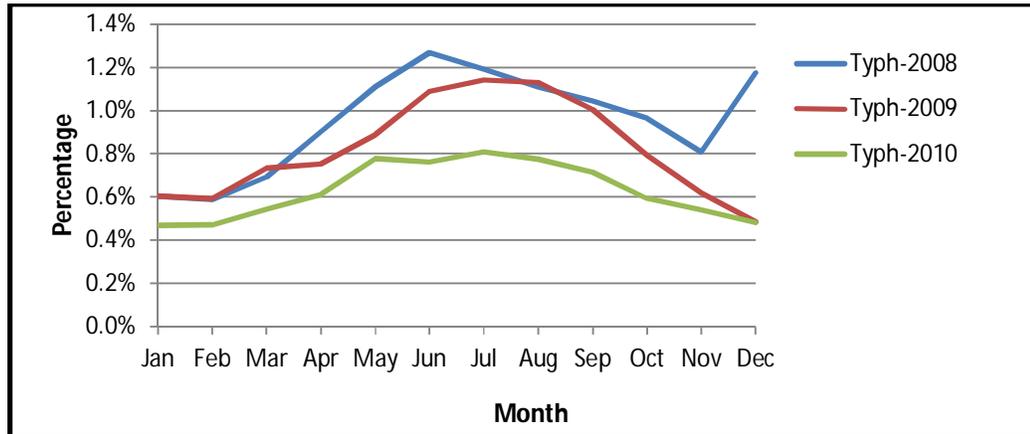


Figure 15: Percentage of Typhoid Fever cases as a proportion of total clients by month, 2008 -2010



Measles

Measles is a highly communicable viral disease that causes many outbreaks in areas with low vaccine coverage in Afghanistan. The disease is transmitted human-to-human via airborne droplet spread. In 2010, a total of 6,415 cases were reported by all sentinel sites with an overall percentage of 0.06 among total clients. Among all age groups, the high percentage of the cases (61.4%) was seen in those aged less than five years. The typical seasonal pattern of measles (peak during the spring) can be observed in 2010 and 2008. However, the peak in 2009 was observed during summer months (Figure 17).

There was a slight increase in the percentage of cases from last year; percent of measles among total client of 0.06 in 2010 compared with 0.05 in 2009 but the proportion was considerably increased from the reported percentage at 2008 (Figure 17). The highest percentage was reported by Central West region (0.13%), followed by North(0.10%) and Central East (0.09%) (Figure 16).

Figure 16: Percentage of Measles cases as a proportion of total clients by region, 2010

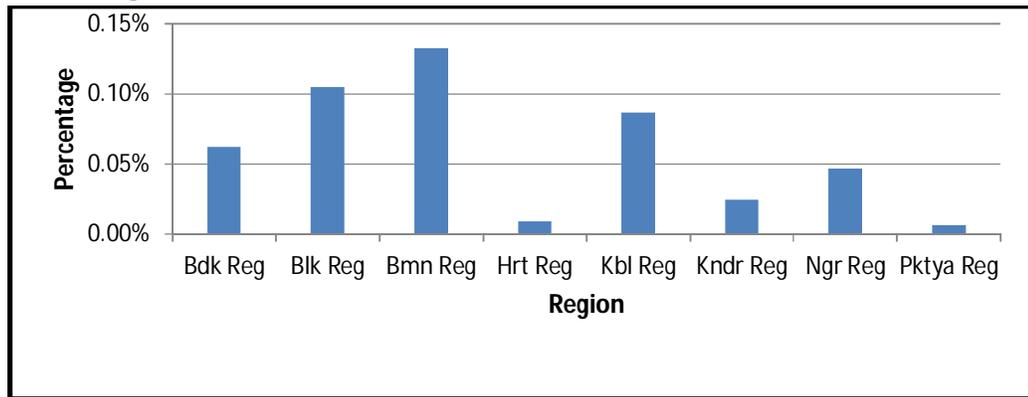
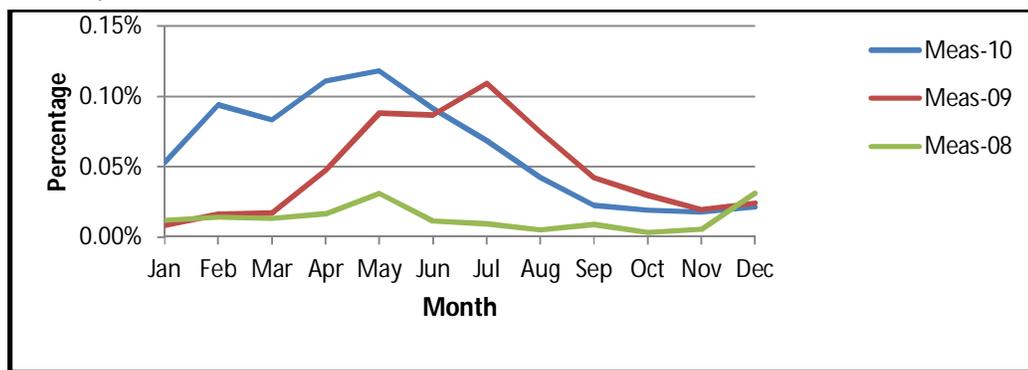


Figure 17: Percentage of Measles cases as a proportion of total clients by month, 2008 -2010



Meningitis/Severe Ill Child

There were 6,661 cases of suspected meningitis/severely ill child reported in 2010 (Table 3). The most affected age group was the children less than five years old with a high percentage of 60.7 among all age groups. The overall national percentage of cases among total clients was 0.1% with the highest percentage being reported by Northern Region (0.17%), North East (0.08%), West (0.07%) and Central East (0.06%).

No seasonal trends could be observed for the reported percentages in 2010, although similar to the data of previous years there were slightly lower reported percentages at the end of the year. In reference to the Figure 19, the percentages of suspected meningitis cases out of the total clients were lower in 2010 compared to 2008 and 2009 for all months.

Figure 18: Percentage of Meningitis cases as a proportion of total clients by region, 2010

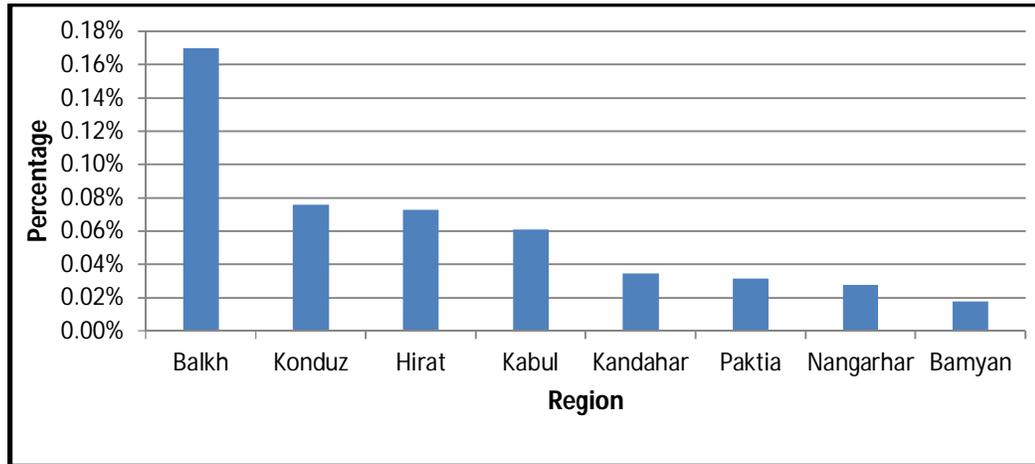
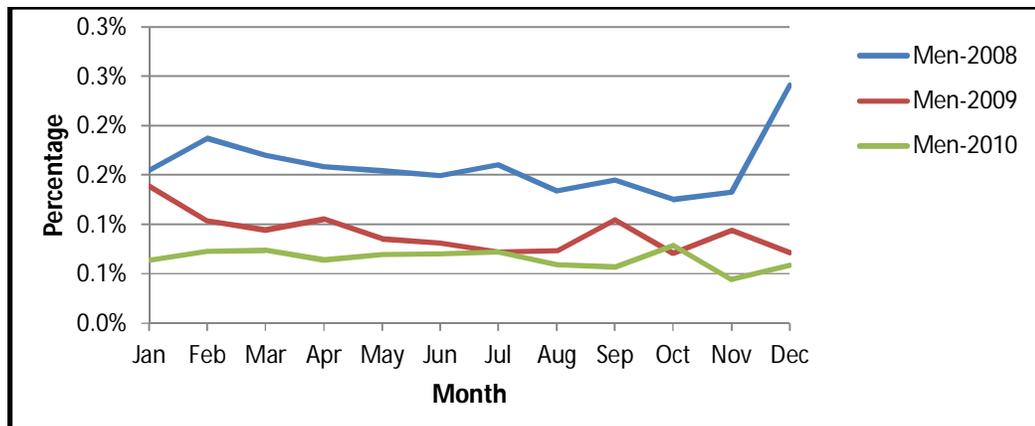


Figure 19: Percentage of Meningitis cases as a proportion of total clients by month, 2008- 2010



Acute Viral Hepatitis

In 2010, 6711 cases (0.1% of total clients) of suspected acute viral hepatitis were reported by all regions. Of these cases, 74.5% were reported in persons aged five

years and old. The highest percentages were observed in Central East region (0.14%), South East region (0.08%), Eastern region (0.06%) and Central West region (0.05%) (Figure 20). No seasonal trends were apparent in the year 2010, but slight decrease in summer months can be observed.

Figure 20: Percentage of AVH cases as a proportion of total clients by region, 2010

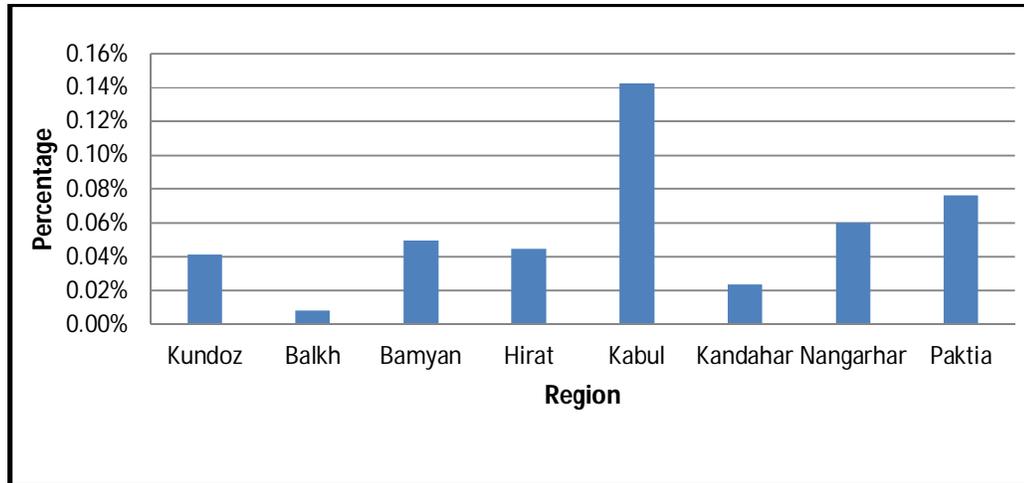
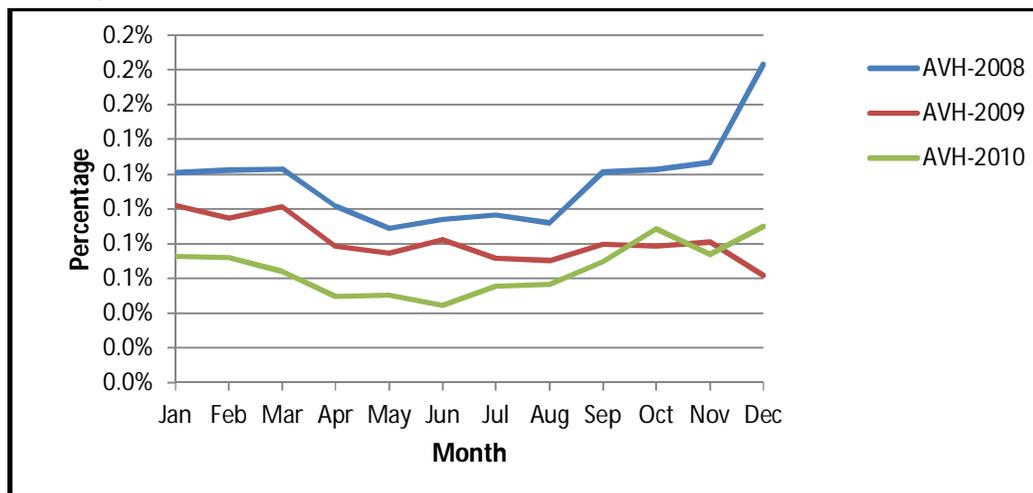


Figure 21: Percentage of Meningitis cases as a proportion of total clients by month, 2008- 2010



Outbreaks in 2010

There were 225 outbreaks reported and investigated by DEWS team in 2010 compared with 241 outbreaks investigated in 2009. Out of all investigated outbreaks, 206 (91.5%) were clinically or laboratory-confirmed (hereinafter in the text – the outbreak) and 19 were rumors. A total of 8,549 cases were associated with outbreaks with an average of 41 cases per outbreak. However, the size of the outbreaks ranged from one (H1N1 and CCHF,) to 957 (Cholera) cases. Regional variation in all outbreaks can be observed in Table 4, which indicates the highest number of outbreaks (48) in South East region that represents 23.3% of all outbreaks in 2010. Eastern region reported the second highest number of outbreaks, 39 (18.9%) followed by Balkh, 31 (15%). While the lowest number, 15 (7.3%) was observed in West and Central West regions.

