EWARS in a box

QUICK START GUIDE

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Acknowledgements

This Quick start guidance is aimed at supporting implementation of EWARS in a box, WHO’s electronic early warning, alert and response system in emergencies. This guidance fulfills a long felt need to have an easy to use resource with step-by-step instructions in establishing EWARS in a box, facilitating field epidemiologists, surveillance officers and emergency responders.

This document was developed by the epidemiologists of the EWARS in a box team; Dr Niluka Wijekoon Kannangarage and Dr Yuka Jinnai, under the Department of Health Emergency Interventions (HEI) of the WHO Health Emergencies Programme at WHO headquarters. Valuable contributions were received from Mr Kevin Crampton from the Information Management and Technology (IMT) of HQ Business Operations (BOS) as well.

Special thanks go to colleagues at WHO regional offices and WHO country offices where EWARS in a box is implemented, as their experiences and insights have shaped the guidance to be a valuable learning resource.
1 About EWARS in a box

**EWARS in a box** is WHO’s electronic early warning, alert and response system.

It is designed to detect disease outbreaks quickly in emergency, conflict and vulnerable settings.

**EWARS in a box** is a simple, rapidly deployable and flexible tool kit, designed with the needs of frontline users in mind.
2 The Kit

The **EWARS in a box Kit** is a rapidly deployable emergency kit that contains the equipment needed to set up an electronic early warning system in a crisis.

Each Kit contains 60 mobile phones, a laptop, solar chargers, and EWARS user guides, and can serve nearly half a million emergency affected population.
EWARS in a box components

- **Global EWARS**: WHO-controlled instance server accessible over the internet.
- **EWARS Country**: A country-controlled EWARS server that may be accessible over the internet or open to a private network only.
- **EWARS Stand-alone**: A user’s local instance of EWARS for use in remote settings with no internet.
- **EWARS Mobile**: The EWARS Mobile application (app) running on Android is connected to Global EWARS, or EWARS Country, or EWARS Local instance.
- **SMS Gateway**: The EWARS mobile app on Android for relaying SMSs to Global EWARS.
How does EWARS in a box work?

4.1 When internet connectivity is reliable

When internet connectivity is reliable, reporting users can submit reports directly to Global EWARS.
4.2 When internet connectivity is not reliable

If internet connectivity is unreliable, reporting users can submit reports via SMS. These reports are received by the SMS Gateway and relayed to Global EWARS.

‘Province A’ Team
Reporting via SMS

‘Country B’
Reporting via SMS

‘Province C’ Team
Reporting via SMS

Global EWARS
4.3 When offline or in remote, inaccessible environments

EWARS Stand-alone facilitates reporting in environments that are offline or lack access to a reliable internet connection. Reporting users can use the usual EWARS Mobile app, but will need to visit the location of the EWARS Stand-alone device to submit reports. Once they are in close proximity, they can submit reports to EWARS Stand-alone by sharing QR codes over a mobile hotspot. Later, EWARS Stand-alone submits the report(s) to Global EWARS over an internet connection.
5 How to set up EWARS in a box when there is a reliable internet connection

5.1 Setting up EWARS in a box Web

1. Contact ewars@who.int to request initiation of the process.

2. The Super Administrator will create a country/context EWARS in a box web account.

3. Refer to Web User Guide for setting up the system at country/context level.
5.2 Installation of EWARS Mobile app

Technical requirements:
1. Android OS version 6.0 Marshmallow or higher.
2. Stable internet connection

**Step 1:** Download the EWARS Mobile app by going to: [https://ewars.ws/ewars_v2_0.apk](https://ewars.ws/ewars_v2_0.apk)

**Step 2:** Allow app installation from an unknown source

‘Settings’ menu —> ‘Security & Privacy’ —> Tap on ‘Install unknown apps’

Enable the toggle button for File Manager.

**Step 3:** To install the EWARS Mobile app tap on the EWARS icon and follow the on-screen instructions.

**Note:** Alternatively, if you do not have an internet connection, you can manually install the EWARS Mobile app by requesting the mobile .apk file from the administrator — that is, use a cable to connect your phone to a device on which the .apk file has been downloaded and transfer the file to your phone.
5.3 Submitting a report to Global EWARS when there is reliable WiFi

If internet connectivity is reliable, reporting users in the field can submit reports directly to Global EWARS.

