IMPULSE

IMProving qUaLity and uSE of newborn indicators

FIRST NATIONAL DISSEMINATION WORKSHOP UGANDA

30 JULY, ENTEBBE

World Health Organization

unicef for every child

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

MARCH MATERNAL ADOLESCENT REPRODUCTIVE & CHILD HEALTH

DOCTORS WITH AFRICA CUAMM

ISO 9001: 2015 certified
IFAKARA HEALTH INSTITUTE
research | training | services

School of Public Health
College of Health Sciences,
Makerere University

WHO Collaborating Center
for Maternal and Child Health
Trieste Italy

Chiesi FOUNDATION

Presentation outline

- WHY is this important
- WHO we are
- WHAT were our objectives
- WHERE have we collected data
- HOW & WHEN we have collected data
- RESULTS & DISCUSSION

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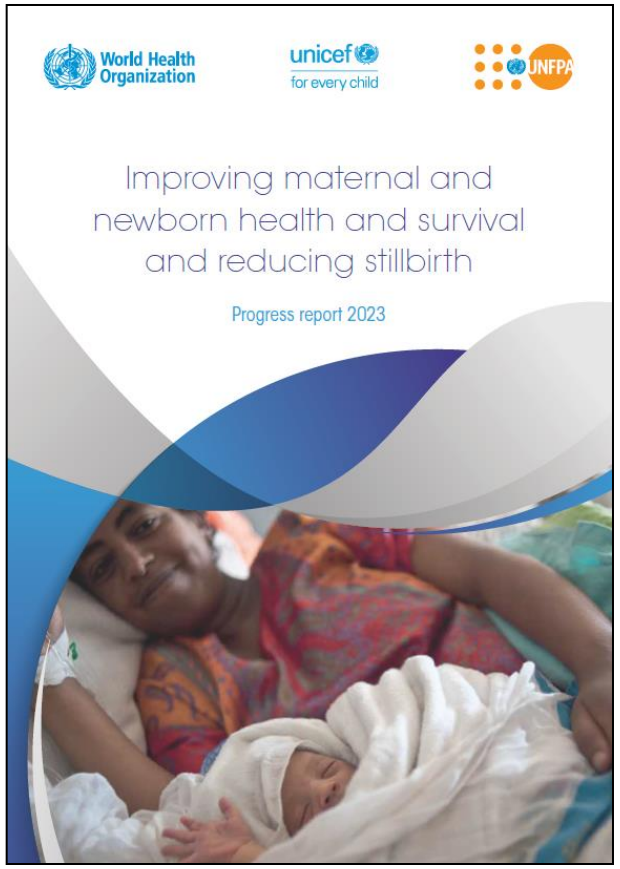
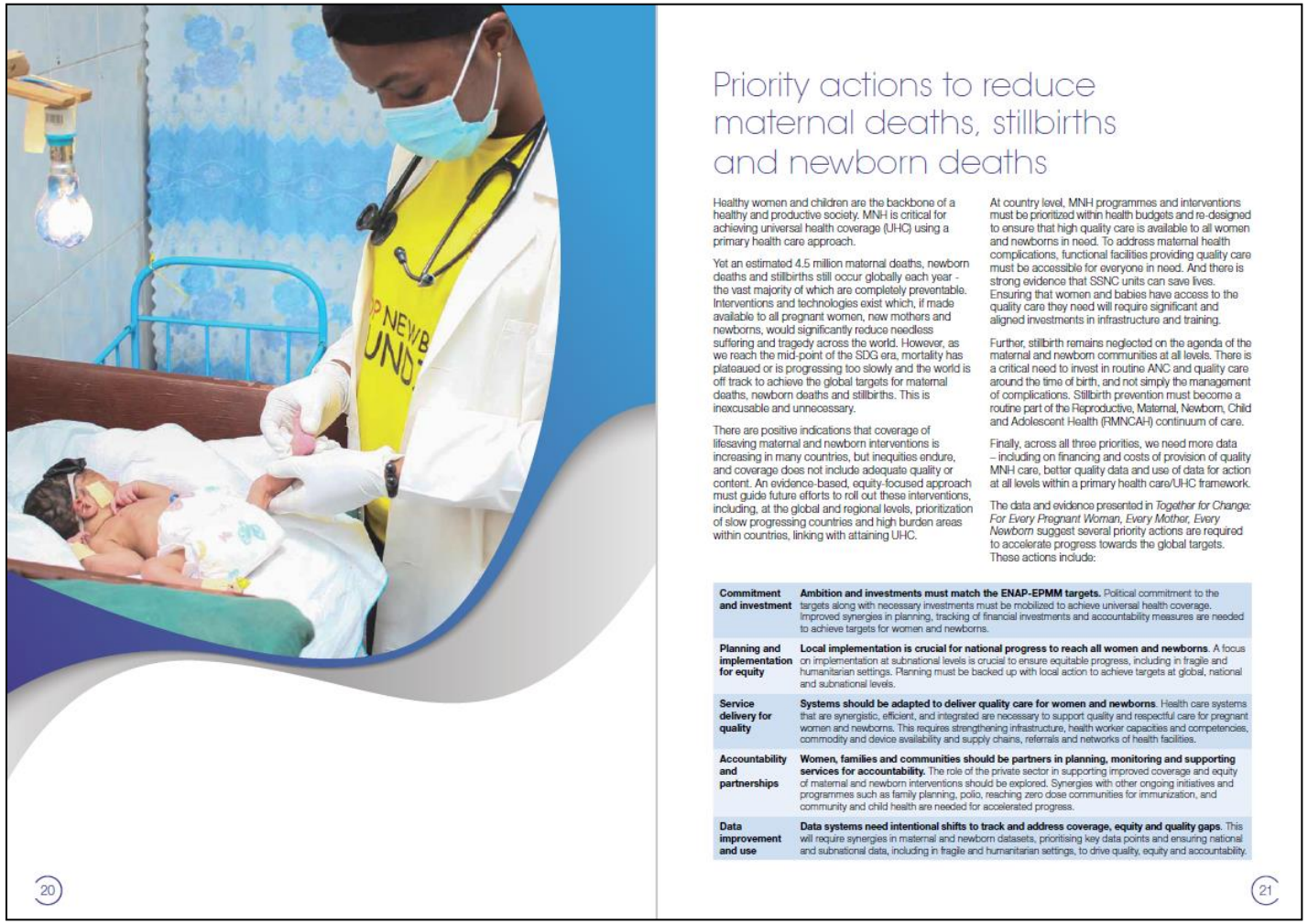
WHY is this important

WHO/ UNICEF/ UNFPA Maternal and newborn progress report 2023

IMPROVING qUaLity and uSE of newborn indicators

- “Preventable stillbirths and newborn deaths remain extraordinarily high”





Priority actions to reduce maternal deaths, stillbirths and newborn deaths

Healthy women and children are the backbone of a healthy and productive society. MNH is critical for achieving universal health coverage (UHC) using a primary health care approach.

Yet an estimated 4.5 million maternal deaths, newborn deaths and stillbirths still occur globally each year - the vast majority of which are completely preventable. Interventions and technologies exist which, if made available to all pregnant women, new mothers and newborns, would significantly reduce needless suffering and tragedy across the world. However, as we reach the mid-point of the SDG era, mortality has plateaued or is progressing too slowly and the world is off track to achieve the global targets for maternal deaths, newborn deaths and stillbirths. This is inexcusable and unnecessary.

There are positive indications that coverage of lifesaving maternal and newborn interventions is increasing in many countries, but inequities endure, and coverage does not include adequate quality or content. An evidence-based, equity-focused approach must guide future efforts to roll out these interventions, including, at the global and regional levels, prioritization of slow progressing countries and high burden areas within countries, linking with attaining UHC.

At country level, MNH programmes and interventions must be prioritized within health budgets and re-designed to ensure that high quality care is available to all women and newborns in need. To address maternal health complications, functional facilities providing quality care must be accessible for everyone in need. And there is strong evidence that SSNC units can save lives. Ensuring that women and babies have access to the quality care they need will require significant and aligned investments in infrastructure and training.

Further, stillbirth remains neglected on the agenda of the maternal and newborn communities at all levels. There is a critical need to invest in routine ANC and quality care around the time of birth, and not simply the management of complications. Stillbirth prevention must become a routine part of the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) continuum of care.

Finally, across all three priorities, we need more data – including on financing and costs of provision of quality MNH care, better quality data and use of data for action at all levels within a primary health care/UHC framework.

The data and evidence presented in *Together for Change: For Every Pregnant Woman, Every Mother, Every Newborn* suggest several priority actions are required to accelerate progress towards the global targets. These actions include:

Commitment and investment	**Ambition and investments must match the ENAP-EPMM targets.** Political commitment to the targets along with necessary investments must be mobilized to achieve universal health coverage. Improved synergies in planning, tracking of financial investments and accountability measures are needed to achieve targets for women and newborns.
Planning and implementation for equity	**Local implementation is crucial for national progress to reach all women and newborns.** A focus on implementation at subnational levels is crucial to ensure equitable progress, including in fragile and humanitarian settings. Planning must be backed up with local action to achieve targets at global, national and subnational levels.
Service delivery for quality	**Systems should be adapted to deliver quality care for women and newborns.** Health care systems that are synergistic, efficient, and integrated are necessary to support quality and respectful care for pregnant women and newborns. This requires strengthening infrastructure, health worker capacities and competencies, commodity and device availability and supply chains, referrals and networks of health facilities.
Accountability and partnerships	**Women, families and communities should be partners in planning, monitoring and supporting services for accountability.** The role of the private sector in supporting improved coverage and equity of maternal and newborn interventions should be explored. Synergies with other ongoing initiatives and programmes such as family planning, polio, reaching zero dose communities for immunization, and community and child health are needed for accelerated progress.
Data improvement and use	**Data systems need intentional shifts to track and address coverage, equity and quality gaps.** This will require synergies in maternal and newborn datasets, prioritising key data points and ensuring national and subnational data, including in fragile and humanitarian settings, to drive quality, equity and accountability.

WHO/ UNICEF/ UNFPA Maternal and newborn progress report 2023

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Data and information systems for MNH indicators

Data and information systems

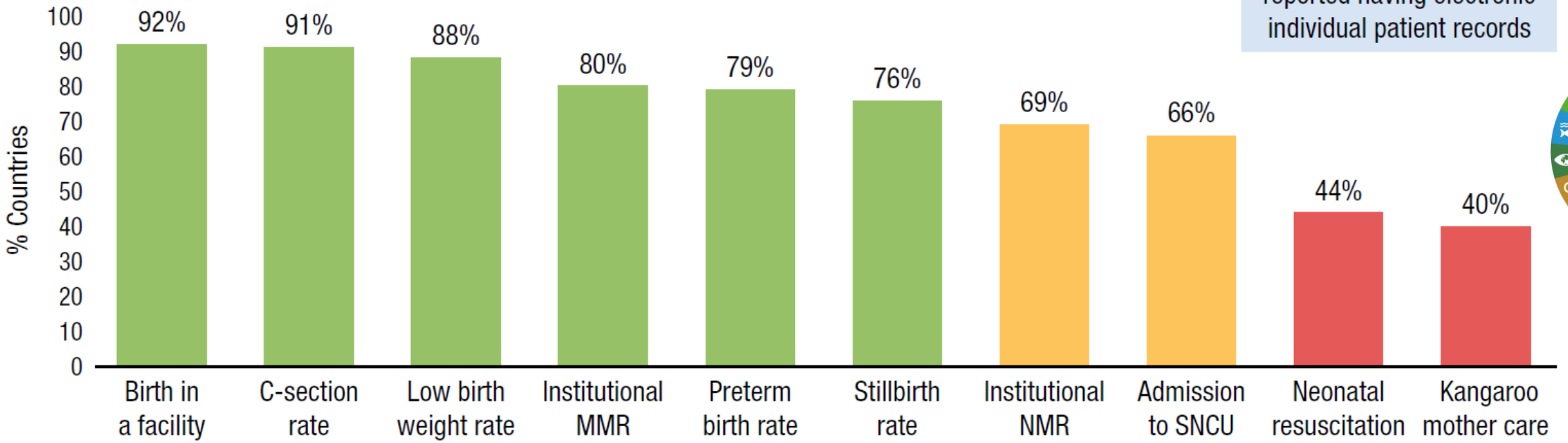
Data and information are a core component of the provision of quality MNH care because they allow for measurement, programme tracking, informed decision-making, evidence-based implementation and accountability. Many countries are routinely tracking,

Reports into the joint *Tracking Tool* from 106 countries across all SDG regions reveal mixed progress towards the ENAP-EPMM targets and milestones. While there is broadly strong political commitment towards achieving the ENAP-EPMM targets across the globe, the necessary investments have not yet been made to support these in many countries. Further, in many

Figure 13: Countries with an RHIS that includes key MNH indicators (n=105)

Only 20-25% Countries reported having electronic individual patient records

SDG



Source: ENAP-EPMM Joint Tracking Tool analysis, 2023.

