

National Health Workforce Accounts Online Platform – part II

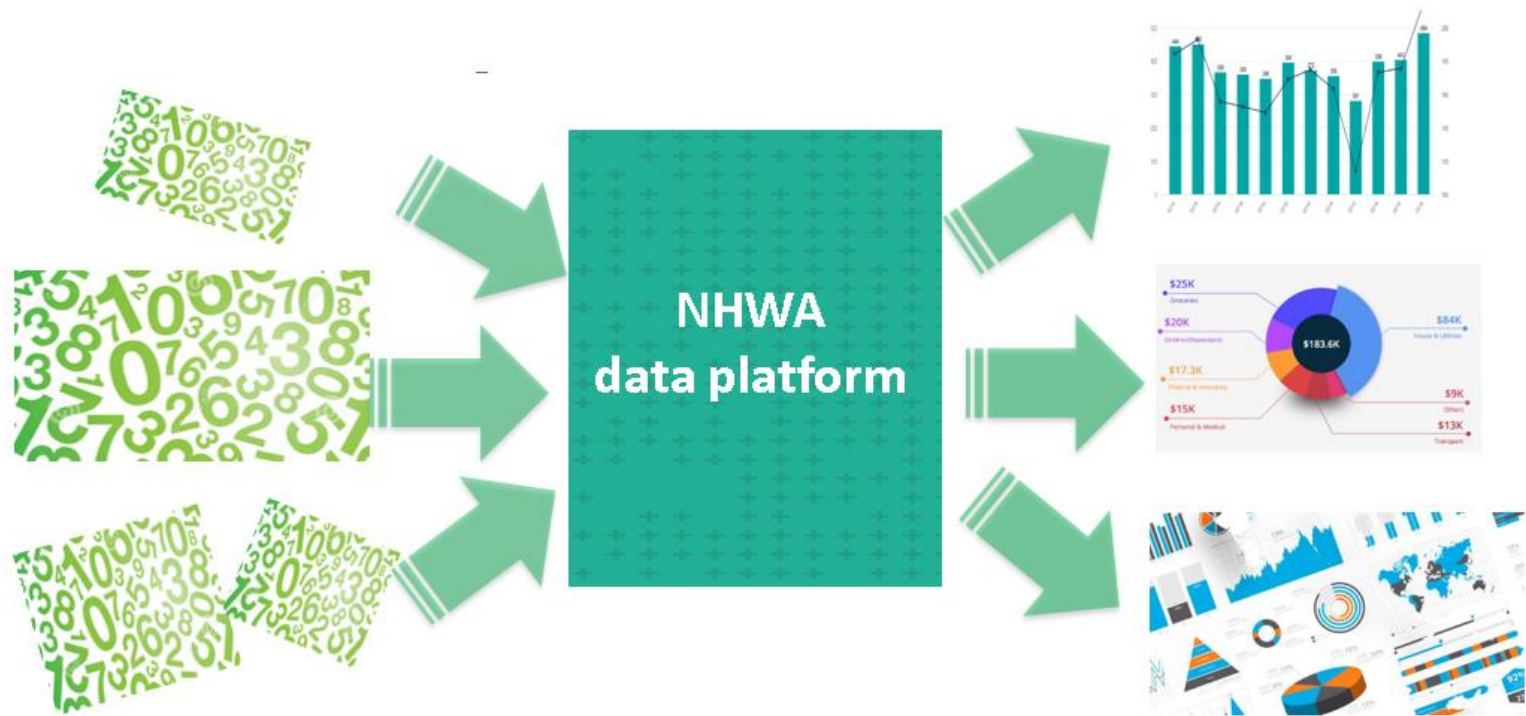
Functions and visualization

Exercises. Data approval, pivot tables, graphs,
dashboard

Aurora Saares

PAHO NHWA workshop, Miami July 2019

NHWA data platform for countries



NATIONAL HEALTH WORKFORCE ACCOUNTS ONLINE DATA PL

Welcome Aurora Saares

NHWA maturity assessment



NHWA maturity assessment enables countries to assess their national information system and its capacity to address the NHWA indicators.

Validate existing baseline data



The validation exercise enables countries to view existing data and undertake necessary action of data correction/update as required.

