SOP 6: Guide to Metabase, Monitoring, and Supervising Results

1. Introduction

The Guide to Metabase, Monitoring, and Supervising Results is an essential component of the ESPEN Collect platform's SOPs. This guide aims to provide comprehensive instructions on utilizing Metabase for effective data monitoring and supervision, ensuring data quality and facilitating informed decision-making.

Data collected through ESPEN Collect is stored in a secure database with automatic backups to prevent data loss in case of accidents or damage. The raw data sent daily by field teams requires cleaning before analysis can produce readable and understandable results, such as charts and summary tables. Since data analysis is conducted only after survey completion, it is challenging to predict results or identify trends for key indicators during the survey.

To address this, it is crucial to generate charts and tables that update automatically as data is received throughout the survey. These visualizations, presented in a dashboard format, enable the Ministry of Health to monitor field activities' progress in real-time. Dashboards facilitate easy visualization, monitoring, and utilization of relevant data in figures, ratios, and charts, linking indicators to objectives to support decision-making.

The ESPEN Collect survey support services use dashboards as a vital tool for national survey teams. This guide is designed to meet the specific needs of program managers, monitoring and evaluation officers, data managers, supervisors, and team leaders in tracking survey progress, locating survey sites, and inspecting data quality. By following this SOP, users will be equipped to effectively monitor and supervise survey results, ensuring data integrity and supporting the overall success of the ESPEN Collect platform.

2. Overview of Metabase

Metabase is an open-source business intelligence tool that simplifies data analysis and visualization. It allows users to create interactive dashboards, generate reports, and query data without needing to write code [1]. Metabase is designed to be user-friendly, making it accessible to both technical and non-technical users.

2.1. Metabase Dashboards

A Metabase dashboard is a collection of visualizations, such as charts, tables, and maps, that provide a comprehensive view of your data. Dashboards group related questions into tabs on a single page, allowing users to easily monitor and analyse data trends. You can customize dashboards by adding filter widgets, text cards, and links to other dashboards or external resources [2].

With regard to the design of the dashboards for the supported surveys, the ESPEN Collect team opted for Metabase, an easy-to-use freeware and powerful analysis tool that facilitates data-driven decision-making. The configuration of the dashboard is done by the data manager using standard templates so that for each new survey, the supervisory team does not have to learn the new content of the dashboard.

This guide explains the step-by-step process to follow from the moment the invitation to download the EPIRF is received, through to the monitoring of data quality. The guide also presents some key features of Metabase that you need to know in order to access the data.

3. Accessing Metabase Dashboard

To access the data, the National NTD Programme Manager specifies the persons authorized to access the data and their privileges (read/write or read-only) at the time of submitting the request to use ESPEN Collect services. The ESPEN Collect Data Manager sends an invitation to the specified persons using their email addresses, as shown in Figure 1.
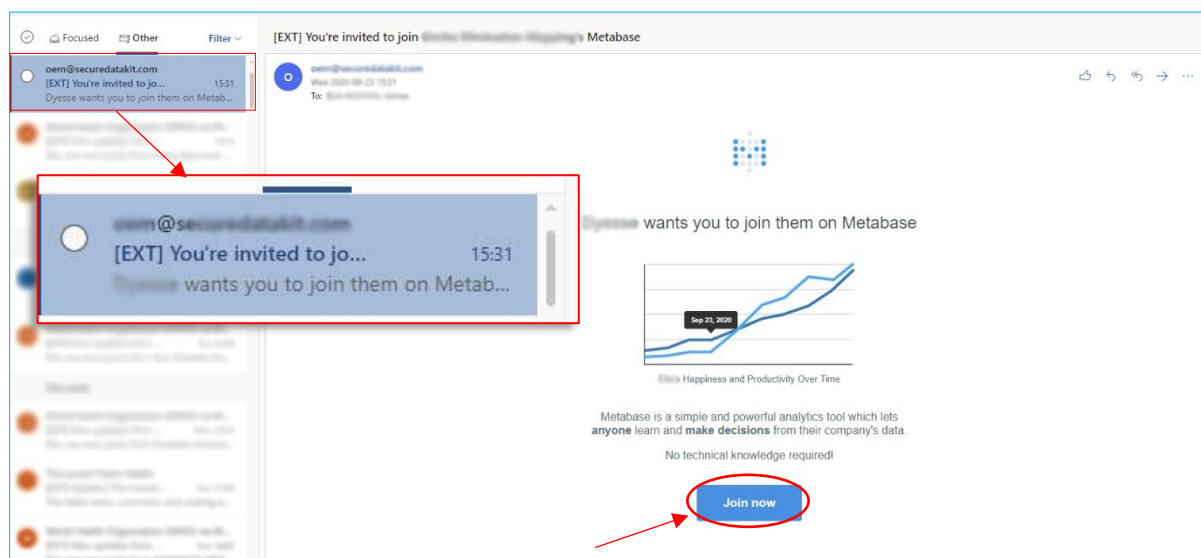