Every Newborn Measurement Improvement Research

Data use in countries for programme improvement and accountability

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Improving Quality and Use of Newborn Indicators (IMPULSE)
In Central Africa Republic, Ethiopia, Tanzania, Uganda)
(funded Chiesi Fundation) 2021-2024

EN-BIRTH STUDY 2

Every Newborn – Measurement Improvement for Newborn and Stillbirth Indicators (EN-MINI) Tools
in Bangladesh, Tanzania – funded by USAID 2019-2022

EN-MINI tools

EN-BIRTH STUDY 1

Every Newborn - Birth Indicators Research Tracking in Hospitals
Assessment of validity of newborn indicator measurement
in Bangladesh, Nepal, Tanzania – funded by CIFF 2016-2021

2030
End Preventable Maternal and Newborn Deaths and Stillbirths

2025
Effective use of data in national health information systems

Data for action - Every Newborn Action Plan

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WHO we are

IMPULSE project team

Chiesi FOUNDATION

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Uganda Makerere School of Public Health	CAR Doctors with Africa, CUAMM	Tanzania Ifakara Health Institute	Ethiopia Doctors with Africa, CUAMM	Italy Doctors with Africa, CUAMM	UK London School of Hygiene & Tropical Medicine (LSHTM)	Italy WHO Collaborating center, Burlo
Muhumuza Kananura Rornald Peter Lochoro Peter Waiswa (PI)	Ousman Mouhamadou	Jacqueline Minja Donat Shamba (PI) Honorati Masanja	Firehiwot Abathun Dawit Fisseha Mary Ayele	Francesca Tognon Martina Borellini Giovanni Putoto	Marzia Lazzerini Louise Tina Day Joy Lawn	Ilaria Mariani Sara Geremia Paolo Dalena Lorenzo Cora Marzia Lazzerini
National Advisory Group Dr Mugahi Richard Dr Chris Ebong Dr Paul Mbaka Dr Jimmy Ogwal Dr Peter Waiswa Dr Victoria Nankabirwa Patricia Pirio BODO, Bongomin Dr Sharon Tsui Christine Mugasha Open to larger participation	National Advisory Group Prof Norbert Richard Ngbale Prof Jean Chrysostome Gody Dr Carine Kiteze Dr Claudia Adam Dr. Jean-Louis Komayan Dr Stephane Muzindusi Bikoro	National Advisory Group Dr Robert Moshiro Mr Claud Kumalija Dr Ahmed Makuwani Sr Ziada Sellah Dr James Tumaini Kengia Dr Felix Bundala Dr Nahya Salim Dr Daimon Lugano Mr Alexander Baluhya Mrs Feddy Mwanga Dr Pius Muzzazzi Dr Matilda Ngarina Dr Edwin Swai Dr Honorati Masanga Dr Ulrika Baker	National Advisory Group Dr Alemayehyu Hunduma Dr Meseret Zelalem Mr Mesoud Mohammed Dr Abas Hassen Mr Tamirat Awol Mr Melese Solomon Mr. Solomon Gebeyehu Mrs Firmaye Bogale Mr Tewdros Getachew Mr Tewdros Getachew Professor Bogale Worku Mr Belete Belgu Dr Yayeh Negash Sarai Malumo Haimanot Ambelu Bejoy Nambiar	International Advisory Group Dr Theresa Diaz Mr Martin Dohlsten Dr Danielle Ehret Dr Tedbabe Degefie Hailegebriel Prof Debra Jackson Dr Ornella Lincetto Dr Allisyn Moran Dr Assumpta W. Muriithi Dr Moise Muzigaba Dr Barbara Rawlins Dr Jennifer Requeio Dr Johan Ivar Saebo Dr Kavita Singh Dr Alex Stevenson Dr Merran Thomson Prof Karen Walker Dr Wilson Were Dr Teshome Desta Woldhanna Mr Andrew Storey Dr Oluwaseun Aladesanmi (Seun)		

International Advisory Group (IAG)

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World Health Organization (WHO) Head Quarter Geneva: Dr Theresa Diaz, Dr Moise Muzigaba, Dr Teshome Desta Woldhanna, Dr Wilson Were, Dr Allisyn Moran, Dr Queen Dubee

WHO Regional office for Africa: Dr Assumpta W. Muritihi

UNICEF: Dr Tedbabe Degefie Hailegebriel (UNICEF HQ New York); Dr Martin Dohlsten (Unicef Nigeria)

Global Quality of Care Network Monitoring and Evaluation: Professor Debra Jackson (LSHTM, Co-Chair)

Global Financing Facility (GFF): Dr Jennifer Requeio

Africa Neonatal Association (ANA): Dr Alex Stevenson

Council of International Neonatal Nurses (COINN): Professor Karen Walker

Von Network: Dr Danielle Ehret

Clinton Health Access Initiative: Mr Andrew Storey, Dr Oluwaseun (Seun) Aladesanmi

USAID: Dr Barbara Rawlins

Chiesi Foundation: Dr Bianco Federico

University of Oslo: Prof Johan Ivar Saebo

Independents: Dr Ornella Lincetto (Independent, former WHO HQ Geneva): Dr Kavita Singh

WHAT were our objectives

IMPULSE study AIMS and OBJECTIVES

IMPULSE
IMProving qUaLity and uSE of newborn indicators

Aim: To improve newborn routine data quality and use in low- and middle-income countries and specifically in Africa for Every Newborn to survive and thrive

1) To **analyse** the current data systems to generate evidence on effective, sustainable tools and methods to assess and improve the availability, quality and use of newborn data

2) To **promote** data use in national and international policies to contribute in improving the health and wellbeing of newborn with an emphasis on small and sick newborn care

IMPULSE Phase 1 Objectives

In four African countries (Central African Republic, Ethiopia, Tanzania and Uganda) focusing on health facilities caring for small or sick newborns, to:

1. **Map** newborn and stillbirth indicator data availability in existing routine health information systems (RHIS)
2. Assess newborn and stillbirth key indicator **data quality** in existing RHIS.
3. Understand newborn and stillbirth indicator **data use** by different stakeholders in existing RHIS.
4. Analyze **technical, organizational and behavioral enabling factors** in RHIS affecting newborn and stillbirth indicator data quality and use

IMPULSE Phase 2 protocol

Developed using evidence generated in phase 1 and a theory of change with focus on high quality care in health facilities caring for small and sick newborns in LMIC and specifically Africa, to:

- **Co-create** practical sustainable intervention(s) to improve routine newborn and stillbirth data availability, quality and use of data for action to improve newborn health and wellbeing.
- Specific research questions will be identified during the design of the phase 2 protocol.

Project Key facts

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✓Study design: observational (cross sectional), quality assessment

✓Duration: 1 August 2021 to 31 May, 2024 (Phase 2 up to May 2026)

✓ Funded by: Chiesi Foundation

✓ Implemented: in 4 countries (Ethiopia, CAR, Tanzania, Uganda), 15 regions

✓ In Uganda: 3 regions and 1 city administration

- Karamoja, Lango, West Nile & Kampala

- 30 C-Emoc health care facilities, 20 subnational health offices and 1 Ministry of Health

Ethical clearance

Approved by:

- Makerere University School of Public Health Institutional Review Board and Uganda National Council for Science and Technology
- Institutional Review Board LSHTM and the other 3 countries

Data collection without identifiers as for General Data Protection Regulation (GDPR).

Only aggregate routine health facility data was collected from each facility/office.

Data collection wit interviews: by informed consent, anonymous

Data transmission and storage: on password protected tablets, uploaded onto encrypted servers. Paper documents were stored in locked filing cabinet

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WHERE have we collected data

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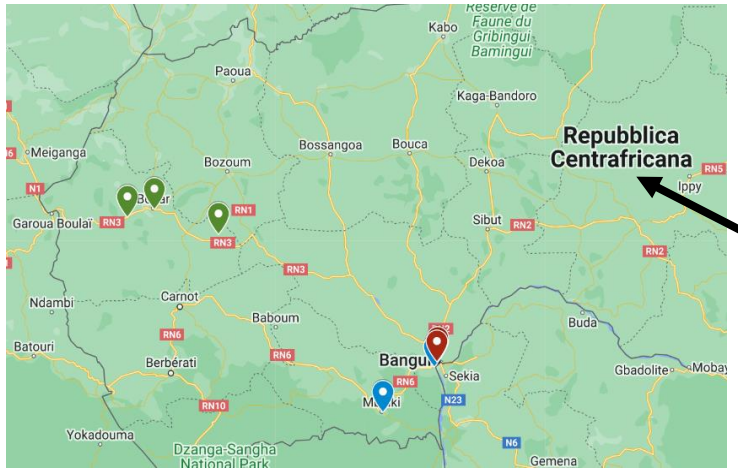
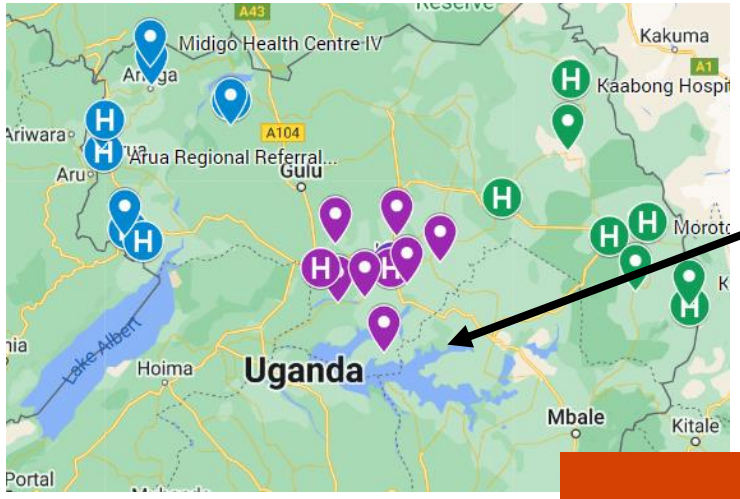
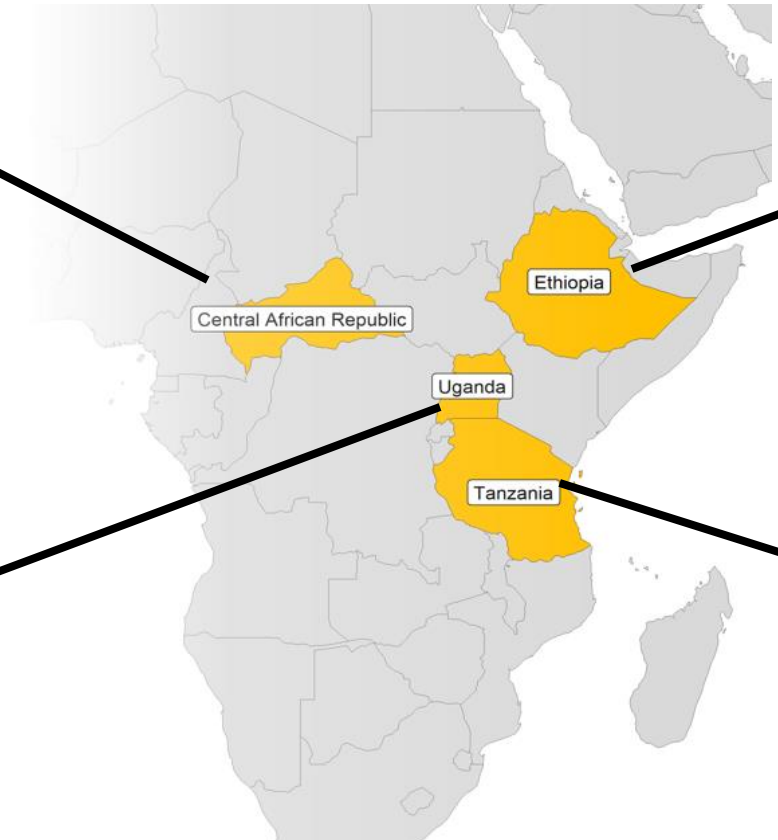
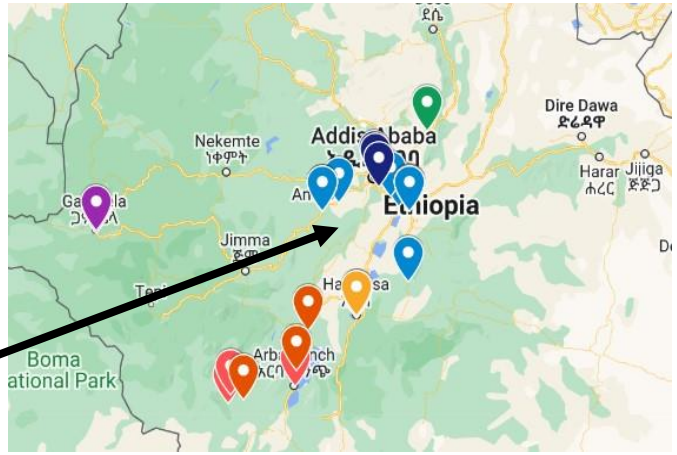
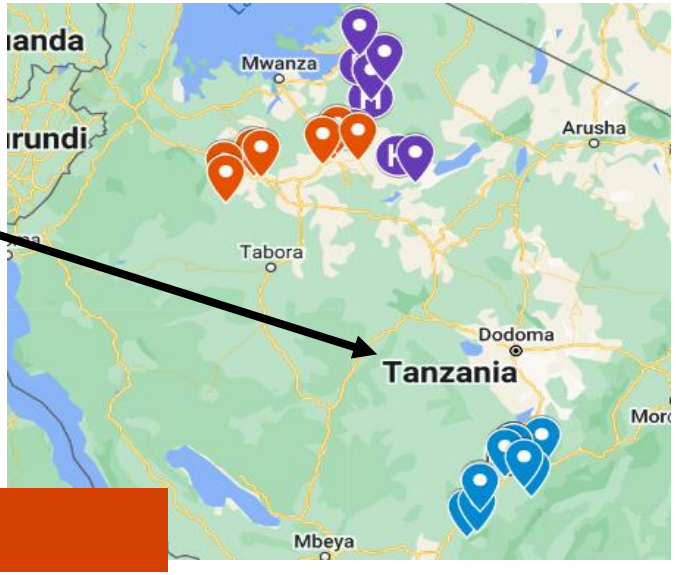
- ✓ 4 Countries: Central African Republic, Uganda, Tanzania, Ethiopia
- ✓ 15 Regions/City adm: including humanitarian, difficult to reach
- ✓ 154 sites across 4 countries











In UGANDA: 51 sites

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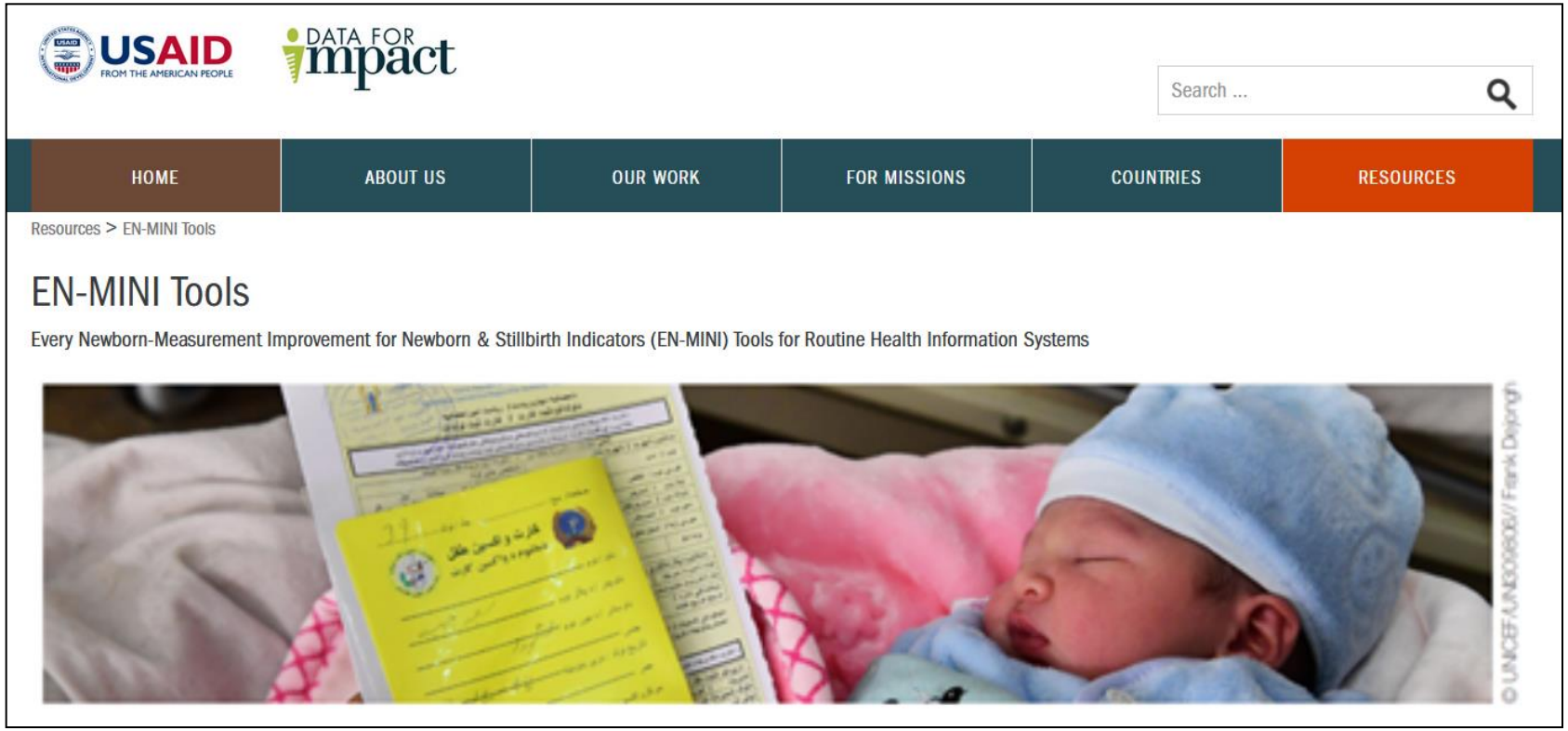
HOW
& WHEN we have collected data

