

Evaluation of Maternal and Newborn Surveillance in North Kivu, Democratic Republic of the Congo

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Outline

- I. **Background**
- II. **Purpose and Objectives**
- III. **Methods**
- IV. **Results**
- V. **Discussion/Conclusion**

I. Background

Political and Social Context In DRC

- Protracted violence for past two decades, resulting from both internal fighting and neighboring conflicts
- North Kivu province, the epicenter of war, remains the greatest challenge to stability
- > 2.8 million internally displaced persons (IDPs) (UNHCR, Dec 2014)
- Most IDPs living with and among local families
- IMC Health centers serve IDPs and local populations



<http://www.unhcr.org/pages/49e45c366.html>

https://en.wikipedia.org/wiki/Democratic_Republic_of_the_Congo

<http://www.warsintheworld.com/index.php/2012/06/08/democratic-republic-of-congo-at-least-19-people-killed-in-clashes-between-army-and-mai-mai-fighters-in-north-kivu/>

I. Background

Maternal and Newborn (MN) Healthcare in DRC

	DRC	Sub-Saharan Africa	More Developed Countries
Total fertility rate *	6.6	5.0	1.7
Infant mortality rate **	108	64	5
Maternal deaths/100,000 births 2013	730	488	15

* average # children born to a woman during her lifetime

** infant (<1 year) deaths per 1,000 live births

Population Reference Bureau 2015 world population data sheet

<http://www.prb.org/Publications/Datasheets/2015/2015-world-population-data-sheet.aspx>

I. Background

IMC & Maternal and Newborn Health

- **Current R2HC Research Project: Applying a QI Framework to MISP Implementation**
 - 12 facilities involved; all have received clinical training on Maternal and Newborn Healthcare & MISP
 - Assessing the impact of a QI framework on maternal and neonatal health outcomes
- **This surveillance evaluation informed sample size calculations and tool development for the R2HC project**



I. Background

DRC's National Surveillance System

Aim

- To capture standardized data on vital health events in IDP and host populations at the health centers (HC), health posts, and in communities

Focus

- Maternal and newborn (MN) vital events including maternal complications and mortality, neonatal mortality, live births and stillbirths

Purpose

- To make informed decisions and target resources for improving healthcare delivery and health outcomes.