In 2010, the number of monthly outbreaks ranged from six (in November) to 36 (in March), with an average of 17 outbreaks per month. And overall, most outbreaks were reported in spring. The increase in number of outbreaks during months of March, April and May 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 ARI is occurring and in other parts where weather gets milder ARI is coming to decline and water-borne diseases start an overall rise in occurrence. Measles outbreaks that consists huge proportion of total outbreaks occurring in spring are also contribute into increased number of total outbreaks in spring.

Table 4: Reported confirmed outbreaks by region, 2010

Region	No. of outbreaks	% of outbreaks(n=206)
South East	48	23.3
East	39	18.9
North	31	15.0
Central East	21	10.2
South	19	9.2
North East	18	8.7
West	15	7.3
Central West	15	7.3
Total	206	100

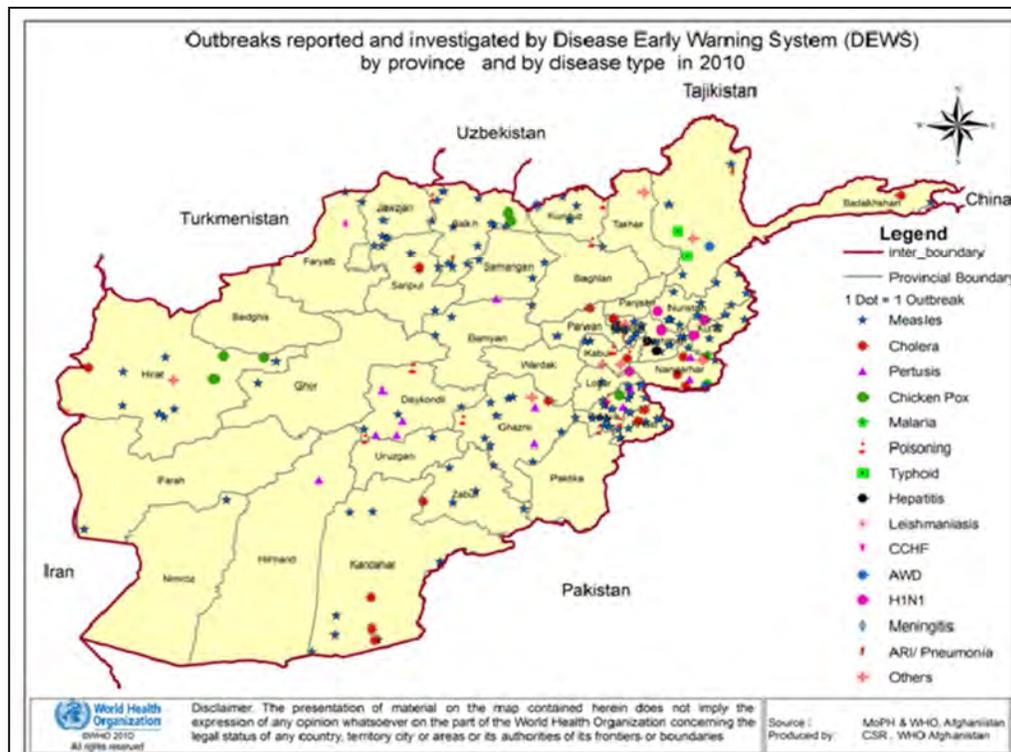
In 2010, Most of these outbreaks (130) were due to measles, accounting for 63.1% (n=206) of all outbreaks. The next most common outbreak was of Cholera, accounted for 8.3% (n=206) of outbreaks, while pertussis and poisoning, each, accounted for

5.8% (n=206) of outbreaks. The diseases caused outbreaks, number of outbreaks and percentages of disease-specific outbreaks are shown in Table 5.

Table 5: Reported confirmed outbreaks by disease, 2010

Disease	No. of outbreaks	% of outbreaks(n=206)
Measles	130	63.1
Cholera	17	8.3
Pertussis	12	5.8
Poisoning	12	5.8
Chicken Pox	6	2.9
Influenza A H1N1	5	2.4
ARI-Pneumonia	4	1.9
Acute watery diarrhea	3	1.5
Malaria	2	1.0
Typhoid	2	1.0
Hepatitis	2	1.0
CCHF	2	1.0
Others	9	4.4
Total	206	100

Figure 22: Distribution of reported confirmed outbreaks- Afghanistan, 2010



Measles outbreaks

The most common outbreak in 2010 was of measles (130), which represents 63.1 % of all outbreaks. There was a 36.8% increase in measles outbreaks compared to those reported during 2009. Measles cases were confirmed by laboratory testing for at least 80% of the outbreaks. Cases are labeled confirm with positive serum IgM and no measles vaccination in prior 28 days. No laboratory testing was carried out for outbreaks in insecure and most remote areas. South East region reported 34 suspected outbreaks (23.8%) of all measles outbreaks. Other regions reported high number of measles outbreaks were North 27 (18.9%), East 23 (16.1%) and Central East 16 (11.2%). At provincial level high numbers of measles outbreaks were reported from Paktia (17), Balkh (14), Kapisa (11) and Nooristan (11).

Cholera outbreaks

After Measles outbreaks (n=130), the next most commonly reported outbreak during 2010 was of Cholera (n=17), accounted for 8.3% of all reported outbreaks. There was a 60.5% decrease compared to the number of cholera outbreaks reported during 2009 (n=43). Regional variation in cholera outbreaks was observed with the highest number observed in Eastern and South (n=4) while the lowest number was observed in West, North, Central West and North East regions (n=1). Table 6 details the regional distribution of cholera outbreaks. Cholera was responsible for the largest outbreaks in terms of number of cases during 2010, occurred in Nangarhar and Kandahar provinces. All of the cholera outbreaks were reported from 11 provinces involving 2369 cases (35 confirmed by laboratory). *Vibrio cholerae* O1 Ogawa serotype was responsible for all the confirmed cases of the cholera. There were 10 deaths associated with outbreaks in 2010, most of which were in Dand district of Kandahar province (n=6). The national case fatality ratio for cholera was lower (0.4%) in 2010 compared to 1.74% in 2009.

Table 6: Reported Cholera outbreaks by region, 2010

Region	No. of outbreaks	% of outbreaks(n=17)
East	4	23.5
South	4	23.5
South East	3	17.6
Central East	2	11.8
West	1	5.9
North	1	5.9
Central West	1	5.9
North East	1	5.9
Total	17	100

Influenza A H1N1 outbreaks

Five Influenza A H1N1 outbreaks were reported in 2010 that account for 2.4% of all outbreaks. Fifty percent decrease in outbreaks was observed compared to the reported outbreaks during 2009 (10 outbreaks). All of the outbreaks were reported only from Eastern region. Table 7 details the locations of outbreaks in the region and number of suspected cases. In 2010, a total of 418 samples were examined, of which five case were confirmed using Polymerase Chain Reaction (PCR).

Table 7: Reported Influenza A H1N1 outbreaks in Eastern region, 2010

Province	No. of outbreaks	No. of suspected cases
Nangarhar	1	14
Laghman	1	3
Kunar	1	1
Nooristan	2	21
Total	5	39

CCHF outbreaks

There were two outbreaks of Crimean-Congo Hemorrhagic Fever (CCHF) with three associated cases reported in August, 2010. This is the lowest number of CCHF outbreaks reported since 2008. The number of outbreaks by CCHF has decreased by 67% compared to 2009 (n=6).

Cases were confirmed clinically in outbreaks occurred in Faryab and Paktia provinces. Outbreaks were reported in 2008 and 2009 from Kabul, Kundoz, Hirat, Ghor, Badghis and Farah provinces.

Mortality in 2010

In 2010, a total of 2,863 deaths from all DEWS targeted diseases including 89 pregnancy-related were reported by all sentinel sites. Pneumonia remains with high number of deaths (1,625), followed by meningitis (626), and acute diarrheal diseases (341).

The distribution of all causes of death in Afghanistan reported by DEWS in 2010 for all ages is provided in Table 8. As illustrated the primary causes of deaths are, Pneumonia accounted for 56.8% of all deaths, meningitis for 21.9% and all other diseases for the rest 21% (Figure 23).

Table 8 shows the case-fatality ratios (CFR), the measure of severity, for all DEWS targeted diseases with high CFR for Tetanus/Neonatal Tetanus (146.9/1000) and Meningitis (94/1000). This means that out of 1000 people diagnosed with Tetanus/ Neonatal Tetanus, 146.9 died and out of 1000 people diagnosed with Meningitis, 94 died.

Figure 23: Distribution (%) of reported leading causes of deaths among All Ages, 2010

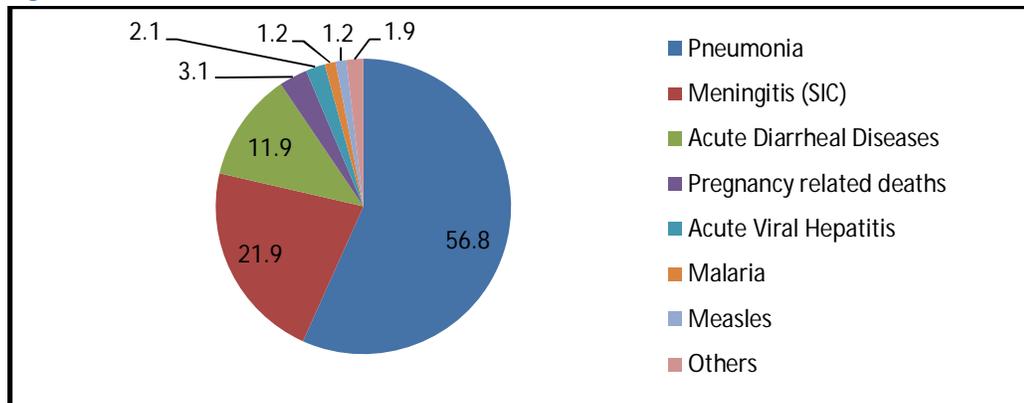


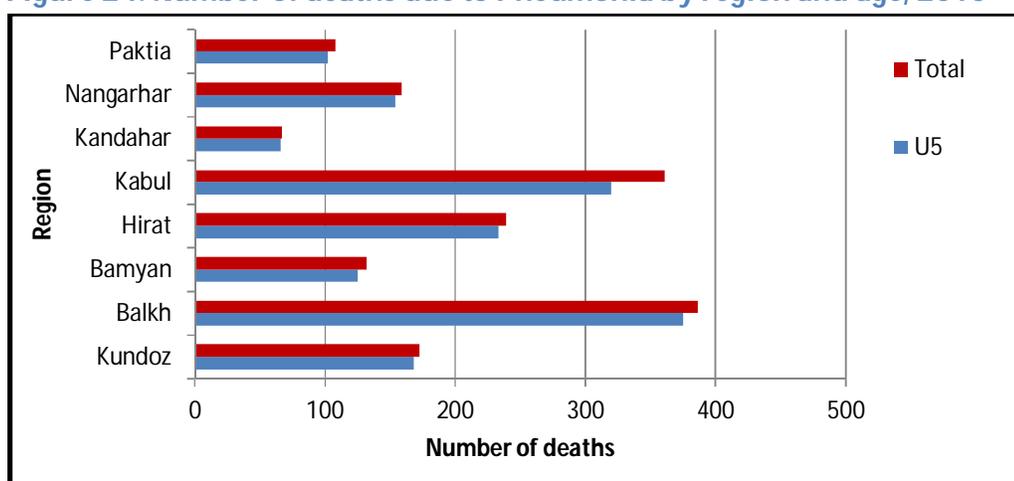
Table 8: Number of Cases, Deaths, Proportionate Mortality and Case Fatality Ratio by Disease, 2010

Diseases/Conditions	Cases	Deaths	Proportionate Mortality	Case Fatality Ratio per 1000
Pneumonia	301,679	1,625	56.8	5.4
Meningitis/SIC	6,661	626	21.9	94.0
Acute Diarrheal Diseases	737,568	341	11.9	0.5
Acute Viral Hepatitis	6,711	60	2.1	8.9
Malaria	65,179	35	1.2	0.5
Measles	6,415	33	1.2	5.1
Tetanus/ Neonatal Tetanus	143	21	0.7	146.9
Bloody Diarrhea	176,604	19	0.7	0.1
Typhoid Fever	64,996	7	0.2	0.1
Cough and Cold	1,559,815	4	0.1	0.0
Acute Flaccid Paralysis	522	2	0.1	3.8

Pneumonia

Data from the year 2010 show that major proportion (56.8%) of deaths in Afghanistan is attributable to Pneumonia. Table 8 indicates the case-fatality ratio of 5.4 per 1000 cases. Around 95% of the deaths were reported in children less than five years old. The total number of reported deaths from pneumonia were 1,625 with highest number of 386 from North(23.8% of all deaths), followed by Central East region (22.2%) while South region reported the lowest number of deaths (67) (Figure 24).