Data were collected : 2023

Using EN-MINI tools, open access launched 2022



EN-MINI tools

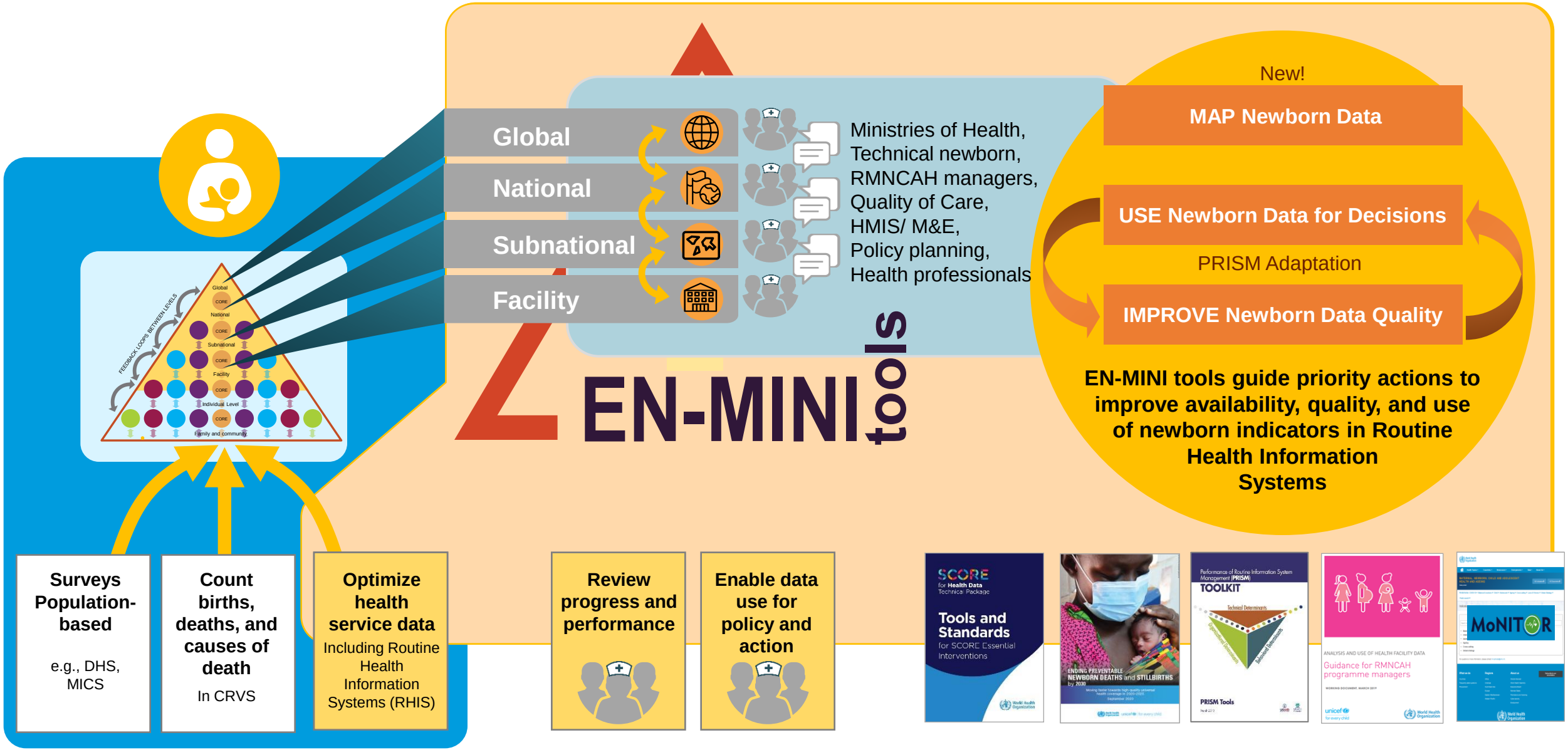
IMPULSE study contributed to:

- ✓ Version 2 EN-MINI tools
- ✓ French and Amharic translations

https://www.data4impactproject.org/resources/en-mini-tools/

Every Newborn-Measurement Improvement for Newborn & Stillbirth Indicators

EN-MINI Tools for Routine Health Information Systems



EN-MINI tools

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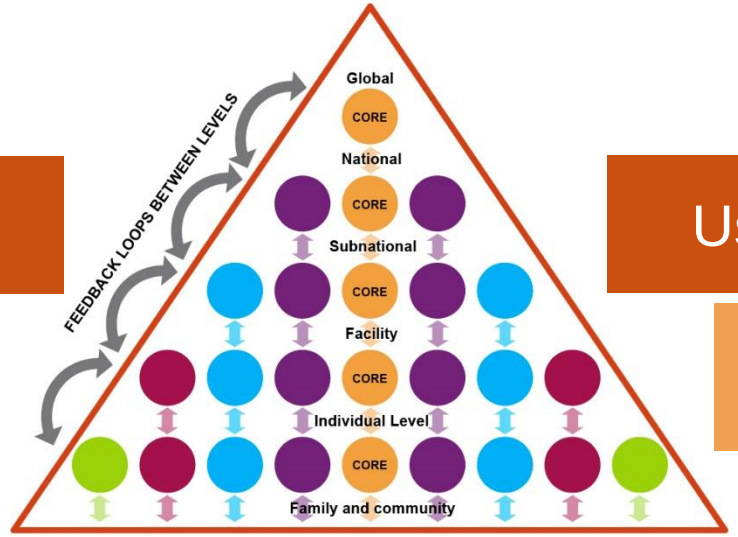
Version 2

Map Newborn Data

Map Newborn Data
EN-MINI Tool 0



Improve Newborn Data Quality

RHIS Performance Diagnostic
EN-MINI-PRISM Tool 2

Facility/Office Assessment
EN-MINI-PRISM Tool 5

Neonatal individual
Case Notes/ Register
EN-MINI Tool 7

new

4 languages

- ❑ English
- ❑ Swahili
- ❑ Amharic
- ❑ French

Use Newborn Data for Decisions

RHIS Overview
EN-MINI-PRISM Tool 1

Electronic RHIS Assessment
EN-MINI-PRISM Tool 3

Management Assessment
EN-MINI-PRISM Tool 4

Organizational/Behavioral Assessment
EN-MINI-PRISM Tool 6

Adapted from: Day LT, Moran AC, Jackson D, et al. (2019). Survive and Thrive: Transforming care for every small and sick newborn. Chapter 5, Figure 5.1. Geneva, Switzerland.

Sampling criteria and resulting sample

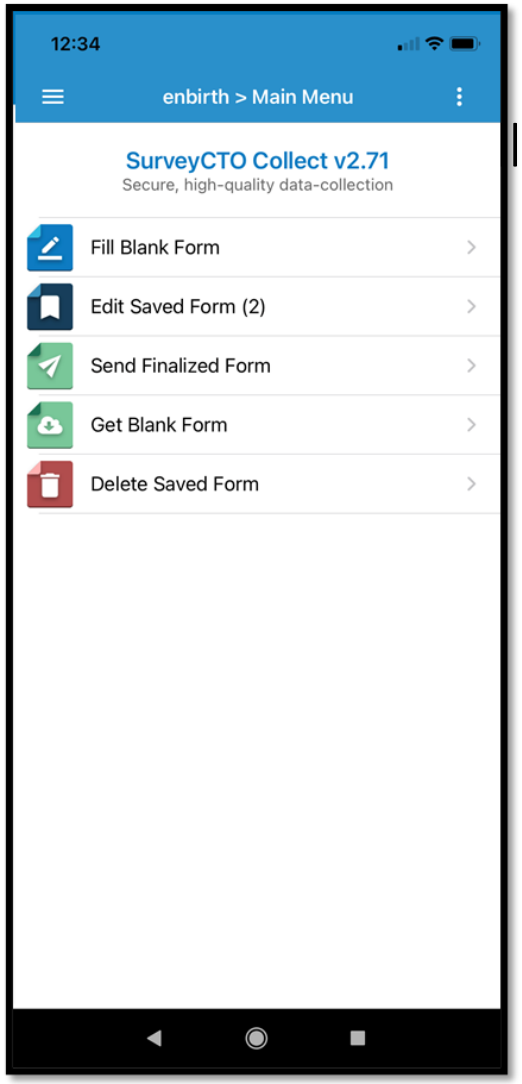
UGANDA	Sampling criteria	Karamoja	Lango	West Nile	Capital city - Kampala	TOTAL
National	1	NA	NA	NA	1	1
Regional referral	1	1	1	2		4
General Hospital - Public	2	3	1	2		6
General Hospital - Not for profit	2	2	2	2		6
Health Centre IV- Public	At least 2	2	6	4		12
Health Centre IV- Not for profit	1 (if existing)	NA	NA	1		1
TOT Facilities		**8**	**10**	**11**	**1**	**30**
District /Subnational Health Office		8	6	6		20
Regional Health office						0
Central Ministry of Health					1	1
TOT District offices		**8**	**6**	**6**	**1**	**21**
Total sites		**16**	**16**	**17**	**2**	**51**

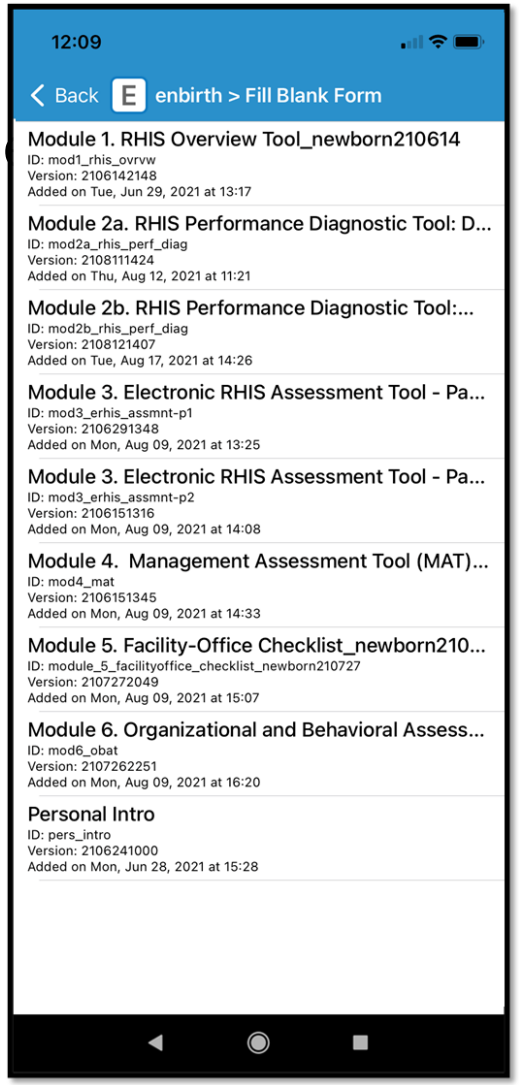
EN-MINI-PRISM Tools
ready-to-use ODK forms for phones/ tablets

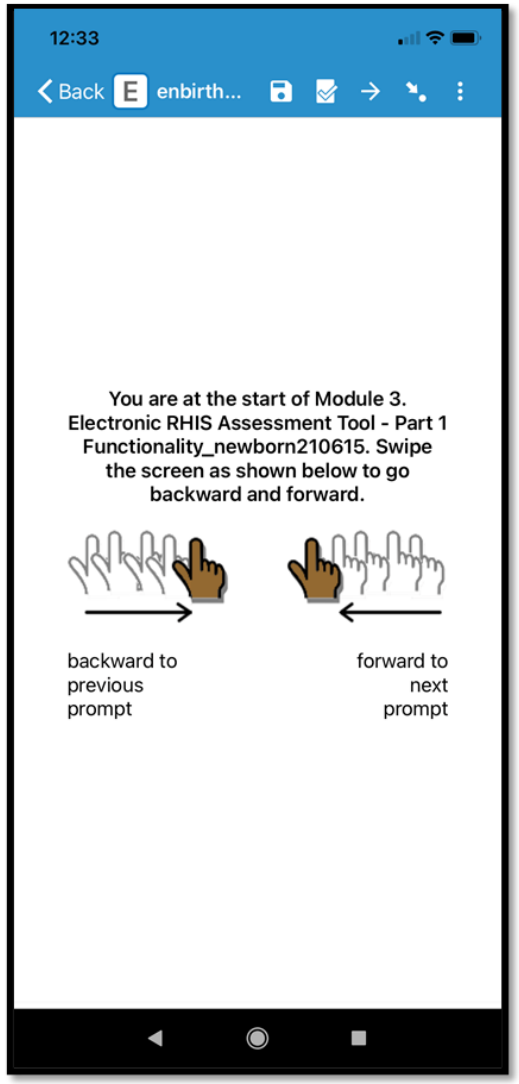
SurveyCTO

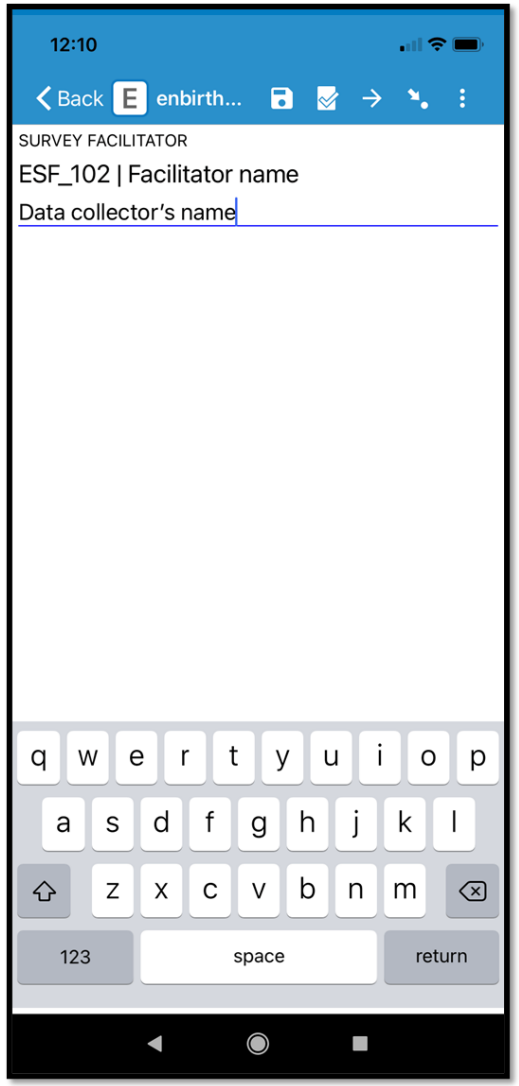
GDPR compliant

EN-MINI tools









Data Quality Assurance procedures

- EN-MINI tool 2 pilot tested in 2 countries (Uganda and Tanzania) before data collection
- Data collection on a digital platform, including checks for data completeness and plausibility.
- Data collector able to speak local languages, supervised by experienced study coordinators.
- Training for both data collectors and study coordinators included, besides formal training: 1) field practices; 2) a series of preliminary meetings to clarify any doubt questions and answers; 3) a file where all questions & answers were recorded; 4) a What App group to solve any remaining question in real-time.
- Standard operating procedures (SOP) for data collection predefined
- M&E file was pre-defined field tested and used regularly to review data timeliness, completeness, and sample size collected.
- Missing data or implausible data was discussed in real-time.
- 4 rounds of interim analyses were conducted, by independent data analysts to check data completeness, internal consistency, plausibility.