Figure 1. Invitation to Metabase

Note: A user's mailbox may classify the invitation message as spam. Therefore, if you cannot find the invitation message in your inbox, it is important to check the spam folder before contacting the ESPEN Collect Data Manager.

3.1. Initial Connection to Metabase

Once you have received the email invitation, you must accept it by clicking on the "Join now" registration button (Figure 1) and creating a new password (Figure 2). This password will be used for each new connection to Metabase. If you already have an account, click on the link or go to Metabase as shown in Figure 2: https://metabase.espen.securedatakit.com and enter your identification details to connect.
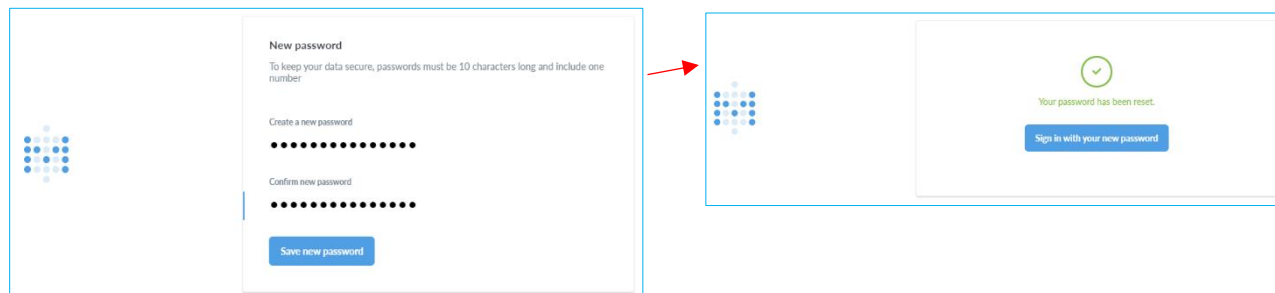
Figure 2. Creating the Password

For future connections to Metabase, navigate to the ESPEN Collect page on the ESPEN Portal below "Connect to dashboard of existing survey" and click on "Identify yourself" (Figure3). You will be directed to Metabase and requested to enter the username and the password. (Use the details created during the creation of the password, Figure 2).
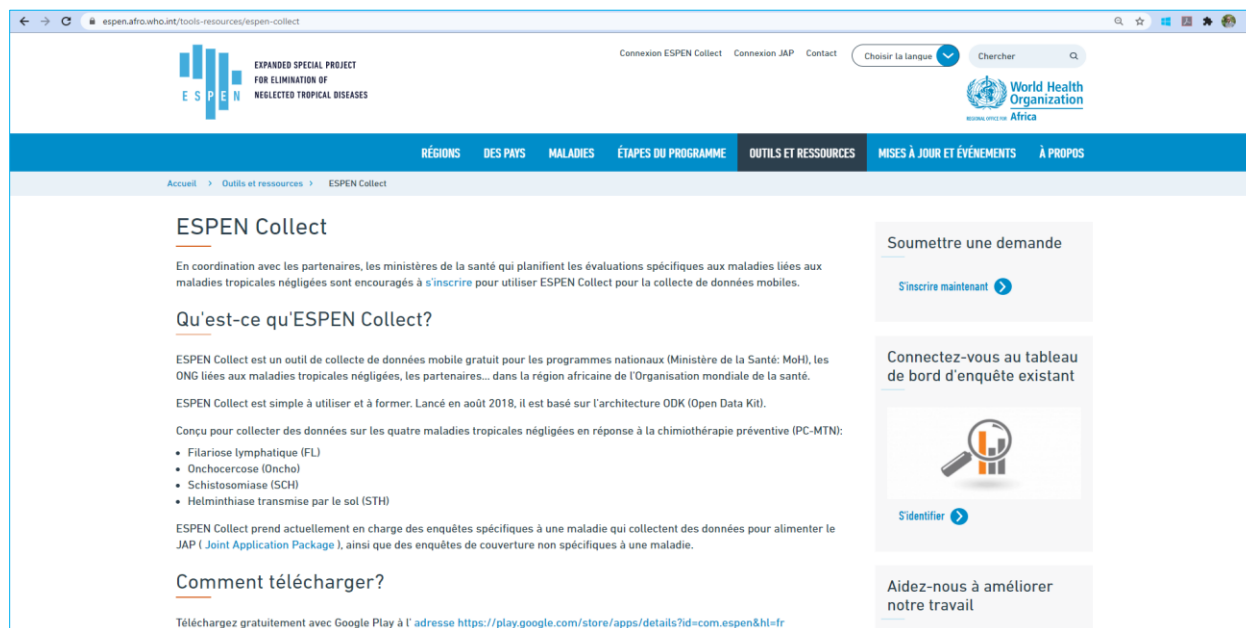

