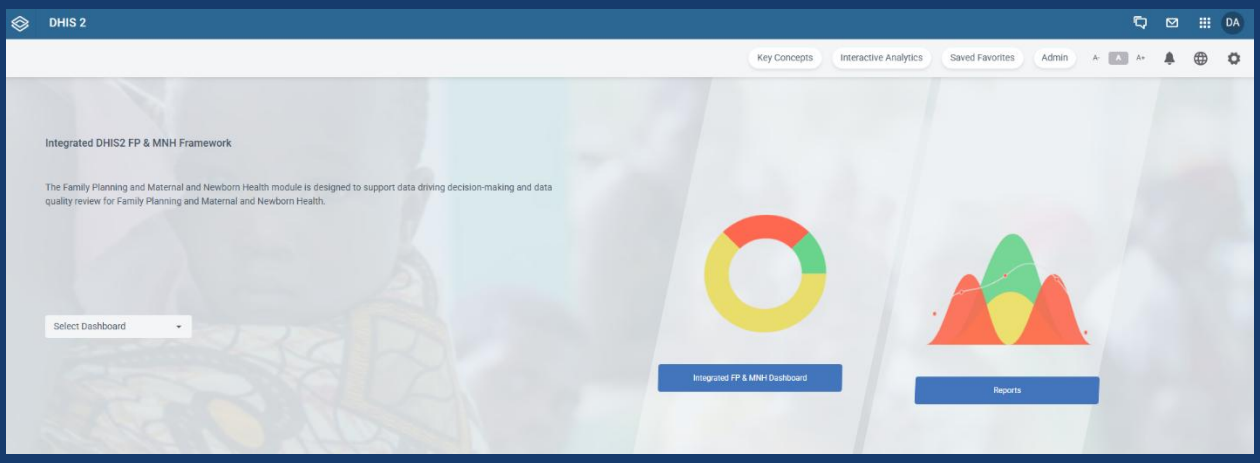
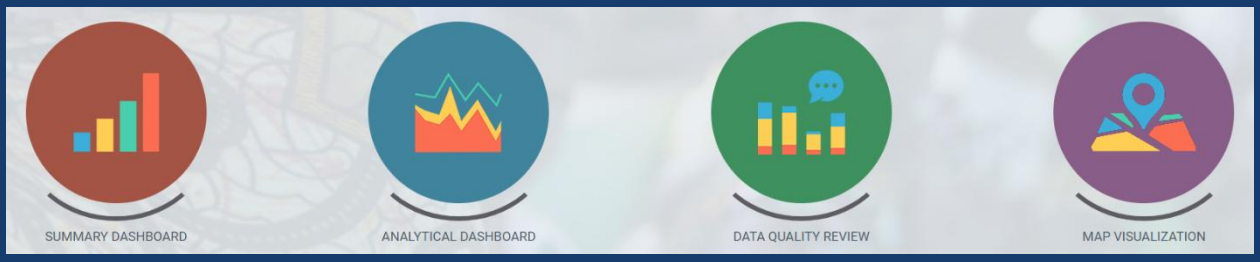




DHIS2 FP DataPro App

User's Manual

March 2025

FP DataPro was developed by
Avenir Health's Track20 Project & Dure Technologies
with support from the Bill & Melinda Gates Foundation

CONTENTS

ABBREVIATIONS

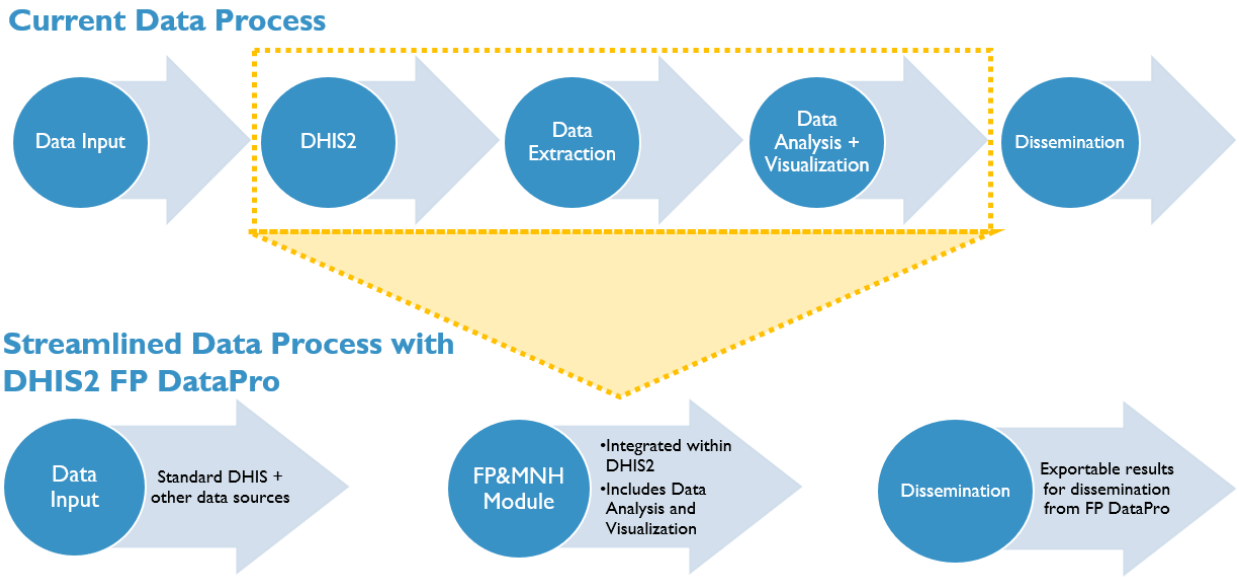
ANC	Antenatal Care
AW	All Women of Reproductive Age
Condom (m+f)	Condom (male + female)
CYP	Couple-Years of Protection
DHIS2	District Healthcare Information Software
DHS	Demographic and Health Survey
DQR	Data Quality Review
EMU	Estimated Modern Use
FP	Family Planning
FPET	Family Planning Estimation Tool
HMIS	Health Information Management System
IPT	Intermittent Preventive Treatment
IUD	Intra Uterine Device
LAPM	Long-Acting and Permanent Methods
LLITN	Long-lasting Insecticide Treated Net
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Surveys
MCPR	Modern Contraceptive Prevalence Rate
MNH	Maternal and Newborn Health
MWRA	Married Women of Reproductive Age
NGO	Non-Governmental Organization
PNC	Prenatal Care
PPFP	Postpartum Family Planning
SS	Service Statistics
STM	Short term Method
TWG	Technical Working Group
UNPD	United Nations Population Division
WRA	Women of Reproductive Age

PART 1. ABOUT FP DATAPRO

1.1 WHAT IS FP DATAPRO?

FP DataPro is the first DHIS2 app to be developed for family planning (FP). Originally developed with a focus on FP data, the app has been expanded to also support Maternal and Newborn Health (MNH) and Child Health programming in recognition of the interplay between these types of services and programs. FP DataPro is an engineered environment within DHIS2 to support data use for monitoring and decision-making. The app is available for download for all DHIS2 users through the **DHIS2 app hub**.

Typically, routine data is exported from DHIS2 to produce analyses and data visualizations through external systems. By integrating these analytic capabilities directly into DHIS2 through the FP DataPro App, the risk of data errors is reduced, the outputs are regularly updated, and the same complex analyses available to system users at the national level can now also be available at the subnational level. Because the analytic functions are built-in and automated, users need not be data experts to accurately monitor programs.



In addition to maximizing data already in DHIS2, FP DataPro's FP module also incorporates and automates calculation of Track20's innovative service statistics-based **Estimated Modern Use (EMU)** indicator (*see Key Concepts for more on EMU*). Also incorporated in the app are the comprehensive data quality assessment steps[1] included in the stand-alone Service Statistics to EMU (SS to EMU) Tool typically used to generate the EMU indicator.

[1] These steps are in line with WHO guidance for data quality in DHIS2, https://dhis2.org/who-dq/

The user can easily export maps and graphics, PowerPoint presentations, and reports from the app, resulting in substantial efficiencies for using service statistics data and sharing analyses. The easy production of standardized graphics and presentations ensures that the same information, in the same format, is available at multiple levels – providing lower administrative levels access to the same quality analysis and visualizations that is available at the national level. This automation frees up the time of those responsible for producing such analyses and visualizations for routine reporting, allowing them more time to spend on more detailed or ad-hoc analysis.

By housing data review, analyses, and visualization tools in one cohesive environment, FP DataPro helps Ministries get the most out of their data. All FP DataPro applications include the FP module. MNH and Child Health modules are also available and sit in the same DHIS2 environment and are organized in similar ways. Which modules are included in your system's DataPro app will depend on your administrator's decisions and health program's needs at the time of installation.

FP DataPro provides:

- high-level data display of priority indicators for decision-makers
- detailed analysis of programmatic indicators for FP, MNH and Child Health program and monitoring and evaluation (M&E) staff
- automated calculations of new FP indicator that maximizes existing data (EMU)
- tools for comprehensive data quality review to identify outliers and enable action toward improved data
- map visualizations that provide important information about geographic differences
- easy generation of automated standardized reports aligned with routine monitoring requirements
- robust administrative functionality that allows country teams to fully adapt and edit the application to meet country needs making it a self-reliant and robust analysis tool.

FP DataPro helps address the following questions and support data-driven decision making:

- Since our last survey, has our trend slowed down, stayed the same, or accelerated? And what does that mean for our programming and investments?
- Are there significant inequities in performance?
- Where (geographically) are the most efficient places for our investments in supportive supervision, in capacity building to improve performance?
- Are our service statistics of good enough quality that we can rely on their signals?
- Are our service statistics measuring what we think they are measuring? For example:
    - Was the change in volume of services (Couple-Years of Protection) from the 1st to 2nd quarter a real change or was it a data issue?
    - Which sub national levels, which facilities are driving the change?
    - Do commodities dispensed to clients correlate well with data on client visits?
    - Where are we seeing stock outs of commodities and trained providers and how does this correlate to service performance?

1.2 DATA SOURCES

Service statistics from DHIS2 are the main source of data, however additional data are pulled in from national and local surveys, scientifically reviewed studies, and Avenir Health's projection models. This allows for benchmarking of routine data against other data sources and provides additional context for decision making.

For family planning, there are four typical types of service statistics available, though all may not be available in each country.

1. **Commodities to Clients:** # of actual FP commodities that were distributed by the health-care facility/worker to an individual.
2. **Commodities to Facilities:** # of FP commodities that were delivered to a healthcare facility but may not represent the volume distributed to actual clients.
3. **FP Visits:** # of visits to health care facilities during which a contraceptive method was distributed by the health-care facility/worker to an individual.
4. **FP Users:** Actual # of women using modern contraceptives calculated by tracking more detailed information on use and discontinuation – and following individual women over time.

In some DHIS2, countries include breakdowns of family planning service statistics, such as if it is a new or returning users (though the definition of new is not consistent across countries), age group of the woman, or if the woman is recently postpartum.

Common maternal and newborn health data in DHIS2 includes antenatal care visits (often broken down by number of visit or age of the pregnant women), delivery care (including cesarian information), postnatal checkups for women and newborns, and newborn vaccinations.

Common surveys used include:

1. **Demographic and Health Surveys (DHS)**
2. **Multiple Indicator Cluster Surveys (MICS)**
3. **Other National Surveys:** Countries may design and implement their own household survey to collect data on their population needed to inform decisions and policies.

Modeled FP estimates are generated by Avenir Health's **Family Planning Estimation Tool.**

1.3 ABOUT THIS MANUAL

Because countries can customize the app to reflect their own priorities and needs, the version of FP DataPro functioning in your DHIS2 system may be organized slightly differently or feature different data types or indicators than represented in this manual. Additionally, your DataPro may not include all three health area modules (FP, MNH, Child Health). However, the guidance provided here will still provide you with a general orientation to how to navigate the application and how it functions.

This training manual takes the typical user through the basic functions of the FP DataPro app in its default configuration and provides a step-by-step walk through of each of the dashboards included in the FP, MNH, and Child Health modules.

Because country service statistics data are proprietary, we could not feature a real country in our examples for this manual. Instead, dummy data was created for a fictitious country named **Harmonia**. We created Harmonia with only 2 subnational regions to make the example charts easy to see and interpret. Your country will likely have more subnational breakdowns, and the charts will be more complex. You will also be able to drill down through more levels than we can show in Harmonia. For example, when we give an example of clicking on an outlier data point to better understand whether it is a true anomaly for a data error, we can only see down to the sub-region level. However, in your FP DataPro application, you will be able to drill down as far as your routine data go – so you may be able to go as far as to pinpoint the specific facility where the data entry error was made that is impacting a certain indicator trend.

Guidance on App Administration:

This manual is designed for routine users of FP DataPro. Additional detailed information required for IT system administrators, such as system requirements, administrative functions and customization features can be found in the **DHIS2 FP DataPro App Administrator's Manual.**

1.4 TARGET AUDIENCE

This training manual is intended for any DHIS2 user who has the authority to use FP DataPro. Typical users include personnel involved in monitoring, evaluation, and strategic decision making related to family planning, maternal, newborn, and child health programs. Users may range from national-level decision makers to subnational program and monitoring and evaluation officers.

PART 2. NAVIGATING FP DATAPRO

2.1 NAVIGATING TO FP DATAPRO WITHIN DHIS2

To access FP DataPro, you must have access to the DHIS2 system. If you are not an authorized DHIS2 user, contact your HMIS administrator to request access. Once you have your credentials, log into the DHIS2 system.

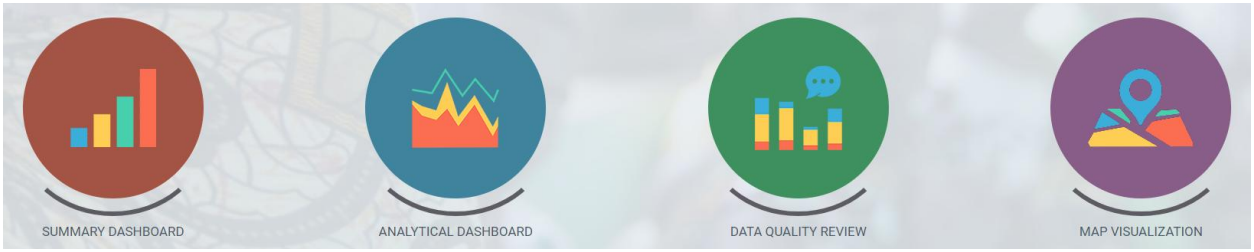
Once logged in, click on the  in the upper right corner and select FP DataPro 

. This will open the FP DataPro landing page.

2.2 GENERAL ORGANIZATION AND NAVIGATION

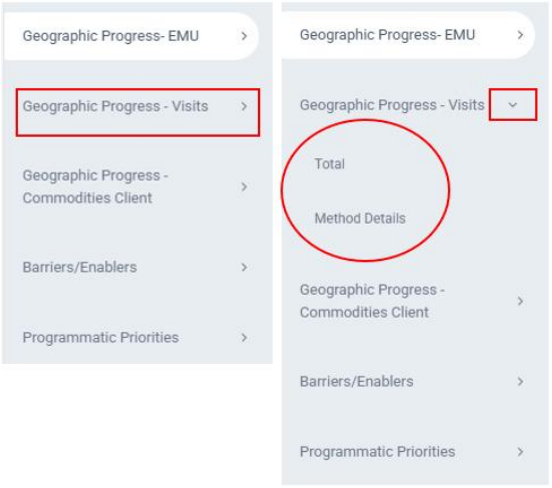
FP DataPro is an integrated application that includes separate modules for Family Planning, Maternal and Newborn Health, and Child Health. The application is customized to meet the needs of each country, so your FP DataPro may not include all three modules. While the health areas are accessed through separate dashboards, they have similar functionality and can be navigated in similar ways. This section describes organizational and navigational aspects that apply across the application and in all health area dashboards.

The FP, MNH, and Child Health Modules are similarly organized. Each feature 4 unique dashboards: Summary, Analytical, Data Quality Review, Map Visualization.

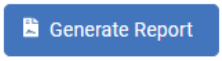


To **enter one of the dashboards**, click on the graphic. To exit a dashboard and return to the home menu of dashboards, click on the "back" arrow ← on the top left.

Moving between Tabs and sub-tabs: On each of the dashboards you will see topics listed on the far left of the page. Each of these is a Tab. Click on the right facing arrow and sub-tabs will appear. Use these to navigate through all the data included on the selected dashboard.



Additional functions are available in the top right corner of the screen: **Key Concepts, Interactive Analytics, Saved Favorites, and Admin**. Click on any of these buttons to go to that section.



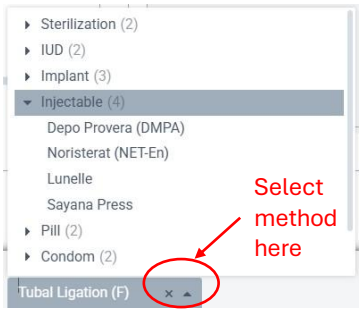
A **Generate Report** button appears on every page. Click on the button and select PDF or PPT and a downloadable file will be created that includes all the information featured on that page.

2.3 DATA & CHART OPTIONS

In the top right of the screen, you will see 4 icons to adjust font size, notification alerts, a globe icon to change language (English or French), and the gear icon to get to settings. A typical user will not need to access settings.

Data Options: At the bottom of each dashboard page there are data options that the user can change to view the featured data differently. These options differ on each page and may include one or more of the following, selected via a drop-down menu:

- Location (national or subnational regions/states)
- Period Type (monthly, quarterly, annual, fiscal year)
- Period (select a year and month)
- View key indicator variations (trend, seasonal trend, regional)
- On some pages you can select which method you would like displayed in the chart



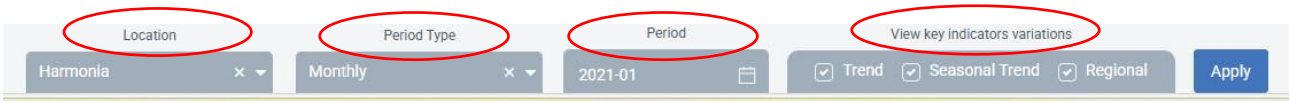
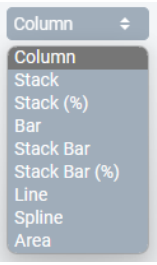


Chart options appear in the top corner of each chart.  Click on the arrow button on the right to expand to see all 7 chart options. Click on the arrow again to collapse.

The 7 icons from left to right are 

1. Chart View – use this to toggle between chart and table view of the data.
2. Table View – use this to toggle between table and chart view of the data.
3. Mail – use this to generate an email to colleagues about a chart.
4. Sorting- manual sorting of data to suit user needs.
5. Preview – expands the viewed graphic to a full page.

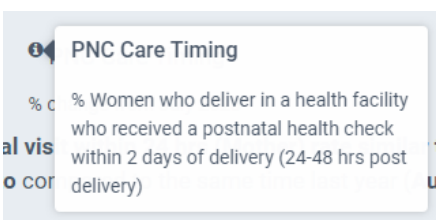
6. Comments- Users can add comments for other viewers to see to provide either their interpretation or additional information that will help other users understand the data.
7. Download/Export- allows the user to export all data into PNG, JPG, or PDF format for easy emailing and sharing.

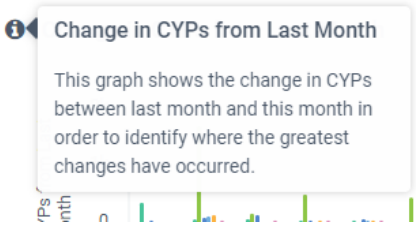


Some charts include additional options to view the data that can be selected by a drop-down menu like the one shown to the left.

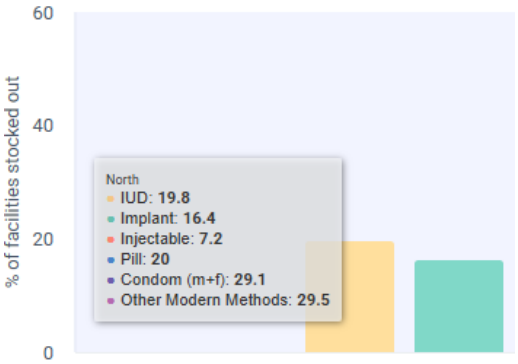
Maps have additional options to view full screen, zoom in or out, or reset the map – as seen on the right.

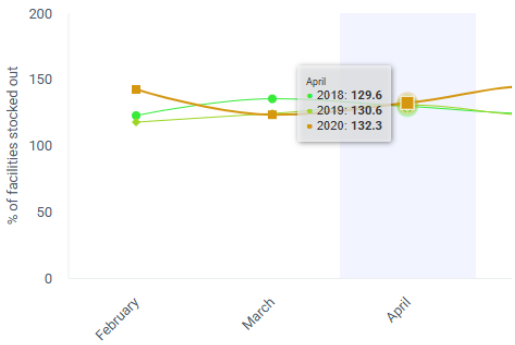
Getting more information on an indicator: Each chart has an icon in the top left corner that you can click on to see a description or definition of that indicator or chart and where relevant the numerator and denominator.





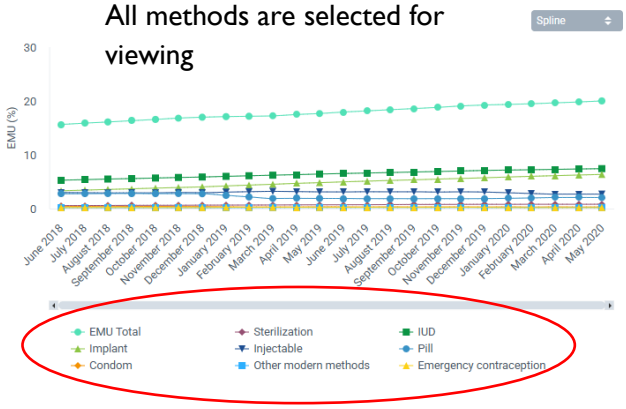
Showing data points in charts: When viewing a visualization, hover over or click the bar or line to see the exact data point.



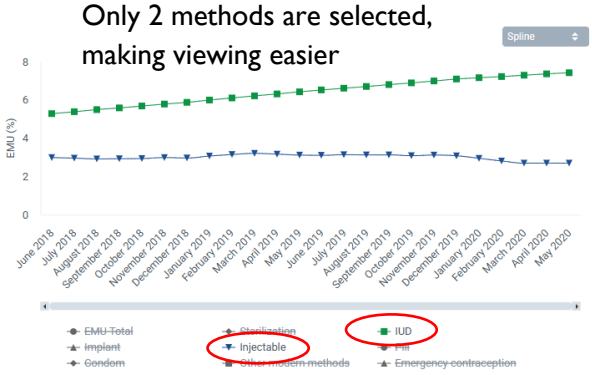


Selecting data to view in charts: For charts with a lot of data points, selecting just some to view can make visualizations cleaner.