Dataset available and data analyses conducted

Dataset: Over **3000 variables** available in the dataset

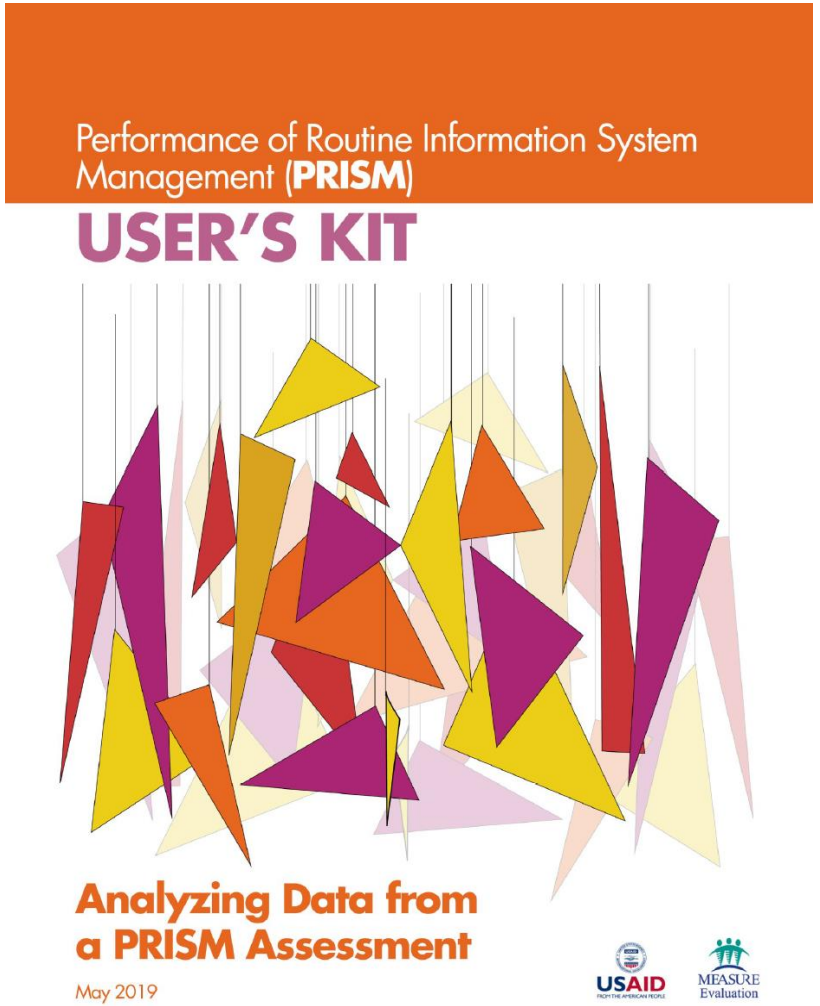
Data analyses conducted

1.EN-MINI PAT (PRISM Analysis Tool)

2.Additional analyses according "**PRISM USER'S KIT**"

3.Additional more in-depth analyses

Structure of reporting: Following the **PRISM Framework**



The Performance of Routine Information System Management (PRISM) -Framework

INPUTS	PROCESSES	OUTPUTS	OUTCOMES	IMPACT

RHIS determinants

Technical factors:
- Complexity of reporting forms and procedures
- HIS design
- Computer software
- Information technology complexity

Organizational factors: Critical management functions & information needs
- Governance
- Planning
- Training
- Supervision
- Quality
- Finance

- Promotion of a culture of information

- Resource availability

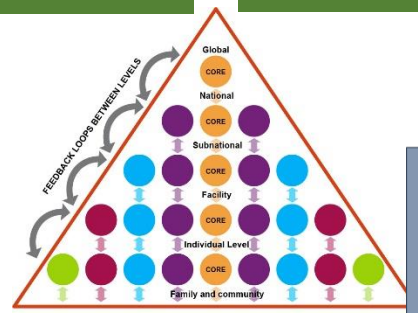
Behavioral factors:
- Level of knowledge of content of HIS forms
- Data-quality checking skills
- Problem-solving for HIS tasks
- Competence in HIS tasks
- Confidence levels for HIS tasks
- Motivation

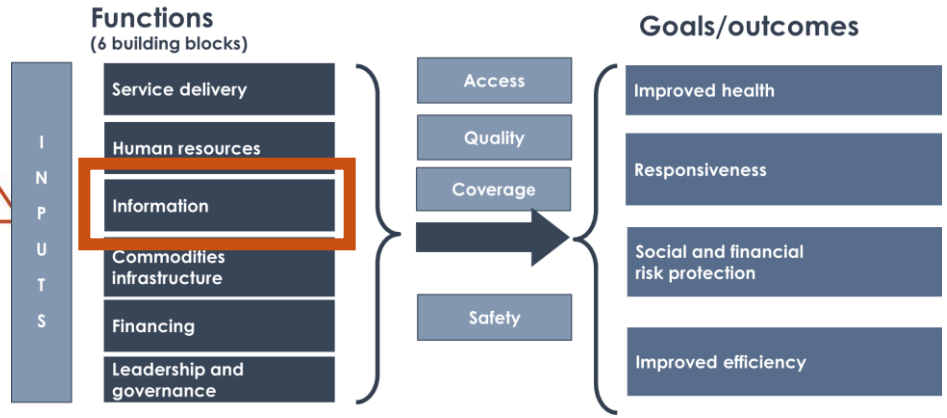
RHIS processes:
- Data collection
- Data transmission
- Data processing
- Data analysis
- Data quality check
- Feedback

Improved RHIS performance
- Data quality
- Information use

Improved health system performance

Improved health status





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RESULTS

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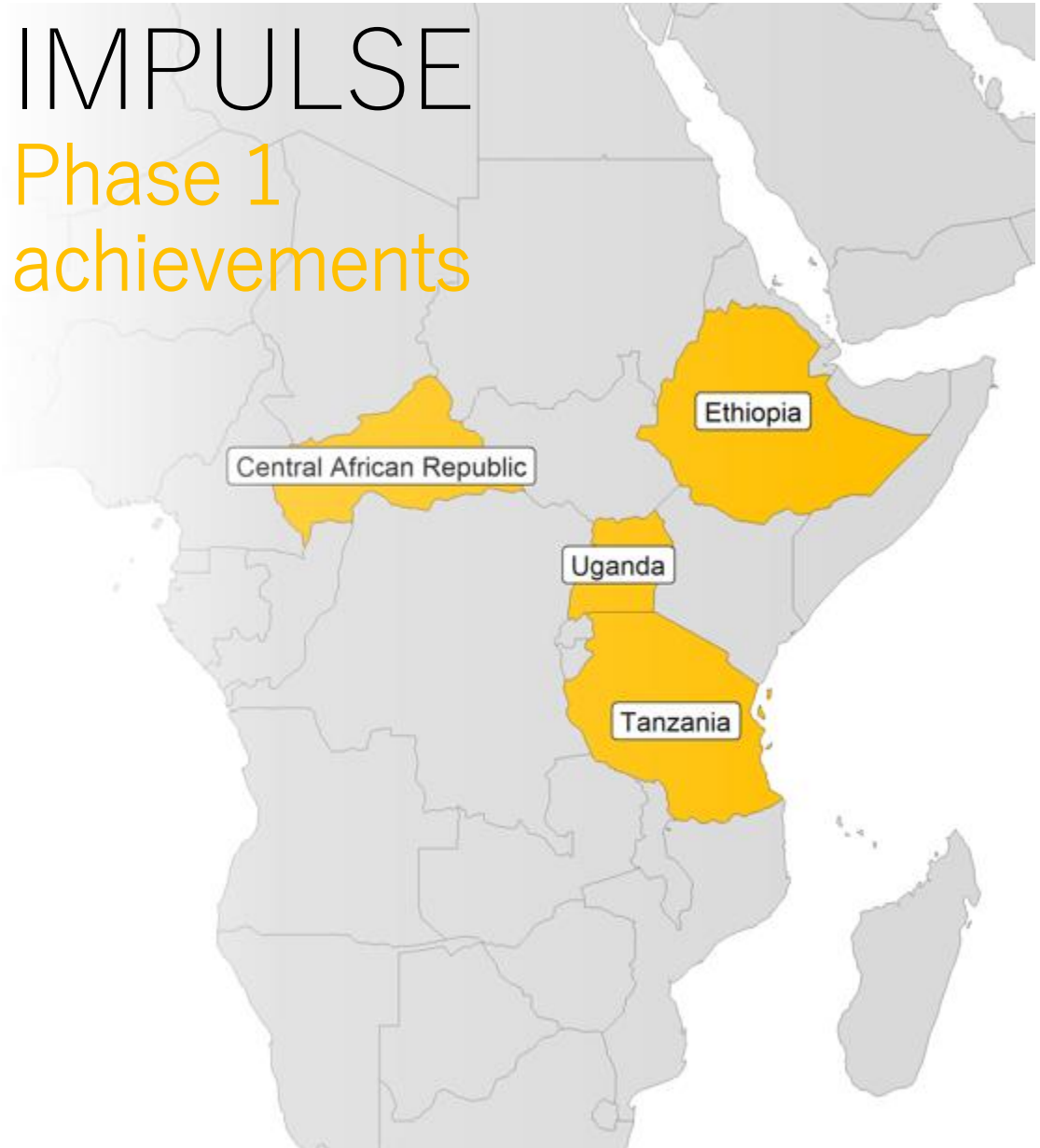
Phase 1 achievements



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1) Evidence generation

Baseline assessment Quality & Use Newborn data

✓4 countries (CAR, Uganda, Tanzania, Ethiopia)

✓15 regions/City Adm (including humanitarian, difficult to reach)

✓154 sites (facilities different level/type + district/regional/national offices)

- Sample size exceeding expectations

2) Tangible products

✓Presentations at international meetings: 3 major meetings, panel at AlignMNH 2023

✓Website: IMPULSE website developed and maintained

✓Tools optimisation: EN-MINI Tools V2 + novel case notes tool + hospital checklist

✓Papers: 12 in progress

We invite NAG member as co-author

3) Partnerships

✓Partnership with 2 African academic institutions

✓Consolidation of country teams (CAR, Ethiopia, Tanzania, Uganda)

✓National Advisory Group (NAG) in each of the 4 countries

✓International Advisory Board (IAG)

EN-MINI tools (V2)
4 languages:

- ❑ Amharic
- ❑ English
- ❑ French
- ❑ Swahili

4) Strengthening technical expertise/leadership

✓for better newborn data quality & use

Visit IMPULSE website:
lshtm.ac.uk/impulse

5) Advocacy

✓for better newborn data quality & use

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WHO CC MCH Trieste Italy
DOCTORS WITH AFRICA CUAMM
World Health Organization
unicef

Website

IMPULSE
IMProving qUaLity and uSE of newborn indicators

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Improving quality and use of newborn indicators (IMPULSE study)

The **IMP**roving q**U**a**L**ity and u**SE** of newborn indicators (IMPULSE) study aims to improve newborn routine data quality and use in high mortality settings for Every Newborn to survive and thrive.

Share

Collaborating partners

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IFAKARA HEALTH INSTITUTE

About

The **IMP**roving q**U**a**L**ity and u**SE** of newborn indicators (IMPULS
two-phase project aiming to describe and improve the quality
facility-level newborn indicators in four African countries: **Cent
Republic, Ethiopia, United Republic of Tanzania** and **Ugand**

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LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

IMPULSE
IMProving qUaLity and uSE of newborn indicators

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Tweets from @MARCH_LSHTM

MARCH C... @MA... · 1h

Today at 1pm BST!

MAR... @... · Apr 27

How do colonial reproductive policies shape #fertility behaviour in ...

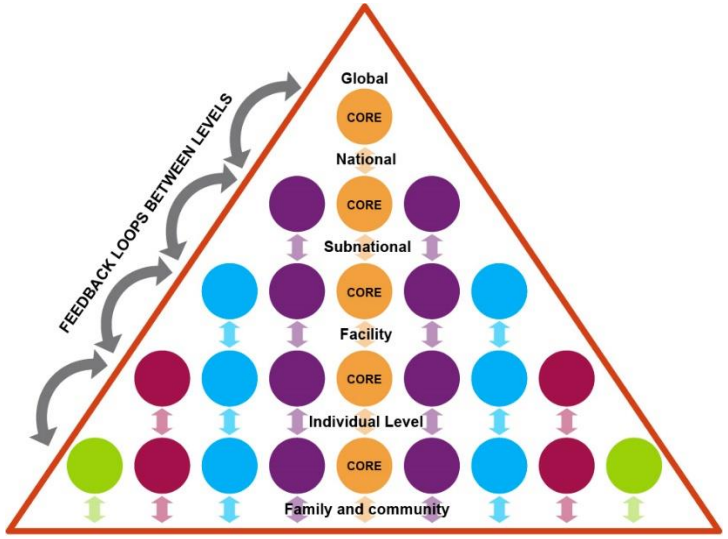
IMPULSE objective 1

1. **Map** newborn and stillbirth indicator data availability in existing routine health information systems (RHIS)

EN-MINI Tool 0 Mapping Report

MAP Newborn Data

Map Newborn Data
EN-MINI Tool 0



EN-MINI Tool 0 Mapping Report

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Electronic Health Information System:

✓ DHIS2

(Neonatal and Child Health,
Reproductive and maternal health &
Nutrition)

