Impact Malaria Data Hub Specifications

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2019-11-20

Contents

Welcome

This is a technical guide for the IM Data Hub, **a work currently in progress by BAO systems intended for official release in production by _____**

IM Data Hub is a warehouse for Impact Malaria indicator data. It houses all the IM indicator data for project monitoring and use. It is primarily designed with data users in mind, and so it comes with several tools specifically designed to enable monitoring and promote the use of IM data.

Today, IM Data Hub is extensively used in 11 countries in Africa, and it collects a tremendous amount of data in the following tracks;

1. case management
2. Malaria in Pregnancy
3. Seasonal Malaria Chemoprevention
4. Global Technical Leadership.

It is used by multiple partners at different levels, from donors (PMI), Implementers (PSI, Jhpiego, UCSF, e.t.c), and government ministries of health in tracking country performance.

IM Data Hub is implemented in an ST-3 plan since Nov 27th, 2018, and it supports HNQIS (1.4) compatibility.

This guide provides information and the technical specifications you need to know about Impact Malaria (IM) Data Hub. It's an all-inclusive guide and it complements other materials on the development, testing, or training in the Data Hub.

Preface

0.1 What is IM Data Hub?

Impact Maria (IM) Data Hub is a project monitoring system used to collect, analyze, and report Impact Malaria indicator data. IM Data Hub is where all the IM data lives.

It's built on DHIS2 core software, and it supports HNQIS (1.4) compatibility.

0.2 Who should read this guide?

This guide is aimed at two main audiences.

- System Administrators who are involved in the administration or the daily operation of IM Data Hub.
- Project teams & M&E staff interested to learn more about the IM Data Hub. You will find this helpful in understanding the overall system set up and how different components work together in the system.

0.3 What is covered in this guide.

The guide is divided into seven chapters.

1. Introduction - offers some background information, basic setup, and how to get started on IM Data Hub quickly.
2. Understanding IM Data Hub Components - explores the basic set up to provide an understanding of the different components and how they function.
3. Data Specification - 'builds on the understanding of IM Data Hub components and talks about the IM indicators and data reporting.
4. Metadata Specifications - dives into the data specification and the system components and talks about what lies at the bottom, the metadata.
5. Security and Access Model - Explains the security mechanisms and access model.

6. Customization & Troubleshooting - Guides the customization, troubleshooting, and how to get help on IM Data Hub.
7. Appendix -

0.4 What is not covered in this guide.

The focus of this guide is to walk you through the technical specification of the IM Data Hub. We attempt to showcase some best practices in configuring, testing, troubleshooting, reporting, monitoring, or use of data in the IM Data Hub. However, still, you need other references to master these essential skill sets.

0.5 Conventions

This guide follows the following document conventions.

Abbreviation	In Full
CR	Case Reporting
IM	Impact Malaria
SS	Supportive Supervision
TR	Training
TL	Technical Leadership
SMC	Seasonal Malaria Chemoprophylaxis
DX	Diagnosis
TX	Treatment
MIP	Malaria In Pregnancy
CS	Country Specific
RE	Reporting
PMP	Performance Management Plan

0.5.1 Data Sets

Data set: [`country ISO code`] [`program`]:

Examples;

- GH Supportive Supervision
- CD Case Reporting |Data set: [country ISO code] [Data entry form name]

0.5.2 Data Elements

DEs: [`country ISO code`] [`program abbreviation`] - [`section abbreviation`] [`DE Form name`]:

Examples;

- GH CR - DX Cases confirmed
- CD TL - DX Does this province have national malaria diagnostic supervision tools that adhere to global standards?

0.5.3 Indicators

Indicators: [`country ISO code`] [`PMP`] - [`section abbreviation`] [`Indicator name`]:

Example;

CD PMP - DX Percentage of health workers demonstrating competence in malaria microscopy

0.6 Acknowledgement

Chapter 1

Introduction

1.1 Background

Impact Maria (IM) Data Hub is a web-based project monitoring system used to collect, analyze, and report IM indicator data. IM is a five-year project by the US President's Malaria Initiative (PMI) global service to reduce malaria mortality and morbidity.

The BAO system implements it in an ST-3 plan that began on Nov 27th, 2018.

