

Optimizing analysis and use of data collected by using an open source routine health information system

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<i>Strengths of DHIS2 and approaches for virtual implementations</i>	<i>Promoting data quality and use in the humanitarian-development nexus using DHIS2</i>	<i>Successes and challenges using DHIS2 for monitoring Global Health Programs</i>



LogicalOutcomes contributes to social justice and equity by empowering stakeholders with data, technology, and information to be more effective.

Our Mission is to build organizational evaluation and learning capacity.

We Value:

- Collaboration
- Respect
- Sharing towards the public good
- Creativity and learning
- Integrity and ethical behaviour
- Competency and self-reflection

Major functions for Monitoring and Evaluation Systems

1. **Develop theories of change and indicators for each project**
2. **Collect data:** with an adequate level of quality and minimum duplication.
3. **Manage data:** Import, store, combine, aggregate and export data.
4. **Report information**
5. **Keep projects on track:** Track activities, milestones and finances compared to targets and flag issues.
6. **Contribute to better programs:** Provide information to improve impact and promote learning and knowledge development.
7. **Contribute to an organizational identity and business development:** Create project reference documents, provide core set of aggregate data on outreach and outcomes, and communicate impact.
8. **Build local capacity:** Use M&E processes to strengthen the capacity of local providers. Do No Harm.

12 requirements for M&E software

Ability to create complex indicators

Ability to collect data on mobile devices

Ability to aggregate data in different combinations

Ability to store, import, export data

Ability to create on-demand attractive and flexible reports

Specifically designed for M&E; does not require extensive customization

Open source and ability to share templates

Used successfully by large international nonprofits

Ability to be configured without software developers

Large community of developers (to prevent vendor lock-in)

Frequent revisions of the software (to prevent obsolescence)

Posted development roadmap

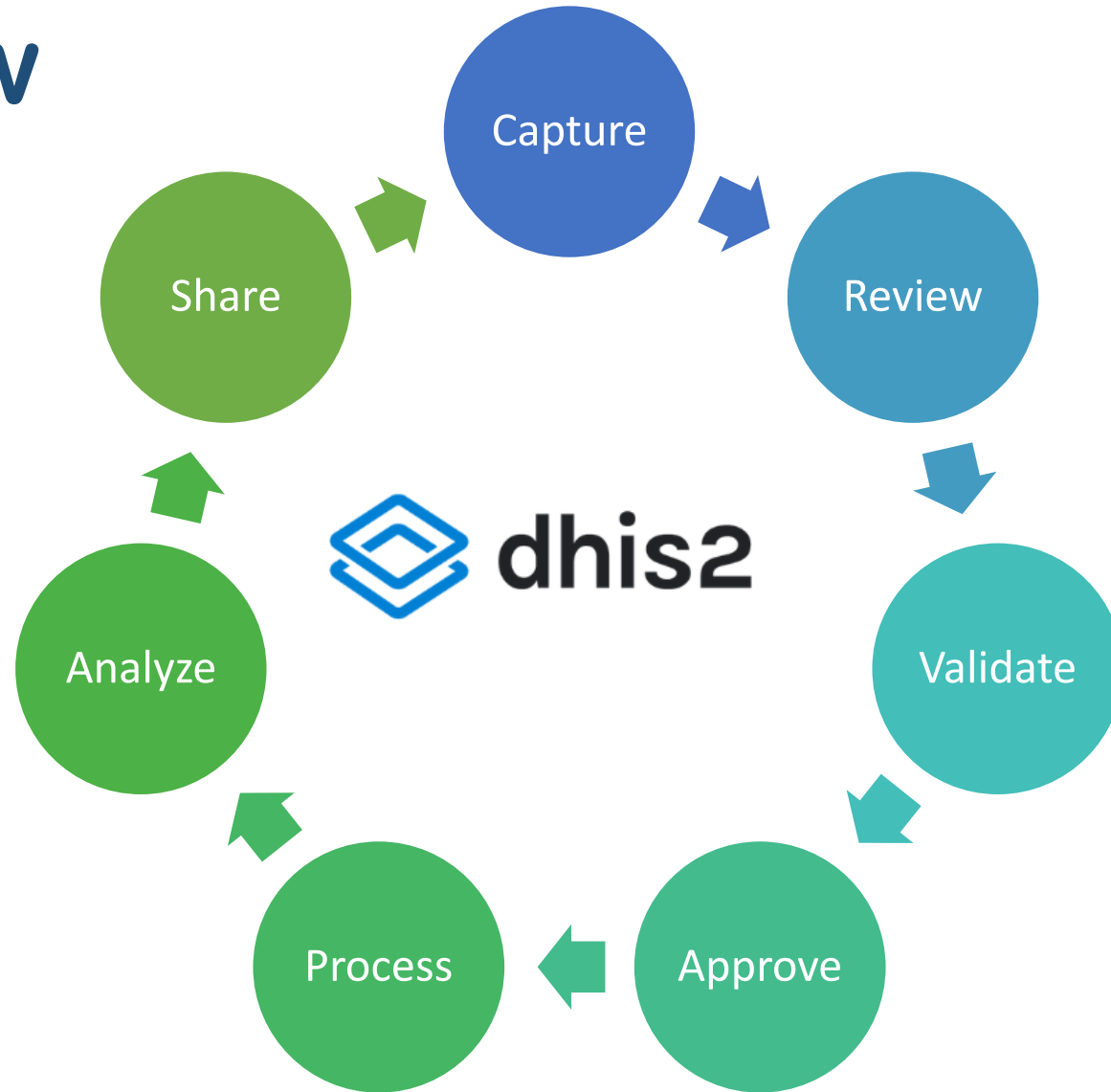
Software	Minimum features							Additional features					
	Create complex indicators that can be grouped in various ways	Collect information using mobile and browser	Aggregate data	Store data	Export and import data	Generate reports and dashboards very flexibly	Designed for M&E (not a general ERP/CRM)	Open source	Frequently updated (at least twice a year)	Large community of developers	Posted roadmap	Used successfully by at least three large INGOs over multiple countries and projects	Can be configured and revised mostly without a software developer
ActivityInfo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aidsbits	✓	✓	✓	✓	✓✗	✓	✓	✗	✓	✗	✗	✓	
Akvo	✓	✓	✗	✗	✓✗	✓✗	✓	✓	✓	✓	✓	✓	✓
Apricot	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓✗	✗	✓
Assyst							✗					✗	
Kwantu BetterData	✓	✓	✓	✓	✗	✓	✓	✓✗	✓	✓	✓	✓	✓
Development Gateway	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✓	✓	✗
DevResults	✓	✓	✓	✓	✓	✓	✓	✗				✓	
DHIS2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kimetrica (ki-projects)	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓
mFieldWork	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	✓
Microsoft Dynamics CRM							✗						
Newdea	✓	✗	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✗
Premise							✗	✗					
Prome	✓	✗	✓	✗	✗	✓	✓	✓		✗	✓	✗	✗
Salesforce							✗	✗	✓	✓		✓	
Sharepoint				✓		✗	✗	✗	✓				
Sigmah		✗		✓	✓	✓	✓	✓	✗	✓	✗	✓	✓
Synergy Indicata	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗		✓	✓
TaroWorks	✗			✗	✗	✓							
Vera Solutions								✗				✓	
WebMo		✗		✓		✓	✓	✗	✓			✗	✗
Workfront, previously AtTask	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