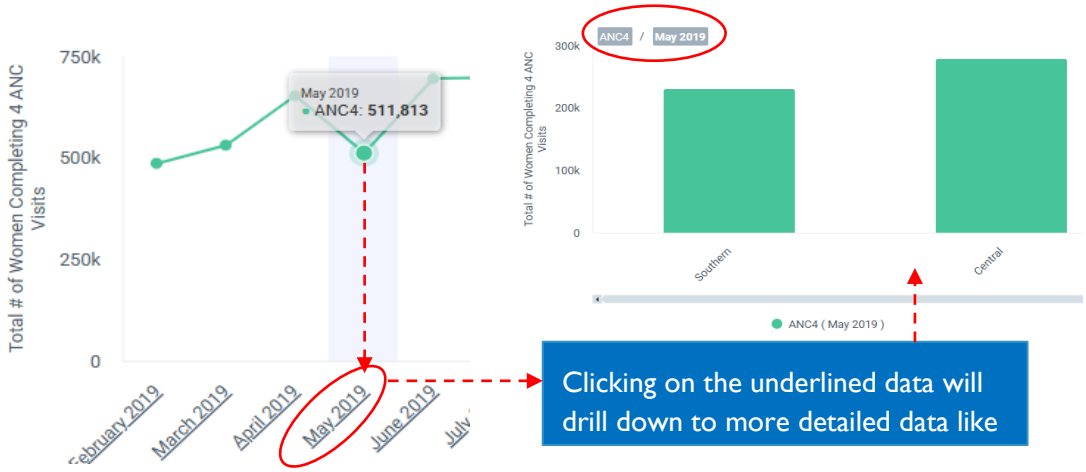
All methods are selected for viewing



Only 2 methods are selected, making viewing easier



Drilling Down: When the graph or chart you are viewing has axis labels that are underlined (as May 2019 is in the image below), users can click on specific data points to drill down further to show more complete information. Depending on your system, it may be possible to drill all the way down to identify which specific facility contributed to the data anomaly, making follow-up and potential data correction simple.



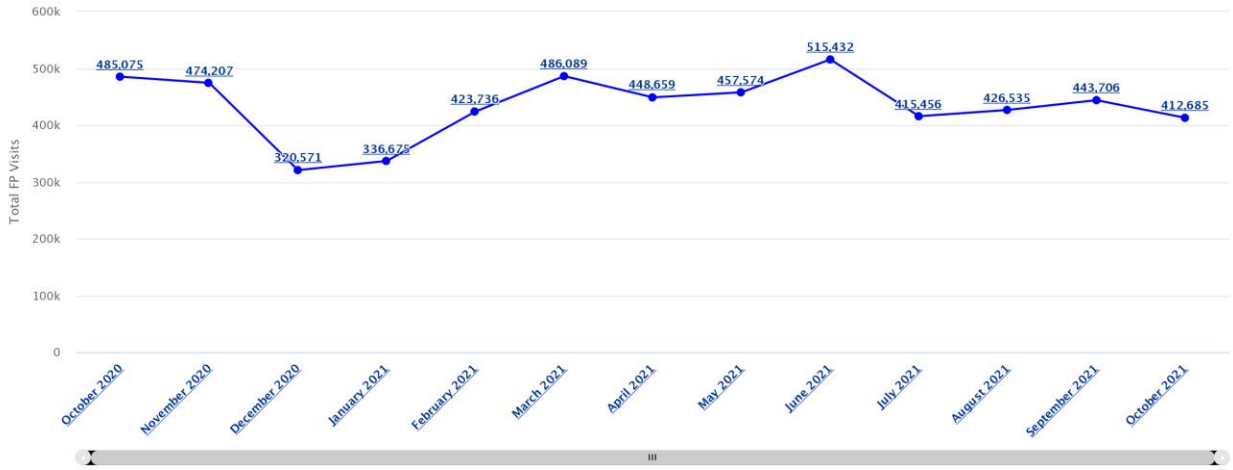
Changing the indicator presented on a map: For some maps, more than one indicator or method can be viewed. To change the view, use the drop-down list in the upper right corner.

PART 3. KEY FAMILY PLANNING, MATERNAL, NEWBORN & CHILD HEALTH CONCEPTS

This section reviews several key concepts related to FP and MNCH monitoring to ensure a common understanding of the module content.

FP VOLUMES

Where do we get our FP volume data from and what does it tell us? Volumes come from data on FP visits and commodities to clients. Volume don't tell us about coverage. Changes in the number of women of reproductive age (WRA) over time and rates of discontinuation are not reflected in volume data.



COUPLE-YEARS OF PROTECTION (CYPS)

Why do we have CYPs? Where do they come from and what do they tell us? Commodities to clients data are converted into Couple-Years of Protection (CYPs). CYP is the estimated protection provided by contraceptive methods during a one-year period, based upon the volume of all contraceptives sold or distributed free of charge to clients during that period. Short term methods (STMs) and Long-acting and Permanent Methods (LAPMs) provide different types of protection and CYP factors equalise methods. CYPs are high in the month/year of insertion.

ESTIMATED MODERN USE (EMU)

Throughout the Module you will see many common FP indicators with which you are familiar. You will also see references to Estimated Modern Use, or EMU, an indicator that may be new to you. The EMU is a service statistics-based indicator created by the Track20 project to estimate the total volume of

$$EMU = \frac{\textit{Estimated Users (from SS)}}{\textit{Population (WRA)}}$$

family planning services in years between surveys or on a quarterly or monthly basis. While the EMU is meant to approximate mCPR, it is not a measure of prevalence. Instead, it is a complementary indicator that can help countries track population-level changes in contraceptive use between surveys, and be used as a cross-country, international FP indicator.

The EMU calculation utilizes CYPs as a basis for estimating a population-based proportional indicator (a percentage versus a whole number), designed to be more comparable to mCPR, with a few adjustments (adjustments for historical use, for method continuation and when looking at the whole market adjustments for private sector not reporting into DHIS2).

EMU calculations are available currently at the national and county level in the FP DataPro App. Population Data at the sub-county and facility level are required to calculate EMUs at that level.

A comprehensive online training is available on EMU on the Track20 website.

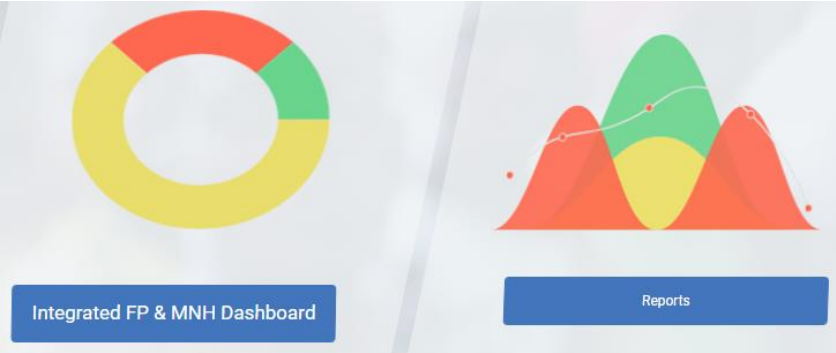
CONTINUATION RATES

A critical difference between CYP and EMU is the distribution of contraceptive use over time. CYPs apply the full impact of long acting and permanent methods (LAPMs) to the year in which the method was provided. When counted in this way, an implant, for example, would show benefit in the year it was inserted, but no impact in future years, even though it continues to provide contraceptive protection for several years into the future. A direct conversion of CYPs to FP Users would result in an overestimation of users in the year of service provision and can skew trends in users when rapid scale-up or declines in service provision occur. In the EMU calculation, a "carryover" approach is used, in which that impact is distributed across the years a method would be in use, based on the standard continuation rates used to develop the CYP factors[2].

[2] https://pubmed.ncbi.nlm.nih.gov/38589048/

PART 4. USING THE FP DATAPRO INTEGRATED LANDING PAGE

When you enter FP DataPro, you will begin on the integrated landing page. From here you can access the integrated FP & MNH (or MNCH) Dashboard where you can see select high level indicators for all included health areas and any reports that have already been created within FP DataPro.

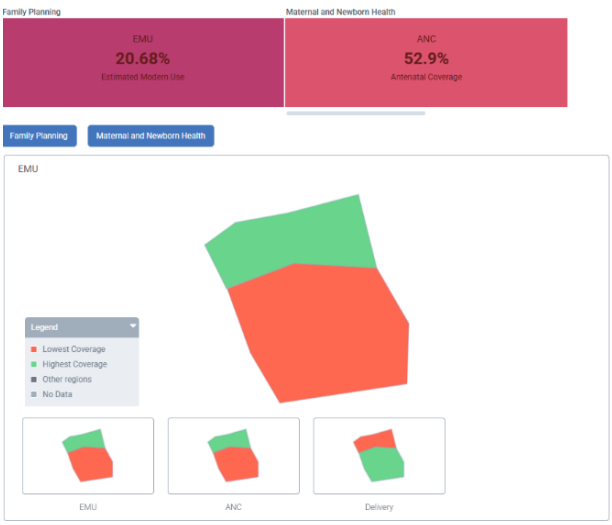


Most FP DataPro apps include FP & MNH data only. Because the Child Health module was introduced in few countries, this manual will focus on only the FP & MNH modules, but the guidance would also apply to the Child Health module.

4.1 INTEGRATED FP & MNH DASHBOARD

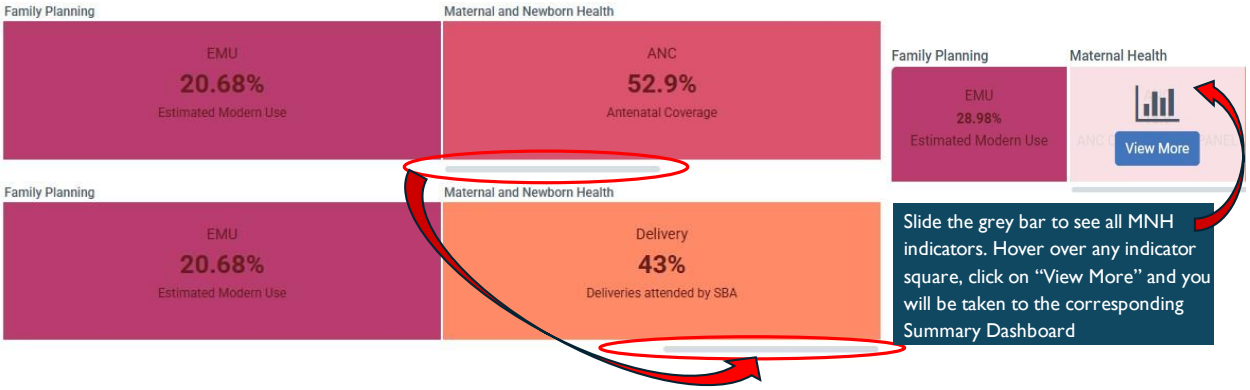
Users choose which priority indicators to display on the Summary page during app installation. The indicators and charts presented here are examples and may not reflect exactly what is in your FP DataPro application. However, these examples should be helpful in showing you how information can be displayed and how to navigate.

This section is designed to highlight priority indicators that show how the FP and MNH programs are performing. This dashboard will provide the user with a quick, high-level snapshot of the status of priority indicators for included health programs. Understanding what indicators are changing can help point to areas of strong performance as well as areas that need greater attention. The graphics provide several ways to look at coverage for both FP and MNH programming and the latest Data Quality Review (DQR) score.



COVERAGE HIGHLIGHTS

On the top left you will see the current period values for the designated priority coverage indicators for FP (EMU) and MNH (Antenatal Care (ANC) Coverage), Deliveries attended by a skilled birth attendant). More priority indicators may be available and can be viewed by sliding the gray bar to the right.

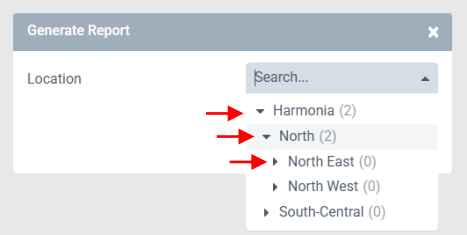


You will also see a bar chart depicting the number of maternal and neonatal deaths, and a map depicting subnational areas with the lowest and highest value for priority indicators.

DATA QUALITY REVIEW HIGHLIGHT: On the bottom right of the screen the current Data Quality Review (DQR) score for FP and MNH will appear. Hover over the data and click on "View More" to go to the DQR tab for the corresponding health area.

4.2 REPORTS

The Reports tab on the Integrated FP and MNH Dashboard is an easy place to quickly access existing reports for both FP and MNH. Use the drop-down list to select the level at which you want a report. The number of levels will depend on your health system. Then click "Generate Report" to create that report with the most current data.

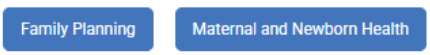


4.3 ACCESS THE INDIVIDUAL FP, MNH, OR CHILD HEALTH DASHBOARDS

You can access the individual health area dashboards from the FP DataPro Landing page or the Integrated FP & MNH Dashboard.

To access the independent FP, MNH, or Child Health dashboards from the FP DataPro Landing Page, go to the drop-down on the left side of the screen, select Family Planning or Maternal and Newborn Health and click to enter the dashboard.

To access the FP or MNH Dashboards from the Integrated FP & MNH Dashboard, hover over the indicator and click on "View More" to be taken to the corresponding dashboard. You can also click the blue dashboard buttons above the maps.



PART 5. USING THE FAMILY PLANNING DASHBOARD

Users choose which indicators to display during app installation. The indicators and charts presented here are examples and may not reflect exactly what is in your FP DataPro application. However, these examples should be helpful in showing you how information can be displayed and how to navigate.

5.1 USING THE FP SUMMARY DASHBOARD

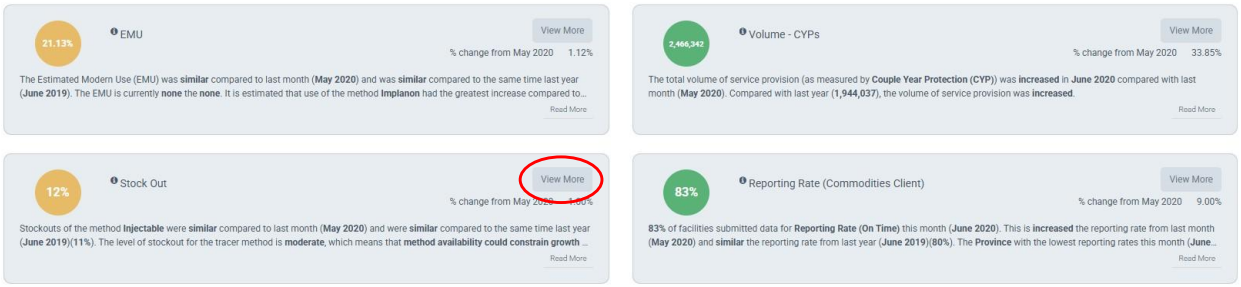
Designed with higher-level decision-makers in mind, the Summary Dashboard provides a snapshot of current (monthly) progress on key FP indicators with options to check against benchmarks and explore trends and regional variations to drive further analysis.

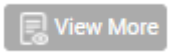
KEY INSIGHTS TAB

This dashboard opens with Key Insights, which highlights progress on 4 featured indicators which have been selected because changes in their value provide important signals and insight into programming and are priorities of the Ministry's program.

1. EMU
2. Volume - CYPs
3. Stock Out
4. Reporting Rate – Commodities to Clients

These indicators are compared to the prior month to show whether there has been positive growth (+5% or more), declines (-5% or more), or limited change (<+/-5%). Indicators are color coded to assess status at a glance. Understanding what indicators are changing can help point to areas of strong performance as well as areas that need greater attention.



The data presented on the Key Insights Tab is meant to be focused and provide only top-line information for decision makers. However, each of the quick status boxes includes a "View More" button 

in the top right which will open additional related charts that show data by region and by month, and performance against benchmark (previous periods).

For instance, if you clicked View More on the Volume- CYPs, you would see the 4 graphics to the right. Each of the featured indicators will have 3-4 additional charts available through the View More button.

ADDITIONAL TABS ON FP SUMMARY DASHBOARD

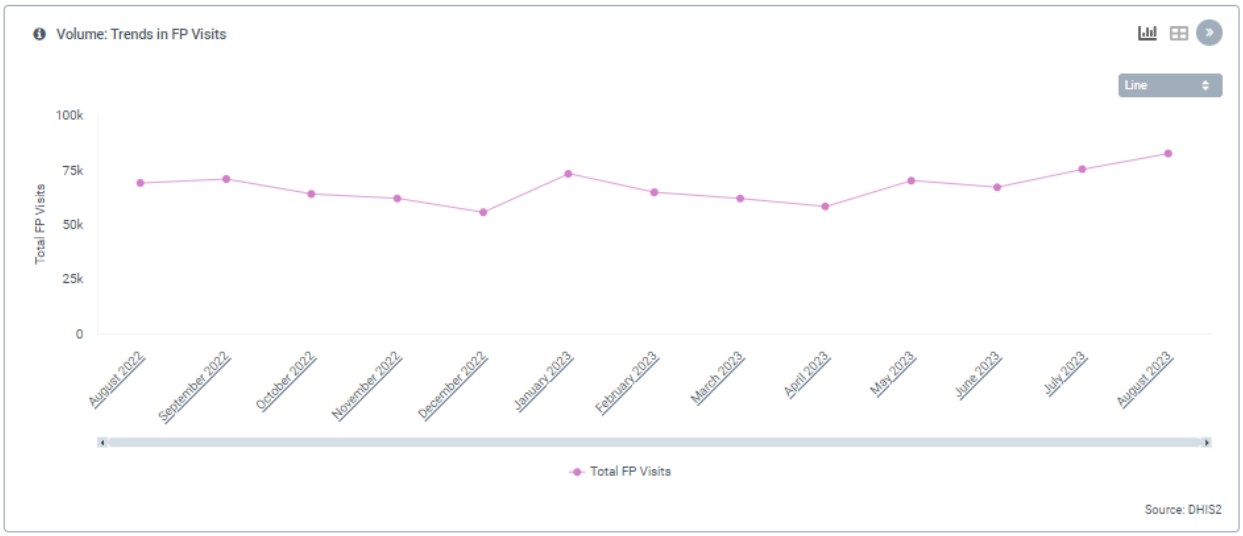
Key Insights is the first tab in the Summary Dashboard. Other tabs and sub-topics can be accessed on the far left. These include EMU, Volume, Volume – CYP by Method, Stock out, Program, and Reporting Rate.

1. **EMU:** *Estimated Modern Use (EMU) provides information about coverage and is a complementary indicator to mCPR to track changes in contraceptive use between surveys.*
2. **Volume:** *Identifies where volume is changing.*
    - FP visits
    - Commodities to Clients

3. **Volume - CYP** by method**:** *Specifically for commodities data where raw volume is not meaningful – is commodities data signaling in a similar direction and level as visits data?*
    - FP visits
    - Commodities to **Clients**
4. **Stock out:** *Identifies facilities experiencing stock outs of FP commodities, which impacts clients' access to contraceptives.*
5. **Program:** *Provides important disaggregation on FP services for common program priorities.*
    - Post-Partum Family Planning
    - FP for Adolescents and Youth
6. **Reporting Rate (Commodities to Clients):** *Signals basic data quality and where it is improving, worsening, staying the same. Contextualizes the meaning of volumes and coverage observed against global benchmarks.*

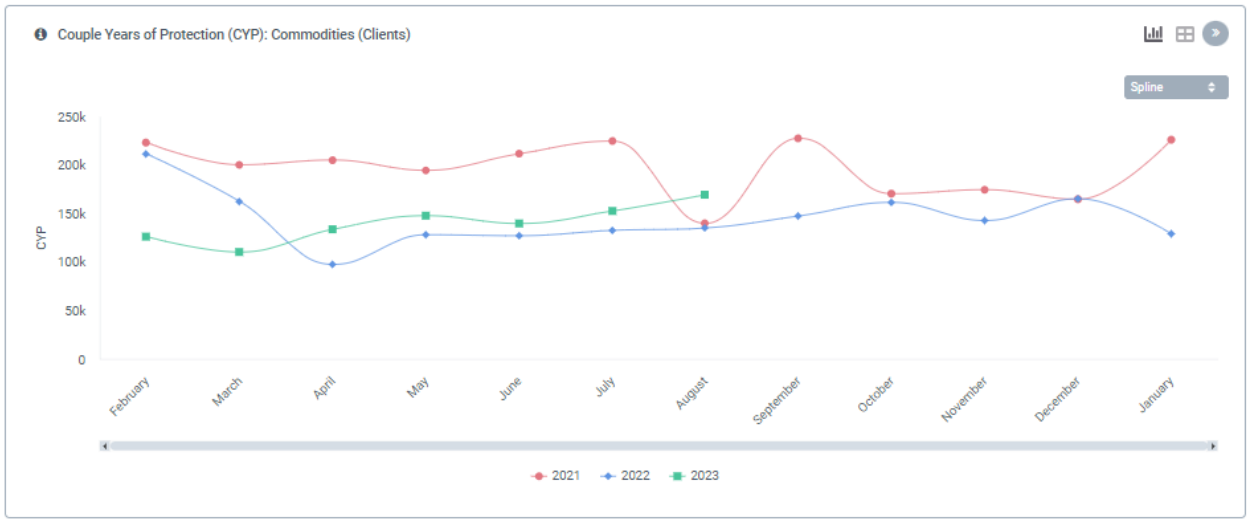
Clicking on these tabs will take you to more detailed data on that topic. Each topic will feature the following graphics:

Trend: Shows 1-year trend by month. Review these line graphs to look for patterns and trends over time. If you click on a data point on the line graph, it will display the change in that indicator from the prior month by region. This is intended to explain the source of the change. Where relevant and available, data will be shown by method. Below is a trend graph for Volume – FP Visits.



Seasonal Trend: Shows 1-year trend by month for 3 years. Review these line graphs to look for seasonal patterns. If you click on a data point on the line graph, it will display the data points for that month for all three years. Below is a Seasonal Trend graph for CYP – Commodities to Clients. The Reporting Rate tab does not include seasonal trend graphs.

A low or high data point in a single year may lead to questions about whether the data point was an error, however, if you see the same dip or rise occur in the same months every year, this may indicate a seasonal shift that can be expected and planned for.



Regional Variation: Shows regional variation for the current month. Review these graphs to understand how individual regions may be driving performance and contributing to the narrative of change or no change. Where relevant and available, data will be shown by method.

Remember that for all dashboards, options to change the data viewed are available at the bottom of the page.

5.2 USING THE FP ANALYTICAL DASHBOARD

For program staff and Monitoring and Evaluation Officers, this dashboard features detailed displays organized around programmatic themes to help answer questions about FP progress or lack-there-of. Topic-specific displays help the user draw inferences about progress related to geographic variations (volume/coverage/method), barriers and enablers (stock), programmatic priorities like Postpartum Family Planning (PPFP), and benchmarking internal data to external data (EMU monthly and annually). The Analytical dashboard is a space to take apart the high-level indicators to understand how differences in location and time are playing a role in achievements, how achievements compare with external benchmarks, the barriers to growth/change, and shifts in programmatic priorities being observed at lower levels.

The analytical Dashboard has been designed with the Program's M&E officers in mind – those who can use the information to provide context of change for subnational Health Committees, National Technical Working Groups (TWGs) and other decision-makers. At the subnational level, this module

can improve the planning and engagement with data among RH coordinators who typically are looking at high level indicators but are less engaged in the data quality and implications of coverage and benchmarking.

Analytical Dashboard includes 5 Tabs:

1. Geographic Progress – EMU (Totals, Method Detail)
2. Geographic Progress – Visits (Totals, Method Detail)
3. Geographic Progress – Commodities to Clients (Totals, Method Detail)
4. Barriers/Enablers (Stock)
5. Programmatic Priorities: Explore specific priority areas such as PPFP (Continuum, Uptake), Equity, Youth

GEOGRAPHIC PROGRESS TABS

There are 3 Geographic Progress Tabs. One focused on EMU, one focused on Visits and one focused on Commodities to Clients data. All three function the same and the map and charts have similar functions as seen in the Programmatic Priorities tab. The purpose of the geographic progress tab is to help the users compare performance on FP volume and coverage indicators by sub-national area, identify the highest- and lowest - performing areas, and explore reasons for observed differences in indicators by geographic level. There are 2 sub tabs under Geographic Progress, Totals and Method Details.