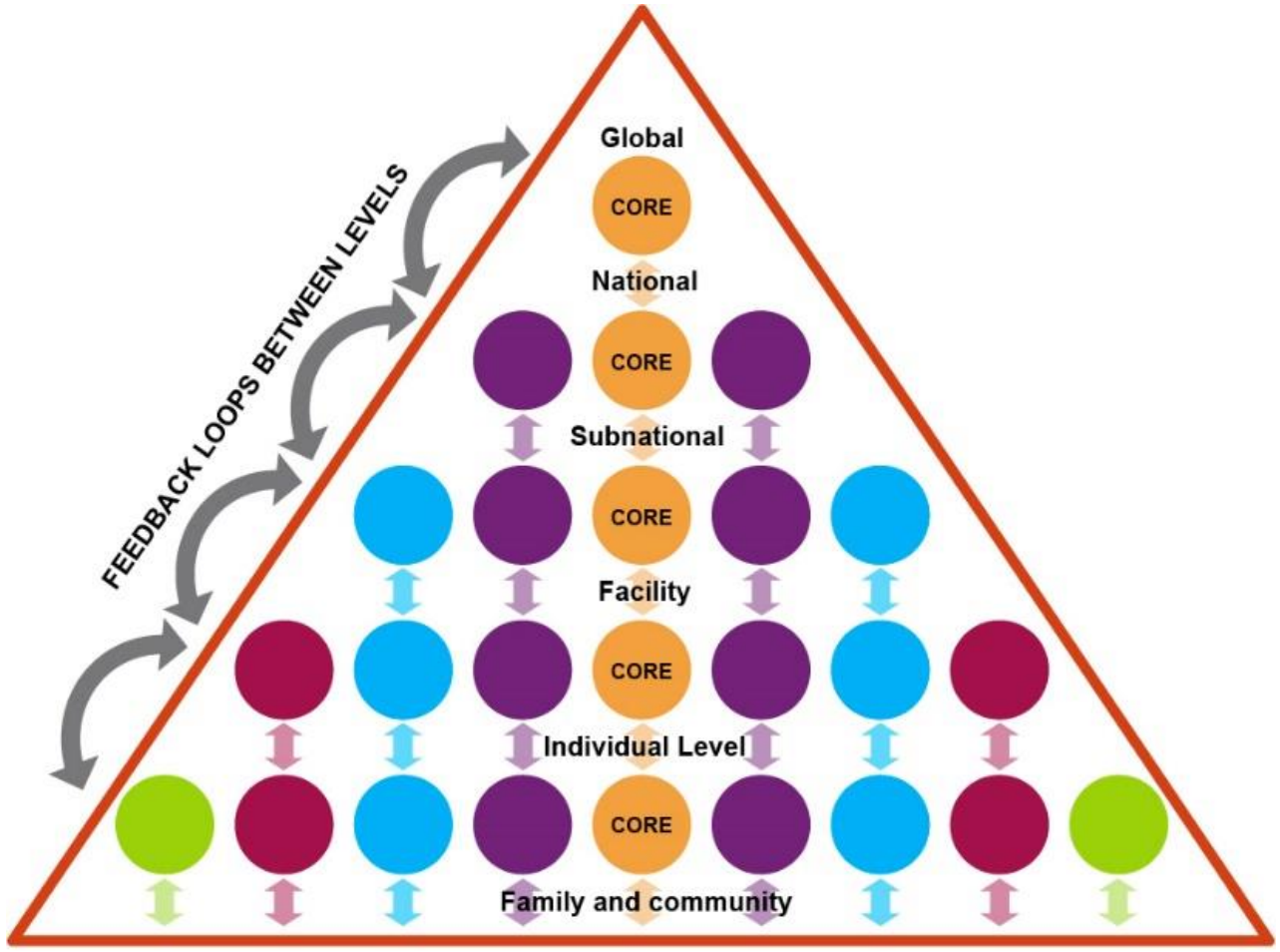
Summary form:

✓Reporting forms

(Neonatal and Child Health,
Reproductive and maternal health &
Nutrition)

Register:

✓Delivery Register
✓NICU Register
✓PNC Register
✓IMNCI Register



Availability of WHO indicators in electronic systems (DHIS2)

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Key message:

Out of 16 WHO Recommended indicators:

- 6 same definition or at least one (GREEN)
- 2 have a different definition (ORANGE)
- 8 missing (RED)

However, some data elements are available in DHIS2 to calculate some of the missing indicators

16 Indicators WHO recommended	Type	Numerator	Denominator	Full indicator
Institutional maternal mortality ratio (per 100 000 deliveries)	Impact	No exact definition	All definitions exact	At least one exact definition
Stillbirth rate in a health facility	Impact	At least one exact definition	All definitions exact	All definitions exact
Pre-discharge neonatal mortality rate	Impact	At least one exact definition	All definitions exact	At least one exact definition
Low birth weight among livebirths (%)	Impact	All definitions exact	All definitions exact	All definitions exact
Preterm birth (facility based)	Impact	At least one exact definition	All definitions exact	All definitions exact
Caesarean section rate	Outcome	All definitions exact	All definitions exact	All definitions exact
Postnatal care for women (Facility-based)	Outcome	No exact definition	No exact definition	No exact definition
Postnatal care for newborns (Facility-based)	Outcome	No exact definition	All definitions exact	No exact definition
Newborns breastfed within one hour of birth	Outcome	All definitions exact	All definitions exact	Not available
Newborn resuscitation with bag and mask	Outcome	All definitions exact	All definitions exact	Not available
Premature (LBW) babies initiating KMC	Outcome	All definitions exact	Not available	Not available
Newborns treated for neonatal sepsis/infection	Outcome	Not available	All definitions exact	Not available
Chlorhexidine cord cleansing	Outcome	Not available	All definitions exact	Not available
Antenatal corticosteroid use	Outcome	Not available	No exact definition	Not available
Newborns with documented birthweight	Outcome	All definitions exact	All definitions exact	Not available
Uterotonic for prevention of post-partum haemorrhage	Outcome	No exact definition	All definitions exact	Not available

EN-MINI Tool 0 Mapping Report

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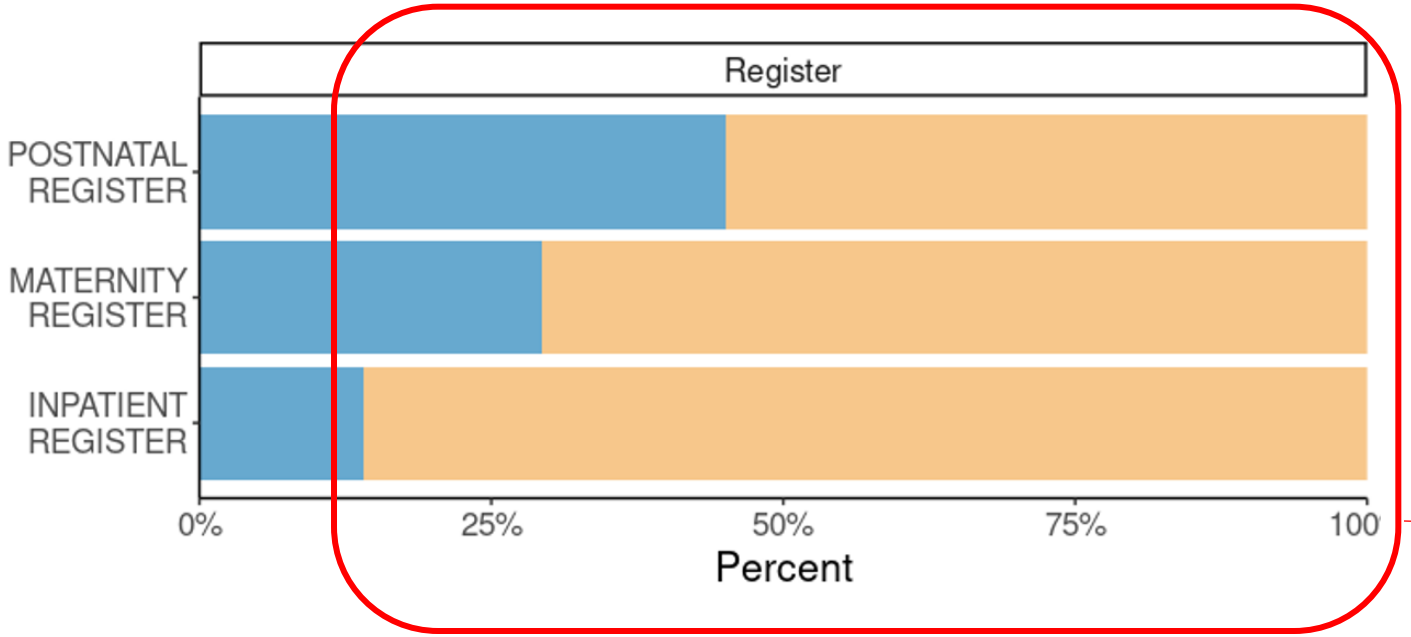
Proportion of newborn data elements in each register

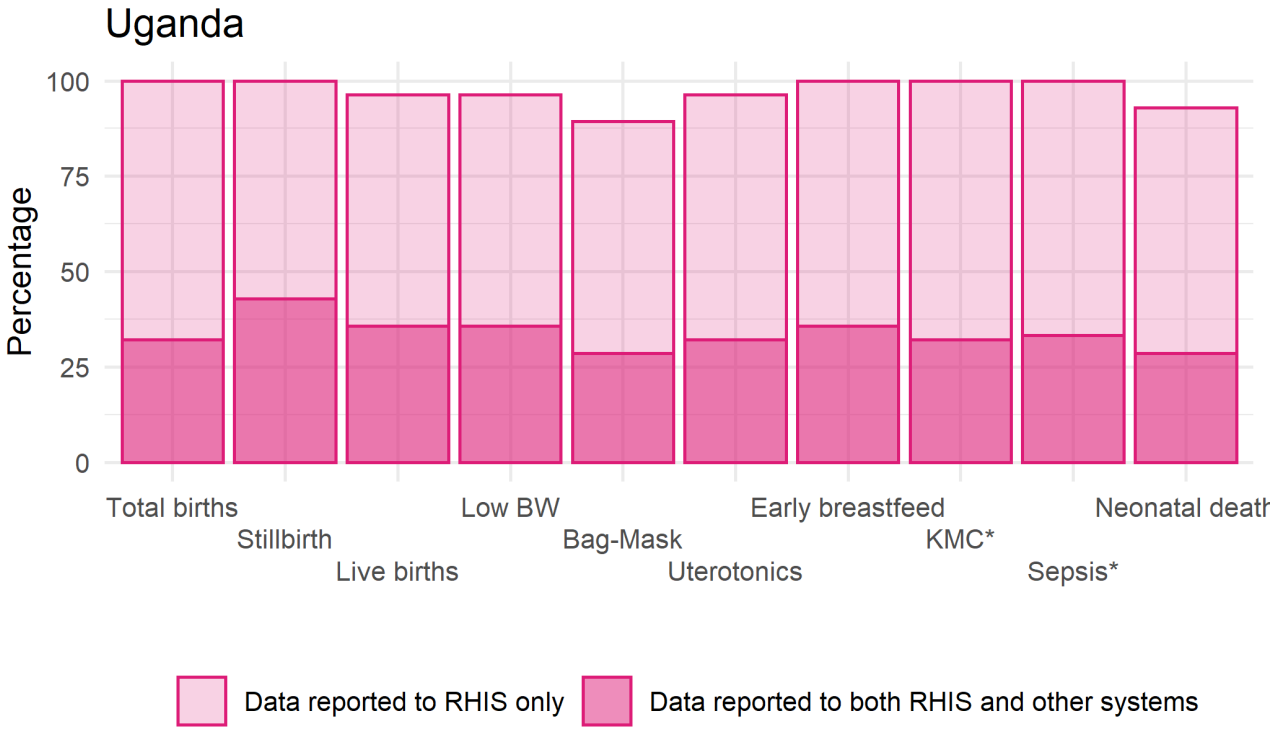


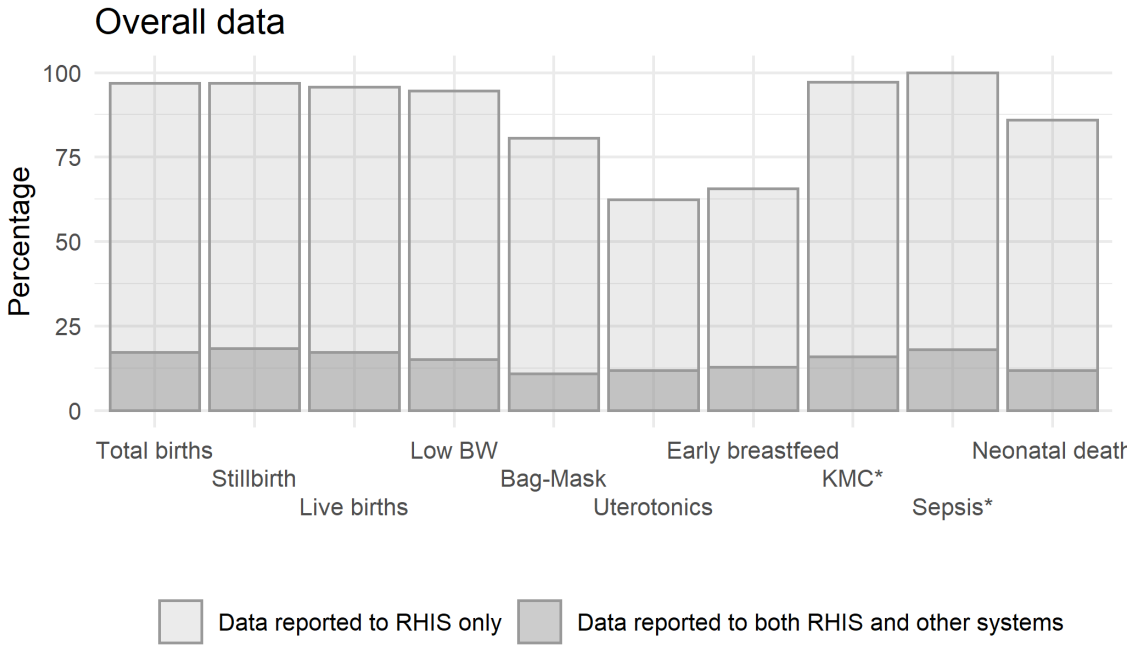
WHO/Nationally recommended Core/optional indicator data elements	Other indicator data elements

Key message:
In Routine registers
there are about 55-80 % additional data element non required for indicator measurement

Key data elements reported at facility level

Novel analysis (not included in PAT)





*KMC and Sepsis were collected only in the facilities in which a dedicated inpatients service was present

Key strengths:

- ❑ In Uganda 8 out of 10 key data elements were reported from the health facility into the DHIS2 system, with a frequency near to 100%

Key gap:

- ❑ Data reported to other systems from 25% to 45%

Presence of written key data element's definitions at the health facility

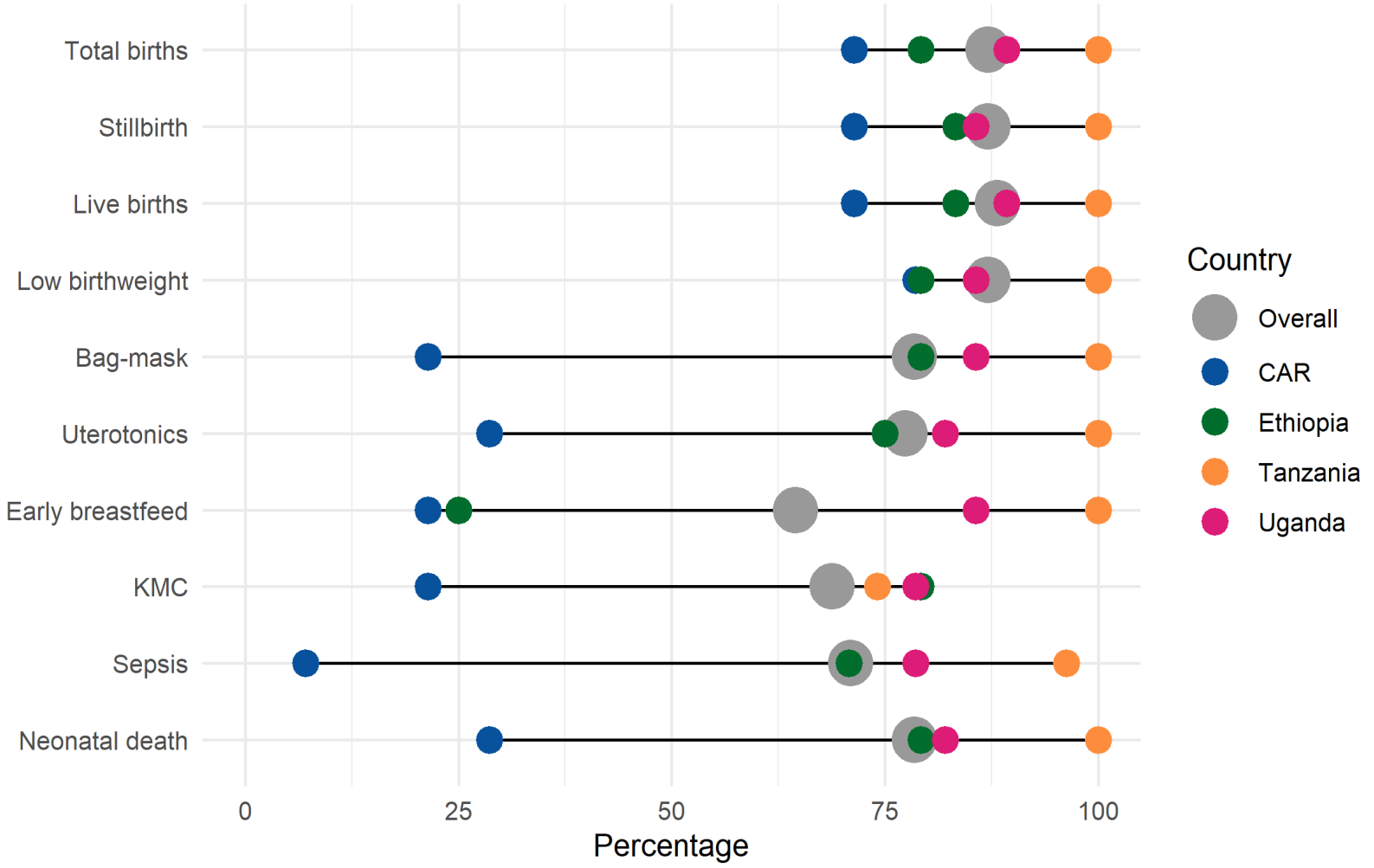
Strengths:

- ❑ In Uganda we found 78-88% of facilities had a written definition for the 10 indicators examined

Gaps:

- ❑ None of the indicators reached 100%

Indicator definitions need to be available in the health facility as well as in the DHIS2



CAR N=14; Ethiopia N=24; Tanzania N=27; Uganda N=28

IMPULSE objective 2 & 3

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- Understand newborn and stillbirth indicator **data quality & use**

We assessed data quality of:

WHAT

10 Indicators

2 "Denominators":

1. Total births (livebirths and stillbirths)
2. Live births

8 "Numerators":

1. Stillbirth
2. low birth weight
3. early initiation breastfeeding
4. bag-mask ventilation
5. kangaroo mother care
6. neonatal sepsis
7. neonatal death
8. maternal uterotonics

WHERE

Register

1. Delivery Register
2. NICU Register
3. PNC Register
4. IMNCI Register

Summary form (montly form)

"Monthly service delivery reporting form"

Electronic Health Information System

DHIS2

Data flow and feedback loops between levels

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7 different dimensions of data quality assessed

Data flow ←
Feedback loop ↔

Ministry of Health

Regional Health Bureau

dhis2
Data submission (online)

District Office

COMPLETENESS
- % Completeness of expected facility to report data= % Completeness of actual facilities that reported data (by indicator)

TIMELINESS
- % Monthly reported on time

AVAILABILITY
- % of expected monthly reports of selected indicators that are available at the district level.

CEmONC health facilities

Data office
Direct data entry onto electronic database

Monthly service delivery report (mostly paper-based)

Wards

ACCURACY:
Reported data on DHIS 2 = Manually counted data on source documents

COMPLETENESS
% Monthly Report contains the data relevant to the selected data elements.

AVAILABILITY
% of expected monthly reports of selected indicators that are available at the facility level

Registers
(mostly paper-based)

COMPLETENESS
% Completeness of source documents (registers)

✓ Key note
Health facilities (Tertiary, General and Primary Hospitals) enter data directly into an electronic database (DHIS2)

EN-MINI-PAT (colour code as for PAT)

Data quality – District

- **Strengths:** availability and completeness on "denominator" data elements
- **Key gaps:** availability and completeness and accuracy on "numerator" data elements (from 30% to 89%)

Note: in DHIS data entered as "zero cases" and "not reported" can't be distinguished

			District data office review n=20 offices		
			Monthly reports n=3 months		
			Availability	Completeness	Accuracy
			Facility monthly reports	Facility monthly reports	Database entry exactly matches facility reports
Indicator domain (ENAP)	Select Core Indicator data element				
IMPACT	Stillbirth	Numerator	73%	72%	64%
	Institutional neonatal deaths	Numerator	63%	59%	30%
	Low birth weight	Numerator	79%	78%	68%
COVERAGE: Every Newborn	Early initiation Breastfeeding	Numerator	90%	89%	85%
COVERAGE: Small or sick newborns	Bag-mask-ventilation	Numerator	62%	59%	76%
	KMC	Numerator	70%	66%	73%
	Neonatal sepsis	Numerator	52%	49%	72%
Maternal Tracer	Uterotonics prevent PPH	Numerator	91%	89%	82%
Indicator denominators	Total Births	Denominator	94%	93%	85%
	Live births	Denominator	94%	94%	83%

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Data quality – Facilities

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Strengths: completeness and availability of "denominator“ and “numerator” data elements
Key gaps: accuracy of “Low birth weight” and “Early initiation breastfeeding” data elements

			Facility review, n=28 facilities			
			Registers, n=3 months	Monthly reports, n=3 months		
			Completeness	Availability	Completeness	Accuracy
			Register primary source data	Monthly report	Monthly report	Monthly report from register
Indicator domain (ENAP)	Select Core Indicator data element					
IMPACT	Stillbirth	Numerator	95%	100%	98%	90%
	Institutional neonatal deaths	Numerator	96%	93%	88%	94%
	Low birth weight	Numerator	95%	98%	93%	74%
COVERAGE: Every Newborn	Early initiation breastfeeding	Numerator	99%	100%	95%	38%
COVERAGE: Small or sick newborns	Bag-mask-ventilation	Numerator	95%	100%	94%	80%
	KMC	Numerator	95%	96%	86%	91%
	Neonatal sepsis	Numerator	83%	100%	88%	97%
Maternal Tracer	Uterotonics prevent PPH	Numerator	95%	99%	96%	93%
Indicator denominators	Total Births	Denominator	96%	100%	95%	95%
	Live births	Denominator	94%	96%	94%	92%

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Data completness – Neonatal Clinical Case notes

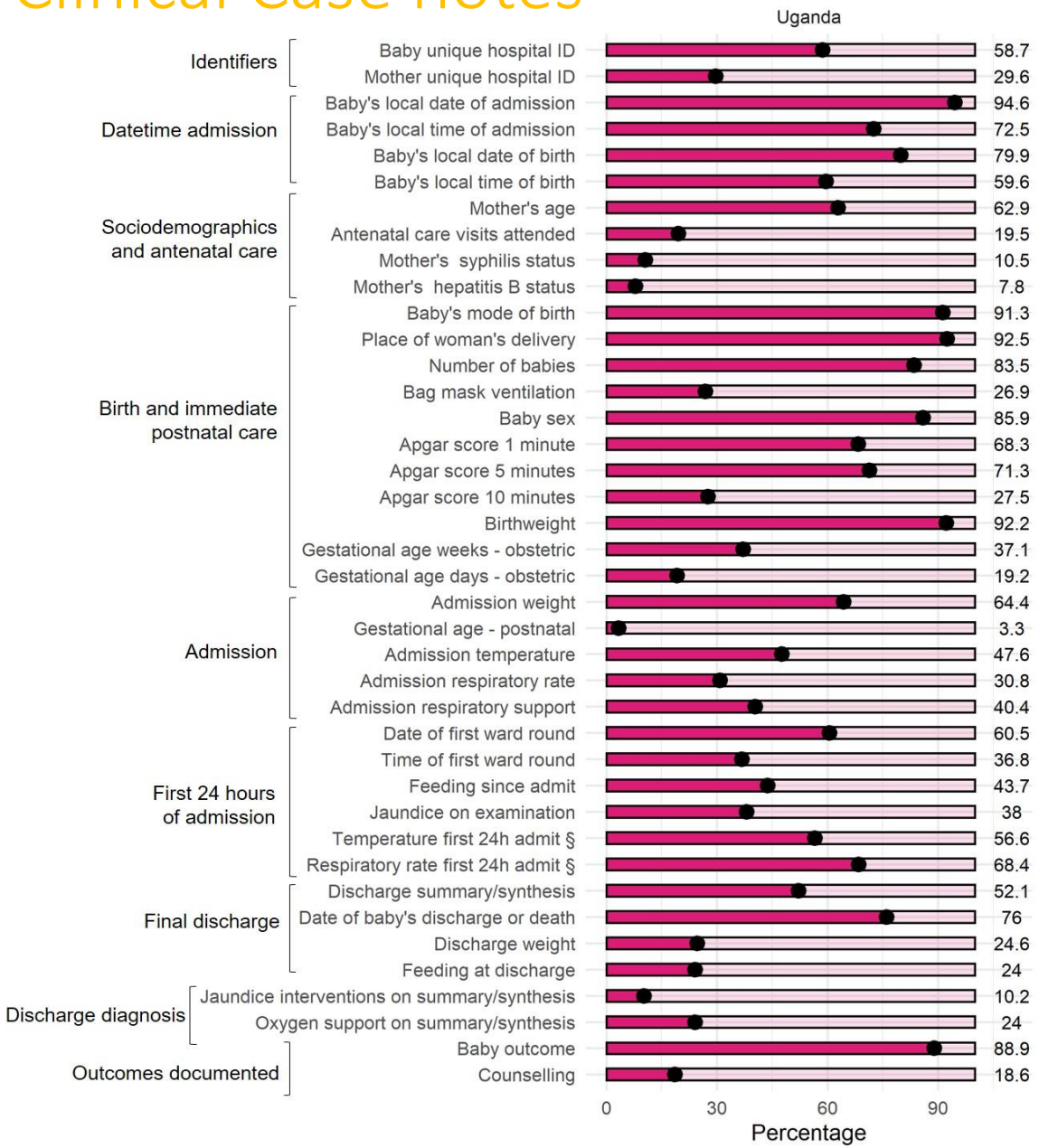
Strengths:

Almost never missing:

- Mode of birth
- Birth weight
- outcome at discharge

Weaknesses:

- ❑ Completeness varies (3%-94%)
- ❑ Missing at a high frequency: socio-dem & discharge information



334 case notes from 16 hospitals

EN-MINI-PAT (colour code as for PAT, compisite indicators)

Data use and enabling factors

Strengths:

- ❑ Data visualization and use at all levels

Key gaps:

- ❑ Data analysis at all levels: 74% at district, 50% at facility
- ❑ Use newborn data for decision varies 14%-50%

		District data office	Facility
Organizational factors	Evidence data analysis taking place	74%	50%
RHIS process	Data Visualization	95%	93%
	Use of data to produce narrative analytical report	80%	68%
Use newborn data for decision	Use information for discussion on key performance targets	50%	36%
	Use information for coverage of services	25%	21%
	Use sex-disaggregated data	25%	21%
	Use information for human resources decisions	45%	21%
	Use information for quality improvement	40%	14%

IMPULSE objective 4

- Understand technical, organizational, behavioral factors affecting newborn and stillbirth indicator **data quality & use**

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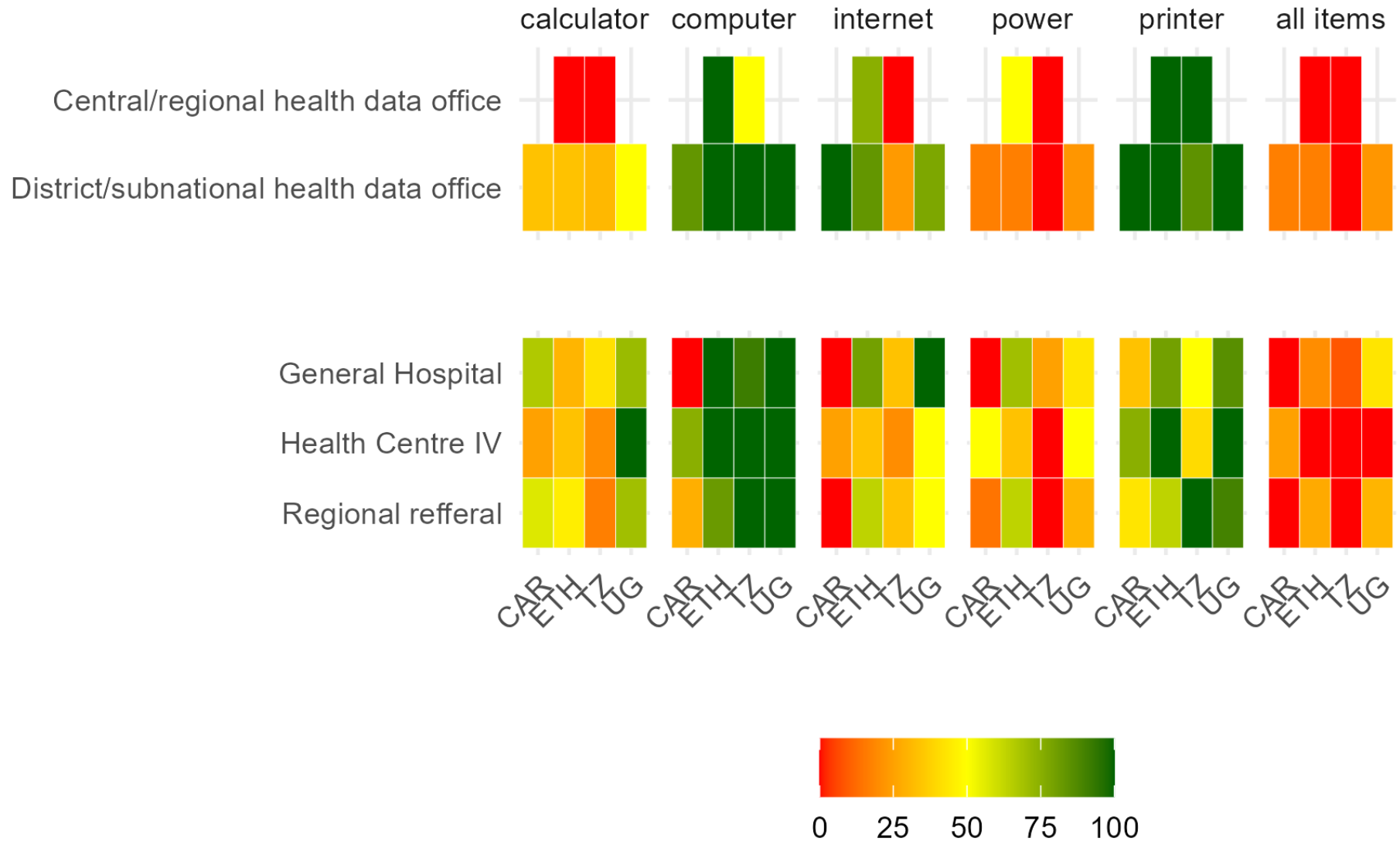
Physical Resources for newborn/stillbirth RHIS