bit.ly/DHIS2_Eval

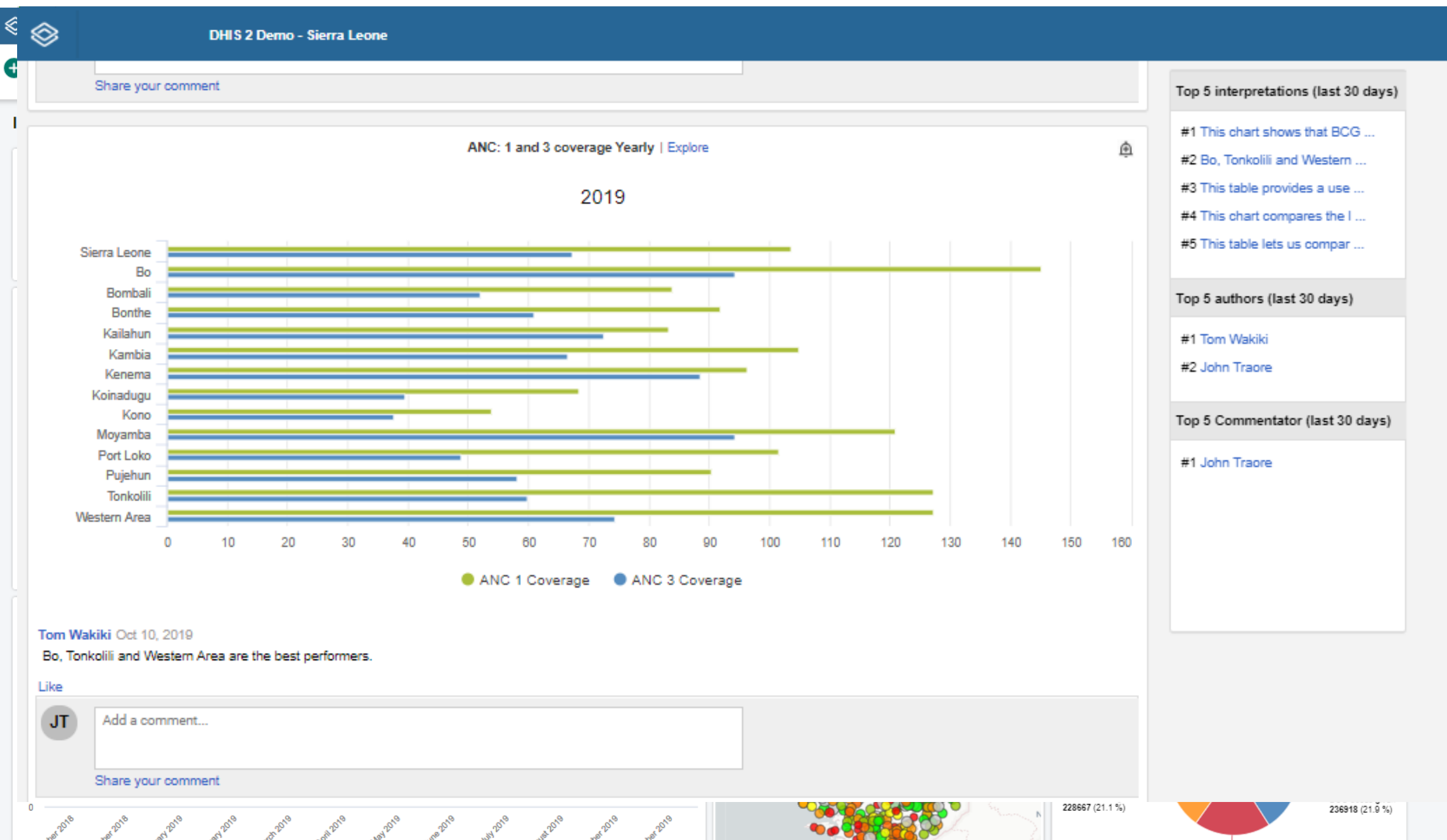


- ✓ not just for health
- ✓ aggregates lowest common denominator (communities)
- ✓ built for low-resource settings
- ✓ scales
- ✓ open source, Created by University of Oslo, sustainable funding
- ✓ android app for offline data collection
- ✓ Community of Practice (community.dhis2.org)

Workflow



DASHBOARDS AND MESSAGING



METADATA AND DATA QUALITY SET UP

DHIS 2 Demo - Sierra Leone

56

Search apps

JT

ALL

CATEGORY

DATA ELEMENT

DATA SET

INDICATOR

ORGANISATION UNIT

PROGRAM

VALIDATION

OTHER

Validation rule

Validation rule group

Validation notification

Edit numerator

Description

Total births

#{gQNFkFkObU8}+#{HZSdn05fCUc}

() * / + - Days

DATA ELEMENTS

PROGRAMS

ORG UNIT COUNTS

CONSTANTS

REPORTING RATES

birth

Complicated deliveries in community live birth

Complicated deliveries in community still births

Complicated deliveries in PHU live birth

Complicated deliveries in PHU still births

Live births

Live births MCH Aides, Female

Live births MCH Aides, Male

Live births SECHN, Female

Live births SECHN, Male

Live births Midwives, Female

Live births Midwives, Male

Live births CHO, Female

Live births+Still births

Valid

CANCEL

DONE

9

DATA ENTRY AND CAPTURE (EVENTS)

DHIS 2 Demo - Sierra Leone

Home

Previous

Next

Sierra Leone

Bo

Badjia

Ngelehun CHC

Njandama MCHP

Baoma

Bargbe

Bargbo

Bumpe Ngao

Gbo

Jaiama Bongor

Kakua

Komboya

Lugbu

Niawa Lenga

Selenga

Tikonko

Valunia

Wonde

Bombali

Bonthe

Kailahun

Kambia

Kenema

Koinadugu

Data Entry ?

Organisation Unit

Njandama

Data Set

Life-Saving

Period

October 2023

UN Commission on Life-Saving

Please remember to report in pack sizes

Reproductive Health

Commodity

Female condom

Implants

Emergency Contraception

Selected registering unit

Sierra Leone

Selected Program

Malaria case registration

Start again

Show all events

New event

Basic info

Report date *

Coordinate

Latitude

Longitude

Age (years) *

Gender *

Household location

Latitude

Longitude

Status

Complete event

Yes

Comments

WRITE COMMENT

SAVE AND EXIT

CANCEL

TRACKER

TB program

×

▼

Search

Register

Search for person

TB identifier

Q

National identifier

Q

Unique ID

Exact value

Q

TB program

×

▼

Search

Register

Enrollment

Enrolling organisation unit

Njandama MCHP

Start of treatment date

2019-11-08

Profile

First name

Last name

Gender

Select or search from the list

▼

Tabular Data Entry

Lab monitoring

TB visit

Sputum smear microscopy test

TB visit date *

2018-07-03

Due date

2017-05-18

Event point

Latitude

Longitude

📍

Disease Classification *

TB Case Definition *

Treatment card

📄

Previous use of second- line drugs?

☐

Started on ART?

☐

Started on CPT?

☐

HIV testing done

Complete

Delete

Print form

Profile Edit

Profile

First name

Scott

Last name

Kelley

Gender

Male

Address

Kenyatta Road 52

City

Zip code

Relationships | Add

No relationships exist

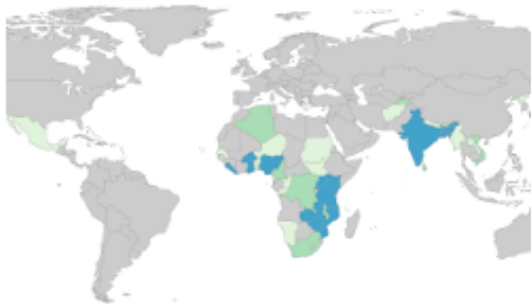
11

Dhis2.org / dhis2@logicaloutcomes.net

Global impact

DHIS2 is the world's largest health management information system (HMIS) platform, in use by 67 low and middle-income countries. 2.28 billion (30% of the world's population) people live in countries where DHIS2 is used. Read more in the [factsheet](#).

[Learn more »](#)



Integrated system

DHIS2 is typically used as national health information systems for data management and analysis purposes, for health program monitoring and evaluation, as facility registries and service availability mapping, for logistics management and for mobile tracking of pregnant mothers in rural communities.