NHWA data entry

Data entry into the system can be done (i)directly through the system interface or (ii) as batch upload through excel sheets



Data entry through the system interface



Batch upload through excel sheets

Visualise data

Access programmed data infographics or create customised data visualisation with the existing data



Pivot Table

Enables users to create pivot tables, using available data



Data Visualizer

Enables users to easily create dynamic data analysis and visualizations through charts and data tables.



GIS

Enables users to visualize system.



Dashboard

Access pre populated data infographics based on existing data



Dashboard

Access to an interactive dashboard



NHWA reports

Access to the NHWA repo

Other Useful features



Browser Cache Cleaner

Enables the users to clear the browser cache.



Data Quality

Enables the users to run data quality checks such as validation and Std dev outlier analysis.



Messaging

Enables the user to comm system and give feedback



Approval

Enables the users to approves the data submitted in the system



User Profile

Enable the user to set his profile and account credentials



Data approval



Secure | <https://extranet.who.int/dhis2/dhis-web-reporting/showDataApprovalForm.action>

- Report
 - Standard Report
 - Data Set Report
 - Reporting Rate Summary
 - Resource
 - Organisation Unit Report
 - Data Approval
 - Report Table
- Analytics
 - Analytics

Data Approval

Approval status: Please make a selection below

Data criteria

Data set
NHWA Module 1

Report period
Yearly
2023

Report organisation unit
Global

- AFR
- BLU
- COS
- EUR
- SEI
- FRS
- FRM
- GLO
- ISR
- ISL

Get

Data Approval

Approval status: Ready for approval

Data criteria Approve



Tuvalu - 2015

Active Health Workforce Demographic Details

[Access the NHWA HANDBOOK](#)

[Access the NHWA USER GUIDE](#)

[Access the NHWA OCCUPATION MAPPING](#)

- Working Details
- Demographic
- Place of Birth and training
- Country of training
- Other indicators in Module 1
- Other Resources

SECTION 1: HWF WORKING DETAILS

NHWA landing page



NATIONAL HEALTH WORKFORCE ACCOUNTS ONLINE DATA PLATFORM

Welcome [redacted]

[User Guide](#)

[Logout](#)

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[Dashboard](#)

Access to an interactive dashboard

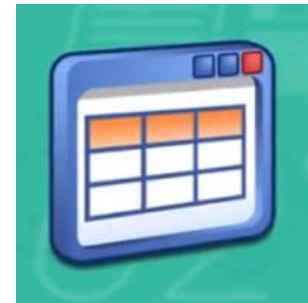


[NHWA reports](#)

Access to the NHWA reports

Pivot tables

- User can select country, year, indicator to create pivot table
- Export in various formats
 - Tabulated (xlsx, csv, HTML etc)
 - Raw data (JSON, XML etc)



Secure | <https://extranet.who.int/dhis2/dhis-web-pivot?id=mEID0yuFpU>

DHIS 2 Pivot Tables

Stock : data validation table

Update Favorites Layout Options Download Embed

Bahrain

Data / Period	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Medical Doctors stock Total	678	742	792	816	803	928	972	1 052	1 103	1 149	1 178	1 208	1 244	1 254	1 279	1 270
General Medical Practitioners stock Total																
Specialist Medical Practitioners stock Total																
General Paediatricians Practitioners stock Total																
Obstetricians Practitioners stock Total																
Psychiatrists Practitioners stock Total																
PP stock Total																
SSP stock Total																
OSP stock Total																
Nursing general stock Total	1 981	2 166	2 111	2 200		2 389	2 605		2 856	2 990	3 052	3 192	3 224	3 293	3 330	3 422
Nursing Professionals stock Total																
Nursing Associate stock Total																
Midwifery personnel stock Total																
Midwifery Professionals stock Total																
Midwifery Associate Professionals stock Total																
Dentists stock Total					180	98	103		119	118	122	127	139	134	131	134
Dental Assistants and Therapists stock Total					96											
Dental Prosthetic Technicians stock Total					86	145	150		154	159	172	181	191	196	208	82
Pharmacists stock Total	127	135	134	139		164	172	180	186	186	196	193	205	194	219	222
Pharmaceutical Technicians stock Total																
Paramedical Practitioners stock Total																
Medical Laboratory scientists stock Total					111	4	4		4	5	6	3	3	3	2	
Medical Imaging Technicians stock Total	78	85	86	91	149	89	102		107	112	123	124	126	123	132	158

DHIS 2 Pivot Tables

Pivot table, interface Data selection

Terminology :

