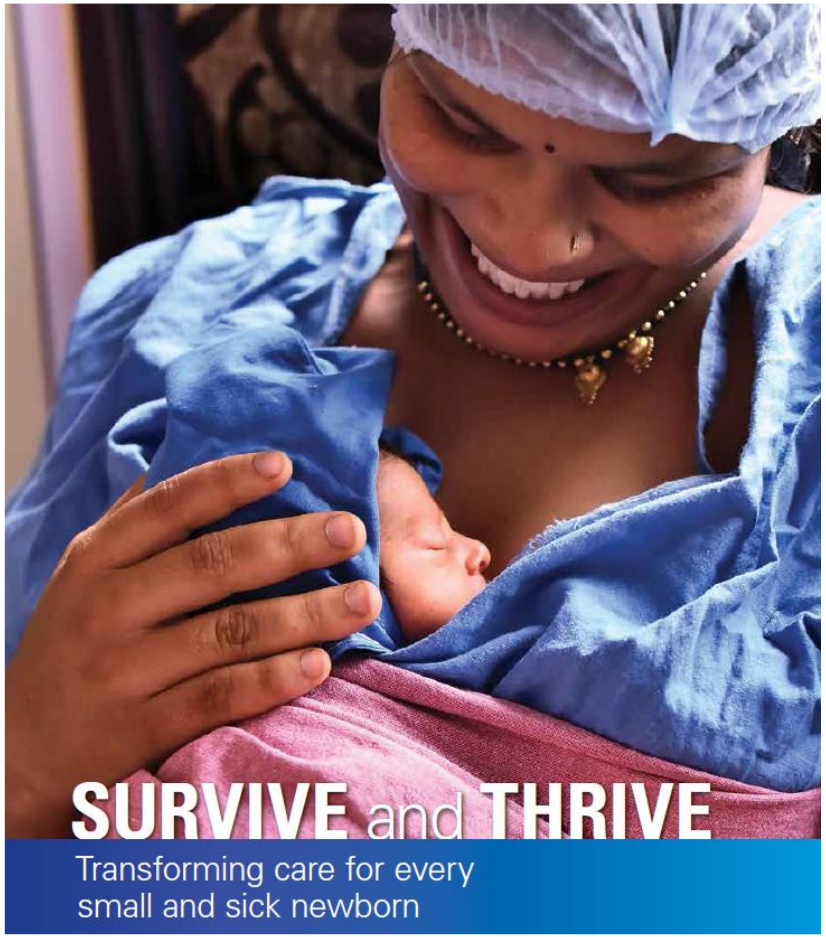
IMPULSE

IMProving qUaLity and uSE of newborn indicators

FIRST NATIONAL DISSEMINATION WORKSHOP ETHIOPIA

31 May 2024, Addis Ababa



World Health Organization

unicef for every child

Chiesi FOUNDATION

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

MARCH MATERNAL ADOLESCENT REPRODUCTIVE & CHILD HEALTH

ጤና ሚኒስቴር - ኢትዮጵያ MINISTRY OF HEALTH - ETHIOPIA

DOCTORS WITH AFRICA CUAMM

School of Public Health
College of Health Sciences,
Makerere University

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

WHO Collaborating Center for Maternal and Child Health Trieste Italy

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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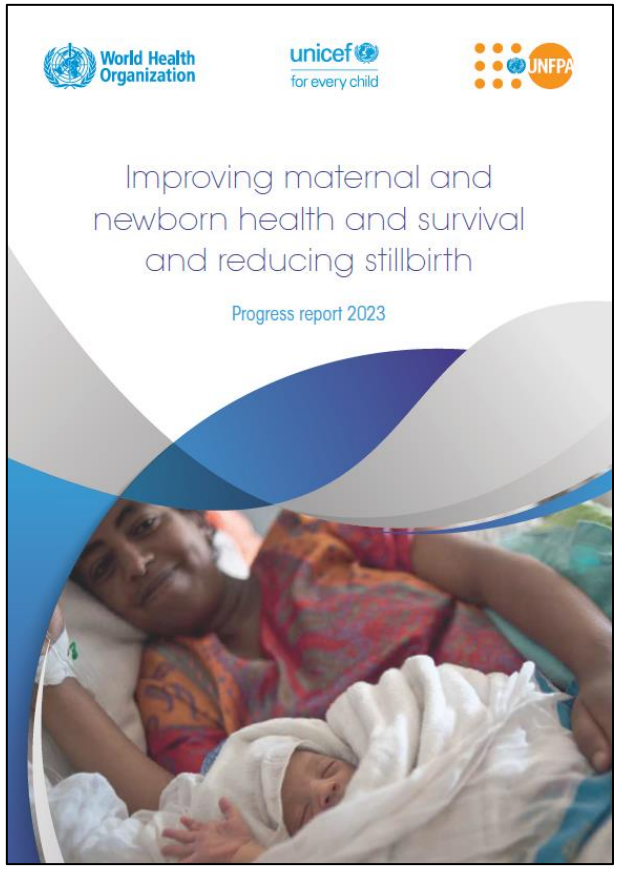
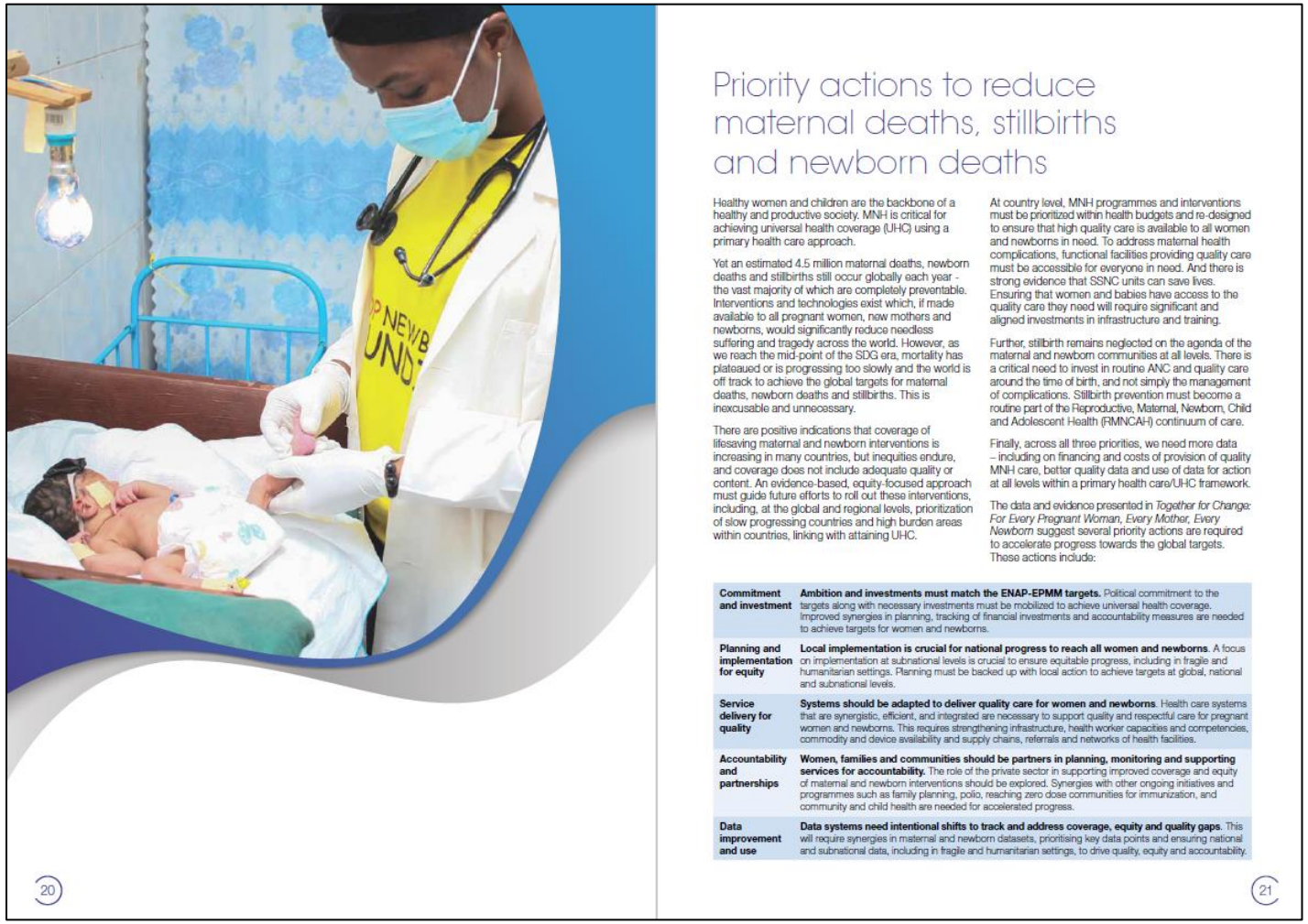
WHY is this important

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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Priority actions to reduce stillbirths and newborn deaths

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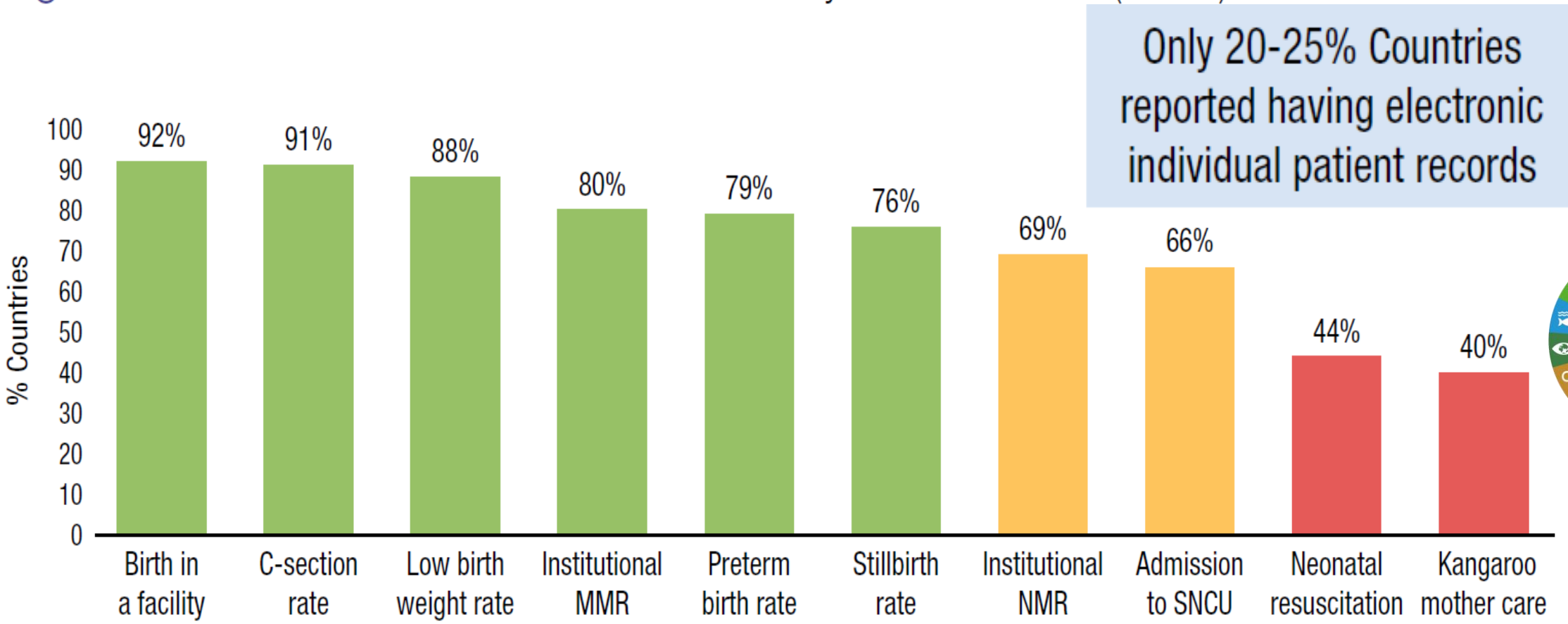
Data and information systems for MNH indicators

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



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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Ethiopia Doctors with Africa, CUAMM	CAR Doctors with Africa, CUAMM	Tanzania Ifakara Health Institute	Uganda Makerere School of Public Health	Italy Doctors with Africa, CUAMM	UK London School of Hygiene & Tropical Medicine	Italy WHO Collaborating centre, Burlo
Firehiwot Abathun Dawit Fisseha Mary Ayele Data collectors	Ousman Mouhamadou Data collectors	Jacqueline Minja Donat Shamba (PI) Honorati Masanja Data collectors	Muhumuza Kananura Rornald Peter Lochoro Peter Waiswa (PI) Data collectors	Francesca Tognon Martina Borellini Giovanni Putoto	Marzia Lazzerini Louise Tina Day Joy Lawn	Ilaria Mariani Sara Geremia Paolo Dalena Marzia Lazzerini
complete list on next slide	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 Edwin Swai 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 Honorati Masanga Dr Ulrika Baker	National Advisory Group Dr Mugahi Richard Dr Peter Waiswa Dr Victoria Nankabirwa Patricia Pirio BODO, Bongomin Dr Sharon Tsui Christine Mugasha	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)		

Ethiopia National Advisory Group (NAG)

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Federal Ministry of Health Ethiopia:

Maternal Child and Adolescent Health Service Lead Executive Office Director: Dr Alemayehyu Hunduma and Dr Meseret Zelalem (former director), Strategic Affairs Executive Office Director: Mr Mesoud Mohammed, Health Service Quality Director: Dr Abas Hassen, Health management information system expert: Mr Tamirat Awol, National program Child Health expert: Mr Melese Solomon and Mr. Solomon Gebeyehu (former expert).

Ethiopian Public Health Institute:

Knowledge Translation Directorate: Mrs Firmaye Bogale

Research Team Lead: Mr Tewdros Getachew

Ethiopian Pediatrics Society (Executive Director): Professor Bogale Worku.

Ethiopian Midwifery Association (Executive Director): Mr Belete Belgu.

UNICEF (Maternal and Child Health): Dr Yayeh Negash

WHO Country Office (CO) Ethiopia: Sarai Malumo, Haimanot Ambelu, Bejoy Nambiar

International Advisory Group (IAG)

IMPROVING QUALITY AND USE OF NEWBORN INDICATORS

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

University of Oslo: Prof Johan Ivar Saebo

Chiesi Foundation: Dr Merran Thomson

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

IMPULSE
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WHAT were our objectives

IMPULSE study AIMS and OBJECTIVES

IMPULSE
IMProving qUaLity and uSE of newborn indicators

Aim: To improve newborn and stillbirth 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 t**echnical, 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.