Totals

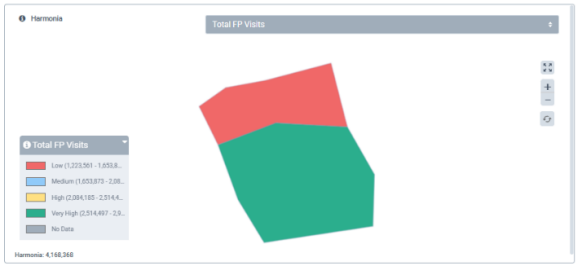
On the left side appears a map (Hover over subnational regions and data point will appear). You can compare this map to the data shown in the charts.

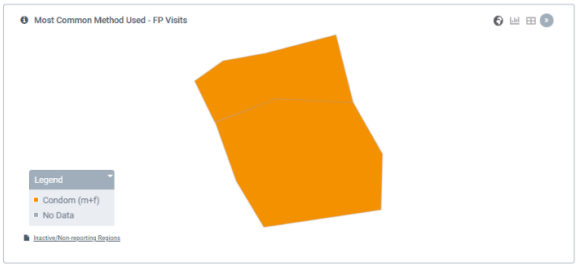
Three additional charts are available for review:

1. **Chart comparing indicator (totals) across regions** – compare current values across region (if relevant, by method)
2. **Chart with Trends in Total** – (if relevant, by method) Is current value new or representing change?
3. **Average monthly growth in total** – (if relevant, by method) How much are things changing by region? Change from month to month.

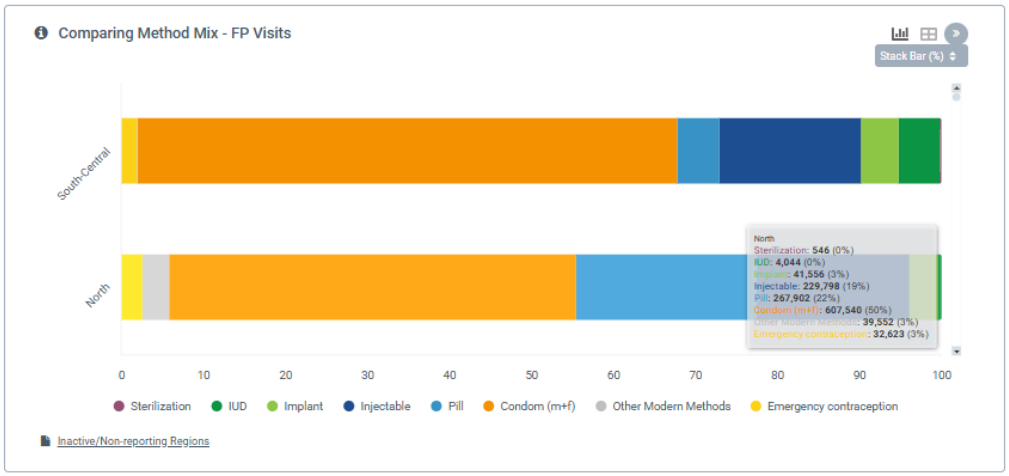
Method Details

One or two maps will appear, depending on which tab you are on. One map shows EMU or method totals by region and the other shows most common method by region, which can have implications for expectations, planning and commodities. A chart shows the most common method by region, which can have implications for expectations, planning, and commodities.

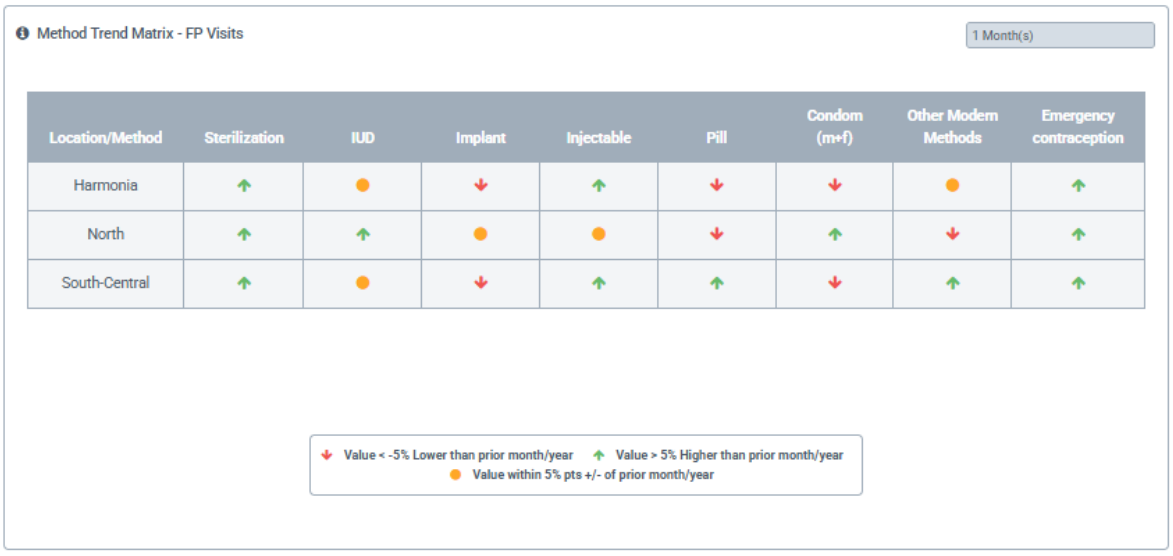




Next is a chart **Comparing method mix**- see proportion of users/CYPs by method by region.



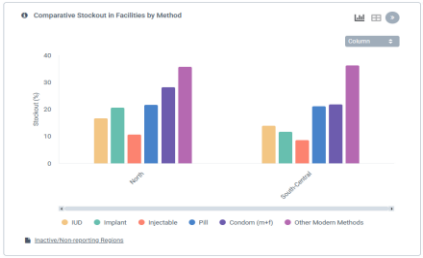
Finally, the **Method trend matrix** quickly summarize how method distribution is changing by region. Change the time to view in the upper right corner – 1, 3, 6, 12 months.



BARRIERS/ENABLERS

Stock

On the left side appears a map displaying stock outs by subregion. The charts feature comparative stock out by subregion and trends in stock outs by method.

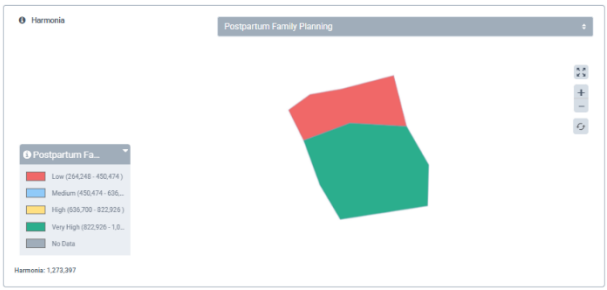


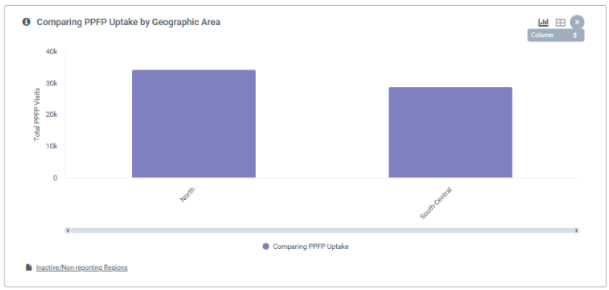
PROGRAMMATIC PRIORITIES TAB

Post-partum FP is included under programmatic priorities as a default in FP DataPro, but your application may also include topics such as **FP for adolescents and youth**. Some countries have chosen to include an additional **Equity module** that is embedded under Programmatic Priorities.

Post-Partum Family Planning (PPFP)

This tab will first show a map to easily compare subnational areas, then a comparison of PPFP uptake by geographic area. If more than one indicator is available for viewing on the map, use the drop-down in the upper right corner.





Additional charts presented for review include:

- **Trends in PPFP Uptake (month to month)**
- **PPFP Continuum (by subnational)**
- **Comparing PPFP Uptake by Timing (by subnational)**

Equity Dashboard

In most cases, your FP DataPro will not include an Equity section. However, some countries have chosen to include an additional Equity Dashboard embedded under Programmatic Priorities. **If you do not see an Equity section, skip ahead to section 5.3**. The Equity Dashboard creates an opportunity for countries to integrate discussions about inequities into regular monitoring activities.

How has equity in family planning been measured in the past?

Equity is a core foundational principle of the Family Planning (FP) 2030 Agenda. In the context of family planning, equity is most commonly thought of as implying that all people, regardless of their social, economic, demographic or geographic background, have the equal right to access and use quality FP services[3]. A number of different frameworks for conceptualizing and measuring equity in health and FP have been suggested[4][5][6]. While each of these frameworks emphasize slightly different aspects of equity and its relationship to health, most emphasize the need to understand the overlapping types of inequity that individuals may simultaneously experience – for example, a person may face challenges accessing FP because they are young, unmarried and from a poor household. Furthermore, there has also been an increasing recognition of the need to examine a broader range of health outcomes and their relationships with inequity, rather than viewing health outcomes in isolation.

Despite the emergence of these more complex frameworks for understanding the relationship between equity and health outcomes; research, programming and policy in FP has remained quite narrow. Most continue to use relatively simple characteristics, such as wealth or rural/urban residence, as key proxies for equity and almost all remain primarily focused on use of modern contraception as a key outcome[7][3]. The focus on modern contraceptive use is problematic for several reasons, mainly because this fails to consider individual or group fertility preferences and therefore implicitly assumes that equitable access to FP services would automatically be reflected in equal rates of use across all groups[7]. Focusing on a combination of other outcome measures would reflect the overlapping determinants of equity, the role of preferences in shaping the outcomes, and the agency that individuals and groups have in making FP decisions. One example of this is the Track20 Equity Tool that was developed for countries with Demographic and Health Surveys, where users could examine how demand for FP satisfied by modern methods (demand satisfied) is related to multiple forms in inequity, both individually and in combination.

Overall, previous attempts to measure family planning equity have focused on survey data. However, given the infrequent nature of survey data, there remains a need for more frequent monitoring of service changes to close gaps. Track20 created the Equity Dashboard, a feature within FP DataPro, which uses survey data to identify regions experiencing inequity and tracks changes in services statistics between surveys to monitor progress.

Track20's Equity Dashboard

Track20's Equity Dashboard seeks to overcome FP equity monitoring challenges by providing users of DHIS2 and FP DataPro with tools that use survey data to identify subnational regions where equity in FP is lagging and then use service statistics to track changes between survey waves. The tool, presented visually below, uses data from a survey (in this case the Demographic and Health Surveys) to create an

---

[3] https://pubmed.ncbi.nlm.nih.gov/38468272

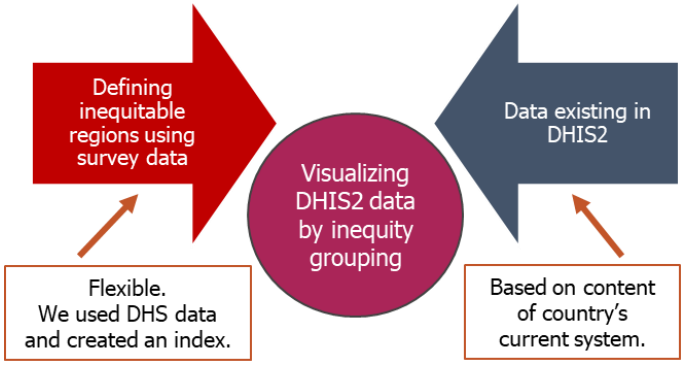
[4] https://www.fphighimpactpractices.org/guides/creating-equitable-access-to-high-quality-family-planning-information-and-services/

[5] https://www.contraceptionaccess.org/sexual-and-reproductive-health-equity

[6] https://pmc.ncbi.nlm.nih.gov/articles/PMC8477424/

[7] https://pubmed.ncbi.nlm.nih.gov/34621093

index capturing FP equity across multiple FP outcomes, which can be used to identify groups or regions that are performing well or poorly. This can then be combined with existing data in DHIS2 to track



changes over shorter periods of time. FP DataPro visually organizes and groups data to provide an up-to-date picture of the performance of the identified regions/groups.

As is the case with FP DataPro as a whole, the Equity Dashboard allows users to easily prepare visual displays such as tables, charts and graphs to show the differences between the dimensions of equity (in this case, regions). The following guide provides detailed information on the benefits and limitations of using survey and service statistics data to track changes in equity over time, as well as step-by-step instructions on how to use the Equity Dashboard to inform policy and/or programming decision-making.

What are the advantages and challenges of measuring equity through service statistics?

Service statistics provide programmers and policy makers with the most up-to-date information on FP services, allowing for immediate changes to be made if programs are not having the expected impact. In terms of equity, these statistics could provide the first indication of where programs are failing to provide equal access to quality services, guiding the allocation of resources (such as additional training for providers or reducing stock outs) or the development of new interventions aimed at specific sectors, groups or geographical locations that show less equitable provision of FP services. The ongoing monitoring of progress in increasing equity in FP provision would also provide policymakers with the opportunity to expand discussion around this topic within countries, as they would have readily available data.

However, the types of data that are usually collected via service statistics are not ideally suited to a detailed examination of equity in FP. Countries do not typically collect information on fertility preferences, the resulting demand for FP, or detailed background information on FP service users - such as marital status or wealth (age is often included, though age group breakdowns vary by country). Geography is one area of interest relevant to measuring equity that is readily available in HMIS, as most countries track services to lower administrative areas and even facilities. While detailed survey data can be combined with HMIS information in some ways, these surveys are often not conducted very frequently and the different data structures and goals of HMIS and survey data require detailed understanding of the relationships between the two types of data. As a result, service statistics and HMIS have not been widely used when exploring equity in FP in the past, limiting the ability of policy

makers and programmers to monitor and rapidly respond to ensure equity across different groups and geographies.

To monitor changes in equity with service statistics, Track20 proposes that survey data be used to create a baseline level of family planning equity by subnational regions within a country.

Using Survey Data to Anchor Equity Monitoring

The Equity Dashboard in FP DataPro is designed to be flexible and easily tailored to the specific contexts and needs of individual countries. Each country team is able to decide which survey indictor(s) to include. While this example uses data from the DHS, data could be drawn from other surveys or sources, such as family planning strategic plans, that provide data at the regional level. When a new survey or strategy is released, stakeholders can meet to update the information used to identify inequity groupings.

When considering which indicators to include, users should weigh a number of different factors, including:

- How well does the indicator capture real differences between groups in terms of FP?
- Is the indicator simple, easy to understand/measure and clearly linked to the drivers of inequity in FP (e.g. socio-economic status, fertility preferences, lack of agency in FP decision-making)?
- Is the indicator measured from everyone in the population, or does it exclude some (e.g. unmarried women, men or youth)? If it does exclude some groups, what does this imply for the overall measure of equity/inequity in FP?
- Will the indicator be measured in the same way across time (e.g. will the survey be repeated with the same items again?).

A further consideration is whether to focus on a single indicator, or to combine multiple indicators in the form of an index. Creating an index allows for a more comprehensive view of equity across FP outcomes and for a more nuanced assessment of group differences but does introduce complexity. This analysis can be done for either the drivers of equity in FP or for FP outcomes, depending on the policy or programming goals that the process is intended to inform.

This approach allows users to identify groups where the FP outcome-based equity measures are better or worse and focus on those. For example, levels of equity in terms of demand satisfied for modern methods of FP could be assessed for different regions, age groups etc., as was done for over 50 countries using the Track20 Equity Tool. Efforts should be made to select FP outcomes that are more reflective of fertility preferences and agency in FP decisions. Some examples might include:

- Having a short birth interval
- Having given birth as an adolescent (below age 20)
- Having high fertility
- Using a traditional family planning method
- Demand satisfied for family planning with modern methods

In an early application of the Equity Dashboard, Track20 worked with key stake holders to develop an index combining short birth intervals, fertility rates, and use of traditional contraceptive methods. To create the index, the highest and lowest data by region are used to rescale all indicators on a 0 to 1

scale, and invert scales if necessary to make all indicators meaningful in the same direction (with 0 being a negative outcome and 1 being a positive outcome). For example, a region with the highest share of short birth intervals would be assigned to 0, and a region with the lowest share would be assigned to 1. In combination, these indicators capture a broad range of FP behaviors that are all strongly influenced by the core determinants of equity, such as women's empowerment, lack of access to quality services and other socioeconomic factors. Combining multiple indicators allows the user to identify geographic regions that have low equity. Regions can be divided into groups based on their equity ranking – for example, this could be used to identify low, medium or high regions. The choice of where to break regions into groups is up for discussion- possible options are looking at the interquartile range or identifying natural breaks. An additional check is to examine how the index relates to outcomes of interest- such as vaccination coverage, child mortality, or contraception use.

Identifying Service Statistics to Monitor Changes Over Time

Monitoring service statistics ensures up-to-date information and allows for change to be tracked monthly or annually. Countries collect a variety of indicators in their DHIS2 that may be of interest for tracking change, though variables vary across countries and can change over time.

One measure that exists in all FP DataPro Applications is Estimated Modern Use (EMU)[8], a service statistics-based indicator created by Track20, designed to help countries monitor trends (monthly or annually) in coverage of family planning programs. FP DataPro is built to transform available FP statistics in DHIS2 into EMU and calculate growth rates and method mix. Once calculated, the EMU can be used at the national or sub-national level. In addition to EMU, countries can choose other programmatically relevant indicators such as contraception given to postpartum women or individual methods (such as implants or injectables) that are growing in use. Examining trends in indicators such as these can provide users with a snapshot of population-level changes in contraceptive use after a survey. In keeping with the user-focus of FP DataPro, users can choose which indicators to track in the Equity Dashboard, matching these to programmatic priorities as needed.

Engaging with Stakeholders

The selection of the indicators used in the Equity Dashboard, both in terms of the broader dimensions of equity and FP outcomes, should be carefully tailored to the needs and circumstances of individual countries. Care should be taken to ensure that the selected indicators are conceptually strongly linked to equity, as described above. The identification of survey data used to define equity across geographies, plus which service statistics should be tracked in the Equity Dashboard to monitor change over time, will benefit from multiple points of view. Ideally, the process of selecting indicators should be collaborative, including a variety of key stakeholders who can bring different perspectives to the discussions on both equity and FP. We suggest that this process includes Track20 monitoring and evaluation officers and/or FP DataPro administrators to help ensure effective presentation and interpretation of results as well as to assign regions to equity groups and program indicators in FP DataPro.

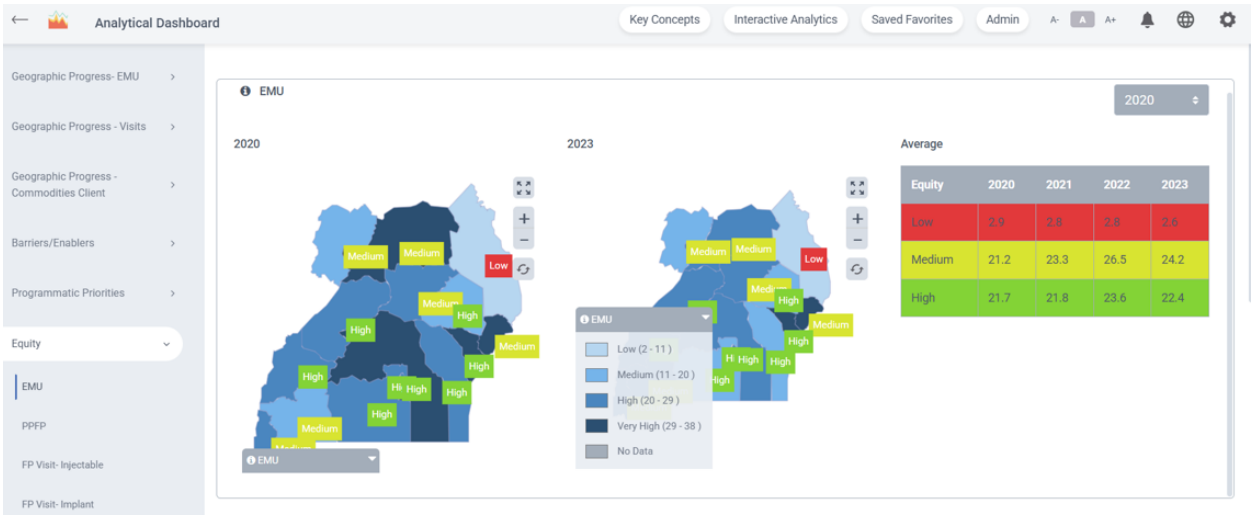
[8] https://www.track20.org/pages/track20_tools/SS_to_EMU_tool.php

Data Presented in the Equity Dashboard

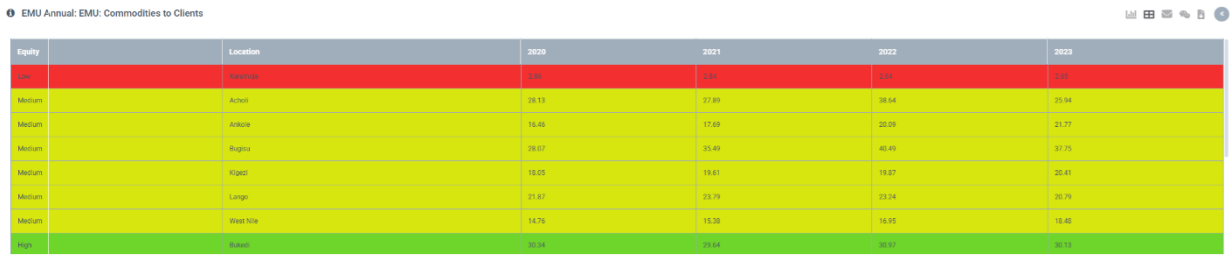
When viewing the Equity tab, you will see that you have the option of examining how a set of FP outcomes vary by equity levels. These are selected by countries to match programmatic needs – in this example, they include the EMU, PPFP, FP visits where injectables were provided and FP visits where implants were provided. This is designed to show the connections between equity levels and the FP outcomes of interest.

When an outcome is selected, the Equity tab will present the figures for the selected FP outcome (EMU, PPFP, etc.) in a number of different ways. An example of this is in the picture below, which focuses on EMU. First, the distribution of EMU rates for different geographic areas is shown using maps (in this example this is for 2020 and 2023). The labels for each region on the maps are color coded to match their equity level. This allows for a view of the geographic distribution of EMU levels while also showing how these are related to equity. To see the breaks in color for the EMU, click on the popup on the lower left-hand side of the graphic to see the EMU legend. You can change the year of data for the map on the left-hand side by selecting a different year from the dropdown menu on the right-hand side of the EMU box. The right-hand map always shows the most recently available year of data.