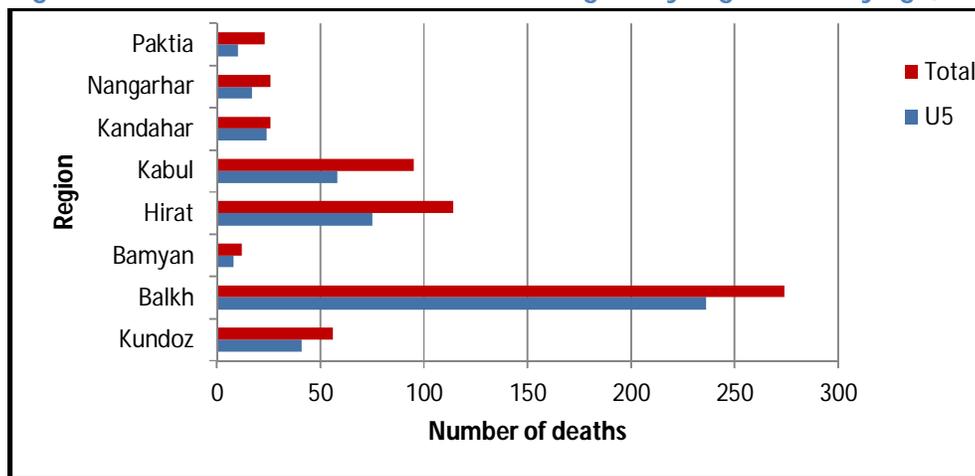
Figure 24: Number of deaths due to Pneumonia by region and age, 2010



Meningitis

The total number of deaths from Meningitis reported to be 626 of which 75% were in children less than five years old. The proportionate mortality for Meningitis was around 22% with second highest case-fatality ratio of 94 per 1000 cases. From all regions, Northern Region reported the highest number, 274 (44% of all meningitis deaths), followed by West (18.2% of all meningitis deaths) and Central East regions (15.2% of all meningitis deaths). Figure 25 details the number of deaths due to meningitis in all regions.

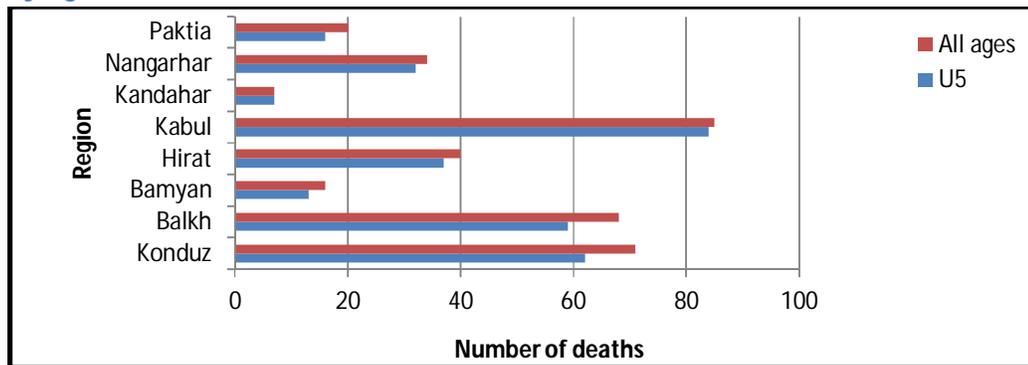
Figure 25: Number of deaths due to Meningitis by region and by age, 2010



Acute Diarrheal Diseases

In 2010, a total of 341 ADD deaths were reported to DEWS department with proportionate mortality of 11.9% and case-fatality ratio of 0.5 per 1000 cases. More than 90% of the deaths were reported in children less than five years old. Central East region reported 85 deaths (25% of all ADD deaths), North East region 71 deaths (20.8%) and Northregion 68 deaths (20%).

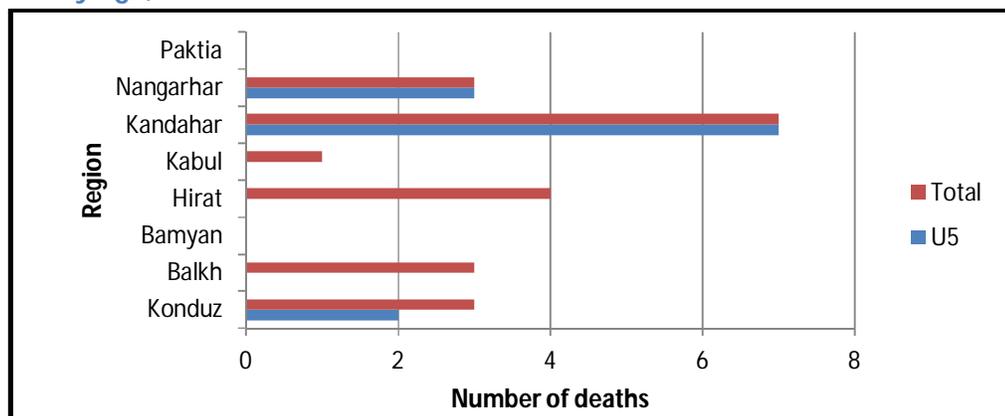
Figure 26: Number of deaths due to Acute Diarrheal Diseases by region and by age, 2010



Tetanus/Neonatal Tetanus

In 2010, a total of 21 deaths were reported from all regions with proportionate mortality of 0.7% and highest in-hospital reported case-fatality ratio of 146.9 deaths per 1000 cases at national level. From total deaths, 12 (57%) were reported in children less than five years old while others were in persons aged five years and old. South region reported highest number of deaths, 7, among all regions, followed by West region with four reported deaths.

Figure 27: Number of deaths due to Tetanus/Neonatal Tetanus by region and by age, 2010



Regional Morbidity and Mortality Eastern Region (Nangarhar Regional Capital)

Morbidity

In Eastern region (Nangarhar, Nuristan, Kunar and Laghman), the total number of client visits through 2010 was 1,734,560 with 534,590 (30.8%) presenting with diseases targeted for DEWS. The total number of client visits from children less than five years old with DEWS targeted diseases was 273,901 which represent 51.2% of the total consultations for DEWS targeted diseases in the region. Figure 29 shows the distribution (percentage among total clients) of most common DEWS targeted diseases, by age categories, in Eastern region during 2010. Acute respiratory infections (ARI) remain the most commonly reported illness with an overall proportion of 18.6% of total reported client visits in 2010, followed by diarrheal diseases (9.5%), suspected malaria (1.8%), and suspected typhoid fever (0.8%). Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total in each province. Malaria, an endemic disease in the east region, contributed a greater percentage to the total of reported most common diseases in Kunar province while the malaria contribution in Nooristan province was very tiny (Figure 30).

Figure 28: Percentage of cases as a proportion of total clients by disease- Eastern Region, 2010

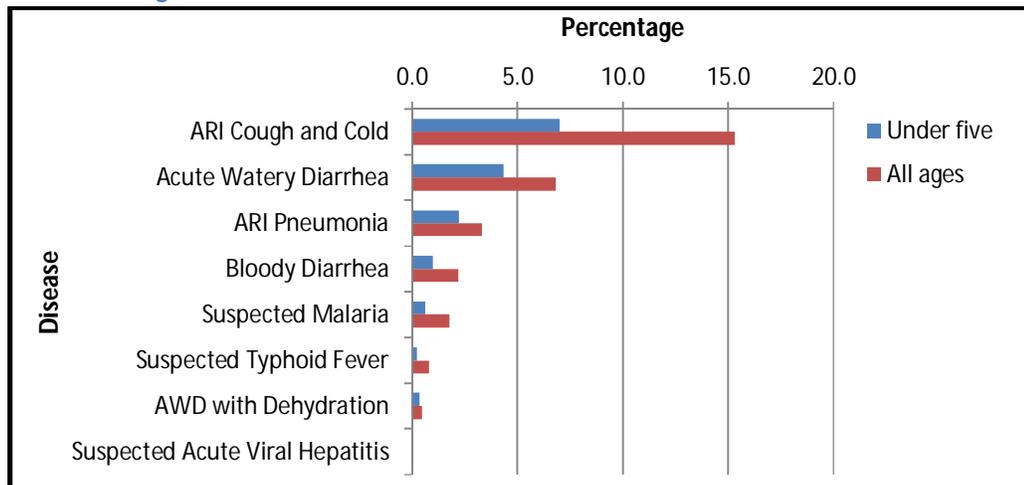
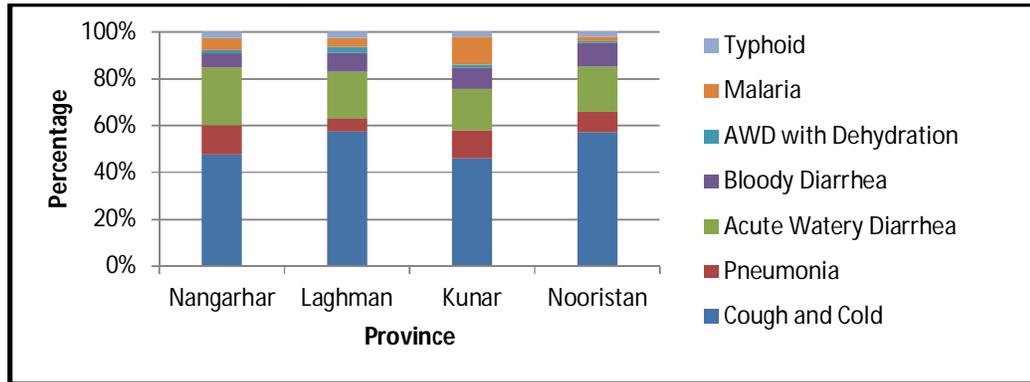


Figure 29: Percent contribution of the cases to the total by disease and province-Eastern Region, 2010



Mortality

In 2010, a total of 268 deaths were reported from Eastern region of which 227 deaths (85%) were in children less than five years old. ARI- pneumonia remains with high proportionate mortality of 59.3%, followed by diarrheal diseases (12.7%) as shown in Figure 31. As illustrated in Figure 32 (the Y axis is measured on logarithmic scale), most deaths are reported from Nangarhar province, followed by Kunar, Laghman and Nooristan. Pneumonia was the main killer in all provinces except Kunar, where more deaths (14) were reported from meningitis.