IMPULSE Phase 1 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 Ethiopia: 5 regions and 1 city administration
  - Amhara, Gambella, Oromia, South Ethiopia, Sidama & Addis Ababa,
  - 24 C-Emoc health care facilities, 6 zonal health departments/woreda health office, 4 Regional Health Bureaus and the Ministry of Health

Ethical clearance

Approved by:

- **Institutional Review Board (IRB) of the Ethiopian Public Health Institute (EPHI)** August 29, 2022 and renewed on August 28, 2023.
- IRBs of LSHTM and of 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 with 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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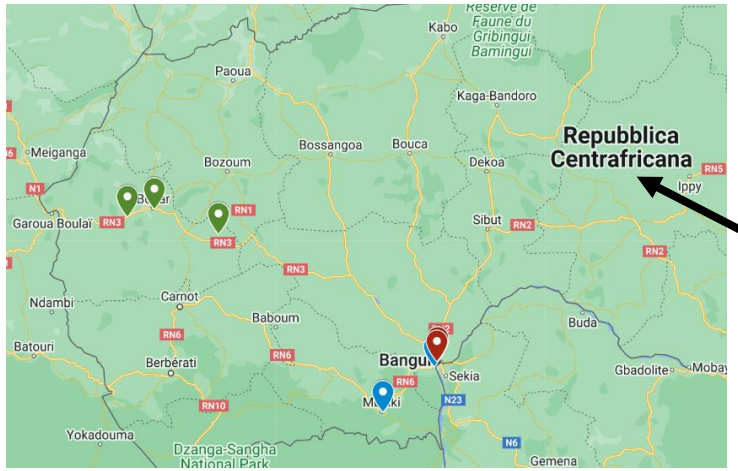
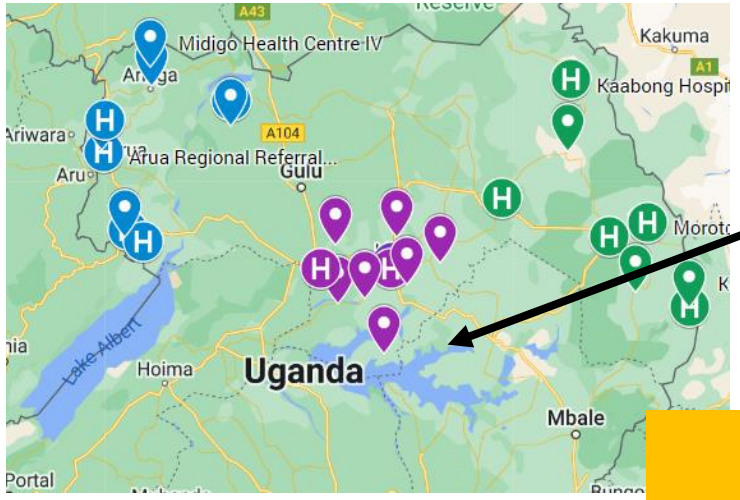
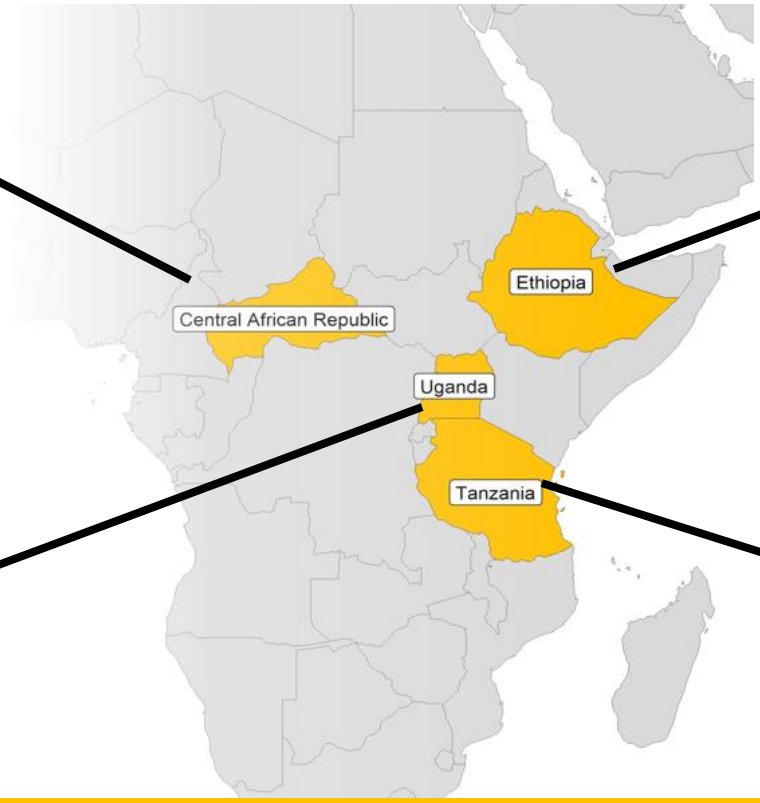
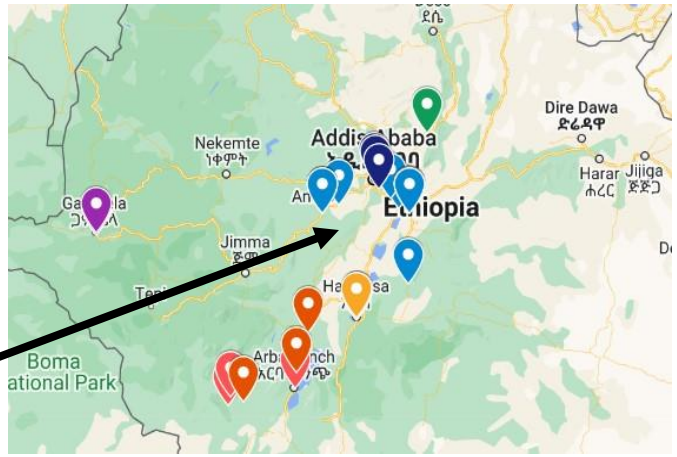
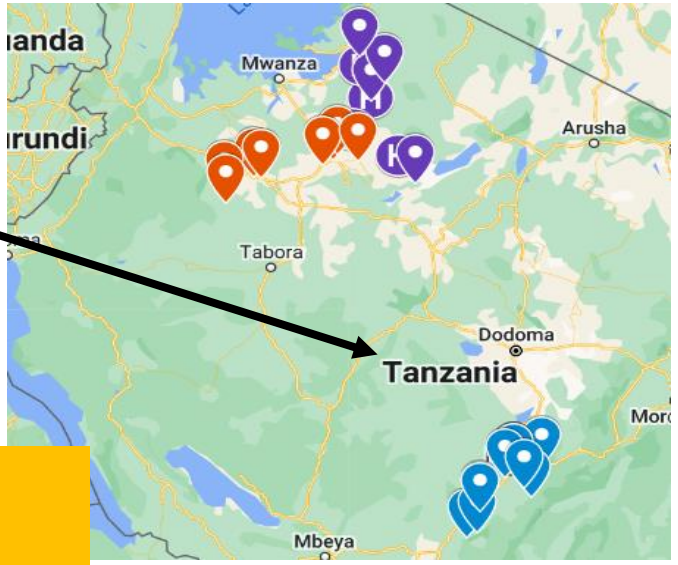
- ✓4 Countries: Central African Republic, Uganda, Tanzania, Ethiopia
- ✓15 Regions/City adm: including humanitarian, difficult to reach
- ✓150 sites across 4 countries











In ETHIOPIA: 35 sites

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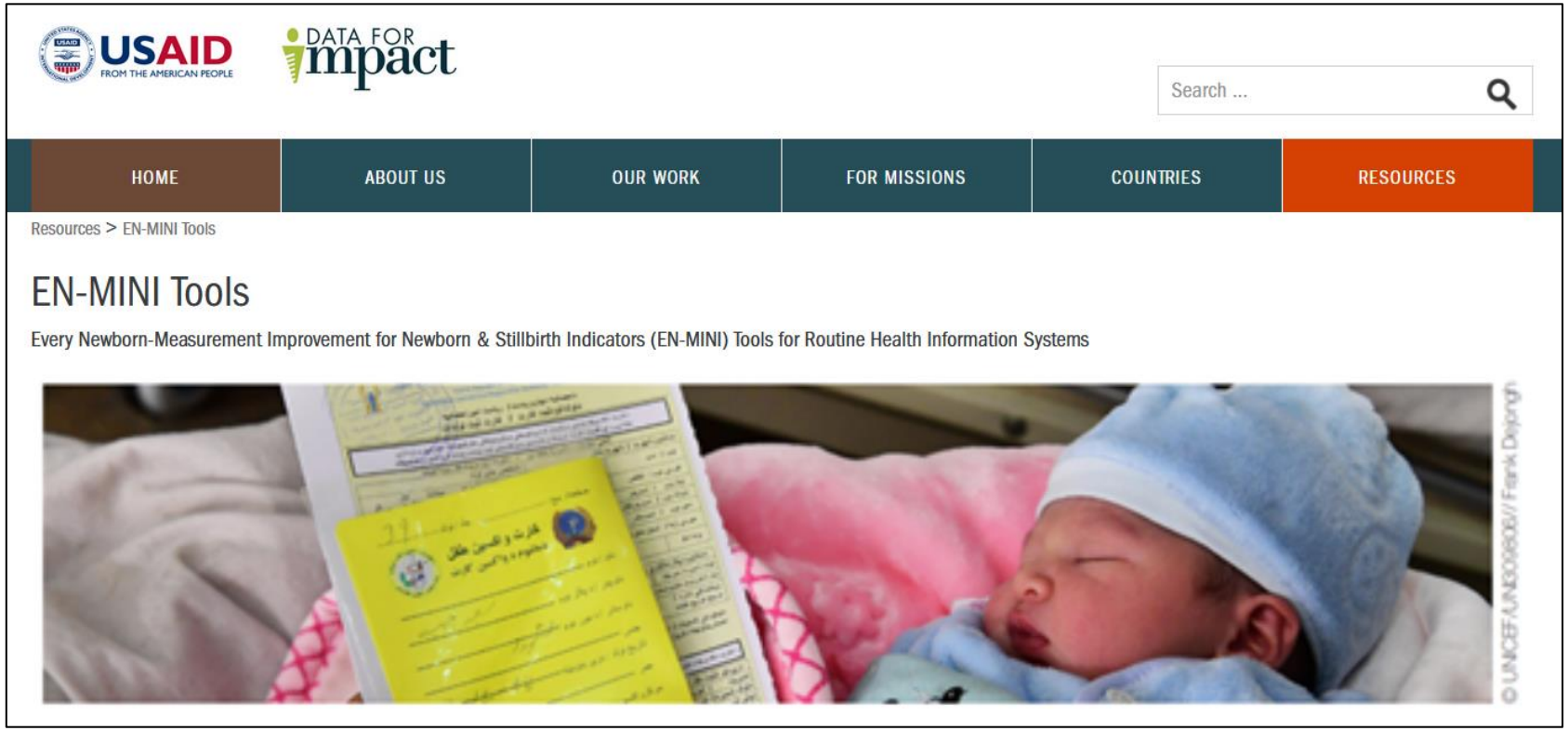
HOW
& WHEN we have collected data

Data were collected : 2023

Using EN-MINI tools, open access launched 2022



EN-MINI tools

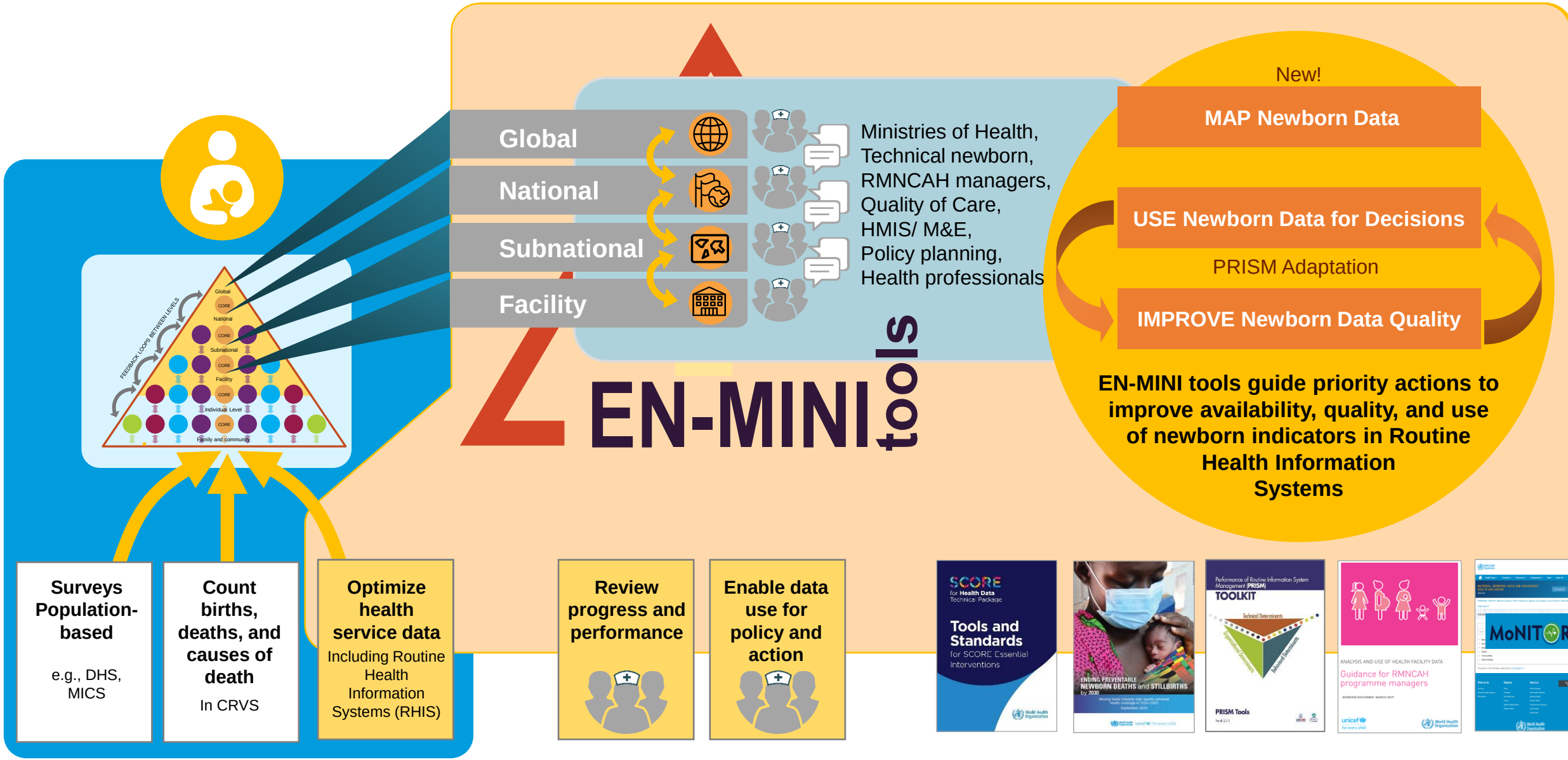
IMPULSE study contributed to:

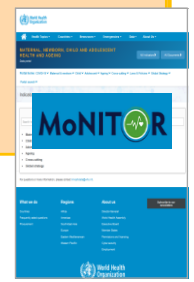
- ✓ Version 2 EN-MINI tools
- ✓ Amharic, French and Swahili translations

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
Version 2

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Map Newborn Data

Map Newborn Data
EN-MINI Tool 0

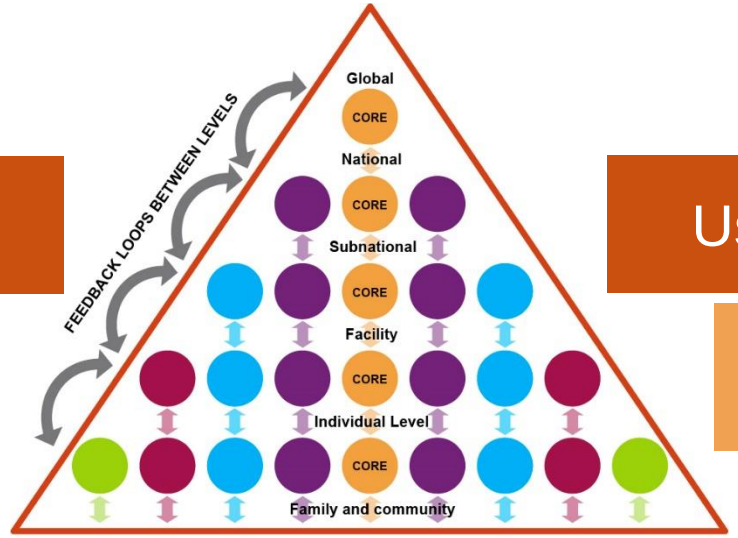
Improve Newborn Data Quality

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

*added upon request MoH

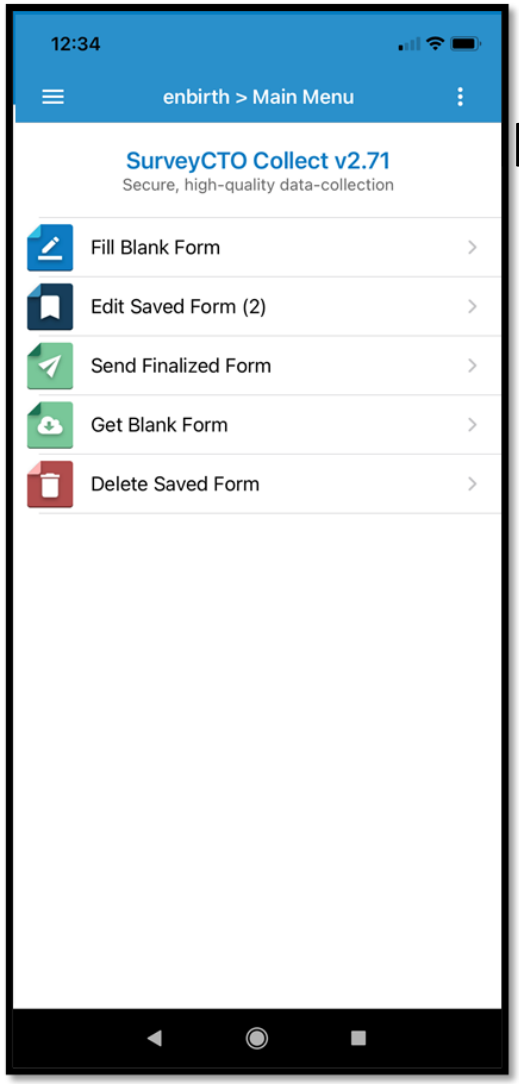
ETHIOPIA	Criteria	Oromia	South Ethiopia and Sidama	Gambela* and Amhara*	Capital city - Addis Ababa*	TOTAL
3rd level of referral (National)	1	NA	NA	NA	1	1
3rd level of referral (Regional)	1	1	1	NA		2
2nd level of referral (Subnational / District) Public	2	2	2	2	2	8
2nd level of referral (Subnational / District) Not For Profit	1 (if existing, and allowing)	1	NA	NA		1
2nd level of referral (Subnational / District) Private	1 (if existing, and allowing)	NA	1	NA		1
1st level of referral (Primary Hospital / Health Center with CEmONC) Public	3	3	3	1		7
1st level of referral (Primary Hospital / Health Center with CEmONC) private	1 -2 (if existing, and allowing)	2	2			4
TOT Facilities	**9 + NATIONAL**	**9**	**9**	**3**	**3**	**24**
District /Subnational Health Office		2	3	1		6
Regional health office		1	1	1	1	4
Central Ministry of Health					1	1
TOT District offices		**3**	**4**	**2**	**2**	**11**
Total sites		**12**	**13**	**5**	**5**	**35**

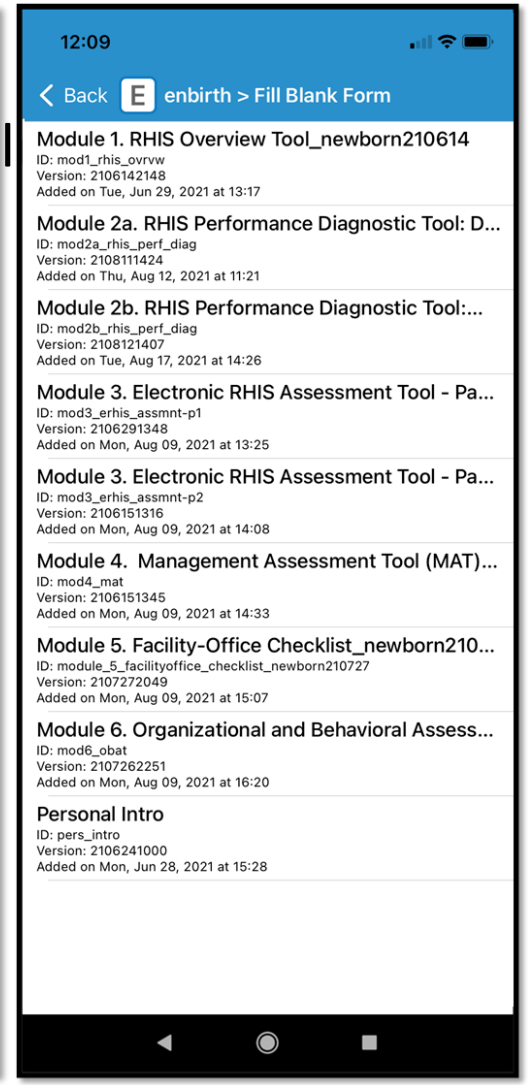
EN-MINI-PRISM Tools
ready-to-use ODK forms for phones/ tablets

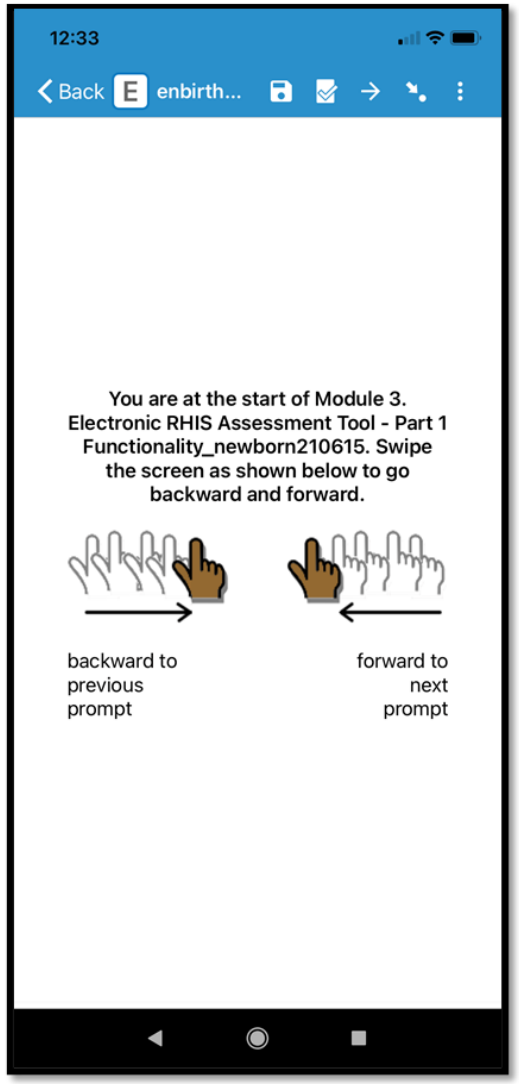
SurveyCTO

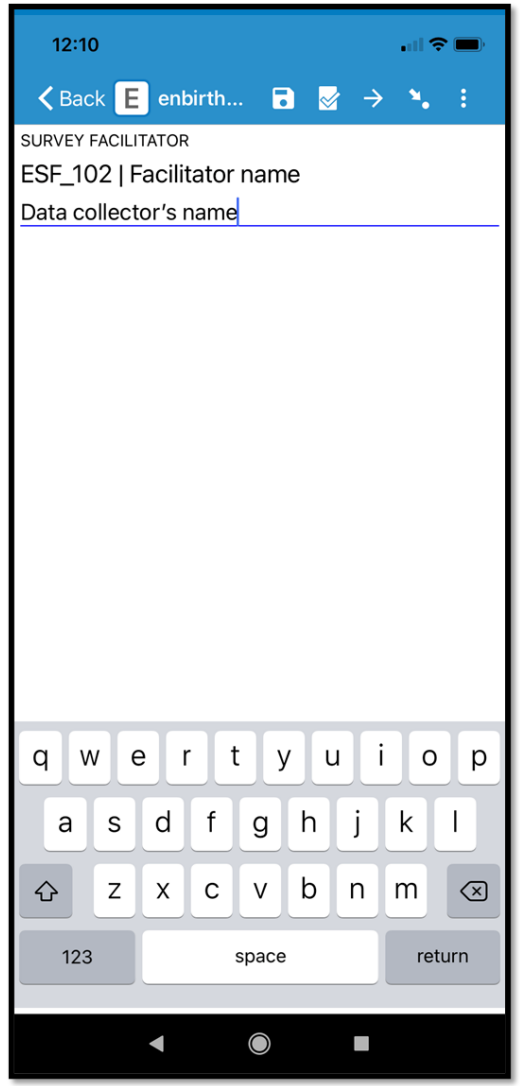
EN-MINI tools

GDPR compliant









Data Quality Assurance procedures

- EN-MINI tool 2 pilot tested in 2 countries 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 WhatsApp 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.

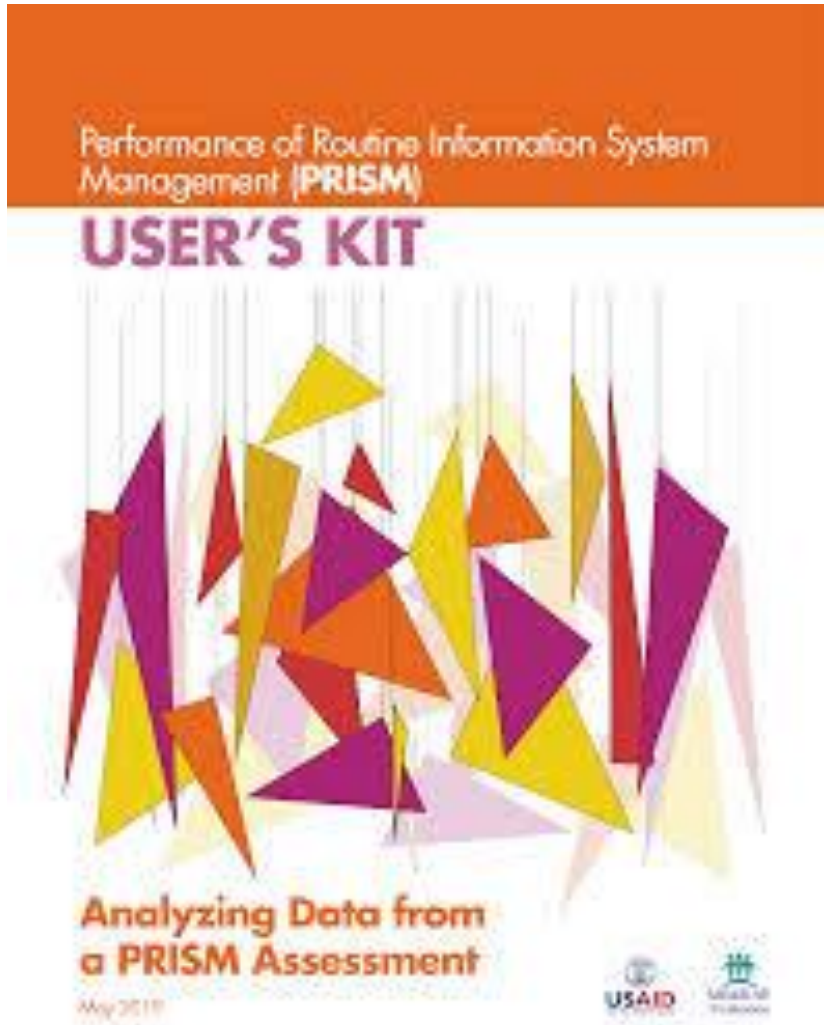
Dataset available and data analyses conducted

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

Data analyses conducted

1. **EN-MINI PAT** (PRISM Analyses Toll)
2. Additional analyses according "**PRIMS 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

