



USAID
FROM THE AMERICAN PEOPLE

AFGHANISTAN

PERFORMANCE EVALUATION

DISEASE EARLY WARNING SYSTEM (DEWS) PROJECT

AUGUST 2014

This report was produced for review by the United States Agency for International Development (USAID). It was prepared under contract with Checchi and Company Consulting, Inc. for USAID's Afghanistan "Services under Program and Project Office for Results Tracking Phase II" (SUPPORT II) project.

Activity Signature Page

This report was contracted under USAID Contract Number: AID-306-C-12-00012. Afghanistan Services under Program and Project Office for Results Tracking Phase II (SUPPORT II).

This Activity was initiated by the Office of Program and Project Development (OPPD) through Ms. Belien Tadesse, COR/SUPPORT II.

Assignment Title: Disease Early Warning System (DEWS) Project

Team Leader: Dr. Gavin Macgregor-Skinner

Team Members: Dr. Palwasha Anwari, Dr. Akmal Samsor, Craig Arnold

Report Authors

& Editors: Dr. Gavin Macgregor-Skinner, Aimee Rose, Lisa Jenkins

Activity Start Date: November 17, 2013

Completion Date: April 8, 2014

Hoppy Mazier, Chief of Party

Waheed Ahmadi, Deputy Chief of Party

Checchi and Company Consulting, Inc.
Kabul, Afghanistan

Disclaimer:

The views expressed in this report are those of the author and do not necessarily reflect the views of USAID, the Government of Afghanistan, or any other organization or person associated with this project.

TABLE OF CONTENT

I. Executive Summary.....	1
1. PROJECT BACKGROUND	1
2. EVALUATION QUESTIONS, DESIGN, METHODS, AND LIMITATIONS	2
3. FINDINGS AND CONCLUSIONS	3
4. RECOMMENDATIONS.....	4
II. Introduction	7
1. PROJECT BACKGROUND	7
2. EVALUATION PURPOSE	10
3. EVALUATION QUESTIONS	10
4. METHODS AND LIMITATIONS	11
III. Findings	13
IV. Conclusions	28
V. Recommendations	35
Annex I: Scope of Work	41
Annex II: Workplan	57
Annex III: Work Schedule	69
Annex IV: Bibliography of Documents Reviewed.....	70
Annex V: Schedule of Meetings	74
Annex VI: Methodology Description	83
Annex VII: Data Collection Survey Instruments.....	91
Annex VIII: Afghanistan DEWS Tools.....	107

ACRONYMS

ADS	USAID Automated Directives System
AFP	Acute Flaccid Paralysis (suspected Polio)
AFN	Afghanistan Afghani (Currency)
AI	Avian Influenza
ABD	Acute Bloody Diarrhea
AWD	Acute Watery Diarrhea
AWDD	Acute Watery Diarrhea with Dehydration
BHC	Basic Health Center
BPHS	Basic Package of Health Services
CCHF	Crimean-Congo Hemorrhagic Fever
CDC	Communicable Disease Control (Afghanistan MoPH Department)
CHC	Comprehensive Health Center
DEWS	Disease Early Warning System
DH	District Hospital
EPI	Expanded Program for Immunization
EMRO	Eastern Mediterranean Region (WHO)
EPR	Emergency Preparedness & Response (MoPH Department)
FY	Fiscal Year
GIRoA	Government of the Islamic Republic of Afghanistan
HMIS	Health Management Information System
IDSR	Integrated Disease Surveillance and Response
IEC	Information, Education, Communication materials
IT	Information and Communications Technology
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MoPH	Ministry of Public Health
NEPI	National Expanded Program on Immunization
NGO	Non-Governmental Organization
OPV	Oral Poliomyelitis Vaccine
PEI	Polio Eradication Initiative
PHD	Provincial Health Director
PHEIC	Public Health Emergencies of International Concern
PHO	Provincial Health Office
PPHCC	Provincial Public Health Coordination Committee
SOPs	Standard Operating Procedures
SOW	Statement of Work
TB	Tuberculosis
TOR	Terms of Reference
ToT	Training of Trainers
UNICEF	UN Children's Fund
USAID	United States Assistance for International Development
US-CDC	United States Center for Disease Control and Prevention, Atlanta, USA
USD	United States Dollars
WHO	World Health Organization

I. EXECUTIVE SUMMARY

1. PROJECT BACKGROUND

The Disease Early Warning System (DEWS) project began in December 2006, and for the past seven years has been Afghanistan's core surveillance mechanism covering multiple priority public health diseases, conditions, and events. USAID supports the Afghanistan Ministry of Public Health (MoPH) to implement DEWs by channeling funding and technical support through the World Health Organization (WHO). One aspect of the DEWS strategy involves indicator-based surveillance: on a weekly basis focal points gather and analyze information on a set of diseases and conditions. If the threshold for a specific disease or condition is reached, an alert is declared, DEWS staff investigate and respond within 48 hours, and confirmed outbreaks are reported to the provincial and national DEWS offices. DEWS also employs case-based surveillance, following single incidents of concern. DEWS provides a national platform for sharing information and coordinating with various bodies to enable public health action.

As a result of gradual expansion, surveillance now takes place at 368 functional sentinel sites across all 34 provinces of Afghanistan (as of December 30, 2013). These sites exist in a variety of government-run facilities, including basic health centers, comprehensive health centers and district and regional hospitals, allowing data capture in even remote areas of rural Afghanistan. Every week, DEWS focal points at sentinel sites compile and send morbidity and mortality data, disaggregated by sex and two age groups (<5 years and ≥5 years), for 16 diseases and conditions to provincial DEWS offices, which, in turn, send compiled data to the national DEWS office. The national DEWS office at the MoPH produces a DEWS Weekly Epidemiological Report which is distributed to relevant departments and published online at the MoPH website¹ and the ANPHI Facebook page.²

DEWS is mandated to coordinate with other surveillance programs (e.g. National Polio Eradication and Expanded Program in Immunizations); provide logistical support to ensure that specimens reach the Central Public Health Laboratory in good condition; and ensure laboratory quality control through standard operating procedures and external quality assurance measures.

As a signatory to the International Health Regulations (IHR 2005), Afghanistan has pledged to meet global standards for preventing, detecting, and responding to the

¹ <http://moph.gov.af/en/documents/category/dews-2013>

² <https://www.facebook.com/gdanphi>; after field work was complete, the team noted that reports were not posted from January 15 to June 30, 2014.

international spread of disease. As part of IHR 2005's core surveillance and response capacity requirements, each state party has to develop and maintain capabilities to detect, assess, and report disease events at the local, intermediate, and national levels. DEWS is one of the most important tools Afghanistan has to be able to meet IHR obligations.

2. EVALUATION QUESTIONS, DESIGN, METHODS, AND LIMITATIONS

This evaluation assesses the performance of DEWS from December 2006 until December 2013 against the objectives agreed upon by the MoPH, USAID, and WHO. The evaluation strives to identify and evaluate the strengths and weaknesses of DEWS. In so doing, the evaluation will identify effective program components and lessons learned, as well as actionable recommendations for the future.

The evaluation focused on the following questions:

1. How has the DEWS program performed programmatically and financially?
2. Has DEWS contributed to the reduction of the morbidity and mortality rates of various health related problems in Afghanistan?
3. What key lessons has the MoPH learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?
4. Have the MoPH and DEWS assured that linkage with laboratories and response plans are in place and are functional?
5. Do any policies, laws, regulations, procedures and/or additional standard operating procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?
6. To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district levels)?
7. What is the correlation of allocated budgets and total costs by year of general categories of implementation inputs for DEWS?

In order to answer the evaluation questions, the evaluation team employed a mixture of approaches including:

- Desk review of existing documents,
- Site visits and observations,
- Semi-structured interviews with key informants,
- DEWS health facility sentinel site phone survey,

- Regional DEWS Officer phone survey,
- Provincial DEWS Officer phone survey, and
- Cost analysis of DEWS implementation inputs for 2010, 2011, 2012, and 2013.

3. FINDINGS AND CONCLUSIONS

The evaluation team found that overall, DEWS in Afghanistan has had remarkable success throughout the life of the project in achieving output and process targets, but its success at the outcome level is more limited. For example, DEWS has scaled up operations and extended to 34 provinces. Out of 368 functional sentinel sites, 99 percent submitted complete weekly reports on time, thereby contributing to a wealth of data and information over seven years of surveillance. DEWS also developed a manual and a five-year strategic plan, all of which laid important groundwork for implementation. However, DEWS falls short in terms of ‘taking the next step’ and effectively applying these procedures to manage and analyze data to trigger the desired longer-term public health response. In addition, while the DEWS 2012 Annual Report states that its goal is to “contribute to the reduction of the morbidity, mortality and disability due to various health related problems in Afghanistan,” there has been less focus on the analysis which is needed to inform public health coordination and long-term response. While the scope and reach of the data collection system are impressive, without proper analysis and action, DEWS is assuredly not reaching its potential to reduce morbidity and mortality.

The evaluation team also found that DEWS support functions such as feedback, equipment, finance, and laboratory confirmation, are not entirely adequate to facilitate the performance of core surveillance activities, such as case and outbreak detection, case confirmation, case notification, data management and analysis. The evaluation team identified several issues with support functions, including poorly defined budgets, inadequate skills-based training, erratic feedback, and weak communication and transport systems for submitting specimens to laboratories. Outbreak investigation and response activities are well understood and implemented by DEWS staff, but final outbreak reports are not widely distributed, which limits sharing lessons learned and information for public health action and hence the assessment of response adequacy and institutional learning.

Finally, the evaluation team identified opportunities to strengthen DEWS monitoring and evaluation (M&E). DEWS indicators, which are primarily focused on outputs and processes, do not encourage managers to focus on outcome and impact level achievements. Prior to this evaluation, no evaluation had been conducted since the start of DEWS in 2006. Errors in the database and weekly epidemiological and annual reports call into question data quality and management. Data analysis was weak at all levels, a fact which is also reflected in the weekly epidemiological reports and annual reports.

4. RECOMMENDATIONS

Findings and conclusions of the DEWS evaluation point to the following recommendations, offered to address systemic challenges in staff capacity, laboratory functions, and communication, which are preventing the program from reaching its maximum impact.

1. Renew focus on staff training and supervision to improve operational systems
 - DEWS should focus on regular supervisory visits at all levels and track the number of visits and coverage of facilities as key indicators.
 - Provincial DEWS officers should coordinate technical on-site skill-based training for all levels of DEWS personnel focused on strengthening surveillance, document and data management, and outbreak response functions. Training must be conducted at regular intervals, outlined within annual capacity building plans, and budgeted for accordingly.
 - DEWS should evaluate its training in order to ascertain the effectiveness of the curricula and trainers.
 - DEWS should maintain a detailed, updated database of trained personnel at all levels.
 - MOPH should institutionalize disease surveillance training in regular medical and paramedical curricula.
2. Review priority diseases/conditions, case definitions and procedures on a regular basis
 - MoPH should review the existing 16 priority diseases and conditions and consider altering, adding and subtracting diseases or conditions based on epidemiological data (e.g. consolidating both types of acute watery diarrhea, separating suspecting meningitis from severely ill child, eliminating cough and cold, and considering addition of diseases like CCHF, leishmaniasis, rabies, and injuries).
 - MoPH should reconsider whether the HMIS case definitions used by DEWS are well-suited for surveillance needs. In the case of watery diarrhea and suspected meningitis/severely ill child, maintaining the HMIS definition may limit the ability to interpret the data.
 - The DEWS system should become more responsive to a changing epidemiological situation. The priority disease and condition list, case definitions, and other procedures should be more regularly reviewed and updated.

- DEWS should consider allowing regions flexibility to add diseases and conditions based on regional disease burden, while maintaining a consistent core list.
- DEWS should make use of the existing IDSR or DEWS technical working groups, to make the aforementioned decisions on inclusion/exclusion of diseases and conditions, revision of case definitions, and procedures.³

3. Improve data entry, management, and analysis

- DEWS should develop clear guidelines for data entry, management, and analysis at each level. DEWS should perform a data quality assessment to determine the cause of inaccuracies in DEWS reports.
- Based on the results of the aforementioned data quality assessment, DEWS should introduce quality control mechanisms.
- DEWS should consider utilizing more effective communication systems (e.g. mobile phone platforms) for ongoing systematic collection, collation and analysis of data. The experiences and documentation developed for electronic DEWS (eDEWS) systems in Pakistan, Somalia, and Yemen provide useful information for the implementation of eDEWS in Afghanistan.
- Data should clearly present the percent of the population being reported through DEWS, as well as disaggregation by age and sex.
- DEWS would benefit from hiring an external consultant on a yearly basis to review the analysis that has been done, conduct additional analysis, and providing training on analysis.

4. Strengthen laboratory infrastructure and guidelines

- DEWS must improve laboratory confirmation to understand the actual etiology of outbreaks detected and trigger the correct response.
- DEWS staff must regularly take inventory of resources used to take and transport patient samples, such as swabs, Cary Blair, Charcoal Agar, blood transport media etc. to ensure that they are not past expiry.
- DEWS will greatly benefit from the planned enhancement of regional and provincial laboratories; program managers should develop a plan to integrate them at the earliest opportunity.
- MoPH should ensure that there are sufficient guidelines on whether laboratory confirmation is needed for each priority disease.

³ This recommendation appears to fall under the IDSR Technical Working Group TOR objective 2: “Reviewing current systems and processes for the reporting of disease surveillance within the health sector.”

5. Revise DEWS Weekly Epidemiological Report
 - DEWS reports should feature longer term trend data; currently, only data from the current week is displayed. This severely limits the ability to identify or interpret changes over time.
 - DEWS should remove or consolidate unnecessary tables and graphs (detailed recommendations are provided in the body of the report).
 - DEWS reports should show sex disaggregated figures for all 16 targeted diseases and conditions.
 - DEWS report should include more information on recent outbreaks and the public health action taken to respond.

6. Enhance DEWS' monitoring and evaluation system
 - Revise M&E indicators to allow for monitoring of more outcomes and impact, in addition to outputs and processes.
 - USAID and MoPH should ensure that DEWS allocates funds for an external evaluation at least every three years. DEWS should consider focused internal evaluations to supplement external evaluation, on an as-needed basis.

7. Develop a detailed DEWS budget
 - The DEWS budget needs to be clearly defined with descriptions for each line item to allow for key expenditures, such as maintenance of equipment and increased supportive supervision.
 - The budget line items should include specific provisions allowing for maintenance and strengthening of DEWS regular functions, as well as money set aside in the event of an outbreak.

8. While DEWS does need to be better integrated into Afghanistan's existing health structure, the team does not recommend introducing the Integrated Disease Surveillance and Response (IDSR) system as a next step.
 - MoPH should first strengthen the core and support functions of the existing DEWS program.
 - Before full integration is planned, an assessment should be conducted to determine how the level of integration will affect the performance of the system, the cost of the system, and the sustainability of the system.

II. INTRODUCTION

1. PROJECT BACKGROUND

Communicable diseases account for 60 to 80 percent of all outpatient visits and more than half of all deaths in Afghanistan. The Ministry of Public Health (MoPH) established the Disease Early Warning System (DEWS) in Afghanistan in 2006 with technical support from the World Health Organization (WHO) and financial support from USAID. The DEWS is designed to follow WHO guidelines on how countries respond to a Public Health Emergency of International Concern (PHEIC). In accordance with those guidelines, the MoPH established DEWS with the overall goal to minimize morbidity and mortality due to outbreaks of infectious disease. The system detects potential outbreaks at their earliest possible stage, transmits that information to the provincial and national level, and facilitates timely interventions.

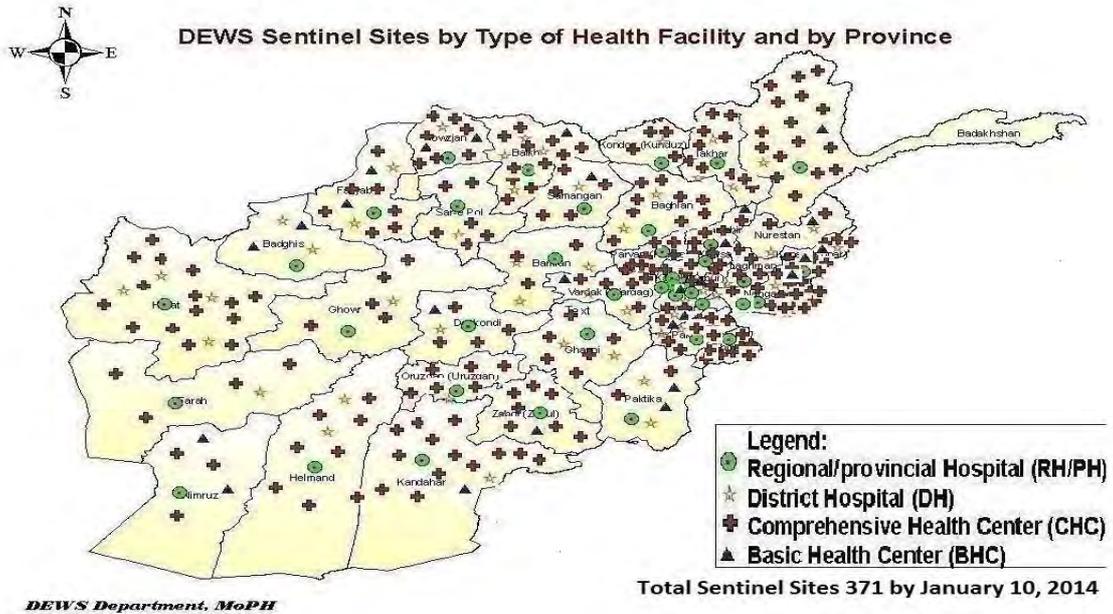
In December 2006, the DEWS established sentinel sites in the seven regional/provincial hospitals. By December 2013, the DEWS had expanded to 368 functional sentinel sites in all 34 provinces (Figure 1). The sentinel site network is comprised of public hospitals, comprehensive health centers (CHCs), basic health centers (BHCs), and polyclinics.

On a weekly basis, DEWS monitors 16 diseases and conditions, which have been identified and defined by the MoPH as priorities, based on the disease's impact on mortality and morbidity in Afghanistan, its epidemic potential, and its preventability by public health interventions (Table 1). In addition, DEWS tracks other events as reported. The weekly data are compiled into reports which ascend up to the national level, as shown in the flow chart in Figure 2. Indicator-based surveillance is conducted based on thresholds of conditions and suspected diseases, while case-based surveillance is conducted when one event warrants monitoring, such as cases of CCHF or diphtheria.

Table 1: DEWS priority diseases and conditions for surveillance

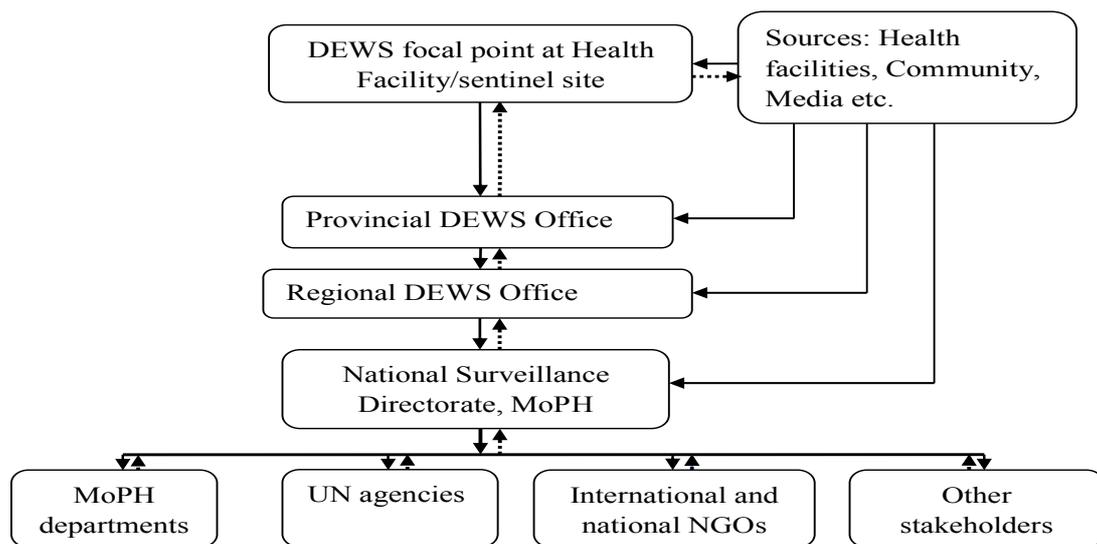
Major endemic diseases/conditions of public health importance	Diseases targeted for eradication and elimination	Epidemic-prone diseases/conditions
Cough and Cold	Poliomyelitis (Acute Flaccid Paralysis)	Acute Bloody Diarrhea – Suspected Shigellosis
Pneumonia	Measles	Acute Watery Diarrhea with Dehydration – Suspected Cholera
Acute Watery Diarrhea		Meningitis/Severe Ill Child
Tetanus/Neonatal Tetanus		Acute Viral Hepatitis
Malaria		Pertussis
Pregnancy-related deaths		Diphtheria
		Typhoid Fever
		Hemorrhagic Fever

Figure 1. DEWS Sentinel Sites by Type of Health Facility as of January 10, 2014 (Symbols show the number and do not indicate the GPS location).



Note: The symbols on the map show the number of Sentinel Sites (SS) in each region/province and do not indicating the GPS of SS locations.

Figure 2: Flow of DEWS data and information. (Source: Afghanistan MoPH DEWS Annual Reports for 2012 and 2011)



The DEWS core functions are outlined below in six steps, though it should be noted that in practice the order of these steps may vary:

1. *Identifying cases of diseases and events at health facility level – priority and otherwise.* Health facility workers identify cases based on standardized case definitions in the DEWS Manual which allows for early detection of outbreaks.

Cases that reach the threshold for reporting are automatically elevated to the provincial level as an alert.

2. *Reporting morbidity and mortality data on a weekly basis.* At sentinel sites, DEWS focal points record the number of cases on a tally sheet, and monitor those numbers against alert thresholds defined in the DEWS Manual.⁴ The sentinel sites submit this information on a weekly basis (through phone and email) to the next administrative level, the Provincial DEWS office.
3. *Compiling, analyzing, and interpreting data for distribution at multiple levels.* The Provincial DEWS Office consolidates and compiles the reported figures. The Provincial DEWS office then submits the monitoring data to the national level, which shares the information with domestic and international stakeholders.
4. *Investigating and confirming alerts and suspected outbreaks, and responding within 48 hours.* In case laboratory confirmation is indicated, samples are supposed to be collected from the suspected cases and sent to the Central Public Health Laboratory (CPHL) for laboratory confirmation.⁵ The DEWS follows both standard laboratory operating procedures and external quality assurance measures for outbreak verification.⁶
5. *Disseminating the findings from the analyses of morbidity and mortality weekly reports and outbreak reports.* Once the weekly reports ascend through the system to the national level, they are compiled into a standard weekly report format and disseminated to relevant MoPH departments, local NGOs, donors, and other international organizations.⁷
6. *Taking timely actions (immediate and long term) to implement appropriate and coordinated measures to prevent and/or control the outbreak.* The actions taken under DEWS fall into three categories:
 - *Primary response-* In response to an initial outbreak, a DEWS investigation team will travel to the outbreak site for further investigation, bringing along the appropriate medication and vaccines, according to DEWS defined procedures. The team may consist of: the provincial DEWS officer; a MoPH Communicable Disease Control (CDC) officer; an Expanded Program Immunizations (EPI) officer; relevant NGO representatives; and local health facility doctors, nurses, midwives, and/or community health workers, depending on the case. The team is responsible for conducting the outbreak investigation and providing initial and immediate response to the outbreak.