Figure 30: Percentage of leading causes of death –Eastern Region, 2010

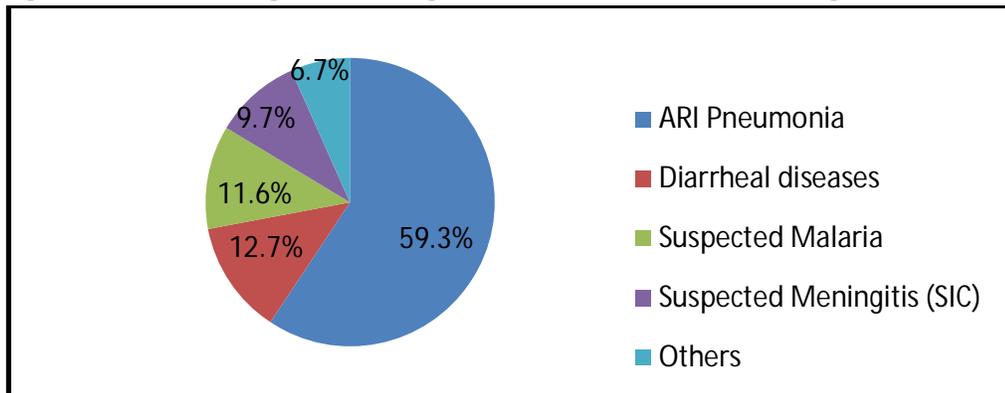
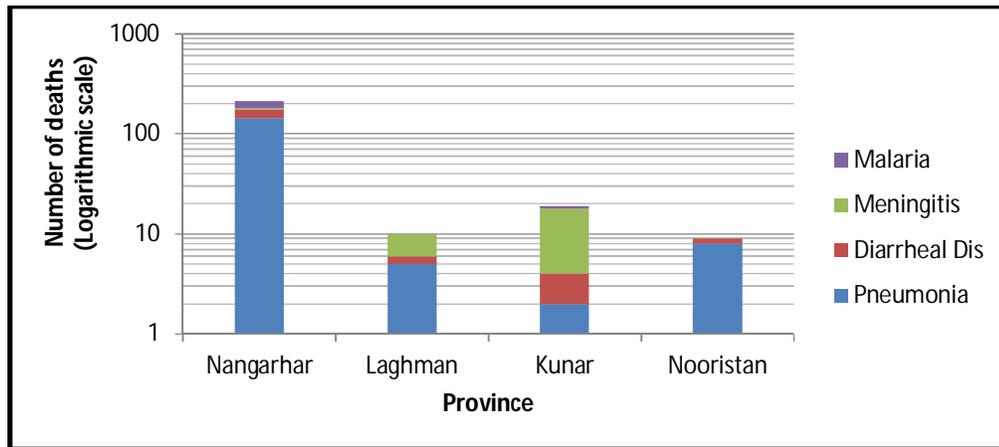


Figure 31: Number of deaths by province and disease- Eastern Region, 2010



North East Region (Capital Kundoz)

Morbidity

In 2010, there were 1,096,324 reported total client visits from North East region, of which 312,992 (28.5%) were for DEWS targeted diseases. The total number of visits for DEWS targeted diseases from children less than five years old was 164,594 that consists 52.5% of the total visits for DEWS targeted diseases in the region. The most commonly reported illness with highest proportion was acute respiratory infections with an overall burden of 18.3% as a proportion of total reported client visits in 2010, followed by diarrheal diseases (8.8%), suspected malaria (0.8%), and suspected typhoid fever (0.5%). Figure 33 illustrates the distribution of most common diseases in the region. Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total of the selected common diseases in each province. The contribution of selected most common diseases to the total was almost similar in all provinces except for malaria that contributed greater percentage in Badakhshan province compared to other provinces in the region(Figure 34).

Figure 32: Percentage of cases as a proportion of total clients by disease-North East Region, 2010

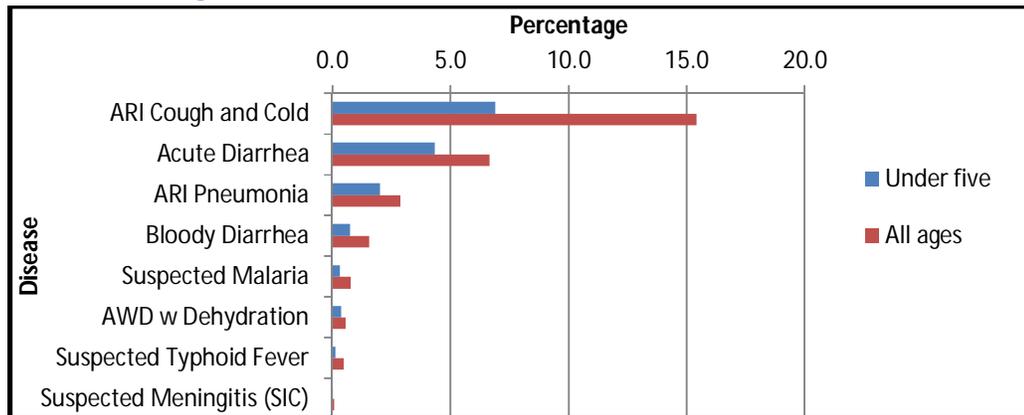
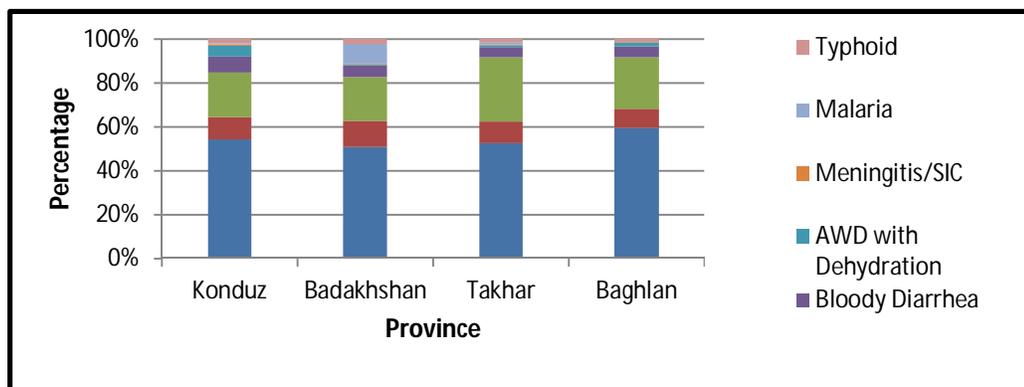


Figure 33: Percent contribution of the cases to the total by disease and province-North East Region, 2010



Mortality

From North East region, a total of 324 deaths were reported in 2010 of which 282 deaths (87%) were in children less than five years old. The highest proportionate mortality (53.4%) can be observed in Figure 35 for pneumonia, followed by diarrheal diseases (22.8%) and suspected meningitis (17.3%). As illustrated in Figure 36, most deaths are reported from Kundoz and Takhar provinces compared to Baghlan and Badakhshan. Pneumonia reported to be the main killer in all provinces; deaths from pneumonia ranged from 33 deaths in Badakhshan to 56 deaths in Kundoz.

Figure 34: Percentage of leading causes of death –North East Region, 2010

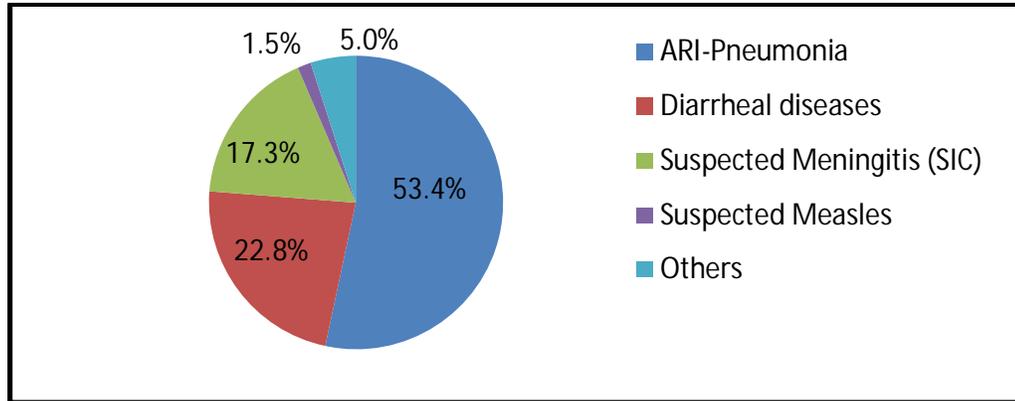
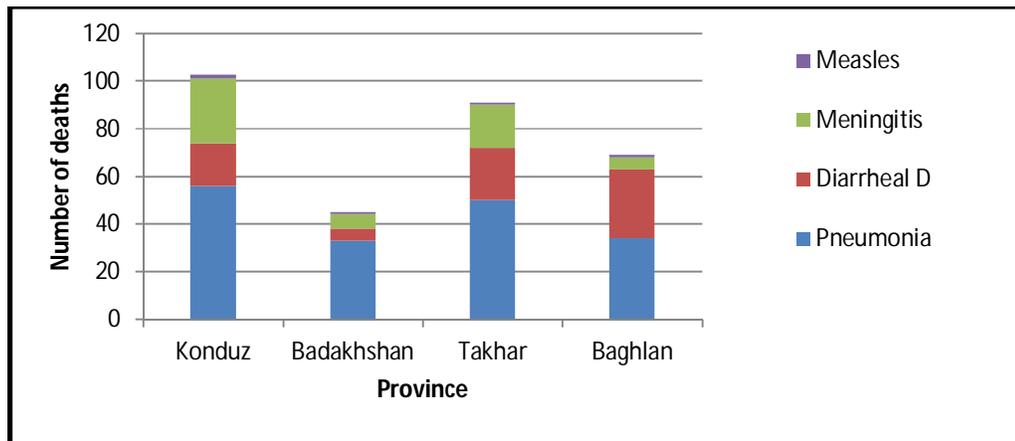


Figure 35: Number of deaths by province and disease- North East Region, 2010



North Region (Capital Balkh)

Morbidity

There were 1,400,136 total client visits in 2010, reported by all sentinel sites in the region. Among total visits 30.2% (422,956) were for DEWS targeted diseases. The total number of DEWS visits from children less than five years old was 238,656 which represent 56.4% of the DEWS visits among all ages. Figure 37 shows the distribution of the most common diseases in the region. Acute respiratory infections remain the most commonly reported illness with an overall percent of 20.3% as a proportion of total clients. The proportion of visits reported as diarrheal diseases was 9%, the second most prevalent condition. There were 7126 (0.5%) cases of typhoid fever, 2377 (0.2%) suspected meningitis, 2183 (0.2%) malaria cases, and 1466 (0.1%)

cases of suspected measles. As illustrated in Figure 38, Cough and Cold contributed the greatest percentages to the total in each province. In Faryab, Pneumonia contributed lesser percentage to the total as compared to other provinces in the region. Greater contribution of typhoid fever can be observed in Balkh.

Figure 36: Percentage of cases as a proportion of total clients by disease- North Region, 2010

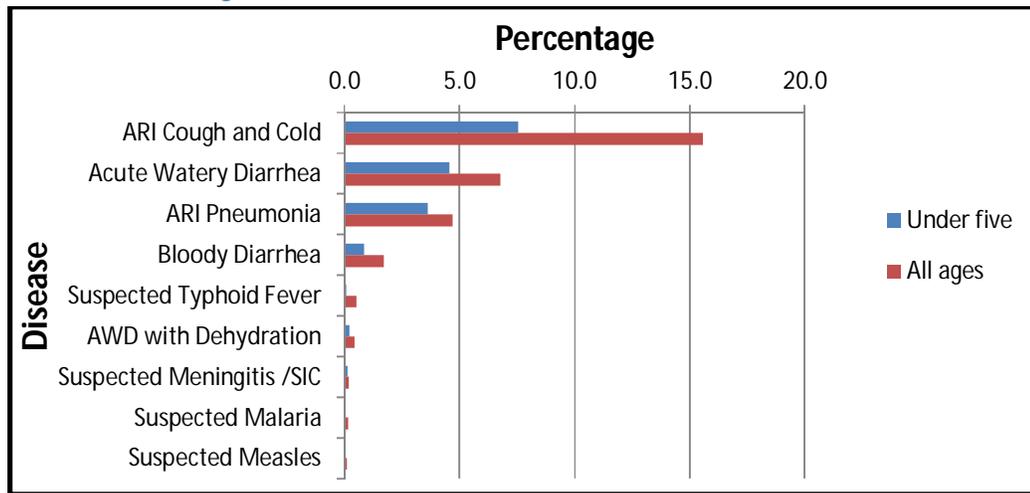
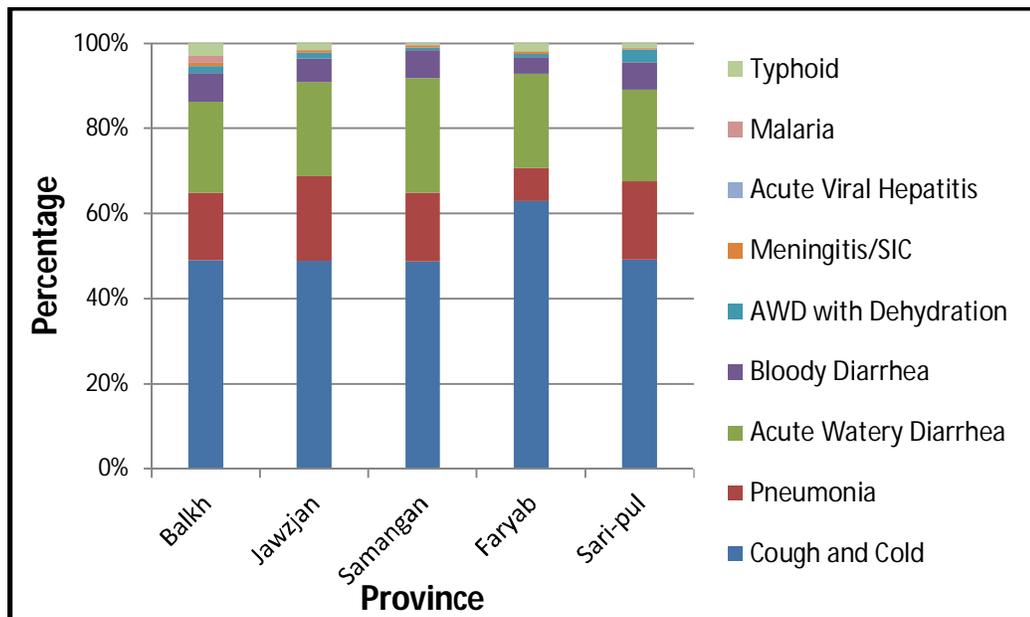