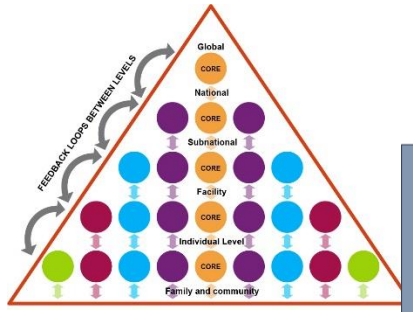
Behavioral factors:
- Level of knowledge of content of HIS forms
- Data-quality checking skills
- Problem-solving for HIS tasks
- Competence in HIS tasks
- Confidence levels for HIS tasks
- Motivation

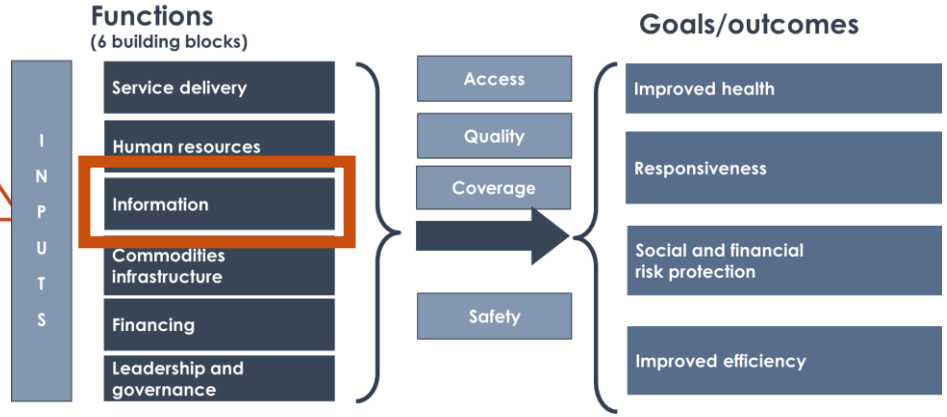
RHIS processes:
- Data collection
- Data transmission
- Data processing
- Data analysis
- Data quality check
- Feedback

Improved RHIS performance
- Data quality
- Information use

Improved health system performance

Improved health status





Results

IMPULSE

Phase 1 achievements

IMPULSE
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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)
- ✓ 150 sites (facilities different level/type + district/regional/national offices)

- Sample size exceeding expectations

2) Tangible products

- ✓ Reports for the dissemination meetings
- ✓ 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: 10 in progress Planned papers exceeding expectations

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

Chiesi FOUNDATION
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
MARCH MATERNAL ADOLESCENT REPRODUCTIVE & CHILD HEALTH
MINISTRY OF HEALTH-ETHIOPIA
IFAKARA HEALTH INSTITUTE
MAKERERE UNIVERSITY
WHO CC MCH Trieste Italy
DOCTORS WITH AFRICA CUAMM
World Health Organization
unicef

Website

lshtm.ac.uk/impulse

IMPULSE
IMProving qUaLity and uSE of newborn indicators

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.

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About

Collaborating partners

DOCTORS WITH AFRICA CUAMM

IFAKARA HEALTH INSTITUTE

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

Learn more about us

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IMPULSE
IMProving qUaLity and uSE of newborn indicators

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MARCH C... @MA... · 1h

Today at 1pm BST!

MAR... @... · Apr 27

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

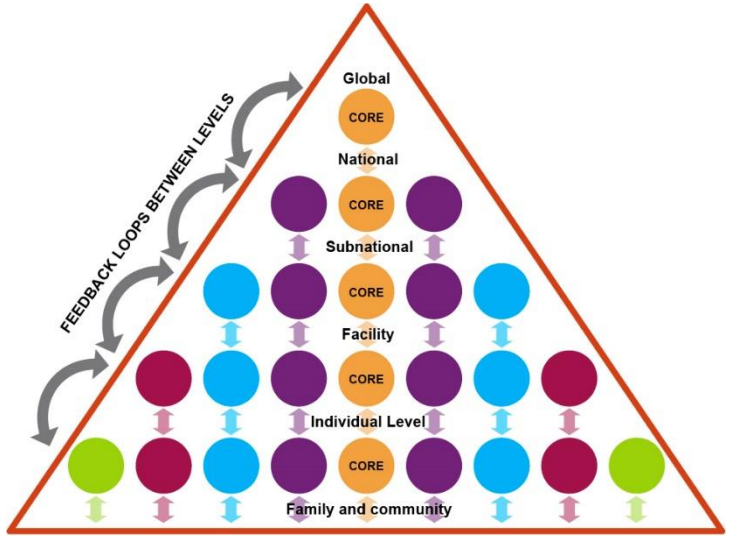
IMPULSE objective 1

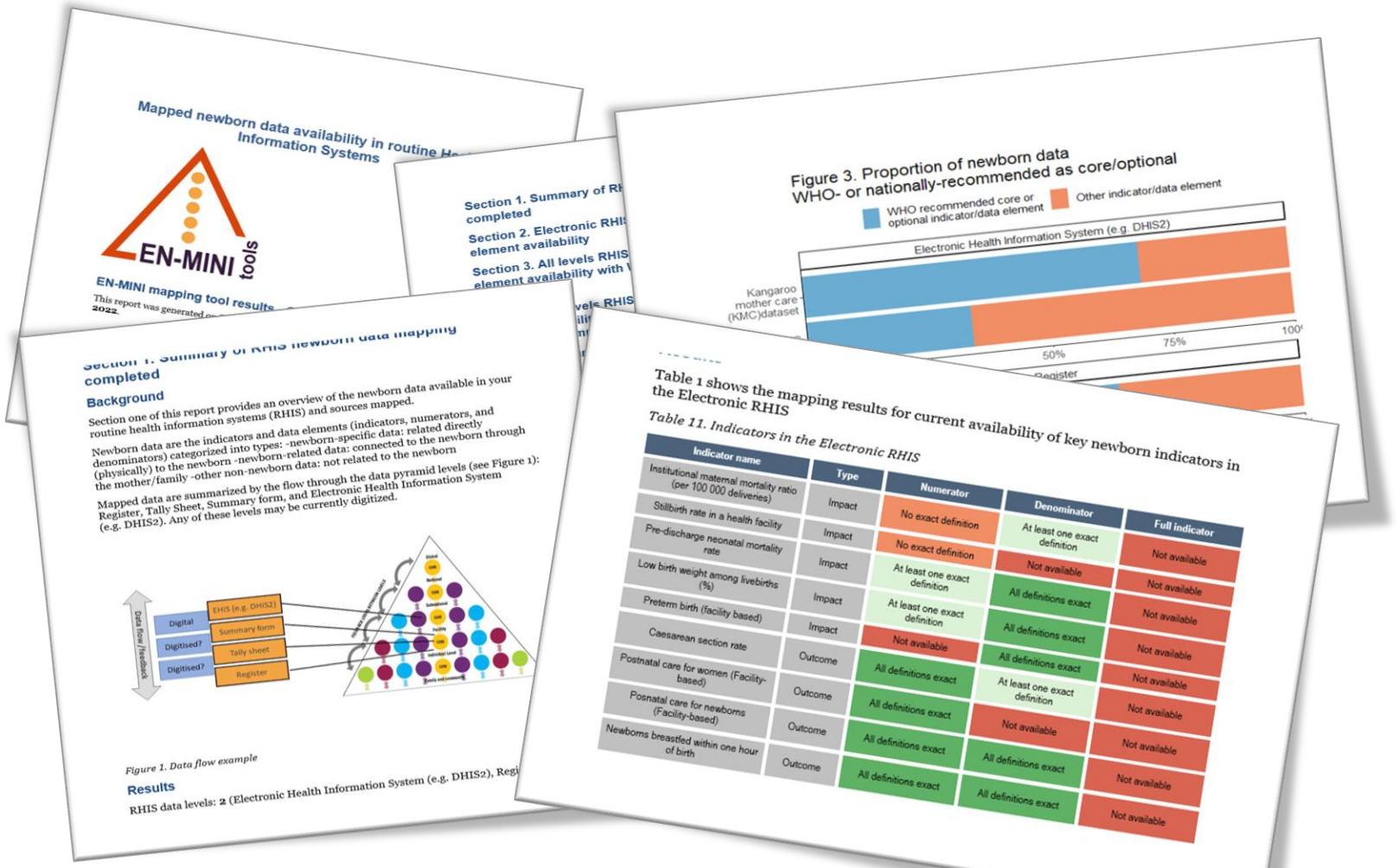
1. **Map** newborn and stillbirth indicator data availability in existing routine health information systems (RHIS)

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)

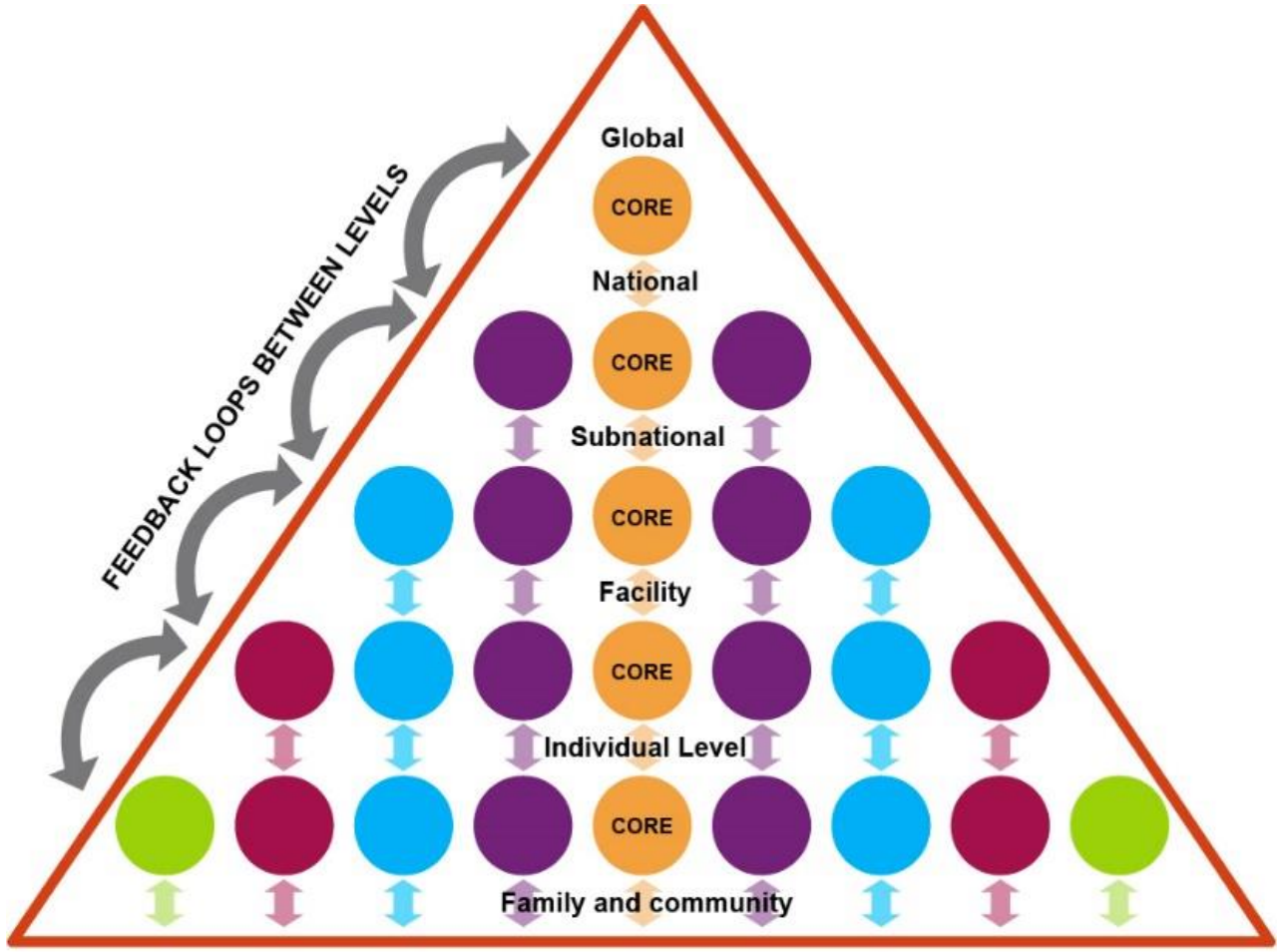
Summary form:

✓ 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 (GREEN)
- 5 have a different definition (ORANGE)
- 5 missing (RED)

2 indicators nationally recommended, but not in WHO list:

1) Women who developed postpartum haemorrhage
2) Treatment outcome of neonates admitted to NICU

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

EN-MINI Tool 0 Mapping Report

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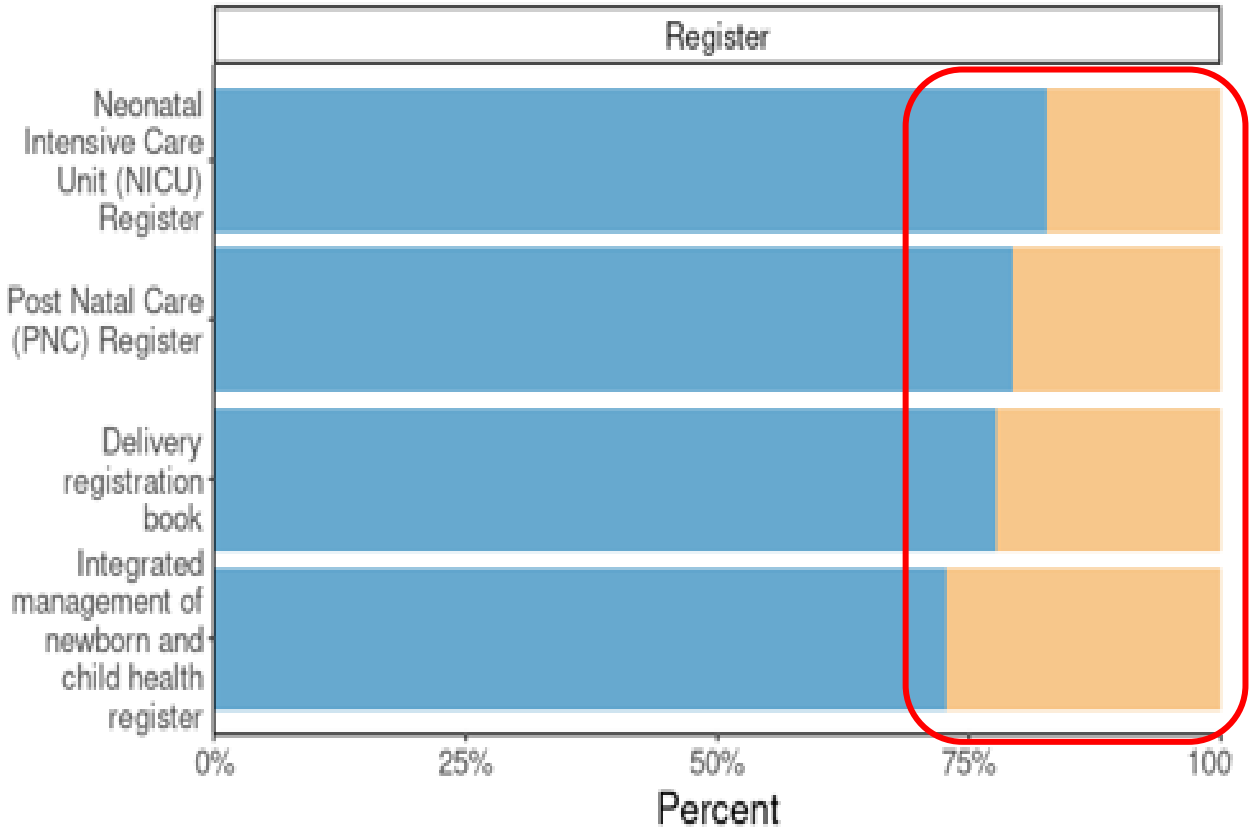
Proportion of newborn data elements in each register