⁴ These are calculated by using the HMIS tally sheet as a proxy for the population denominator, and by using the total number of new clients as the numerator.

⁵ See Annex VIII for complete detail.

⁶ Examples of external quality assurance include delivering viral specimens of cases of influenza-like illnesses to the U.S. Naval Medical Research Institute in Cairo, Egypt, and sending measles specimens to the National Institutes of Health laboratory in Islamabad, Pakistan for confirmation.

⁷ Available online at the MoPH website (<http://moph.gov.af/en/documents/category/dews-2013>) and the ANPHI Facebook page (<https://www.facebook.com/gdanphi>).

- *Secondary response*- This response takes place after investigation and assessment by the initial provincial DEWS investigation team, and depends on the scale of the outbreak. If the provincial response is inadequate, or if the provincial investigation team confirms an epidemic (large scale outbreak), then a national level response team is introduced to control and treat the outbreak.
- *Long-term response*- At the national level, DEWS' analysis of the trends and patterns of outbreaks should facilitate coordination between various departments and agencies for effective response, which could include changes in policy, implementation of a specific intervention (e.g. a vaccination campaign), or undertaking focused research (e.g. a study of disease etiology).

2. EVALUATION PURPOSE

The primary purpose of this evaluation is to determine whether the DEWS program has met its objectives and achieved its intended results since its inception in 2006. The MoPH will use the findings to help determine the future of DEWS and whether DEWS should stand alone as a disease surveillance, reporting and response system or be integrated with other surveillance and response systems. USAID will use the findings to determine the recommendations it will make to the MoPH, other donors and stakeholders regarding the future of surveillance, reporting, and response in Afghanistan.

3. EVALUATION QUESTIONS

In order to evaluate the performance of Afghanistan's first national Disease Early Warning System, the evaluation team sought to answer the following evaluation questions:

1. How has the DEWS program performed programmatically and financially?
2. Has DEWS contributed to the reduction of the morbidity and mortality rates of various health related problems in Afghanistan?
3. What key lessons has the MoPH learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?
4. Have the MoPH and DEWS assured that linkage with laboratories and response plans are in place and are functional?

5. Do any policies, laws, regulations, procedures and/or additional standard operating procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?
6. To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district levels)?
7. What is the correlation of allocated budgets and total costs by year of general categories of implementation inputs for DEWS?

4. METHODS AND LIMITATIONS

The evaluation team conducted the evaluation from November 17, 2013 to January 31, 2014, and utilized a mix of qualitative and quantitative data collection methods. The methodology developed complied with the USAID Evaluation Policy (USAID, 2011) and USAID Automated Directive System (ADS) Chapter 203 (USAID, 2012). The four-person evaluation team, which consisted of two expatriate and two Afghan consultants, designed the evaluation with the current Afghanistan context in mind. For example, geographical remoteness and winter weather prevented physical access to many provinces; security prevented access to an additional set of provinces. Thus the team relied on phone surveys to collect data from a representative sample of sentinel sites throughout the country. Physical field visits were possible to the cities of Herat, Kabul, and Mazar-e-Sharif. The team's methods included:

- *Desk Review of Existing Documents:* The team reviewed a broad range of documents, including: program descriptions and modifications; work plans; weekly reports; quarterly reports; annual reports; supervisory reports; outbreak investigation reports; program performance data; and assessments and reports.
- *Site Visits and Observations:* The team travelled to four provinces (Herat, Balkh, Samangan, and Kabul) and visited DEWS sentinel surveillance sites, regional offices, and provincial offices which were accessible in those areas.
- *Semi-structured Individual Interviews:* The team conducted interviews with key stakeholders, including USAID/Afghanistan health team members, relevant MoPH staff, WHO senior management, DEWS staff, and other stakeholders at the national, provincial, district, and community levels.
- *DEWS Sentinel Site Focal Point Phone Survey:* The team designed a retrospective cross-sectional phone survey in order to evaluate DEWS' program objectives, structural components, core surveillance functions, and support functions,

including laboratory testing.⁸ The team utilized a stratified random sampling design to select 66 DEWS focal points representing each of the eight regions. The survey team translated the tool into Dari, and multi-lingual interviewers conducted the surveys in Dari, Pashto, and English.

- *Regional DEWS Officer and Provincial DEWS Officer Phone Survey*: The evaluation team modified the sentinel site focal point survey instrument for use with regional and provincial DEWS officers. The team interviewed 15 randomly selected provincial DEWS officers (from a total of 34) and all eight regional DEWS officers.

These methods of evaluating the DEWS's performance do not lend themselves to detailed statistical analysis. Rather, the evaluation methodology allowed the evaluators to gain understanding of the system, and to analyze stakeholders' reported experiences. Therefore, rather than focusing on individual capacities or competencies within the DEWS network, this evaluation produces more of an overall, "all things considered" evaluation of the DEWS.

Since interviews were conducted in three different languages it is possible that some information may have been lost in translation, or that the interviewers used technical terminology that may have been misinterpreted by the interview subjects. None of these limitations appeared sufficiently pervasive or difficult to detect so as to significantly skew the evaluation findings. Any detected bias noted in the interviews has been accounted for in the analysis and conclusions.

A few limitations on the evaluation's scope must be noted. The team found it difficult to answer question 2 on the effect of DEWS on morbidity and mortality. Due to the fact that improved surveillance can actually result in greater numbers of cases reported, it is always difficult to understand the effect of surveillance. The lack of consistent household data made it particularly difficult to provide definitive answers in the case of Afghanistan. Question 4 on linkages with laboratories could not be comprehensively answered and requires future consideration. Finally, the evaluation team proposed to perform a cost analysis of inputs from 2010–2013 in order to understand the resources required to operate DEWS. However, in the course of conducting the analysis, it became evident that many of the inputs were not accounted for in the documents made available. After discussions with MoPH, WHO and

⁸ The team used survey tools adapted from the WHO protocol for assessing national surveillance systems (World Health Organization, 2001), WHO guide to assessing disease surveillance and response systems (World Health Organization, 2006), CDC 2001 updated guidelines for evaluating public health surveillance systems (Centers for Disease Control and Prevention, 2001), the CDC 2004 Framework for evaluating public health surveillance systems (Centers for Disease Control and Prevention, 2004), and the WHO framework for evaluating communicable disease surveillance systems (World Health Organization, 2004).

USAID, the evaluation team concluded that the discrepancies were likely the result of other sources of donor funding. DEWS could not easily produce expenditure records or budgets which accounted for all inputs; therefore, this evaluation question could not be answered.

III. FINDINGS

The evaluation team's findings include facts and evidence gathered during the evaluation and do not rely solely on opinion. Findings are presented in accordance with the evaluation questions identified in the SOW and are listed below:

1A. Programmatic Performance: How has the DEWS program performed programmatically?

This section presents findings on the core and support surveillance functions of DEWS.

Case Detection and Registration: DEWS has developed a DEWS manual and alert action thresholds, which have been distributed to sentinel sites. The vast majority of stakeholders interviewed, including all regional DEWS officers (8), all provincial DEWS officers surveyed (15), and 83 percent of DEWS focal points at sentinel sites surveyed, reported having copies of the DEWS manual. In addition to the DEWS manual, staff also need operational guidelines for individual diseases/conditions. While DEWS does not have the responsibility to produce them, the lack of guidelines for some diseases and conditions is notable.

Despite a 2012 National DEWS Office review of the manual and DEWS documentation efforts, no major changes have been made in alert action thresholds, or DEWS documentation. DEWS relies on HMIS case definitions, even though they are not always well-suited to surveillance needs. The evaluation team did not find evidence of an ongoing process for evaluating these guidelines and making changes. For example, there are two separate definitions for "acute watery diarrhea" and "acute watery diarrhea with dehydration/suspected cholera," but the evaluation team could not find evidence during site visits that health care staff could actually apply and differentiate between the two case definitions. Yet, the use of HMIS case definitions has not been reviewed.

Only 65 percent of sentinel site focal points reported reviewing patient registers on a daily basis. Many (32 percent) only reviewed the patient registers at the end of the week, when preparing to submit data to the DEWS reporting system. That means that in the event of an increase in cases tracked by indicator-based surveillance, these focal points would not be able to detect an outbreak until the end of the week. Eighty-five percent of surveyed sentinel sites reported having DEWS Weekly Watch Charts

(hand-drawn charts drawn to display weekly data for highly contagious diseases like measles, typhoid fever, meningitis, etc.).

Case Confirmation: Depending on the condition or disease suspected, DEWS' guidelines require staff to collect specimens and send to the Central Public Health Laboratory (CPHL) for confirmation. Sixty-one (92 percent) sentinel sites reported having resources to collect samples, including measles sampling kits (82 percent), charcoal agar (83 percent), Cary-Blair media (83 percent), and swabs (77 percent). More than two-third of sentinel sites (68 percent) had all four. Fifty two (87 percent) sentinel sites had a refrigerator onsite, but only 38 (63 percent) reported that their health facility usually had continuous electricity. The evaluation team visited 11 health facility sentinel sites, all of which were carrying expired supplies for collecting samples (see Annex VIII for DEWS list of sample transport media). Rapid diagnostic tests were not available at any sentinel sites. For more information on linkages with laboratories, see question 4.

Case Reporting: Sixty-five (99 percent) of sentinel site focal points reported that they submit the weekly report on a Thursday by cell phone; one reported that he hand delivers a paper copy to the DEWS provincial officer. E-mail submission was not used by any of the sites. The average time it takes to complete the weekly report was reported to be one hour and 40 minutes (range: 10 minutes to 4 hours). Ninety-four percent (94 percent) of focal points reported that they kept a copy. Reporting procedures were clear and very well understood and no problems were identified that could affect the reporting chain. All sentinel sites relied on hard copies; even where computers were available they were not being used for DEWS.

All provincial DEWS officers reported that they submitted their weekly reports on a Saturday to the national DEWS office. Twelve (80 percent) reported that they submitted their weekly reports by e-mail and three (20 percent) by phone to the regional DEWS office, although all reported having access to a computer. All regional DEWS officers used computers to enter DEWS data and send and receive reports by e-mail to the national DEWS office.

Data Management: Although the evaluation revealed that sentinel surveillance site staff understood the reporting procedures well, and followed the reporting chain, poor data entry and management appear to have adversely affected data accuracy. For example, surveys and interviews revealed that all respondents reportedly had DEWS registers, but during site visits the evaluation team found that the registers were sometimes incomplete and the handwriting illegible. Further, the evaluation team found that in order to use the DEWS database, they had to do quite a lot of data cleaning. Some data was found to be in the wrong fields. Other entries lacked consistency.

Data Analysis and Reporting: The DEWS system suffers from a lack of systematic data analysis geared toward informing public health action. There was limited or no evidence of routine data analysis at national, regional, provincial, and sentinel site levels, apparently due to lack of clear guidelines and training on how and when to analyze data. All regional and provincial DEWS officers reported that they were responsible for conducting data analysis on a weekly basis, including summary, descriptive, and trend analysis. However, the only form of “trend analysis” conducted was the inclusion of an Excel graph of the data in the weekly report, without accompanying interpretation or analysis. Twenty-five percent of surveyed regional officers, and seven percent of provincial officers reported performing a weekly risk analysis, but the evaluation team were unable to confirm this effort. Even at the highest levels, none of the staff surveyed reported performing any kind of predictive analysis using DEWS data. One example of a missed opportunity for analysis is pregnancy-related deaths. While this indicator has been collected for many years, there is no evidence that DEWS is examining deaths reported.

The DEWS focal points report morbidity and mortality by sex and age group of the patient, but DEWS reports do not always provide disaggregation, which limits the utility of the reports (see Annex VIII for the DEWS Weekly Report Form).

The evaluation team found that there was not a uniform data source being used for baseline or denominator population data. Regional and Provincial DEWS Officers reported using at least seven different sources for denominator data in their analysis: total new clients, HMIS, CAAC, CSO, United Nations, DEWS-conducted survey data, and information provided by community or village elders. This means that regions and provinces are calculating disease incidence rates differently, thus affecting comparability of data.

The team also noted that DEWS does not consistently report on the outcome or resolution of outbreaks in the weekly or annual reports.⁹ Weekly reports sometimes follow up on previously reported outbreaks, but lab results are inconsistently provided. Such reports are an invaluable way to share lessons and experiences.

In its review, the evaluation team found obvious errors in both weekly epidemiological reports and annual reports contain, which may be a reflection of poor data quality, poor data management, poor reporting practices, or a combination of factors. For example, the 2011 and 2012 report section on outbreaks shows an alarming number of similarities (including the same number of outbreaks and samples taken for 2011 and 2012) which are likely the result of incomplete cutting and

⁹ The 2013 Annual Report was released following the drafting of this report and features a nice section summarizes the outcomes of several outbreaks.

pasting. Some weekly reports were found to have less total number of cases than the number of one gender reported. Internal inconsistencies were commonly noted in the report, suggesting that other errors could go unnoticed and result in incorrect interpretation and poor decisions.

With better data quality and a stronger culture of analysis, the rich data collected by DEWS could be applied reliably in more advanced ways – for example, to assess prevention and control efforts of certain diseases, to estimate morbidity and mortality of target disease and conditions, or to stimulate research. None of these possibilities have been fully realized in the current system.

Outbreak Preparedness, Detection, and Response: According to outbreak reports, in seven years DEWS has provided early detection, investigation, and response to 1,571 alerts, initiating preventive and control measures within 24-48 hours of a reported outbreak, with an average outbreak investigation length of 4.8 days (range: 1-14 days). The majority of outbreaks were measles, cholera, pertussis, chicken pox, malaria, poisoning, typhoid fever, hepatitis, leishmaniasis, Crimean-Congo hemorrhagic fever (CCHF), diarrhea, meningitis, pneumonia, Influenza H5N1, and Influenza H1N1.

Despite these achievements, on the whole, the evaluation team found that the DEWS is not as proactive as it could be, which may undermine its effectiveness. Fourteen (93 percent) provincial officers surveyed reported having a rapid response team for investigating epidemics and outbreaks, but only two (13 percent) reported having a written outbreak preparedness and response plan. Twenty-eight (42 percent) health facility sentinel sites had a reported at least one disease outbreak, nine (14 percent) had reported an outbreak in the last six months, and 38 (58 percent) sentinel sites had never reported an outbreak.

Feedback: “Weekly Epidemiological Reports” are produced and posted to a website by the national DEWS Office. WHO sends a DEWS Quarterly Report to USAID, and the MoPH and WHO produce a DEWS Annual Report that is printed and also posted online.

Seven (88 percent) regional and 14 (93 percent) provincial officers reported receiving feedback from the next level up over the previous 12 months. Regional officers who reported receiving feedback from the national DEWS office received it by phone (100 percent), official letter (100 percent), and email (38 percent); five (63 percent) reported feedback from WHO by phone; and four (50 percent) reported feedback from another organization by phone (50 percent) and email (75 percent). Provincial officers received feedback from the regional DEWS office by phone (64 percent), official letter (50 percent), email (50 percent), and report (36 percent); from the national DEWS office by report (57 percent), official letter (43 percent), email (43

percent), and phone (14 percent); one provincial officer reported receiving feedback from WHO by phone; and two reported feedback from another organization by email.

Supervision: Supervision was generally strong, although it was lacking or inconsistent in some offices. Thirteen (86 percent) provincial DEWS officers interviewed reported that they had received at least one official supervisory visit from a regional DEWS officer in 2013. It was reported that the purpose of the supervisory visits were: data management (100 percent), quality of reports (100 percent), information network maintenance (92 percent), checks DEWS knowledge (54 percent), and on-the-job training (15 percent).

Provincial DEWS officers reported conducting an average number of 19 supervisory visits in the past year with sentinel site focal points. Duties performed during these visits included: monitoring record file management (93 percent), monitoring data management practices (80 percent), monitoring DEWS register record keeping practices (93 percent), testing DEWS knowledge (53 percent), and providing on-the-job training (13 percent). Site visits confirmed supervisory visit schedules had been created as a GANTT chart and were displayed on office walls, but actual visits frequently deviated from the schedule due to security concerns and other priorities.

Forty-five (82 percent) sentinel site focal points reported that a DEWS provincial officer had visited them in the previous two months; activities conducted included: inspecting the register book (91 percent), observing the filing system (89 percent), observing the outbreak file (85 percent), checking DEWS materials (83 percent), meeting with focal points supervisor (74 percent), checking laboratory resources (74 percent), checking the weekly chart (74 percent), checking knowledge of case definitions (74 percent), and only one reported receiving on-the-job training.

Training: All regional and provincial DEWS officers reported having received at least one training from the DEWS program. In 2013, 13 (87 percent) provincial DEWS officers attended a DEWS training course, out of which 11 (85 percent) attended a course on the 16 DEWS priority diseases; four (36 percent) a course on environmental investigation, and one a course on epidemiological methodologies for investigations.

Six (75 percent) regional and five (33 percent) provincial officers reported that they had facilitated workshops for DEWS focal points at sentinel sites. Seven officers provided at least one training course on DEWS priority diseases, two facilitated at least one course on epidemiological investigation, and one taught a course on law and regulations.

Twenty-four (36 percent) DEWS focal points reported that they had attended a workshop focused on DEWS: 20 (30 percent) reported attending a course on outbreak investigation and response, 19 (29 percent) a course on DEWS target diseases, 18 (27

percent) a DEWS introduction course, and 14 (21 percent) a course on DEWS information systems.

Thirty-one (47 percent) DEWS focal points reported ever having received on-the-job training for DEWS. Twenty-seven (41 percent) received a DEWS introduction course, 26 (39 percent) received training on diagnosing DEWS target diseases, 26 (39 percent) received DEWS information systems training, and 24 (36 percent) received a course on outbreak investigation and response. Eleven (17 percent) DEWS focal points reported having never received any formal training for DEWS

1B. Financial Performance: How has the DEWS program performed financially?

Budgets and financial reporting: The evaluation team found that, by and large, financial information for the DEWS in general, and specific detailed budgets in particular, were difficult to find or else nonexistent. Between 2009 and 2012, the WHO and the MoPH did not report financial data for the DEWS in their Annual Reports. The evaluation team was also unable to obtain operational budgets and actual DEWS program expenditure data; even though the number of DEWS health facility sentinel sites increased by approximately 50 percent between 2010 and 2013, there were no available supporting expenditure data to determine the costs of establishing and maintaining a sentinel site, nor were there data available on the annual costs of supporting the entire network.

The evaluation team found that there was a knowledge gap regarding financial matters, as many DEWS officers lacked basic financial knowledge about the program. In the survey conducted by the evaluation team, all regional DEWS officers knew USAID funded the DEWS program, but only four (27 percent) provincial officers knew this. All regional and provincial DEWS officers knew that WHO provided technical assistance.

The evaluation team also found that the DEWS budgets are not well defined or closely managed. Each year, DEWS budgets ear-marked money for training and supervisory visits over a 12-month period, but the evaluation team found that these activities were not fully conducted. As a result, the DEWS budgets have not been able to ensure funding of key aspects of the program. When asked an open question, “what kind of support is needed for DEWS improvement in your region or province,” six (75 percent) regional DEWS officers replied “support to integrate all the programs,” and twelve (80 percent) provincial officers replied “more training for DEWS staff.” Only three (38 percent) regional and seven (47 percent) provincial officers mentioned that they needed both “more money” and “better equipment.” Without clearly defined detailed budgets, important support functions (such as feedback, supervision, training, communication, and equipment) have been underfunded under the DEWS program.

At all levels of the DEWS program, the evaluation team found that available resources decreased in 2013 compared to previous years. The DEWS experienced reduced funding, reportedly after the no cost extension of the program, which resulted in less funding for supervisory visits by provincial DEWS officers, a 50 percent reduction in the weekly incentives paid to DEWS staff, and decreased training and workshop opportunities. The team was unable to determine the direct effect of these changes during the short time period of the evaluation, but various senior-level DEWS staff reported relatively little change in reporting. While there was a drop in the number of outbreaks investigated in 2013 (190, as compared to 325 in 2012 and 355 in 2011), the decrease is largely explained by the reduction in measles outbreaks following concerted public health efforts.

ICT: In the interest of examining financial support for communication and data sharing systems, the evaluation team examined the prevalence of using information and communications technology (ICT) within the DEWS. Seven (88 percent) regional and 14 (93 percent) provincial DEWS officers reported that their offices had a desktop computer, but only five (63 percent) regional and 11 (73 percent) provincial officers reported that the computer was functional. All (100 percent) regional and five (33 percent) provincial DEWS officers reported that their office had a laptop computer, but only six (75 percent) regional and three (20 percent) provincial officers reported that the laptop computer was working. All regional and all provincial DEWS offices had a printer, but three (20 percent) provincial officers reported that their printers did not work. All regional and all provincial DEWS officers surveyed had personal cell phones, and all reported that the phones were functioning and had been used for DEWS activities. Sixty-five (99 percent) of DEWS focal points at sentinel sites reported that the primary means of communication between the health facility and the provincial DEWS officer was by cell phone, but only nine (14 percent) reported ever having sent an SMS text message to communicate with a DEWS officer. In order to understand which mobile phone applications DEWS focal points already used, and generate ideas for future DEWS communication methods, focal points were asked how they communicated with family and friends. The results were: SMS text messages (59 percent); Facebook (21 percent); Viber (14 percent); Skype (21 percent). Sixteen (24 percent) said that they used their phone to access the Internet.

2. Morbidity and Mortality: How has the DEWS contributed to the reduction of morbidity and mortality rates of health related problems in Afghanistan?

According to DEWS Annual Reports, one of the chief objectives of the program is “to reduce morbidity and mortality through detecting early and responding rapidly to outbreaks of infectious diseases and other health related problems in Afghanistan (World Health Organization 2012).” DEWS certainly reaches enough Afghans to make a difference. From 2009 to 2012, DEWS health facility sentinel sites reported an increase from 7.5 million consultations to 14.2 million in 2012, a stunning figure

as it represents approximately 53 percent of the Afghanistan population. Through expansion of sentinel sites over four years, DEWS doubled the number of new cases for the 16 diseases and conditions targeted by DEWS from 2.3 million to 4.7 million (Table 2). Cases of cough and cold alone accounted for more than half of the 4.7 million cases reported in 2012 (2.6 million); cases of acute watery diarrhea (1.1 million) and pneumonia (0.5 million), acute bloody diarrhea (0.3 million), and acute watery diarrhea with dehydration (0.1 million) account for much of the rest. In 2012 DEWS reported less than 10,000 cases of eight of the diseases and conditions, and between 10,000 and 100,000 cases of measles, malaria, and typhoid fever.

Table 2. *DEWS Health Facility Sentinel Sites reported number of cases for all diseases and number of cases reported for the 16 diseases and conditions targeted by DEWS from 2009 to 2012.*

	2009	2010	2011	2012
No. of consultations reported by DEWS sentinel sites	7,503,362	10,242,476	12,603,592	14, 205,433
% of Afghanistan population (estimated 27,000,000)	28%	38%	47%	53%
No. of cases for the 16 diseases and conditions targeted by DEWS	2,325,821	2,927,215	3,923,467	4,679,891
% of Afghanistan population (estimated 27,000,000)	9%	11%	15%	17%

Surveillance can contribute to the reduction of morbidity and mortality in two distinct ways. First, early detection and response can help contain an outbreak and trigger a response that can directly reduce morbidity or mortality of any single event. Sometimes this effect may be substantial – such as in the case of a highly contagious disease – but more commonly, at a national level, the improvement in morbidity and mortality is fairly small. The greater potential for surveillance to reduce morbidity and mortality is when patterns of data reveal trends or laboratory findings identify the cause of an outbreak which can be used for prevention or large-scale intervention, including policy change.