Figure 37: Percent contribution of the cases to the total by disease and province-North Region, 2010



Mortality

A total of 765 deaths were reported in 2010 from Northregion of which 682 deaths (89%) were in children less than five years old. ARI- pneumonia remains with high proportionate mortality of 50.5%, followed by suspected meningitis (35.8%) as shown in Figure 39. Most deaths are reported from Balkh province (297), followed by Jawzjan, Faryab, Sari-pul and Samangan. Pneumonia was the main killer in all provinces except for Jawzjan, where more deaths (99) were reported from meningitis/severe ill child.

Figure 38: Distribution of leading causes of death in Northern Region, 2010

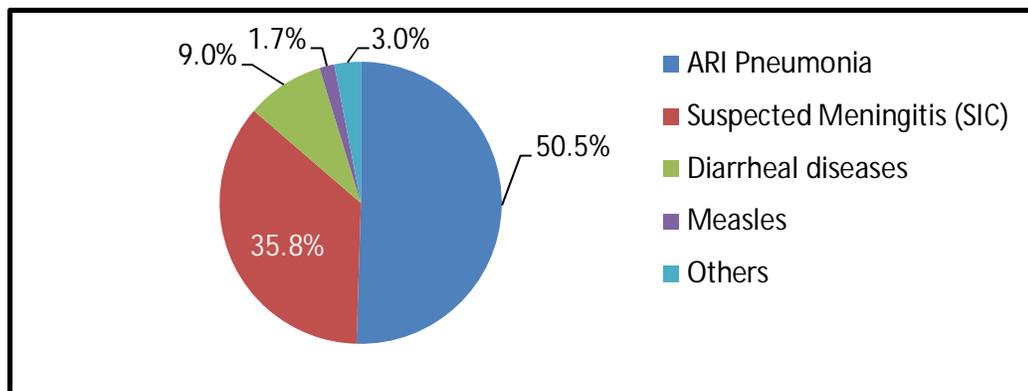
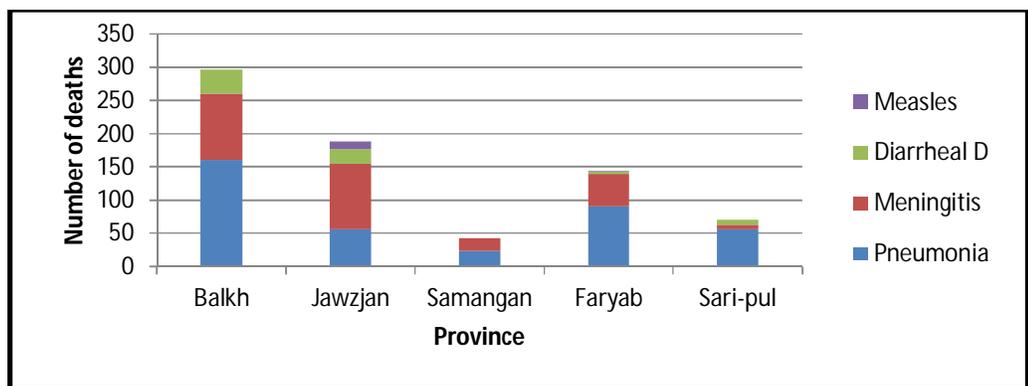


Figure 39: Number of deaths by province and disease- Northern Region, 2010



Central West region

Morbidity

In Central West region, the total number of client visits through 2010 was 721,827 with 231,455 (32.1%) presenting with diseases targeted for DEWS. The total

number of client visits from children less than five years old with DEWS targeted diseases was 102,787 which represent 44.4% of the total consultations for DEWS targeted diseases in the region. Figure 41 shows the distribution (percentage among total clients) of most common DEWS targeted diseases, by age categories, in Central West region during 2010. Acute respiratory infections remain the most commonly reported illness with an overall proportion of 21.8% of total reported client visits in 2010, followed by diarrheal diseases (9.4%), suspected typhoid fever (0.5%), and suspected malaria (0.1%). In particular, Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total in each province. Figure 42 details the contribution of various diseases to the total client visits by province.

Figure 40: Percentage of cases as a proportion of total clients by disease- Central West Region, 2010

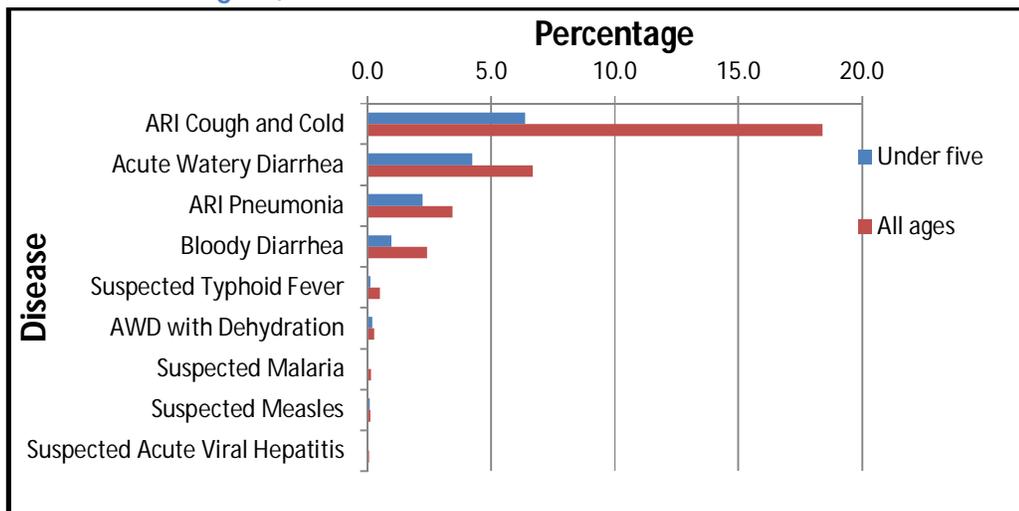
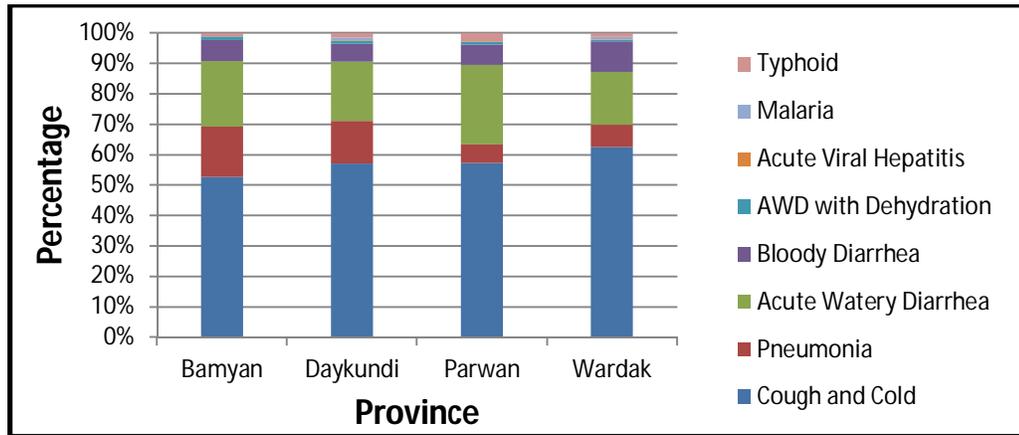


Figure 41: Percent contribution of the cases to the total by disease and Province-Central West Region, 2010



Mortality

In 2010, a total of 178 deaths were reported from Central West region of which 157 deaths (88.2%) were in children less than five years old. Pneumonia remains with high proportionate mortality of 74.2%, followed by diarrheal diseases (13.5%) as shown in Figure 43. Most deaths are reported from Bamyan and Parwan, followed by Daykundi and Wardak. Pneumonia was the main killer in all provinces while diarrheal diseases and meningitis was the second and third major killer respectively.

Figure 42: Leading causes of death –Central West Region, 2010

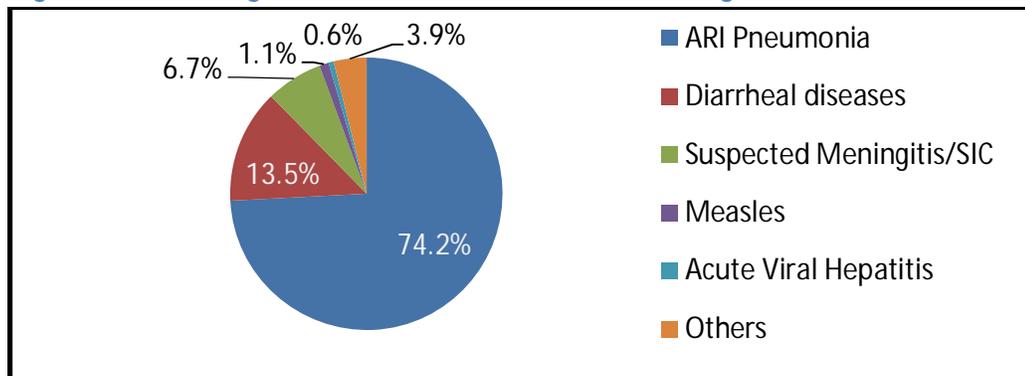
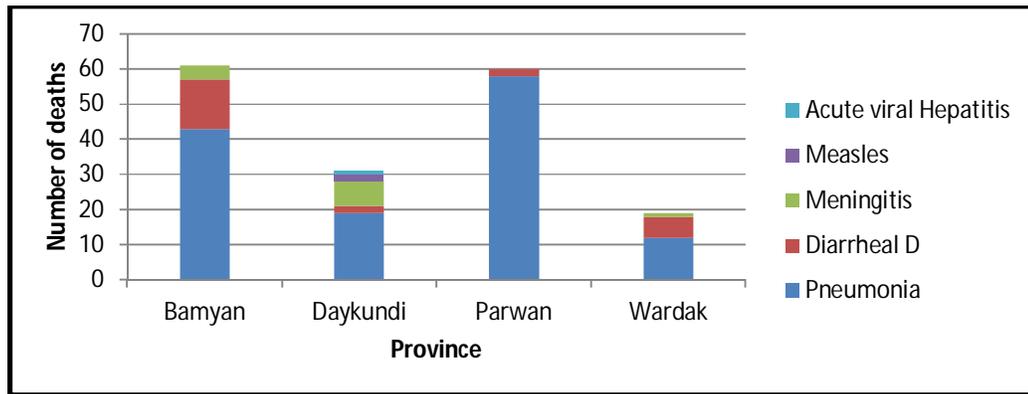


Figure 43: Number of deaths by province and disease- Central West Region, 2010



West Region

Morbidity

In 2010, there were 1,043,445 reported total client visits from West region, of which 278,593 (26.7%) were for DEWS targeted diseases. The total number of visits for DEWS targeted diseases from children less than five years old was 146,571 that consists 52.6% of the total visits for DEWS targeted diseases in the region. The most commonly reported illness with highest proportion was acute respiratory infections with an overall burden of 16.8% as a proportion of total client visits in 2010, followed by diarrheal diseases (9.1%), suspected typhoid fever (0.4%), suspected malaria (0.2%) and suspected meningitis (0.1%). Figure 45 illustrates the distribution of most common diseases in the region. As usual, Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total in each province. Greater contribution of the bloody diarrhea and typhoid fever to the total can be observed in Badghis and Farah provinces (Figure 46).