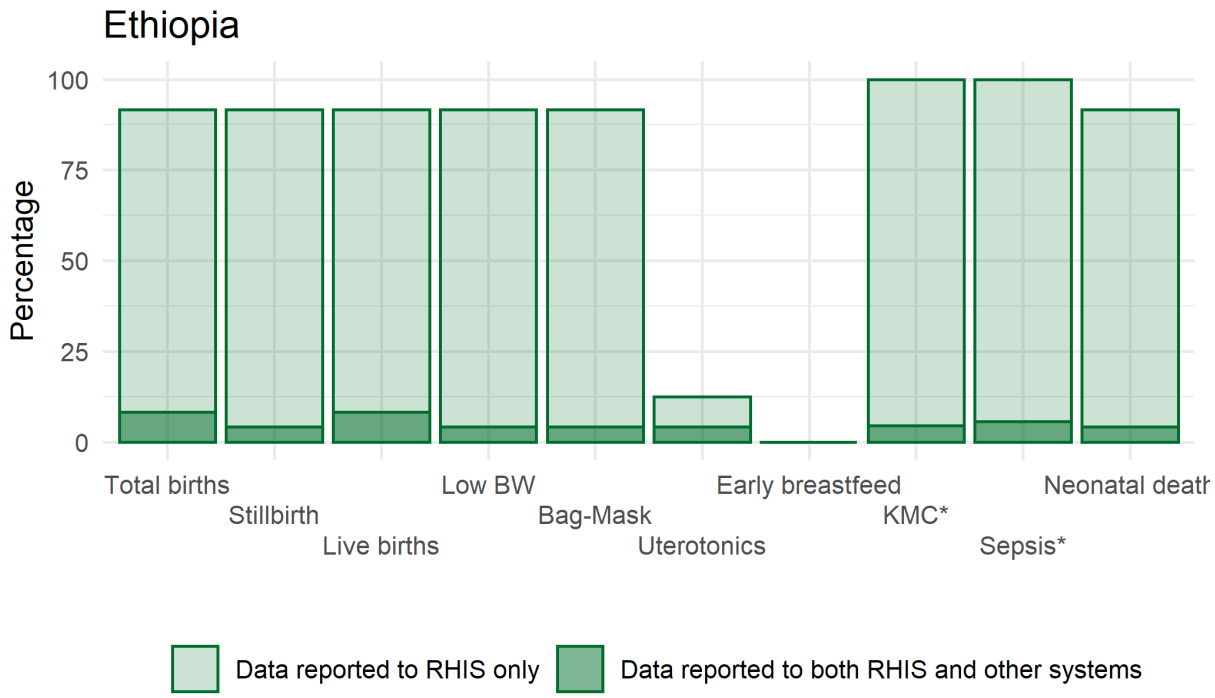
WHO/Nationally recommended Core/optional indicator data elements	Other indicator data elements

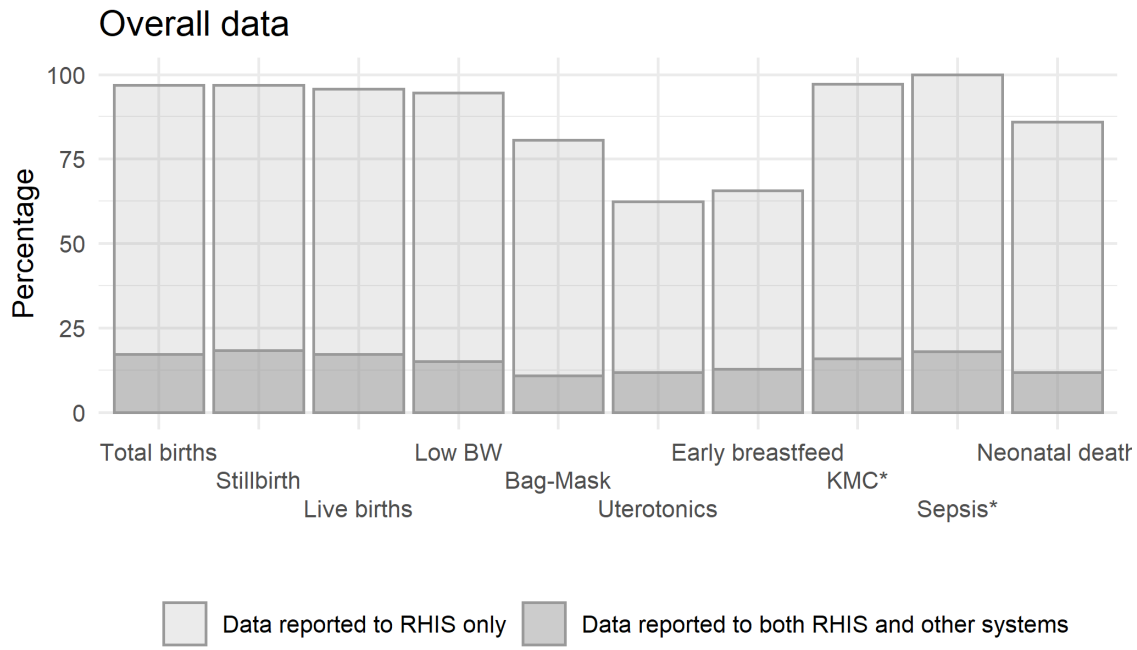
Key message:

In Routine registers
there are about 20-25 % 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 Ethiopia 8 out of 10 key data elements were reported from the health facility into the DHIS2 system, with a frequency near to 100% (and the reporting gap was due to 2 private facilities not yet connected with DHIS2)
- ❑ Reporting systems different from DHIS2 were observed in only < 10% of cases

Key gaps:

- ❑ Early Breastfeeding is not reported in DHIS2
- ❑ Uterotonics has been added to DHIS2 during our assessment period

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

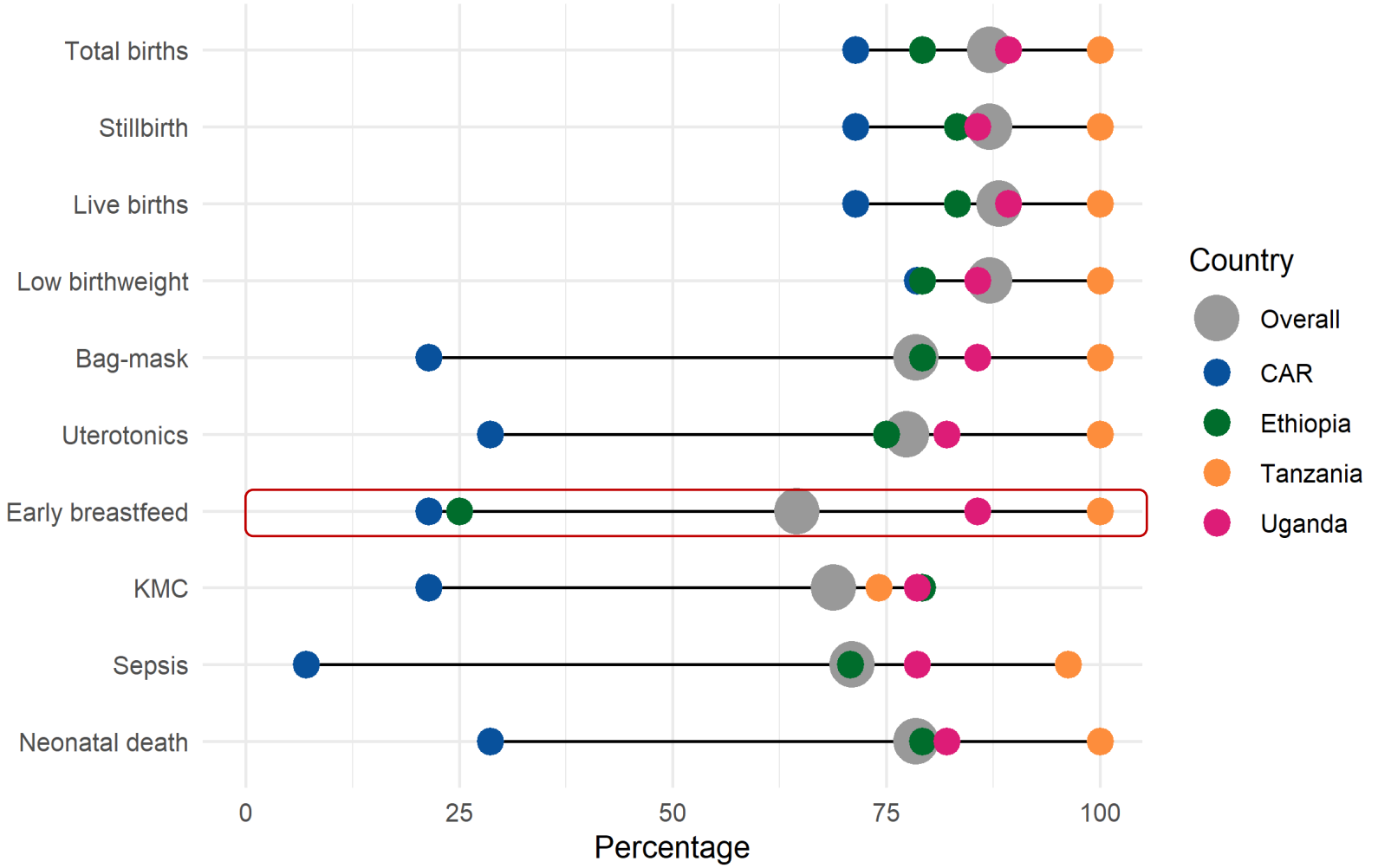
Strengths:

- In Ethiopia we found73-80% of facilities had a written definition for 9 out of 10 indicators examined

Weakness:

- Definitions for Early breastfeeding present in only about 25% of facilities and this indicator is not reported in DHIS2.

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

IMPULSE
IMProving qUaLity and uSE of newborn indicators

- 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)

1. "Monthly service delivery reporting form"

Electronic Health Information System

DHIS2

Data flow and feedback loops between levels

IMPULSE
IMProving qUaLity and uSE of newborn indicators

Data flow ←
Feedback loop ↔

7 different dimensions of data quality assessed

Ministry of Health

Regional Health Bureau

District Office

dhis2
Data submission (online)

CEmONC health facilities

Data office
Direct data entry onto electronic database

Monthly service delivery report (mostly paper-based)

Wards

Registers
(mostly paper-based)

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.

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

COMPLETENESS
% Completeness of source documents (registers)

✓ Key note

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

Data quality – Facility

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IMProving qUaLity and uSE of newborn indicators

Strengths: quality of "denominator" indicators, and stillbirth

Key gaps: heterogenous quality of "numerator" indicators with key gaps in completeness of data sources and accuracy between data sources/monthly report

			Facility review, n=24 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	91%	95%	95%	54%
	Institutional neonatal deaths	Numerator	45%	86%	64%	87%
	Low birth weight	Numerator	32%	95%	95%	62%
COVERAGE: Every Newborn	Early initiation Breastfeeding	Numerator	Pending checks in PAT	Not reported	Not reported	Not reported
COVERAGE: Small or sick newborns	Bag-mask-ventilation	Numerator	9%	95%	91%	77%
	KMC	Numerator	23%	95%	95%	Pending checks in PAT
	Neonatal sepsis	Numerator	28%	83%	50%	89%
Maternal Tracer	Uterotonics prevent PPH	Numerator	33%	67%	67%	100%
Indicator denominators	Total Births	Denominator	91%	95%	95%	88%
	Live births	Denominator	82%	95%	95%	86%

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

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IMProving qUaLity and uSE of newborn indicators

Data quality – District office

- **Strengths:** availability and completeness on "denominator" indicators
- **Key gaps:** availability and completeness on "numerator" indicators (both ranging from 12% to 49%)

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

			District review n=6 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	31%	31%	Not assessable
	Institutional neonatal deaths	Numerator	12%	12%	Not assessable
	Low birth weight	Numerator	25%	25%	Not assessable
COVERAGE: Every Newborn	Early initiation Breastfeeding	Numerator	Not in DHIS2	Not in DHIS2	Not assessable
COVERAGE: Small or sick newborns	Bag-mask-ventilation	Numerator	18%	18%	Not assessable
	KMC	Numerator	12%	12%	Not assessable
	Neonatal sepsis	Numerator	49%	49%	Not assessable
Maternal Tracer	Uterotonics prevent PPH	Numerator	Not in DHIS2	Not in DHIS2	Not assessable
Indicator denominators	Total Births	Denominator	97%	97%	Not assessable
	Live births	Denominator	98%	98%	Not assessable