- Data (indicators, data element)
- Periods (year)
- Organisation unit (country)

The screenshot displays the 'Data' section of the DHIS 2 Pivot Tables interface. It features a search bar and a list of indicators. The 'Available' list includes items like '% of active health workers in 15-49 age groups', '% of medical Doctors in P4P', and 'Density of Dentists per 10,000 population'. The 'Selected' list contains 'Density of Medical Doctors per 10,000 population'. Navigation arrows (left and right) are visible between the lists. Below the indicator lists are sections for 'Periods', 'Organisation units', 'Age group', 'Age group (BU)', 'Animal ownership', 'Animals', and 'Category (BU)'. Red arrows point to the search bar, the indicator lists, the navigation arrows, and the 'Density of Dentists' indicator.

Available	Selected
% of active health workers in 15-49 age groups	Density of Medical Doctors per 10,000 population
% of medical Doctors in P4P	
% of medical Doctors in PN4P	
% of medical Doctors in Public	
Density of Dentists per 10,000 population	
Density of Midwifery per 10,000 population	
Density of Nurse per 10,000 population	
Density of Pharmacist per 10,000 population	
Percentage of domestic-trained Medical Doctors	
Percentage of foreign-trained Medical Doctors	

Pivot table,
interface
Period
selection



Data

Periods

Yearly ▼ Prev year Next year

Available	Selected
2018	2017
2009	2016
2008	2015
	2014
	2013
	2012

Days

- Today
- Yesterday
- Last 3 days
- Last 7 days
- Last 14 days

Bi-months

- This bi-month
- Last bi-month
- Last 6 bi-months
- Bi-months this year

Financial years

- This financial year
- Last financial year
- Last 5 financial years

Weeks

- This week
- Last week
- Last 4 weeks
- Last 12 weeks
- Last 52 weeks
- Weeks this year

Months

- This month
- Last month
- Last 3 months
- Last 6 months
- Last 12 months
- Months this year