Figure 44: Percentage of cases as a proportion of total clients by disease- West Region, 2010

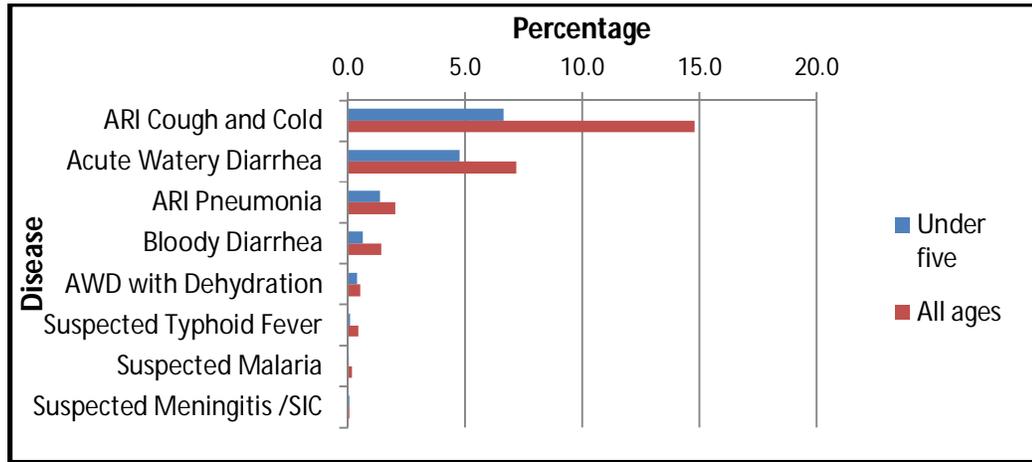
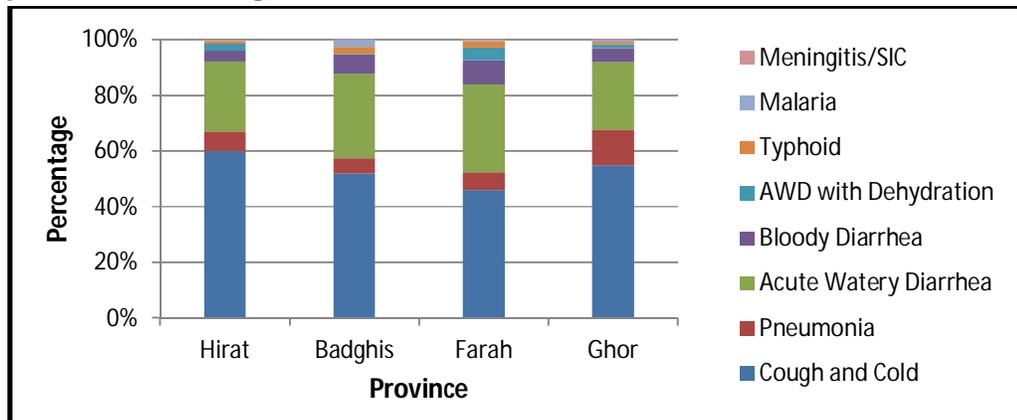


Figure 45: Percent contribution of the cases to the total by disease and province-West Region, 2010



Mortality

From West region, a total of 418 deaths were reported in 2010 of which 347 deaths (83%) were in children less than five years old. The highest proportionate mortality (57.2%) can be observed in Figure 47 for pneumonia, followed by suspected meningitis (27.3%) and diarrheal diseases (9.6%). As illustrated in Figure 48, most deaths are reported from Hirat and Badghis provinces compared to Farah and Ghor. Pneumonia reported to be the main killer in all provinces with deaths ranged from 128 in Hirat to 17 in Farah.

Figure 46: Leading causes of death –West Region, 2010

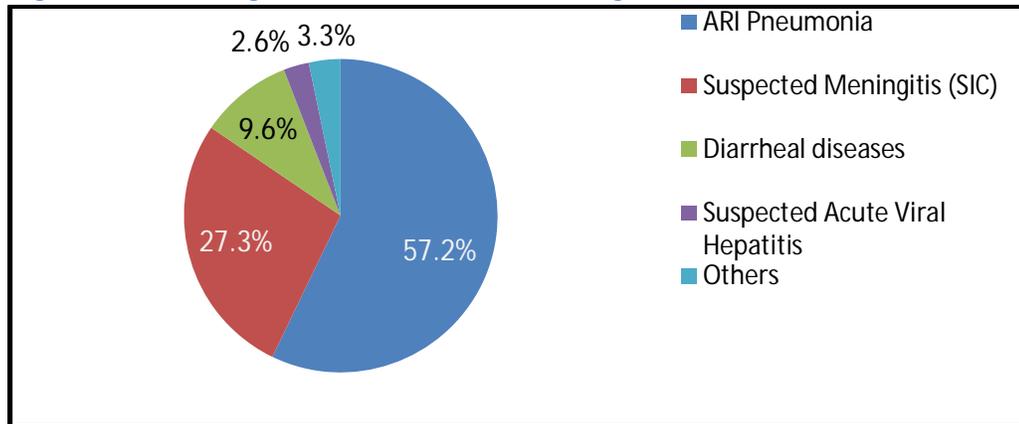
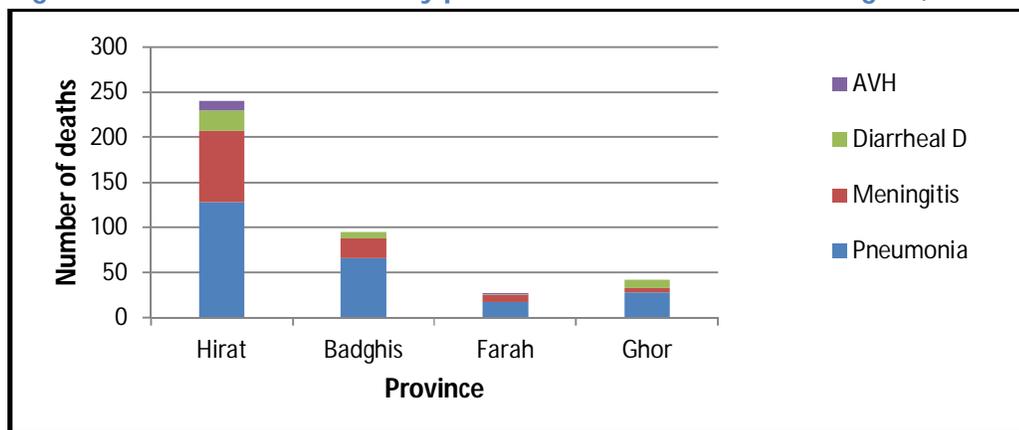


Figure 47: Number of deaths by province and disease- West Region, 2010



Central East Region

Morbidity

There were 2,415,056 total client visits in 2010, reported by all sentinel sites in the region. Among total visits 657,394 (27.2%) were for DEWS targeted diseases. The total number of DEWS visits from children less than five years old was 335,582 which represent 51% of the DEWS visits among all ages.

Figure 49 shows the distribution of most frequently reported diseases in the region. Acute respiratory infections remain the most common illness with an overall percent of 18.4 as a proportion of total clients. The proportion of visits reported as diarrheal diseases was 7.9%, the second most prevalent condition in the region. There were 9523 (0.4%) cases of typhoid fever, 4291 (0.2%) malaria cases, 3437 (0.14%) acute viral hepatitis cases, and 2093 (0.1%) suspected measles. As illustrated in Figure 50,

Cough and Cold contributed huge percentages to the total in each province with greatest percentage in Logar. Pneumonia contributed higher percentages to the total in Kabul and Panjsher provinces as compared to Kapisa and Logar.

Figure 48: Percentage of cases as a proportion of total clients by disease-Central East Region, 2010

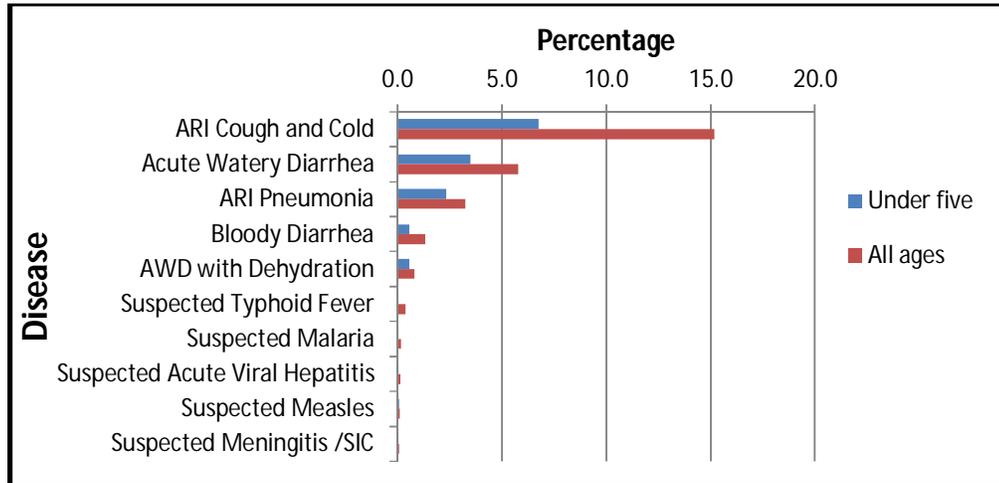
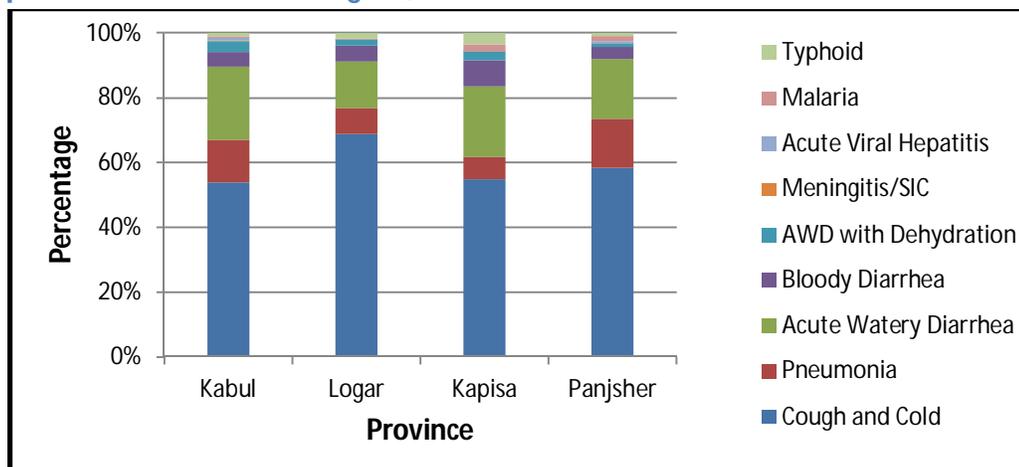


Figure 49: Percent contribution of the cases to the total by disease and province-Central East Region, 2010



Mortality

A total of 628 deaths were reported in 2010 from Central East region of which 497(79%) deaths were in children less than five years old. ARI- pneumonia remains with high proportionate mortality of 57.5%, followed by suspected meningitis (15.1%) and diarrheal diseases (14.3%) as shown in Figure 51. Most deaths are reported from Kabul province (555) while from Panjsher, Logar and Kapisa very few

deaths were reported. As usual, Pneumonia was the main cause of death in all provinces.