Figure 3. Access to Metabase from the ESPEN Portal

After creating the password (also for future logins), you will be automatically redirected to the Metabase homepage of your country.

Next, use the connection bar to select your collection. In Metabase, a collection is a set of items — questions, models, dashboards, and subcollections — stored together for organizational purposes. You can think of collections like folders within a file system [3].

Please select the collection you are looking for. The name of the collection corresponds to the survey you want to conduct. Once the collection is selected, you will see a list of dashboard names appear (Figure 4).
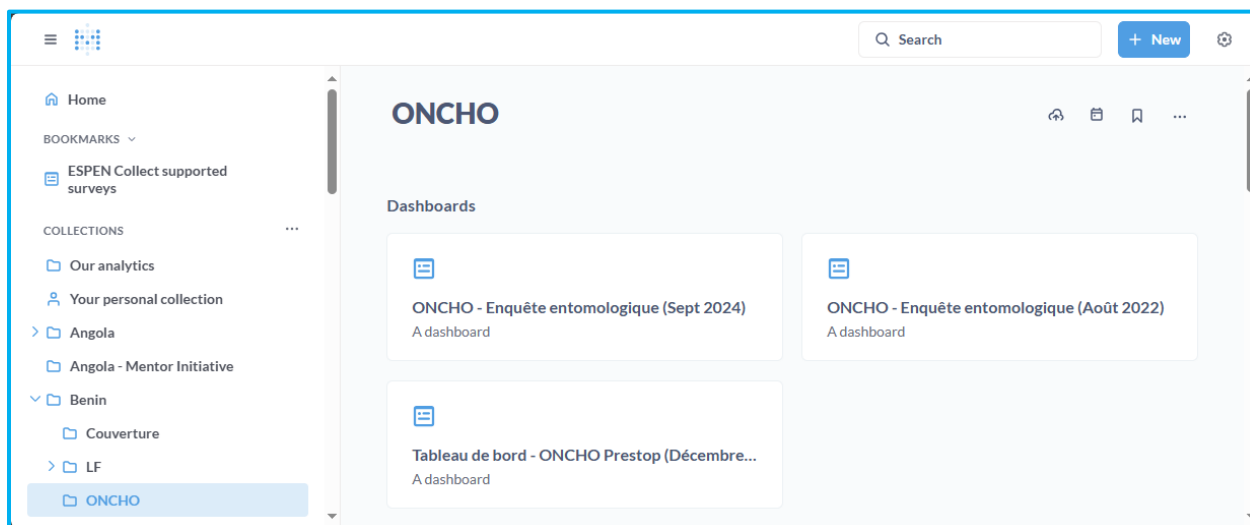

Figure 4. Metabase Home Page

4. Content of Metabase Dashboard

The Dashboard contains four large blocks, subdivided in turn into visuals corresponding to the indicators chosen for each type of survey. These visuals can therefore be the number of sites visited, participants per site, total number of participants, number/percentage of positive tests, distribution of males and females, and so on. Depending on the type of data, the visuals are displayed in the form of charts, tables, maps, text, and so on.

Below are the main blocks that form a dashboard:

4.1. Surveillance and errors:

This block contains a set of information on errors in the collected data. This part allows for monitoring of the quality of the data and provides a general idea of the elements to be followed to avoid future errors.

4.2. Reporting:

The report includes visuals with key indicators from the survey. This block also contains the formatting of the data in EPIRF. To download them, simply click on the title of the table containing the EPIRF data (to the open page containing the "EPIRF" table, click on the bottom right corner of the page to download the EPIRF). For more details on downloading the data, please refer to the page below about downloading.