Quarters

- This quarter
- Last quarter
- Last 4 quarters
- Quarters this year

Six-months

- This six-month
- Last six-month
- Last 2 six-months

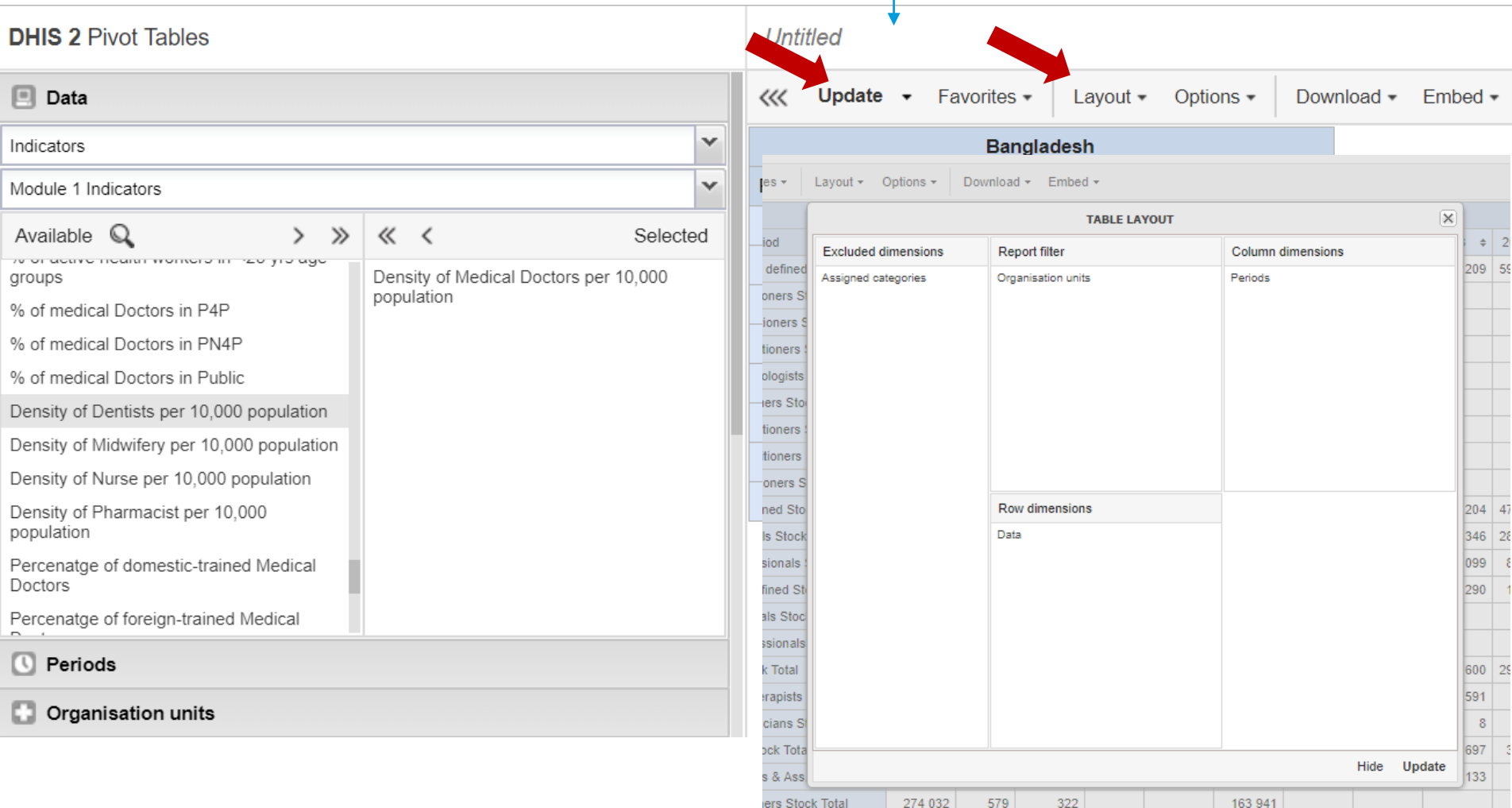
Years

- This year
- Last year
- Last 5 years

Organisation units

Manipulate a table/graph/...











Layout: manage table



The screenshot displays the DHIS 2 Pivot Tables interface. On the left, there are panels for 'Data', 'Indicators', and 'Periods'. The main area shows a table with the selected indicator 'Density of Medical Doctors per 10,000 population'. A 'TABLE LAYOUT' dialog box is open, allowing users to manage the table's structure. The dialog has a title bar 'Bangladesh' and a menu with 'Layout', 'Options', 'Download', and 'Embed'. The dialog is divided into several sections: 'Excluded dimensions' (containing 'Assigned categories'), 'Report filter' (containing 'Organisation units'), 'Column dimensions' (containing 'Periods'), and 'Row dimensions' (containing 'Data'). At the bottom right of the dialog, there are 'Hide' and 'Update' buttons. A blue arrow points to the 'Layout' menu item, and two red arrows point to the 'Update' and 'Layout' menu items respectively.

Save/open a table/ graph/...

NHWA Bangladesh Medical doctor

<<< Update ▾ Favorites ▾ Layout ▾ Options ▾ Download ▾ Embed ▾		
	<ul style="list-style-type: none">  New  Open  Save  Save as  Rename  Translate  Share  Write interpretation  Get link  Delete 	
Period / Data		0,000 population ↕
2017		5.263
2016		4.823
2015		4.715
2014		4.747
2013		4.1
2012		3.891
2011		3.736
2010		3.538

- Under the “favorites”:
- Save the table/ visual (save as)
 - Search for saved and shared tables (open)
 - Set Shared settings to NHWA team (share)