Figure 50: Leading causes of death –Central East Region, 2010

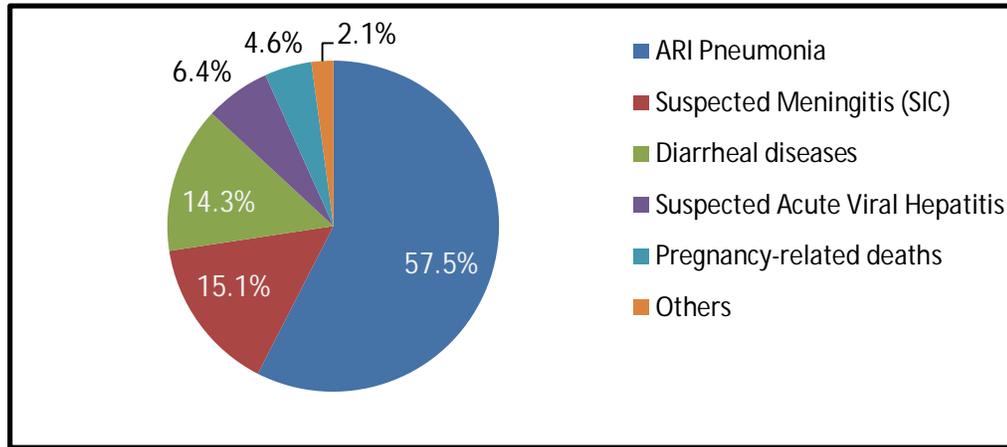
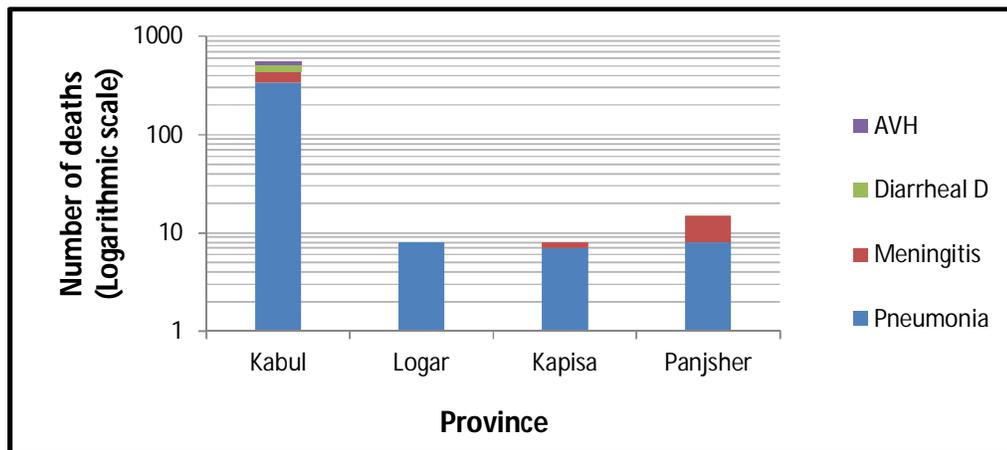


Figure 51: Number of deaths by province and disease- West Region, 2010



South Region

Morbidity

In South region, the total number of client visits through 2010 was 1,071,468 with 274,708 (25.6%) presenting with diseases targeted for DEWS. The total number of client visits from children less than five years old with DEWS targeted diseases was 142,933 which represent 52% of the total consultations for DEWS targeted diseases in the region. Figure 53 shows the distribution (percentage among total clients) of most common DEWS targeted diseases, by age categories, in the region during 2010. Acute respiratory infections (ARI) remain the most commonly reported illness with an overall proportion of 14% of total reported client visits in 2010, followed by diarrheal diseases (9.3%), suspected typhoid fever (1.3%), and suspected malaria (1%). In particular, Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total in each province. Figure 54 details the contribution of various diseases to the total client visits by province.

Figure 52: Percentage of cases as a proportion of total clients by disease- South Region, 2010

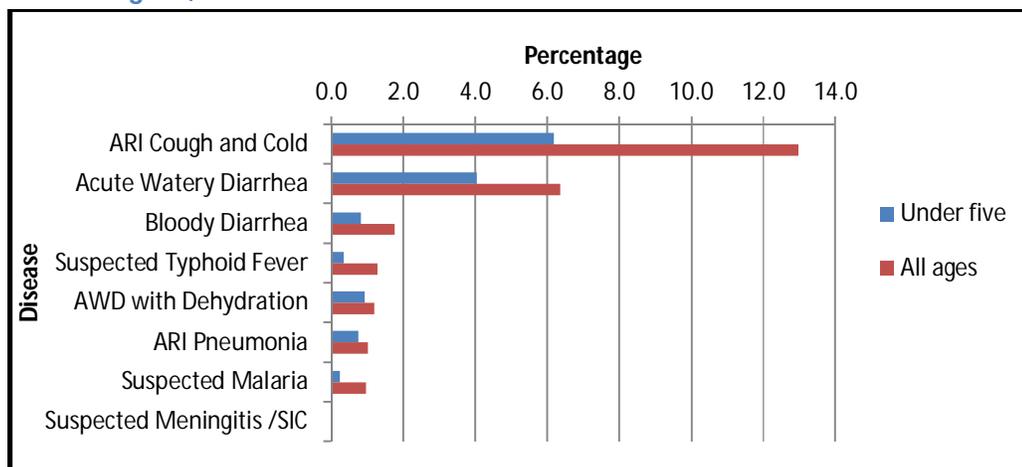
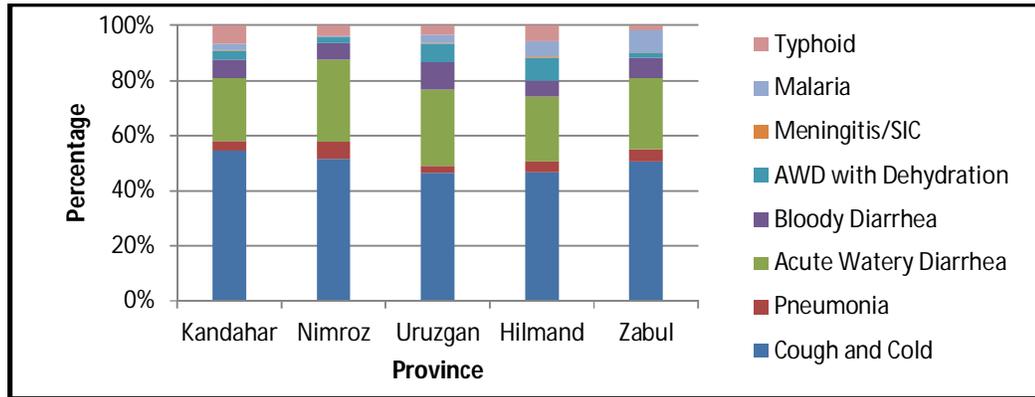


Figure 53: Percent contribution of the cases to the total by disease and province-South Region, 2010



Mortality

In 2010, a total of 121 deaths were reported from South region of which 108 deaths (89.2%) were in children less than five years old. Pneumonia remains with high proportionate mortality of 55.4%, followed by suspected meningitis (21.5%) as shown in Figure 55. Deaths due to main causes (Pneumonia, meningitis and diarrheal diseases) are shown in Figure 56 with most deaths from Hilmand and Kandahar. Pneumonia was the major killer in Hilmand, Kandahar and Nimroz provinces while meningitis was the second. No deaths have been reported from Zabul and Uruzgan provinces for these main causes.

Figure 54: Leading causes of death –South Region, 2010

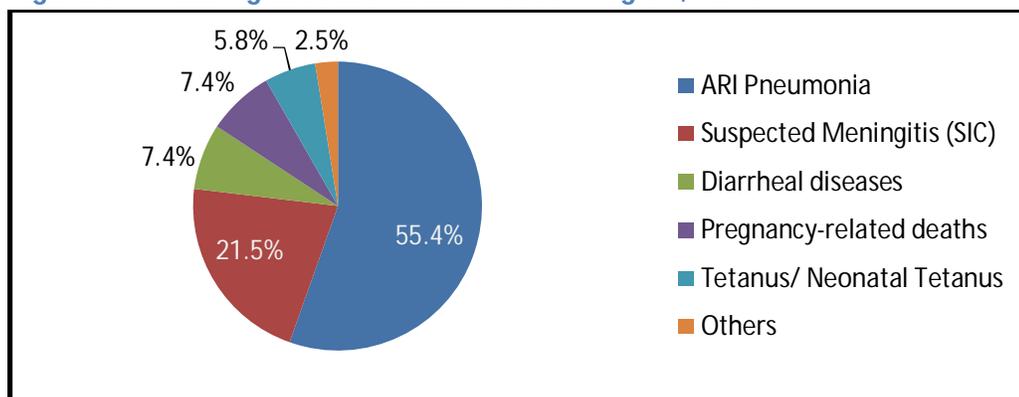
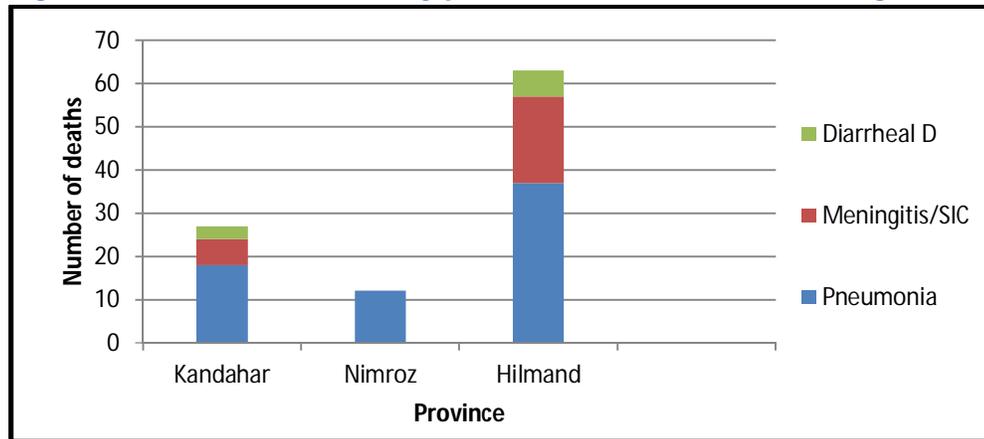


Figure 55: Number of deaths by province and disease- South Region, 2010



South East Region

Morbidity

In 2010, there were 759,660 reported total client visits from South East region, of which 214,548 (28.2%) were for DEWS targeted diseases. The total number of visits for DEWS targeted diseases from children less than five years old was 107,779 that consists 50.2% of the total visits for DEWS targeted diseases in the region. The most commonly reported illness with highest proportion was acute respiratory infections with an overall percent of 16.5 as a proportion of total client visits in 2010, followed by diarrheal diseases (9.8%), suspected typhoid fever (1%), suspected malaria (0.8%) and suspected acute viral hepatitis (0.1%). Figure 57 illustrates the distribution of most common diseases in the region. As usual, Cough and Cold, followed by acute watery diarrhea contribute greater percentages to the total in each province. Greater contribution of typhoid fever and malaria to the total can be observed in Paktika province (Figure 58).

Figure 56: Percentage of cases as a proportion of total clients by disease-South East Region, 2010

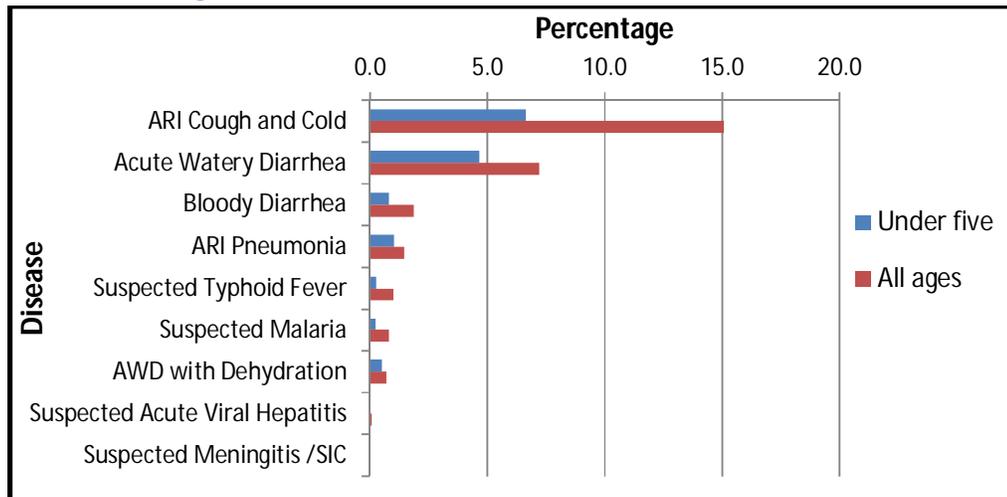
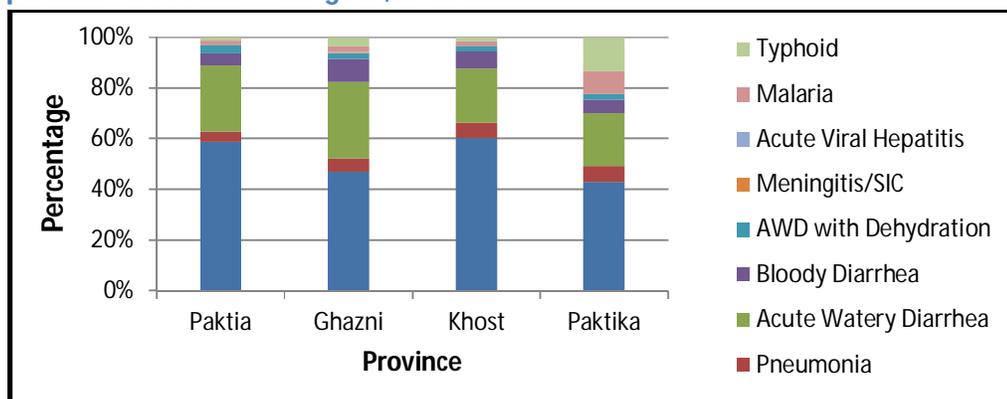


Figure 57: Percent contribution of the cases to the total by disease and province-South East Region, 2010



Mortality

From South East region, a total of 162 deaths were reported in 2010 of which 131 deaths (80.8%) were in children less than five years old. The highest proportionate mortality (66.7%) can be observed in Figure 59 for pneumonia, followed by suspected meningitis (14.2%) and diarrheal diseases (12.3%). As illustrated in Figure 60, most deaths due to major causes (pneumonia, meningitis, diarrheal diseases and malaria) are reported from Ghazni and Khost provinces compared to Paktia and Paktika. Pneumonia reported to be the main killer in all provinces with deaths ranged from 19 in Paktia to 35 in Khost.