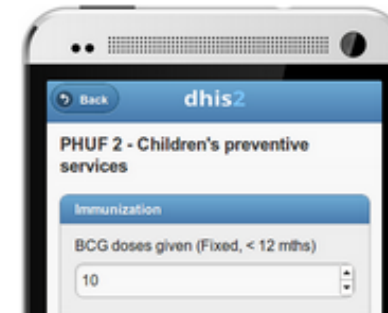
[Learn more »](#)



Runs on everything

With DHIS2 you can capture data on any type of device, including desktops, laptops, tablets, smartphones and feature phones. Most solutions work offline, enabling improved reach in locations with poor connectivity. DHIS2 provides a wide range of solutions based on HTML5, SMS and Java.

[Learn more »](#)



BE PREPARED

- Define requirements; sort and prioritize.
- Review metadata before initiating with vendor
- Manage expectations: DHIS2 will solve most, not all problems
- Identify 2-3 'core team' future Super Users/System Admins
- FIND HELP: open source doesn't mean free
- PHASED WORK PLAN: Manage the change, one project at a time
 - 0.25 FTE for Super Users to build, train and lead
 - Use prototypes to gain buy-in/reduce anxieties
- RINSE AND REPEAT: Test, Train, Revise...It's alive!
- USE TEMPLATES

Promoting data quality and use in the humanitarian-development nexus using DHIS2

Sylvie Kambou

Senior Program Officer SAFPAC

AEA 2019, Minneapolis MN



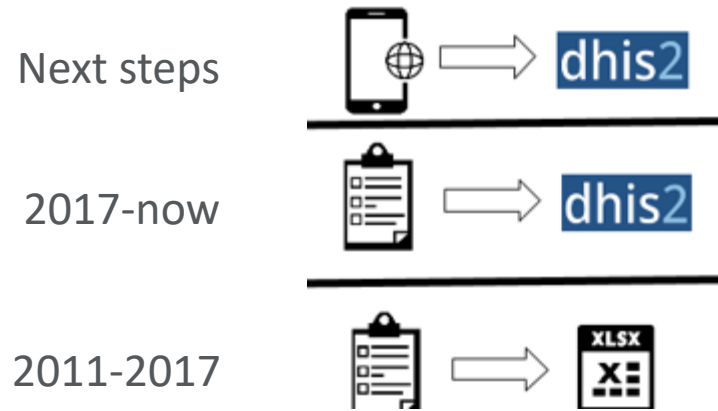
Supporting Access to Family Planning and Post-abortion Care (SAFPAC)



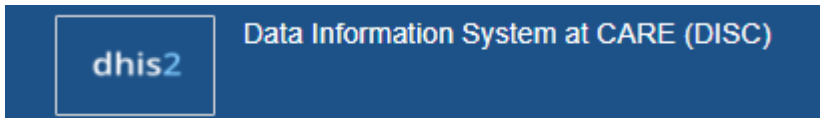
■ The SAFPAC project supports governments in emergencies, to deliver high quality services to communities through:

- Competency-based training
- Supportive supervision
- Supply chain management
- Community engagement
- Data use for decision-making which requires good health information systems (HIS)

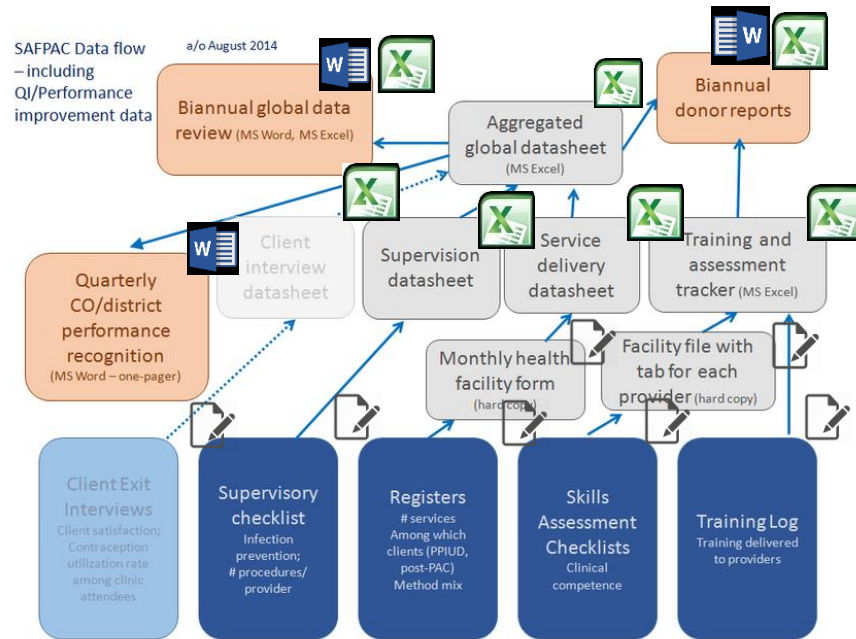




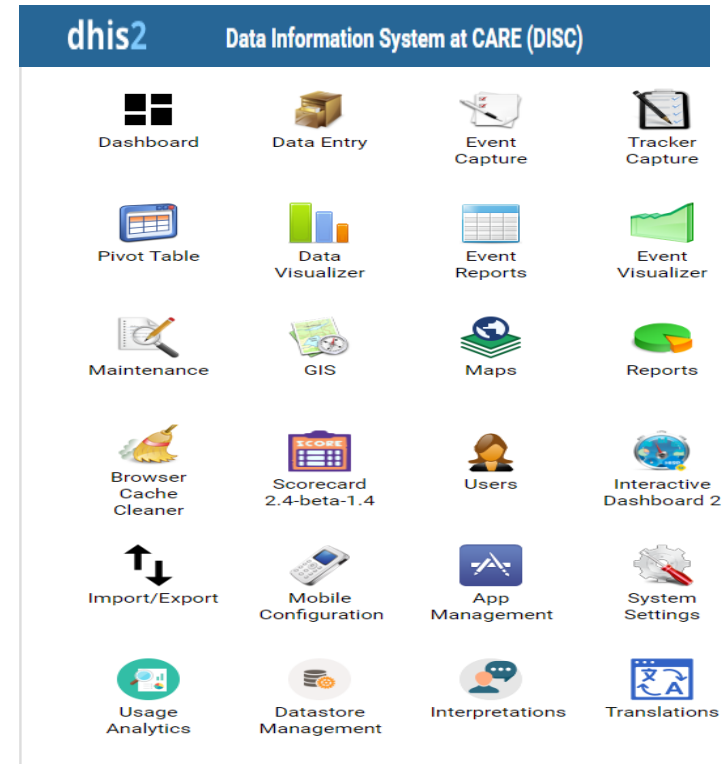
- In 2017, SAFPAC started using DHIS2 as its platform for project monitoring and evaluation in Chad, DRC, Mali, Pakistan and Syria.
- **DISC:** Data Information System at CARE
 - Currently, used by 18 countries for sexual and reproductive health programs, immunization
 - 5 projects: SAFPAC, CDC/PHE, VIVO, PSME, FP2020
 - Service delivery, performance management, supply chain management, outbreaks tracking



Background



Before DHIS2



With DHIS2



DHIS2 training



Data entry with DHIS2

Capacity building: Support resources



SAFPAC PROJECT
CARE USA

dhis2

Data Information System at CARE (DISC)

Superuser Guide

DISC DRC

21 participants | Gallery | Find

Yannick, 11:30 AM

Ok. Merci j'essaie et reviens à vous. Merci

Ok C'est bon j'ai finalement visualiser les données? Merci Sylvie pour le soutien

Yannick, 11:36 AM

Merci à vous autant.