Defining sharing settings



Navigation: Update, Favorites, Layout, Options, Download, Embed

Period / Data	Den
2017	
2016	
2015	
2014	
2013	
2012	
2011	3.736
2010	3.538

SHARING SETTINGS

NHWA Bangladesh Medical doctor

Add users and user groups

Created by Mathieu BONIOL

Allow external access

Public access: None

Save

SHARING SETTINGS

NHWA Bangladesh Medical doctor

miriam

Miriam Nanyunja

Allow external access

Public access: None

Groups access

NHWA Country Team: Can view

Users access

Bernard Badié Yao: Can view

Save

Period / Data	Den
2017	
2016	
2015	
2014	
2013	
2012	
2011	
2010	

Download options

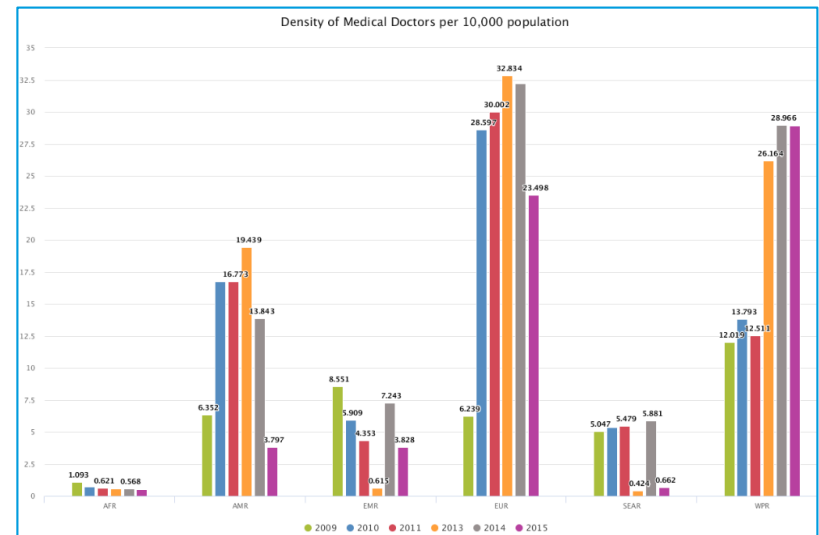
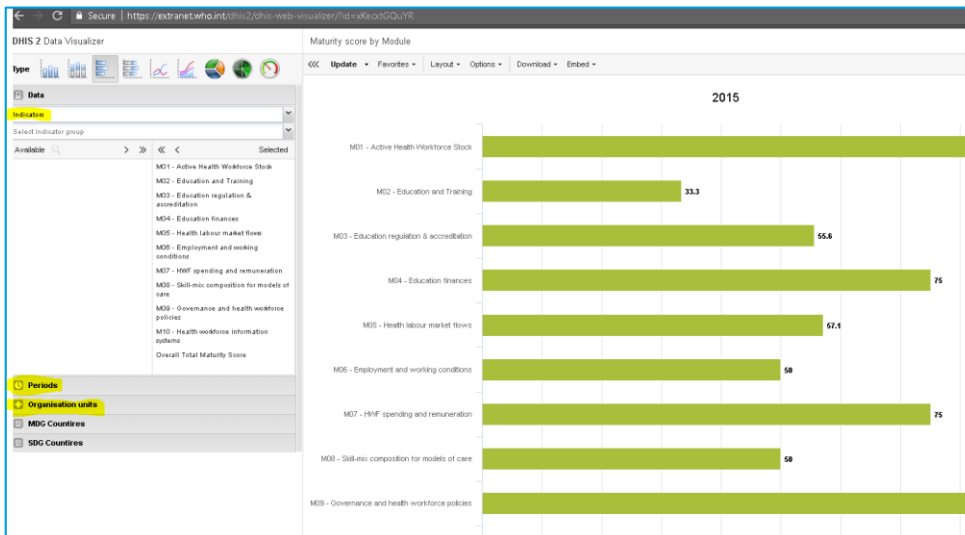
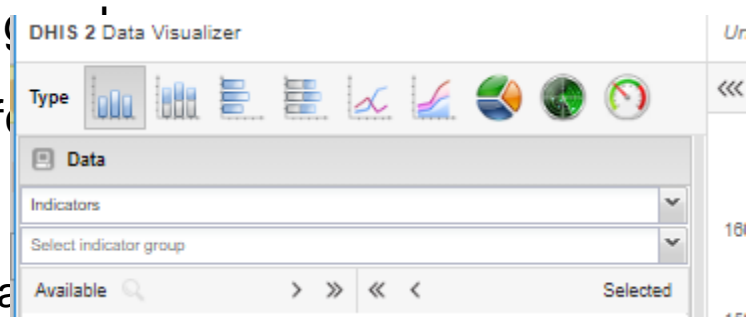
Stock : data validation table

[Update](#)
[Favorites](#)
[Layout](#)
[Options](#)
[Download](#)
[Embed](#)