Figure 58: Leading causes of death –South East Region, 2010

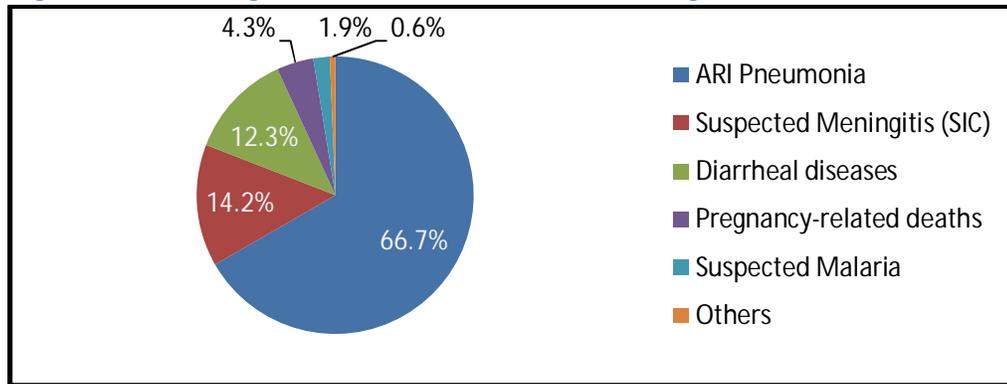
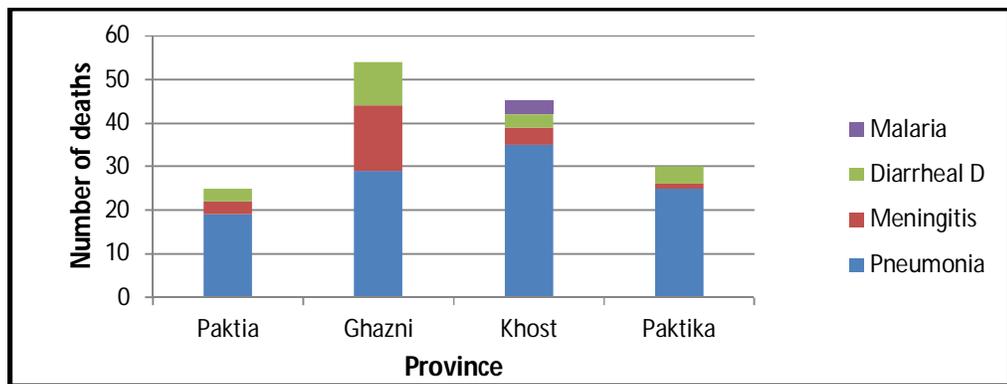


Figure 59: Number of deaths by province and disease- South East Region, 2010



Daily Emergency Report 2010

All the country, including 34 provinces are 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 9 shows the reported number of injuries and deaths due to various unpleasant events in 2010.

Table 9: Number of injured and deaths by event, reported by Codan unit, 2010

Event	Total number of injured	Total number of deaths
Explosions	3,770	949
Road traffic accident	34,464	636
Natural disaster	6,867	291
Burns	9,547	25
Criminal events	27,275	567

Laboratory Report 2010

Central Public Health Laboratory, a national reference laboratory, supports the surveillance/DEWS program in confirmation of the suspected outbreaks detected countrywide. The laboratory is capable of doing

In 2010, 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 2,328 or 68 % of total specimens. In total, 1,666 specimens were positive, of which 1,515 were for measles, 71 for Rota virus, 35 for Cholera and the rest 46 for typhoid, CCHF, HBV, H1N1, Rubella and Flu. Table 10 details the number of tested and positive specimens by region and diseases.

Table 10: Number of total and positive specimens by region and diseases reported by CPHL, 2010

Region	No. of specimens/positive	Measles	Rota virus	Cholera	Typhoid	CCHF	HBV	H1N1
East	No. of specimens	184	116	47	0	0	18	85
	No. tested positive	92	29	10	0	0	6	2
South	No. of specimens	117	0	14	0	1	0	20
	No. tested positive	82	0	1	0	0	0	0
South East	No. of specimens	119	0	19	0	1	0	10
	No. tested positive	81	0	6	0	0	0	0
Central East	No. of specimens	361	0	15	0	2	0	92
	No. tested positive	275	0	4	0	1	0	1
West	No. of specimens	224	26	3	0	7	0	21
	No. tested positive	89	13	0	0	2	0	0
North	No. of specimens	614	55	3	0	3	15	87
	No. tested positive	403	29	1	0	1	1	2
Central West	No. of specimens	447	0	33	0	0	4	108
	No. tested positive	323	0	5	0	0	0	1
North East	No. of specimens	262	0	20	30	4	0	12
	No. tested positive	170	0	8	4	0	0	0
Total	No. of specimens	2328	197	154	30	18	37	435
	No. tested positive	1515	71	35	4	4	7	6

Capacity Building- Health System Strengthening

Health system strengthening is defined as capacity building in six critical areas (Policy, financing, supply systems, service management, monitoring system and creating a sufficient, productive and skilled staff) to achieve more equitable and sustained improvements across health services and outcomes. In addition to the early detection and response, Health system strengthening through providing trainings in laboratory, 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 2010. The details of the all trainings including laboratory have been provided below;

International Trainings

- One year MPH scholarship in Indonesia for one DEWS officer of MOPH supported by WHO and USAID.
- Four scholarships of International Health Regulation (IHR) implementation 6 month online course, worth 40,000 USD granted by WHO with support from USAID.

National level Trainings

- Principles of Public Health
- IHR implementation course
- Basic GIS training course by International facilitator.
- Measles training course
- H1N1 training course
- 6 Coordination meetings and refresher trainings
- 8 Regional Refresher trainings

Summary of 2010 Outbreaks

There were 225 suspected outbreaks reported and investigated by DEWS team throughout the 2010 year, 19 reported outbreaks were rumor and the rest or 206 were clinically or laboratory confirmed outbreaks. Measles outbreak were dominant in this year, 143 suspected measles outbreaks were reported and investigated from those 13 were rumor and the rest were confirmed outbreaks. Meanwhile in 2010 we had Cholera outbreaks as well, total 18 Cholera suspected outbreaks reported and investigated, one of them was rumor and the rest were confirmed outbreaks which

properly investigated and responded. Table-11 shows the summary of number of reported outbreaks by disease in 2010.

Table-11 Number of outbreaks in Afghanistan from W1-W52 of 2010 by Diseases

Disease	Number of suspected outbreaks	Number of Rumor	Number of confirmed outbreaks (Clinically/Lab)
Measles	143	13	130
Cholera	18	1	17
Pertusis	14	2	12
Chicken Pox	6	0	6
Malaria	2	0	2
Poisoning	13	1	12
Typhoid	2	0	2
Hepatitis	2	0	2
Leishmaniasis	1	0	1
CCHF	2	0	2
AWD	4	1	3
H1N1	5	0	5
Meningitis	1	1	0
ARI/Pneumonia	4	0	4
Others	8	0	8
Total	225	19	206

Table-12 shows the summary of number of reported outbreaks by province in 2010.

Table-12 Number of outbreaks in Afghanistan from W1-W52 of 2010 by Province

Province	Reported outbreak	Rumor	Clinically/Lab confirmed outbreak
Hirat	15	2	13
Badghis	0	0	0
Farah	1	0	1
Ghor	1	0	1
Balkh	18	2	16
Jawzjan	6	0	6
Samangan	3	0	3
Faryab	2	0	2
Sari-Pul	4	0	4
Kabul	12	4	8
Logar	1	0	1
Kapisa	15	3	12
Panjshir	0	0	0
Bamyan	5	1	4
Daikundi	11	2	9
Parwan	4	2	2
Wardak	1	1	0
Nangarhar	14	1	13
Laghman	8	0	8
Kunar	5	0	5
Nooristan	14	1	13
Paktia	24	0	24
Ghazni	13	0	13
Khost	11	0	11
Paktika	0	0	0
Kandahar	10	0	10
Nimroz	1	0	1
Urozgan	1	0	1
Helmand	1	0	1
Zabul	6	0	6
Kunduz	6	0	6
Badakhshan	10	0	10

DEWS indicators

Below table-13 indicate DEWS achievements based on the seven indicators quarterly base for the whole year as well as the average calculation of the indicators.

Table-13 DEWS achievements based on the indicators in 2010

S/N	Name of indicator	Q1	Q2	Q3	Q4	Total /Average
1	Percentage of Weekly report arrived from sentinel sites to National level timely	99.79%	99.72%	98.59%	99.63%	99.43%
2	Percentage of timely Compilation, analysis and dissemination of Weekly report at the national level	100%	100%	100%	100%	100.00%
3	Percentage of outbreaks investigated within 48 hours of notification	97.01%	96.77%	94.12%	97.60%	96.38%
4	Attendance of DEWS in monthly PHCC meetings (%)	99.17%	98.98%	100%	100%	99.54%
5	Number of DEWS coordination meeting hold at the national level	One	One	One	Two	Five
6	Percentage of serum specimens collected for measles/Rubella reached to CPHL in good condition (Adequate specimen)	94.13%	92.29%	90.81%	96%	93.31%
7	Percentage or number of specimen confirmed by reference lab	20	508	440	288	1256

Conclusion

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 week referral system also contribute to the persistence of the communicable disease.

In 2010, there is significant decrease in the percentage of DEWS targeted diseases as a proportion of total clients compared to 2008 and 2009. This can be attributed to the improved health system and health situation in the country as was years back. Constantly, 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

Surveillance Reporting Form for Morbidity (disease) and Mortality (death) BRING TO PHD OFFICE EVERY SATURDAY

Province Name/Code:

District Name/Code:

Town/Village/Camp:

Facility Name/Code:

NGO/Donor:

Epidemiological Week__ from Saturday: ___/___/2011 to
Friday___/___/2011 Submission Date: ___/___/___ Contact's Name &
phone #...

Disease/condition	<5 years		≥5 years	
	Cases	Deaths	Cases	Deaths
1	ARI- Cough and cold			
2	ARI- Pneumonia			
3	Acute Diarrhea			
4	Bloody Diarrhea			
5	AWD w Dehydration			
6	Suspected Meningitis (SIC)			
7	Susp. Acute Viral Hepatitis			
8	Suspected Measles			
9	Suspected Pertussis			
10	Probable Diphtheria			
11	Tetanus/ Neonatal Tetanus			
12	Acute Flaccid Paralysis			
13	Suspected Malaria			
14	Suspected 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/
1					
2					
3					

Investigate with history and lab specimen single cases of suspected avian influenza, cholera, measles, pertussis, diphtheria, AFP, meningitis and hemorrhagic fever and search for other cases. Similarly, investigate clusters of pneumonia, bloody diarrhea, hepatitis, malaria, and typhoid and increasing trends of ARI and diarrhea.

Annex-2: Case Definitions

- 1. ARI–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. ARI – Pneumonia:** In adults: ARI, 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 Diarrhea:** Three or more abnormally loose or fluid stools in the past 24 hours with or without fever or mucous, but without dehydration.
- 4. 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 (AWD) 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 O1 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 purpurial 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 8th-10th 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.

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