As it is implemented currently, DEWS has the potential to capitalize on the first type of morbidity and mortality reduction, but has less potential to capitalize on the second. In order to enable DEWS to realize its full potential to reduce morbidity and mortality, DEWS must improve data analysis and interpretation, and coordination for public health action. These goals should be monitored using indicators to track surveillance outcomes and impact, rather than simply outputs.

In fact, some of the partnerships DEWS established in its early years provided more opportunities to influence morbidity and mortality than are found in the current system. In 2008, DEWS and the National Immunization Program (NEPI) launched a case-based surveillance system of measles and hospital-based surveillance system for

vaccinations. WHO supported technical training for focal points from both DEWS and NEPI on case-based measles surveillance, as well as improved methods for specimen collection and transport for serum specimens. Data captured by the DEWS assisted the MoPH/ NEPI in making evidence-based selections of effective vaccines. DEWS was able to inform these decisions by providing accurate baseline information about the burden of disease, and the serotypes/genotypes causing the disease (which must be collected by a hospital-based disease surveillance program where pathogen strains can be isolated, preserved, and submitted to laboratories for serotyping). For example, a pneumococcal vaccine produced and used in the West might not include local pneumonia serotypes in Afghanistan, and so the vaccine would be ineffective. For this reason, there are DEWS officers in all regions (since mid-2008) conducting hospital-based surveillance of four vaccine-preventable diseases: bacterial meningitis caused by *H. influenza* b, pneumococcus, meningococcal, and rotavirus. Similarly, in 2008, DEWS data showed that *Streptococcus pneumoniae* is a leading cause of meningitis among children less than 5 years of age. Rotavirus was also found so far to be responsible for over 70 percent of acute watery diarrhea in hospitalized infants less than one year old. In the last few years DEWS Annual Reports have not highlighted as much use of the DEWS network for research..

In the scope of this evaluation, it was not possible to undertake a comprehensive study of morbidity and mortality of the DEWS diseases and conditions in relation to the introduction and expansion of DEWS. However, the evaluation team examined the example of “suspected meningitis,” a vaccine preventable disease, in order to demonstrate how the relationship between DEWS and morbidity and mortality is challenging to ascertain, especially with the current limitations in case confirmation and reporting.¹⁰

The evaluation team found that DEWS does not use a “probable” or “confirmed bacterial meningitis” case definition or laboratory criteria for diagnosis. For DEWS to begin monitoring any reduction in morbidity or mortality due to bacterial meningitis the program would need add to their current case definition a probable case classification (a suspected case and turbid CSF or ongoing epidemic and epidemiological link to a confirmed case), and a confirmed case classification (a suspected case or probable case with laboratory confirmation). In addition, the case definition would have to separate severely ill child from suspected meningitis.

¹⁰ The term "meningitis," which describes an inflammation of the membranes (meninges) and/or cerebrospinal fluid (CSF), can result from many causes, both infectious and non-infectious. The incidence and case-fatality rates for bacterial meningitis vary by region, country, pathogen, and age group. Without treatment, the case-fatality rate can be as high as 70 percent (Rosenstein, et al. 2001).

Over a five year period, from 2008 to 2012, DEWS reported 36,092 suspected cases of meningitis/severely ill child. DEWS Quarterly Reports and Annual Reports showed no positive laboratory testing and confirmation of “suspected meningitis” cases from 2008 to 2012. Over the five year period, DEWS has reported 3,364 deaths due to suspected meningitis/severely ill child; 78 percent were in children under 5 years (Table 3).

Table 3. *Suspected Meningitis/Severely Ill Child cases by all ages and in children under 5 years in Afghanistan as reported in DEWS Annual Reports for 2008 to 2012.*

	ALL			Children < 5		
	Suspected meningitis cases	Number of deaths	Case fatality rate (per 1,000 cases)	Suspected meningitis cases	Number of deaths	% deaths <5 years old
2008	8,191	1,020	146	6,037	880	86.3%
2009	6,640	770	116	4,253	617	80.1%
2010	6,661	626	94	4,043	469	74.9%
2011	6,481	396	61		291	73.5%
2012	8,119	552	68		383	69.4%

The DEWS reports do not indicate that any investigations of suspected meningitis were made and the number of suspected cases that were laboratory confirmed is not provided. This is very important in respect to the etiology and outcomes of meningitis, as the severity of illness and the treatment for meningitis differ depending on the cause. As no cases have been laboratory confirmed, then the number of deaths due to meningitis cannot be verified and the case fatality rates are also questionable as they are based on a case definition for only suspected meningitis or severely ill child. For example, the case fatality rate for “suspected meningitis” decreased from 2008 to 2012, but remained very high. The cause for this decrease is unknown as there have not been any outbreaks of meningitis investigated or reported by DEWS.

3. Lessons Learned: What key lessons has the Ministry of Public Health learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?

The evaluation team sought to understand the successes achieved in some areas of DEWS implementation, and apply those lessons learned to enhance other features of the system.

Documentation: DEWS staff are responding to more than 98 percent of outbreaks nation-wide within 48 hours – often under very difficult conditions – but the DEWS offices involved in the outbreak investigations do not document any lessons learned, best practices, or summary recommendations in writing to share with other offices. The evaluation team did note there are regular National Coordination Meetings that

bring all regional officers to Kabul to discuss issues and provide an opportunity for training. Initial outbreak reports are included in the DEWS Weekly Epidemiological Report, but they do not include final outbreak report findings. The evaluation team found through its interviews that the DEWS final outbreaks investigation reports are written and submitted to the National DEWS Office, where they are stored on a computer. The evaluation team could not find any evidence that these reports are ever looked at again, nor was there evidence that there are any subsequent reports consolidating information from the outbreak reports. Lessons learned and recommendations for public health action were also not captured in DEWS Annual Reports from 2008 to 2012.

Durability: It is worth noting that despite the budget constraints experienced in 2013, which led to the significant cut in incentives for DEWS focal points, the system hasn't experienced any noticeable failure. Though the MoPH should be cautious not to put additional pressure on a burdened workforce by introducing any new cuts, it can take this experience as a sign of the durability of the system and the commitment of its workforce.

Coordination: As the MoPH considers moving toward IDSR, it is important to appreciate that in many cases coordination is already working well at the local level. At the provincial level, DEWS outbreak investigations have included multi-sectoral rapid response teams that consisted of actors from various clinical and public health disciplines, as well as animal health and/or environmental health personnel or other specialists, depending on the disease reported. In addition, DEWS sometimes shared data and coordinated with other sectors in order to leverage vehicles, equipment, and human resources needed to respond to outbreaks. In the provinces, the DEWS teams also participate in monthly Provincial Public Health Coordination Meetings, providing reports on weekly trends and outbreaks in each province and the rest of the country.

The DEWS program also has staff and sentinel sites that are integrated with other vertical disease programs in Afghanistan. Twenty-two (33 percent) DEWS sentinel sites reported that they were also sentinel sites for tuberculosis and polio programs, 19 (29 percent) are also the sentinel site for measles, and nine (14 percent) act as influenza sentinel sites. Of the 66 DEWS focal points interviewed, 24 (36 percent) reported having received surveillance training from another government program: 14 (21 percent) received training from the measles program, 13 (20 percent) from tuberculosis, seven (11 percent) from HMIS, six (9 percent) from polio, four (6 percent) from malaria, and three (5 percent) from influenza.

In Mazar-e-Sharif the evaluation team attended a regional polio meeting facilitated by WHO which featured the fact that 256 acute flaccid paralysis (AFP) cases were reported in 2013, 94 (37 percent) of which had been reported by DEWS sentinel sites. In the five provinces of the northern region there are in total 57 AFP focal points and

60 DEWS focal points. Thirty-one of these are both the AFP and DEWS focal point; that is, about half of AFP and DEWS focal points are the same person (Table 4). This illustrates a significant level of integration and coordination occurring between polio and DEWS programs.

Table 4. Integration of human resources working for AFP Surveillance System and DEWS and number of reported AFP cases in 2013 (Source: Mazar-e-Sharif Polio Coordination meeting, December 10, 2013)

Province	Total AFP Focal Points	Total DEWS Focal Points	AFP and DEWS Focal Points	Total AFP cases reported in 2013	AFP cases reported by DEWS in 2013
Balkh	17	17	10	91	39
Faryab	13	15	4	62	8
Jawzjan	9	12	9	31	22
Samangan	7	8	2	31	8
Sar-i-Pul	8	8	6	41	17
Total	57	60	31	256	94

4. Linkages and Response Plans: Have the MoPH and DEWS assured that linkages with laboratories and response plans are in place and are functional?

The evaluation team found that while the Central Public Health Laboratory appears to be providing substantial support to DEWS surveillance and outbreak response activities, relying on one national laboratory is not timely or cost-effective. Analysis of project-wide lab results and follow up are inadequate.

Linkages with laboratories: In order to evaluate the extent to which MoPH and DEWS have assured that linkages with laboratories (e.g. the Central Public Health Laboratory) are in place and functional, the evaluation team surveyed DEWS staff on their capacity to use the laboratory facilities, and then conducted site visits to compare results. At the regional and provincial level, 100 percent of interviewees reported they had the resources and capacity to transport specimens to a laboratory..

Of those DEWS focal points that had been involved in an outbreak investigation in the last six months, 83 percent reported sending samples to the province, and 17

percent sent them directly to the Central Public Health Laboratory (CPHL) in Kabul and all stated that they shipped samples by road.¹¹ All DEWS samples are tested at CPHL, where they may have arrived from sentinel sites via the province. All sites reported that samples were shipped in cold storage boxes. Not one provincial DEWS officer surveyed mentioned any laboratory staff involved in their rapid response team. Only two sentinel sites that had shipped samples from an outbreak investigation to a laboratory for diagnosis were able to report the laboratory results during our survey.

Reporting: The evaluation team found that the laboratory sections of the quarterly and annual reports lack the analysis needed to identify important patterns in test results. Additionally, DEWS does not seem to use the laboratory results to assess whether its staff are following guidelines for testing. Quarterly reports present positive tests and total tests in separate tables, but do not show the proportion of positives or trends over time. In interviews, CPHL staff mentioned that all specimens from pertussis outbreaks have tested negative, even though according to clinical criteria, the cases were almost certainly pertussis. According to quarterly data, 517 specimens were tested for pertussis from January 2011 – December 2013 with not one positive result. This issue was identified anecdotally, but could have been systematically identified if staff were to examine the pertussis test results across time. During the preparation of the annual report (or at another regular interval), DEWS staff at the central level should review laboratory testing data for such patterns and anomalies and follow up to understand the results.

The “Laboratory Report” section of the 2012 DEWS Annual Report shows results for only a select number of diseases. Most importantly, there is no explanation in either report of how the CPHL supported surveillance activities, outbreak detection, or outbreak investigations.

The evaluation team assessed that minimal participation of laboratories in regular surveillance and outbreak investigations is caused by inadequate resources. Currently there are plans to enhance regional and provincial laboratories. When this process is completed, DEWS should integrate these newly refurbished laboratories into the surveillance system.

Linkages with response plans: To determine the effectiveness of the DEWS in linking its surveillance activities to other response plans, the evaluation team examined reports and other documents for signs of cooperation and coordination throughout the life of the program. DEWS officials state that they coordinate with other disease response programs in order to promote the most effective and efficient

¹¹ All interviewees in the survey reported moving samples by road; however, in Herat, staff showed evaluators a contract they have with a private courier that ships by air for AFN 1,500 per shipment.

utilization of resources in collecting, analyzing, and responding to information.¹² This occurs at all levels; for instance, the DEWS regional and provincial officers—who are responsible for training the DEWS sentinel site focal point—collaborate with the Communicable Disease Control (CDC) Officer in each province. This collaboration allows both the DEWS and the CDC to provide the Provincial Surveillance and Response Unit with supplies, as well as logistical, technical and clinical support for each activated investigation.

5. Do any policies, laws, regulations, procedures and/or additional standard operating procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?

To answer this question, the evaluation team questioned stakeholders and reviewed and assessed the existing DEWS tools and protocols. The tools used by the DEWS include several surveillance and reporting forms, operational guidelines,¹³ and the DEWS Manual.¹⁴ As noted above, there are operational guidelines for some, but not all, major diseases/conditions encountered by DEWS staff. The DEWS manual itself lacks consistent guidelines for specimen collection and testing. For some cases, the guidelines are clear: for example, in a suspected outbreak of pertussis, only a few cases need to be laboratory confirmed. Guidelines for testing of other diseases, such as suspected hemorrhagic fever or hepatitis, are unclear. The evaluation team discovered a lack of clear guidance in the DEWS regarding roles, responsibilities, and, as reported in question 1, the frequency and type of required data analysis. A first draft of a “Policy and Strategy of Surveillance for DEWS” has been developed (2012).

Interviewees often noted inefficiencies caused by parallel disease-specific surveillance strategies. Many believed that moving toward an Integrated Disease Surveillance and Response (IDSR) strategy would reduce inefficiencies.

¹² These programs include: Emergency Preparedness and Response Department (EPR), Communicable Disease Control Department (CDC), National Immunization Program (NEPI), Polio Eradication Initiative (PEI), National Tuberculosis Program, National Malaria Control Program, National AIDS Control Program, Health Management Information System (HMIS), Central Public Health Lab (CPHL) and Provincial Public Health Departments (PPHD).

¹³ Operational guidelines for responses to epidemics of cholera and measles have already been developed and distributed. Operational guidelines for epidemics of acute respiratory infections and viral hepatitis were developed in 2012, but were not reported in surveys conducted by the evaluation team, nor were they observed during health facility site visits.

¹⁴ The DEWS Manual contains: guidelines for surveillance and response to outbreaks of 28 diseases (including measles and influenza); fact sheets for health workers; health education material for each disease; a toolkit for early detection, response to, and control of outbreaks of influenza A (H1N1) and avian influenza (H5N1).

Although surveillance and response functions were generally supported by policy, the evaluation team noted variable participation of the NGOs contracted to provide health services. Currently, their contracts do not require their participation in DEWS outbreak detection or response. Some NGOs see it as part of their duties to participate fully; others reportedly request per diem for participation.¹⁵ In one of the four provinces visited, the evaluation team met a representative of an NGO who was entirely unaware of the DEWS program.

Weak participation of the private sector along with poor community-based surveillance components remain essential gaps in DEWS, as with other surveillance systems in Afghanistan. Private health facilities have no current requirement to feed into the DEWS system, although two private facilities in Kabul do voluntarily participate as sentinel sites. To encourage private sector participation, either formally as sentinel sites, or informally by reporting cases of concern, private facilities must first be aware of the program. Communities too can play a more active role, even informally, if they are more aware of the program.

DEWS must remain flexible enough to respond to a changing environment. To date, DEWS had not changed its data collection methods or case definitions during the life of the program, despite maturing as a program and encountering changing conditions. The current system does not have clear mechanism for reviewing and revising the priority disease list based on emerging health problems. It may not be enough to imbue national-level procedures with flexibility; regions have differing epidemiological profiles and differing capacities and may also benefit from flexibility.

6. To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district levels)?

Certainly, since the program's 2006 inception, the DEWS has extended surveillance activities and, by extension, capacity for surveillance at the national and subnational level. By the end of 2007, DEWS had three to six sentinel sites in each of the 34 provinces (total 129) and had investigated an average of three reported outbreaks per week, presumably preventing considerable morbidity and mortality by early detection and control of epidemics, although actual numbers cannot be quantified. Tables 7 and 8 detail the progress the DEWS has made in capturing outbreak data (Table 7) and sharing that data internally through reports (Table 8).

Table 7. Number of Outbreaks reported and investigated by DEWS from 2007 to 2013 (Source: DEWS Annual Reports and DEWS database)

¹⁵ Interview, Dr. Ziar, DEWS Director, Dec. 3, 2014.

Disease	2007	2008	2009	2010	2011	2012	2013
Measles	23	45	95	130	146	213	35
Crimean-Congo Hemorrhagic Fever	3	4	6	2	4	30	44
Pertussis (Whooping Cough)	60	60	24	12	46	26	13
Scabies					2	12	10
Food Poisoning		2		12		10	11
Malaria	3	5		2	5	7	
Pneumonia	9			4	3	4	2
Acute Gastroenteritis					2	4	
Cholera		35	43	17	76	3	22
Acute Viral Hepatitis	12	6	9	2	9	3	3
Acute Respiratory Infection		9	5		2	3	3
Leishmaniasis				1	3	2	2
Brucellosis		1			1	2	2
Chicken Pox		13	8	6	7	1	9
Diphtheria		3			3	1	1
Influenza A (H1N1)			10	5	2	1	
Tinea Capitis					2	1	5
Meningitis	1	1		1	1	1	
Mumps		1			1	1	3
Typhoid Fever		3		2	2		1
Rabies		2			1		3
Diarrhea	24			3			3
Avian Influenza (H5N1)	27	19	2				
Total		215	227	206	355	325	190

Table 8. Number of Sentinel Sites by the end of the year and Number of reports received by the National DEWS office from 2007 to 2013

	2007	2008	2009	2010	2011	2012	2013	Total
Sentinel Sites	123	130	177	245	283	330	368	
Weekly Reports	3,143	6,731	7,871	10,349	13,544	15,870		57,508
Daily Reports	298	298	298	298	248	248		1,688
Outbreak Reports	129	235	232	217	329	358		1,500

The quick expansion of DEWS has led to much greater numbers of health workers across the country who are experienced with surveillance and can be mobilized for future surveillance efforts. DEWS has successfully strengthened capacity in the areas in which it has focused. M&E indicators have stressed timeliness and percentage of reports received, and achievements have been remarkable. DEWS trainings have focused on filing, reporting, outbreak investigation and response and, with the

exception of laboratory confirmation, capacity to perform these functions is fairly strong. Capacity is weak where DEWS has yet to focus: data quality, analysis and interpretation. In addition, although DEWS is not responsible for laboratory functionality, weaknesses at all levels of the laboratory system limit DEWS' impact.

7. What is the correlation of allocated budgets and total costs by year of general categories of implementation inputs for DEWS?

Sustainability of the DEWS program is a major concern for both USAID and the MoPH, and hinges to a great degree on the recurring costs of the program. In order to provide actionable advice, the evaluation team intended to conduct a cost analysis so as to understand the funding requirements for maintaining and scaling up the existing program. As mentioned in the limitations section of the introduction, it was not possible to obtain the necessary budgets and other documents to establish the costs of the major inputs of DEWS. While the team was able to obtain quarterly reports to cover USAID investment, through discussions with WHO, USAID, and MoPH, it was determined that other donor funds had been used to procure other inputs and thus there was no consolidated record of all expenditures.

The fact that no consolidated expenditure accounts exist is itself a critical finding. As MoPH assesses the possibility of implementing IDSR, it is absolutely vital that it consider the investment it has already made in DEWS, and use these figures to estimate the requirements for IDSR. Cost information is also important to understanding the size of system that MoPH can reasonably maintain in the face of potentially dwindling aid; even if funds are available for five or even ten years, the establishment of a surveillance system is a significant investment for any country and should be carefully analyzed from all perspectives, including financial.

IV. CONCLUSIONS

The evaluation findings confirm that the DEWS program has scaled its operations to reach various levels of the health system across the country, enabling it to collect impressive amounts of information from 368 sentinel sites in a timely manner. Among other achievements, DEWS has implemented standard case definitions, developed procedural manuals, and maintained adequate outbreak response. The MoPH and DEWS leadership has accomplished these feats by closely monitoring outputs such as reporting timeliness and focusing training accordingly. Yet as the program has matured, it has not yet taken the next step to translate this wealth of data into the public health action that is needed to achieve the ultimate goal of reduced morbidity and mortality. Data management and analysis were found to be weak at all levels, as reflected in the weekly epidemiological reports, annual reports, and a review of the database itself. The reports purport to inform decision makers, but provide only absolute numbers with no analysis or disaggregation to highlight opportunities for intervention, policy change or research.

The evaluation team identified several issues with support functions, including poorly defined budgets, inadequate skills-based training, and erratic feedback. DEWS has yet to take full advantage of available electronic data processing opportunities. Poor documentation management of final outbreak reports severely limits sharing lessons learned and relevant information for effective public health interventions. These issues affect surveillance effectiveness.

Finally, DEWS relies exclusively on a national laboratory, but requires support from a network of laboratories to be able to provide timely and cost-effective services. Currently DEWS does not conduct the necessary analysis of laboratory results to identify important patterns or address issues with quality. These are critical weaknesses that must be aggressively addressed if DEWS is to fulfill its potential as an early warning system and strategy for achieving Afghanistan's IHR obligations.

The following conclusions are provided based on the evaluation's questions.

1. How has the DEWS program performed programmatically and financially?

DEWS functions effectively for transferring information from the peripheral level to the central national level. Significant progress and achievements have been made, but there are programmatic and financial gaps in terms of adequately addressing current and/or potential challenges to public health in Afghanistan. The main weakness identified was the insufficient analysis and utilization of the data that has been painstakingly collected. Leadership is required to shift the focus of the DEWS network from collection and reporting to analysis and use.

Despite constituting the pinnacle of DEWS' current efforts, weekly reports are not optimally effective in detecting outbreaks because the reports fail to 1) incorporate laboratory data; 2) disaggregate data by age group, sex or geographic region; 3) measure trends over time; 4) provide updates on previously reported outbreaks, and 5) share lessons learned through implementation.

Data management is also problematic; numerous errors were detected by the evaluation team even through routine review of reports and the database. The DEWS is currently underutilizing ICT tools that might facilitate more timely and accurate data collection as well as analysis. In the evaluation, the team observed opportunities at every level of DEWS to enhance the use of computers and mobile phone technology to improve the flow of data. Electronic data processing presents a significant opportunity, as it improves data quality by sheer reduction in data volume, and by speeding up surveillance, which also allows the staff more time to analyze data as the burden of data entry is reduced. Currently, the DEWS is not taking advantage of these technologies.

Financially, the DEWS program suffers from poorly defined budgets. As a result, allocations of resources and funding levels have not always met the operational requirements for the effective implementation of DEWS. The MoPH has yet to determine the exact financial and resource requirements of the DEWS, which is necessary in order to form a clear budget and make decisions about the future size of the network.

2. Has DEWS contributed to the reduction of the morbidity and mortality rates of various health related problems in Afghanistan?

Undoubtedly, DEWS has had some effect on morbidity and mortality, through identifying and containing outbreaks on a case by case basis, and through its earlier contribution to vaccine planning. However, it is not currently able to maximize its impact, due to the poor availability of laboratory confirmation and limited analysis and use of data for decision-making.

The evaluation team's attempts to examine the effect of DEWS on morbidity and mortality further highlight some of DEWS' weakness; since lab confirmation of cases is rare, it is difficult to quantify the effect of the program on the morbidity and mortality of any one disease. Furthermore, as surveillance programs expand, they are likely to lead to greater reporting of morbidity and mortality, not less, even while the response on the ground may have a real impact on outcomes. However, attributing decreases in case fatality rates is difficult. As an example, the suspected meningitis case fatality rates recorded by DEWS did drop over four years of surveillance, but there were many possible factors so it cannot be attributed to DEWS.

3. *What key lessons has the MoPH learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?*

A particular strength of DEWs at the local level is the cooperation observed between staff of different departments and agencies, staff of health facilities, and community members to work together when outbreaks or events of concern occur. Another positive natural occurrence which is worth mentioning is the overlap with other surveillance systems, which allow DEWS personnel to benefit from other training and capacity building experiences, and vice versa.