**Step 1:** To select a main form, tap on the form you want from those listed under **Forms**.

**Step 2:** To complete the main-form fields (i) tap on **Create New** and (ii) fill out the field values.

**Step 3:** To submit the main form, tap on **Submit** and select ‘Submit’.

The form is submitted to Global EWARS.

Reports will be received in the EWARS web account for the country/context.

See the EWARS Mobile User Guide for more information.
How to set up EWARS in a box when internet connection is unreliable

6.1 Using SMS reporting

SMS reporting allows reporting users to submit reports from their mobile phones to EWARS Web using SMS.

SMS reporting can be enabled for an entire country or a particular group of users. To enable SMS reporting in your country or context, the administrator will first need to set up the SMS Gateway application.

Identify the area that has an unreliable internet connection and form a team to enable SMS reporting. Assign a mobile phone and install the SMS Gateway application (see 6.2). Add an SMS Gateway number for the team. The team can then submit the reports via SMS. The SMS Gateway application will relay the received SMSs to EWARS Web.

- Identify area with unreliable internet connection e.g., Province A
- Form a team to enable SMS reporting e.g., ’Province A’ SMS Reporting Team
- Assign a phone & install SMS Gateway app e.g., SMS Gateway number +2541451001
- Add SMS Gateway number i.e., add +2541451001 as SMS phone number for Province A reporting team
- Province A reporting team submits reports via SMS
6.2 Installation of SMS Gateway application

**Step 1:** To download the SMS Gateway application go to: https://ewars.ws/static/apps/ewars-sms.apk

**Step 2:** Allow app installation from an unknown source
‘Settings’ menu → ‘Security & Privacy’ → Tap on ‘Install unknown apps’ Enable the toggle button for File Manager.

**Step 3:** Installing the EWARS in a box app
Navigate to your ‘Downloads’ folder > Tap the SMS Gateway APK file > follow the on-screen instructions

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**Technical requirements:**

1. Android OS version 6.0 Marshmallow or higher.

2. Procure and insert a SIM card from an appropriate telecommunication provider, with an active internet data connection and an active SMS plan to receive SMSs.

3. Plugged into a power source for charging at all times.
6.3 Submit a report to Global EWARS

Using SMS

If internet connectivity is unreliable, reporting users can submit reports to EWARS web via SMS.

**Step 1:** Select a main form
Tap on the form you want from those listed under "Forms".

**Step 2:** Complete the main-form fields
Tap on "Create New" and fill out the field values.

**Step 3:** Submit the main form
Tap on "SUBMIT VIA SMS".

Reports submitted using SMS will be relayed to the EWARS Web account of the country/context through the SMS Gateway application.
Setting up EWARS in a box in offline, remote inaccessible environments

7.1 Using the EWARS Stand-alone app

The EWARS Stand-alone app facilitates mobile reporting in environments that are offline or lack access to reliable internet connections.

This app is set up on a dedicated machine (such as a laptop) with a Windows operating system, ideally one situated at a central surveillance office of the concerned area.

EWARS Stand-alone uses a similar interface to EWARS Web but is also equipped with additional data collection and synchronization features.

Reporting users will need to visit the surveillance office when they want to submit data. The reports will be submitted to EWARS Stand-alone over a local hotspot that is created for the purpose.
7.2 Installation of EWARS Mobile app

**Technical requirements:**

- Processor: 2.0 + GHz processor.
- RAM: 8 GB or above.
- Available Hard Disk Space: 40 GB or above.
- Operating System: Windows 8 32-bit/64-bit or above.
- 3G/4G is recommended for smooth running.

**Step 1:** Download the EWARS Stand-alone app by going to: [https://ewars.ws/static/apps/ewars_setup.exe](https://ewars.ws/static/apps/ewars_setup.exe)

**Step 2:** Install the EWARS Stand-alone app:

Double click on the downloaded file > Click on ‘More info’ > Click on ‘Run anyway’, and the app will start the installation.

This app should be installed on a dedicated machine placed in the surveillance office which will act as the receiver for data submitted from EWARS Mobile reporting users by means of a hotspot.
7.3 Submitting a report to Global EWARS through Stand-alone: Step 1

The queued reports in your EWARS Mobile app are shared with the EWARS Stand-alone by QR code sharing. Later, EWARS Stand-alone will submit the reports to Global EWARS by performing a sync.