The system hosts all the IM data. Multiple partners use it at different levels from donors (PMI), implementers (PSI, Jhpiego, UCSF,.e.tc), and government ministries of health (MOH) to track project progress and country performance.

It's active in 11 countries, and collects a tremendous amount of data on;

1. Case Management
2. Malaria in pregnancy
3. Seasonal Malaria Chemoprevention
4. Global Technical Leadership.

IM Data Hub is compatible with HNQIS version 4.

1.1.1 Purpose

IM Data Hub was developed;

1. To monitor IM indicator data.
2. Provide access to IM indicator data at the country and global level.
3. Enable central/global level data management
4. Track project progress and country performance
5. Promote data use for decision making.

1.1.2 Servers

IM Data Hub is available at the following instances;

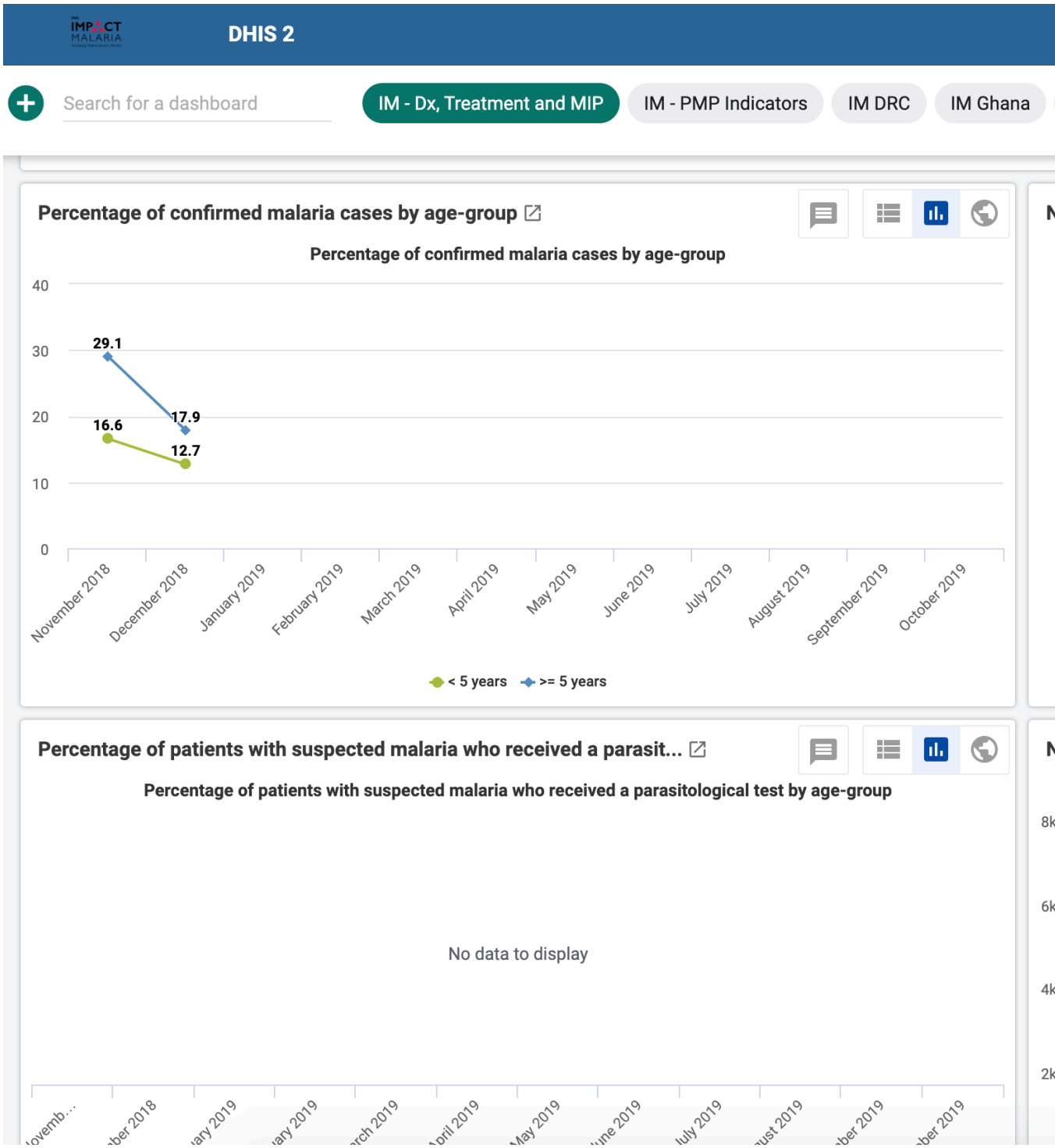
1. Development instance: Where all the developments and testing takes place. It's accessible at https://im-dev.psi-mis.org/ (version 2.30 as of Jan 9, 2019): Analytics run at midnight and 12:00 UTC (EAT -3h)
2. Production instance: Ready for use. Accessible at impactmalaria-mis.org (Version 2.30, not ready as of Aug 30, 2019):