The DEWS scaled up quickly, and has a wide reach into rural Afghanistan, but communication of lessons learned remains a challenge. This is due to the lack of documentation of best practices and lessons learned at the community level, and insufficient feedback and training. As with all surveillance systems, there is a need to continue with regular supervisory visits, training and feedback in order to maintain and strengthen surveillance, prevention, preparedness, and control mechanisms. Constraints, gaps, and lessons learned at the local level could be better shared throughout the DEWS system, and/or institutionalized up to the national level through improved documentation, feedback, supervision, and coordination. Overall, better sharing of lessons learned could also be used to raise awareness among all stakeholders and donors of the practical constraints of the DEWS in Afghanistan, and identify solutions.

4. *Have the MoPH and DEWS assured that linkages with laboratories and response plans are in place and are functional?*

The DEWS sentinel site focal points are often the first contact for laboratory diagnostic service needs, and many of them have not been trained in the laboratory support functions of DEWS. There is low capacity to perform proper specimen handling, storage, processing, and transport, all of which affect specimen quality.

Sample collection at the health facility level and during outbreak investigations, and then packaging and transportation to a laboratory needs to be improved. DEWS Annual Reports show low numbers of positive results. Further investigation is required to identify if these results are accurate or if they are the result of inadequate, inappropriate or contaminated samples, or problems with the laboratory itself. One explanation may be the use of expired materials. The evaluation team found that focal points are often not receiving test results, a reflection of poor laboratory feedback.

While the CPHL provides support at the central level, laboratory services could be strengthened to go beyond simple confirmation in order to identify the etiology of unconfirmed cases or learn more about the strain of confirmed cases, which would in

turn facilitate improved interventions and policies. The DEWS laboratory component should make better use of the DEWS platform by expanding research initiatives and assessments, such as lab-based rotavirus surveillance begun in the early years of DEWS.

5. *Do any policies, laws, regulations, procedures and/or additional standard operating procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?*

The DEWS framework has many of the necessary standard operating procedures in place for surveillance and response to public health events in Afghanistan, however other SOPs must still be developed and approved. DEWS could be strengthened by explicitly requiring NGOs contracted with the government to participate in DEWS reporting and outbreak investigations. DEWS should also seek to create more public awareness, particularly in communities and among private sector health facilities, to increase the likelihood of events reporting.

The current approach to public health surveillance in Afghanistan is fragmented, with many vertical surveillance systems operating simultaneously and with poor coordination and duplication of efforts. Many elements of DEWS are not currently utilized to their full potential, but this does not justify designing and implementing a new system such as IDSR.

For the past decade, IDSR has been the framework used in 46 countries in the WHO African region to enhance surveillance for priority public health diseases, conditions, and events. Each national IDSR strategy defines its own disease priorities, administrative processes, key actors, and nongovernmental partners. Also in the WHO-AFRO region, public and private sectors have collaborated in developing national disease reporting systems using the IDSR framework to report priority diseases and unknown events in their geographic areas.

6. *To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district) levels?*

From the DEWS' inception in 2006, the program has certainly expanded and strengthened Afghanistan's capacity for disease surveillance, but there remain gaps and inconsistencies in the quality of that surveillance, and in coordination with other entities. As previously mentioned in Question 1, the DEWS data is underutilized at all levels as a result of poor data management and lack of analysis. Reporting timeliness, "percentage of weekly reports arrived from sentinel sites to national level timely" and percentage of timely compilation, analysis and dissemination of weekly reports at the national level" are the two most frequently assessed quality attributes of DEWS. While these are important indicators of the system's functionality, they do not

accurately capture accuracy or completeness. Furthermore, without proper analysis, the usefulness of the DEWS data reports in informing public health decision making is severely limited.

At the outset of the DEWS, the program envisaged capacity building and laboratory strengthening at all levels, though in practice these activities have been inconsistently implemented, especially in the last few years. Although some progress has been made, further consolidation efforts and formal guidelines are necessary to develop sustainable and regular training strategies, stronger supervision, and regular feedback systems. To date, most efforts to strengthen DEWS have been focused on technical aspects of establishing and maintaining sentinel sites. These efforts have been fairly successful, but other important areas have been ignored. Irregular supervision, lack of sustainable training strategies and too little feedback leads to an overburdened and demoralized peripheral staff that can affect surveillance quality within the DEWS. Additionally, poor participation of laboratories in regular and outbreak surveillance has resulted in sub-optimal use of laboratory data to inform DEWS and the MoPH more broadly. Inclusion and training of laboratory staff specifically in surveillance activities at all levels is therefore necessary.

Finally, there are not any clearly identifiable operational mechanisms for coordination at any levels between DEWS and other vertical surveillance systems. At the peripheral level, partial integration is happening and mutual benefits have been reported, but these activities have not been scaled up or institutionalized.

V. RECOMMENDATIONS

The following recommendations are offered to address systemic challenges in staff capacity, laboratory functions, and communication, which are preventing the program from reaching its maximum impact:

1. Renew focus on staff training and supervision to improve operational systems
 - DEWS should increase regular supervisory visits at all levels and monitor the number of visits as a key indicator. Supervisory visits should reinforce messages from training.
 - Provincial DEWS officers should coordinate technical on-site skill-based training for all levels of DEWS personnel focused on strengthening surveillance, document and data management, and outbreak response functions. Training must be done at regular intervals and should be outlined within annual capacity building plans.
 - MOPH should institutionalize disease surveillance training in regular medical and paramedical curricula.
 - DEWS should evaluate its training in order to ascertain the effectiveness of the curricula and trainers.
 - A detailed, updated database of trained personnel at all levels should be maintained by DEWS.

2. Review priority diseases/conditions, case definitions and procedures on a regular basis
 - MoPH should review the existing 16 priority diseases and conditions and consider altering, adding and subtracting diseases or conditions based on epidemiological data (e.g. consolidating both types of acute watery diarrhea, eliminating cough and cold, and considering addition of diseases like CCHF, leishmaniasis, rabies, and injuries). At a minimum the priority illnesses should include:
 - Acute Watery Diarrhea
 - Bloody Diarrhea
 - Acute Respiratory Infection
 - Acute Flaccid Paralysis
 - Suspected Measles
 - Acute Jaundice Syndrome
 - Suspected Malaria
 - Suspected Meningitis
 - Suspected Hemorrhagic Fever
 - Unexplained Fever >38.5C
 - Unexplained cluster of health events
 - MoPH should review the definition of what constitutes a “case,” especially for infectious disease surveillance. Case definitions for surveillance purposes may

be different from the criteria used for clinical diagnosis (Centers for Disease Control and Prevention, 1997) and we recommend that MoPH facilitate a technical review and determine the applicability of current case definitions.

- MoPH should review all case definitions and guidelines on whether laboratory confirmation is needed for each priority disease and condition.
 - DEWS should consider allowing regions more flexibility to add diseases and conditions based on regional disease burden.
 - DEWS should form an advisory board, or make use of the existing IDSR working group, to make the aforementioned decisions on inclusion/exclusion of diseases and conditions, revision of case definitions, and procedures.¹⁶

3. Improve data entry, management, and analysis

- DEWS would be strengthened significantly if all stakeholders followed the recommendation that “collection and analysis should not be allowed to consume resources if action does not follow” (Foege, Hogan, & Newton, 1976).
- DEWS should develop clear guidelines for data entry, management, and analysis at each level.
- DEWS should perform a data quality assessment to determine the cause of inaccuracies in DEWS reports.
- Based on the results of the aforementioned data quality assessment, DEWS should introduce quality control mechanisms.
- DEWS should consider utilizing more effective communication systems (e.g. mobile phone platforms) for ongoing systematic collection, collation and analysis of data. Other disease networks, such as Polio in Afghanistan, and DEWS and Tuberculosis in Pakistan, routinely use mobile phones and SMS text messaging for case detection. Mobile phones provide opportunities to quickly share photos and video, and utilize platforms such as Frontline SMS, iForm Builder, and Magpi, that are used in other countries for ongoing systematic collection, collation, analysis and interpretation of data.
- Provision of annual maintenance contracts for purchased equipment and software should be envisaged in annual budgetary planning.
- DEWS data initially should be analyzed in terms of time, place, and person, by looking at time trends and geographic distribution and comparing age, sex, and population groups (Chambers, Ehrlich, O’Connor, Edwards, & Hockin, 2006).

¹⁶ This recommendation appears to fall under the IDSR Technical Working Group TOR objective 2: “Reviewing current systems and processes for the reporting of disease surveillance within the health sector.”

- More advanced data analysis approaches for surveillance data are available than what is currently conducted by DEWS. Examples include:
 - Space-time clustering (Centers for Disease Control and Prevention, 1990),
 - Time-series analysis (Anderson, Grenfell, & May, Oscillatory fluctuations in the incidence of infectious disease and the impact of vaccination: time series analysis, 1984) (Choi & Thacker, 1981),
 - Geospatial analysis (Baker, et al., 2011),
 - Life tables (Kwong, et al., 2012),
 - Logistic regression (Hosmer & Lemeshow, 2000),
 - Trend and small area analysis (Chambers, Ehrlich, O'Connor, Edwards, & Hockin, 2006),
 - Mathematical models to study the dynamics of infection within communities (Anderson & May, 1985) (Thacker & Millar, 1991), and
 - Methods for the forecast of epidemics based on surveillance data (Sitepu, et al., 2013).
 - DEWS would benefit from bringing an external consultant in on a yearly basis to review the analysis that has been done, conduct additional analysis, and providing training on analysis.
4. Strengthen laboratory infrastructure and guidelines
- DEWS would benefit from improved laboratories that could identify the actual etiology of outbreaks detected and trigger the correct response.
 - Focal points must be well trained on sample collection and packing.
 - The National DEWS Office also needs to strengthen DEWS networks so that more standardized mechanisms exist for submitting samples to a laboratory and reporting results back to the referring clinic.
 - DEWS staff must regularly take inventory of resources used to take and transport patient samples, such as swabs, Cary Blair, Charcoal Agar, blood transport media etc. to ensure that they are not past expiry.
 - MoPH should ensure that there are sufficient guidelines on whether laboratory confirmation is needed for each priority disease and the number and type of samples required.
5. Revise DEWS Weekly Epidemiological Report
- Provincial DEWS Officers should be provided with resources and capabilities to develop a Weekly Provincial DEWS Epidemiological Bulletin.
 - National DEWS Office (ANPHI) should continue to post Weekly DEWS Epidemiological Bulletins on a public website.
 - DEWS reporting standards at each level should be published and distributed as a wall chart to all DEWS stakeholders.
 - Instead of multiple graphs/tables showing proportional morbidity (e.g. Tables 3, 4. Fig 6, Table 5, Fig 7), one table could display proportional morbidity

(and/or number of cases for rare conditions) for all targeted diseases over a four week period.

- Exclude graphs such as the breakdown by province of ARI/diarrheal cases, since high numbers of cases are expected.
- Consider including more trend information whereas now only the current week is shown in many graphs.
- Include sex disaggregated data and percentages for all 16 targeted diseases and conditions.
- For reporting outbreaks, it would be more helpful to present details about recent outbreaks (what, where, when, who) in a table rather than the number of reported outbreaks since the beginning of the year. For example, in the DEWS weekly epidemiological report dated November 11, 2013, one table shows 20 cholera outbreaks that were investigated since the beginning of the year, with no accompanying information, while in the same weekly report there was an outbreak of 232 cholera cases mentioned that were laboratory confirmed and public health action taken.
- The National DEWS Officer should prepare a monthly summary report of outbreaks to be distributed to all DEWS staff. All outbreak investigations and outbreak reports should include at a minimum the steps involved in investigating the outbreak listed below. The steps often do not happen in sequence, and outbreak control measures should be implemented as soon as possible.

6. Enhance DEWS' monitoring and evaluation system

- Revise DEWS M&E indicators to allow for monitoring of more outcomes and impact, as well as outputs and processes. Examples of possible process indicators include number of supervisory visits which included data validation or percentage of data double entered for quality control; examples of outcome indicators include use of surveillance data for policy and program decisions and appropriateness of outbreak response; examples of possible impact indicators include changes in case fatality rates from epidemic prone diseases and changes in morbidity patterns.¹⁷
- The MoPH should initiate a process of indicator framework development. This process would involve the following steps:
 - Conduct a literature review,
 - Conduct a review of DEWS and HMIS data,
 - Expert consultation, and
 - Delphi surveys to get a consensus on a list of indicators and evaluating

¹⁷ Indicators come from WHO, *Communicable disease surveillance and response systems: Guide to monitoring and evaluating*, 2006, p. 7.

availability and quality of data. Delphi survey is a method that requires experts to answer questionnaires in two or more cycles, with a feedback summary of experts' opinion after each cycle, in order to converge towards a consensus (Kashiwagi, Horiguchi, Ishikawa, & Marui, 2009).

- USAID and MOPH should ensure that DEWS has plans and funds for an external evaluation at least every three years. DEWS should consider internal evaluations to supplement external evaluation.

7. Develop a detailed DEWS budget

- MoPH should endeavor to gather all the necessary expenditure information related to all funding for DEWS so as to understand how much it has cost to implement and scale up the system, and to estimate how much future maintenance is likely to cost.
- The DEWS budget needs to be clearly defined with descriptions for each line item to allow for key expenditures, such as maintenance of equipment and increased supportive supervision.
- The budget line items should include specific provisions allowing for maintenance and strengthening of DEWS regular functions, as well as money set aside in the event of an outbreak.
- DEWS should conduct an annual cost analysis by resource category at the national, regional, provincial, district, and health facility sentinel site level.

8. While DEWS does need to be better integrated into Afghanistan's existing health structure, the team does not recommend introducing the Integrated Disease Surveillance and Response (IDSR) system as a next step.

- MoPH should first strengthen the core and support functions of the existing DEWS program.
- For DEWS to continue functioning as an 'early warning system', it must maintain reporting, confirmation, decision-making and response that is rapid. For some endemic diseases, the aim may be to carefully consider data collected in order to adjust or target the control program.
- Despite the variety of information needs, many elements of data collected in surveillance are similar and the data source is often the same facility, but there are differences that need solutions before committing to an IDSR approach, these include:
 - The specific case detection method used – active case detection vs passive
 - The speed at which data need to flow through the system – immediate vs routine
 - The rapidity of response required – immediate investigation of cases or clusters of

- Cases vs analysis of data on a regular basis with subsequent adjustments to a control program.
- Before full integration is planned, an assessment should be conducted to determine how the level of integration will affect the performance of the system, the cost of the system, and the sustainability of the system.
- A functional integration of DEWS, but not necessarily integration of budgets or decision-making processes would allow for the gradual, progressive channeling of surveillance activities of all major vertical disease control programs, including those for non-communicable diseases and other public health events such as injuries and accidents, through existing units, resulting in effective public health action and attributable reduction in mortality and morbidity.

ANNEX I: SCOPE OF WORK

This is the SOW provided by USAID under which the assignment is contracted.



**OFFICE OF SOCIAL SECTOR DEVELOPMENT (OSSD) /
OFFICE OF PROGRAM AND PROJECT DEVELOPMENT (OPPD)**

STATEMENT OF WORK: PERFORMANCE EVALUATION

DISEASE EARLY WARNING SYSTEM (DEWS) PROJECT

CONTRACT NUMBER GHN-G-00-09-0003

I. INTRODUCTION

The USAID Evaluation Policy (2011) encourages independent external evaluation to increase accountability, to inform stakeholders who develop programs and strategies, and to refine designs and introduce improvements into future efforts and investments. In keeping with these aims, USAID/Afghanistan requests technical assistance to conduct an independent external performance evaluation of the Disease Early Warning System (DEWS) program of the Ministry of Public Health (MoPH), implemented by the World Health Organization (WHO). The evaluation will focus on assessing the DEWS program from December 2006 to December 2013 in achieving its goal, and objectives.

The DEWS 2012 Annual Report states the Goal and Objectives of the program:

Goal

The main goal of Public Health Surveillance System is to contribute to the reduction of the morbidity, mortality and disability due to various health related problems in Afghanistan.

Objectives

- To monitor the distribution and seasonal trend of diseases
- To assess public health status and define public health priorities
- To identify and rapidly respond to outbreaks and emerging events within 24-48 hours of occurrence

- To identify demographic and geographic populations 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 evaluate health programs and stimulate researches
- To provide opportunity for capacity building of health workers

The intended results or outcomes from the project efforts are:

1. Weekly reports from DEWS Sentinel Sites on the occurrence of 15 major communicable diseases and recorded deaths (90 percent complete and on time);
2. Outbreaks are investigated by a team designated by an active and prepared “Provincial Surveillance and Response Unit” (or similar unit) within 48 hours of notification (at least 90 percent);
3. A weekly report at the national level is compiled, analyzed and disseminated on the MoPH webpage, and in electronic and hard copies, to all partners and to the field by Tuesday (95 percent are completed on time);
4. Communicable disease surveillance and control is reported at every monthly meeting of the Provincial Public Health Coordination Committee in all 34 provinces (90 percent of meetings will include this report);
5. A minimum of six national surveillance coordination meetings are held during the year;
6. Serum specimens collected for measles/ rubella diagnosis arrive at Central Public Health Laboratory in good condition (A minimum of 80 percent); and
7. One hundred percent (100 percent) of all specimens related to a diagnoses that would be considered a Public Health Event of International Concern (PHEIC) according to International Health Regulations (IHR), and a minimum of 10 percent of all specimens, are confirmed by an outside reference lab for quality assurance purposes.

II. BACKGROUND AND CONTEXT

Communicable diseases account for 60 to 80 percent of all outpatient visits, and more than half of all deaths in Afghanistan. MoPH established the Disease Early Warning System (DEWS) in 2006 with USAID assistance to reduce morbidity and mortality through early detection of and ensuring a rapid response to outbreaks of infectious diseases. DEWS is a health facility-based surveillance system that had initially established sentinel sites in the seven regional/provincial hospitals (Badakhshan, Bamyan, Kunduz, Nangrahar, Kandahar, Herat, Balkh); and later on, the sentinel sites were gradually expanded to the remaining health facilities based on the geographic location, burden of communicable diseases in the areas, history of outbreaks,

availability of communication systems (internet/mobile phones) and population density.

In addition to providing timely surveillance and support to the MoPH to prevent epidemics, DEWS also contributes to the dissemination of public health information, provides logistical support to the Central Public Health Laboratory, ensures quality control, builds the capacity of other health departments and non-governmental organizations (NGOs) in communicable diseases surveillance and response, and coordinates with other health initiatives and surveillance systems (e.g., polio, EPI, HMIS). Since December 2006, DEWS has built health surveillance capacity/infrastructure and transferred skills to staff in the MoPH system. By 2013, it established monitoring sites in all 34 provinces in Afghanistan and at the district level, expanded from 123 districts in 2007, to 330 districts by the end of 2012. To date DEWS has more than 345 active sentinel sites across the country.

DEWS has monitors and reports to the MoPH on 16 priority diseases and conditions, on a weekly basis. 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. The DEWS 2012 Annual Report lists the priority diseases and conditions under surveillance as:

1. Acute Respiratory Infection (ARI) - Cough & Cold, Influenza-Like Illness, Suspected Avian Influenza
2. Acute Respiratory Infection - Pneumonia
3. Acute Watery Diarrhea (AWD)
4. Acute Bloody Diarrhea (Dysentery) - Suspected Shigellosis
5. Acute Watery Diarrhea (AWD) with Dehydration - Suspected Cholera
6. Meningitis/Severe Ill Child
7. Acute Viral Hepatitis
8. Measles
9. Pertussis
10. Diphtheria
11. Tetanus/Neonatal Tetanus
12. Acute Flaccid Paralysis - Polio
13. Malaria
14. Typhoid Fever
15. Acute Hemorrhagic Fever
16. Pregnancy-Related Deaths

DEWS also detects events or hazards that are not specifically included in the formal reporting system for diseases and conditions which are required for International Health Regulations (IHR, 2005) implementation within 24 hours. Several suspected diseases outbreaks which were originally not under the DEWS program and a number

of events were investigated and responded by DEWS in the last 6 years such as Avian Influenza in human and birds, Anthrax, Brucellosis, Leishmaniasis, Chickenpox, Leprosy, Gulran diseases, Tinea capitis, Scabies, Mumps and suspected Poisoning events (School poisoning or mass fainting, water and food poisoning) and post vaccination adverse effects. Weekly reports are collected from sentinel sites to observe the time trend and distribution of the targeted events for early response. In Afghanistan, the sentinel sites network is comprised of public hospitals, Comprehensive Health Centers (CHCs), Basic Health Centers (BHCs), and polyclinics¹⁸.

DEWS is responsible for organizing the initial response, which is implemented by the Basic Package of Health Services (BPHS) implementers and Provincial Health Department. DEWS coordinates the efforts on ground. In certain cases such as Avian Influenza outbreaks DEWS program provides medicine (Tami Flu) to the provincial hospital and conducts public awareness campaigns. The DEWS 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.

Under the General Directorate of the Afghan Public Health Institute (APHI), two surveillance systems are currently operational: 1) DEWS; and 2) Influenza/SARI surveillance. APHI is also the national focal point for the IHR, a binding agreement signed by WHO Member States that obligates them to prevent the international spread of disease by quickly detecting and responding to outbreaks. WHO is mandated to assist countries in fulfilling these obligations. Currently, influenza surveillance is operating through the DEWS system in Afghanistan. The diagrams below illustrate the data information flow of DEWS and influenza surveillance with APHI.

Indeed, other surveillance systems exist in the health sector which do not come under the auspices of APHI, such as those for Tuberculosis, Malaria, HIV, Polio, Nutrition, and routine immunization, etc.

Figure 1:

¹⁸ Polyclinic: It is not officially part of the MOPH health system. It exists only in limited number of cities in Afghanistan which only provides large range of OPD services to the population.

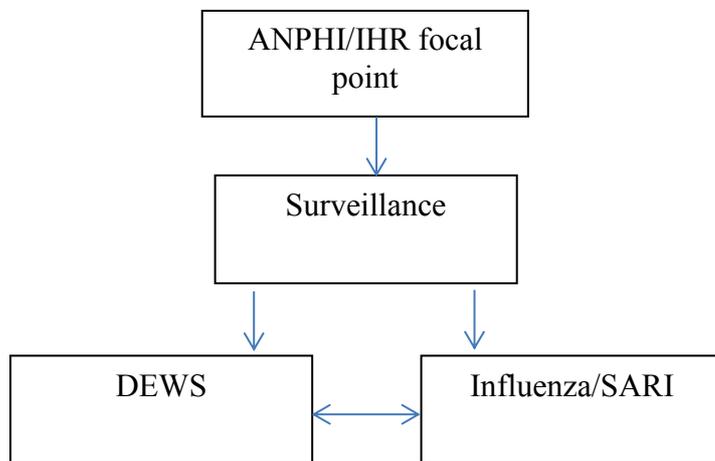
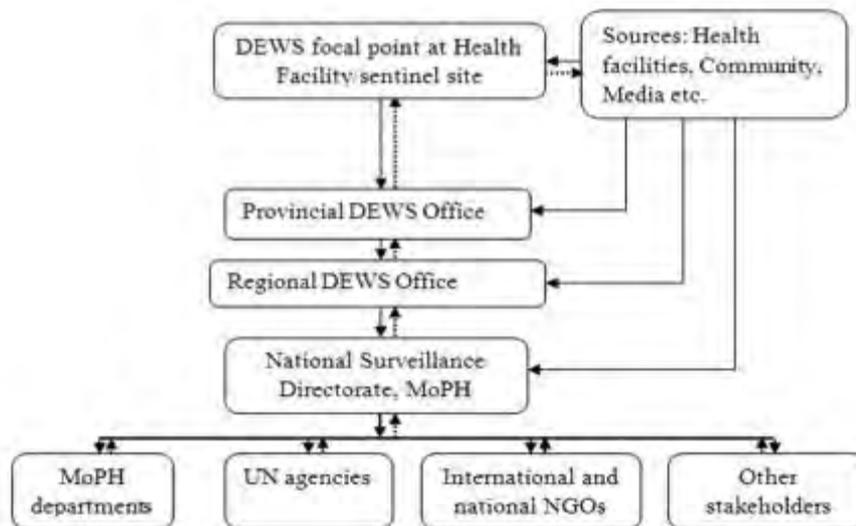


Figure 2: Flow of DEWS reports and feedbacks



All levels of the DEWS – sentinel sites and health facilities, regional, provincial, and national - and partners noted in the figures above, are involved in responding to an outbreak among the diseases and conditions noted earlier. The outbreak detection, investigation, and initial response activities include the following core functions in six steps. The steps are presented in conceptual order, however, in practice, the order and time frames of these steps may differ. For example, taking actions might come quite soon after cases are identified by a health facility.