Strengths in Uganda:
❑Computers and printers available at all levels (>75%)

Key gaps in Uganda:
❑Major gap for the **all physical items bundle** needed for RHIS data (0-50%)

❑Internet and power gaps main contribute to the gap - even at higher levels of the data systems



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Understanding factors affecting data quality and use

Key strengths:

District

- ❑ Designated staff checking data quality (100%), data quality assurance score 89 %

Facility

- ❑ Designated staff checking data quality (93%)

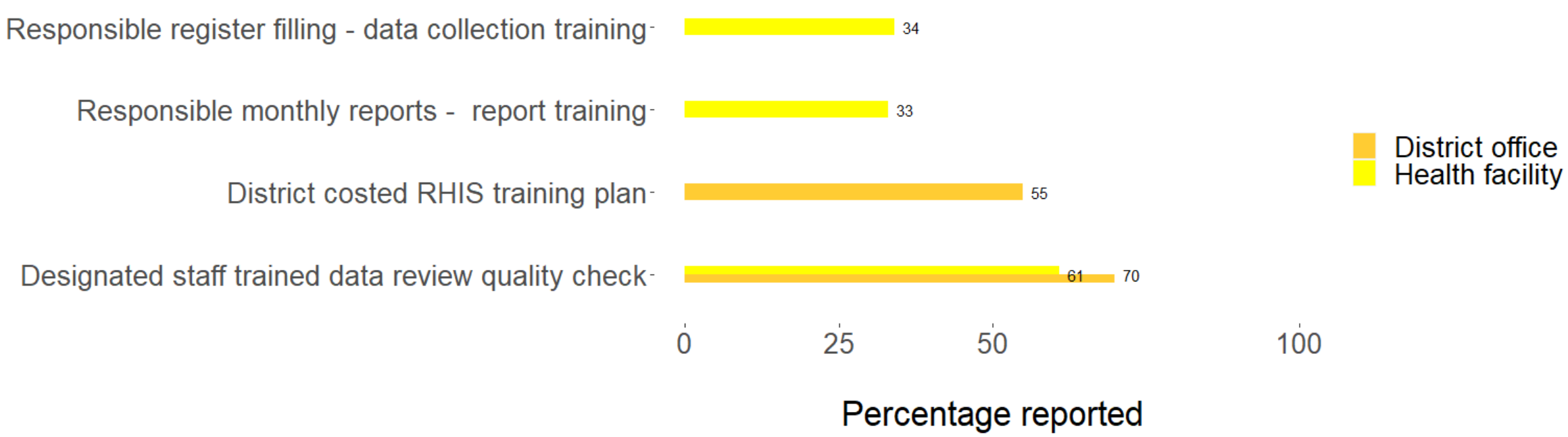
Key gaps:

- ❑ Most organizational factors at district level (55%-68%)
- ❑ Motivation among staff at all levels (67% and 56%)
- ❑ Use of routine data for RHIS quality improvement at all levels (44% and 31%)

Uganda		District data office	Facility
Organizational factors	Good governance structures	59%	Not assessed
	Planning for RHIS	48%	Not assessed
	Use of quality improvement standards	92%	Not assessed
	Supervision quality	68%	79%
	Financial resources allocated	45%	Not assessed
	Training plan costed	55%	Not assessed
	Data quality assurance score	89%	70%
	Designated staff check report data quality	100%	93%
Behavioral Factors	Knowledge RHIS	93%	69%
	Knowledge data quality checking methods	97%	73%
	Motivation among staff	67%	56%
Improve Newborn Data Quality	Use of routine data for RHIS quality improvement	44%	31%

RHIS Training

Uganda



Key strengths:

70% staff trained on data review quality checks at district level

Key gaps:

- 33-34% of staff trained at facility level
- 55% of costing RHIS plans in district offices

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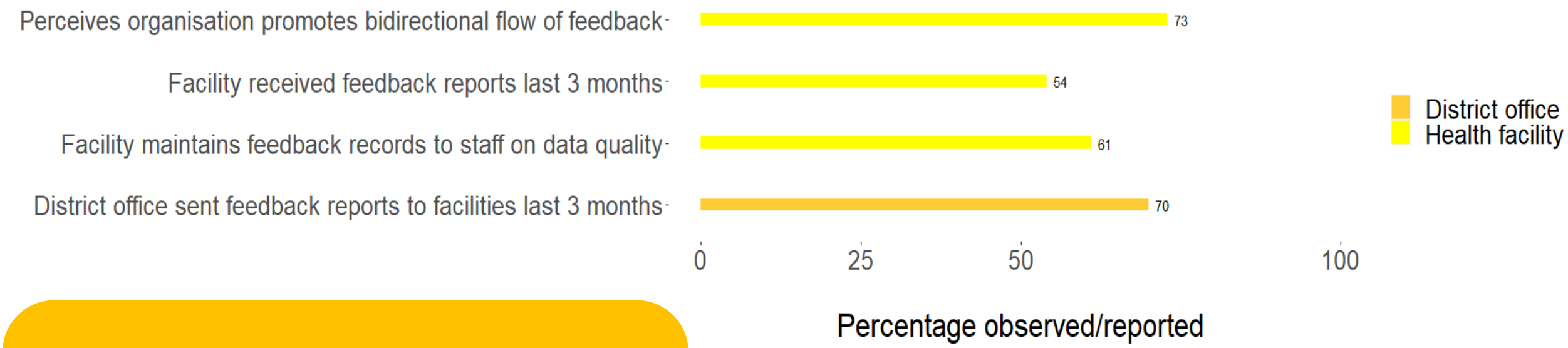
Feedback loops

Uganda



Key strengths:

❑Feedback report sent by district offices to facilities is moderately good (70%)

Key gaps:

❑ 54% of facilities received feedback report (past 3 months)

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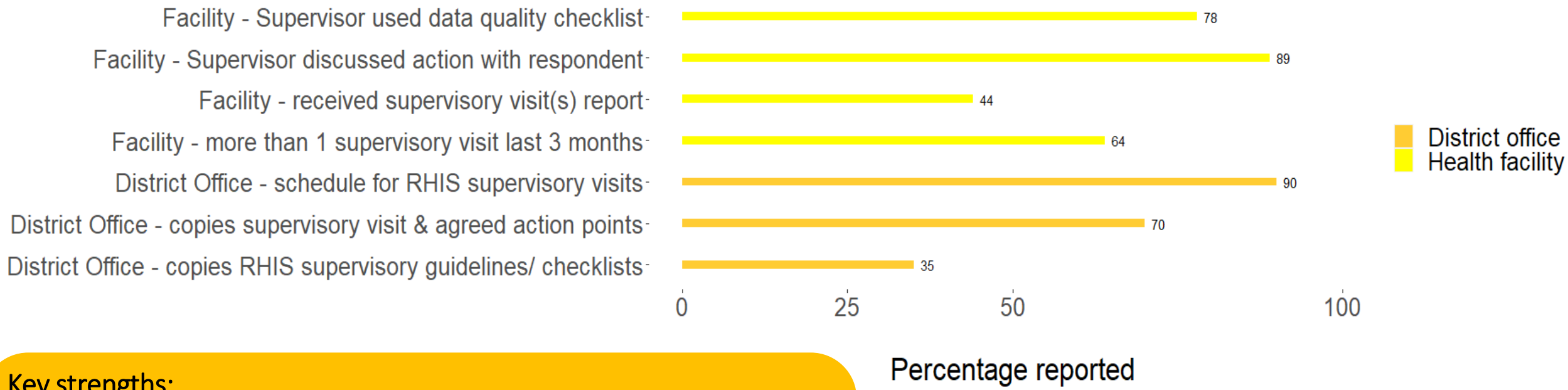
Supervision Mechanisms

Uganda



Key strengths:

- ❑ 90% schedule for RHIS supervisory visit at district level
- ❑ 89% supervisor discussed action with respondent at facility level

Key gaps:

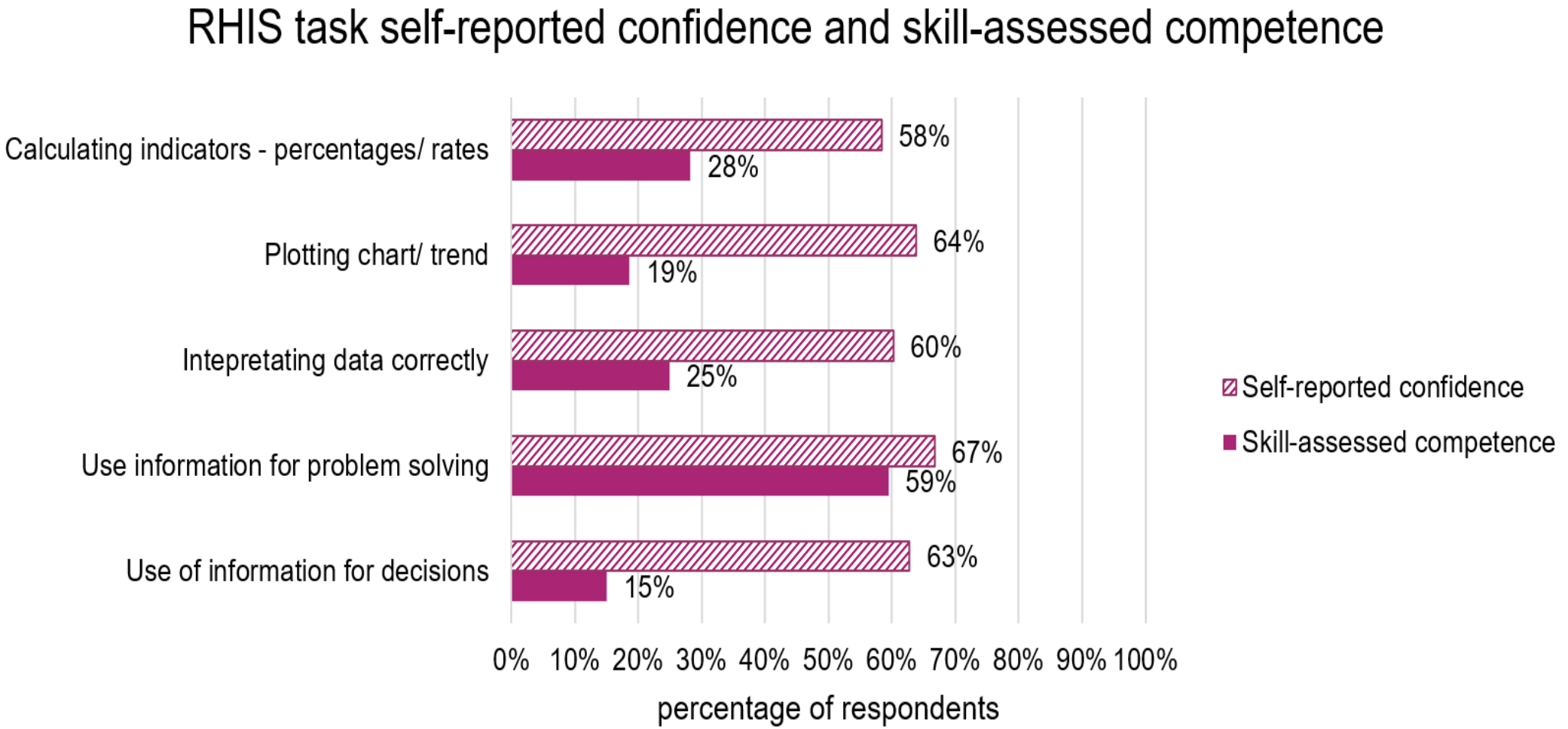
- ❑ districts lack copies RHIS supervisory guidelines/checklists (35%)
- ❑ 44% facilities received a report

Uganda n = 48 sites, 120 respondents

RHIS task self-reported confidence vs skill-assessed competence

Confidence-competence gap :

- calculating indicators (30 % gap)
- plotting charts and trends (45% gap)
- interpreting data (35% gap)
- problem-solving (8% gap)
- using information for decisions (48% gap).