Data / Period		Table layout		Global					
2000		Microsoft Excel (.xls)	3	2004	2005	2006	2007	2008	
Medical doctors not further defined Stock Total	1 236 328	CSV (.csv)	979	1 359 262	1 347 928	544 400	544 540	613	
General Medical Practitioners Stock Total		HTML (.html)							
Specialist Medical Practitioners Stock Total		Plain data source							
Gen Paediatricians Practitioners Stock Total		JSON							
Obstetricians and Gynaecologists Stock Total		XML							
Psychiatrists Practitioners Stock Total		Microsoft Excel							
Medical Specialists Practitioners Stock Total		CSV							
Surgical Specialists Practitioners Stock Total		Advanced							
Other Specialists Practitioners Stock Total									
Nurses not further defined Stock Total	3 472 675		601	1 052 063	4 002 883	1 092 871	1 831 369	1 650	
Nursing Professionals Stock Total								279	
Nursing Associate Professionals Stock Total								81	
Midwives not further defined Stock Total	1 254	5 509	3 351	2 504	6 297	1 523	2 265	1 636	2
Midwifery Professionals Stock Total									
Midwifery Associate Professionals Stock Total									
Dentists Stock Total	399 549	266 503	238 264	219 438	279 275	440 777	287 239	290 818	309

Data visualization

- Saved Pivot table can be viewed as a chart
- A new chart can be created
- Selection of country, year, indicator to create
- Data and graphs can be exported in various formats
 - Graphical (png, pdf)
 - Tabulated data (xlsx, csv, HTML etc) or raw data



Dashboards

NATIONAL HEALTH WORKFORCE ACCOUNTS ONLINE DATA PLATFORM

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[Batch upload through excel sheets](#)

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[Dashboard](#)

Access pre populated data infographics based on existing



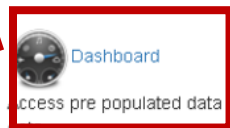
[Dashboard](#)

Access to an interactive dashboard



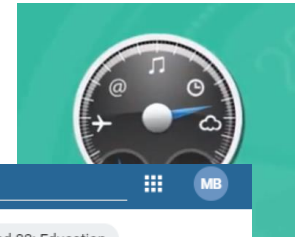
[NHWA reports](#)

Access to the NHWA reports



Dashboard

- Display tables and graphs already created, prepopulated dashboards by NHWA module
- Possibility to create your own dashboards



WHO Integrated data platform

Search for a dashboard: **1.HWF Dashboard** | 2. NHWA Maturity Score | Data Validation | Global Report | HR Density | M01: Health workforce density | M01: HWF Distributions by Age | Mod 02: Education

SHOW MORE

1.HWF Dashboard

EDIT SHARE FILTER

Mod 1: Occupation density trend

Global

Year	Density of Dentists per 10,000 population	Density of Medical Doctors per 10,000 population	Density of Midwifery per 10,000 population	Density of Nurse per 10,000 population	Density of Pharmacist per 10,000 population
2010	1.629	11.533	0.745	28.065	3.151
2011	1.166	11.346	0.592	21.402	2.402
2012	1.192	12.058	0.812	20.825	2.725
2013	0.862	12.449	0.539	22.023	2.359
2014	1.321	12.512	0.587	26.082	1.962

Age distribution doctors

Global

Year	% of active health workers in <25 yrs age groups (Dentists)	% of active health workers in <25 yrs age groups (Medical Doctors)	% of active health workers in <25 yrs age groups (Midwifery)	% of active health workers in <25 yrs age groups (Nurse)	% of active health workers in <25 yrs age groups (Pharmacist)
2018	3.8	2.7	1.8	2.2	1.4
2017	1.1	0.66	0.06	0.06	0.06
2016	4.8	5.2	4.0	5.4	1.5
2015	4.4	4.7	4.0	3.8	2.2
2014	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00
2010	2.7	3.3	3.2	2.3	1.3
2009	0.20	0.00	0.00	0.00	0.00
2008	0.68	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00
2000	0.00	0.00	0.00	0.00	0.00
1999	0.00	0.00	0.00	0.00	0.00
1998	0.00	0.00	0.00	0.00	0.00
1997	0.00	0.00	0.00	0.00	0.00
1996	0.00	0.00	0.00	0.00	0.00
1995	0.00	0.00	0.00	0.00	0.00
1994	0.00	0.00	0.00	0.00	0.00
1993	0.00	0.00	0.00	0.00	0.00
1992	0.00	0.00	0.00	0.00	0.00
1991	0.00	0.00	0.00	0.00	0.00
1990	0.00	0.00	0.00	0.00	0.00