1.2 Getting Started

The easiest way to get started on IM Data Hub is to log in at the test server at https://im-dev.psi-mis.org/ with the following credentials.

`Username :demoUser and Password : Temp1234!`

The landing page!


DHIS 2
Search for a dashboard
IM - Dx, Treatment and MIP
IM - PMP Indicators
IM DRC
IM Ghana
Percentage of confirmed malaria cases by age-group
Percentage of confirmed malaria cases by age-group
40
30
20
10
0
29.1
17.9
16.6
12.7
November 2018
December 2018
January 2019
February 2019
March 2019
April 2019
May 2019
June 2019
July 2019
August 2019
September 2019
October 2019
< 5 years
>= 5 years
Percentage of patients with suspected malaria who received a parasit...
Percentage of patients with suspected malaria who received a parasitological test by age-group
No data to display

Countries doing data entry or testings can log in with the following credentials based on their country ISO codes.

Country	username ; password
Congo	`CDdemo;Temp1234!`
Cameroon	`CMdemo;Temp1234!`
Ghana	`GHdemo;Temp1234!`
Kenya	`KEdemo;Temp1234!`
Mali	`MLdemo;Temp1234!`
Niger	`NEdemo;Temp1234!`

Chapter 2

Understanding IM Data Hub

2.1 Introduction

Now that you're already started and you've got some essential background about IM Data Hub, we are going to explore the details/components that form IM Data Hub.

As we saw in chapter **??**, IM Data Hub is not just a database; it's a project monitoring system. It's divided into components; whose primary goal is to monitor IM indicator data for action.

We'll dive deeper into the components and understand how they are set up in the Hub.

Understanding IM Data Hub components will allow you to report, analyse, and monitor IM indicators more effectively.

I'll start by showing the you reporting component, IM Data Hub uses data sets to collect indicator data. We will discuss them briefly in the next section. We will then walk through the data mining piece, and how the different outputs are pulled together on a dashboard for the project use. We'll wind up by exploring the data quality component and how the IM indicator data pass through the quality checks.

2.2 Reporting Component

Reporting is organized through the use of data sets. A data set is simply a list of data elements that are grouped for data collection. We'll talk more about data elements in the next chapter.

Figure 2.1: An icon of the data entry app

A data set has a reporting period and an organization unit. The reporting period specifies how the data is reported, i.e., monthly, or quarterly, while the organization unit determines the location "where" the information is collected.

IM Data Hub has two main types of data sets;

1. Global data sets for reporting IM indicators. You will learn more about this in section **??**
2. Country specific data set for reporting PMP indicators. You will learn more about this in section **??**

The data sets are accessible through the data entry app (Fig. **??**), and they appear as forms. They are designed to mimic the paper forms to allow ease of data entry/reporting process.

2.2.1 Global datasets

Global datasets are accessible at a global level and are used to report IM indicators on a monthly and quarterly basis.

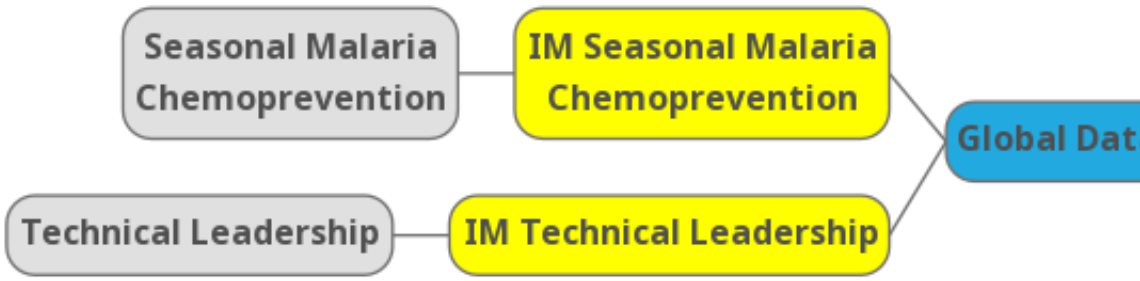
They consist of five data sets, which all begin with the `[project code]` followed by the `[data set name]` as shown below in yellow (Fig **??**)