Data quality – Neonatal Clinical Case notes

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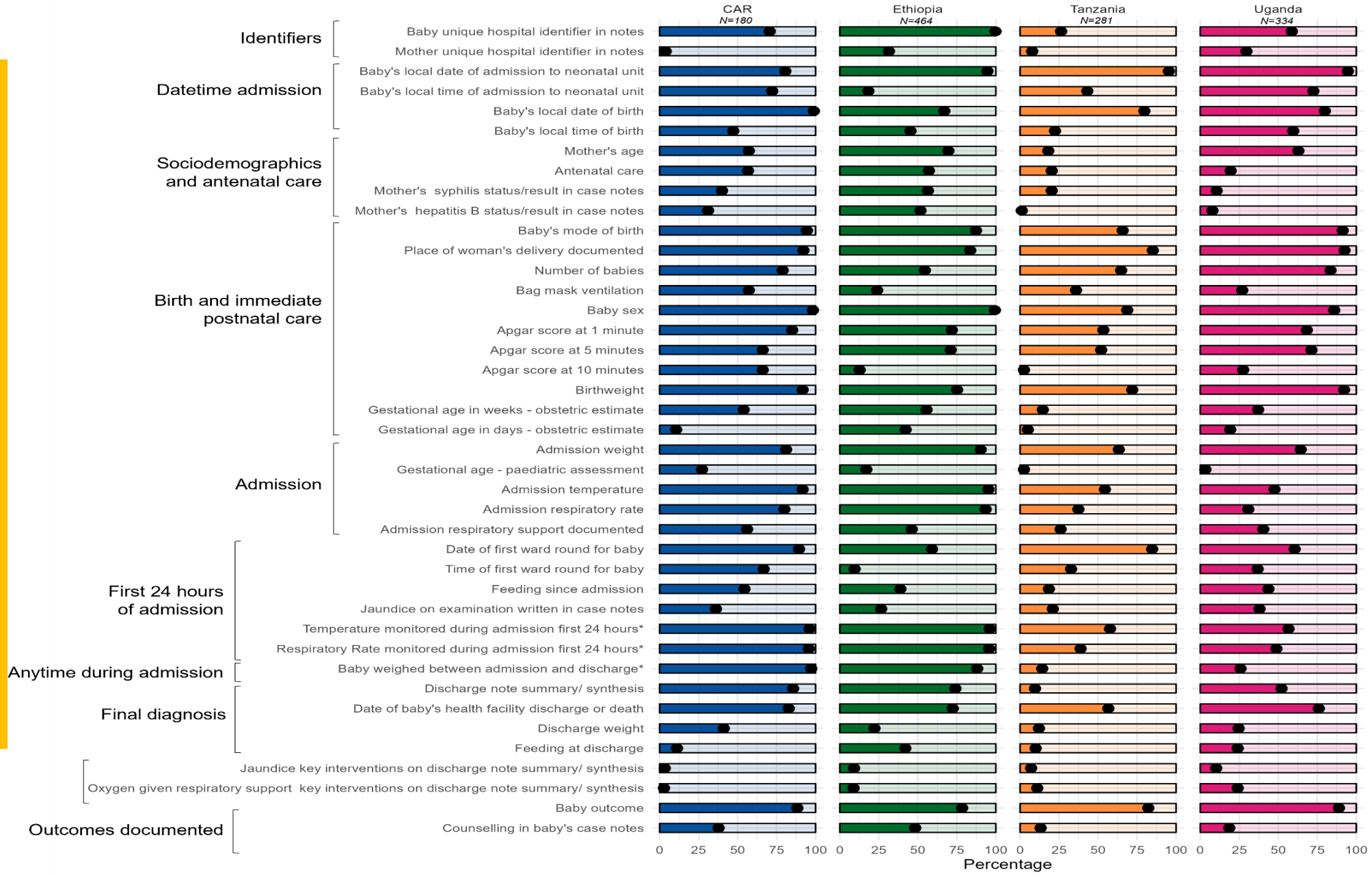
Key messages:

- Key newborn data is available in clinical case notes but completeness varies 8%-100%
- Mode of birth, weight, temperature and respiratory rate almost never missing
- Missing at a high frequency: socio-dem & discharge information



Data use and enabling factors

Strengths:

1) Data visualization and use at district level

Key gaps:

1) Data analysis at all levels: 63% al district, 50% at facility
2) Data visualization (75%) and data use for report at facility level (67%)
3) Data use for decisions at both facility and district level (note: for districts data extracted only from minutes, if available)

		District	Facility
Organizational factors	Evidence data analysis taking place	63%	50%
RHIS process	Data Visualization	100%	75%
	Use of data to produce narrative analytical report	100%	67%
Use Newborn data for decision	Use information for discussion on key performance targets	100%	86%
	Use information for coverage of services	17%	21%
	Use sex-disaggregated data	0%	4%
	Use information for human resources decisions	33%	21%
	Use information for quality improvement	33%	4%

IMPULSE objective 4

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

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IMProving qUaLity and uSE of newborn indicators

Physical Resources for newborn/stillbirth RHIS

Strengths:

- ❑ Good availability:

computers 95%
Printer 80%

- ❑ Moderate availability:

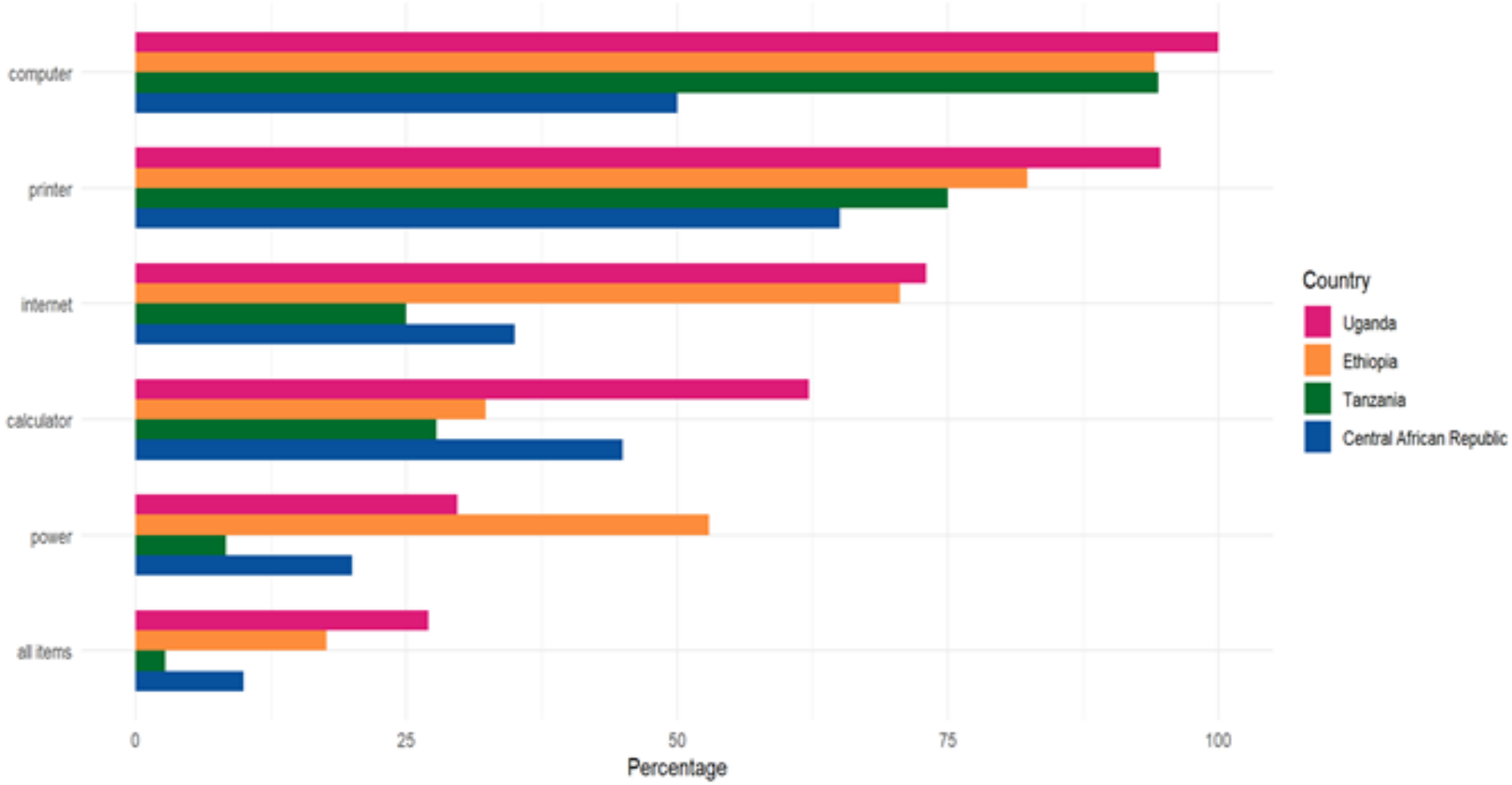
internet 70%

Key gaps:

- ❑ Low availability:

Power 55%
calculator 30%

- ❑ Bundle of items for RHIS <20% of sites



EN-MINI-PAT

Understanding factors affecting data quality and use

Ethiopia

Key strengths:

District

- ❑ Supervision quality score 100%; d data quality assurance score 92 %

Facility

- ❑ Designated staff checking data quality (83%)

Key gaps:

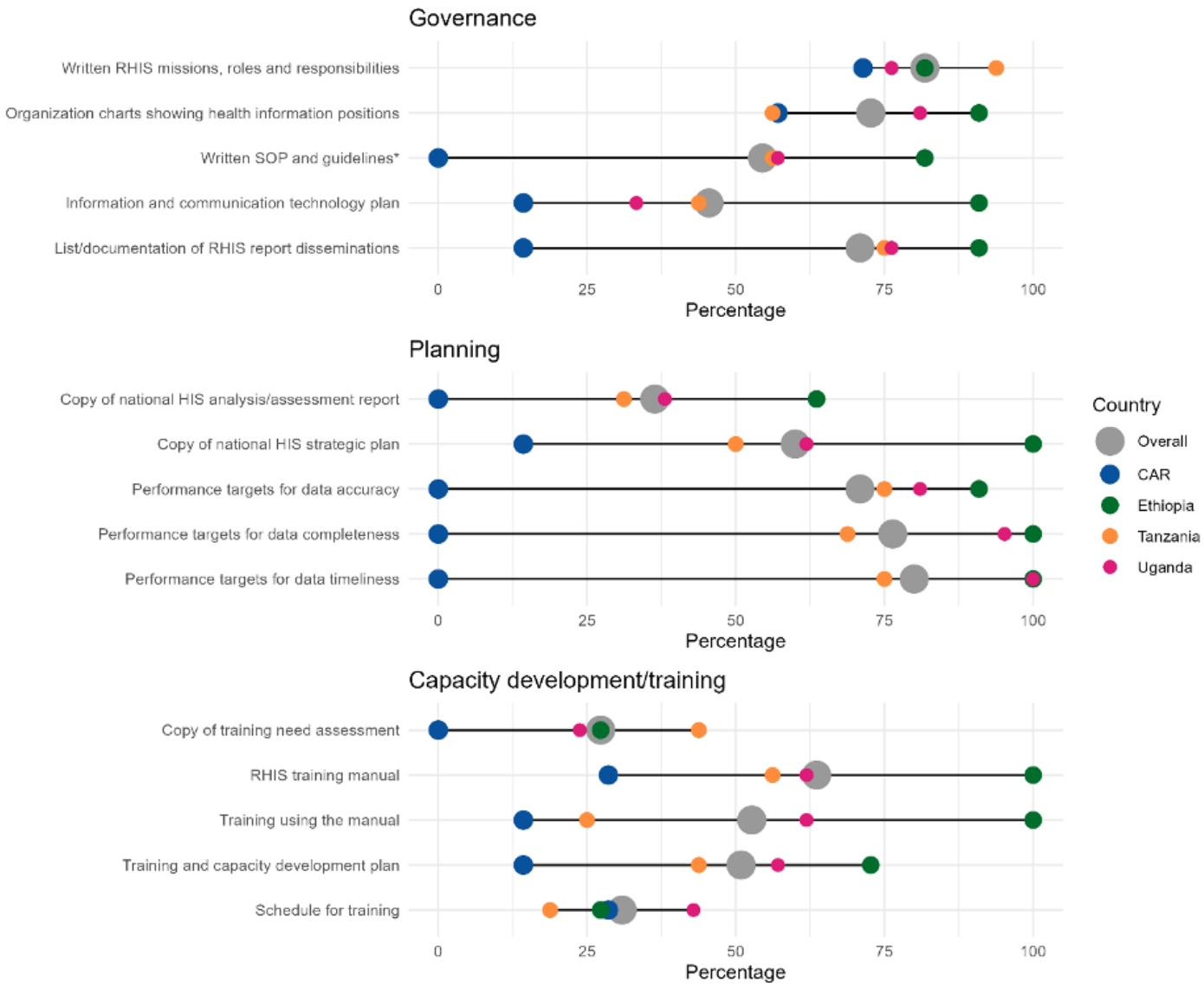
- ❑ Knowledge regarding RHIS at facility and district: 36-40%

		District	Facility
Organizational factors	Good governance structures	81%	Not assessed
	Planning for RHIS	83%	Not assessed
	Use of quality improvement standards	100%	Not assessed
	Supervision quality	100%	62%
	Financial resources allocated	33%	Not assessed
	Training plan costed	67%	Not assessed
	Data quality assurance score	92%	70%
	Designated staff check report data quality	83%	83%
Behavioral Factors	Knowledge RHIS	40%	36%
	Knowledge data quality checking methods	76%	51%
	Motivation among staff	Not assessed	64%
Improve Newborn Data Quality	Use of routine data for RHIS quality improvement	100%	71%