Step 1- Identification of cases with priority diseases and events 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, email and phone call

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.

The response mechanism consists of two coordinated phases:

1) Primary response

This response occurs during the initial period, during which a national investigation team takes the necessary medicines and vaccines along with them when they are dispatched to the field for investigation. This team consists of a DEWS officer, MoPH Communicable Disease Control (CDC) officer, Expanded Program Immunizations (EPI) officer, NGO representatives, and health facility doctors/nurses. In some places if a doctor/nurse is not available for any reason, then midwives and community health workers are included as part of the DEWS system. This team is responsible for conducting the outbreak investigation and providing initial and immediate response to the outbreak.

2) Secondary response

This response takes place after investigation and assessment by the national investigation team and depends on the scale of the outbreak. The DEWS Provincial-level office is then responsible for forming a team. If the provincial response is determined to be adequate, then no national response is required. If the provincial response is determined to be inadequate, then a national level team is involved. If an epidemic (large scale outbreak) is confirmed, and if the provincial team is unable to respond, then the national level response automatically takes place.

In addition to early detection and response support, one of the core objectives of DEWS is to strengthen health systems by providing training at international and national levels to DEWS staff, CDC officers, Basic Package of Health Services (BPHS) implementing Non Governmental Organizations NGOs, and others who are involved with DEWS. The training includes:

- Distance Masters of Public Health courses
- Epidemiology, statistics, and data analyses
- Project planning, management, monitoring, and evaluation
- Outbreak investigation and response
- Basic and advanced rapid response team training
- Specimen collection and environmental sampling procedures
- Control of outbreaks of specific diseases, e.g., measles, cholera, typhoid, hepatitis, ARI, and others
- IHR
- Water quality testing
- Internal coordination meetings and with partners

Since December 2006, DEWS has provided early detection, investigation and response to 1,571 alerts, initiating preventive and control measures within 24-48 hours of a reported outbreak¹⁹. Measles, Cholera, Pertussis, Chicken Pox, Malaria, Poisoning, Typhoid Fever, Hepatitis, Leishmaniasis, Crimean-Congo Hemorrhagic Fever (CCHF), Diarrhea, Meningitis, Pneumonia and H1N1 caused the majority of outbreaks.

III. PURPOSE AND USE OF THIS EVALUATION

The MoPH will use the results of this evaluation to determine the future of DEWS and whether DEWS should stand alone as a disease surveillance, reporting and response system or be integrated with other surveillance and response systems. USAID will use the results of this evaluation to determine the recommendations it will make to the MoPH, other donors and stakeholders regarding the future of surveillance, reporting and response in Afghanistan.

This performance evaluation will assess DEWS performance from December 2006 until December 2013 against the objectives and intended results/outcomes agreed upon among the MoPH, DEWS, USAID and WHO. The evaluation will identify lessons learned through implementation of the DEWS program and recommended program components that merit continuation, as well as actionable recommendations for the future for stakeholders.

IV. EVALUATION QUESTIONS

- 1) How has the DEWS program performed programmatically and financially?

¹⁹ Outbreak: An outbreak is the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season.

- 2) Has DEWS contributed to the reduction of the morbidity and mortality rates of various health related problems in Afghanistan?
- 3) What key lessons has the MoPH learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?
- 4) Have the MoPH and DEWS assured that linkage with laboratories and response plans are in place and are functional?
- 5) Do any policies, laws, regulations, procedures and/or additional Standard Operating Procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?
- 6) To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district levels)?
- 7) What is the correlation of allocated budgets and total costs by year of general categories of implementation inputs for DEWS? Implementation inputs may include Personnel, Transportation, Office Consumable Items, Public Awareness Campaigns, Laboratory Consumable Items, Treatment Supplies, and Capital Items.

V. EVALUATION METHODS

The evaluation team will be responsible for developing an evaluation strategy and methodologies that include a mix of qualitative and quantitative data collection and analysis approaches. The methodology will be presented as part of the draft work plan as outlined in the deliverables below and included in the final report. The evaluation team will have available for their analysis a variety of program implementation documents, and reports. Methodology strengths and weaknesses should be identified as well as measures taken to address those weaknesses.

The suggested methodology should include, but is not limited to:

The evaluation team will review available data on each of the 16 diseases and conditions included in the DEWS. The team will comment on whether DEWS has monitored and analyzed mortality and morbidity for each of the diseases over time, and whether the analyses by DEWS led to improved decision-making, faster detection and responses, and declines in mortality and morbidities as a result. On these issues and others, the evaluation team will identify strengths and limitations, as well as any measures taken by DEWS to address weaknesses.

The methodology should comply with the USAID Evaluation Policy, be outlined as part of the draft work plan per the deliverables section below, and be attached to the final report. Any limitations in carrying out the methodology should be explained. The evaluators have the responsibility to design, pilot, and implement the most appropriate evaluation tools as possible taking limitations in the Afghanistan environment – for example, limitations on travel due to security concerns – into account. The evaluation approach should be participatory in design and implementation, and should include but is not limited to key informant interviews, focused group discussions, semi-structured questionnaires and/or surveys, desk analysis of existing data, and site visits/observation.

- **Desk review:** Program documents, i.e. contracts, Mission and Project Performance Management Plans (PMPs), contractor reports on capacity building efforts, quarterly/annual reports, training materials and registers, and other documents mentioned below.
- **Key Informant Interviews/Focus Group Discussions:** Key individuals and groups will be interviewed to collect qualitative information on the evaluation questions. The interviews will be with USAID/Afghanistan project staff, relevant MoPH staff, WHO senior management and DEWS staff, health facility staff, project beneficiaries, and other relevant stakeholders (e.g. donors) at central, provincial, district and community levels.

Data analysis of available relevant datasets: DEWS data is collected separately from the MoPH, and is not a direct part of the Health Management Information System (HMIS); however, any existing or possible linkages will be examined by the evaluation team. Likewise, linkages with other surveillance /response systems will be examined.

- **Visits to DEWS sentinel sites and respective referral laboratories.** Given the reach of DEWS to all 34 provinces, the evaluation team will select a sample of DEWS sentinel surveillance sites and linked laboratories, with consideration of key variables such as geography, and will report on limitations of this method. The evaluation team will develop the sampling frame.

The evaluation team is required to meet with an appropriate sample of all stakeholders identified. In its work plan, the evaluation team will develop and present to USAID a clear methodology of the sampling approach prior to implementation to ensure an adequate cross-section of qualitative and quantitative data collected for later analysis in the final report. The team should also provide USAID with the opportunity to review tools prior to piloting or final implementation.

Due to the constantly changing security situation in Afghanistan, close coordination with USAID/Afghanistan will be necessary to ensure that the evaluation team selects

methods, a sampling approach, and site visits suitable given the security environment. If security precludes application of certain evaluation methodologies, the USAID implementing partner that hired the evaluation team will inform USAID's Evaluation Officer and Health Team.

VI. EXISTING PERFORMANCE INFORMATION SOURCES

The evaluation team will be expected to meet with USAID/Afghanistan health and evaluation staff; the MoPH at senior levels and DEWS senior management and mid-level staff; the WHO Country Representative and staff responsible for DEWS; laboratory personnel at laboratories linked with DEWS; trainers and trainees; and health facility personnel responsible for DEWS reporting - if the security situation permits. The evaluation team will review the following broad range of background and program documents including, but not limited to:

- a) Program Descriptions and Modification.
- b) Work Plan
- c) Quarterly Reports
- d) Annual Reports
- e) PMP and other M&E documents
- f) Project performance data
- g) Project-generated assessments
- h) Relevant external evaluations from other sources (e.g., other donors)
- i) GIRoA performance data (if available)

VII. EVALUATION TEAM COMPOSITION

The evaluation team shall be a four person team consisting of three independent public health experts and one evaluation expert. The team leader should be a surveillance/response specialist with considerable experience working with and/or evaluating surveillance systems in other developing countries. The evaluation expert should have experience leading evaluation teams in developing countries and will serve as the primary team lead and coordinator with USAID. A statement of potential bias or conflict of interest (or lack thereof) is required of each team member.

The evaluation team leader should be an ex-pat senior public health expert who is a specialist in epidemic surveillance and response. S/he should have the following additional qualifications:

1. Strong skills in program implementation, monitoring and evaluation of disease surveillance/response systems (preferably more than 7 years) in developing country contexts, including:
 - Disease early warning and rapid response systems, aimed at identifying and mitigating outbreaks of diseases;

- Rapid diagnosis (clinical and laboratory) and rapid response capacity from national to lower levels of health systems;
 - Data information collection, reporting, analysis and feedback loops to enable timely, effective decision-making and response at all levels of the health system and at the community level; and
2. Experience analyzing and presenting evaluation data is preferred.

The evaluation specialist should be an ex-pat with preferably 7 or more years of evaluation experience in developing countries. Experience leading evaluation teams in a developing country context and serving as lead author on evaluation reports in English is required. Experience evaluating public health programs preferred. In addition s/he should have:

1. Experience in evaluation team management including coordination of meetings, field visits, periodic reporting, planning travel and other logistics, and professional analytical evaluation reports – note that the USAID implementing partner for the evaluation will take the responsibility for managing the evaluation travel and other logistics needs in support of the evaluation team ;
2. Strong applied research and writing skills in English.

The two Afghan evaluation specialists should have experience working in the public health sector. Experience working in disease surveillance and response is strongly preferred. In addition:

1. Strong skills in monitoring and evaluation are preferred.
2. Knowledge of terminology related to biological disease surveillance in English, Dari and Pashto is strongly preferred.
3. Strong skills in spoken and written English as well as Dari and Pashto are required.

VIII. EVALUATION SCHEDULE

The estimated time period for undertaking this evaluation is 49 working days from November 15, 2013 to January 31, 2013. The ideal arrival time in Afghanistan will be finalized between USAID and the organization conducting the evaluation.

The evaluation team is required to work six days a week. The team is required to travel to selected provinces in each region where program activities are being implemented. Approximately 50 percent of the consultants' time will be spent outside Kabul to conduct interviews with municipal officials, project staff, government officials, and the beneficiaries. During their visits, the consultants are expected to provide a mid-term briefing and the evaluation team will prepare a final presentation of the findings. Given the time frame, the consultants may deliver their final

presentation of findings after the expat consultants leave Afghanistan. The evaluation team will submit a draft report 24 hours in advance of this presentation for review and comments by USAID. The presentation is to be prepared in PowerPoint and will summarize the draft report. Comments from USAID will be incorporated before the submission of the final draft.

Level of Effort (LOE) in Days:

Activity	LOE for Ex-pat Team Leader/Health Specialist	LOE for Ex-pat Evaluation Specialist	LOE for CCN#1	LOE for CCN#2
Document review, work plan development, draft questions, data collection and analysis plan, proposed list of interviewees, finalized questions based on qualitative approach	5	5	5	5
Travel to/from Afghanistan	4	4	0	0
In-briefing with USAID	1	1	1	1
Interviews/focus groups/surveys (based on 8 regions for sample)	25	25	25	25
Mid-Term briefing with USAID	1	1	1	1
Data analysis, translation, preliminary report, and final presentation preparation	5	5	2	2
Draft final report preparation	4	4	1	1
Final exit presentation to USAID (with PowerPoint presentation and draft evaluation report)	1	1	1	1
Final evaluation report+ one page briefer preparation	3	3	0	0
Total	49	49	36	36

IX. USAID MANAGEMENT

The evaluation team will officially report to SUPPORT II, managed by Checchi and Company Consulting, Inc. SUPPORT II is responsible for all direct coordination with the USAID/Afghanistan Office of Program and Project Development (OPPD), through the Contract Officer's Representative for SUPPORT II. From a technical management perspective, the evaluation team will work closely with the member of USAID's Health Team, in the Office of Social Sector Development, assigned to

manage and oversee assistance for DEWS. In order to maintain objectivity, all final decisions about the evaluation will be made by OPPD's M&E Unit.

X. REPORTING REQUIREMENTS AND DELIVERABLES

a. DESCRIPTION AND TIMELINE OF DELIVERABLES

- 1. In-briefing: In-briefing:** Within 48 hours of arrival in Kabul, the evaluation team, will have an in-brief meeting with USAID/Afghanistan's OPPD M&E unit and office of social sector development OSSD for introductions; presentation of the team's understanding of the assignment, initial assumptions, review of the evaluation questions, public perception survey instrument (if required) discussion of initial work plan; and/or adjustment of the SOW if necessary.
- 2. Evaluation Work Plan: Evaluation Work Plan:** The evaluation team shall provide a detailed initial work plan to OPPD's M&E unit and OSSD/ health team and a revised work plan three days after the in-briefing. USAID will share the revised work plan with GIRoA for comment, as needed, and will revise accordingly. The initial work plan will include (a) the overall evaluation design, including the proposed methodology, data collection and analysis plan, and data collection instruments; (b) a list of the team members indicating their primary contact details while in-country, including the e-mail address and mobile phone number for the team leader; and (c) the team's proposed schedule for the evaluation. The revised work plan shall include the list of potential interviewees, sites to be visited, and evaluation tools.
- 3. Mid-term Briefing and Interim Meetings:** Schedule a mid-term briefing with USAID to review the status of the evaluation's progress, with a particular emphasis on addressing the evaluation's questions and a brief update on potential challenges and emerging opportunities. The team will also provide the Contracting Officer's Representatives for SUPPORT II and DEWS with periodic written briefings and feedback on the team's findings. Additionally, a weekly 30 minute phone call with OPPD's M&E unit and the OSSD/ health Team Leader will provide updates on field progress and any problems encountered.
- 4. PowerPoint and Final Exit Presentation** to USAID that will include a summary of key findings and key conclusions as these relate to the evaluation's questions and recommendations to USAID. The presentation will be scheduled as agreed upon during the in-briefing. A

copy of the PowerPoint file will be provided to the OPPD M&E unit prior to the final exit presentation.

- 5. First Draft of Report, PowerPoint and Final Exit Debriefing: Draft Evaluation Report:** The content of the draft evaluation report is outlined in Section X.B, below, and all formatting shall be consistent with the USAID branding guidelines. The focus of the report is to answer the evaluation questions and may include factors the team considers to have a bearing on the objectives of the evaluation. Any such factors can be included in the report only after consultation with USAID. **The draft evaluation report will be submitted by the evaluation team leader to OPPD's M&E unit for review and comments by USAID. USAID's M&E unit and OSSD office will have ten calendar days in which to review and comment and OPPD's M&E unit shall submit all comments to the evaluation team leader.**

- 6. Final Evaluation Report will** incorporate final comments provided by the M&E unit. USAID comments are due within ten days after the receipt of the initial final draft. The final report should be submitted to the OPPD M&E unit within three days of receipt of comments by the evaluation team leader. All project data and records will be submitted in full and shall be in electronic form in easily readable format; organized and fully document for use by those not fully familiar with the project or evaluation; and owned by USAID and made available to the public barring rare exceptions.

- 7. A One-page briefer** on key qualitative and quantitative findings and conclusions relative to the evaluation questions for each municipality is included in the evaluation's scope—to be given to the appropriate municipal government, provincial government, and/or GIRoA representative(s), so that they have the opportunity to review evaluation findings and share them with the larger community. Each briefer shall be translated in Dari and/or Pashto. Each briefer will be reviewed by the OPPD M&E unit and OSSD prior to distribution.

A. FINAL REPORT CONTENT

The evaluation report shall include the following:

- 1. Title Page**
- 2. Table of Contents (including Table of Figures and Table of Charts, if needed)**
- 3. List of Acronyms**

4. **Acknowledgements or Preface (optional)**
5. **Executive Summary (3-5 pages)**
6. **Introductory Chapter**
 - a. A description of the project evaluated, including goals and objectives.
 - b. Brief statement on purpose of the evaluation, including a list of the main evaluation questions.
 - c. Brief statement on the methods used in the evaluation such as desk/document review, interviews, site visits, surveys, etc.
 - d. Explanation of any limitations of the evaluation—especially with respect to the methodology (e.g., selection bias, recall bias, unobservable differences between comparator groups, etc.)—and how these limitations affect the findings.
7. **Findings:** This section should include findings relative to the evaluation questions.
8. **Conclusions:** This section must answer the evaluation questions based upon the evidence provided through the Findings section.
9. **Recommendations:** Based on the conclusions, this section must include actionable statements that can be implemented into the existing program or included into future program design. Recommendations are only valid when they specify who does what, and relate to activities over which the USAID program has control. For example, recommendations describing government action is not valid, as USAID has no direct control over government actions. Alternatively, the recommendation may state how USAID resources may be leveraged to initiate change in government behavior and activities. It should also include recommended future objectives and types of specific activities based on lessons learned.
10. **Annex:** The annexes to the final evaluation report should be submitted as separate documents—with appropriate labels in the document file name (e.g., Annex 1 – Evaluation SOW), and headers within the document itself—and may be aggregated in a single zipped folder.
 - a. Evaluation Statement of Work
 - b. Places visited; list of organizations and people interviewed, including contact details.
 - c. Evaluation design and methodology.
 - d. Copies of all tools such as survey instruments, questionnaires, discussions guides, checklists.
 - e. Bibliography of critical background documents.
 - f. Meeting notes of all key meetings with stakeholders.
 - g. “Statement of Differences”
 - h. Evaluation Team CV’s

B. REPORTING GUIDELINES

- The evaluation report should represent a thoughtful, well-researched and well-organized effort to objectively evaluate what worked in the project over the given time period, what did not, and why.
- Evaluation reports shall address all evaluation questions included in the statement of work.
- The evaluation report should include the statement of work as an annex. All modifications to the statement of work, whether in technical requirements, evaluation questions, evaluation team composition, methodology, or timeline need to be agreed upon in writing by the OPPD M&E unit.
- Evaluation methodology shall be explained in detail and all tools used in conducting the evaluation such as questionnaires, checklists and discussion guides will be included in an annex in the final report.
- Evaluation findings will assess outcomes and impact on males and females, and data will be disaggregated by gender, age group, and geographic area wherever feasible.
- Limitations to the evaluation shall be disclosed in the report, with particular attention to the limitations associated with the evaluation methodology (selection bias, recall bias, unobservable differences between comparator groups, etc.).
- Evaluation findings should be presented as analyzed facts, evidence, and data and not based on anecdotes, hearsay or the compilation of people's opinions. Findings should be specific, concise and supported by strong quantitative and/or qualitative evidence.
- Sources of information, including any peer-reviewed or grey literature, will be properly identified and listed in an annex.
- Recommendations will be supported by a specific set of findings. They will also be action-oriented, practical, and specific, with defined responsible parties for each action.

ANNEX II: WORKPLAN



USAID | **AFGHANISTAN**
FROM THE AMERICAN PEOPLE

WORKPLAN

PERFORMANCE EVALUATION

OF

DISEASE EARLY WARNING SYSTEM (DEWS) PROJECT

Submitted on:

December 5, 2013

1. Purpose of the Performance Evaluation

The MoPH will use the results of this evaluation to determine the future of DEWS and whether DEWS should stand alone as a disease surveillance, reporting and response system or be integrated with other surveillance and response systems. USAID will use the results of this evaluation to determine the recommendations it will make to the MoPH, and other donors and stakeholders regarding the future of surveillance, reporting and response in Afghanistan.

This performance evaluation will assess DEWS performance from December 2006 until December 2013 against the objectives and intended results/outcomes agreed upon among the MoPH, DEWS, USAID and WHO. The evaluation will identify lessons learned through implementation of the DEWS program and recommended program components that merit continuation, as well as actionable recommendations for the future for stakeholders.

The evaluation will focus on the following questions:

- 8) How has the DEWS program performed programmatically and financially?
- 9) Has DEWS contributed to the reduction of the morbidity and mortality rates of various health related problems in Afghanistan?
- 10) What key lessons have the MoPH learned through DEWS implementation and how can local and national ownership and future commitment to continued implementation of good practices and lessons learned be enhanced?
- 11) Have the MoPH and DEWS assured that linkage with laboratories and response plans are in place and are functional?
- 12) Do any policies, laws, regulations, procedures and/or additional Standard Operating Procedures need to be developed and institutionalized in order to make more effective epidemic surveillance, reporting and response?
- 13) To what extent has the DEWS program strengthened capacity for surveillance at the national and subnational (province and district levels)?
- 14) What is the correlation of allocated budgets and total costs by year of general categories of implementation inputs for DEWS? Implementation inputs may include Personnel, Transportation, Office Consumable Items, Public Awareness Campaigns, Laboratory Consumable Items, Treatment Supplies, and Capital Items.

2. Methodology

The methodology, which will accompany the final report as an attachment, has been developed in consideration of the USAID Evaluation Policy. Limitations of the methodology and its implementation will be described thoroughly in the report.

In order to answer the above questions, the evaluation team will employ a mixture of approaches including a desk review of existing documents, desk analysis of existing data (including budgets), site visits and observation, semi-structured interviews with key informants, and phone surveys with key personnel. Together, these methods take into account the challenges presented by the Afghanistan context. Field visits will allow the team to understand how the DEWS system is working at various levels of health facilities. The team anticipates being able to travel to provinces in each of three categories of interest to the MOPH (based on categories used by the Afghan government). However, security concerns will prevent the team from travelling to many areas, particularly in the south and the east. Other areas will not be accessible due to remoteness. Therefore, the team will supplement data from field visits with data from phone surveys, which are designed to capture responses from a larger and more representative group of respondents.

The DEWS evaluation team has drafted evaluation tools. Before going to the field, the tools will be revised based on feedback from key stakeholders and results of pilot testing. A description of the proposed tools is below

- **Desk review:** Program documents, i.e. contracts, scopes of work, work plans, budget reports, weekly epidemiological reports, quarterly reports, annual reports, standard operating procedures, protocols, training materials and registers, and other documents mentioned.
- **Key Informant Interviews/Focus Group Discussions:** Key individuals and groups will be interviewed to collect qualitative information on the evaluation questions. The interviews will be with USAID/Afghanistan project staff, relevant MoPH staff, WHO senior management and DEWS staff, health facility staff, project beneficiaries, and other relevant stakeholders (e.g. donors) at central, provincial, district and community levels.
- **Data analysis of available relevant datasets:** DEWS data is collected separately from the MoPH, and is not a direct part of the Health Management Information System (HMIS); however, any existing or possible linkages will be examined by the evaluation team. Likewise, linkages with other surveillance /response systems will be examined.

- **Visits to DEWS sentinel sites and respective referral laboratories.** Given the reach of DEWS to all 34 provinces, the evaluation team will select a sample of DEWS sentinel surveillance sites and linked laboratories, with consideration of key variables such as geography and security, and will report on limitations of this method. The evaluation team will develop the sampling frame.