**Step 1:** Fill and submit the form

1. Under **Forms** Tap on form
2. Tap on **Create New** > Fill in the form details
3. Tap on **icon** > Tap on **SUBMIT** , if there is no internet connection, the form will be added to the queued records
7.3 Submitting a report to Global EWARS through Stand-alone: Step 2

Perform the following step on EWARS Stand-alone.

**Step 2:** Receiving reports on the EWARS stand-alone by the surveillance officer.

1. Click on the **EWARS icon**

2. Click on the **Receive reports** icon. The QR code reader/scanner starts on EWARS stand-alone.
7.3 Submitting a report to Global EWARS through Stand-alone: Step 3

Perform the following step on EWARS Mobile.

The queued reports in your EWARS Mobile app are shared with the EWARS Stand-alone by QR code sharing. Later, EWARS Stand-alone will submit the reports to Global EWARS by performing a sync.

**Step 3:** Sending reports by the reporting user

1. Tap on EWARS Mobile icon
2. Tap on the ‘Sync’ icon
3. Tap on LOCAL EWARS
4. Tap on None of the above (Go to QR display mode)
5. A screen showing ‘Creating hotspot’ will appear and generate a QR code.

The QR code is generated in EWARS Mobile and needs to be scanned using a camera available on the machine on which EWARS Stand-alone is installed.
7.3 Submitting a report to Global EWARS through Stand-alone: Step 4

Perform the following step on EWARS Stand-alone.

**Step 4: Scanning the QR code on EWARS Stand-alone**

1. Hold the smartphone in a way that the QR code is clearly visible within the camera on your machine as depicted below.

2. Once QR code has been scanned successfully, the confirmation notification will appear on EWARS Mobile.

All the collected reporting data will be available in the EWARS Stand-alone.
Submit the queued reports in offline mode through QR code sharing with EWARS Mobile. Later, EWARS Mobile will submit the reports to Global EWARS by performing a sync.

**Step 1:** Fill and submit the form

1. Under **Forms** Tap on form
2. Tap on **Create New** > Fill in the form details
3. Tap on **icon** Tap on **SUBMIT**, if there is no internet connection, the form will be added to the queued records
Mobile-to-mobile reporting to Global EWARS: Step 2

**Step 2:** Perform a sync

You can sync your data with another EWARS Mobile device using a QR code. Here the second mobile device acts as a receiver, and later submits the data to Local EWARS or Global EWARS.

Both reporting users and the sending and receiving mobile devices need to be in one location for the data transfer to happen.

**On the sender’s mobile device:**

1. Tap on the Sync icon
2. Tap on MOBILE
3. Tap on SEND REPORTS, a hotspot is created on your mobile phone and a QR code is generated.

Once the scan is successful, the sender receives a notification confirming the transfer of data.

The sender confirms and the data is transferred.
8 Mobile-to-mobile reporting to Global EWARS: Step 3

On the sender’s mobile device:

1. Tap on the Sync icon
2. Tap on MOBILE
3. Tap on RECEIVE REPORTS; your WiFi service is enabled, and a QR code scanner is opened to scan the code
4. Point the device’s camera over the QR Code so that the phone automatically scans the code.
5. Once the scan is successful, the sender gets a notification confirming the transfer of data. The sender confirms and the data is transferred. The receiver can then view the submitted report(s) in the queue.
The EWARS Country instance is a local copy of Global EWARS that will be installed on a local server. That is, the server of the Ministry of Health of the country/context.

This country/context instance is managed entirely by the local authorities without continuous support from the Super Administrator team.

Refer to the Super Administrator Guide for more information.
9.1 Setting up EWARS in a box Country instance

EWARS in a box may be installed on a local server hosted independently by the respective country/context.

Steps:

- The country need store quest the Super Administrator to setup a country instance-

- The Super Administrator will create a new EWARS Country instance and provide a server installation file-

- The country needs to install the server installation file on their local machine-

- This is only deployed on a single machine(server) and will be accessed by others through the domain name.

For more information, contact the Super Administrator.
For further information, please contact:

World Health Organization
20 Avenue Appia
CH-1211 Geneva 27
Switzerland

Email: ewars@who.int

Web: https://www.who.int/emergencies/surveillance/early-warning-alert-and-response-system-ewars

Trainings: https://openwho.org/courses/EWARS-in-a-box