Global datasets are divided into sections (in grey) that groups IM data elements into multiple subheadings for ease of data collection.

There are five main sections:

1. Diagnosis
2. Treatment
3. MIP
4. Technical leadership
5. Seasonal Malaria Chemoprevention

We will talk about them in chapter **??**.



datasets.bb

Figure 2.2: Global datasets

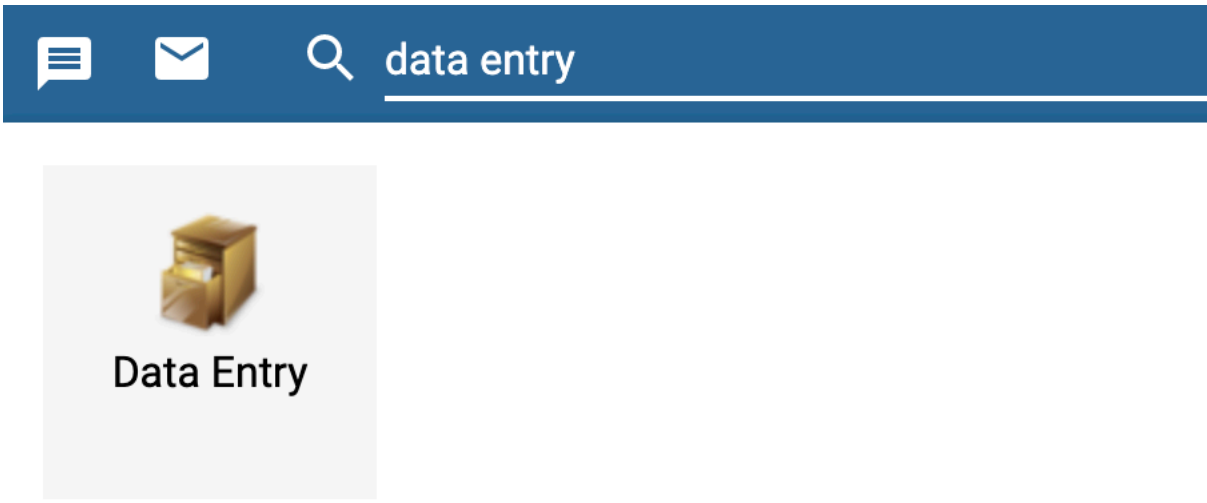
2.2.1.1 Accessing Global Datasets

1. If you haven't already logged in yet, please log in now at:

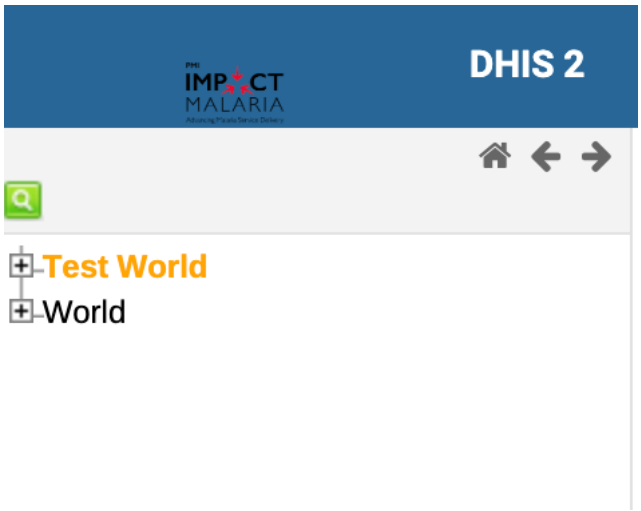
IM Data Hub demo

`Username` :**`demoUser`** and `Password` : **`Temp1234!`**

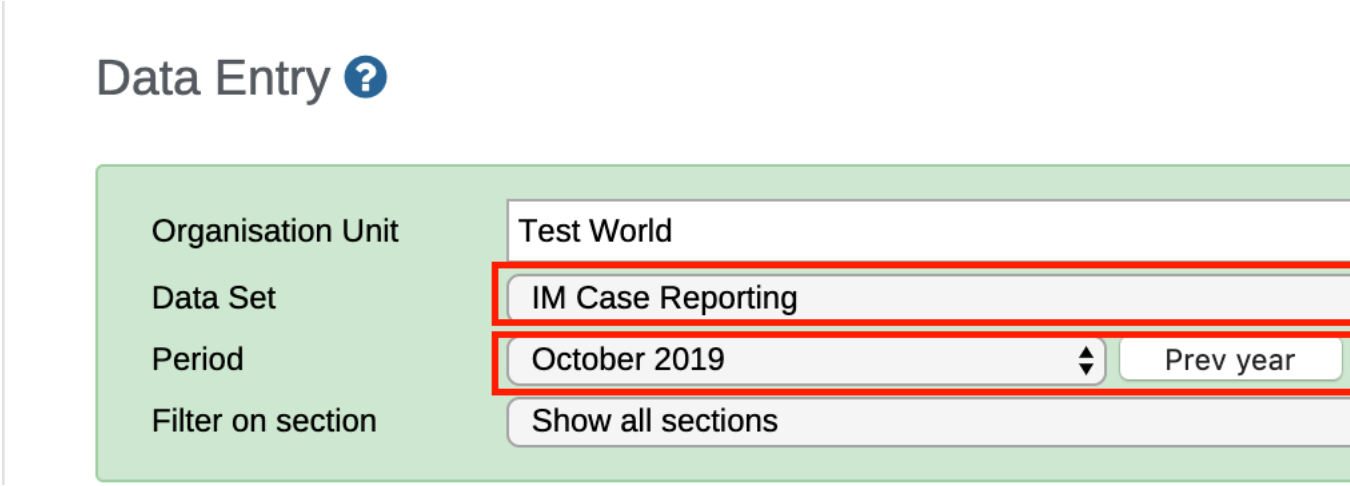
2. Search for the Data Entry App from Apps



3. Click on the test world on top left if not already selected



4. Select `IM Case Reporting` data set and the period to report; this case October 2019.



5. Wait for the data entry form to load, and check that you can see the same screen as in Fig **??** below. Congratulations! You can now start reporting.

Before completing the records, please notice the `Run validation` button at the top right. We will talk about this in section 6.

The complete button submits the records into the data hub.

2.2.2 Country Specific Datasets

Country specific datasets are mainly used to report country's performance management plan (PMP) indicators. They are accessible at the district or facility