Merci Yannick, bonne journee

DISC Chad

6 participants | Gallery | Find

si vous avez toujours besoin d'une orientation, communiquez moi votre disponibilité

Period / Age (Core CDs)	10-14	15-19	20-24	25-29	30-39	40 and above
July 2018	842	842	842	842	842	842
August 2018	842	842	842	842	842	842
September 2018	842	842	842	842	842	842
October 2018	842	842	842	842	842	842
November 2018	842	842	842	842	842	842
December 2018	842	842	842	842	842	842
January 2019	842	842	842	842	842	842
February 2019	842	842	842	842	842	842
March 2019	842	842	842	842	842	842
April 2019	842	842	842	842	842	842
May 2019	842	842	842	842	842	842
June 2019	842	842	842	842	842	842

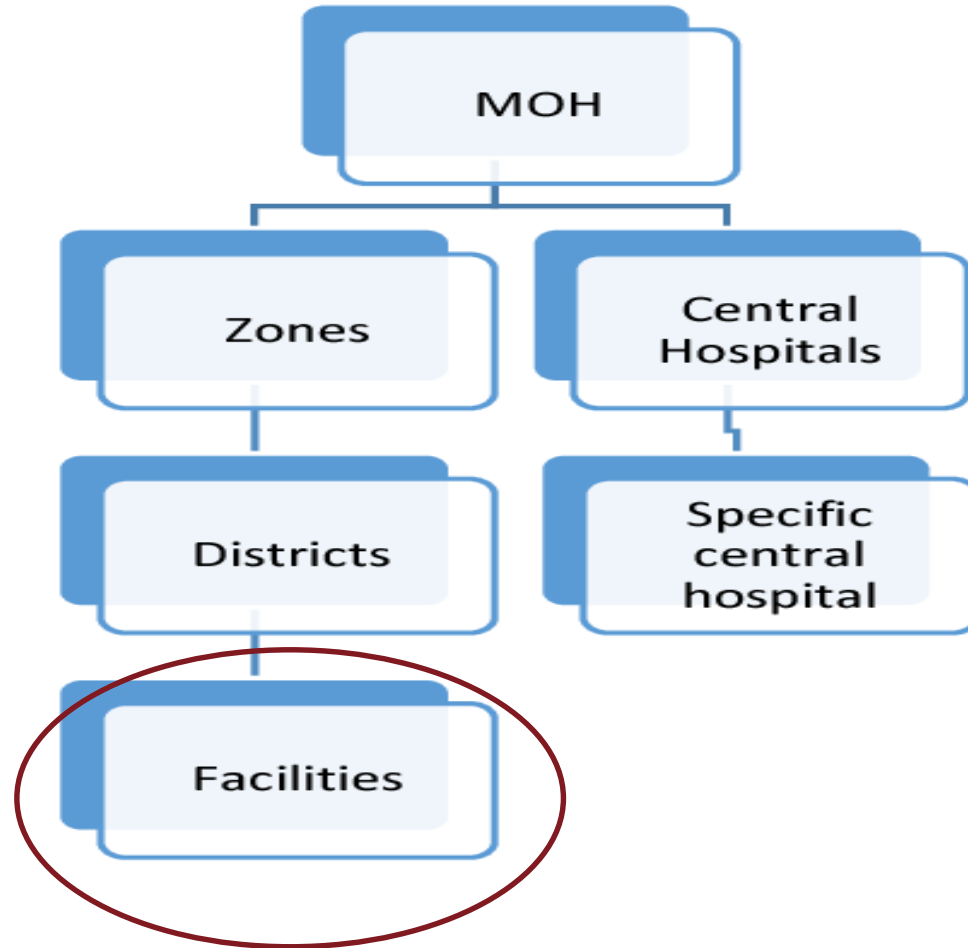
pour l'age, choisissez 30-39 comme sur les fiches

Roland, 10:04 AM

Merci pour les orientations. je reviendrais a vous a tout moment.

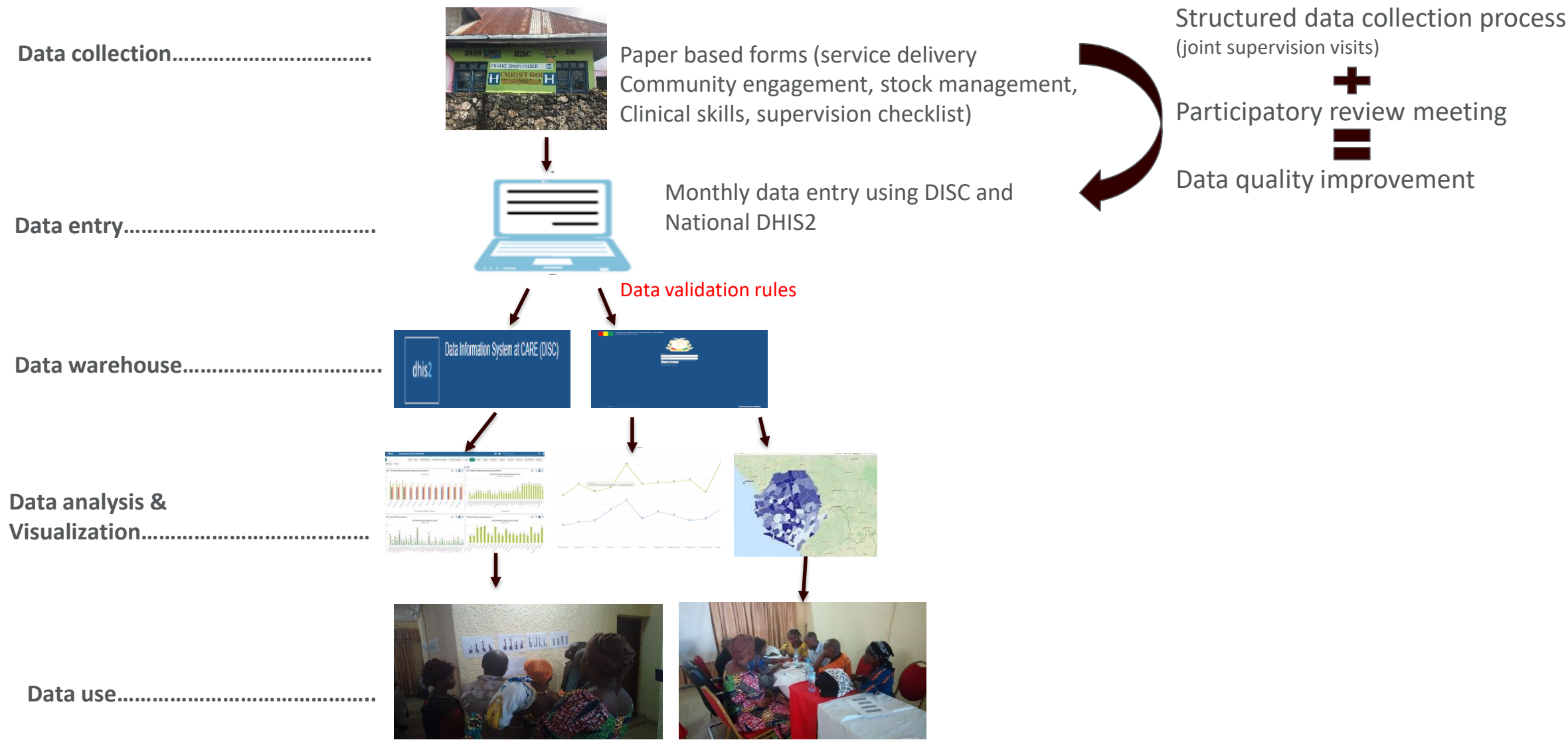
Merci Roland

Data source



- SAFPAC collects data from the same health facilities as the government
- Joint supervision visits with MOH representatives to improve data quality

SAFPAC model: from data collection to data use



DHIS2 allows program results evaluation through Country dashboards



dhis2

Data Information System at CARE (DISC)