Uganda n = 48 sites, 120 respondents

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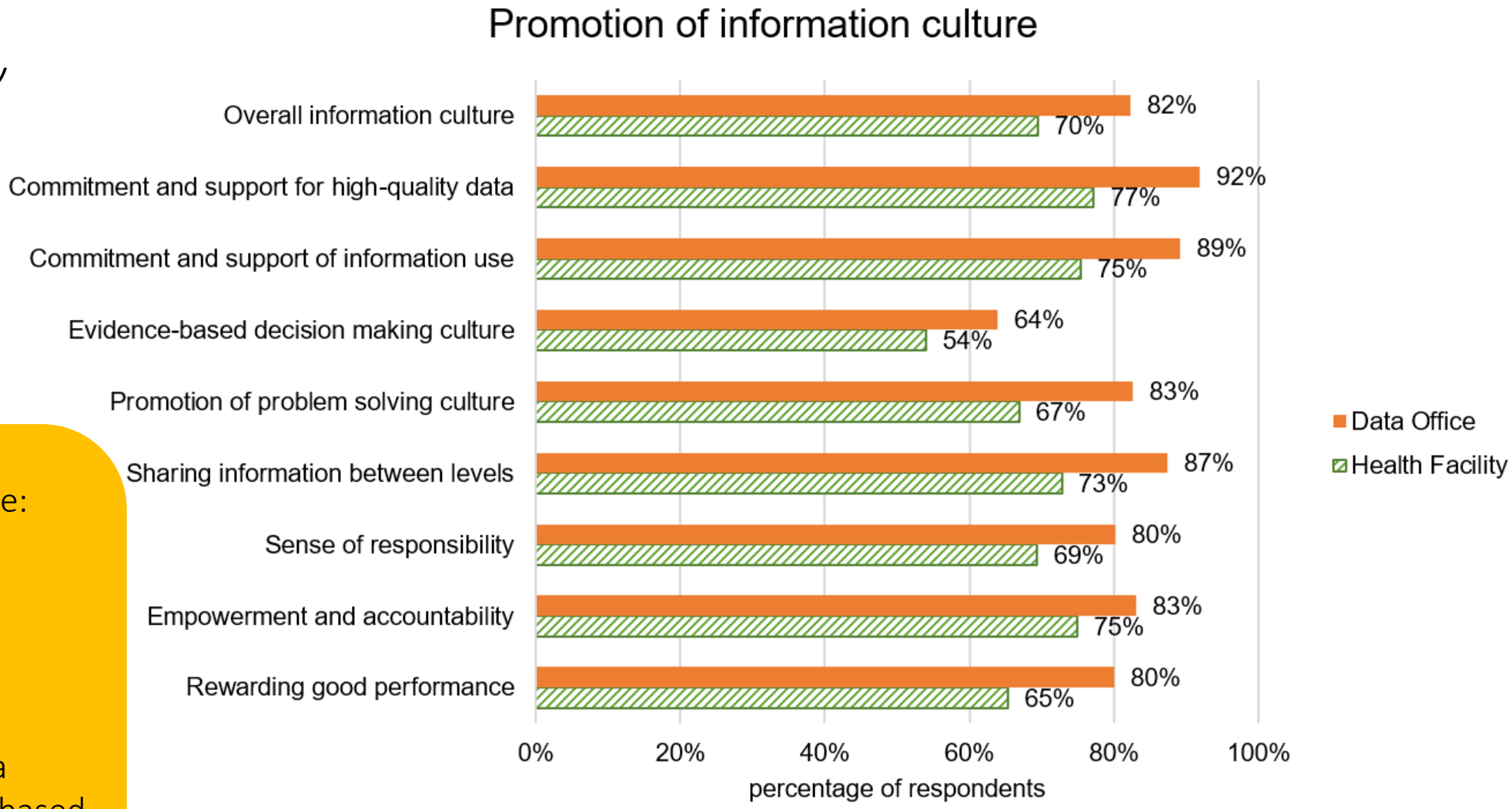
Promotion of culture of information *

*operationally defined as: *an organization having the **capacity and control to promote values and beliefs** among its members to promote collection, analysis and use of information to accomplish its goals and mission.*



Key strengths:

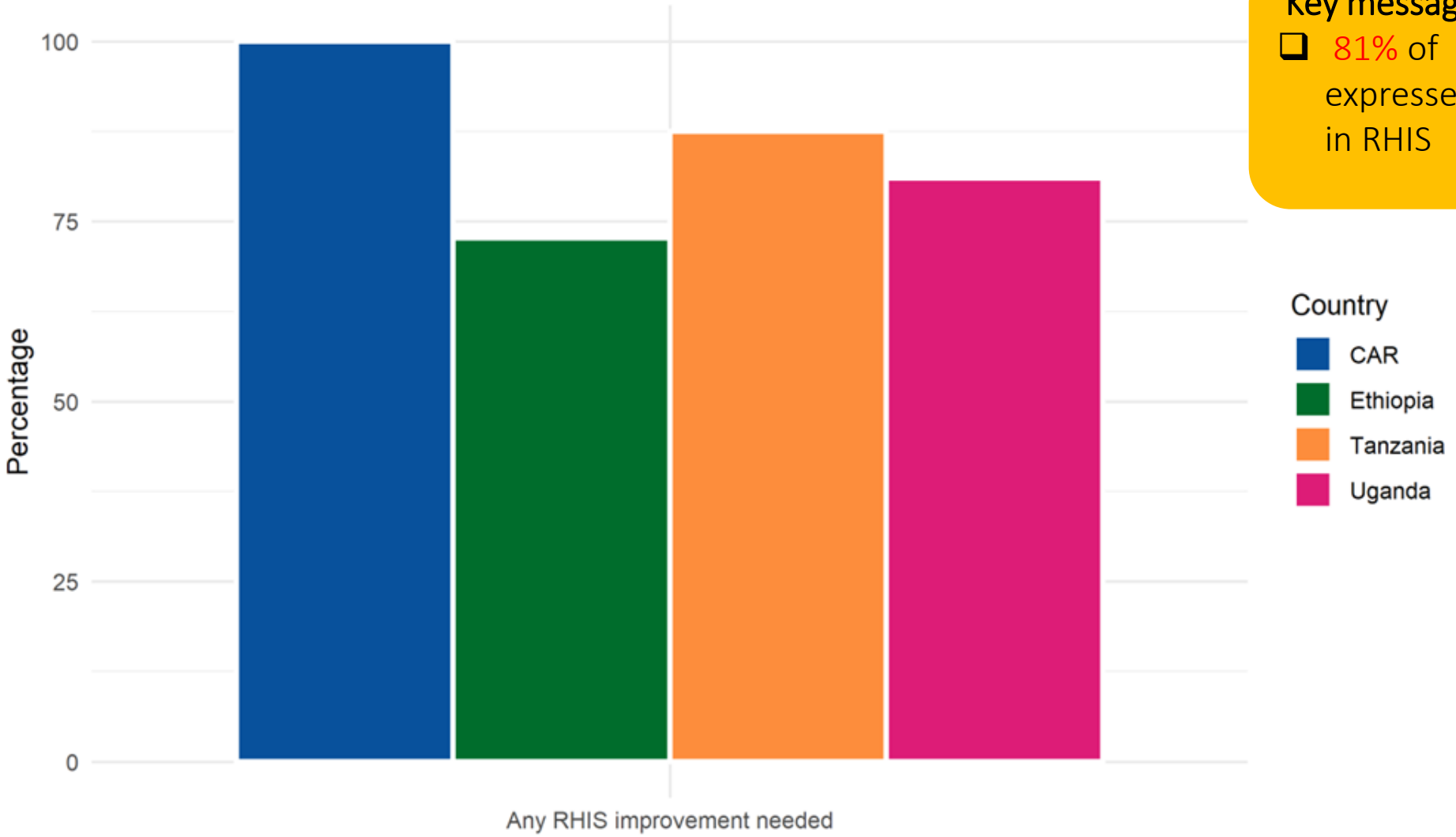
- Overall Information culture:
  health facility 70%
  district data office 82%

Key gaps:

- Health facility lower than district data office all criteria
- Lowest criteria: evidence-based decision making culture

Respondent's perspectives on RHIS

Novel analysis (not included in PAT)

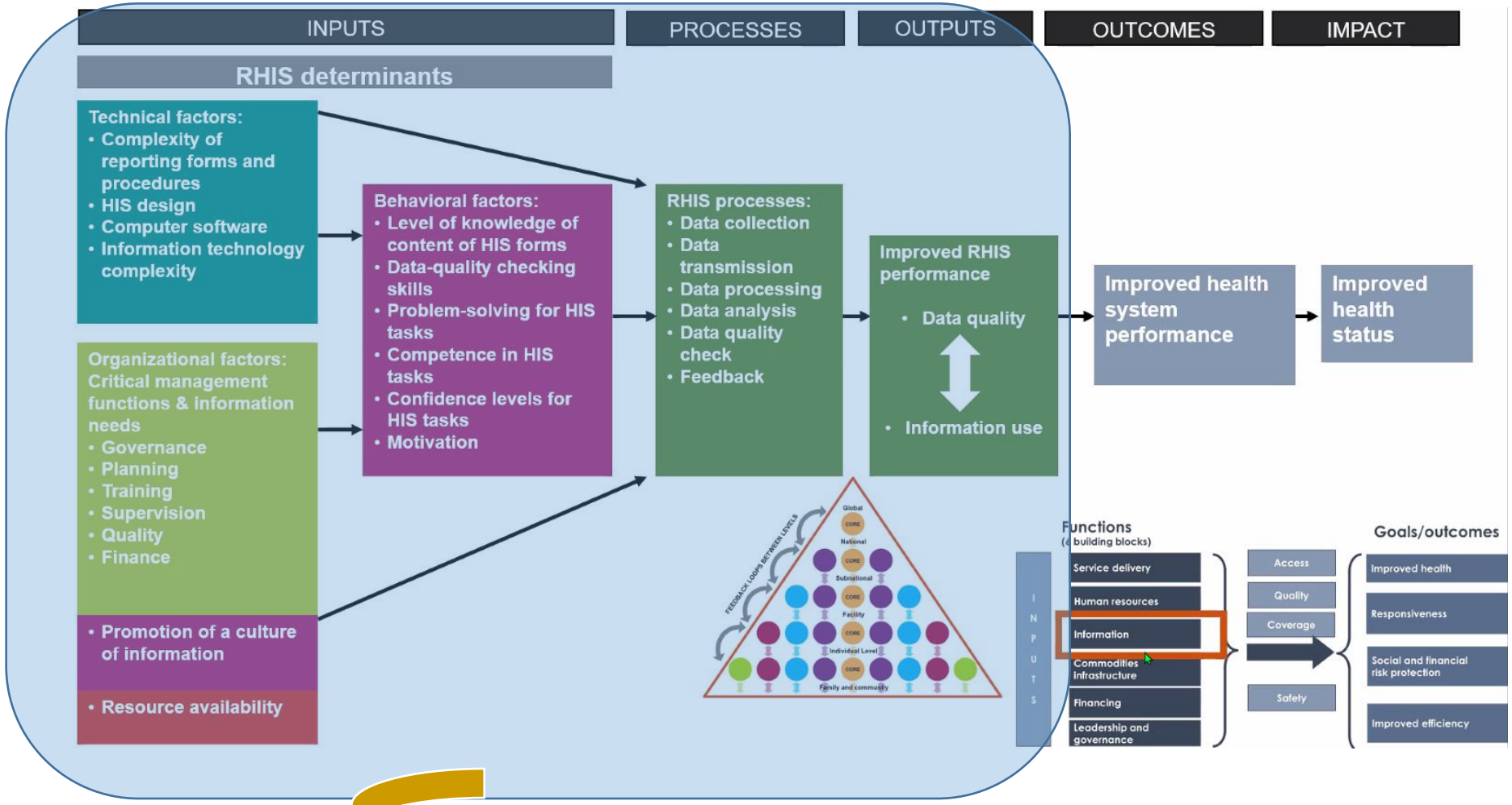


Key message:

- 81% of respondents in Uganda expressed the need for improvement in RHIS

Ethiopia N=11
Tanzania N=16
Uganda N=21
CAR N=7

IMPULSE phase 1 - what lessons are we learning?



PRISM framework

May strengths, but also gaps across technical, organizational and behavioral determinants contributing to newborn and stillbirth data quality and use

Strengths and limitations

Strengths:

1) Data are very specific to the newborn sector, providing a comprehensive overview of the quality and use of newborn data, and underlying determinants
2) Data can drive quality improvement initiatives
3) Data were collected according to a standardized methodology which allow replicating data collection in different sites and at different time points (e.g. to check progresses)
4) Most data were directly observed
5) A set of quality assurance procedures was implemented
6) Data comparison across countries may favor cross fertilization of idea/action among IMPULSE partners and related stakeholders

Limitations of this assessment include:

1) Study findings are not directly generalizable to the whole country
2) Analyses provided on the overall sample do not explore individual practices at each site; further subgroup analyses (e.g. by region, by individual facilities) can be provided.

DISCUSSION

Overview of Actionable Findings

Domain	Strengths to recognize	Gaps for focused action
Presence of WHO Recommended indicators in DHIS2, reporting from facilities and existence of written definitions	❑ Six indicators had the same definition as WHO. ❑ Eight out of 10 key data elements were reported from health facility into the DHIS2 with a frequency near to 100% . ❑ Reporting systems different from DHIS2 were observed in 25-45% of cases. ❑ 78-88% of facilities had a written definition for the 10 indicators examined.	❑ Out of 16 WHO Recommended indicators, two had different definitions, eight were missing. ❑ Only 25% of facility had a written definition for early breastfeeding, and this indicator is not reported in DHIS2.
Newborn data quality	❑ Good availability and completeness on "denominator" indicators for the district and facilities.	❑ Low availability and completeness and accuracy on "numerator" indicators for the districts. ❑ Medium or low accuracy for both "numerator" and "denominator" indicators for the districts.
Neonatal clinical case notes	❑ Mode of birth, weight and outcome (discharge diagnosis) almost never missing.	❑ Completeness of case notes is heterogenous, many key information are missing in a high percentage of case notes.
Data use	❑ Good data visualization and use at both district and facility level.	❑ Gaps in use of newborn data for decision both at district and facility level. ❑ Not strong evidence of data analysis taking place at both district and facility level.

Domain	Strengths to recognize	Gaps for focused action
Resources and Technical, Organizational and Behavioral factors	❑ Good availability of computers and printers. ❑ Moderate availability of the internet (50%-100%). ❑ Good supervision mechanism in place. ❑ Good overall information culture at the health facility and district level. ❑ Moderate feedback loops at the health facility and district level	❑ Low availability of electric power, calculators, and bundles of items for RHIS. ❑ Lower scores were observed at facility level. ❑ Some gaps in the supervision mechanism related to copies of RHIS supervisory visits and guidelines at district level and received report(s) of supervisory visits at facility level. ❑ Reported gaps regarding the evidence-based decision making culture at both levels. ❑ Lowers scores were observed at facility level. ❑ Feedback at facility level is reported at 53%. ❑ Training reports low scores for both facility and district level.

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Session 3

Opportunities generated by IMPULSE Phase 1

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The **comprehensive assessment** generated by IMPULSE Phase 1 can be used for different purposes:

1. To identify priorities for action & health planning > **Preliminary discussion TODAY: how can these data be used ?** link to other newborn/ stillbirth data plans/activities ?
2. Systematic methods of data collection allow monitoring progress over time and across sites
3. To request **additional funds from "big donors"**
4. For academic products - we invite all NAG members to be co-authors

Phase 2 (two more years) may support

1. **Dissemination** of the findings of Phase 1 at different levels
2. Tool development & Capacity strengthening **– priorities to be identify in dialogue with key stakeholders**

Identifying priorities for action, current feasibility and possible interventions

Domain	Gaps for focused action	Possible interventions
Presence of WHO Recommended indicators in DHIS2, reporting from facilities and existence of written definitions	❑ Out of 16 WHO Recommended indicators, two had different definitions, eight were missing. ❑ Only 25% of facility had a written definition for early breastfeeding, and this indicator is not reported in DHIS2.	
Newborn data quality	❑ Low availability and completeness and accuracy on "numerator" indicators for the districts. ❑ Medium or low accuracy for both "numerator" and "denominator" indicators for the districts.	From a preliminary discussion with MoH Strategic Affair ❑ New app for DHIS2 to document data accuracy + capacity development ❑ New tool for automated data analysis ❑ Knowledge hub
Neonatal clinical case notes	❑ Completeness of case notes is heterogenous, many key information are missing in a high percentage of case notes.	
Data use	❑ Gaps in use of newborn data for decision both at district and facility level. ❑ Not strong evidence of data analysis taking place at both district and facility level.	

Domain	Gaps for focused action	Possible interventions
Technical, Organizational and Behavioral factors	❑ Low availability of electric power, calculators, and bundles of items for RHIS. ❑ Lower scores were observed at facility level. ❑ Some gaps in the supervision mechanism related to copies of RHIS supervisory visits and guidelines at district level and received report(s) of supervisory visits at facility level ❑ Reported gaps regarding the evidence-based decision making culture at both levels. ❑ Lowers scores were observed at facility level ❑ Feedback at facility level is reported at 53%. ❑ Training reports low scores for both facility and district level.	

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Thank you!