Table 1, below, describes the tools and sampling strategy that will be used to collect data on the various levels of DEWS and other surveillance systems:

- Community level: Focus group discussion or key informant interview with members of a community which experienced an outbreak
- Reporting unit level: In-person interview with sentinel site personnel and observational checklist; telephone survey with sentinel site personnel (random sample of all sentinel site personnel)
- Provincial level: In-person interview with provincial DEWS officer and observational checklist; telephone survey with provincial DEWS officer; in-person interview with provincial Public Health Director
- National level: In person interviews with stakeholders at the national level (WHO, MoPH, USAID, stakeholders, etc.)
- Laboratories (at National, Regional and Provincial level): In person interview with laboratory personnel and observational checklist

Table 1: Tools and Sampling Strategy

Geographic Level: Communities
Data Collection Tool: Focus Group Discussion or Key informant Interview with Community Members in a Community that had a Disease Outbreak
<p><i>Purpose</i></p> <p>The interview or focus group discussion with community member is to determine beneficiary perceptions about DEWS and its disease outbreak response in the community.</p> <p><i>Methodology/Sampling</i></p> <p>Focus group discussions or key informant will be held with community members of a community that that has had a disease outbreak and response in the recent past (6 months ago or less). Depending upon the situation at the village and the availability of people, the evaluation team will either utilize focus group discussions or individual interviews. The questionnaire would be similar and consist of mainly open-ended questions.</p> <p>The sample is a convenience sample of communities who meet all of the following requirements:</p>

- 1) the community must have had a disease outbreak and response in the last six months,
- 2) the community must be located within one of the provinces visited during field work, and
- 3) The village must be accessible.

While community members' perceptions are somewhat outside the scope of this evaluation, the donor has expressed interest in this information; therefore, the evaluation team will try to accommodate through a few community visits. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

These interviews or focus group discussions are to be held between the 7th and 21st of December.

Data Analysis

Notes will be taken during the interviews/focus groups, reviewed afterwards, then transcribed and analyzed. This information may be utilized for case studies.

Topics Covered

- Account of the DEWS response
- Community perception of the DEWS response (timeliness, helpfulness, appropriateness)

Geographic Level: Reporting Unit

Data Collection Tool: In-person interview with Sentinel Site Representative and Observational Checklist

Purpose

The in person interview with the Sentinel Site Representatives allows the team to more fully discuss the DEWS system with the Sentinel Site Representative. It provides the evaluators with key insights about the functioning of DEWS at the health facility level (from case definition to routine feedback and response) and the representative's opinions and perceptions about the system. It allows the evaluators to receive more in depth information about of the program than is possible through phone surveys. Additionally, the observation checklist provides another piece of information that attempts to independently verify key functions of the program.

Methodology/Sampling

Qualitative key informant interviews will be performed on Sentinel Site Representatives. The key informant interviews will consist of a mixture of open-

ended and closed question. At the same time of the interview, the evaluation team is expected to verify the observational checklist.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- Case Detection and Registration
- Data Collection (Quality, timeliness, completeness and burden)
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available to and needed in the facility

Data Collection Tool: Telephone Survey with Sentinel Site Representative

Purpose

The telephone interviews allow the evaluation team to collect information efficiently from a larger sample of Sentinel Sites. It provides the evaluators with key insights about the functioning of DEWS at the facility level (from case definition to routine feedback and response) and Sentinel Site Representatives opinions and perceptions about the system. A telephone interview will allow the evaluation team to reach a larger number of Sentinel Sites than could be reached through field visits. Additionally, the evaluation team will be able to reach Sentinel Sites in areas that are too remote or insecure for a field visit.

Methodology/Sampling

The methodology employed will be a quantitative phone survey that will attempt to interview a representative sample of sentinel sites. The questionnaire will consist

mainly of closed ending questions with a few open-ended ones.

Timing

Phone surveys are to be held between the first and last week of December.

Data Analysis

Data collected from the interviews will be entered into a database, which will then be analyzed quantitatively. The data generated from these interviews will be analyzed through descriptive statistics.

Topics Covered

- Case Detection and Registration
- Data Collection (Quality, timeliness, completeness and burden)
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available to and needed in the facility

Geographic Level: Provincial Level

Data Collection Tool: Telephone Survey with Provincial DEWS Officer

Purpose

The telephone interviews allow the evaluation team to collect information efficiently from all Provincial DEWS Officers. It provides the evaluators with key insights about the functioning of DEWS at the provincial level (from data collection to outbreak response), its role in the larger health system from the perspective of the field staff, and Officer's opinions and perceptions about the system. A telephone interview will allow the evaluation team to reach a larger number of DEWS Officers than could be reached through field visits. Additionally, the evaluation team will be able to reach DEWS Officers in areas that are too remote or insecure for a field visit.

Methodology/Sampling

The methodology employed will be a quantitative phone census, where we will attempt to interview a majority of the Provincial DEWS Officers, who weren't interviewed in person. The questionnaire will consist mainly of closed ending questions with a few open-ended ones.

Timing

Phone surveys are to be held between the first and last week of December.

Data Analysis

Data collected from the interviews will be entered into a database, which can then be

analyzed quantitatively. The data generated from these interviews will analyzed through descriptive statistics.

Topics Covered

- Data Collection from Sentinel Sites (Quality, timeliness, completeness)
- Data analysis for quality, trends and disease thresholds
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Experience with collecting samples and laboratory results
- Coordination with other stakeholders (normal and outbreak)
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available and needed to perform duties

Data Collection Tool: In person interview with Provincial DEWS Officer and Observational Checklist

Purpose

The in person interview with the Provincial DEWS Officer allows the team to more fully discuss the DEWS system with the DEWS Officers. It provides the evaluators with key insights about the functioning of DEWS at the provincial level (from data collection to outbreak response), its role in the larger health system from the perspective of the field staff, and Officer's opinions and perceptions about the system. It allows the evaluators to receive more in depth information about the program than phone surveys. Additionally, the observation checklist provides another piece of information that attempts to independently verify key functions of the program.

Methodology/Sampling

Qualitative key informant interviews will be performed on Provincial DEWS Officers. The key informant interviews will consist of a mixture of open-ended and closed question. At the same time of the interview, the evaluation team is expected to verify the observational checklist.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- Data Collection from Sentinel Sites (Quality, timeliness, completeness)
- Data analysis for quality, trends and disease thresholds
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Experience with collecting samples and laboratory results
- Coordination with other stakeholders (normal and outbreak)
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available and needed to perform duties

Data Collection Tool: In person interview with Provincial Public Health Director

Purpose

The in person interview with the Provincial Public Health Director allows the team to understand how DEWS functions at the provincial level and how it works with other systems. It provides the evaluation team with an outsider's perspective on the DEWS system at the provincial level, with a particular focus on the functioning of an integrated system and outbreak investigations and responses.

Methodology/Sampling

Qualitative key informant interviews will be conducted with the Provincial Public Health Director in provinces visited, depending upon his/her availability. The key informant interviews will consist of a mixture of open-ended and closed question.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then

transcribed and analyzed.

Topics Covered

- Coordination between DEWS and health system, both on a regularly scheduled meetings and during responses
- Possibility and challenges of integrating DEWS with other systems
- Strengths, weakness and ways to improve the DEWS

Geographic Level: Multiple (Provincial, Regional and National)

Data Collection Tool: In person interview with Laboratory personnel and observational checklist

Purpose

The semi-structured in-depth interview allows the evaluation team to collect in-depth information from laboratory technicians at central and regional/or provincial levels. It provides the evaluators with key insights about the functionality of labs within DEWS (from sample collection and transportation to quality assurance, predictive value positive, and reporting). The data will be triangulated by direct observation from central lab facility and from a sample of regional/provincial labs during field visits. Observational checklist will be used to assess the capacity of the labs in handling samples in the routine bases and in outbreaks.

Methodology/Sampling

The methodology employed will be a semi-structured questionnaire and observational checklist, where we will attempt to interview central and provincial lab technicians, and observe central lab and a purposive sample of regional/provincial labs. The questionnaire will consist mainly of open ended questions with follow up questions and a few closed-ended ones. The interviews may be recorded, if the respondents provide consent for voice recording. World Health Organization lab assessment tool will be adopted.

Timing

These interviews will occur between 7 and 21st of December. The observational checklist is going to be filled out during field visits from laboratory facilities.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- laboratory staff, training and supervision

<ul style="list-style-type: none"> • building facilities and utility services • laboratory equipment • tests performed at the laboratory • laboratory management • specimen collection, labelling and handling • reporting procedures • quality control procedures and program safety
<p>Geographic Level: National</p>
<p>Data Collection Tool: In person interviews with stakeholders at the national level (WHO, MoPH, USAID, stakeholders, etc.)</p>
<p><i>Purpose</i></p> <p>The semi-structured in-depth interview allows the evaluation team to collect in-depth information from wider range of stakeholders at national level. It provides the evaluators with key insights about the lessons learned, strength and weakness of the system, sustainability of the system in the future, and prospects about integration of disease surveillance system.</p> <p><i>Methodology/Sampling</i></p> <p>The methodology employed will be a semi-structured questionnaire, where we will attempt to interview key informants from MOPH, WHO, USAID and stakeholders. The questionnaire will consist mainly of open ended questions with follow up questions and a few closed-ended ones. The interviews are going to be recording, only if the respondents provide consent for voice recording.</p> <p><i>Timing</i></p> <p>We expect the in-depth interview will take 30 - 60 minutes.</p> <p><i>Data Analysis</i></p> <p>Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed.</p> <p><i>Topics Covered</i></p> <ul style="list-style-type: none"> • availability of a national surveillance manual • existence of standardized case definitions for the country’s priority diseases • presence of recommended reporting forms • capacity of data analysis at the central level • action threshold defined for each priority disease • percent of suspected outbreaks were investigated in the past 1 year • ability of the central level to respond within 48 hours of notification of most recently reported outbreak

- ability of the national epidemic management committee to evaluate its preparedness and response activities
- existence of capacity for publication of health and surveillance information is the are MOPH for publications
- existence of a reporting or bulletin that is regularly produced to disseminate surveillance data
- Training and post-basic training in disease surveillance
- Resources (data management, communication, budget and logistics)
- Existence of coordination body
- Opportunities for integration

TEAM MEMBERS

Dr. Gavin Macgregor-Skinner, Team Lead (International Consultant)

Email: gavinms@gmail.com

Tel: +1-202-468-7553 (Washington, DC); +93(0) 729 001 678 (Kabul)

Craig Arnold, M&E Specialist (International Consultant)

Email: craiginbogra@yahoo.com

Tel: +93(0) 729 001 677

Dr. Palwasha Anwari (National Consultant)

Email: anwari222@gmail.com

Tel: +93(0) 729 001 674

Dr. Akmal Samsor (National Consultant)

Email: asamsor@samsorafghanistan.org

Tel: +93(0) 777 331 512

ANNEX III: WORK SCHEDULE

	November			December																					January																									
	17 - 25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22 - 31	1	2	3	4 - 9	10	11 - 15	16	17	18	19 - 23	24	25	26	27	28	29	30	31				
Document Collection and Review	XXXX	X	X	X		X	X	X																																										
Meet USAID		X																																																
Initial Meeting MoPH			X																																															
Initial Meeting WHO			X																																															
Finalize SoW		X		X		X																																												
Develop measurements		X		X		X																																												
Formalize and submit work plan							X	X	X	X	X																																							
USAID work plan review (incl. tools)											X		X																																					
Finalize work plan (incl. tools)												X	X																																					
Translate data collection tools											X																																							
Data collection tool testing												X																																						
Data collection tool revision													X																																					
Retrieve secondary data from partners	X	X	X			X	X	X	X	X	X																																							
Kabul Meetings (MoPH, WHO, USAID, etc)						X	X	X	X	X	X																																							
Meetings with field staff												X	X	X	X	X	X																																	
Field Telephone Surveys												X	X	X	X	X	X										X	XXXX	X	X																				
Data Entry												X	X	X	X	X	X										X	XXXX	X	X																				
Mid-term USAID meeting																		X																																
Field work / exit briefing (exact date TBD)																																																		
Holiday time																																																		
Data analysis																																																		
Initial Report Writing																																																		
Draft Report Submission																																																		
Findings Presentaion (exact date TBD)																																																		
USAID review of draft report																																																		
Revision of report and final submission																																																		
1 page executive findings report																																																		

ANNEX IV: BIBLIOGRAPHY OF DOCUMENTS REVIEWED

- Accessing population health information through interactive systems: lessons learned and future directions 2001 *Public Health Reports* 116 2132-147
- Age-related changes in the rate of disease transmission: implications for the design of vaccination programmes 1985 *Journal of Hygiene* 94 3365-436
- An evaluation of influenza mortality surveillance, 1962–1979 I. Time series forecasts of expected pneumonia and influenza deaths 1981 *American Journal of Epidemiology* 113 3215-226
- ANPHI 2010 *Disease Early Warning System (DEWS) Annual Report 2010* Afghanistan National Public Health Institute Surveillance Directorate Ministry of Public Health, Government of Islamic Republic of Afghanistan Kabul Ministry of Public Health, Government of Islamic Republic of Afghanistan
- ANPHI 2011 *Disease Early Warning System* Afghanistan National Public Health Institute Surveillance Directorate Ministry of Health, Government of Islamic Republic of Afghanistan Kabul Ministry of Health, Government of Islamic Republic of Afghanistan
- ANPHI 2012 *Disease Early Warning System (DEWS) Annual Report 2012* Afghanistan National Public Health Institute Surveillance Directorate Kabul Ministry of Health, Government of Islamic Republic of Afghanistan
- Applied Logistic Regression* 2000 John Wiley & Sons
- Can scientists and policy makers work together? 2005 *Journal of Epidemiology and Community Health* 59 8632-637
- Canadian Institutes of Health Research 2003 *The Future of Public Health in Canada: Developing a Public Health System for the 21st Century* Ottawa, Canada CIHR
- Centers for Disease Control and Prevention 1990 Guidelines for investigation clusters of health events *Morbidity and Mortality Weekly Report* 39 1-23
- Centers for Disease Control and Prevention 1997 Case definitions for infectious conditions under public health surveillance *Morbidity and Mortality Weekly Report* 46 1-55
- Centers for Disease Control and Prevention 2001 Updated guidelines for evaluating public health surveillance systems: recommendations from the guidelines working group *Morbidity and Mortality Weekly Report* 50 131-35
- Centers for Disease Control and Prevention 2001 Updated guidelines for evaluating public health surveillance systems: Recommendations from the guidelines working group. *MMWR* 50 1-35
- Centers for Disease Control and Prevention 2004 *Behavioral Risk Factor Surveillance System Operational and User's Guide, Version 3.0* Atlanta GA USA US Department of Health and Human Services
- Centers for Disease Control and Prevention Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks *MMWR* 53 1-11
- Centers for Disease Control and Prevention *Meningitis*
- Challenging custom: Rethinking national population surveillance policy in a global public health age 2010 *Journal of Health Politics, Policy and Law* 35 61027-1055
- 2010 Chapter 1. Historical development New York NY USA Oxford University Press
- 2010 Chapter 1. Historical development New York NY USA Oxford University Press
- 2010 Chapter 1. Historical development New York NY USA Oxford University Press
- 1992 Chapter 11. Injury surveillance New York NY USA Van Nostrand Reinhold
- 1992 Chapter 13. Surveillance of occupational illness and injury New York NY USA Van Nostrand Reinhold

1992Chapter 14. Epidemiologic surveillance following disastersNew YorkNYUSAVan Nostrand Reinhold

1992Chapter 15. Pharmacosurveillance: public health monitoring of medication,New YorkNYUSAVan Nostrand Reinhold

2010Chapter 2. Considerations in planning a surveillance sytemNew YorkNYUSAOxford University Press

2009Chapter 2. Public health surveillanceNew YorkNYUSASpringer

2010Chapter 4. Collecting public health surveillance data: creating a surveillance sytemNew YorkNYUSAOxford University Press

1992Chapter 6. Hazard surveillanceNew YorkNYUSAVan Nostrand Reinhold

2006Chapter53. Public health surveillance: a tool for targeting and monitoring interventionsWashingtonDCUSAThe World Bank and Oxford University Press

Combined high-resolution genotyping and geospatial analysis reveals modes of endemic urban typhoid fever transmission*Open Biology*121-14

Disease Control Priorities Project*Public Health Surveillance—The Best Weapon to Avert Epidemics*

Establishing goals, techniques and priorities for national communicable disease surveillance1991*The Canadian Journal of Infectious Diseases*237-40

Evidence-based decision making in public health1999*Journal of Public Health Management and Practice*5586-97

Future directions for com- prehensive public health surveillance and health information systems in the United States1994*American Journal of Epidemiology*1405383-397

*Global Behaviour Risk Factor Surveillance*2003New YorkNYUSAKlawer Academic/Plenum Publishers

Global epidemiology of meningococcal disease2009*Vaccine*27851-863

Health surveillance: an essential tool to protect and promote the health of the public2006*Canadian Journal of Public Health*9732-8

Health surveillance: an essential tool to protect and promote the health of the public2006*Canadian Journal of Public Health*9732-8

Infectious diseases that people should be informed: a Delphi survey of clinicians engaged in practice of infectious diseases in Japan*Kansenshogaku Zasshi*8318-12

London School of Hygiene and Tropical Medicine2009Types of surveillanceLondonUKLondon School of Hygiene and Tropical Medicine

Mandatory reporting of infectious diseases by clinicians1990*Morbidity and Mortality Weekly Report*3991-17

Mathematical modeling and attempts to eliminate measles1991*American Journal of Epidemiology*1336517-525

Meningococcal Disease2001*New England Journal of Medicine*3441378-1388

Oscillatory fluctuations in the incidence of infectious disease and the impact of vaccination: time series analysis1984*Journal of Hygiene*933587-608

Perspectives on epidemiologic surveillance in the 21st century1998*Chronic Diseases in Canada*19145-151

ProMED-mail: an early warning system for emerging diseases2004*Clinical Infectious Diseases*392227-232

Public Health Agency of Canada2004*Global Public Health Intelligence Network (GPHIN)*OttawaOntariaCanadaPHAC

*Public Health Surveillance Toolkit: A Guide for Busy Task Managers*2002WashingtonDCUSAWorld Bank

*Public Health Surveillance Toolkit: A Guide for Busy Task Managers*2002WashingtonDCUSAWorld Bank

- Regional infectious disease surveillance networks and their potential to facilitate the implementation of the international health regulations 2008 *Medical Clinics of North America* 92:61459-1471
- Surveillance in environmental public health: Issues, systems, and sources 1996 *American Journal of Public Health* 86:5633-638
- Surveillance projects for selected diseases 1976 *International Journal of Epidemiology* 5:129-37
- Temporal patterns and a disease forecasting model of dengue hemorrhagic fever in Jakarta based on 10 years of surveillance data *Southeast Asian Journal of Tropical Medicine and Public Health* 44:2206-217
- The global public health intelligence network and early warning outbreak detection: a Canadian contribution to Global Public Health 2006 *Canadian Journal of Public Health* 97:142-44
- The impact of infection on population health: results of the Ontario burden of infectious diseases study *PloS One* 7:91-10
- The internet and the global monitoring of emerging diseases: lessons from the first 10 years of ProMED-mail 2005 *Archives of Medical Research* 36:6724-730
- Trends and directions of global public health surveillance 2010 *Epidemiologic Reviews* 32:193-109
- U.S. General Accounting Office 2001 *Global Health: Challenges in Improving Infectious Disease Surveillance Systems* Washington DC USA U.S. General Accounting Office
- UNAIDS 2000 *National AIDS Programmes: A Guide to Monitoring and Evaluation* Geneva Switzerland Joint United Nations Programme on HIV/AIDS (UNAIDS)
- Update guidelines for evaluating public health surveillance systems *Morbidity and Mortality Weekly Report* 50:131-35
- USAID *USAID Evaluation Policy - Learning from Experience*
- USAID *DADS Chapter 203: Assessing and Learning*
- WHO EMRO/Afghanistan 2008 *Proposal to USAID for Support to MOPH for Disease Early Warning System (DEWS)* Kabul WHO Eastern Mediterranean Region/Afghanistan
- World Health Organization 1998 *Disease surveillance – WHO's role* *Weekly Epidemiological Record* 73:333-334
- World Health Organization 1999 *Report on Infectious Diseases – Removing Obstacles to Healthy Development* Geneva Switzerland World Health Organization
- World Health Organization 2000 *An integrated approach to communicable disease surveillance* *Weekly Epidemiological Record* 75:1-8
- World Health Organization 2001 *Protocol for the assessment of national communicable disease surveillance and response systems: Guidelines for assessment teams.* Geneva Switzerland WHO Department of Communicable Disease Surveillance and Response
- World Health Organization 2004 *Overview of the WHO framework for monitoring and evaluating surveillance and response systems for communicable diseases.* *Weekly Epidemiology Record* 36:322-326
- World Health Organization 2005 *48th World Health Assembly. 2005. Resolution WHA58.3: Revision of the International Health Regulations* Geneva Switzerland World Health Organization
- World Health Organization 2005 *International Health Regulations* Geneva Switzerland World Health Organization

World Health Organization 2006 *Communicable disease surveillance and response: Guide to monitoring and evaluating*. Geneva Switzerland WHO Department of Communicable Disease Surveillance and Response,
World Health Organization 2008 *International Health Regulations 2005 2nd Edition* Geneva Switzerland World Health Organization
World Health Organization 2009 *DengueNet* Geneva Switzerland World Health Organization
World Health Organization 2009 *Global Inuenza Programme (FluNet)* Geneva Switzerland World Health Organization
World Health Organization 2012 *Afghanistan - Communicable disease surveillance and response*
World Health Organization 2012 *Immunization surveillance, assessment and monitoring*
World Health Organization *Global Alert and Response (GAR) - Alert & Response Operations*
World Health Organization *Immunization Surveillance, Assessment and Monitoring*
World Health Organization *Public Health Surveillance*
World Health Organization *Surveillance and Monitoring*

ANNEX V: SCHEDULE OF MEETINGS

<i>No</i>	<i>Date</i>	<i>Organization</i>	<i>Name</i>	<i>Title</i>	<i>Phone</i>	<i>Email</i>
1	December 12, 2013	DEWS/ANPHI/MOPH	Dr. Naqibullah Ziar	DEWS Director	+93799001491	nziarhaleem@gmail.com
2	December 17, 2013	APHI/MOPH	Dr. Bashir Noormal	General Director	+93700281134	dgaphi.moph@gmail.com
3	December 18, 2013	Presidential office and National Polio Eradication High Commission	Dr. Fezullah Kakar	Chair of Polio Eradication high commission		
4	December 18, 2013	Retired	Dr. Rana Kakar	WHO Former Health specialist	+93782418516	Suzette.kakar@gmail.com
5	December 18, 2013	National Polio Eradication High Commission	Dr. Sabawoon	Epidemiologist and member of Polio Eradication High Commission		
6	December 18, 2013	National Polio Eradication High Commission	Dr. Taqdir	Epidemiologist and member of Polio Eradication High Commission		
7	December 05, 2013	World Health Organization	Dr. Sampath K Krishnan	Epidemiologist	+93 782220829	krishnans@afg.emro.who.int
8	December 05, 2013	World Health Organization	Dr. Mohammad Nadir Sahak	National Program Officer	+9370 8892177	sahakm@afg.emro.who.int
9	December 05, 2013	World Health Organization	Dr. Ahmad Farid Ghiasi	National Program Officer	+93700602174	ghiasia@afg.emro.who.int