Mod 1: Foreign Trained HWF

Global

Year	Percentage of foreign-trained Medical Doctors	Percentage of foreign-trained Nurse
2015	6.6	2.3
2014	5.0	1.7
2013	4.9	1.4
2012	5.0	2.8
2011	5.0	0.75
2010	4.4	0.53

Mod 1: Occupation density's by years

Global

Year	Density of Dentists per 10,000 population	Density of Medical Doctors per 10,000 population	Density of Midwifery per 10,000 population	Density of Nurse per 10,000 population	Density of Pharmacist per 10,000 population
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Dashboards

- Add tables, charts to existing dashboards or create a new dashboards, mark favorite dashboards

- Set shared settings to NHTA country team /NHTA regional team
 - Not to be public

The screenshot shows a dashboard configuration interface for a dashboard titled "Nurses stock". At the top, there are buttons for "SAVE CHANGES" and "EXIT WITHOUT SAVING". Below the dashboard title, there is a search bar containing the text "sown". The interface is divided into two main sections: "Pivot tables" and "Charts".

Pivot tables section:

- SoWN - Gender all 2013-2018 (+ ADD)
- SoWN Nursing density average 2013-2018 (+ ADD)
- SoWN Nursing Stock 2017 (+ ADD)
- SoWN_TAB1 (+ ADD)

Charts section:

- SoWN Age 2017 (+ ADD)
- SoWN Age nursing personnel 2013-2018 (+ ADD)
- SoWN Age Nursing Professional 2013-2017 (+ ADD)

Below the dashboard configuration, there is a "Sharing settings" section. It shows the dashboard name "test" and the creator "Aurora Saares". Under "Who has access", there are three rows:

- Public access: No access (toggle off)
- External access: No access (toggle off)
- NHTA Country Team: Access (toggle on, edit icon)

At the bottom, there is a section for "Add users and user groups" with a text input field "Enter names". A "METADATA" dropdown menu is open, showing two options: "Can edit and view" (checked) and "Can view only".

Maturity assessment dashboard

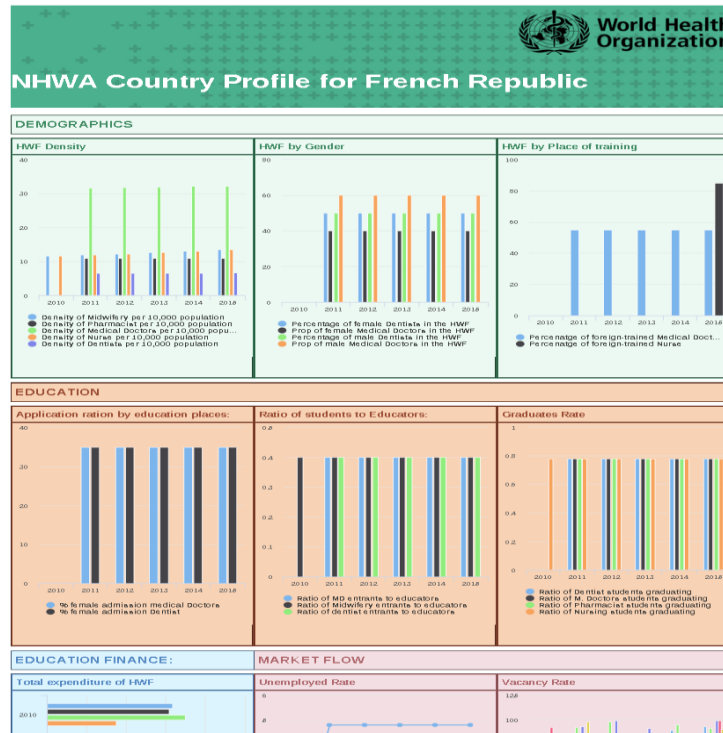
- NHWA dashboard presents the assessment results for easy interpretation and becomes a valuable resource for stakeholders dialogue at the national level.



- Green indicates that country has the country 'has data on' a particular indicators, while Red indicating that 'country does not have data' on a particular indicators

Other tools

Country profiles (in “report”)



Messaging

Messages

Write me a message | Write feedback | | Inbox | Follow up | Unread

Sender	Subject	Date		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		
De mo Country	Form registered as complete	2018-03-12		

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Dashboard

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Access to the NHWA reports

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Enables the users to clear the browser cache.



Data Quality

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Messaging

Enables the user to communicate system and give feedback to the system administrators.