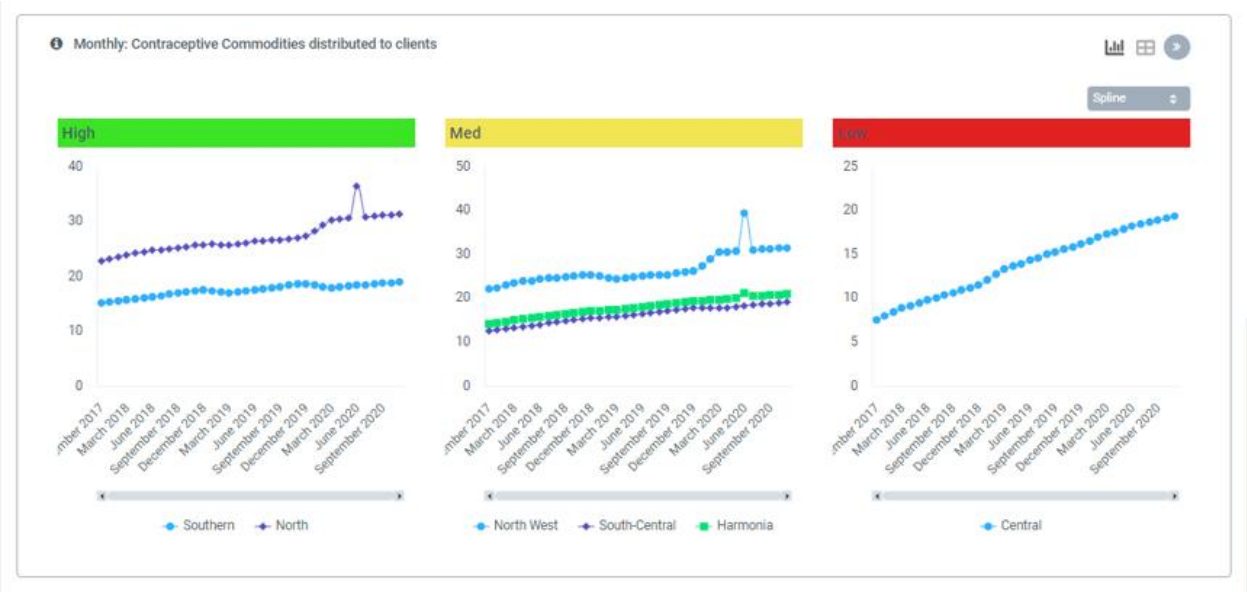
Next to the maps is a table showing the average EMU for each level of equity for all years of data.



If you would like information for each region, the table below the maps shows annual EMUs for each region, the table is organized and color coded by equity level. You can also change this table into graphs by clicking on the graph icon on the upper right-hand side of the table.



Finally, monthly data by region and equity group is available at the bottom of the page. Again, you can toggle between a table or graphic view.



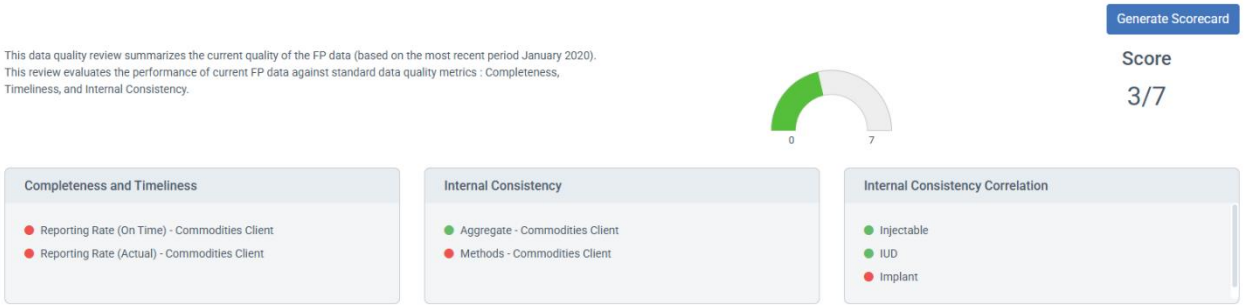
For each indicator in the Equity Dashboard, the user can view maps, annual averages, annual data, and monthly data. To navigate to another indicator, click on its name on the left-hand navigation panel.

5.3 USING THE FP DATA QUALITY REVIEW DASHBOARD

In a standard DHIS2 set-up, data quality components are separated from the data itself, but the FP DataPro App integrates data quality review into the process of using FP service statistics. This dashboard leads the user through a comprehensive review process in which unexpected data points or trend changes are flagged, and the user can provide explanations for the outlier data or actions for follow-up on investigation or correction steps. This dashboard provides a system to validate and sign-off on data quality monthly and generates a summary data quality "score" based on data completeness, timeliness, and internal consistency.

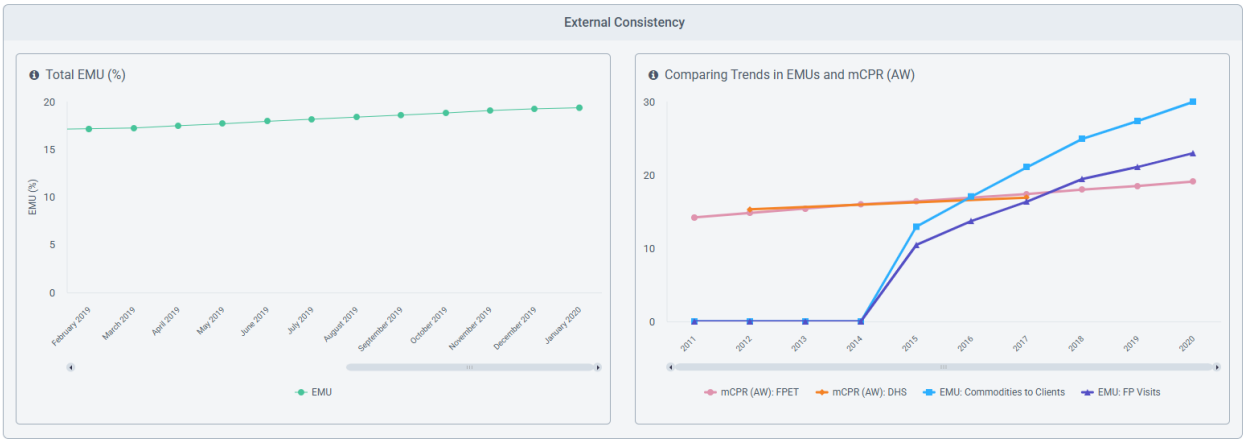
SUMMARY TAB

This data quality review summarizes the current quality of the family planning data (based on the most recent period). This review evaluates the performance of current FP data against standard data quality metrics: Completeness and Timeliness, Internal Consistency, and Internal Consistency Correlation. An **overall data quality score and color-coded status** (green, yellow, red) are shown at the top of the page.

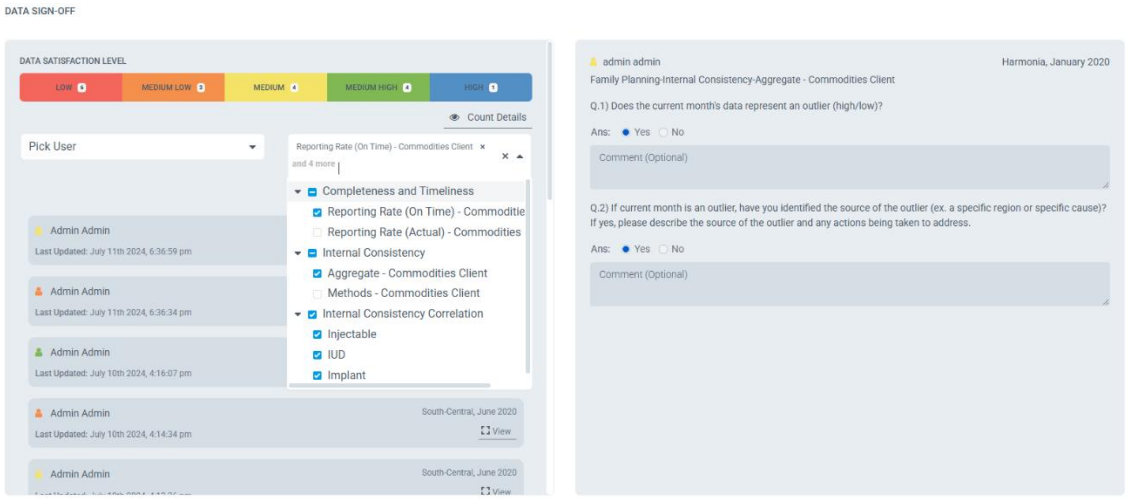


For **External Consistency**, FP data is benchmarked against surveys. The Summary page includes 2 charts related to external consistency:

1. **Total EMU monthly trend**
2. **Comparison of Trends in EMUs and mCPR (all women)**



At the bottom of the summary tab there is a **Data Sign Off section** in which assigned users can indicate their level of satisfaction with the data quality and indicate if the current month's data includes an outlier, and if so, whether they have identified the source of the outlier and what actions are being taken to address the anomaly.



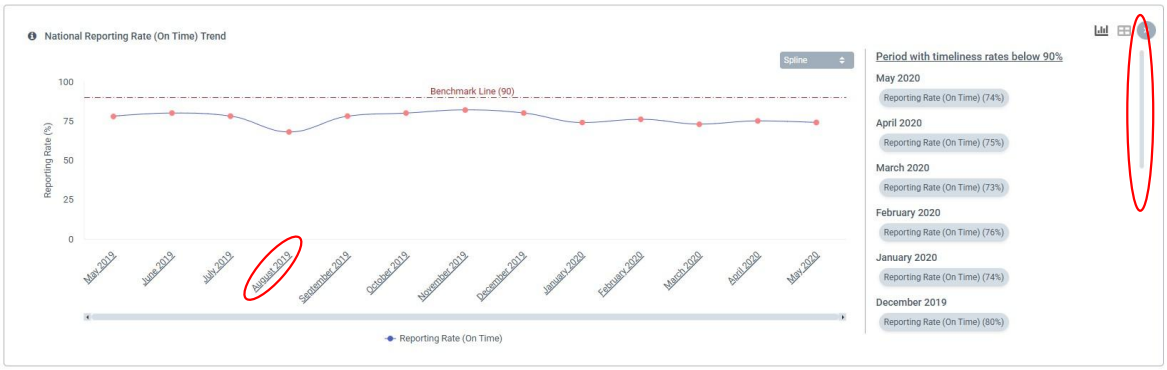
COMPLETENESS AND TIMELINESS TAB

There are 2 subtopics under Completeness and Timeliness: Reporting Rate (On time) and Reporting Rate (Actual).

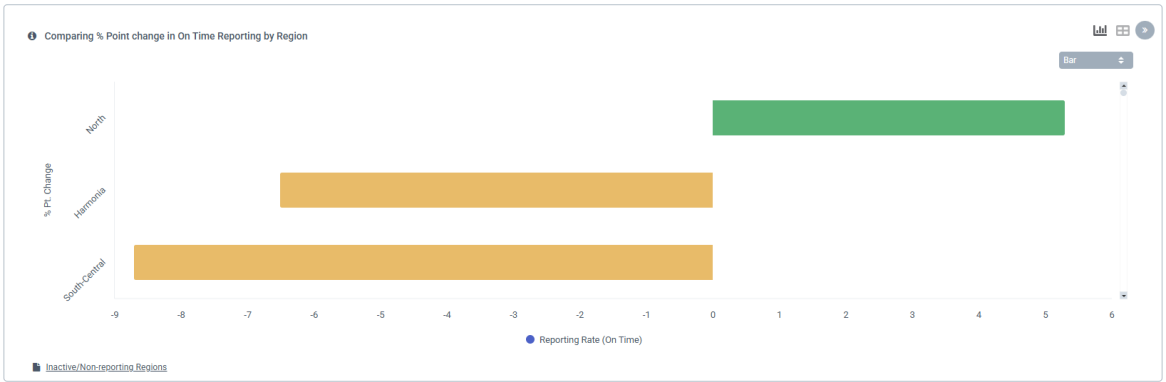
Reporting Rates (On Time)

On time reporting rates are useful for determining if your data reflects all family planning services provided at the time the reports were due. If the on-time reporting rate is low, a large portion of facilities providing services did not submit data at the time reporting was due and are not reflected in the data. Due to this omission, the data did not represent the full program, or the majority of services being provided. This discrepancy may limit the timely use and interpretation of the most recent data. Achieving and maintaining high on time reporting rates is critical to program monitoring and data use and interpretation, especially for the most recent data. There are 3 data visualizations for review under this tab.

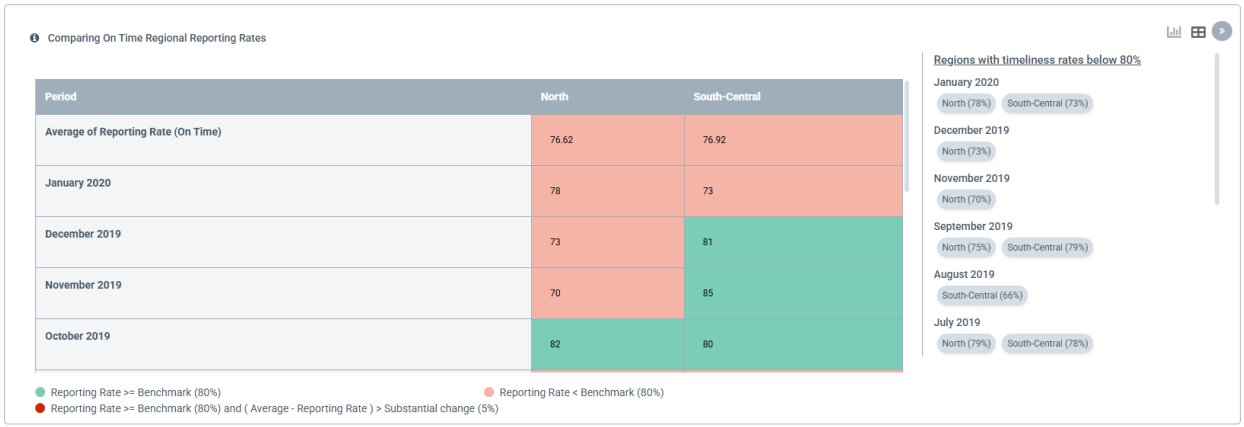
National Reporting Rate Trend by month – to the right of the graphic information appears about periods with reporting rates below 90% and periods with substantial change. Use the grey slide on the right to see all data. Click on the underlined month to see more details.



Comparing Changes in Reporting Rates by Region for a period - The reporting rates at the national level conceal the variation by county. This chart shows positive and negative changes by subregion compared to the previous month.



Comparing Regional Reporting Rates by month- to the right of the graphic information appears about regions with reporting rates below 80%.



Reporting Rate (Actual)

Reporting rates are useful for determining if your data reflects all family planning services provided. Low reporting rates mean that a large portion of facilities providing services are not reflected in the data, so the data does not represent the full program, or the majority of services being provided. This discrepancy may limit data use and interpretation. Achieving and maintaining high reporting rates is critical to program monitoring and data use and interpretation.

The same 3 visualizations available under On Time Reporting can be seen for Actual Reporting.

1. **National Reporting Rate Trend by month**
2. **Comparing Changes in Reporting Rates by Region for a period**
3. **Comparing Regional Reporting Rates by month**

INTERNAL CONSISTENCY

Internal consistency checks if your data is reliable and consistent over time. Outliers (values significantly different from the average) can indicate data errors.

Outliers are identified using standard deviations: values more than 2 standard deviations from the average of the last 24 months are considered outliers. Any value that is more than 2 standard deviations from the average of 24 months, we consider a moderate outlier either a **low** (- 2 SD below mean) or a **high** outlier (+2 SD above mean).

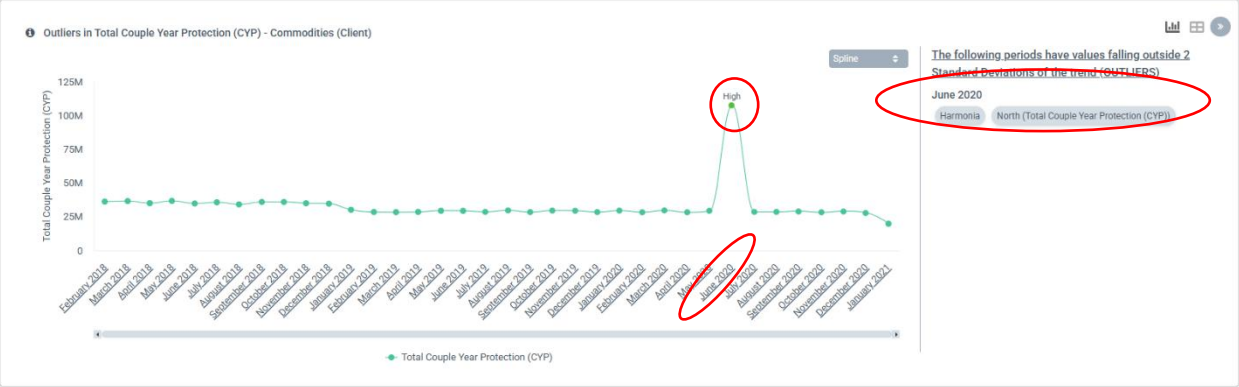
Checking trends over time for outliers allows you to answer the question: is the data reported for any month significantly different from the other months over a 24-month period? Usually, a value that is very different signals data entry errors, indicating problems with data quality, either across regions or within a specific region.

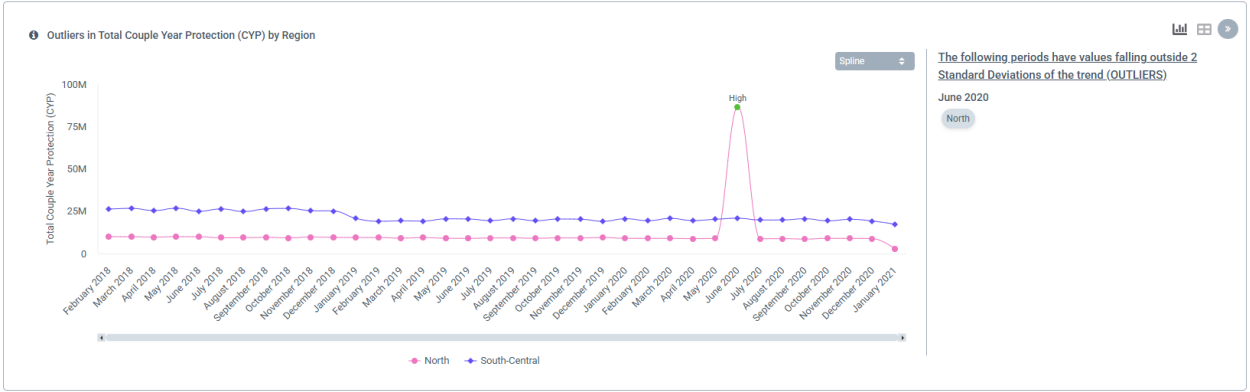
There are 2 sub tabs under Internal Consistency: Aggregate and Methods. Both use FP Visit data.

Aggregate

Two graphics are available for review:

1. **Outliers in Total CYP**: To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers). Click on a month for more detail.
2. **Outliers in Total CYP by Region**: To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers). Click on a month for more details.

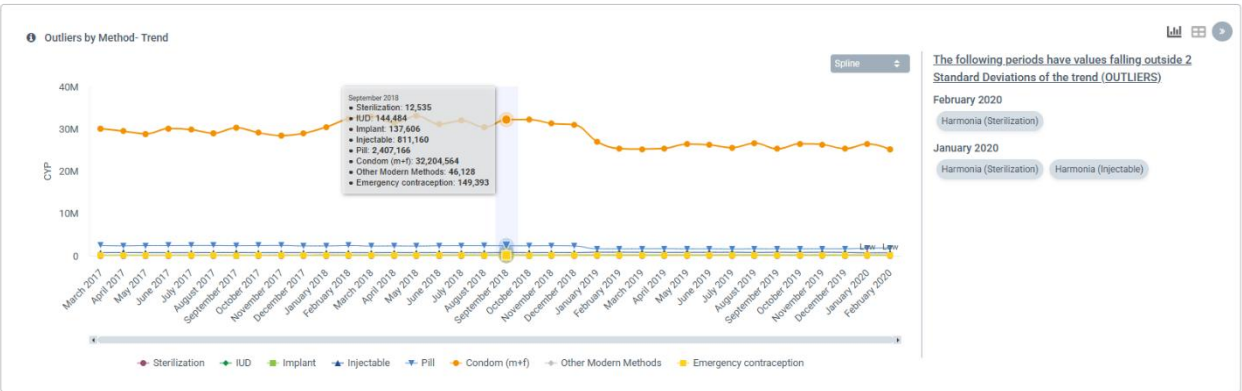


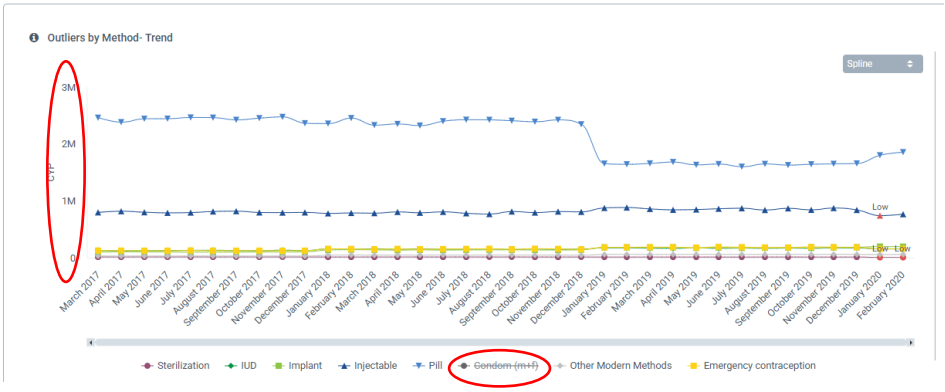


Methods

Two graphics are available for review:

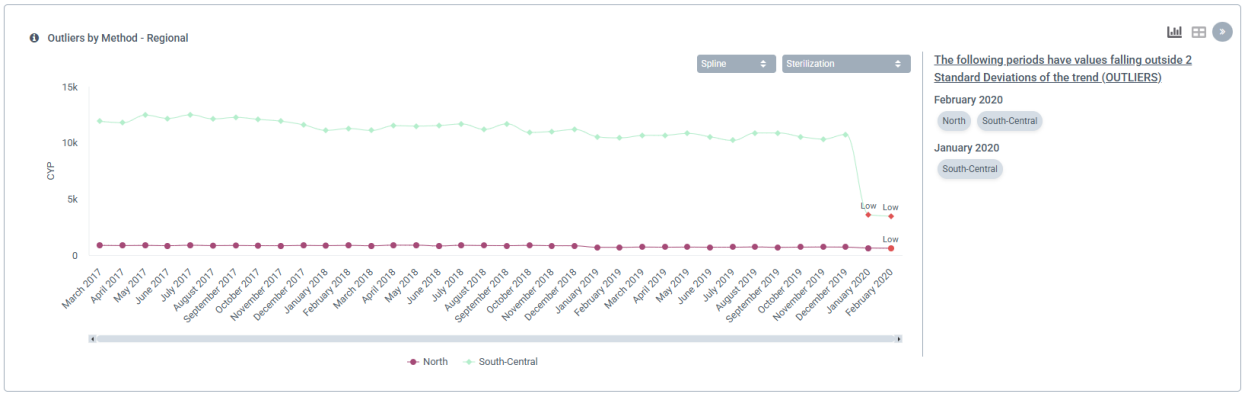
1. **Outliers by method – Trend:** To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers).





Notice that if you de-select Condoms at the bottom of the chart, data on other methods becomes easier to read because the scale for condoms is so different than that used for other methods.

2. **Outliers by Method- Regional:** All regions are shown, and to the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers).