Search apps



SK

Search for a dashboard

Nepal

Niger

1. SAFFAC Global

2. Mano River + Sub-Region

3. Sahel + Sub-Region

4. Chad

5. DRC

6. Mali

7. Nigeria

Benin_VIVO

Cameroon

Chad_GSK

Cote d'Ivoire

DRC_CDC_PHE

Philippines

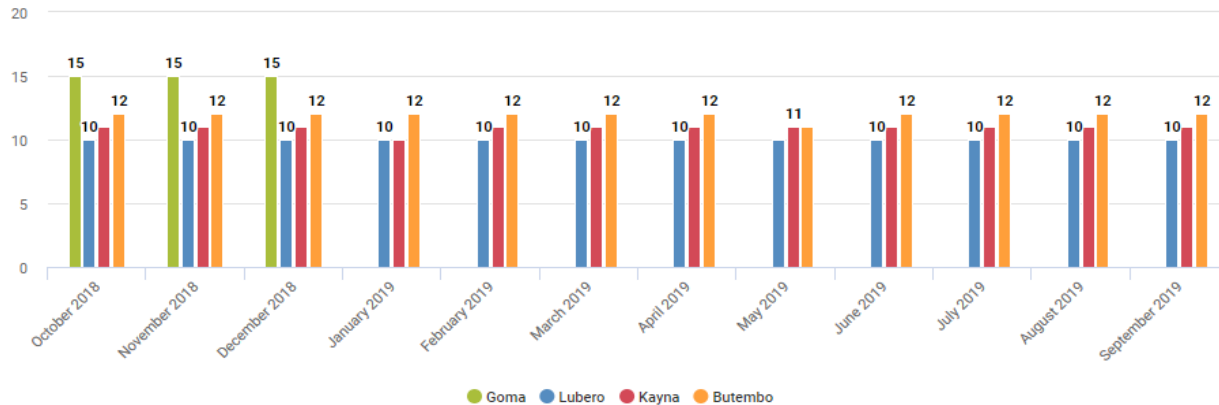
PSME_Togo

Yemen

SHOW MORE

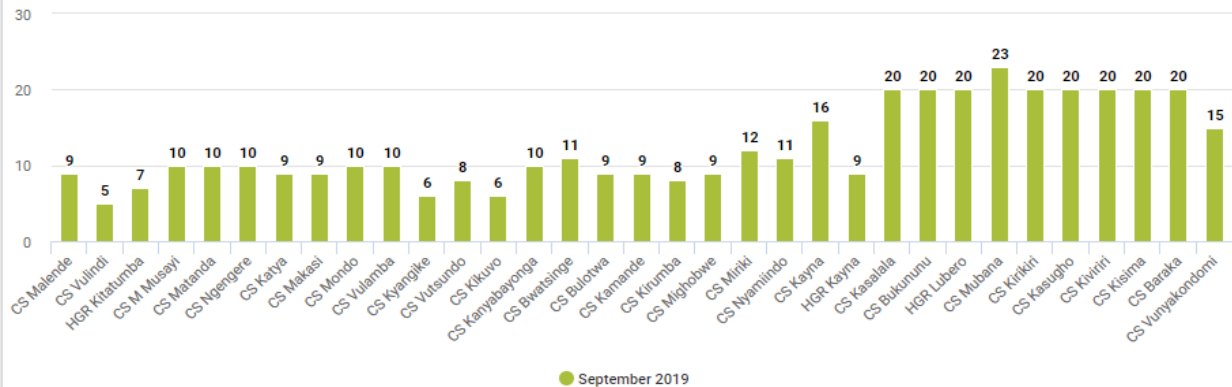
DRC - CE: Health Facilities with at least 4 dialogue sessions per month

DRC (North Kivu)



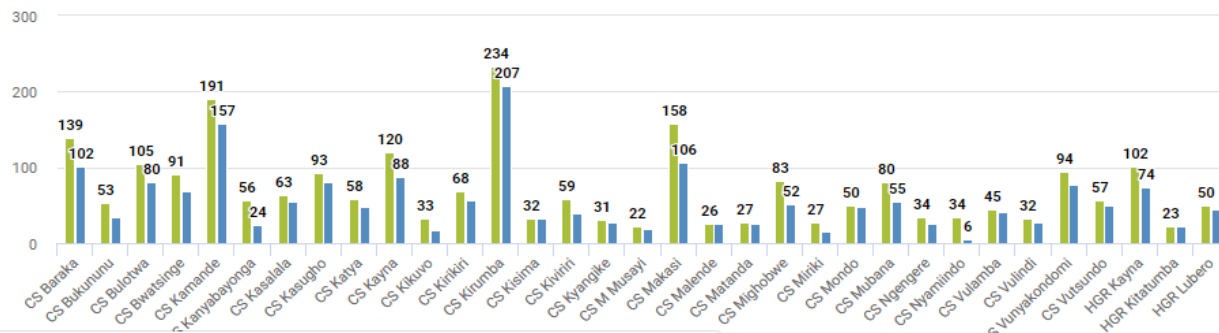
DRC - Number of Dialogue Session by Facility_Last Month

DRC (North Kivu) Number of Dialogues Sessions by Facility
CE: Number of CE dialogue sessions



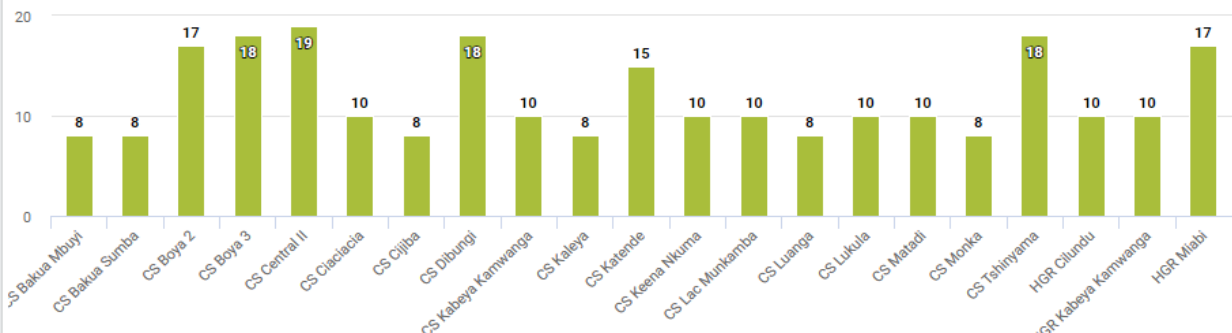
DRC - New FP/LAPM_Last Month

DRC (North Kivu) New FP/LAPM users by facility
September 2019

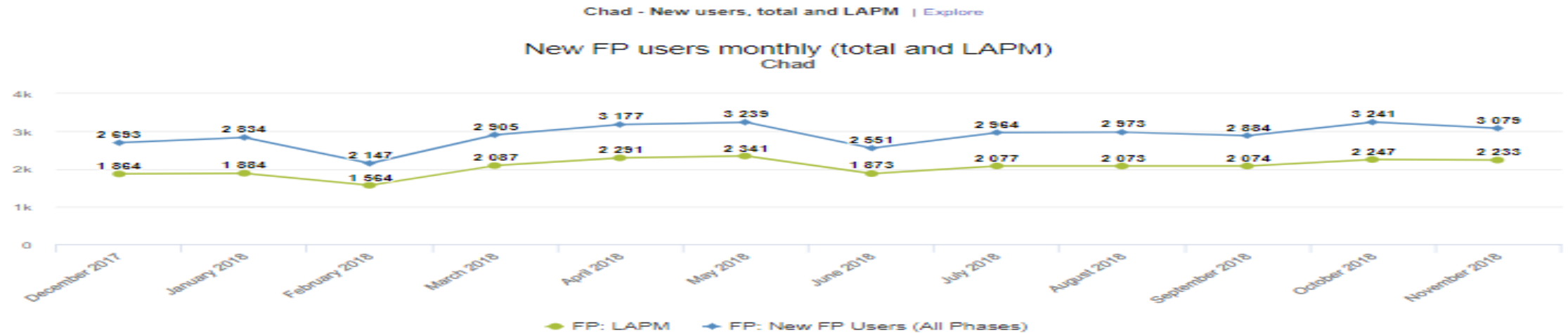


DRC (Kasai) Number of dialogue sessions

DRC (Kasai) Number of dialogue sessions by facility
September 2019



DHIS2 allows program results evaluation through Country dashboards



Roger Laly Dec 29, 2018

C'est une bonne avancée l'entrée des données en ligne qui permet à d'autres personnes de les voir depuis leur lieu de travail. Je me rends compte que les données de PF ne concernent que les nouvelles acceptantes. La courbe verte étant le total des nouvelles acceptantes et la courbe bleue ... [more](#)