Approval

Enables the users to approve the data submitted in the system



User Profile

Enable the user to set his profile and account credentials

DHIS 2 browser cache cleaner

Session storage

ouUseShortName	<input type="checkbox"/>
ouSelected	<input type="checkbox"/>
dhis2.de.cst.metaData	<input type="checkbox"/>
dhis2.de.cst.dataSetAssociations	<input type="checkbox"/>

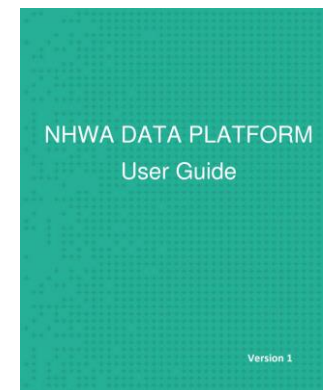
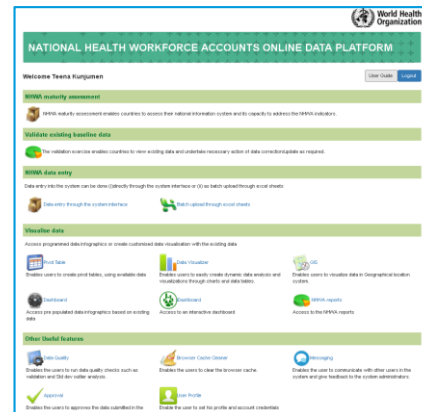
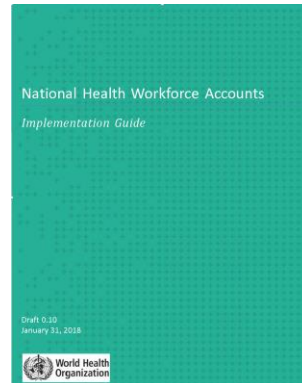
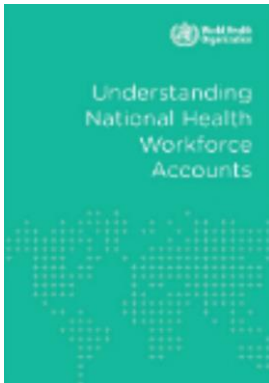
Local storage

dhis2.menu.ui.headerBar.title	<input type="checkbox"/>
formversions	<input type="checkbox"/>
ouUsername	<input type="checkbox"/>
ouVersion	<input type="checkbox"/>
usersettings	<input type="checkbox"/>
dhis2.menu.ui.headerBar.userStyle	<input type="checkbox"/>
datavalues	<input type="checkbox"/>
dhis2.dashboard.current.a.saares	<input type="checkbox"/>
ouRoots	<input type="checkbox"/>
loglevel	<input type="checkbox"/>

indexedDB

dhis2ou	<input type="checkbox"/>
dhis2de	<input type="checkbox"/>

Resources



<https://www.who.int/hrh/statistics/nhwa/en/>
Contact us at hrhstatistics@who.int

Exercises – part II

Connection <https://extranet.who.int/dhis2-demo/dhis-web-commons/security/login.action>

- **2.1 – Approve data entered yesterday**
- **2.2 – Pivot table**
- **2.3 – Data visualizer**
- **2.4 – Dashboard**

Exercise 1 – Data approval

- On landing page, go to Approval
- Select module and year you entered data yesterday
- Review the data and approve

Exercise 2 – Pivot table

- Go to pivot table
- Select data element, all data elements → nursing personnel stock (use search function)
- Select period (year you entered data)
- Save the table and define sharing settings for certain groups : NHWA Country team, NHWA Regional team and NHWA Global team, eventually share as visualization only for participants of the same country.

Exercise 3 – Visualization

- Click Chart in top right corner → open this table as a chart
- Visualize in
- Line plot with data from Table 1
- Bar chart with data from Table 1
- Pie chart with data from Table 2
- Save charts and define sharing settings (as per exercise 2)

Exercise 4 – Dashboard

- 4.1. Create a Dashboard with pivot tables and charts created in exercises 2 and 3.
- 4.2. Define sharing settings of your Dashboard.
- 4.3. Add comments and save as favorite

Thank you



World Health
Organization

WHO

20, Avenue Appia
1211 Geneva

Switzerland

Contact us:
hrhstatistics@who.int

<https://www.who.int/hrh/statistics/nhwa/en/>