10	December 05, 2013	USAID/Afghanistan	Dr. Mohammad Shapor Ikram	USAID DEWS Focal Point		sikram@state.gov
11	December 24, 2013	National Central Public Health Laboratory	Dr. Sharifi	Director		
12	December 24, 2013	National Central Public Health Laboratory	Mr. Faridullah Safi	Lab technician	+93783734290	aphicphrecep@gmail.ocm
13	December 25, 2013	National Central Public Health Laboratory	Mr. Lalaqa	Lab technician	+93783734291	aphicphrecep@gmail.ocm
14	December 24, 2013	DEWS Central Kabul Region Office, ANPHI, MOPH	Dr. Nawid Musarat	Central Kabul DEWS Coordinator	+93799413160	dews.centraleastregion@gmail.com
15	December 24, 2013	DEWS Central Kabul Region Office, ANPHI, MOPH	Dr. Mahboob Kolal	Central Kabul DEWS Coordinator	+93776129402	Dews.kolal@gmail.com
16	December 8, 2013	USAID/Afghanistan	Dr. Charles Oliver	Deputy Director/Office of Health & Education	+933014901042 Ext4719	choliver@usaid.gov coliver@state.gov
17	December 05, 2013	USAID/Washington	Ms. Ellen W. Odgen	USAID Worldwide polio Eradication Coordinator	+15712186408	odgendellyn@hotmail.com eodgen@usaid.gov
18	December 05, 2013	USAID/Afghanistan	Dr. Iqbal Roshani	USAID Polio focal point		
19	December 05, 2013	USAID/Afghanistan	Ms. Christina Lau	USAID Health Development Officer	+93702323272	clau@state.gov
20	December 04, 2013	CDC/Afghanistan	Dr. Diane Simpson	CDC Medical Officer	+93700107790	dsimpson@state.gov
21	December 8, 2013	USAID/Pakistan	Randolph Augustin	USAID Health Development Officer	+92512082844	raugustin@usaid.gov
22	December 4, 2013	USAID/Pakistan	Dr. Muhammad Ahmed Isa	Senior Health Technical Officer	+92512082844	maisai@usaid.gov
23	December 06, 2013	Management Sciences for Health (MSH)	Dr. Chris Bishop	Medical Epidemiologist/Senior	+93799640141	cbishop@msh.org

				technical Adviser		
24	December 06, 2013	HMIS/MOPH	Dr. S. Yaqoob Azimi	HMIS Director	+93792595861	drazimi56@googlemail.com
25	Phone interview	DEWS/ANPHI/MOPH	Dr. Jan Mohammad Kohistani	Kapisa DEWS Officer	783734278	dewskapisa5@gmail.com
26	Phone interview	DEWS/ANPHI/MOPH	Dr. Farid Ahmad Paikar	Hilmand DEWS Officer	708340212	dews.helmand@gmail.com
27	Phone interview	DEWS/ANPHI/MOPH	Ms.Shiba	Nimroz DEWS officer	708500706	dews.nimroz@gmail.com
28	Phone interview	DEWS/ANPHI/MOPH	Mohammad Shah	Ghor DEWS officer	783734348	Not available
29	Phone interview	DEWS/ANPHI/MOPH	Sabir Khashi	Badakhshan DEWS officer	783734328	Not available
30	Phone interview	DEWS/ANPHI/MOPH	Dr. Sharif Obaidi	Baghlan DEWS officer	783734329	
31	Phone interview	DEWS/ANPHI/MOPH	Dr. Siddiq Samsor	Laghman DEWS officer	783734272	laghman.dews@gmail.com
32	Phone interview	DEWS/ANPHI/MOPH	Dr. Haidar Ali Amiri	Daikundi DEWS Officer	0783737319	dews.daykundi@gmail.com
33	Phone interview	DEWS/ANPHI/MOPH	Elhamudin	Khost Assistant	0799813479	elhamuddin@gmail.com
34	Phone interview	DEWS/ANPHI/MOPH	Dr. Amanullah Tareq	Wardak DEWS Officer	0783734317	dews.wardak@gmail.com
35	Phone interview	DEWS/ANPHI/MOPH	Dr. Haidar Ali Amiri	Daikundi DEWS Officer	0783737319	dews.daykundi@gmail.com
36	Phone interview	DEWS/ANPHI/MOPH	Dr. Said Jamal	Paktika DEWS Assistant	0799000448	Not Available

37	Phone Interview	Health Facility	Dr. Shafiq	Faizabad city, Provincial Hospital Focal Point	799844645	Not Available
38	Phone Interview	Health Facility	Dr. AbdulJabar	Khurdakan, Comprehensive Health Center Focal Point	700568594	Not Available
39	Phone Interview	Health Facility	Dr. Habibullah	Empty, Basic Health Center Focal Point	799290421	Not Available
40	Phone Interview	Health Facility	Dr. Sekandar	Ali abad, Basic Health Center Focal Point	799406747	Not Available
41	Phone Interview	Health Facility	Nr. Nabeel	Sahare Jadid, District Hospital Focal Point	777822384/0774828403	Not Available
42	Phone Interview	Health Facility	Dr. Naworz	Kalafgan, Comprehensive Health Center Focal Point	777822428	Not Available
43	Phone Interview	Health Facility	Rahmatullah	District 8, District Hospital Focal Point	700035184	Not Available
44	Phone Interview	Health Facility	Sahadullah	Kalakan, Comprehensive Health Center Focal Point	77629432	Not Available
45	Phone Interview	Health Facility	Dr. Zia	Afghan private hospital, District Hospital Focal Point	780185920	Not Available
46	Phone Interview	Health Facility	Dr. SayedJan	Shinwari, District Hospital Focal Point	799174685	Not Available
47	Phone Interview	Health Facility	Jumakhan	FMIC, Provincial Hospital Focal Point	797809072	Not Available
48	Phone Interview	Health Facility	Dr. Abdulrahman	Allasay, Comprehensive Health Center Focal Point	773303107	Not Available

49	In-person Interview	Health Facility		Mazar Regional Hospital, Regional Hospital Focal Point	NA	Not Available
50	Phone Interview	Health Facility	Dr. Habibullah	Hairatan, Comprehensive Health Center Focal Point	0799 433 792	Not Available
51	Phone Interview	Health Facility	Dr. Firooz	Khulm, District Hospital Focal Point	750518293	Not Available
52	Phone Interview	Health Facility	Dr. Said Yosuf	Zari, Basic Health Center Focal Point	798854519	Not Available
53	Phone Interview	Health Facility	Not Recorded ¹	Noor-i-khuda, Comprehensive Health Center Focal Point	NA	Not Available
54	Phone Interview	Health Facility	Dr. Ghulam Sakhi	Daha dara, Basic Health Center Focal Point	778239976	Not Available
55	Phone Interview	Health Facility	Dr. Salah Mohammad Rasoli	Aqcha, District Hospital Focal Point	794338682	Not Available
56	Phone Interview	Health Facility	Dr. Basheer	Khoja Dokoh, Comprehensive Health Center Focal Point	776182296	Not Available
57	Phone Interview	Health Facility	Allah Mohammad	Feroz Nakhcher, Basic Health Center Focal Point	0 773736546	Not Available
58	In-person Interview	Health Facility	Not Recorded ²⁰	Sarbagh town, Comprehensive Health Center Focal Point	NA	Not Available

²⁰ Conducted on field visit. No contact info recorded.

59	Phone Interview	Health Facility	Dr. Najeebullah Anayaty	Sawza Qala, Basic Health Center Focal Point	789820406	Not Available
60	Phone Interview	Health Facility	Dr. Sayed Azam	Bazar, Comprehensive Health Center Focal Point	799222661	Not Available
61	Phone Interview	Health Facility	Dr. Haji Mohamad Nahim	Morghab, Comprehensive Health Center Focal Point	708408890	Not Available
62	Phone Interview	Health Facility	Abdulbashir	Anar Dara, Comprehensive Health Center Focal Point	704192406	Not Available
63	Phone Interview	Health Facility	Dr. Mohmmad Khan	Chakh Charan, Basic Health Center Focal Point	797027142	Not Available
64	Phone Interview	Health Facility	Mohamad Isaq	Dawlatyar, Comprehensive Health Center Focal Point	775864645	Not Available
65	Phone Interview	Health Facility	Mohamad Nahem Hamidi	Chesht-e-sharif, Comprehensive Health Center Focal Point	789042236	Not Available
66	Phone Interview	Health Facility	Dr. Abdul Hadi	Gulran, District Hospital Focal Point	779499016	Not Available
67	In-person Interview	Health Facility	Ass.Dr.Shir Aqa Naeb	Herat City, Regional Hospital Focal Point	NA	Not Available
68	Phone Interview	Health Facility	Ass.Dr.Mirwais Azizi	Gozara, District Hospital Focal Point	700404670	Not Available
69	Phone Interview	Health Facility	Salahuddind Jamshidi	Karuch, Comprehensive Health Center Focal Point	799210516	Not Available

70	Phone Interview	Health Facility	Dr. Sher Aqa Naib	Herat, Basic Health Center Focal Point	799021462	Not Available
71	Phone Interview	Health Facility	Fazalahmad Majidi	Khan Sheen, Basic Health Center Focal Point	0708364889	Not Available
72	Phone Interview	Health Facility	Dr. Ghairat khan	Sangeen, Basic Health Center Focal Point	0798769999	Not Available
73	Phone Interview	Health Facility	Dr. Anwarullah	Musa Qula, District Hospital Focal Point	0706248151	Not Available
74	Phone Interview	Health Facility	Dr. Ashrafullah	Maroof, Comprehensive Health Center Focal Point	703945709	Not Available
75	Phone Interview	Health Facility	Navidullah Momand	Zaronj, Provincial Hospital Focal Point	793662191	Not Available
76	Phone Interview	Health Facility	Matiullah Khan	Gazib, Comprehensive Health Center Point	202851858	Not Available
77	Phone Interview	Health Facility	Dr. Hameed and Akhtar Mohammad	Dahroot, District Hospital Focal Point	799792706	Not Available
78	Phone Interview	Health Facility	Dr. Mohammad Amin	Shahjoye, District Hospital Focal Point	700355815	Not Available
79	Phone Interview	Health Facility	Hazrat Mohammad	Sar Khani, Comprehensive Health Center Focal Point	773075746	Not Available
80	Phone Interview	Health Facility	Dr. Samiullah	Sutltanpur, Comprehensive Health Center Focal Point	700639762	Not Available
81	Phone Interview	Health Facility	Dr. Mohamaduddin	Mamkhail, Comprehensive Health Center Focal Point	798206305	Not Available

82	Phone Interview	Health Facility	Izatshah Sameem	Achin, Comprehensive Health Center Focal Point	797362063	Not Available
83	Phone Interview	Health Facility	Abdullah	Gushta, Comprehensive Health Center Focal Point	776452194	Not Available
84	Phone Interview	Health Facility	Dr. Waheedullah	Dur Baba, Basic Health Center Focal Point	773416688	Not Available
85	Phone Interview	Health Facility	Dr. Mahmood Riaz khan	Paroon, Basic Health Center Focal Point	795820048	Not Available
86	Phone Interview	Health Facility	Dr. Fazeluddin	Khost, Provincial Hospital Focal Point	779998549	Not Available
87	Phone Interview	Health Facility	Dr. Zafar	Qara bagh, Basic Health Center Focal Point	796880213	Not Available
88	Phone Interview	Health Facility	Dr. Sharif	Doabi, Comprehensive Health Center Focal Point	771028215	Not Available
89	Phone Interview	Health Facility	Dr. Mohammad Hemat	Moqur, Comprehensive Health Center Focal Point	794256393	Not Available
90	Phone Interview	Health Facility	Dr. Abdulkarim	Mandozi, Comprehensive Health Center Focal Point	708957520	Not Available
91	Phone Interview	Health Facility	Dr. Noorullah Noori	Mosa Khel, Comprehensive Health Center Focal Point	775101679	Not Available
92	Phone Interview	Health Facility	Dr. Ayub	Danda Patan, Basic Health Center Focal Point	772289535	Not Available
93	Phone Interview	Health Facility	Dr. Hazrat Nabi	Amhed, Comprehensive Health Center Focal Point	775290340	Not Available

				Point		
94	Phone Interview	Health Facility	Dr. Ghulam Ali	Empty, Basic Health Center Focal Point	796676848	Not Available
95	Phone Interview	Health Facility	Dr. Said Abdul Matin	Urgoon, District Hospital Focal Point	700294295	Not Available
96	Phone Interview	Health Facility	Abdul Khaliq ul Nabi	Naiak area, District Hospital Focal Point	772642687	Not Available
97	Phone Interview	Health Facility	Fazeluluq	Khoja Namazga, Basic Health Center Focal Point	776033042	Not Available
98	Phone Interview	Health Facility	Zamin Ali	Sharestan, Comprehensive Health Center Focal Point	775674871	Not Available
99	Phone Interview	Health Facility	Dr. Samiullah	Kohesafi, Comprehensive Health Center Focal Point	776536500	Not Available
100	Phone Interview	Health Facility	Dr. Anwar	Lolenj area, Comprehensive Health Center Focal Point	778585259	Not Available
101	Phone Interview	Health Facility	Dr. Waheedullah Wardak	CHA, Basic Health Center Focal Point	770940806	Not Available
102	Phone Interview	Health Facility	Dr. Habibullah Rahimi	Tagab Behsud, Basic Health Center Focal Point	708052340	Not Available

ANNEX VI: METHODOLOGY DESCRIPTION

Table 1: Tools and Sampling Strategy

<p>Geographic Level: Communities</p> <p>Data Collection Tool: Focus Group Discussion or Key informant Interview with Community Members in a Community that had a Disease Outbreak</p> <p><i>Purpose</i> The interview or focus group discussion with community member is to determine beneficiary perceptions about DEWS and its disease outbreak response in the community.</p> <p><i>Methodology/Sampling</i> Focus group discussions or key informant will be held with community members of a community that that has had a disease outbreak and response in the recent past (6 months ago or less). Depending upon the situation at the village and the availability of people, the evaluation team will either utilize focus group discussions or individual interviews. The questionnaire would be similar and consist of mainly open-ended questions. The sample is a convenience sample of communities who meet all of the following requirements:</p> <ol style="list-style-type: none"> 1) the community must have had a disease outbreak and response in the last six months, 2) the community must be located within one of the provinces visited during field work, and 3) the village must be accessible. <p>While community members’ perceptions are somewhat outside the scope of this evaluation, the donor has expressed interest in this information; therefore, the evaluation team will try to accommodate through a few community visits. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.</p> <p><i>Timing</i> These interviews or focus group discussions are to be held between the 7th and 21st of December.</p> <p><i>Data Analysis</i> Notes will be taken during the interviews/focus groups, reviewed afterwards, then transcribed and analyzed. This information may be utilized for case studies.</p> <p><i>Topics Covered</i></p> <ul style="list-style-type: none"> • Account of the DEWS response • Community perception of the DEWS response (timeliness, helpfulness, appropriateness)
<p>Geographic Level: Reporting Unit</p> <p>Data Collection Tool: In-person interview with Sentinel Site Representative and Observational Checklist</p> <p><i>Purpose</i> The in person interview with the Sentinel Site Representatives allows the team to more fully discuss the DEWS system with the Sentinel Site Representative. It provides the evaluators with key insights about the functioning of DEWS at the health facility level (from case definition to routine feedback and response) and the representative’s opinions and perceptions about the system. It allows the evaluators to receive more in depth information about of the program than</p>

is possible through phone surveys. Additionally, the observation checklist provides another piece of information that attempts to independently verify key functions of the program.

Methodology/Sampling

Qualitative key informant interviews will be performed on Sentinel Site Representatives. The key informant interviews will consist of a mixture of open-ended and closed question. At the same time of the interview, the evaluation team is expected to verify the observational checklist.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- Case Detection and Registration
- Data Collection (Quality, timeliness, completeness and burden)
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available to and needed in the facility

Data Collection Tool: Telephone Survey with Sentinel Site Representative

Purpose

The telephone interviews allow the evaluation team to collect information efficiently from a larger sample of Sentinel Sites. It provides the evaluators with key insights about the functioning of DEWS at the facility level (from case definition to routine feedback and response) and Sentinel Site Representatives opinions and perceptions about the system. A telephone interview will allow the evaluation team to reach a larger number of Sentinel Sites than could be reached through field visits. Additionally, the evaluation team will be able to reach Sentinel Sites in areas that are too remote or insecure for a field visit.

Methodology/Sampling

The methodology employed will be a quantitative phone survey that will attempt to interview a representative sample of sentinel sites. The questionnaire will consist mainly of closed ending questions with a few open-ended ones.

Timing

Phone surveys are to be held between the first and last week of December.

Data Analysis

Data collected from the interviews will be entered into a database, which will then be analyzed quantitatively. The data generated from these interviews will be analyzed through descriptive statistics.

Topics Covered

- Case Detection and Registration
- Data Collection (Quality, timeliness, completeness and burden)
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available to and needed in the facility
-

Geographic Level: Provincial Level

Data Collection Tool: Telephone Survey with Provincial DEWS Officer

Purpose

The telephone interviews allow the evaluation team to collect information efficiently from all Provincial DEWS Officers. It provides the evaluators with key insights about the functioning of DEWS at the provincial level (from data collection to outbreak response), its role in the larger health system from the perspective of the field staff, and Officer's opinions and perceptions about the system. A telephone interview will allow the evaluation team to reach a larger number of DEWS Officers than could be reached through field visits. Additionally, the evaluation team will be able to reach DEWS Officers in areas that are too remote or insecure for a field visit.

Methodology/Sampling

The methodology employed will be a quantitative phone census, where we will attempt to interview a majority of the Provincial DEWS Officers, who weren't interviewed in person. The questionnaire will consist mainly of closed ending questions with a few open-ended ones.

Timing

Phone surveys are to be held between the first and last week of December.

Data Analysis

Data collected from the interviews will be entered into a database, which can then be analyzed quantitatively. The data generated from these interviews will be analyzed through descriptive statistics.

Topics Covered

- Data Collection from Sentinel Sites (Quality, timeliness, completeness)
- Data analysis for quality, trends and disease thresholds
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Experience with collecting samples and laboratory results
- Coordination with other stakeholders (normal and outbreak)
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available and needed to perform duties

Data Collection Tool: In person interview with Provincial DEWS Officer and Observational Checklist

Purpose

The in person interview with the Provincial DEWS Officer allows the team to more fully discuss the DEWS system with the DEWS Officers. It provides the evaluators with key insights about the functioning of DEWS at the provincial level (from data collection to outbreak response), its role in the larger health system from the perspective of the field staff, and Officer's opinions and perceptions about the system. It allows the evaluators to receive more in depth information about the program than phone surveys. Additionally, the observation checklist provides another piece of information that attempts to independently verify key functions of the program.

Methodology/Sampling

Qualitative key informant interviews will be performed on Provincial DEWS Officers. The key informant interviews will consist of a mixture of open-ended and closed question. At the same time of the interview, the evaluation team is expected to verify the observational checklist.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- Data Collection from Sentinel Sites (Quality, timeliness, completeness)
- Data analysis for quality, trends and disease thresholds
- Data dissemination from National/Regional
- Outbreak investigation and response procedures
- Experience with collecting samples and laboratory results
- Coordination with other stakeholders (normal and outbreak)
- Strengths, weakness and ways to improve the DEWS
- Trainings and capacity building (received and needed)
- Resources available and needed to perform duties

Data Collection Tool: In person interview with Provincial Public Health Director

Purpose

The in person interview with the Provincial Public Health Director allows the team to understand how DEWS functions at the provincial level and how it works with other systems. It provides the evaluation team with an outsider's perspective on the DEWS system at the provincial level, with a particular focus on the functioning of an integrated system and outbreak investigations and responses.

Methodology/Sampling

Qualitative key informant interviews will be conducted with the Provincial Public Health Director in provinces visited, depending upon his/her availability. The key informant interviews will consist of a mixture of open-ended and closed question.

The sample will attempt to cover most of the 3 tiers of provinces, as is possible. Within each tier, at least one Province will be selected. Provinces will be selected based upon the ability to travel to and within them. Within each province, the evaluation team will attempt to visit two or more sites within a province and region. Visiting regions, provinces and sentinel sites is highly dependent upon security, weather and travel situation.

Timing

In person interviews are to be held between the 7th and 21st of December.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed.

Topics Covered

- Coordination between DEWS and health system, both on a regularly scheduled meetings and during responses
- Possibility and challenges of integrating DEWS with other systems
- Strengths, weakness and ways to improve the DEWS

Geographic Level: Multiple (Provincial, Regional and National)

Data Collection Tool: In person interview with Laboratory personnel and observational checklist

Purpose

The semi-structured in-depth interview allows the evaluation team to collect in-depth information from laboratory technicians at central and regional/or provincial levels. It provides the evaluators with key insights about the functionality of labs within DEWS (from sample collection and transportation to quality assurance, predictive value positive, and reporting). The data will be triangulated by direct observation from central lab facility and from a sample of regional/provincial labs during field visits. Observational checklist will be used to assess the capacity of the labs in handling samples in the routine bases and in outbreaks.

Methodology/Sampling

The methodology employed will be a semi-structured questionnaire and observational checklist, where we will attempt to interview central and provincial lab technicians, and observe central lab and a purposive sample of regional/provincial labs. The questionnaire will consist mainly of open ended questions with follow up questions and a few closed-ended ones. The interviews may be recorded, if the respondents provide consent for voice recording. World Health Organization lab assessment tool will be adopted.

Timing

These interviews will occur between 7 and 21st of December. The observational checklist is going to be filled out during field visits from laboratory facilities.

Data Analysis

The interviews may be recorded, if the respondents provide consent for voice recording. Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed. Checklist data will be entered into a database and then analyzed.

Topics Covered

- laboratory staff, training and supervision
- building facilities and utility services
- laboratory equipment
- tests performed at the laboratory
- laboratory management
- specimen collection, labelling and handling
- reporting procedures
- quality control procedures and program safety

Geographic Level: National

Data Collection Tool: In person interviews with stakeholders at the national level (WHO, MoPH, USAID, stakeholders, etc.)

Purpose

The semi-structured in-depth interview allows the evaluation team to collect in-depth information from wider range of stakeholders at national level. It provides the evaluators with key insights about the lessons learned, strength and weakness of the system, sustainability of the system in the future, and prospects about integration of disease surveillance system.

Methodology/Sampling

The methodology employed will be a semi-structured questionnaire, where we will attempt to interview key informants from MoPH, WHO, USAID and stakeholders. The questionnaire will consist mainly of open ended questions with follow up questions and a few closed-ended ones. The interviews are going to be recording, only if the respondents provide consent for voice recording.

Timing

We expect the in-depth interview will take 30 - 60 minutes.

Data Analysis

Notes will be taken during the interviews, reviewed afterwards, then transcribed and analyzed.

Topics Covered

- availability of a national surveillance manual
- existence of standardized case definitions for the country's priority diseases
- presence of recommended reporting forms
- capacity of data analysis at the central level
- action threshold defined for each priority disease
- percent of suspected outbreaks were investigated in the past 1 year
- ability of the central level to respond within 48 hours of notification of most recently reported outbreak
- ability of the national epidemic management committee to evaluate its preparedness and response activities
- existence of capacity for publication of health and surveillance information is the are MoPH

for publications

- existence of a reporting or bulletin that is regularly produced to disseminate surveillance data
- Training and post-basic training in disease surveillance
- Resources (data management, communication, budget and logistics)
- Existence of coordination body
- Opportunities for integration

Costs Analysis: Description of Resources Used to Operate the DEWS program

Our methodology covered resources required to operate the DEWS program. These resources include the personnel and financial resources expended in operating the system. We used the following checklist to guide the documentation of these resources.