INTERNAL CONSISTENCY- CORRELATION

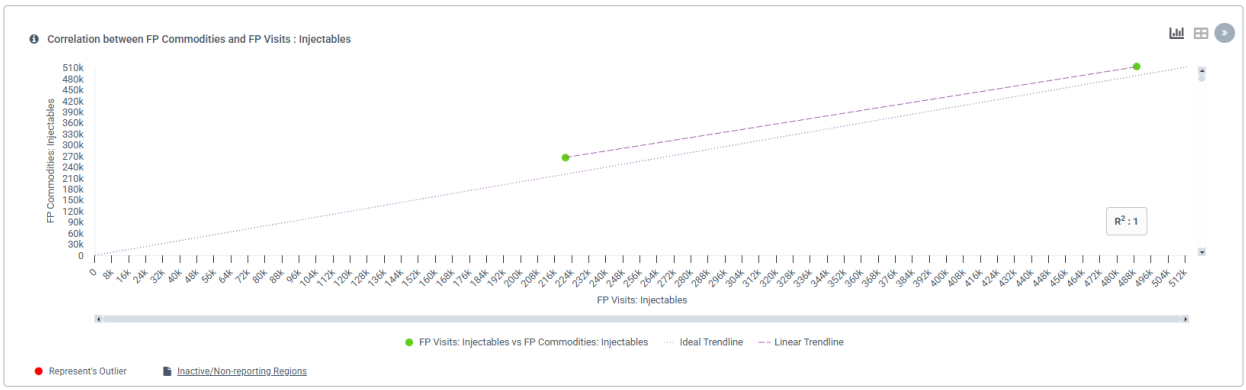
Internal consistency compares different indicators that are collecting similar information and should, therefore align, indicating a relationship between the variables. For example - Injectable commodities distributed and Injectable insertions/visits should be strongly correlated. If the data is, in fact, comparable, the correlation will equal to 1 (one). The further away from 1, in either a positive or negative direction, the less correlated the data. A lack of correlation indicates that there may be quality issues with one or both types of data. There are 3 sub tabs: Injectable, IUD, Implant.

Injectable

There are 3 graphics for review:

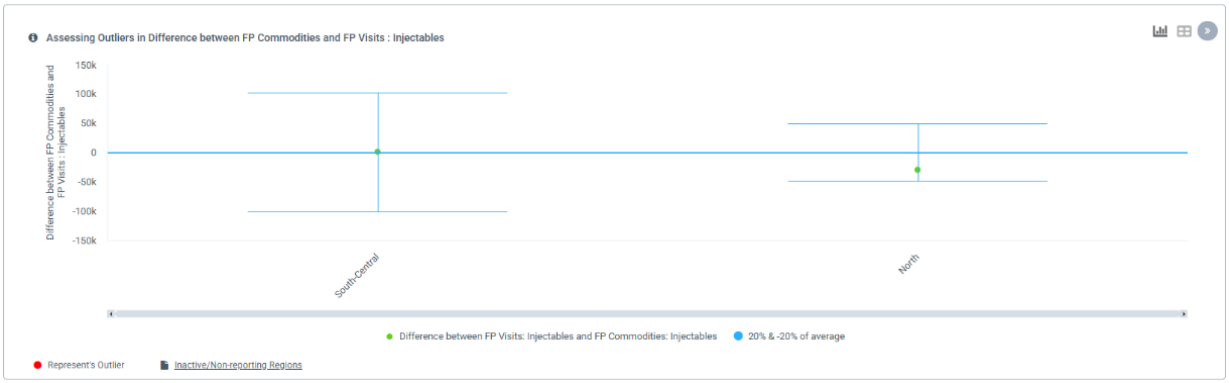
1. Correlation between FP Commodities and FP Visits: Injectables

The green dots in the example below show the number of FP Visits on the x-axis and the number FP Commodities on the y-axis. The graph shows an ideal trendline- where FP Visits are equal to FP Commodities (because ideally women should receive 1 injectable per visit) The two data points, shown in green, are near the ideal trend line, though a bit above- suggesting that more commodities injectable data are recorded than visits data.



2. Assessing Outliers in Difference between FP Visits and FP Commodities: Injectables

The graphic below shows the same information as the graphic above, but in a different format. Here, the number of FP Commodities is subtracted from the number of FP Visits, with the hope that the difference would be near 0. The green dots show the difference, which in South -Central is near 0, and in North is below 0. The error bars show 20% above and below the difference, to demonstrate how much variability there is in the data and emphasize the difference between the numbers for FP Visits and FP Commodities. As with the graphic above, we see that the commodities and visits data are close together in this example country.



3. Implications – Average # of FP Commodities per visits: Injectables

Finally, this graphic shows the same information in the other two but in an alternative format. Here, we see the ratio of FP Commodities to FP Visits. Ideally, the ratio would be near 1- with every woman who has an FP Visit also received a commodity. We can see in the example that the ratios are near 1. All three of these graphics show that there is internal validity between commodities and visits data for injectables. Based on the audience, a data expert could choose which of the three graphics they believe would be best to show this information.

IUD & Implant

The same 3 graphics shown in the Injectable tab appear on the IUD and Implant tabs, with the focus on those specific methods.

EMU MONTHLY

There are two layers of options on this page.

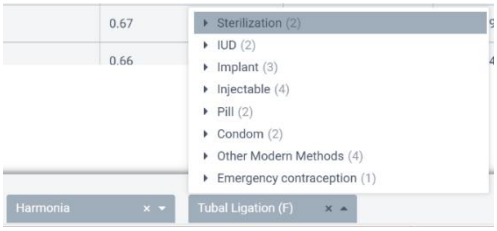
1. At the top you select the SS data types: **FP Visits**, **Contraceptive Commodities Distributed to Clients**.

2. Beneath those options you will select either **Input Data** or **Total EMU**.

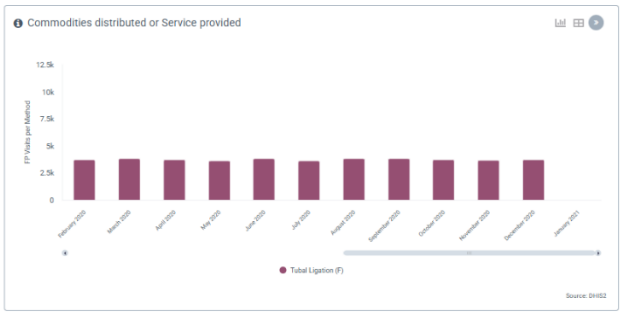
Input Data

You will be able to view input data for all SS types: FP Visits and Contraceptive Commodities Distributed to Clients. For each option, there are 3 Input Data graphics for review:

1. **Input Data by month**
2. **CYP Factors for each Method**
3. **EMU Value (%)/Total Users/ Population** – For each month, the EMU value, total users and population are listed



It is important to note that for this page, you must **select the method for which to view data from a drop-down list at the bottom of the page.**



Commodities distributed or Service provided

Method	Submethod	CYP Factors
Sterilization	Tubal Ligation (F)	10
	Vasectomy (M)	10
IUD	Copper- T 380-A IUD	4.6
	LNG-IUS	4.8
Implant	Implanon	2.5
	Jadelle	3.2
	Sino-Implant	3.8

Source: DHIS 2

New Users/Total Users

Period	EMU Value (%)	Total Users	WRA Population
January 2021	0.79	664,685	84,462,883
December 2020	0.79	664,685	84,292,206
November 2020	0.79	660,914	84,121,529
October 2020	0.78	657,241	83,950,852
September 2020	0.78	653,499	83,780,175

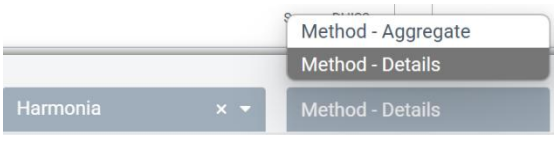
Clicking the **Multi-Save EMU** button at the bottom of the page (not available for FP Visits/Input data), will provide information on when the EMU was calculated for each subregion and give the option to recalculate the EMU for any or all subregions.

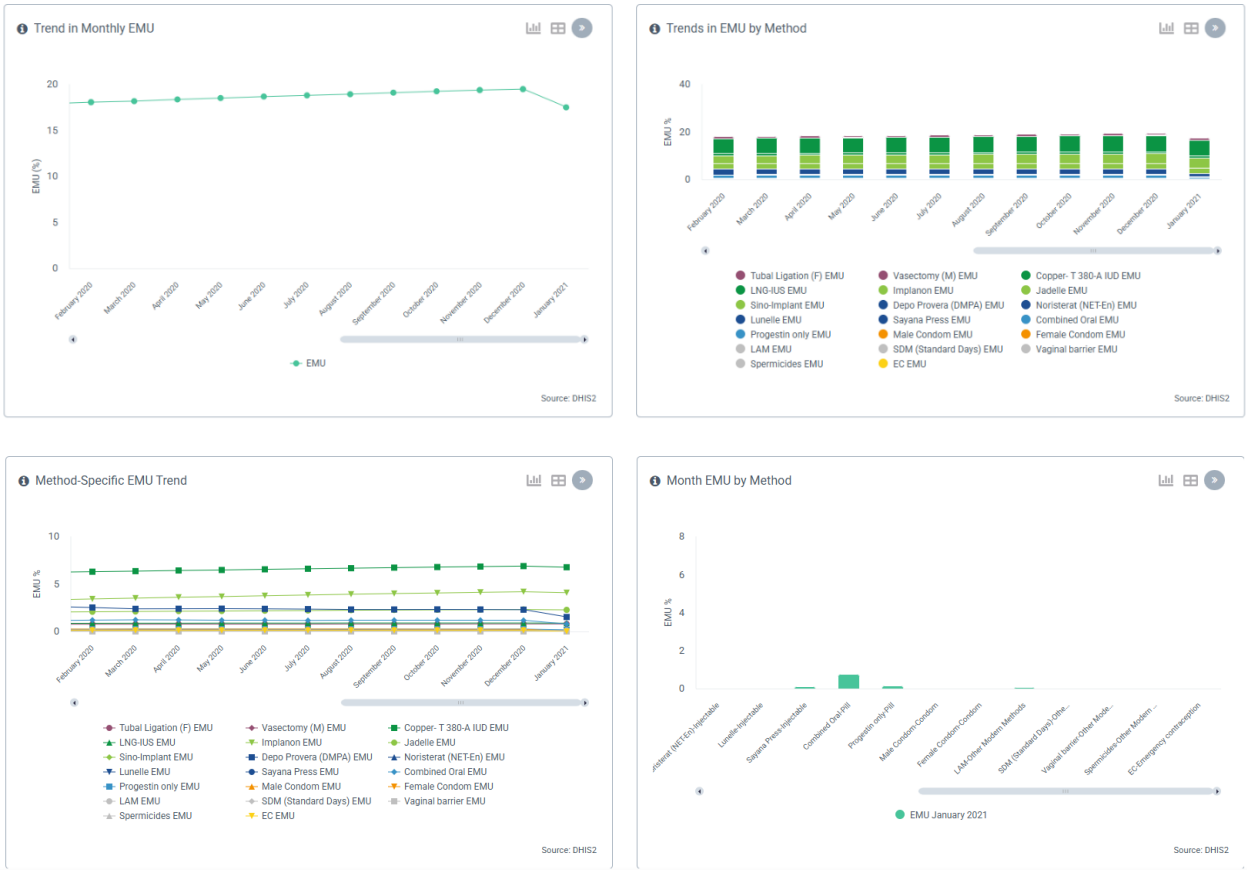
Total EMU

You will be able to view total EMU for both FP Visits and Contraceptive Commodities Distributed to Clients. For each option, there are 4 graphics for review:

1. **Trend in Monthly EMU**
2. **Trend in EMU by Method**
3. **Method-specific EMU Trend**
4. **Month EMU by Method**

At the bottom of the page, you can choose to view the data with Methods- Aggregate or Methods- Detail. Select one to change the data view.





EMU ANNUAL

The EMU is calculated using Track20's SS to EMU Tool, and at the top of the page you will be able to review more information on the data used to calculate EMU and details on FP Source, which influences the **adjustment factor** applied to calculate EMU.

The EMU in FP DataPro is considered "unadjusted" because it does not include women who may have received contraceptive methods outside of the facilities and/or sectors that report into the national HMIS. The final adjustment integrated into the EMU calculation is intended to make the EMU more representative of the full FP market. In most countries, parts of the private sector report data into HMIS, but it is very rare that the full private sector reports. Efforts have been made to better integrate data from private sector providers, including NGOs providing family planning services and private hospitals and clinics, but few countries have pharmacies or other non-medical sources reporting into the system. This impacts methods differently, for example in many countries, shops are key sources of pills and condoms, and they rarely report into HMIS. The EMU calculation uses a method-specific adjustment factor, applied to the service statistics data, to account for provision in sectors not represented in the available data. This adjustment factor is based on data from DHS (where available) concerning the source of methods for current users of contraception, along with information estimating how much private sector provision is captured in their data.

The EMU Output tab is the main content of this section, but you can first review the data inputs for EMU on the service statistics tabs.

Service Statistics Tabs

You'll see that to the left of EMU Output tab at the top there are 2 additional tabs: **FP Visits, Contraceptive Commodities to Clients**.

For each of these tabs there are subtabs that appear for **Reporting Rates, Input Data**, or **Outputs**. You will review all three for each Data Type.

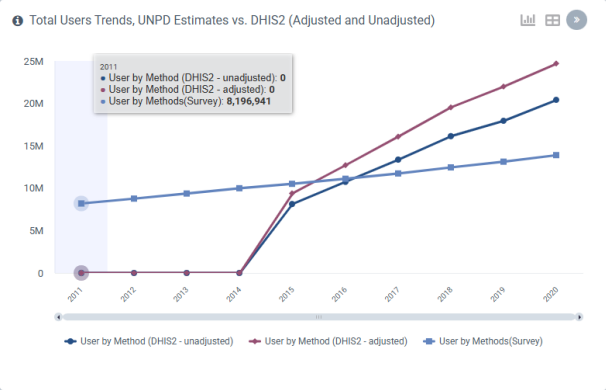
Reporting Rates: Graphics of reporting rates (actual) by year

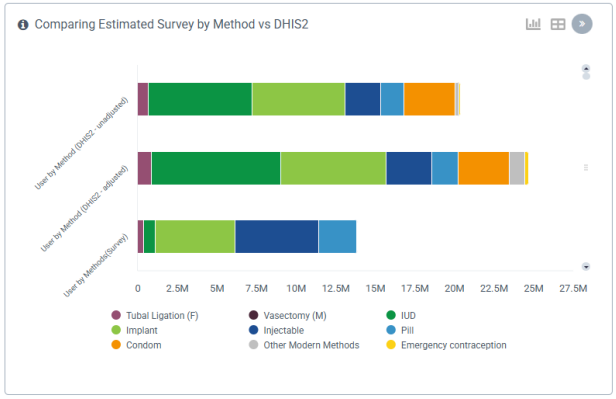
Input Data: Separate graphics for each method by year and one graphic of Total CYP per year

Outputs: These graphs have been designed to help illustrate the impact of the private sector adjustment, which is intended to help account for services provided by sectors that are not included in your data.

Review the impact of the adjustment factor through the following 2 charts:

1. **Total Users Trends, UNPD Estimates vs. DHIS2** (Adjusted and Unadjusted)
2. **Comparing Estimated Surveys by Method vs. DHIS2**

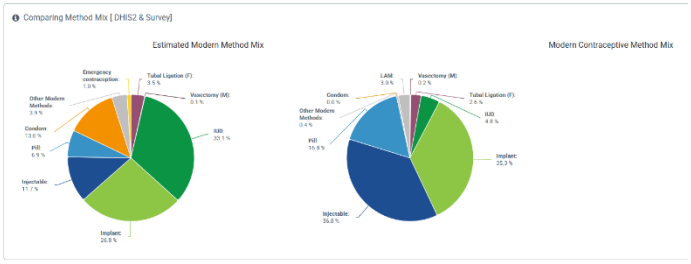


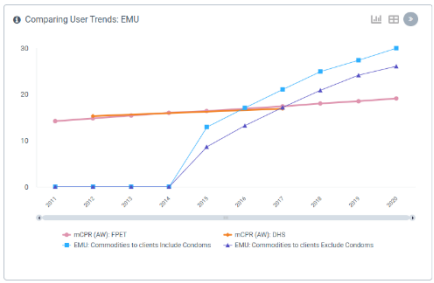


The next graphs have been designed to help identify potential issues with the service statistics data and analyze trends and comparability with surveys. As with all charts, users can click on the upper right corner to add comments and observations on the data to share with colleagues.

1. **User Trends by Method (DHIS2), Source of Data**
2. **Comparing Estimated Total FP Users by method: DHIS2 vs. Survey**
3. **Comparing Method Mix (DHIS2 & Survey)**
4. **Comparing User Trends: EMU**
5. **Comparing Slopes: EMU**
6. **Estimated Modern Use (%) – including and excluding condoms**

7. **Estimated Modern Users: Adjusted for the Private Sector**

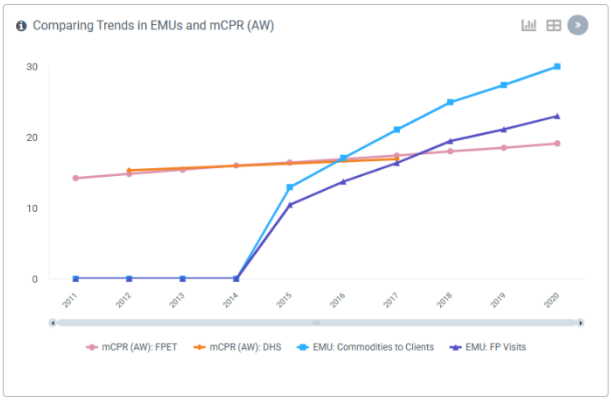


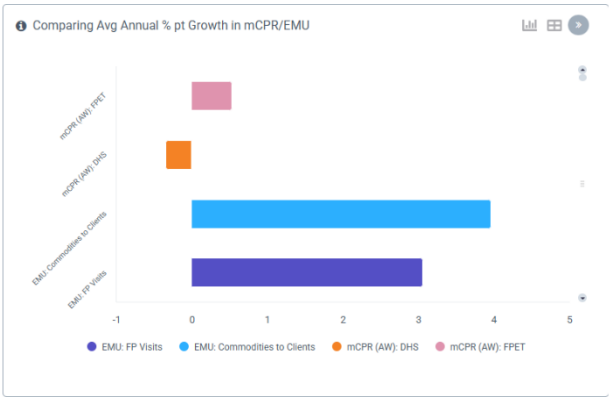


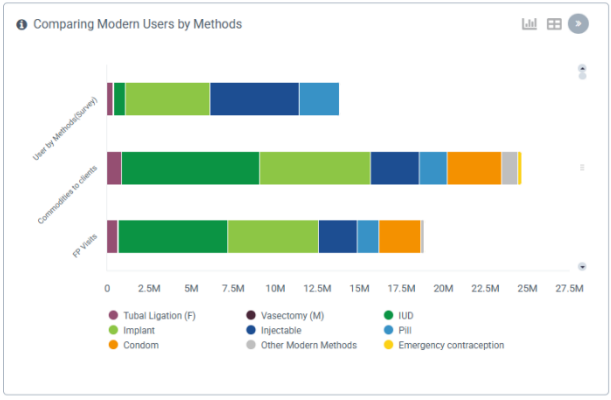
EMU Output Tab

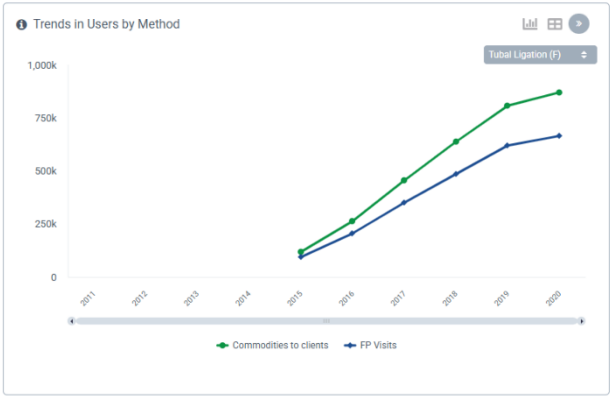
This tab will present EMUs and other data and lead the user through questions to help them select the most appropriate EMU value for their circumstances. There are 4 charts for review:

1. **Comparing Trends in EMUs and mCPR (AW)**
2. **Comparing Average Annual % point growth in mCPR/EMU**
3. **Comparing Modern Users by Methods**
4. **Trends in Users by Method**









Next, the user is asked to answer several questions that will guide their decision on which EMU (for which data type) they will use for their monitoring and, if appropriate, as an input to the Family Planning Estimation Tool (FPET).

The EMU is a useful indicator to help track change over time, but the EMU can also be used as an input into the **Family Planning Estimation Tool (FPET)**, which produces trended annual estimates of mCPR, based on a variety of data sources, largely population-based surveys. Including the EMU as one of those data sources allows FPET to consider service statistics in its estimation of mCPR, unmet need and demand satisfied by modern methods. These timelier service statistics data increase the accuracy of the FPET estimates and narrow the confidence intervals.

After selecting the EMU type to use, the user can save the EMU and export the CSV file for use in FPET.

5.4 USING THE MAP VISUALIZATION DASHBOARD

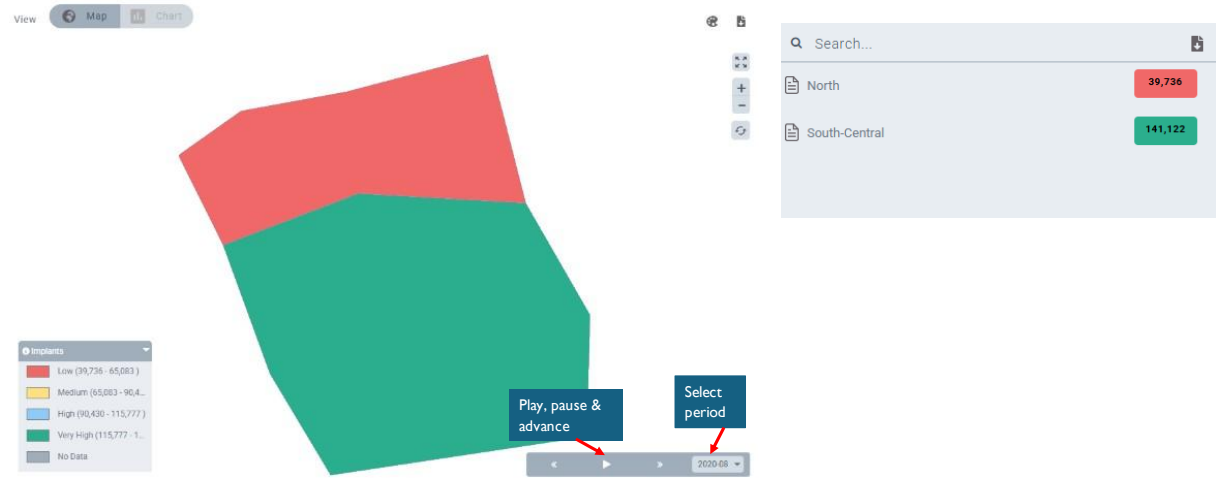
At the top of each page, you can select to view the data as a **Map or Chart**. The maps help visualize the data geographically.