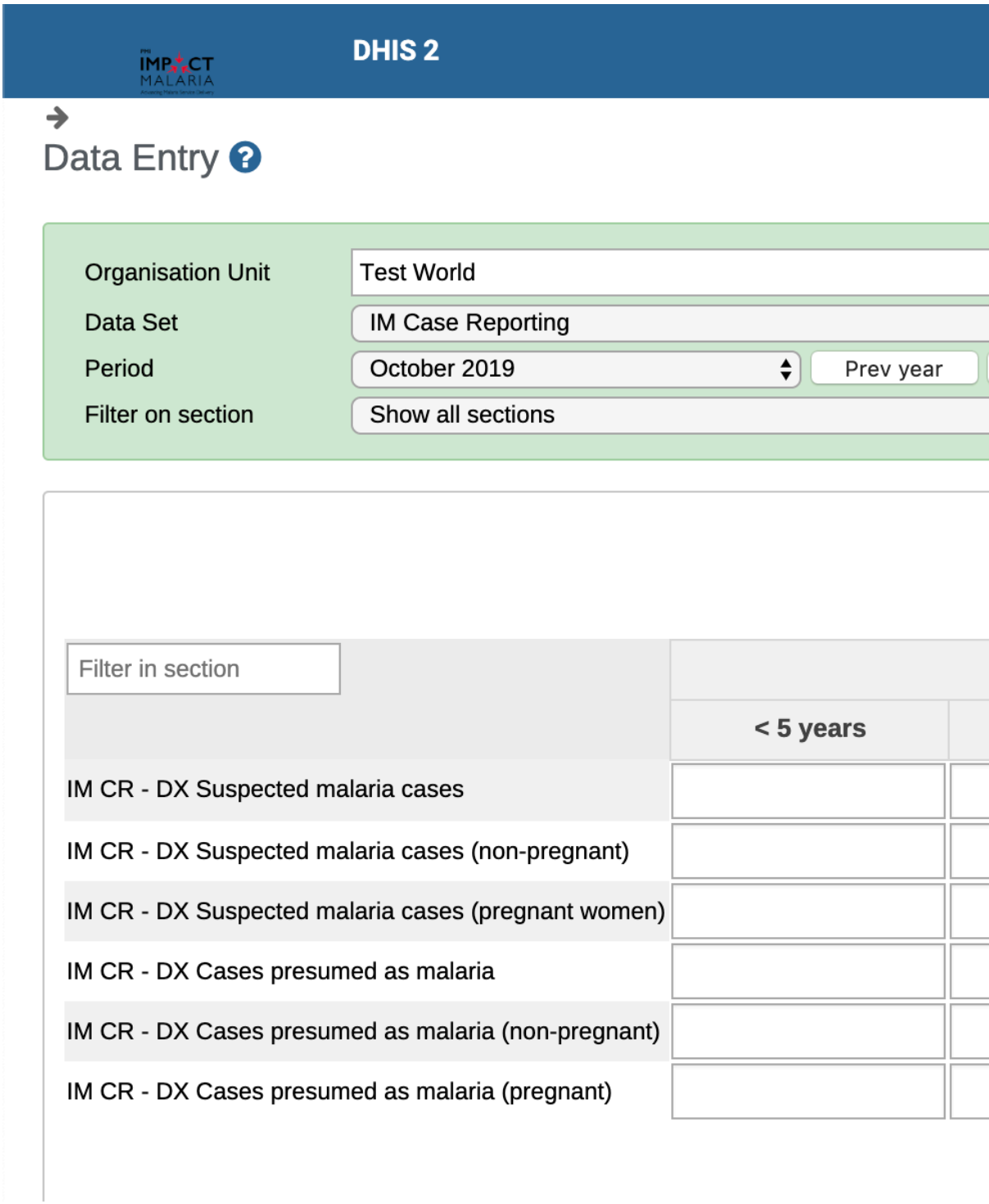


Figure 2.3: IM Case Reporting Data Entry Form

level and are reported monthly.

Similar to the global data sets, Country specific ones are organized in sections (in grey) with multiple subheadings. Fig **??**

2.2.2.1 Accessing Country Specific Datasets

1. Follow the same steps in section **??** to launch the data entry app. Ensure you are loogied in with your country demo account.
2. Click on the level to report (i.e country / district / facility) on the left bar
3. Select `[Country ISO] Case Reporting` data set and the period to report; this case October 2019.
4. Wait for the form to load. Congratulations!

For some countries like `Kenya`, `Ghana` and `Mali` the reporting process is automated through scripts. This is discussed in section.

2.3 Data Mining Component

Once the data is collected or loaded into the Data Hub, it then becomes available for data mining. Data mining is a technical process that involves the extraction and analysis of data to generate information.

The data mining component provides tools for enabling the extraction and analysis of IM indicator data.

1. Pivot Tables - extracts data in a tabular format and enables the ability to pivot IM indicators.
2. Data Visualizers - generates a variety of charts; standard line, bar charts, pie charts e.t.c
3. Maps - gives the ability to visualize IM data on a map.

We will discuss more of these tools in section **??**, section **??** and section **??**

2.3.1 Pivot Tables

If you are familiar with excel, you are probably aware of "pivoting" the ability to summarize data on table in multiple dimensions. Excel Pivot Tables inspire Pivot Table.

Pivot Table offers quick access to IM data in a tabular format. It allows the ability to 'pivot' data in several dimensions, such as indicators, data elements, periods, and organization units. The aspects can quickly appear as rows or columns, depending on the tailored view.

In the following subsection, we are going to access and tabulate a sample of IM indicator data using the Pivot Table.

datasets.bb

Figure 2.4: Country Specific Datasets