More in depth analyses

Organizational Factors

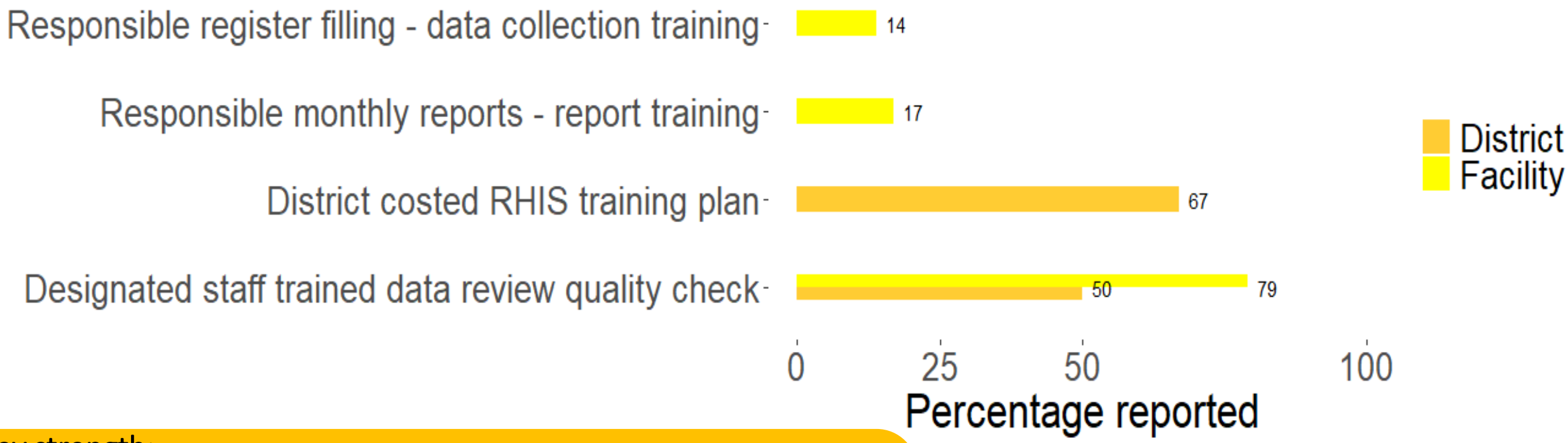
- ETH performing better than other 3 countries
  - ✓ Availability of training manual
  - ✓ National HIS strategic plans
  - ✓ Written SOP and guidelines



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

RHIS Training

Ethiopia



Key strength:

79% staff trained on data review quality checks at facility level

Key gaps:

- large gaps in training for HCW reporting and collecting routine newborn data, 57% of costing RHIS plans in district offices

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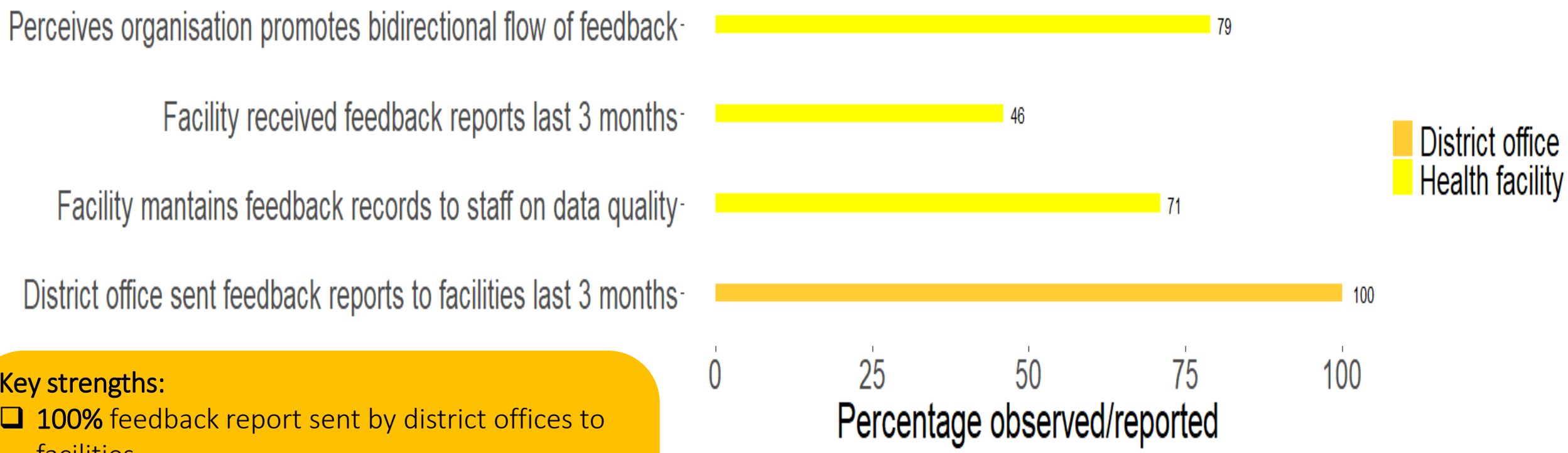
Feedback loops

Ethiopia



Key strengths:

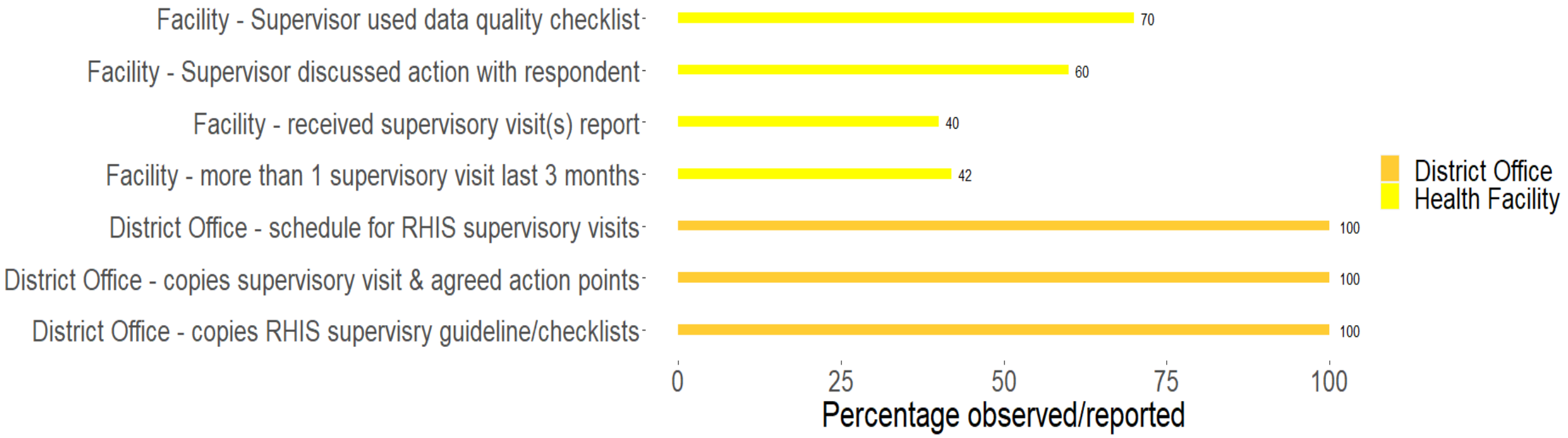
- ❑ **100%** feedback report sent by district offices to facilities

Key gaps:

- ❑ **46%** of facilities received feedback report (past 3 months)
- ❑ **79 %** of facilities perceive organisation promotes bidirectional feedback

Supervision Mechanisms

Ethiopia



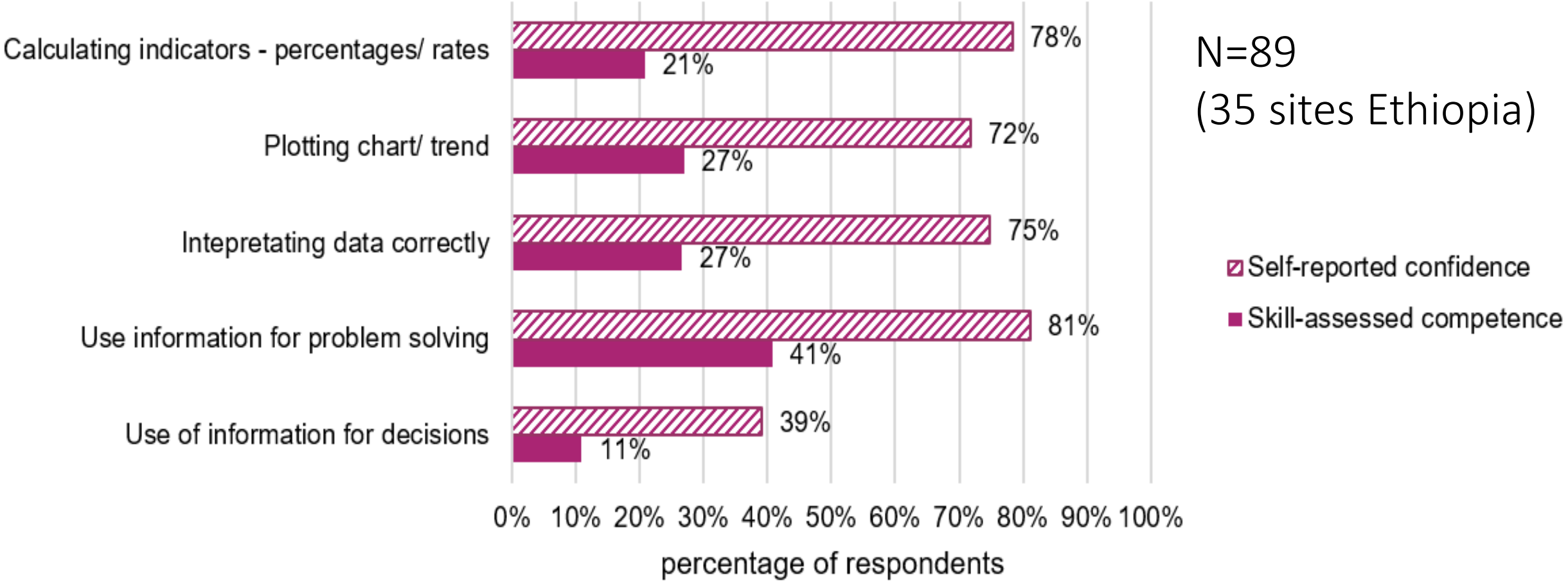
Key strength:

- ❑ 100% Supervisory visit report guide & checklist at district level

Key gaps:

- ❑ 42% facilities had more than one supervisory visit
- ❑ 40% received a report

RHIS task self-reported confidence and skill-assessed competence



N=89
(35 sites Ethiopia)

Confidence-competence gap :

- Respondents were overconfident in calculating indicators (57 percent gap), interpreting data (48 percent gap), plotting charts and trends (45 percent gap), problem-solving (40 percent gap), and using information for decisions (28 percent gap).

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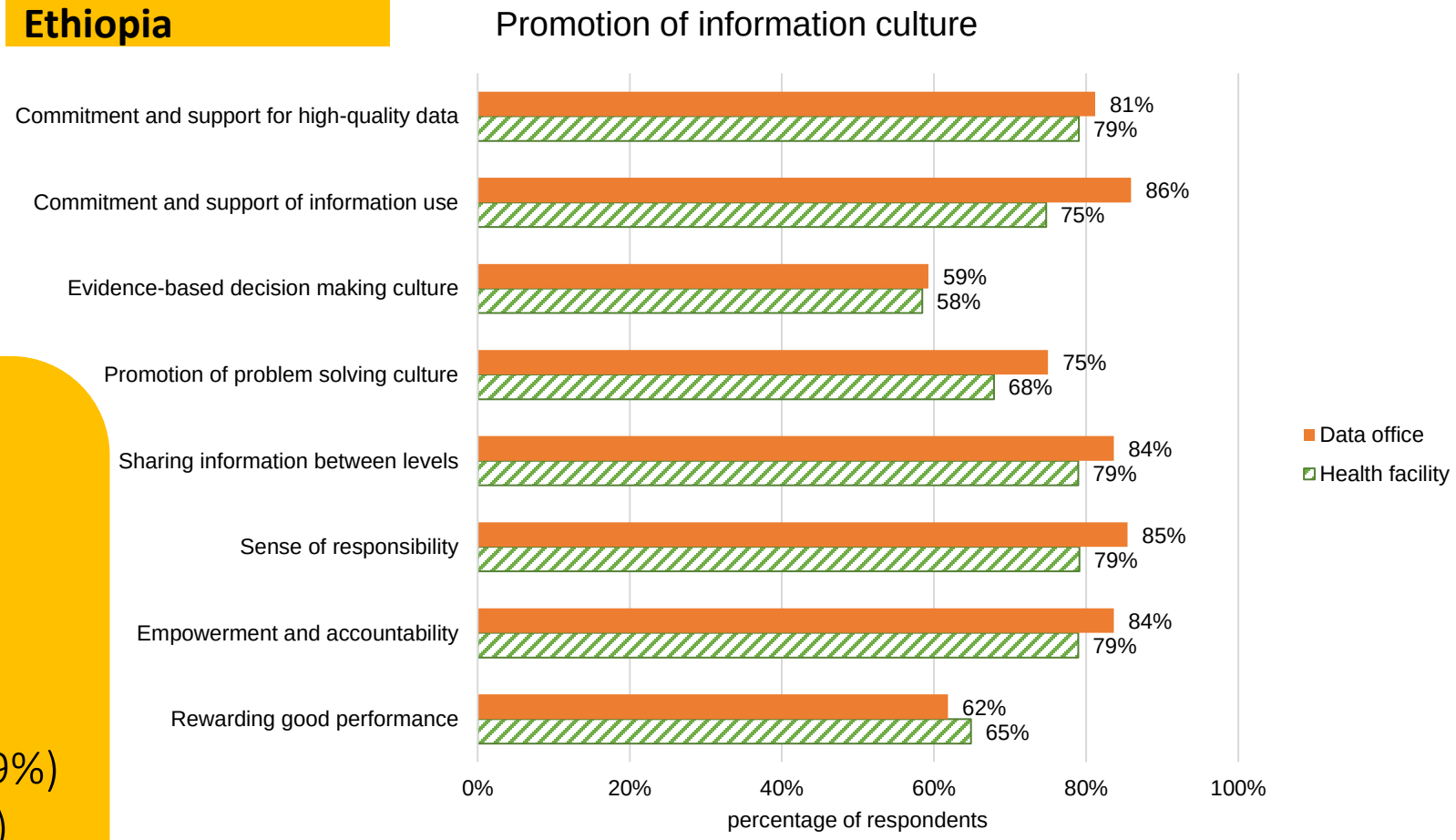
Promotion of culture of information *

N=89
(35 sites Ethiopia)

*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.*

Ethiopia



Strenghts

- ❑ Overall Information culture:
health facility 73%
district data office 77%

Key gaps:

- ❑ Evidence-based decision making (58-59%)
- ❑ Rewarding good performance (62-65%)