Maps can be viewed by the categories shown on the left of the page:

- EMU – Comparing EMU %
- FP Provision - Totals
  - CYPs
  - FP Visits
- Long-Acting Methods
  - Implants
  - Sub-Populations (PPFP Uptake)
  - Short-Term Methods (Injectables, Condoms, OC Pills)

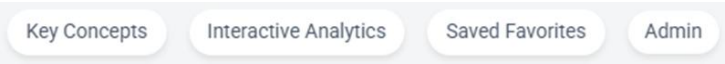
Once you have selected a map, you can select a period to view at the bottom of the map. You will see the subregion values and color coding from low to very high on the right.

If you want to see how the levels change over time, you can press the play button, and the map will scroll through the periods showing one period after another. You can let it play through or pause the animation.



5.5 CUSTOMIZATION: USING THE INTERACTIVE ANALYTICS AND SAVED FAVORITES FUNCTIONS

Throughout the module, at the top right of the screen you will see buttons for four functions that allow the user to organize and present data in ways that support their own work and priorities.



KEY CONCEPTS

The content here may change depending on choices made during app installation, but definitions or more information on topics such as Estimated Modern Use (EMU) or other concepts that may be new to the user will appear here.

INTERACTIVE ANALYTICS

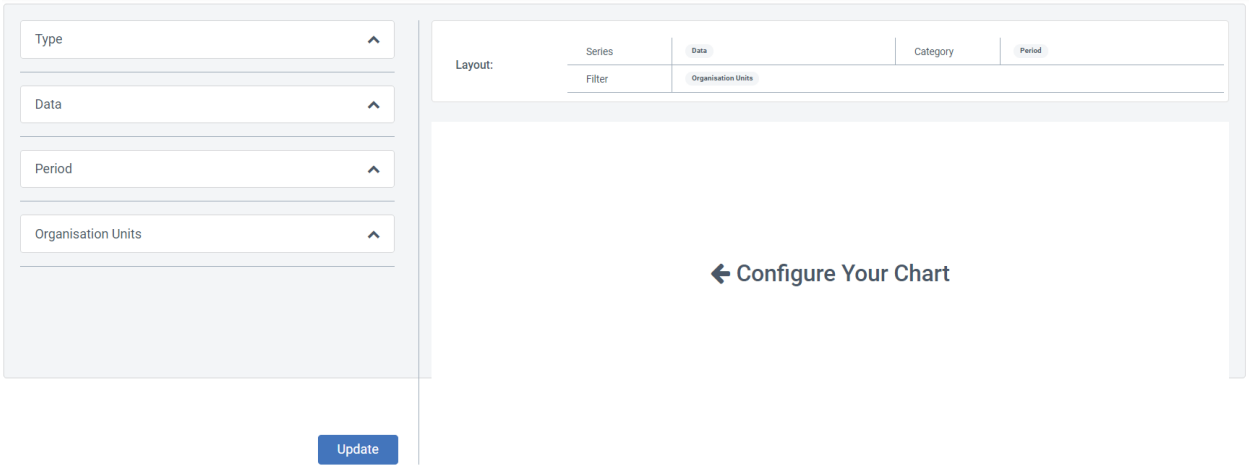
This is a space where all available DHIS2 data can be accessed, and users can create their own visualizations to answer queries not included in the pre-determined analyses. Custom analytics created here can be saved here for review every month or incorporated into the Summary Dashboard with help from the App administrator.

Configure your chart

To create your own analysis, select your preferred:

- Type of chart (bar, column, pie, etc.)
- Data (indicators, data element, data sets, event data items, program indicators)
- Period
- Organizational Unit

You will be walked through the creation of your chart.



SAVED FAVORITES

A space for users to cultivate their own dashboard composed of existing or self-created charts, giving them the ability to create a focused view of topics or data that is particularly relevant to their work.

ADMIN

Typical FP DataPro users should not access the administrative functions. Additional detailed information required for IT system administrators, such as system requirements, administrative functions and customization features can be found in the **DHIS2 FP DataPro App Administrator's Manual**.

PART 6. USING THE MATERNAL AND NEWBORN HEALTH DASHBOARD

The MNH module is organized around the same 4 dashboards as the FP module, functions in a similar way, and displays the same type of graphics and charts to visualize data. The indicators will be different and the MNH module does not include any sections on EMU, which is an FP-specific indicator and calculation.

Before beginning this section, please read Parts 1-4, as they apply to the overall DataPro application and its functionality and are relevant to using the MNH module. Reviewing the FP module section may provide more detail on shared sections.

6.1 USING THE MNH SUMMARY DASHBOARD

Designed with higher-level decision-makers in mind, the Summary Dashboard provides a snapshot of current (monthly) progress on key MNH indicators with options to check against benchmarks and explore trends and regional variations to drive further analysis.

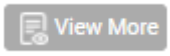
Users choose which priority indicators to display on the Summary page during app installation. The indicators and charts presented here are examples and may not reflect exactly what is in your FP DataPro application. However, these examples should be helpful in showing you how information can be displayed and how to navigate.

KEY INSIGHTS TAB

This dashboard opens with Key Insights, which highlights progress on 4 featured indicators which have been selected because changes in their value provide important signals and insight into programming and are priorities of the Ministry's program.

5. ANC 4
6. 1st PNC
7. Delivery Care
8. Neonatal Deaths

These indicators are compared to the prior month to show whether there has been positive growth (+5% or more), declines (-5% or more), or limited change (<+/-5%). Indicators are color coded to assess status at a glance. Understanding what indicators are changing can help point to areas of strong performance as well as areas that need greater attention.

The data presented on the Key Insights Tab is meant to be focused and provide only top-line information for decision makers. However, each of the quick status boxes includes a "View More" button 

in the top right which will open additional related charts that show data by region and by month, and performance against benchmark (previous periods).

For instance, if you clicked View More on the 1st PNC, you would see the 4 graphics to the right. Each of the featured indicators will have 3-4 additional charts available through the View More button.

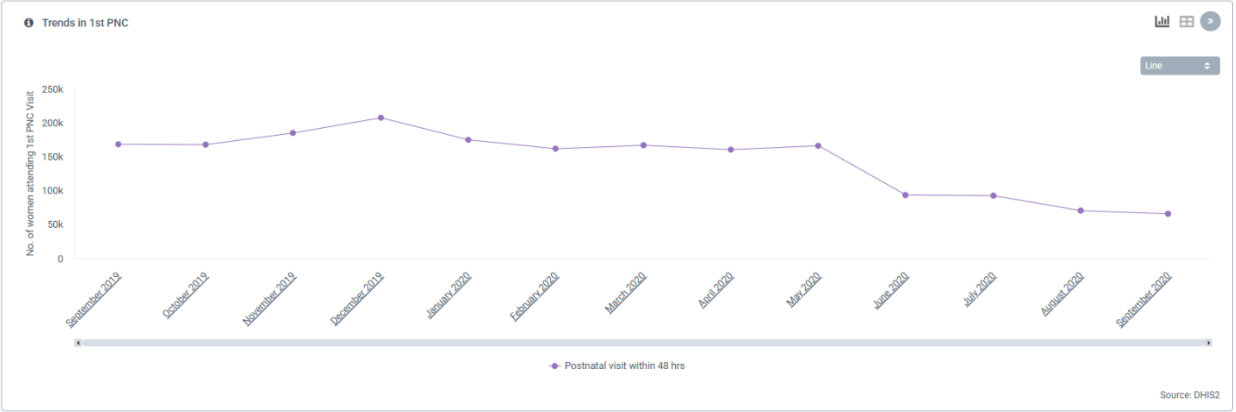
ADDITIONAL TABS ON SUMMARY DASHBOARD

Key Insights is the first tab in the Summary Dashboard. Other tabs and sub-topics can be accessed on the far left. In this example, these include:

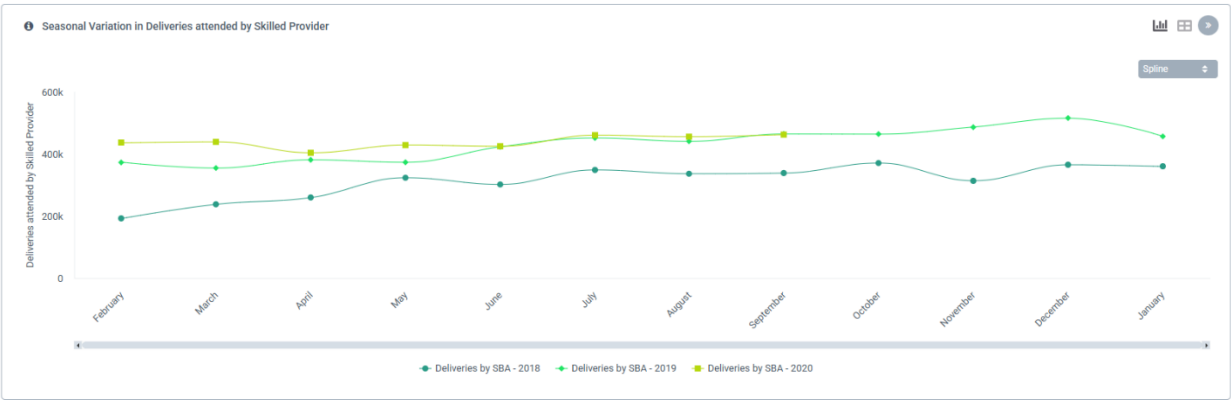
- **ANC (antenatal care)**
- **PNC (post-natal care)**
- **Delivery**
- **Maternal Deaths**
- **Neonatal Deaths**.

Clicking on these tabs will take you to more detailed data on that topic. Each topic will feature the following graphic types:

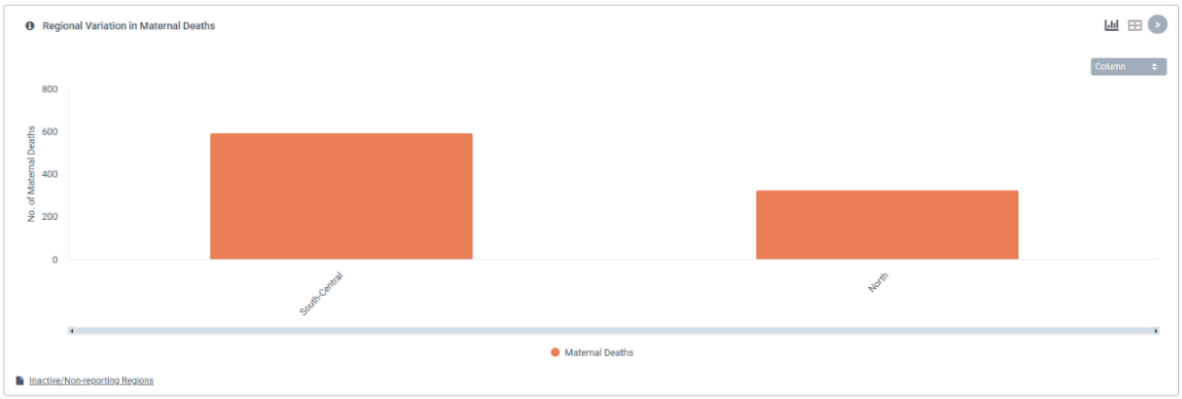
Trend: Shows 1-year trend by month. Review these line graphs to look for patterns and trends over time. If you click on a data point on the line graph, it will display the change in that indicator from the prior month by region. This is intended to explain the source of the change. Where relevant and available, data will be shown by method. Below is a trend graph for 1st PNC. For charts where data labels are underlined, as the months are in the example below, you can dig deeper into the data point by clicking on the month.



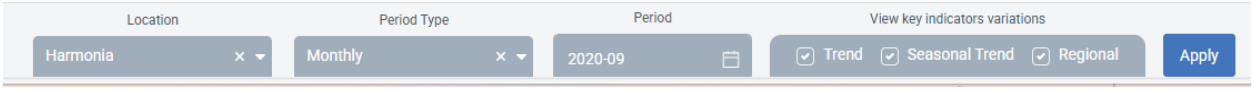
Seasonal Trend: Shows 1-year trend by month for 3 different years. Review these line graphs to look for seasonal patterns. If you click on a data point on the line graph, it will display the data points for that month for all three years. Below is a Seasonal Trend graph for Deliveries attended by a skilled provider. A low or high data point in a single year may lead to questions about whether the data point was an error, however, if you see the same dip or rise occur in the same months every year, this may indicate a seasonal shift that can be expected and planned for.



Regional Variation: Shows regional variation for the current month. Review these graphs to understand how individual regions may be driving performance and contributing to the narrative of change or no change. Our example country, Harmonia, only has 2 sub-regions, however, your display may be more complex if your country has many states or districts.



Remember that for all dashboards, options to change the data viewed are available at the bottom of the page.



6.2 USING THE MNH ANALYTICAL DASHBOARD

For program staff and Monitoring and Evaluation Officers, this dashboard features detailed displays organized around programmatic themes to help answer questions about MNH progress or lack-there-of. The four priority areas featured on the MNH Analytical Dashboard are displayed on the left side of the Dashboard homepage. These are ANC, PNC, Delivery, and Maternal Deaths.

Topic-specific displays help the user draw inferences about progress related to geographic variations, timing, barriers, and priorities. The Analytical dashboard is a space to take apart the high-level indicators to understand how differences in location and time are playing a role in achievements, how achievements compare with external benchmarks, the barriers to growth/change, and shifts in programmatic priorities being observed at lower levels.

The analytical Dashboard has been designed with the Program's M&E officers in mind – those who can use the information to provide context of change for subnational Health Committees, National Technical Working Groups (TWGs) and other decision-makers. At the subnational level, this module can improve planning and engagement with data among health coordinators who typically are looking at high level indicators but are less engaged in the data quality and implications of coverage and benchmarking.

Analytical Dashboard in the Harmonia example includes 5 Tabs:

1. Antenatal Care (ANC)
2. Prenatal Care (PNC)
3. Delivery
4. Maternal Deaths

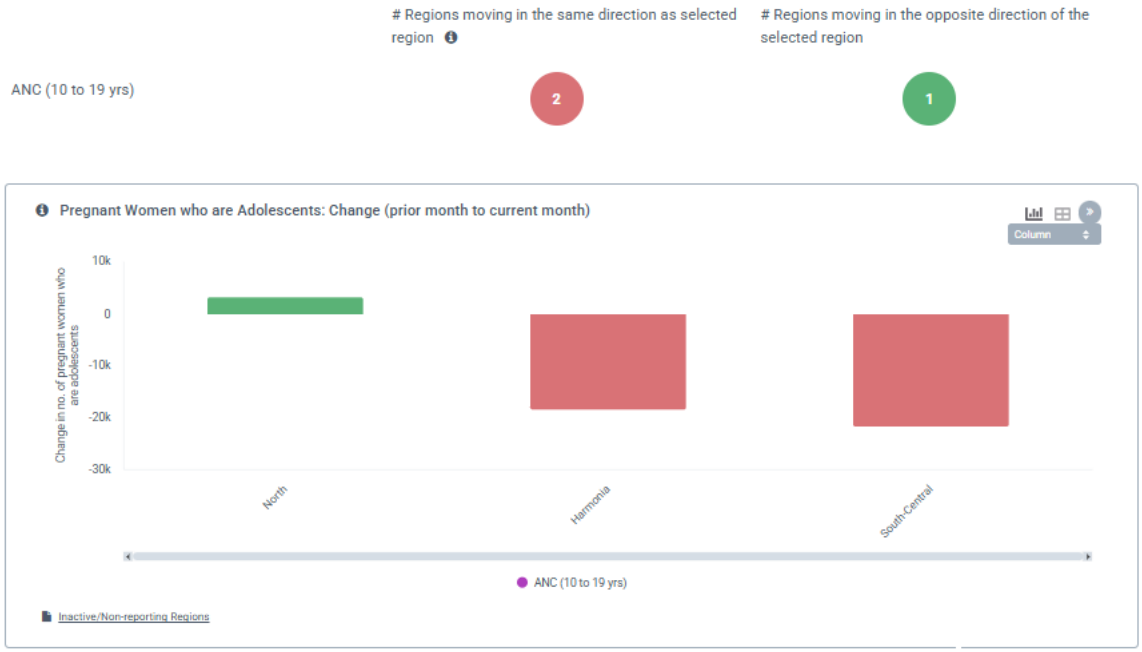
ANTENAL CARE (ANC)

For our Harmonia example, this section has 6 subtabs:

1. Summary
2. Geographic Variations
3. Timing
4. Youth
5. Quality
6. Malaria Care

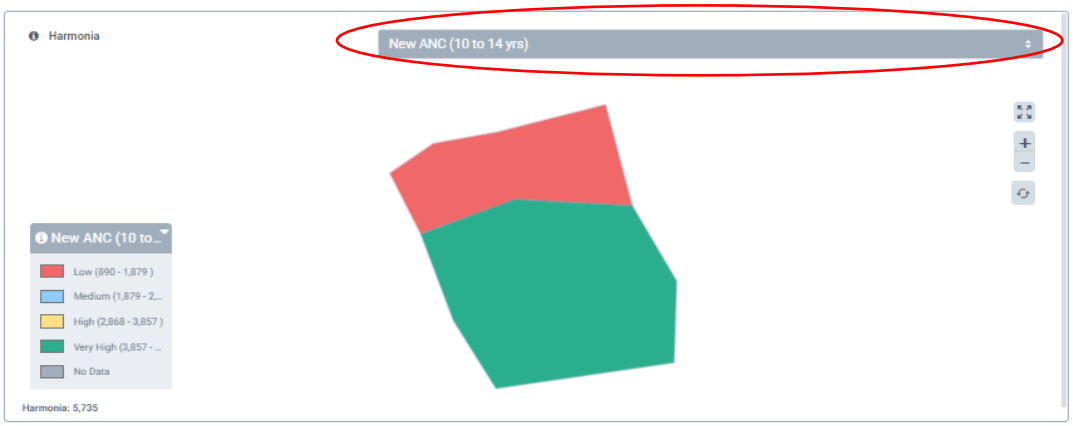
Summary Tab

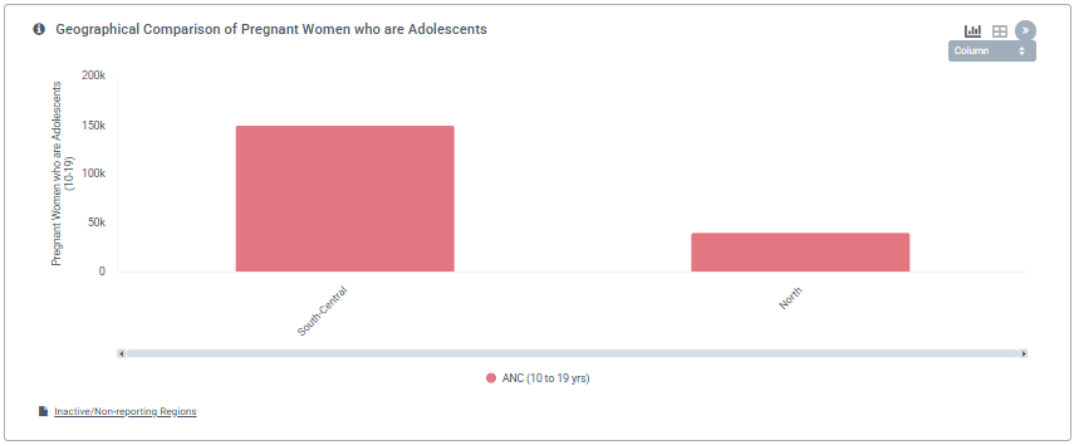
The summary tab provides a quick look at top indicators in priority areas. Some charts show change month to month:



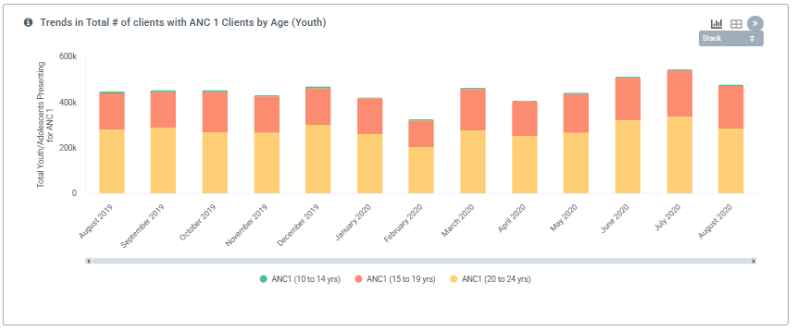
Some display geographic variation:

On the map, you can select the indicator to display in the top right corner.



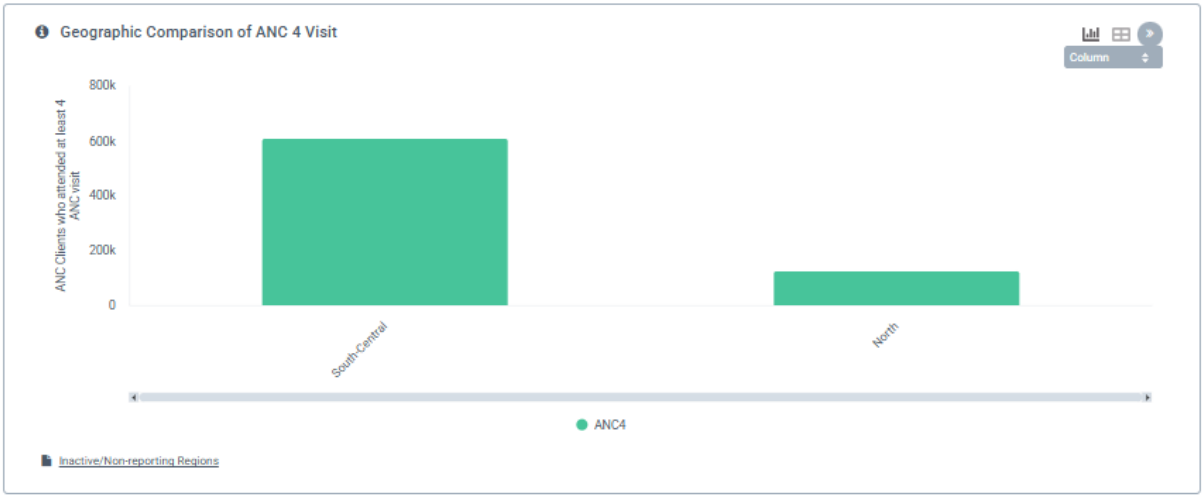


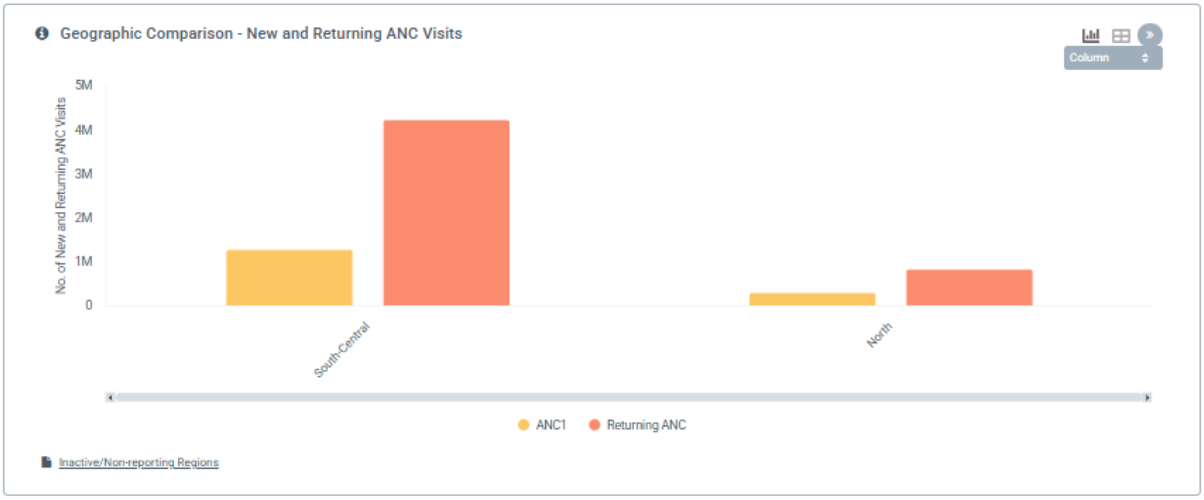
Others show trends:



Geographic Variation Tab

The purpose of this tab is to help the users compare performance on indicators by sub-national area, identify the highest- and lowest - performing areas, and explore reasons for observed differences in indicators by geographic level. The tab features a variety of charts for several ANC indicators such as ANC 4th visit and 8th visit and new and returning ANC visits.