INVESTMENT COSTS	OPERATIONAL COSTS	INDIRECT COSTS
Facilities	Facilities	Volunteers
Equipment	Equipment	Consultants
Transport	Transport	Donated item
Training	Personnel	Others
Others	Supplies	
	Training	
	Media	
	Medical	
	Utilities	
	Others	

Selection criteria for specific categories of costs were based on their appropriateness for DEWS activities, their relevance to economic analysis, and the feasibility for data collection. The cost items ultimately were grouped into the following categories:

- *Buildings and Civil Works*: New construction under the DEWS program, renovation and repair of existing structures or extension of facilities
- *Goods*: Procurement of goods (laboratory equipment, office equipment, computer hardware, application and system software, furniture/fixtures and, materials and supplies)
 - *Laboratory equipment*: binocular microscopes, tabletop centrifuge, refrigerator, deep freezer, incubator, autoclave, ELISA reader, etc.
 - *Office equipment*: All DEWS surveillance units (peripheral/district/province/central) such as computers, photocopier, fax machine, overhead projector, air conditioner and telephone, etc.
 - *Computer hardware and operating system*: Connecting health facility sentinel sites, district, province, and central surveillance units is the major activity of the DEWS

program. Computer server, router, modem, printer, UPS, etc. are required for networking. Operating system for Server, RDBMS, Website Tool and GIS Software is required for carrying out various functions (data entry, data analysis, transmission of information and reporting).

- *Furniture and fixtures*: Includes tables, chairs, laboratory platforms, washbasins, etc. are required for laboratories and surveillance units.
- *Materials and Supplies*: Laboratory consumable goods and supplies are required continuously for the purpose of various diagnostic tests. These include slides, gloves, test tubes, cotton wool swabs, blood culture bottles, aluminum foil, typhoid rapid diagnostic kit, fecal contamination rapid test kits, HIV diagnostic kit ELISA, etc.
- *Services*: Procurement of services including the following
 - *Information, Education and Communication (IEC)*: IEC activities includes organization of workshops, review meetings, publication of advertisement in newspapers to make public aware about the preventive action to be taken, printing of pamphlets/leaflets/brochures/manuals/formats for reporting, counseling and motivation of public through inter-personal communication, IEC activities at the national level like development and publication of advertisements in national newspapers for public awareness, printing of manuals, guidelines, training modules, production and telecast/broadcast of TV/Radio spots.
 - *Studies*: Quality Assurance of laboratory services, survey on risk factors, evaluation of training activities, effectiveness of information.
 - *Training*: The training at various levels in the laboratories and sentinel site surveillance units includes:
 - training of multi-purpose health workers and laboratory assistants undertaken in-house at health facility sentinel sites
 - training of DEWS officers at sentinel site, district, and regional surveillance units
 - training of laboratory technicians, data managers, district and province surveillance and response teams
 - *Consultancy services*:
- *Miscellaneous (Incremental Operating Cost)*: This involves operational expenses for all the components of the program and included office expenses, office stationary, travel costs, hiring and maintenance of vehicles, maintenance of equipment/computers, salary of incremental staff and consumable, and individual consultants hired for specialized services to serve in the district and province DEWS surveillance units.

ANNEX VII: DATA COLLECTION SURVEY INSTRUMENTS

Evaluation Questionnaire for Regional and Provincial DEWS officers

Consent form

Study title: Performance Evaluation of the Disease Early Warning System (DEWS) Project

Date:...../...../.....

Region: _____

Region: _____

Reporting unit: _____

Disease Early Warning System (DEWS) continues to carry out surveillance for infectious diseases in a timely manner. Investigations bring quick action to mitigate outbreaks and prevent further morbidity and mortality. Disease Early Warning System reported data on 16 priority diseases on a weekly basis from 364 health facilities in all regions of the country in this quarter.

We, an independent evaluation team want to assess DEWS performance from December 2006 until December 2013 against the objectives and intended results/outcomes agreed upon among the MoPH, DEWS, USAID and WHO. The evaluation will identify lessons learned through implementation of the DEWS program and recommended program components that merit continuation, as well as actionable recommendations for the future for stakeholders.

The MoPH will use the results of this evaluation to determine the future of DEWS and whether DEWS should stand alone as a disease surveillance, reporting and response system or be integrated with other surveillance and response systems. USAID will use the results of this evaluation to determine the recommendations it will make to the MoPH, other donors and stakeholders regarding the future of surveillance, reporting and response in Afghanistan.

Your questions concerning this study are going to be answered. You have the right to stop or withdraw at any time from the study without providing a reason.

By signing below you certify that you agree to take part in this study.

Name _____

Signature _____

Date: DD/MM/YYYY _____

Please read the following options carefully and tick ONE option:

1. The respondent agrees that material from his or her interview may be quoted, although his or her name will remain anonymous.
2. The respondent does not agree that any material from his or her interview may be quoted, but researchers may use information from his or her interview to inform their analysis.

Name of interviewer : _____

Signature of interviewer : _____

Q1. Do you have any guidelines on DEWS management (surveillance manual, disease specific guidelines)?

If yes, describe these documents and go to Q1.1. If no, go to Q2.

Title	Publisher	Issue time(Month/Year)

Q1.1 What is the deficiency of these guidelines when applied to use? (choose all the apply)

- ① There are some duplications among different guidelines
- ② Lack of practicability
- ③ There are some conflicts among different guidelines
- ④ Some contents are ambiguously phrased
- ⑤ Other, please specify:

Please list the most important deficiency: _____

Q2. Are there any additional Case Definitions used in DEWS in your Region besides the Case Definitions for the 16 diseases used by DEWS manual?

- ① Yes, go to Q2.1
- ② No, go to Q3
- ③ I don't know, go to Q3

Q2.1 Describe these parallel case definitions.

Disease Case Definition	Publisher	Issue time (Month/Year)

Q3. Does the region have the capacity to transport specimens to a higher lab?

- ① Yes, go to Q3.1
- ② No, go to Q4
- ③ I don't know, go to Q4

Q3.1 What transport mechanism is used for transfer of the specimens? (choose all the apply)

- ① Public Transportation
- ② Private Transportation Company
- ③ Mail (Express mail, DHS, Fed.Ex)
- ④Other, please specify:

Q4. Does the region have guidelines for specimen collection, handling and transportation to the next level?

Data analysis				
Quality of Reports				
Funding support				

Q13.3 In your opinion, what were some of the problems of conducted supervisions? (choose all the apply)

- ① They are not productive of any important findings ② The frequency is too low
 ③ The frequency is too high ④ Lack of feedback
 ⑤ _____ Other, _____ please specify: _____

Please state the most important problem: _____

Q14. Did your Regional Office do supervisory visits to sentinel sites in 2013?

- ① Yes, go to Q14.1 ② No, go to Q14.2 ③ I don't know, go to Q15

Q14.1 Specify the number of the visits made by your Regional Office in 2013.

Organization been supervised	Total number of visits	The number of visits for			
		Record Keeping/File Management	Data management	Quality of report	Other, please specify:
Provincial/Regional Hospital					
District Hospital					
Laboratories					
Other Health facilities					
Other, please specify:					

Q14.2 Describe the most usual reason for not making supervisory visits:

- ① It is another office responsibility to do the visits. The office is: _____
 ② It is not required ③ It is not necessary
 ④ Lack of fund ⑤ Lack of staff
 6 _____ Other, _____ please specify: _____

Q15. Have the DEWS staff (Yourself and the DEWS officers & focal points) in your regions ever been trained on DEWS?

- ① Yes, specify how for long ② No, go to Q16 ③ I don't know, go to Q16

Q16. Describe the training course received by the DEWS staff (Yourself and the DEWS

focal points) in 2013.

Training	Total trained person-times	Trained person-times of:				
		Introduction to DEWS	Diagnosing Priority Diseases	How to use DEWS Information System	Epidemiological investigation	Other, please specify:
Region-level						
National						
International						

Q17. Has your office provided training courses about DEWS in 2013?

- ① Yes, go to Q17.1 ② No, go to Q17.2 ③ I don't know, go to Q18

Q17.1 Describe the trainings courses provided by your office in 2013.

Training course	Total number trainings	The number of trained person-times from		
		DEWS health facilities	Non-DEWS health facilities	Others (specify)
Law and regulation				
Disease Reporting				
Data management and analysis				
Epidemiological investigation				
Other, please specify:				

Q17.2 Describe the most usual reason for not providing training courses:

- ① It is another offices responsibility to provide trainings. The office is: _____
- ② It is not required ③ It is not necessary ④ Lack of fund and equipment
- ⑤ Lack of trainers ⑥ Lack of training materials
- ⑦ Other, _____ please _____ specify: _____

Q18. Has your office ever investigated an outbreak ?

- ① Yes, go to Q19 ② No, go to Q20 ③ I don't know, go to Q20

Q19. Did you look for the outbreak-risk-factors during your outbreak investigation?

- ① Yes, go to 20 ② No, go to 19.1 ③ I don't know, go to 20

Q19.1 Describe the most usual reason for not investigation the risk factors during the outbreak

- ① It is another offices responsibility. The office is: _____
- ② It is not required ③ It is not necessary ④ Lack of fund and equipment

Q25.1 Specify the amount of each items of expenditure on DEWS in 2013.

Personnel/Salaries/Training	Public Awareness Campaigns	Transportation	Treatment Supplies	Office Supplies	Laboratory Supplies	Capital Items

Q25.2 Do you think the existing financial support can satisfy the demand of DEWS or not?

- ① Yes ② No ③ I don't know

Q26. In your opinion, what are the problems of DEWS in your region? (choose all apply)

- ① Insufficient coverage ② Lack of well-functioned equipment
③ Lack of training staffs ④ Imperfect reporting system
⑤ Other, _____ please
specify: _____

Please state the most important problem: _____

Q27. In your opinion, what kind of support are needed for DEWS improvement in your Region? (choose all apply)

- ① Policy support ② Financial and equipment support ③ Integration support
④ Staff training ⑤ Technical support
6 Other, _____ please specify:

Please state the most important support needed: _____

Q28. What model and number of vehicles does your office use to support DEWS activities? (choose all apply)

- ① Four Wheel Drive and No. _____ ② Two Wheel Drive and No.
③ Motorbike and No. ④ Flying Couch and No.
⑤ Other, _____ please
specify: _____

Q28.1. Do you rent any of these vehicles and how much does it cost per day?

Q29. What are your suggestions to improve the performance of DEWS in your Region ?

Thank you for your time

Evaluation Questionnaire for Health Facility Sentinel Site Focal Points

Health Facility Phone Survey	
Province _____ District _____ Village or Name of Facility _____ Type of Facility: Provincial Hospital, District Hospital, Comprehensive Health Center, Basic Health Center Database Code:	
Staffing	
1. How long have you been working as the focal point for DEWS	_____ Months (if < 1 year) _____ years
2. Is there a back up focal point at your site for DEWS	_____ yes _____ No
3. What is your position in the health facility?	1. Doctor 2. Nurse 3. Midwife 4. Administrator 5. Other (Specify) _____
Training	
4. Have you ever received any classroom or workshop training from DEWS?	Yes No (Skip to Q7)
5. Which of the following classroom or workshop trainings have you received (read list):	
a. DEWS Introduction and	Yes No
b. Diagnosing Target Diseases	Yes No
c. How to use DEWS information System	Yes No
d. Outbreak Investigation and response	Yes No
6. When did you last receive a classroom or workshop training from DEWS?	_____ months (if < 1 year) _____ years

7. Have you received on-the-job training from DEWS?	Yes No (Skip to Q10)
8. Which of the following on the job trainings have you received (read list):	
a. DEWS Introduction and	Yes No
b. Diagnosing Target Diseases	Yes No
c. How to use DEWS information System	Yes No
d. Outbreak Investigation and response	Yes No
9. When did you last receive on the job training from DEWS?	____ months (if < 1 year) ____ years
10. What types of trainings do feel would help you to perform essential functions for DEWS (data collection and reporting, outbreak detection and response)	Open Question
Case Definition	
11. How many diseases and conditions are covered by the DEWS system	____ # of diseases and conditions
12. Does the health facility have the DEWS poster for the disease diagnosis	Yes No (Skip to Q14)
13. What color is the border of the DEWS poster for disease diagnosis	List color
14. Does the health facility have the DEWS manual, which lists all the diseases covered by DEWS, their diagnosis, threshold and response	Yes No (Skip to Q16)
15. What main color is the cover of the DEWS Manual	List color
16. Do you have a DEWS Weekly Watch Chart posted at the clinic?	Yes No (Skip to Q19)
17. How many disease is it possible to track on the weekly watch chart?	# of diseases _____
18. How many disease has your facility mapped onto the weekly watch chart	# of diseases _____

<p>19. How often do you review the patient register or tally sheet, concerning the 16 diseases and conditions covered by DEWS</p>	<p>1. Everyday 2. Every other day 3. 2 – 3 times a week 4. Once a week 5. Less than weekly 6. Never 7. Other (Specify) _____</p>
Data Reporting	
<p>20. During the last six months has there been times when you have not had the appropriate surveillance forms for DEWS?</p>	<p>____yes ____No</p>
<p>21. Do you keep a copy of the weekly reports in a file?</p>	<p>____yes ____No (Skip to Q23)</p>
<p>22. To check data quality, we want to go over the report for the week of (insert week name). Please tell us the numbers for each of the diseases tracked through DEWS</p>	<p>(this we will need a box for those who don't have it on them for some reason. Additionally, we will need a report from HF and a way to check the numbers against each other.)</p>
<p>23. On average, how long does it take for you to complete the weekly report for DEWS</p>	<p>____Hours (use decimal: 2 1/2 hours = 2.5)</p>
<p>24. When do you contact the DEWS focal point? (Multiple Response)</p>	<p>Weekly Report____ Outbreak Response____ Don't know____</p>
<p>25. What is the means of communication between the health facility and the provincial DEWS officer</p>	<p>1. Cell Phone _____ 2. Clinic Phone _____ 3. Fax _____ 4. Computer/Internet_____ 5. Hand Delivered_____ 6. Other _____</p>
<p>26. I will now read a list of the other surveillance</p>	<p>Did you act as the focal point</p>

programs, please tell me which programs this health facility acts as a sentinel site? (Read List)	for this program? If so, how long does it take you complete the report?
a. TB	Acts as focal point: Yes No Hours _____
b. Polio	Acts as focal point: Yes No Hours _____
c. Measles	Acts as focal point: Yes No Hours _____
d. HMIS	Acts as focal point: Yes No Hours _____
e. Malaria	Acts as focal point: Yes No Hours _____
f. Influenza	Acts as focal point: Yes No Hours _____
Before moving to the next question, the enumerator must answer the question on the right for the surveillance program in which the facility participates.	
Supervisory	
27. When was the last visit by the DEWS officer (if more than 6 months, skip to Q29)	# of months ____ (If < 1 year) # of years _____
28. Which of the following activities did the DEWS officer perform?	<ol style="list-style-type: none"> 1. Checking register books 2. Checking filing system 3. Checking outbreak file 4. Training 5. Meeting with supervisors 6. Checking facility laboratory resources 7. Checking facility DEWS materials 8. Testing focal points knowledge about DEWS 9. Other (specify) _____

Outbreak investigation	
29. When was the last disease outbreak investigation for your Health facility (if longer than 6 months ago, skip to Q36)	_____ # of months
30. What outbreak was suspected?	<ol style="list-style-type: none"> 1. Acute Respiratory Infection—Cough & Cold-like illnesses, Suspected Avian Influenza 2. Acute Respiratory Infection—Pneumonia 3. Acute Watery Diarrhea 4. Acute Bloody Diarrhea (Dysentery)—Suspected Shigellosis 5. Acute Watery Diarrhea with Dehydration—Suspected Cholera 6. Meningitis / Severe ill child 7. Measles 8. Pertussis 9. Diphtheria 10. Tetanus / Neonatal Tetanus 11. Acute Flaccid Paralysis—Polio 12. Malaria 13. Typhoid Fever 14. Acute Hemorrhagic Fever 15. Pregnancy Related Death 16. Other (specify) <p>_____</p>
31. How was the outbreak investigation triggered	<ol style="list-style-type: none"> 1. Media 2. Health facility 3. Community 4. Analysis by DEWS officer 5. Other (Specify) <p>_____</p>
32. Was DEWS alerted during this outbreak?	<p>_____ yes (Skip to Q34)</p> <p>_____ No</p>
33. Can you explain why the DEWS was not alerted? (Skip to Q36 after completing)	Open answer

34. How many days after the initial report were the personnel from DEWS able to mount an outbreak investigation/response?	___# of days
35. How long after the initial investigation did the DEWS officer remain in contact to track the outbreak?	___# of weeks
Laboratory	
36. Does the health facility have the ability to collect samples?	____yes ____No (Skip to Next Section)
37. Which of the following supplies do you have for collecting samples?	
a. Measles Sampling kit	Yes No
b. Charcoal agar	Yes No
c. Cary bailer	Yes No
d. Swabs	Yes No
38. Does the facility have refrigerator for sample storage?	Yes No
39. How many hours a day does the refrigerator have power?	# of hours_____
Check Q29 to determine if the facility has had an outbreak investigation in the last 6 months or less. If yes, continue to next question. If no, then skip to next section	
40. During the last investigation, were samples taken?	____yes ____No (Skip to Next Section)
41. To where were the sample shipped?	1. Provincial Center 2. Regional Center 3. Kabul 4. Don't know
42. How were the samples shipped?	1. By Road 2. By mail 3. By air 5. Other_____

43. What were the samples shipped in?	1. Vaccine Carrier 2. Other (specify) _____
44. How would rate the timeliness of the laboratory response?	1. Very timely 2. Somewhat timely 3. Not very timely 4. Not timely at all
DEWS Satisfaction	
45. How useful do you feel the DEWS is in tracking trends and monitoring diseases?	1. Very useful 2. Somewhat useful 3. Not very useful 4. Not at all useful
46. How successful is the DEWS in launching a outbreak investigation and response in a timely manner	1. Very successful 2. Somewhat successful 3. Not very successful 4. Not successful at all
47. How would you describe the burden of producing the weekly report	1. Not burdensome at all 2. Very little burden 3. Fairly burdensome 4. Extremely burdensome
48. What do you see as the greatest strengths of DEWS? Something that could not be achieved without it?	Open ended question
49. How would you improve the DEWS, its systems and functions?	Open ended question

ANNEX VIII: AFGHANISTAN DEWS TOOLS

1. Health Facility Sentinel Site Weekly Report Form

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					

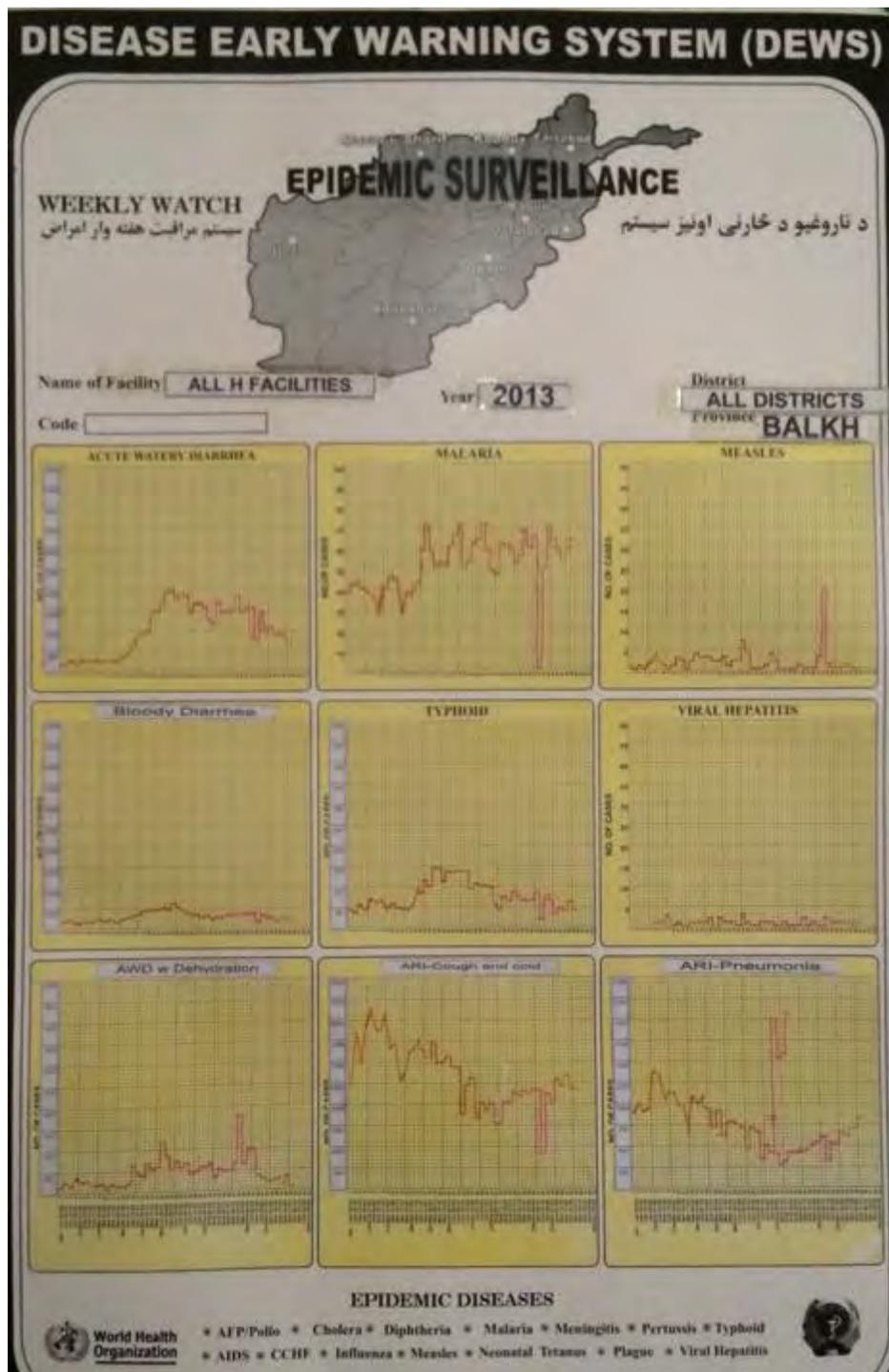
2. DEWS Case Definitions

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 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/ risussardonicus, 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 GuillainBarré 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.

3. DEWS Weekly Watch Chart for Sentinel Sites



4. DEWS Alert Threshold Chart



Threshold Alert Chart

Disease	Alert Threshold
AFP/Polio	One case
CCHF	One case
Dengue	One case
Cholera	One case
Diphtheria	One case
Pertussis	One case
Measles	Cluster (5 Case)
Meningitis	One case
Hepatitis	Cluster
Malaria	Above Average
Typhoid	Cluster
Influenza	Above Average
Pneumonia	Above Average
A.W.D.	Above Average
A.B.D	Cluster (5 Case)

5. DEWS Disease, Specimen Type, and Specimen Transportation Media Chart

Disease	Specimen Type	Specimen Transportation Media
AFP/Polio	Stool	No media only specimen container
CCHF	Serum, Urine, whole blood	No media only specimen container / specific blood transport media
Dengue	Serum, Urine, whole blood	No media only specimen container / specific blood transport media
Cholera	Stool	Cary Blair
Diphtheria	Throat Swab	Cary Blair
Pertussis	Throat Swab	Charchol Agar
Measles	Throat Swab/Serum	VTM/No media only specimen container
Meningitis	CSF, serum, whole blood	Specific media for CSF / No media only specimen container / specific blood transport media
Hepatitis	Serum, Urine, whole blood	No media only specimen container / specific blood transport media
Malaria	Blood film	Blood slides
Typhoid	Whole blood	No media only specimen container / specific blood transport media
Influenza	TS/Nasal Swab	VTM

Cecchi and Company Consulting, Inc.
SUPPORT II Project
Kabul, Afghanistan