[Like](#) · [Edit](#) · [Delete](#)

JM

Justin Mumbere Oui Roger. Les MLDP (Méthodes à Longue Durée et Permanentes dont il est question ici sont le DIU, les implants et la ligature des trompes ainsi que la vasectomie. Nous ... [more](#)
7 months ago [Edit](#) · [Delete](#)

SK

Add a comment...

[Share your comment](#)

RDC_Kayna Tableau Clinique SAA | Explore

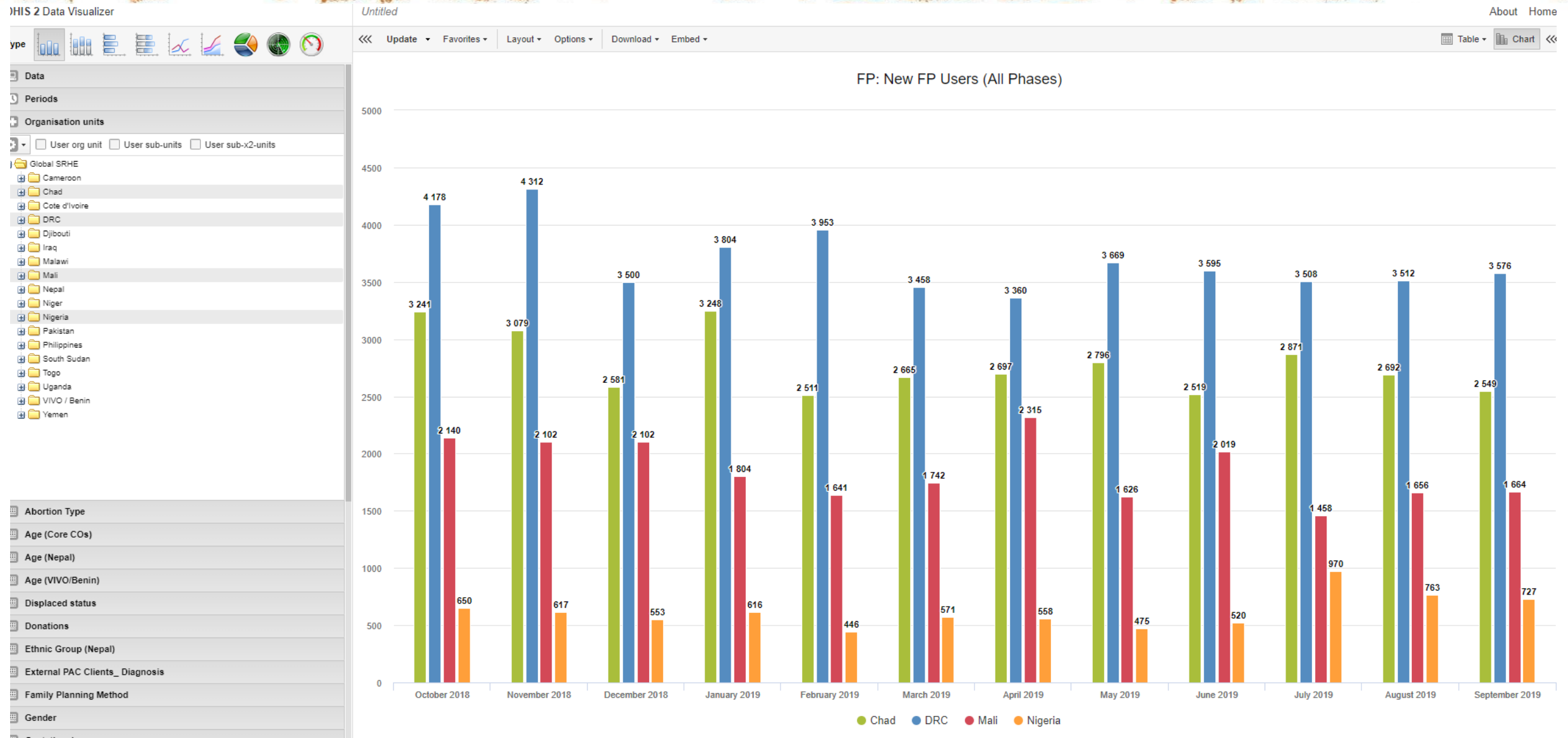
Kayna						
Period / Data	SAC: PAC Clients ↕	SAC: MVA ↕	FP: FP/PAC Clients ↕	FP: % FP/PAC ↕	FP: % LAPM among FP/PAC ↕	Total ↕
February 2018	16	13	16	100	31.25	176.25
March 2018	22	20	14	63.64	50	169.64
April 2018	26	25	19	73.08	36.84	179.92
Total	64	58	49	76.56	38.78	525.81

Jsseni Mushabaa May 30, 2018

Le pourcentage des clientes SAA qui ont choisi les MLDP est tres faible ce trimestre avec une moyenne de 35%. une Analyse sociale pour comprendre les causes et facteurs sera faite rapidement. Le % FP/SAA evolue en dent de SCie; ce qui engendre une necessite des actions de Counselling et ... [more](#)

[Like](#) · [Edit](#) · [Delete](#)

DHIS2 also allows program results evaluation across various contexts



Program performance evaluation at the health facility level



Participatory review meetings with community stakeholders



Occurs monthly at the health facility level with CARE staff, providers, community stakeholders, and MOH representatives.



Data is appraised and informed strategic decisions used to improve the data quality and the project performance.

Quarterly Data use workshops



Gather providers from all the district health facilities for routine data presentation and evaluation.



Contribute to the district data quality improvement by promoting systematic peer review and program improvement strategies sharing to non performing health facilities

Thank you!



Care Canada's experience using DHIS2 for monitoring Global Health programs

Clarissa Teixeira
MEAL Specialist
Global Health Team

Agenda



- What type of project?
- What type of data?
- Features and limitations: what it does and what it does not do
- Vision in 2017 and where we are at in 2019: challenges and benefits
- Recommendations: when to use it and what not to do

What type of projects?



What type of data?