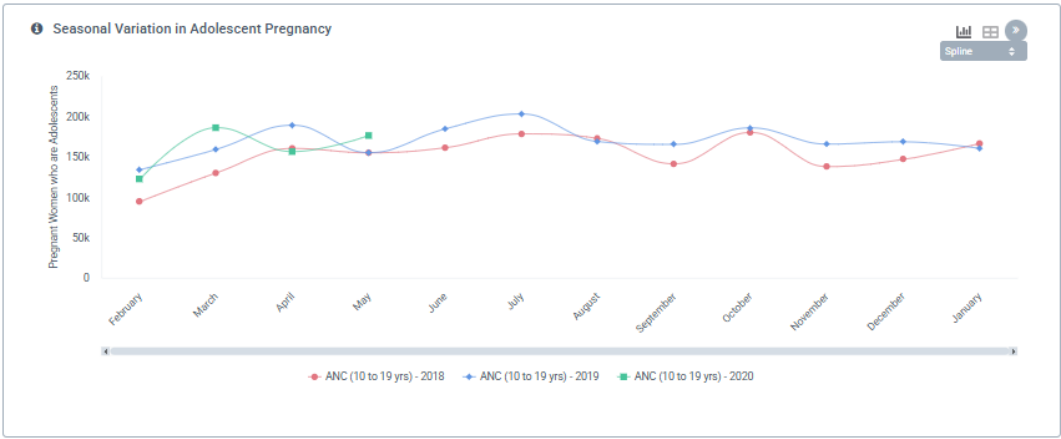


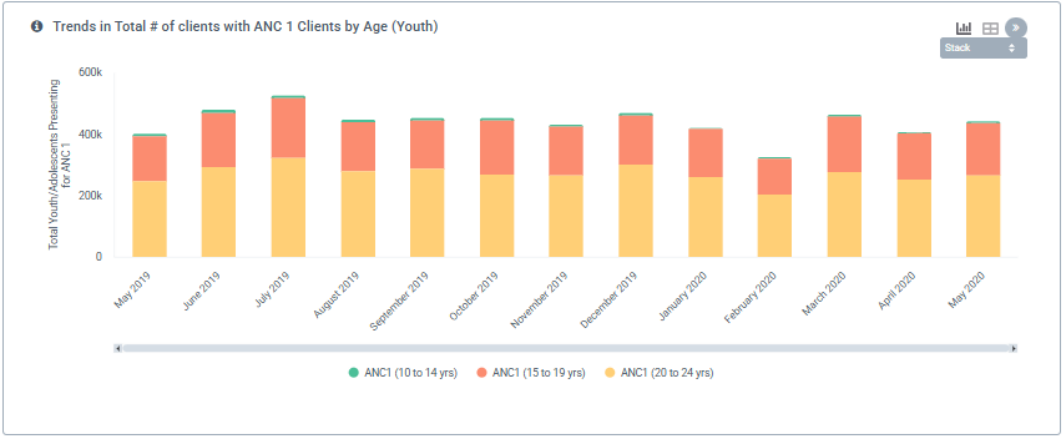


Timing & Youth Tabs

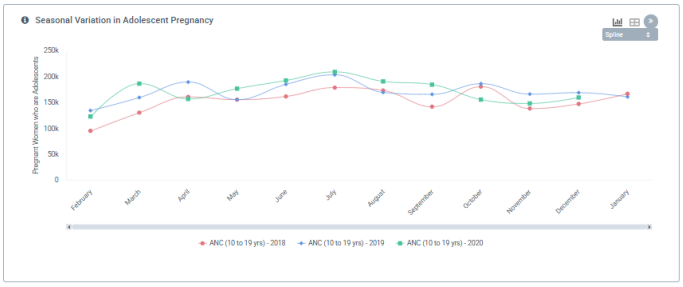
The Timing and Youth tabs include a set of charts similar to those in the Summary Tab – some show change month to month or trends to gage progress and some show geographic variations.

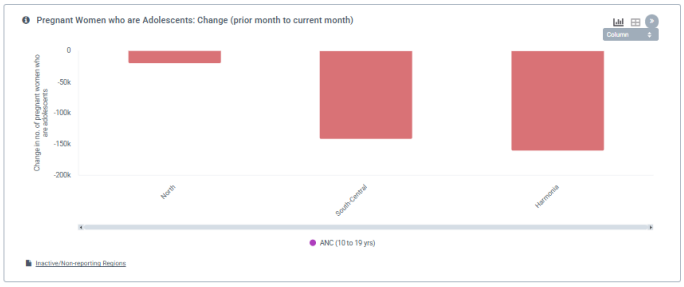
On the Timing Tab, the indicators are related to timing of ANC visits and ANC visits by client age.





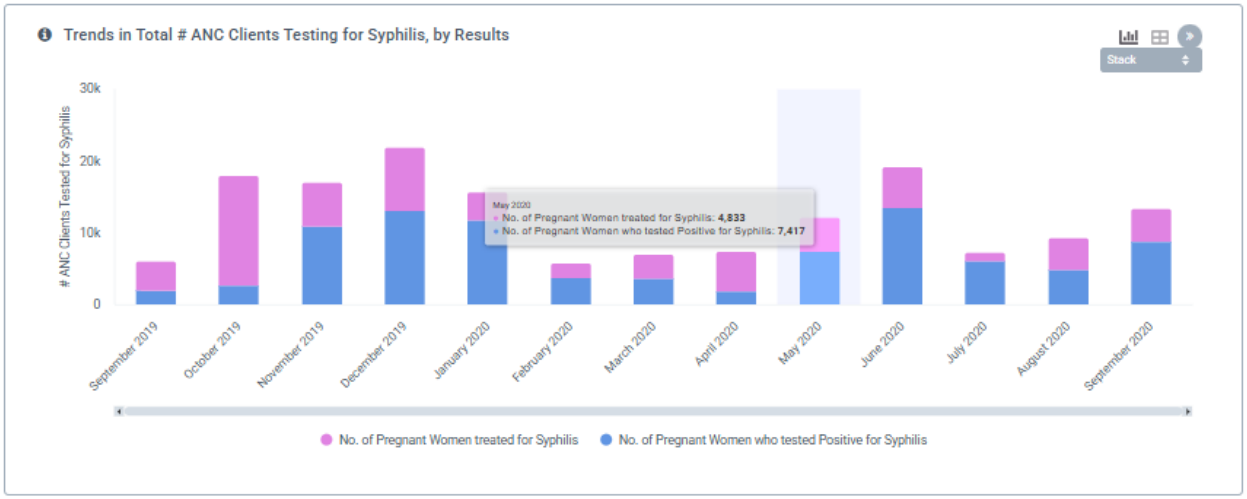
The Youth Tab includes data focusing on adolescents, so the user can get a better monitor progress on this specific population.

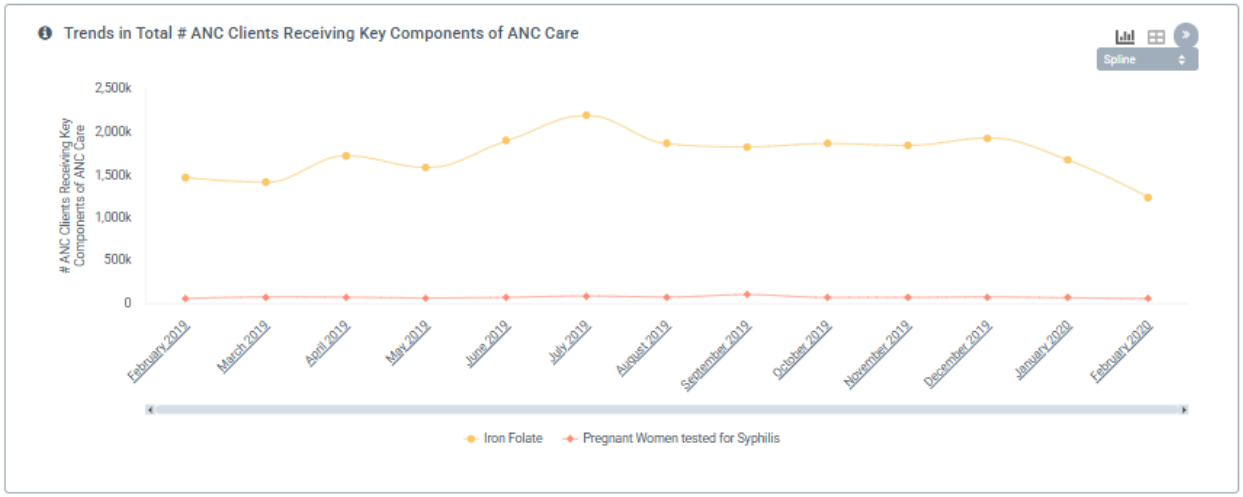




Quality Tab

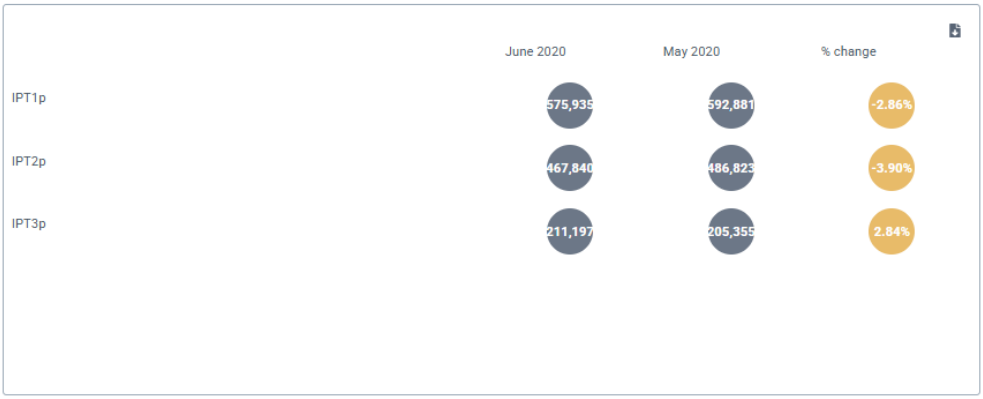
This tab provides a deeper dive into select services, including Syphilis Testing and Treatment, Iron/Folate Supplementation, and other key components of ANC care. Charts are available related to trends, geography and month on month change.





Malaria Care

This tab is the hub for indicators tracking malaria care, including ANC clients receiving doses of Intermittent Preventative Treatment (IPT1, IPT2 IPT3), anemia testing, provision of Long-lasting Insecticide Treated Nets (LLITNs). Charts are available related to trends, geography and month on month change.



PRENATAL CARE

For Harmonia, this section has 2 subtabs:

1. Summary
2. Geographic Variations

Summary Tab & Geographic Variation Tab

These tabs features priority indicators, such as postnatal visit within 48 hours, 6 weeks and 12 weeks and present maps and charts on trends, change month to month and geographic variations.

As with all charts where the data are underlined, you can click on a month to drill down to get more information. For example, to explore the data anomaly seen below in March, click on May 2020 and you will see additional information that can help identify where the data point comes from and potentially follow-up with to understand if this high number was an actual data point, or a data input error.

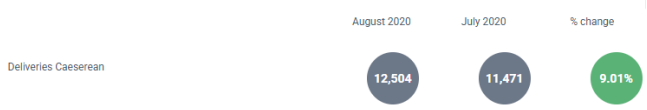
DELIVERY

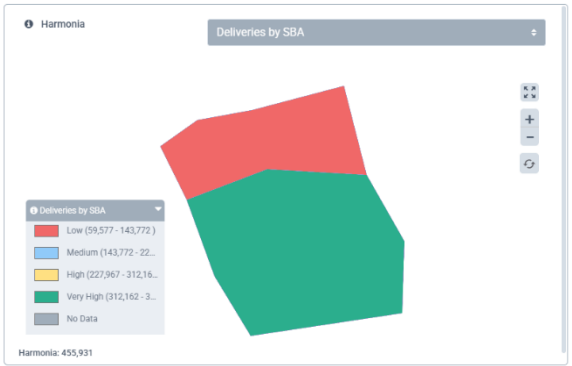
For our Harmonia example, this section has 4 subtabs:

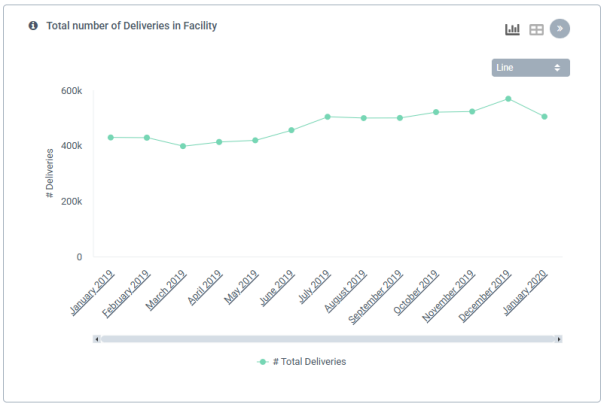
1. Summary
2. Geographic Variations
3. Delivery Complications (maternal)
4. Birth Outcomes (neonatal)

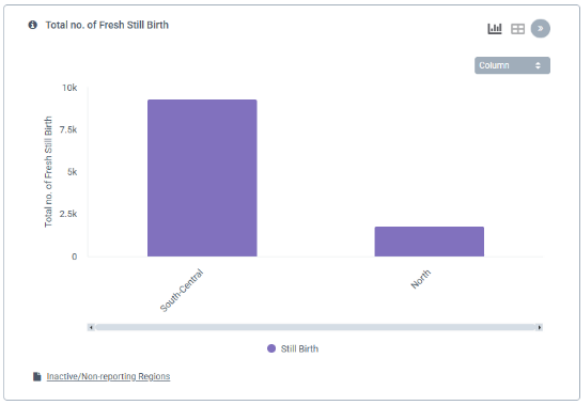
Summary & Geographic Variation Tabs

These tabs features priority indicators, such as number of deliveries by skilled birth attendants (SBA), type of delivery (vaginal or caesarian), and number of still births, and present maps and charts on trends, change month to month and geographic variations.



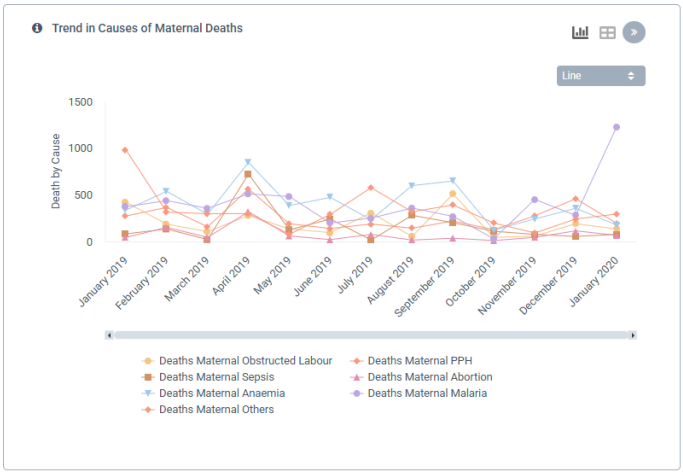


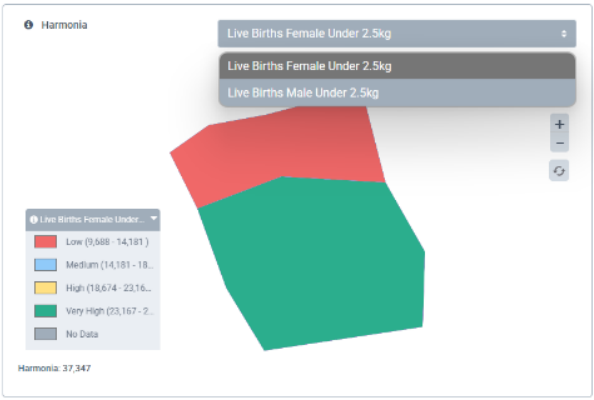


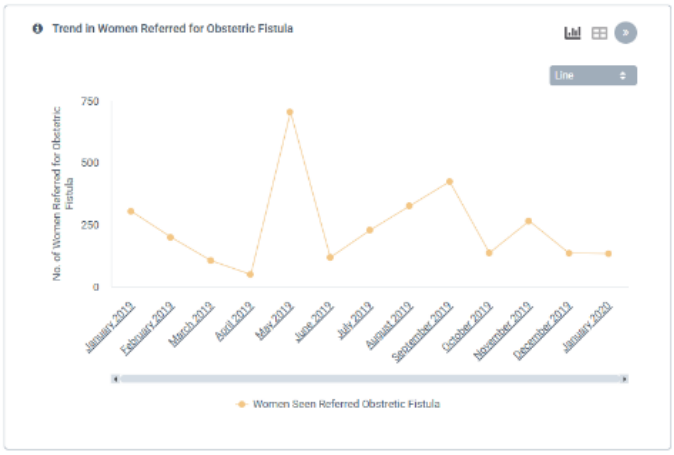


Delivery Complications (Maternal), Birth Outcomes (Neonatal) & Maternal Deaths Tabs

These are examples of tabs that present more focused data based on country priorities. For example, the Delivery Complications tab may include data on complications such as fistula, the birth outcomes tab could show data related to low birth weight, and the maternal death tab can provide insight into the causes of maternal deaths and geographic variation. Again, these tabs will include charts related to trends, change month to month, and geographic variations.





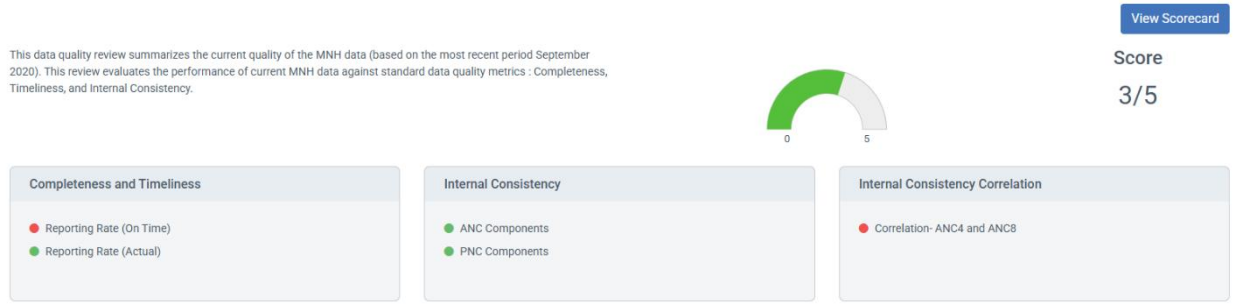


6.3 USING THE MNH DATA QUALITY REVIEW DASHBOARD

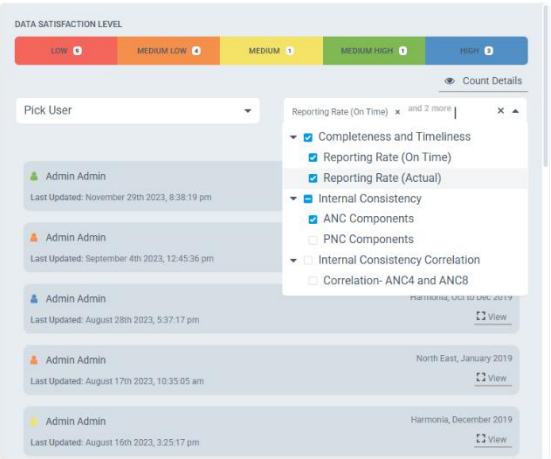
In a standard DHIS2 set-up, data quality components are separated from the data itself, but the FP DataPro App integrates data quality review into the process of using service statistics. This dashboard leads the user through a comprehensive review process in which unexpected data points or trend changes are flagged and the user can provide explanations for the outlier data or actions for follow-up on investigation or correction steps. This dashboard provides a system to validate and sign-off on data quality monthly and generates a summary data quality "score" based on data completeness, timeliness, and internal consistency.

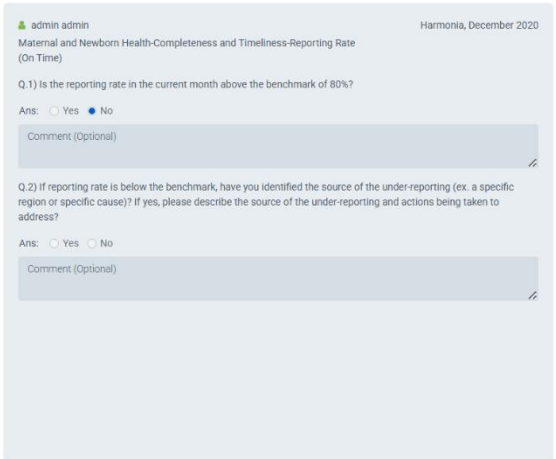
SUMMARY TAB

This data quality review summarizes the current quality of the maternal and newborn health data (based on the most recent period). This review evaluates the performance of current MNH data against standard data quality metrics: Completeness and Timeliness, Internal Consistency, and Internal Consistency Correlation. An **overall data quality score and color-coded status** (green, yellow, red) are shown at the top of the page.



At the bottom of the summary tab there is a **Data Sign Off section** in which assigned users can indicate their level of satisfaction with the data quality and indicate if the current month's data includes an outlier, and if so, whether they have identified the source of the outlier and what actions are being taken to address the anomaly.





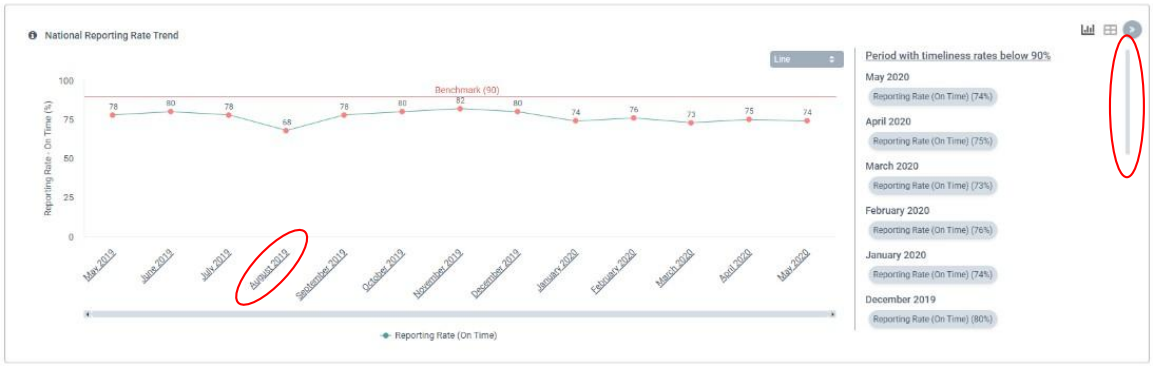
COMPLETENESS AND TIMELINESS TAB

There are 2 subtopics under Completeness and Timeliness: Reporting Rate (On time) and Reporting Rate (Actual).