Novel visualization generated by IMPULSE team

Motivation for RHIS tasks

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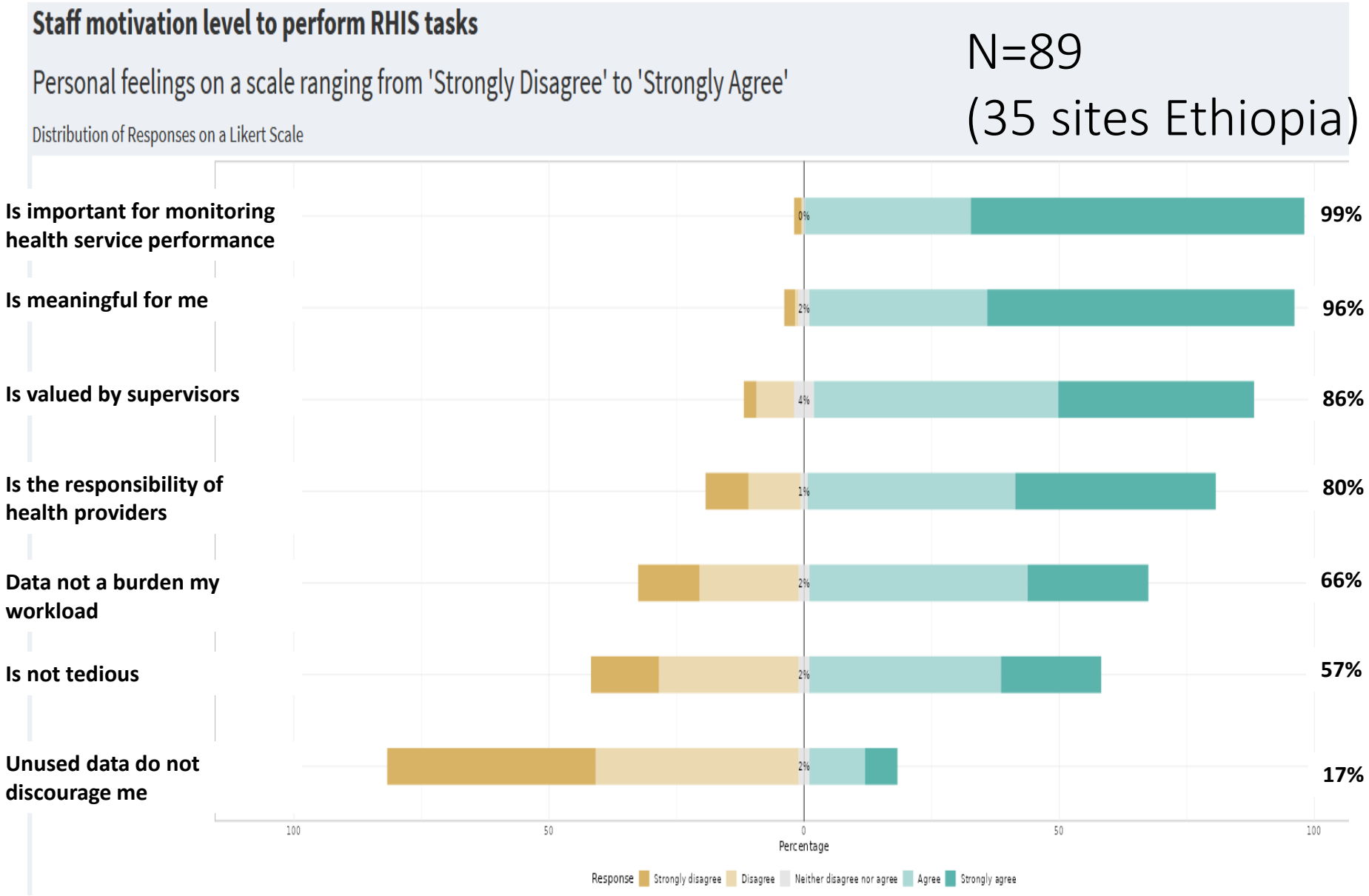
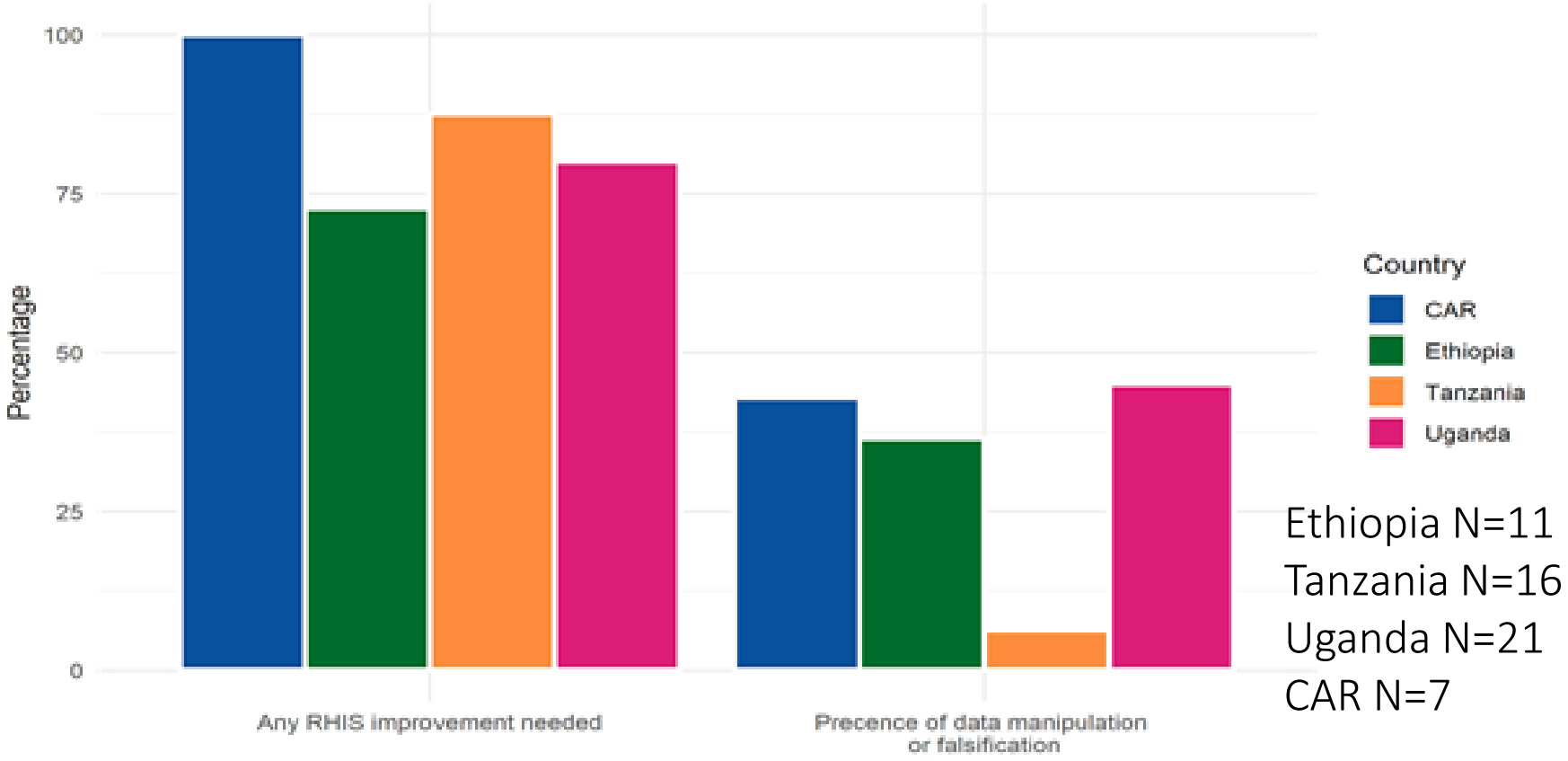
Self-reported score 7 components:

- ❑ 80% agree RHIS tasks are the responsibility of healthcare providers
- ❑ 66% consider RHIS tasks burden their workload
- ❑ 87% agree unused data is discouraging



Respondent's perspectives on RHIS

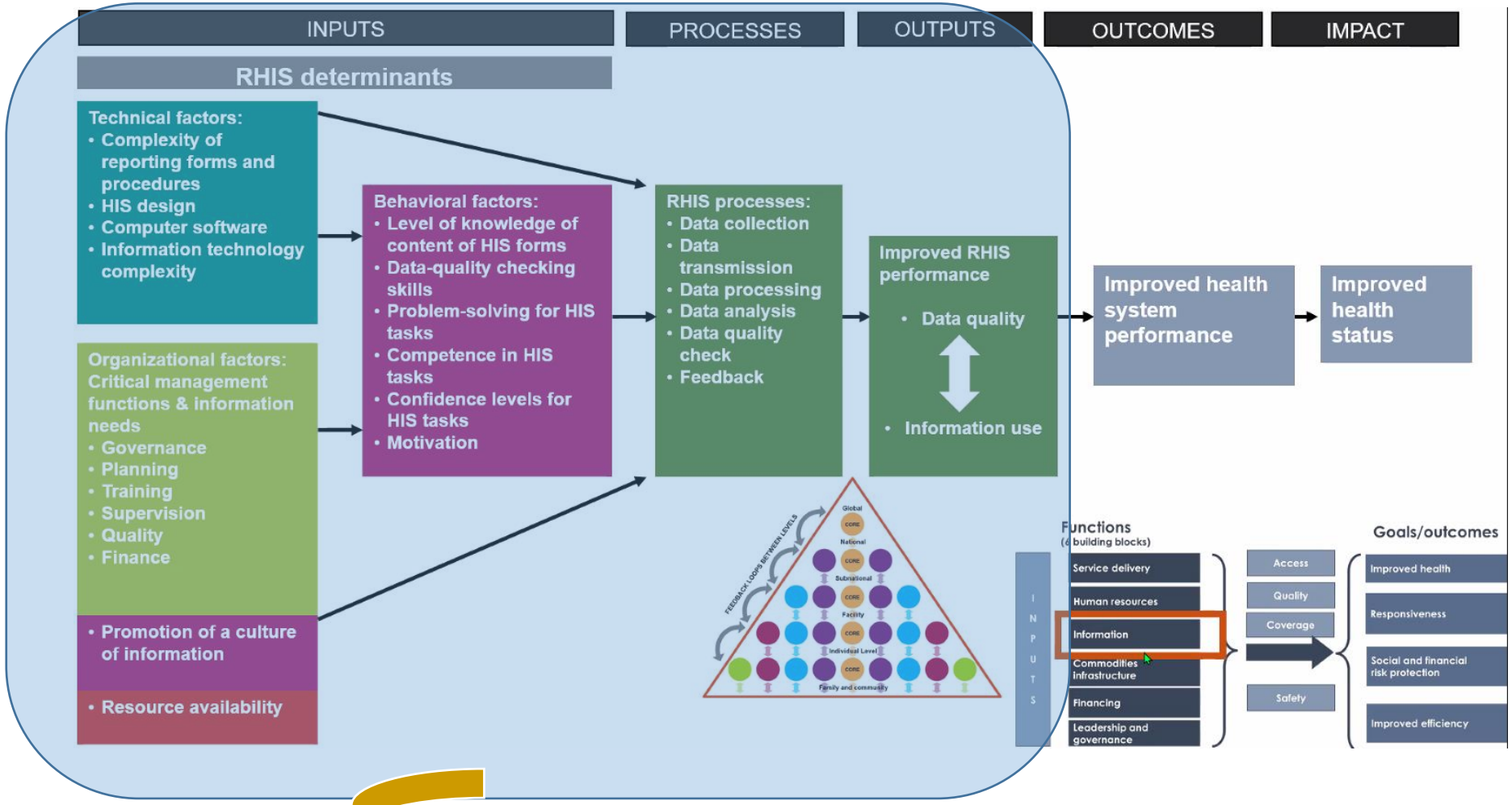


Ethiopia N=11
Tanzania N=16
Uganda N=21
CAR N=7

Key message:

- 75% of respondents expressed the need for improvement in RHIS
- 36.4% of respondents reported **data falsification or manipulation.**

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.

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 only < 10% of cases. ❑ 73-80% of facilities had a written definition for 9 out of 10 indicators examined.	❑ Out of 16 WHO Recommended indicators, five had different definitions, five 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 on "numerator" indicators for the districts. ❑ Heterogeneous quality of "numerator" indicators with key gaps in the completeness of data sources and accuracy between data sources and the monthly report.
Neonatal clinical case notes	❑ Mode of birth, weight, temperature and respiratory rate 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 the district level.	❑ Gaps in data analysis and data use for decisions at district and facility levels. ❑ Gaps in data visualization and data used for reports at the facility level.

Domain	Strengths to recognize	Gaps for focused action
Technical, Organizational and Behavioral factors	❑ Good availability of computers and printers. ❑ Moderate availability of the internet (70%). ❑ Good district supervision quality score (100%) and data quality assurance score (92%) ❑ Better availability of training manuals, written SOPs, guidelines, and national HIS strategic plans than the other 3 countries. Designated staff trained in data review quality checks at the facility 79% ❑ Good overall information culture 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 (62% and 70%). ❑ Gaps in the allocation of financial resources (33%), costing of training plans (67%), and aspects related to behaviors factors, with knowledge regarding RHIS scoring 40% at the district level and 36% at the facility level, high faps in-between confidence vs competence. ❑ Major gaps in training for healthcare professionals responsible for register filling (14%) and reporting (17%) at the facility and data quality check at districts (50%) ❑ Only 46% of facilities had received a feedback report from the district in the preceding 3 months. ❑ Three-quarters of responders from subnational/national offices in Ethiopia expressed the need for improvement in the organizational and management factors in the RHIS. ❑ 36.4% of respondents reported data falsification or manipulation in Ethiopia.

Session 3

Opportunities generated by IMPULSE Phase 1

IMPULSE
IMProving qUaLity and uSE of newborn indicators

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, five had different definitions, five 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 on "numerator" indicators for the districts. ❑ Heterogeneous quality of "numerator" indicators with key gaps in the completeness of data sources and accuracy between data sources and the monthly report	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 data analysis and data use for decisions at district and facility levels. ❑ Gaps in data visualization and data used for reports at the 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 (62% and 70%). ❑ Gaps in the allocation of financial resources (33%), costing of training plans (67%), and aspects related to behaviors factors, with knowledge regarding RHIS scoring 40% at the district level and 36% at the facility level, high faps in-between confidence vs competence. ❑ Major gaps in training for healthcare professionals responsible for register filling (14%) and reporting (17%) at the facility and data quality check at districts (50%) ❑ Only 46% of facilities had received a feedback report from the district in the preceding 3 months. ❑ Three-quarter of responders from subnational/national offices in Ethiopia expressed the need for improvement in the organizational and management factors in the RHIS. ❑ 36.4% of respondents reported data falsification or manipulation in Ethiopia.	

IMPROVING qUALITY AND uSE OF newborn indicators

IMProving qUaLity and uSE of newborn indicators

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Thank you!