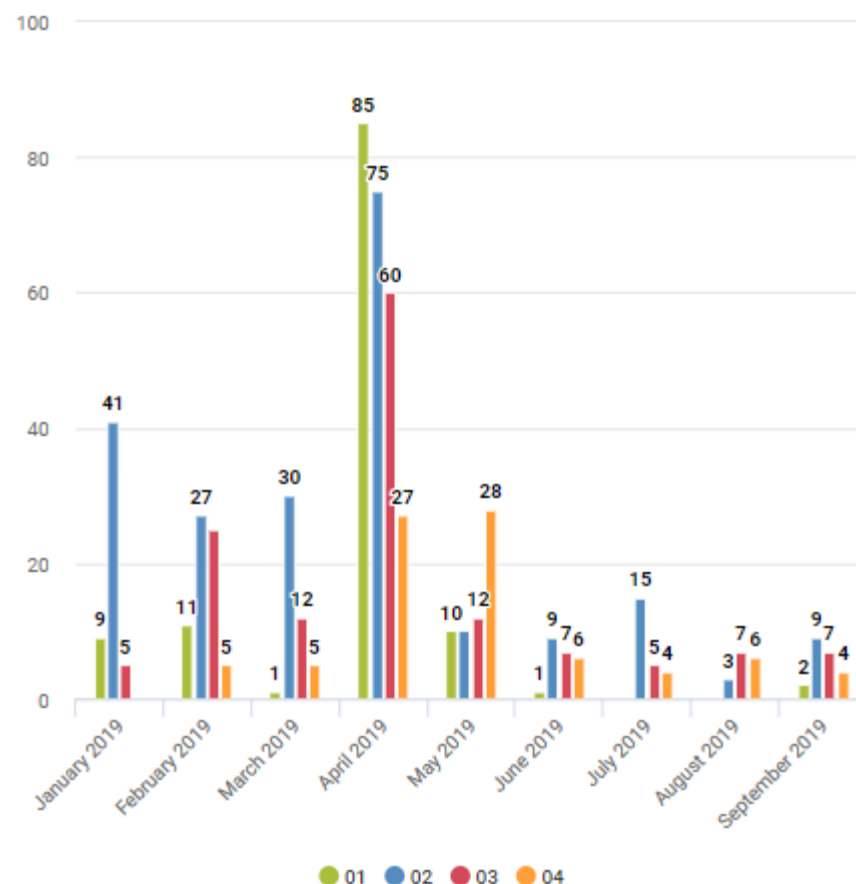
SANI ZAM_Care Group Monthly report_qu...

#	Event date	Organisation unit	SANI ZAM_Name of CHW	SANI ZAM_NHC/GMP	SANI ZAM_Code	SANI ZAM_meeting
1	2019-09-30 00:00:00.0	Lwanya HC	Ngosa Theresa	Lwanya	3508.0	6.0
2	2019-09-30 00:00:00.0	Lwanya HC	Maggie Mulenga	Chabala	3507.0	6.0
3	2019-09-30 00:00:00.0	Konja HC	Given Mwenya	Chinkalanga	3414.0	6.0
4	2019-09-30 00:00:00.0	Konja HC	Sophia Phiri	Konja	3417.0	6.0
5	2019-09-30 00:00:00.0	Konja HC	Lilian Mubanga	Mabuluki	3413.0	6.0
6	2019-09-30 00:00:00.0	Konja HC	Webster Mutale	Muntuwenda	3411.0	6.0
7	2019-09-30 00:00:00.0	Konja HC	Oliver Mulenga	Konja	3410.0	6.0
8	2019-09-30 00:00:00.0	Konja HC	Christopher Chilumba	Konja	3404.0	6.0
9	2019-09-30 00:00:00.0	Konja HC	Shadrack Chanda	Poya	3403.0	6.0
10	2019-09-30 00:00:00.0	Ilondola HC	Davies Kapolyo	Spaida	6.0	6.0

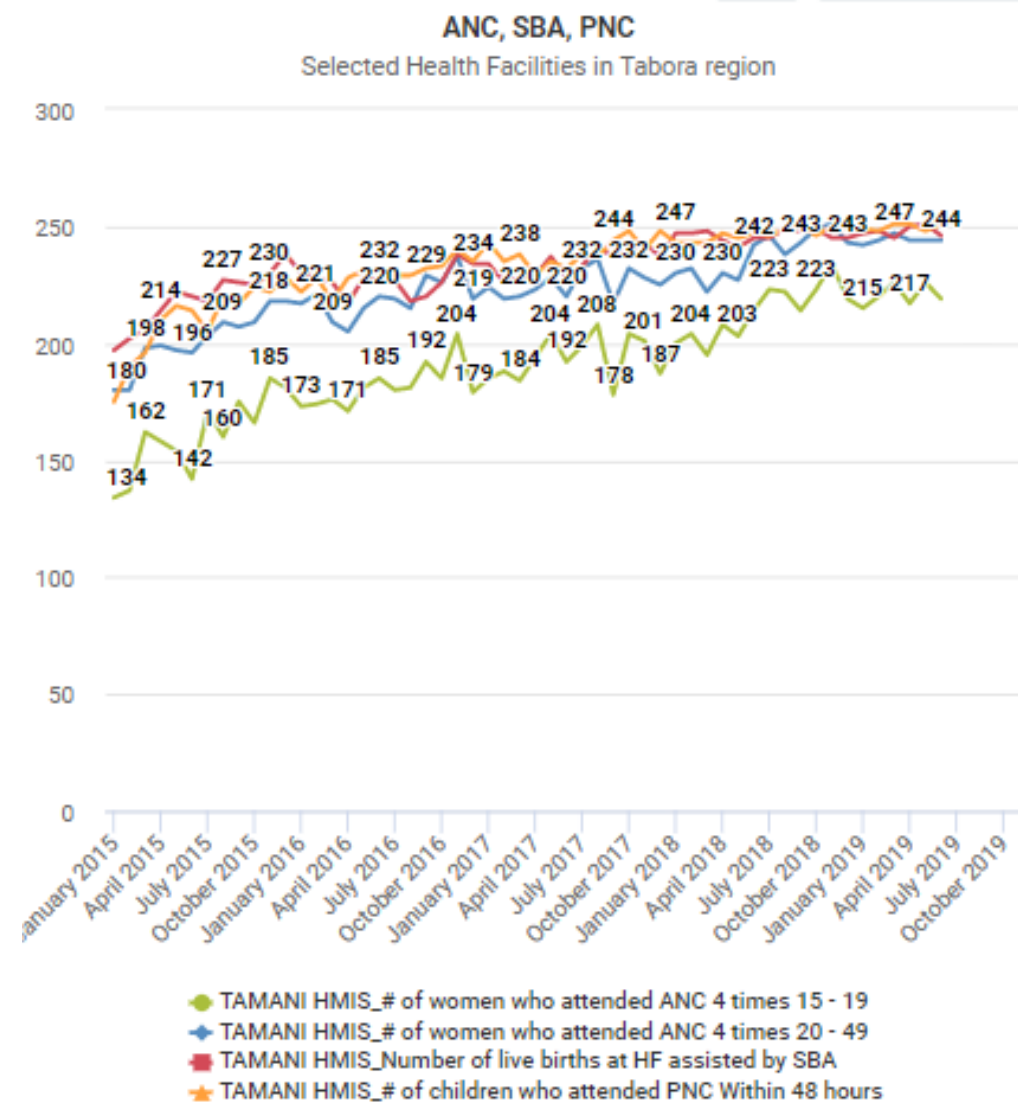
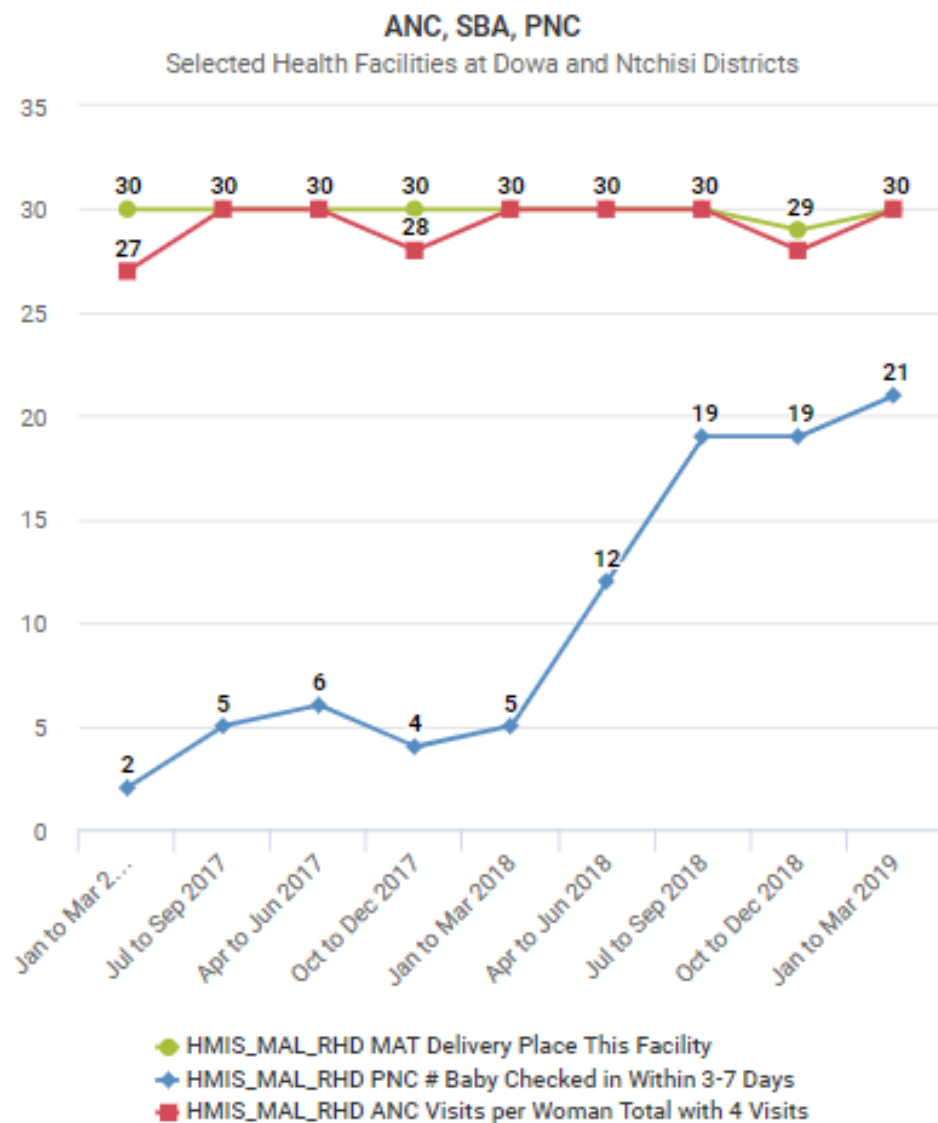
SANI ZAM_Care Group Monthly report_nu...

