



Electronic DEWS

A National Electronic Disease Surveillance System

Mobile Based Interface

MANUAL

Electronic DEWS (eDEWS): A National Electronic Disease Surveillance System

Disease Early Warning System

According to the World Health Organization (WHO) Surveillance is defined as the "ongoing systematic collection, collation, analysis and interpretation of data; and the dissemination of information to those who need to know in order that action may be taken". To minimize morbidity and mortality due to communicable diseases by detecting epidemics at their earliest possible stages, World Health Organization (WHO) in collaboration with the Ministry of Health and National Institute of Health established the first national weekly reporting based surveillance system called Disease Early Warning System (DEWS) in Pakistan. DEWS is operational at FLCFs of the health system and is an integral part of the district HMIS/DHIS. The DEWS was initially implemented in response to natural disaster and displacement emergencies in Pakistan in 1996, most notably the 2010 floods. However the system has now expanded to cover about 107 million people (57%) of Pakistan's population. The DEWS is effective in its core functions of alert detection and early outbreak containment. Its approaches for outbreak detection include immediate alert reporting, investigation, timely response and weekly data collection on several syndromes from more than 3000 health facilities in five provinces of Pakistan.

National Surveillance Systems in Pakistan:

Currently, national surveillance systems, (including DEWS, District Health Information System (DHIS), Polio/EPI reporting systems, vaccination programs) are isolated from one another due to differing data standards, legacy systems, patient privacy concerns and a lack of tools for information exchange. Most of the public health data is being received by mail, email or in person and then entered in old databases by district health authorities. Such data transfer often occurred long after disease incidences were first reported. Many diseases are underreported, inadequately documented or inaccurately recorded.

Electronic Disease Surveillance System:

The Electronic Disease Early Warning System (eDEWS) is an initiative that promotes the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, provincial and district levels. A primary goal of eDEWS is to capture data using mobile software and secure automatic electronic transmission and analysis of data, alert generation and dissemination of information to main stake holders. It will also facilitate identification of national public health threats more promptly, more timely and accurate disease reporting and may provide platform to facilitate integration of disparate reporting system.

Objectives:

1. Automatic capture, transmit, validation and analysis of data
2. Identification of national public health threats more promptly

3. More timely and accurate disease reporting
4. May provide platform to facilitate integration of disparate reporting system

Idea of Electronic DEWS:

The Electronic Disease Early Warning System (eDEWS) will be a secure online framework that will allow healthcare professionals and government agencies to communicate about disease patterns and coordinate national response to outbreaks. The idea of eDEWS will help in streamlining weekly data collection and better integration with district health information system and parallel surveillance programs such as routine, polio and EPI surveillance, based on a plan to progressively integrate the DEWS with routine surveillance. The data transmission will be simplified by GPRS/SMS reporting where possible; importantly, data will be managed more effectively so as to maximize their usefulness, through a new software application. Alert detection will be enhanced further by including automatic alert detection module in the software that will generate alerts based on thresholds and will send messages to DEWS response team for immediate response within 24 hours of alert notification.

Electronic DEWS Strategy and Structure:

The development of a data management system for electronic DEWS will consist of three phases of application development. Phase I will involve developing a system to conduct weekly disease surveillance using mobile phones in four districts of Pakistan. Phase II will involve providing additional system enhancements that will be weekly based and will be implemented throughout country. Phase II system enhancement will cover more advanced features, such as sophisticated data analysis, graphing and mapping, and integration of weekly DEWS data with DHIS monthly data.

Flow of Current National Disease Surveillance System

DHIS (Monthly flow)



DEWS (Weekly flow)



Flow of Electronic DEWS (eDEWS) Surveillance System (Weekly Reporting System)



Conversion of paper based DEWS reporting form into mobile application



Data submission using eDEWS application



Users Guide

**Submission of Weekly Data
Using Mobile Based Interface**

Steps to Submit Weekly Data Using Mobile Phone

Follow the following steps to download eDEWS data entry form in mobile phone (Nokia C5-01)

Menu → **Internet** → **Go to address**

Write down the following address in blank field:

<http://58.65.177.14/mobile>

Following login page will be downloaded



Step 1a



First register online to get user name and password for your health facility. Click on "Register Here" link on Main Login Page to open the following registration page.

Step 2a



Enter health facility code in the first field "HF Code" and click find button. Your health facility will be detected automatically to fill the rest of the fields in registration form as follow:



Step 3a



Now fill in all blank fields and click on "Register Now" button.

Step 4a:



Enter phone number in correct format i.e 03331234567

Step 5a:

One cannot register twice for same HF. HF code is a unique id. User name is also unique and you will be asked to re-register as follow with unique user name:



Click on New Register option, follow the steps from step 2 again and enter unique user name as follow.



Once all fields are accepted, following message will appear to confirm successful registration.



Now click Main login button, as shown above.

Data Entry Form: Data entry and Submission Procedures

Step 1b:



Go to "main login" page and enter your user name and password as follow:



Following "Data Entry Form" page will open on clicking login button:



Now select week number and year from drop down button first.

Reporting period for submitted week will appear automatically as follow:



Step 8:

Now fill all fields for diseases and do not leave any field blank. Enter "0" for diseases without any case registration.



Step 9:

Following checks will not allow you to submit blank fields. Popups will warn you regarding blank entries as follows:



Step 10:



Now click next button to proceed to page 2 (last page) of data entry form.

Step 11 (optional):



Fill in all blank fields except 'Total Consultations' and 'Other Disease' that will be filled automatically by clicking 'Calculate Others' button at the bottom of form.

Step 12:

Following page will appear once data entry form is submitted and uploaded on eDEWS server successfully.