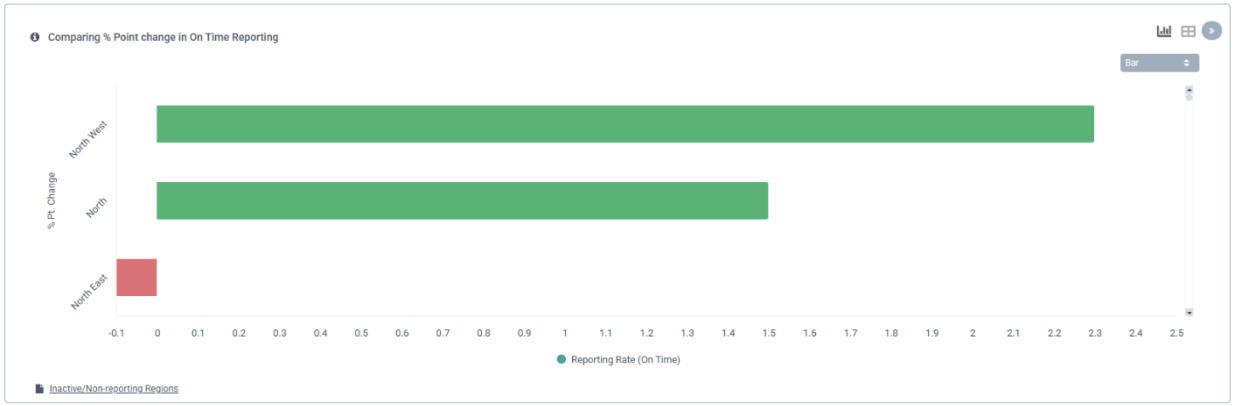
Reporting Rates (On Time)

On time reporting rates are useful for determining if your data reflects all MNH services provided at the time the reports were due. If the on time reporting rate is low, a large portion of facilities providing services did not submit data at the time reporting was due and are not reflected in the data. Due to this omission, the data did not represent the full program, or the majority of services being provided. This discrepancy may limit the timely use and interpretation of the most recent data. Achieving and maintaining high on time reporting rates is critical to program monitoring and data use and interpretation, especially for the most recent data. There are 3 data visualizations for review under this tab.

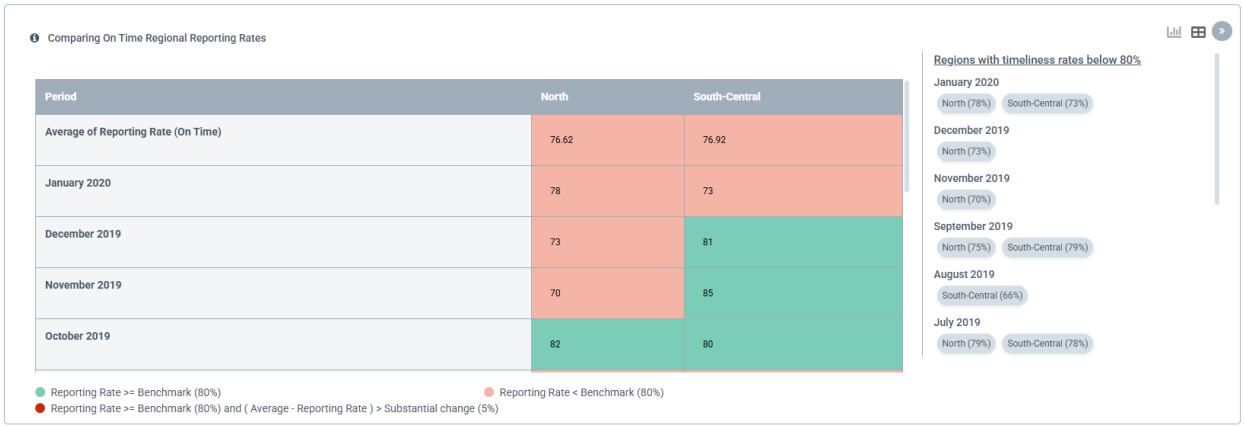
National Reporting Rate Trend by month – to the right of the graphic information appears about periods with reporting rates below 90% and periods with substantial change. Use the grey slide on the right to see all data. Click on the underlined month to see more details.



Comparing Changes in Reporting Rates by Region for a period - The reporting rates at the national level conceal the variation by county. This chart shows positive and negative changes by subregion compared to the previous month.



Comparing Regional Reporting Rates by month - to the right of the graphic, information appears about regions with reporting rates below 80%.



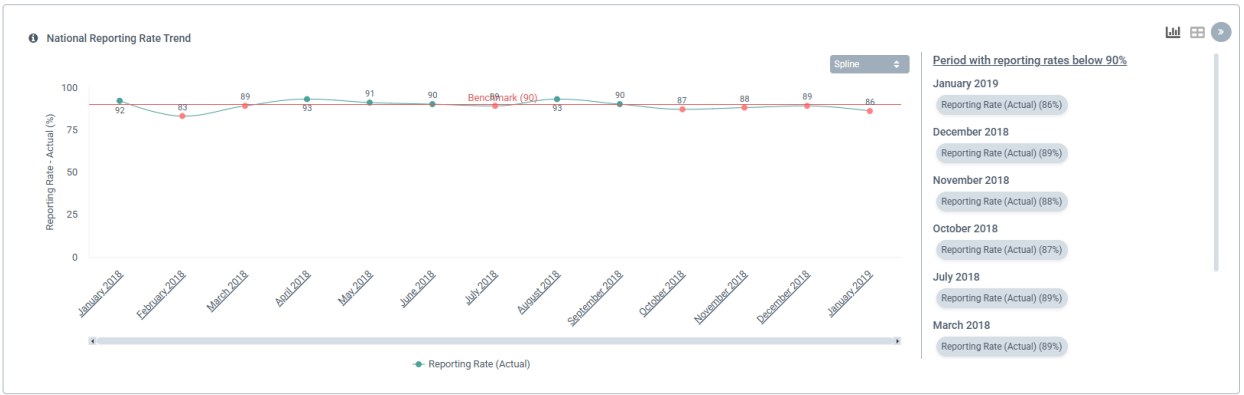
Reporting Rate (Actual)

Reporting rates are useful for determining if your data reflects all MNH services provided. Low reporting rates mean that a large portion of facilities providing services are not reflected in the data, so the data does not represent the full program, or the majority of services being provided. This discrepancy may limit data use and interpretation. Achieving and maintaining high reporting rates is critical to program monitoring and data use and interpretation.

The same 3 visualizations available under On Time Reporting can be seen for Actual Reporting.

4. **National Reporting Rate Trend by month**
5. **Comparing Changes in Reporting Rates by Region for a period**
6. **Comparing Regional Reporting Rates by month**

It is interesting to reflect on the differences between on time and actual reporting and it may differ for the same period.



INTERNAL CONSISTENCY

Internal consistency checks if your data is reliable and consistent over time. Outliers (values significantly different from the average) can indicate data errors.

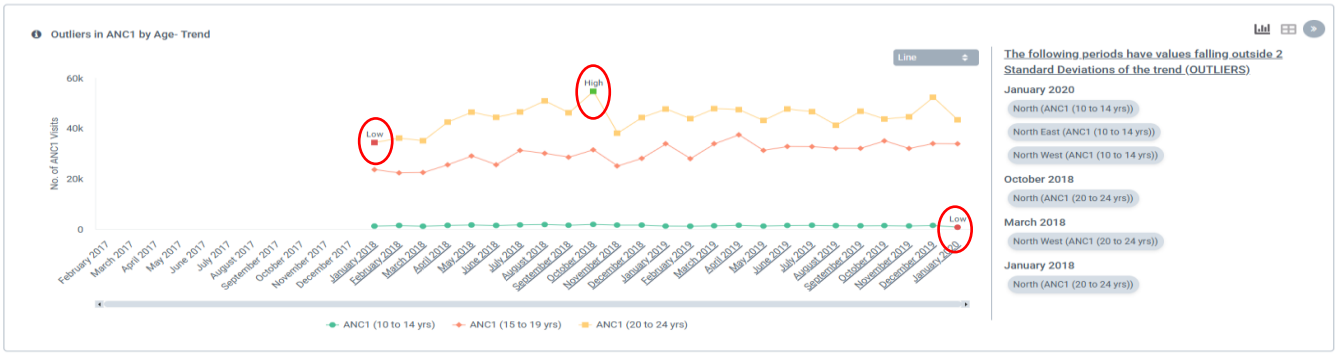
Outliers are identified using standard deviations: values more than 2 standard deviations from the average of the last 24 months are considered outliers. Any value that is more than 2 standard deviations from the average of 24 months, we consider a moderate outlier either a low (- 2 SD below mean) or a high outlier (+2 SD above mean).

Checking trends over time for outliers allows you to answer the question: is the data reported for any month significantly different from the other months over a 24-month period? Usually, a value that is very different signals data entry errors, indicating problems with data quality, either across regions or within a specific region.

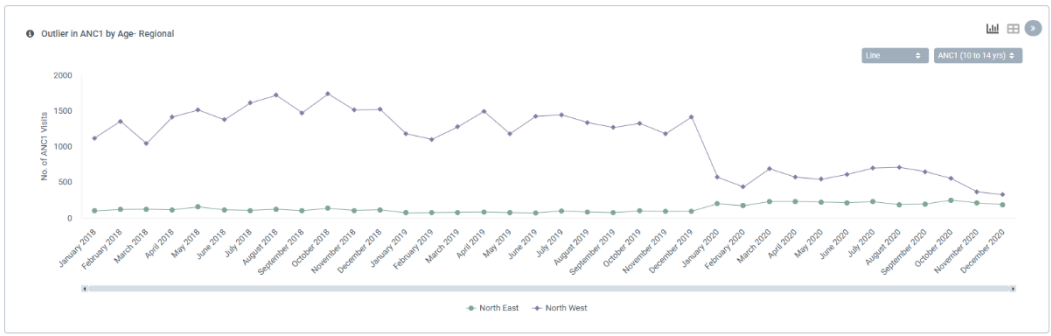
There are 2 sub tabs under Internal Consistency: ANC Components and PNC Components.

ANC Components:

1. **Outliers in ANC1 by Age - Trend**: To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers). You will also see that high and low outliers are flagged. Click on a month for more detail. Note that data for Harmonia is not available prior to 2018.

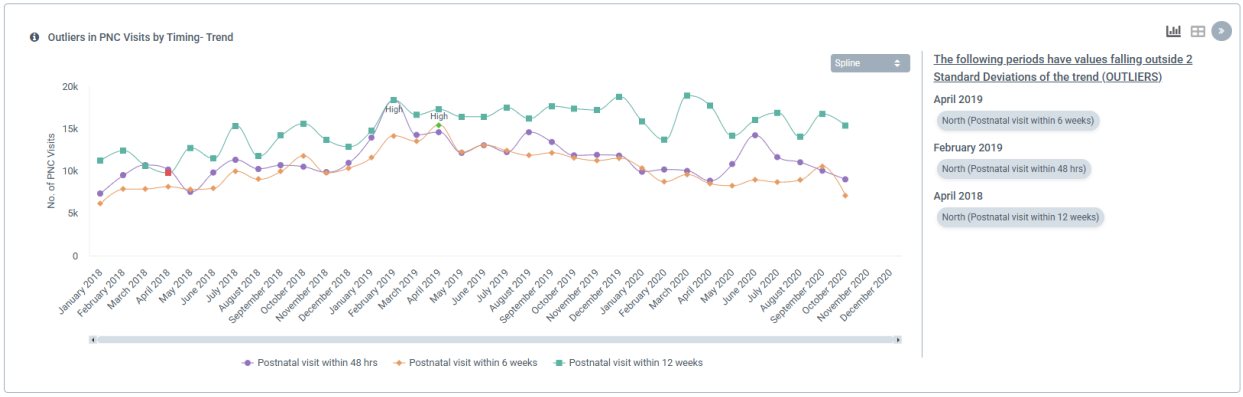


2. **Outliers in ANC1 by Age - Regional**: This graph will help the user identify any anomalies and also compare trends by region. One might explore why ANC1 dropped in the Northwest Region after January 2020.



PNC Components:

1. **Outliers by PNC Visits by Timing – Trend:** To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers). You will also see that high and low outliers are flagged.



When multiple trends are presented, it is easier to see the flagged high and low outliers if you hover over one type of data listed at the bottom of the chart – that will highlight only that data type.

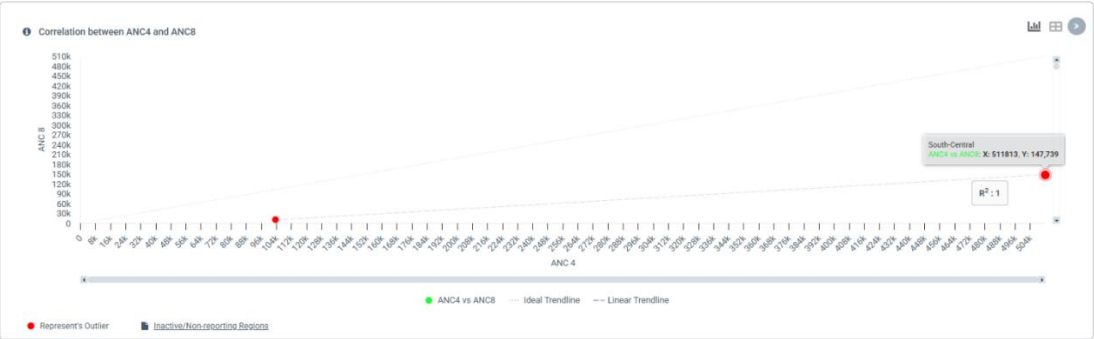
2. **Outliers in PNC Visits by Timing – Regional:** To the right of the graphic appears information about any values falling outside 2 Standard Deviations of the trend (outliers). You will also see that high and low outliers are flagged.

INTERNAL CONSISTENCY- CORRELATION

Internal consistency compares different indicators that are collecting similar information and should, therefore align, indicating a relationship between the variables. For example - Injectable commodities distributed and Injectable insertions/visits should be strongly correlated. If the data is, in fact, comparable, the correlation will equal to 1 (one). The further away from 1, in either a positive or negative direction, the less correlated the data. A lack of correlation indicates that there may be quality issues with one or both types of data. The example below features the correlation between ANC4 and ANC8.

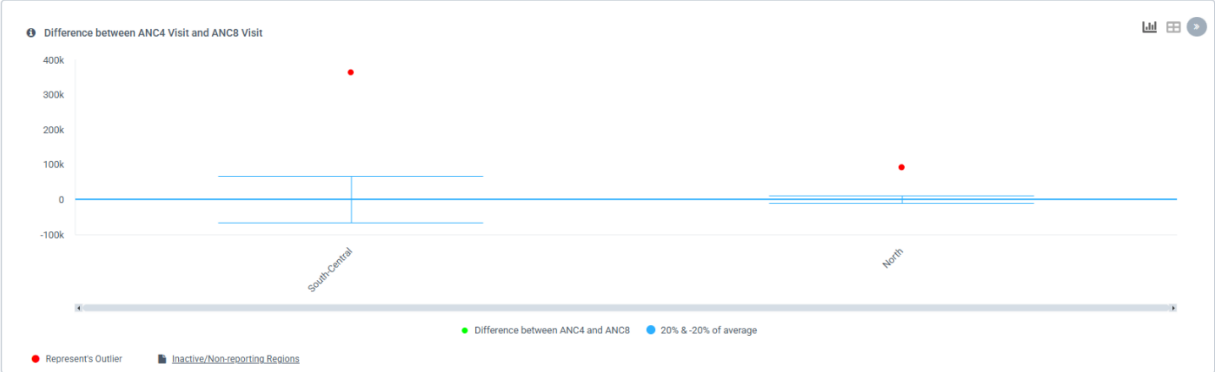
1. Correlation between ANC4 and ANC8

The red dots show the number of ANC4 visits on the x-axis and the number of ANC8 visits on the y-axis. The graph shows an ideal trendline- where ANC4 visits are equal to ANC8 visits (because ideally all women who receive 4 ANC visits in pregnancy also receive 8), but what we see in the example data below is that ANC8 visits are very low compared to ANC4 visits. There is a linear trend line for the datapoints, which, like the data points themselves, sits much lower than the ideal trendline. This graphic could be used as part of a policy discussion around the need to increase pregnant women's access to ANC services more often in their pregnancies.



2. Assessing Outliers in Difference between ANC 4 Visits and ANC8 Visits

This graphic shows the same information as the graphic above, but in a different format. In the example below, the number of ANC8 visits is subtracted from the number of ANC4 visits, with the hope that the difference would be near 0. The red dots show the difference, which in both cases is much higher than 0. The error bars show 20% above and below the difference, to demonstrate how much variability there is in the data and emphasize how drastically different the numbers are for ANC4 and ANC8.

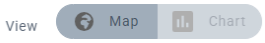


3. Implications – Average # of ANC8 per ANC4

Finally, this graphic shows the same information in the other two but in an alternative format. In the example below, we see the ratio of ANC8 visits to ANC4 visits. Ideally, the ratio would be near 1- with everyone women who has 4 ANC visits also having 8 visits. But we can see here, the ratios are much smaller. In South-Central, 100 women received ANC 4 visits, but only 29 returned for ANC8. In North, the share is even smaller. This can be a useful graphic to show a non-technical audience to demonstrate the gaps in health care utilization.

6.4 USING THE MAP VISUALIZATION DASHBOARD

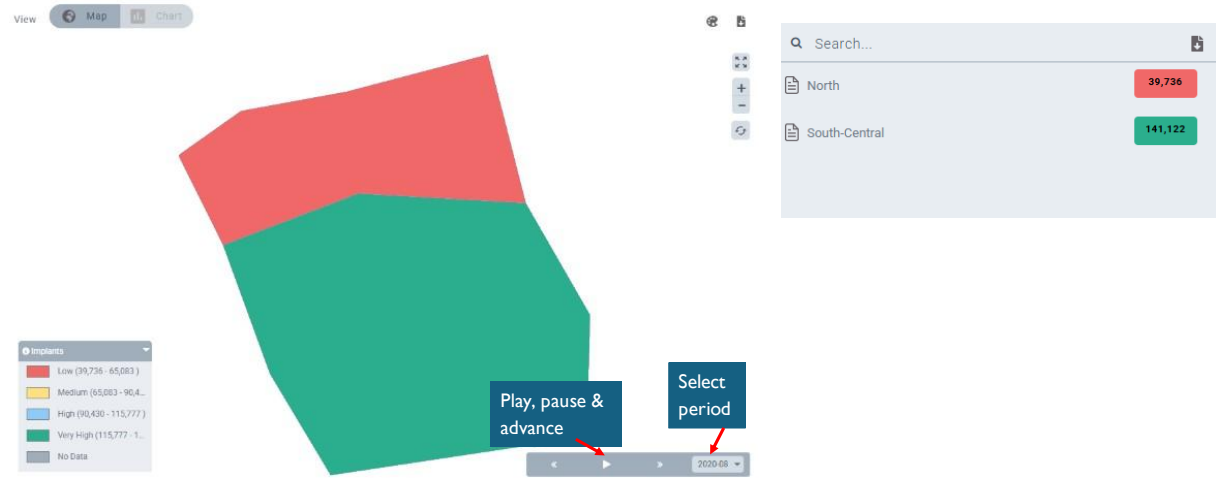
At the top of each page you can select to view the data as a **Map or Chart**. The maps help visualize the data geographically.



Maps can be viewed by the categories shown on the left of the page, which will reflect your country's priority selections.

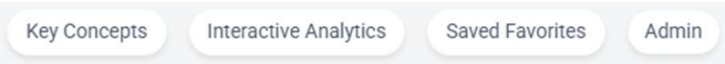
Once you have selected a map, you can select a period to view at the bottom of the map. You will see the subregion values and color coding from low to very high on the right.

If you want to see how the levels change over time, you can press the **play button** and the map will scroll through the periods showing one period after another. You can let it play through or pause the animation.



6.5 CUSTOMIZATION: USING THE REPORTS, INTERACTIVE ANALYTICS AND SAVED FAVORITES FUNCTIONS

Throughout the module, at the top right of the screen you will see buttons for four functions that allow the user to organize and present data in ways that support their own work and priorities.



KEY CONCEPTS

The content here will change depending on choices made during app installation, but definitions or more information on priority topics or technical concepts that may be new to the user will appear here.

INTERACTIVE ANALYTICS

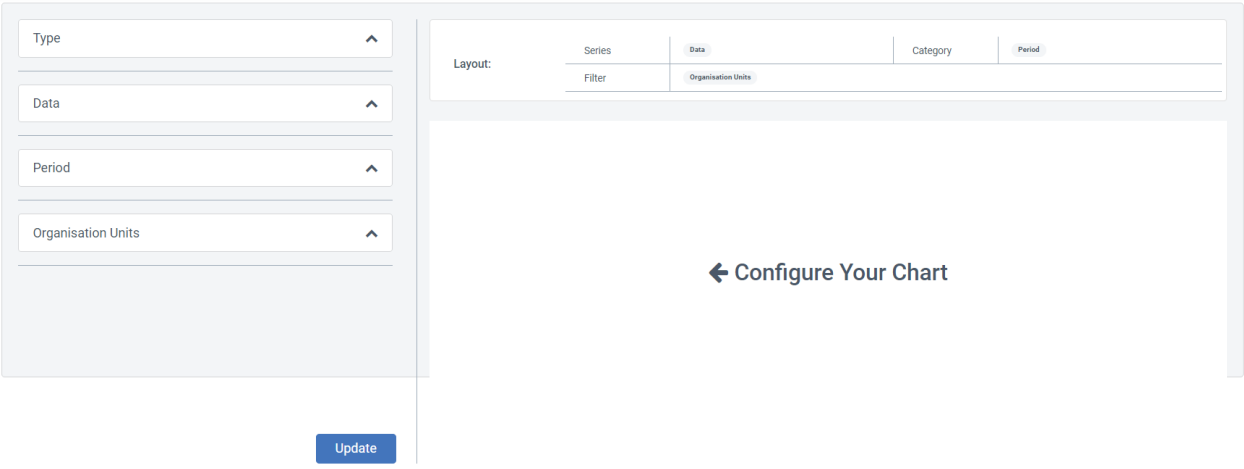
This is a space where all available DHIS2 data can be accessed, and users can create their own visualizations to answer queries not included in the pre-determined analyses. Custom analytics created here can be saved here for review every month or incorporated into the Summary Dashboard with help from the App administrator.

Configure your chart

To create your own analysis, select your preferred:

- Type of chart (bar, column, pie, etc.)
- Data (indicators, data element, data sets, event data items, program indicators)
- Period
- Organizational Unit

You will be walked through the creation of your chart.



SAVED FAVORITES

A space for users to cultivate their own dashboard composed of existing or self-created charts, giving them the ability to create a focused view of topics or data that is particularly relevant to their work.

ADMIN

Typical FP DataPro users should not access the Admin functions. Additional detailed information required for IT system administrators, such as system requirements, administrative functions and customization features can be found in the **DHIS2 FP DataPro App Administrator's Manual**.

PART 7. USING THE CHILD HEALTH DASHBOARD

If your FP DataPro application includes the Child Health module, it will function in the same way as the FP and MNH modules in terms of the organization around the 4 main dashboards, navigation, and types of data displays. The indicators will differ. Please refer to the guidance provided for the FP and MNH modules and Parts 1- 4, which provide guidance relevant to the entire application.