4.3. Raw data

The raw data is represented in the form of tables that include the data as stored in the database.
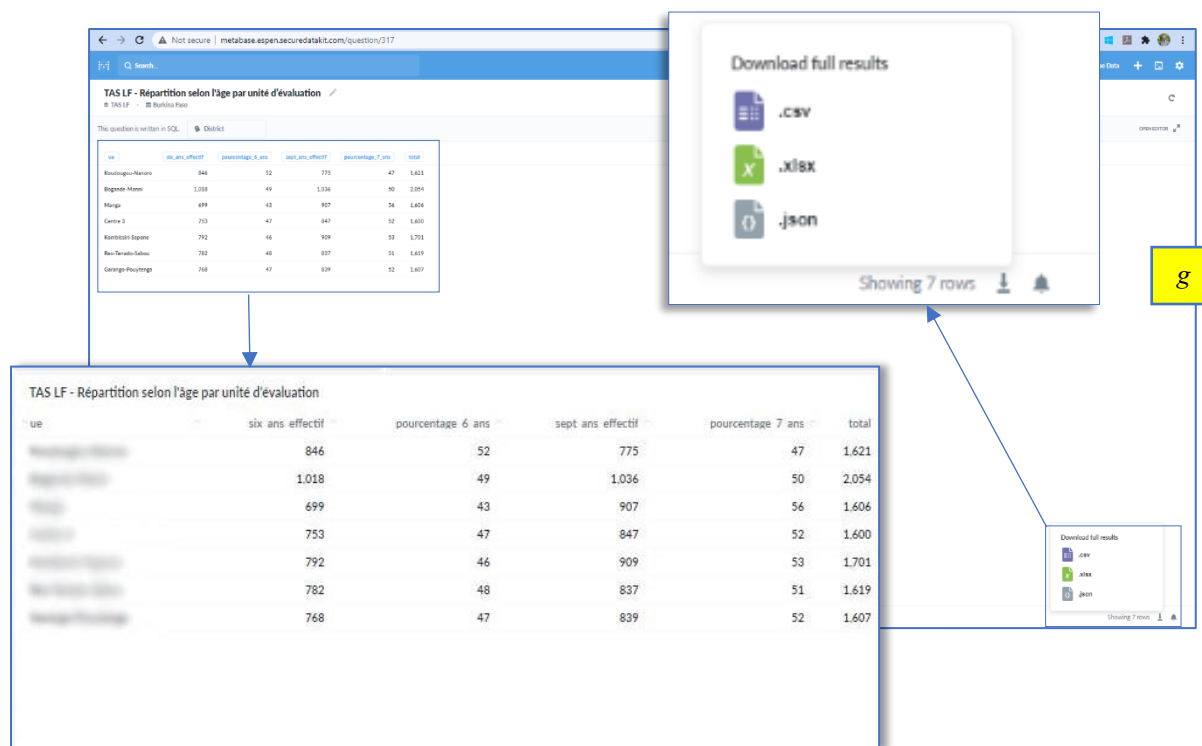
4.4. Metadata

This refers to additional information from the survey such as the start date, which persons have access to the data, the end date, the partner supporting the activity, the number of sites visited, and so on.

4.5. Downloading data from Metabase

You can download the data directly from the dashboard. Below are the steps for downloading the data set using a Metabase dashboard.

- Access the dashboard and identify the data set you want to download.
- Click on the title of the indicator Figure 5 – containing the data – that you wish to download. It will redirect you to the Metabase visual (the question) containing the data set.
- Wait until Metabase loads all the required data and click on the arrows in the lower right corner of the page. This will drop down the list of available data formats.
- Click on the format you want, usually *.csv* or *.xlsx*. Wait for the download to finish and go to the download folder to get the downloaded file.

Figure 5. Indicator (containing data) for downloading

5. Helpdesk/ Troubleshooting

5.1. I have forgotten my password

Click on "I seem to have forgotten my password" on the connection page of Metabase and follow the instructions. You will receive an email containing instructions on how to reset your password.

5.2. I have reset my password, but I still cannot get connected

This problem has been encountered by some users of the old version of Metabase. If this happens again, contact the ESPEN Data Manager at espensupport@who.int for help.

References

[1] Metabase, "Metabase Documentation," [Online]. Available: https://www.metabase.com/docs/latest/index.html. [Accessed 7 February 2025].

[2] Metabase, "Introduction to Dashboards," [Online]. Available: https://www.metabase.com/docs/latest/dashboards/introduction. [Accessed 7 Ferbuary 2025].

[3] Metabase, "Metabase Collection," [Online]. Available: https://www.metabase.com/glossary/collection. [Accessed 7 February 2025].