Organisation unit / Period	April 2019	May 2019	June 2019	July 2019	August 2019
Mpepo HC	20	19	19	18	20
Chikakala HC	19	18	19	16	18
Mbati HC	7	8	8	10	8
Kabinga HC	13	13	4		11
Chalabesa HC	20	20	13	19	17
Konja HC	16	14	16	17	17
Lufila HC	20	18	20	20	16
Ilondola HC	20	19	20	16	15
Philip HC	5	7	6	6	6
Lwanya HC	9	7	7	9	8
Shiwa ngandu HC	9	8	9	9	9
Mukwikile HC	2	2	3	3	3
Chibamba HC	5	7	9	6	8
Mwika HC	13	13	12	12	13
Mukungule HC	16	11	14	9	12
Total	194	184	179	170	181

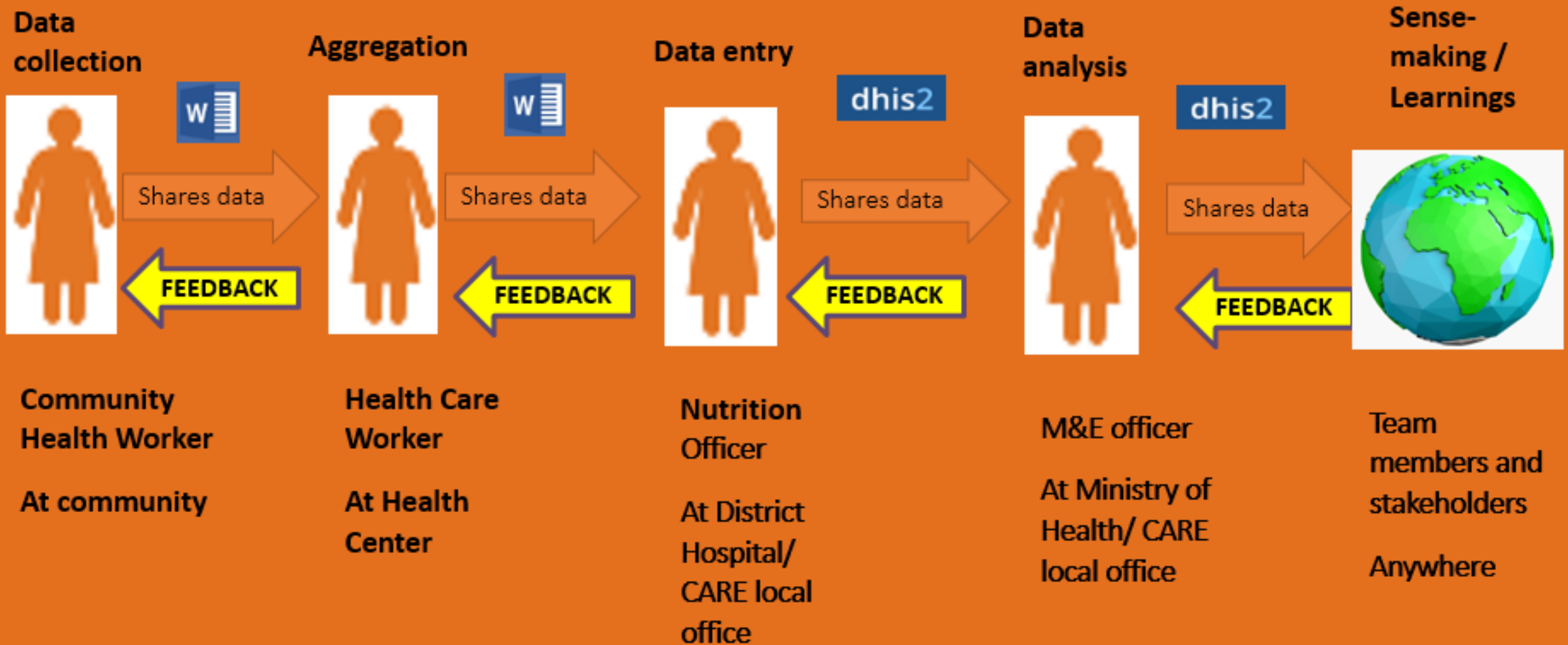
Content of visit for pregnant women



What type of data?



Features and limitations



Vision and where we are at - CHW



Vision in 2017	Where we are at in 2019	Country
Data entry to DHIS2 using tablets in offline data collection	Achieved (individual level data)	Mozambique
	Achieved (aggregated data)	Zambia
	*Pending roll out	Tanzania
	Excel	Ethiopia
	Kobo	Malawi

Vision and where we are at - HMIS



Vision in 2017	Where we are at in 2019	Country
Download from HMIS and Upload to DHIS2	No access to HMIS (data received in excel)	Mozambique
	No access to HMIS (data received in excel)	Zambia
	Achieved	Tanzania
	No access to HMIS (data received in excel)	Ethiopia
	Achieved (login to HMIS)	Malawi

Recommendations



- Potential contribution to the Country's HMIS
- Large time investment at first with long term benefits
- Great for large projects with long life time
- Start small, one tool at a time, only few data points
- Slowly add different projects / interventions / sources for compared analysis
- Budget for tablets – totally worth it!
- Opportunity to build team's capacity
- Explore different visualizations (tables, graphs, maps)
- Not worth it if there is a step in excel prior to entering data to DHIS2



THANK YOU!

Conclusion:  **dhis2** is awesome.

Questions welcome

Sara Gaudon	Sylvie Kambou	Clarissa Teixeira
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