I. Background

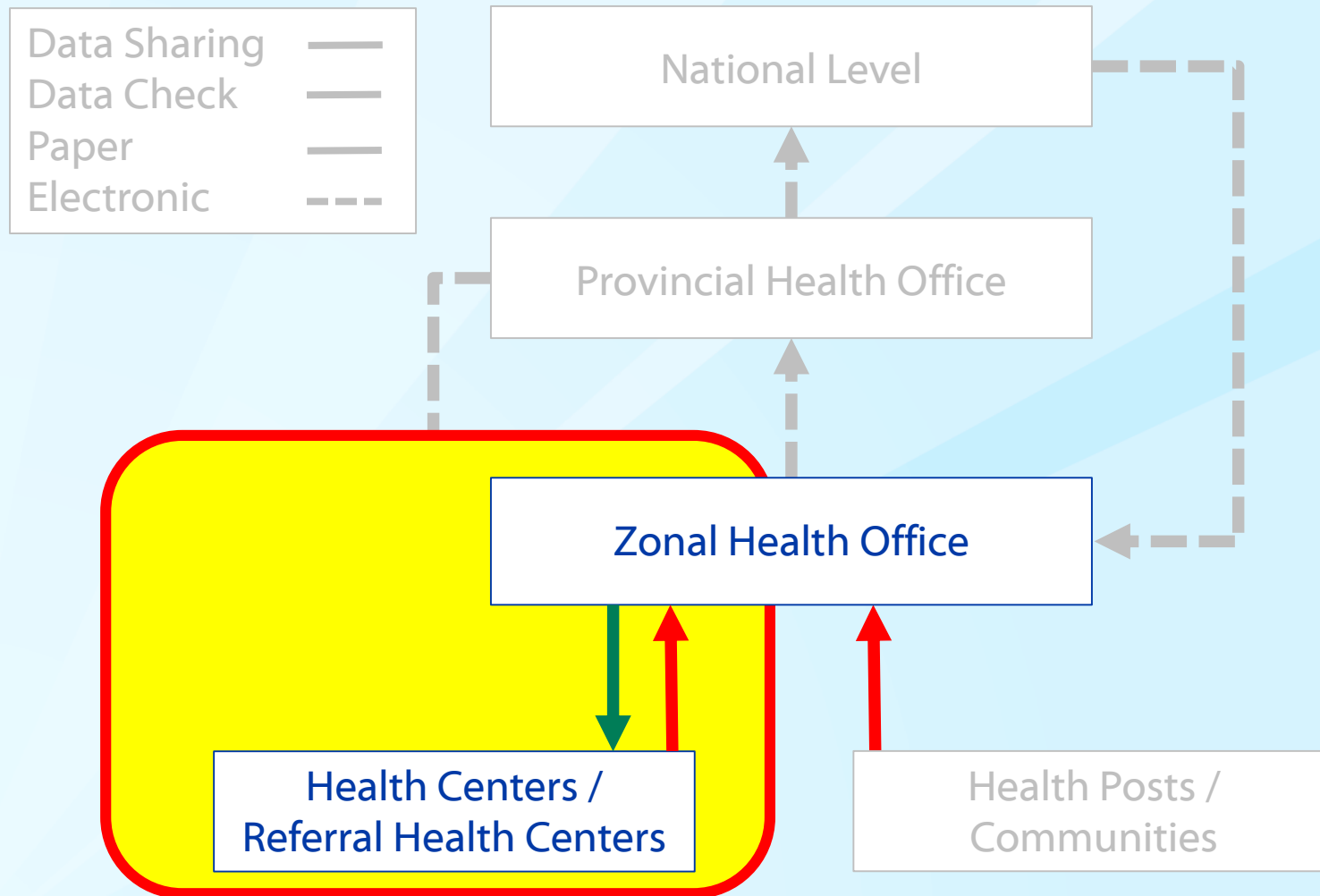
Stakeholders

- **Democratic Republic of the Congo (DRC)**
 - Ministry of Health
 - Provincial and Zonal health offices
 - Referral Health Centers and Health Centers
 - Residents of North Kivu province and DRC
- **International Medical Corps (IMC)**
- **Centers for Disease Control and Prevention (CDC)**



I. Background

Surveillance System Flowchart



II. Purpose and Objectives

Evaluation Purpose

- To assess quality of MN health indicator data collected as part of the national surveillance system in 12 IMC-supported HC in North Kivu, DRC

Evaluation Objectives

1. To systematically evaluate collection, interpretation, and use of MN health indicators
2. To develop recommendations for stakeholders to further improve record keeping and use of collected data

III. Methods

Methods



i. Develop Tools (evaluation criteria, forms)



ii. Train & Pilot



iii. Review Pilot & Finalize Tools



iv. Implement & Collect Data



v. Data Analysis & Reporting

III. Methods

Evaluation Criteria

1.	Simplicity
2.	Flexibility
3.	Data Quality
4.	Acceptability
5.	Sensitivity
6.	Representativeness
7.	Timelines
8.	Stability
9.	Usefulness

III. Methods

Evaluation Design

- **MN data registers and reports (n=12)**
 - Health Centers (n=12)
- **Key Informant Interviews (n=20)**
 - Health Center Nurses / Birth Attendants (n=12)
 - Health Center Supervising Nurses (n=4)
 - Health Zone Chief Medical Officers (n=2)
 - Provincial data manager (n=1)
 - Provincial data supervisor (n=1)



IV. Results

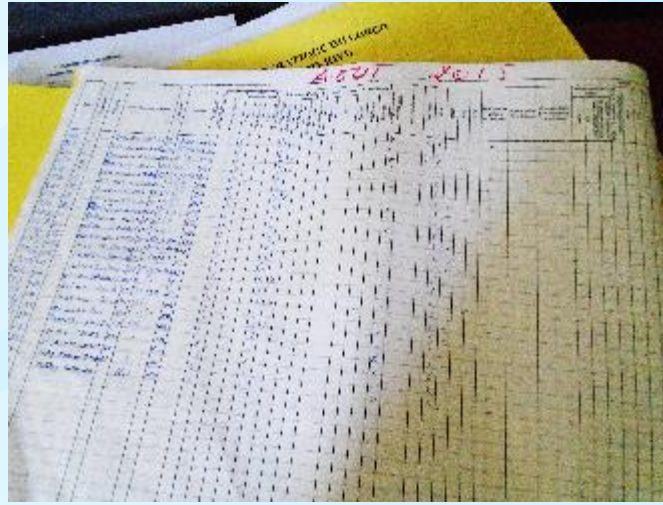
Data Quality

Reviewed:

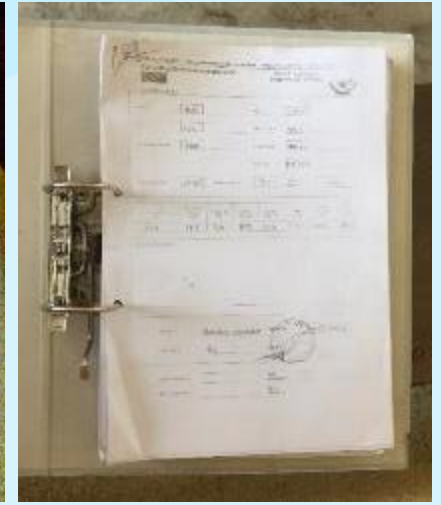
- 16 indicators in the birth registers
- 8 indicators in the post-natal registers
- 11 indicators in the monthly reports



A photograph of a birth register page. The page is filled with a grid of columns and rows, containing handwritten text and numbers. The grid is organized into several sections, with some columns appearing to be for dates and others for names or identifiers. The handwriting is in black ink on a light-colored paper.



A photograph of a post-natal register page. The page is filled with a grid of columns and rows, containing handwritten text and numbers. The grid is organized into several sections, with some columns appearing to be for dates and others for names or identifiers. The handwriting is in black ink on a light-colored paper.



A photograph of a monthly report page. The page is filled with a grid of columns and rows, containing handwritten text and numbers. The grid is organized into several sections, with some columns appearing to be for dates and others for names or identifiers. The handwriting is in black ink on a light-colored paper.

IV. Results

Data Quality



Strengths

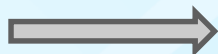
- None identified

Weaknesses

- Little or no training in record keeping and low literacy among staff
- Outdated/makeshift versions of registers in use
- Lack of health zone or provincial oversight of HC activities
- Birth registers:
 - 50% (6 of 12) HC had legible birth registers for all 3 months examined
 - 25% (3 of 12) HC register entries were “barely legible” or “illegible”
 - 46% (264 of 576) cells examined were missing entries
 - Discrepancies between register data and monthly reports

IV. Results

Taken from Facility Registers



Taken from Electronic Reports



INDICATORS	CHAMBUCHA		
	June	July	Aug
# births (register)	20	26	24
# births (SNIS)	30	28	26

IV. Results

INDICATORS	CHAMBUCHA			HOMBO NORD			LUKARABA			MIANGA			MUSENGE			MALEMBE			NTOTO			LANGIRA			BYUNGU			BIRUWE			NDOFIA			MUNDINDI		
	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug
# births (register)	20	26	24	ND	37	51	14	14	17	16	17	15	12	15	15	21	20	18	ND	7	3	1	3	2	ND	ND	ND	11	16	16	4	20	18	21	18	11
# births (SNIS)	30	28	26	33	37	47	35	ND	ND	16	ND	ND	21	35	ND	20	18	21	5	11	12	2	2	3	ND	ND	ND	16	22	ND	12	20	22	ND	ND	14
# women benefiting from "GATPA" (register)	0	0	0	ND	37	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	16	14	4	19	18	ND	ND	ND
# women benefiting from "GATPA" (SNIS)	0	0	ND	ND	ND	47	36	ND	ND	14	ND	ND	ND	ND	ND	20	18	21	0	0	0	2	0	0	ND	ND	ND	0	20	ND	12	20	22	0	ND	ND
# benefiting from "essential newborn care" (register)	0	24	21	ND	0	0	ND	ND	ND	ND	ND	ND	6	ND	15	7	15	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	15	14	0	0	0	ND	ND	ND
# benefiting from "essential newborn care" (SNIS)	ND	26	ND	33	0	47	34	ND	ND	16	ND	ND	22	30	ND	19	17	21	0	0	0	2	0	0	ND	ND	ND	16	20	ND	12	20	22	23	21	14
# "stillborn" (register)	0	2	3	ND	0	0	ND	ND	ND	ND	2	ND	ND	0	ND	1	1	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	2	0	ND
# "stillborn" (SNIS)	2	2	3	0	0	0	1	ND	ND	0	ND	ND	0	1	ND	1	1	0	18	11	33	0	1	ND	ND	ND	ND	0	0	ND	0	0	0	1	0	0
# attending postnatal appointment #2 (register)	22	14	7	ND	30	39	ND	ND	ND	ND	7	5	ND	6	9	0	0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	9	ND	ND	ND	0
# attending postnatal appointment #2 (SNIS)	22	28	ND	43	38	41	35	ND	ND	14	ND	ND	22	20	ND	19	19	22	30	29	38	4	11	9	ND	ND	ND	14	20	ND	12	20	22	13	16	12

144 (40%) of 360 cells missing data

IV. Results

INDICATORS	CHAMBUCHA			HOMBO NORD			LUKARABA			MIANGA			MUSENGE			MALEMBE			NTOTO			LANGIRA			BYUNGU			BIRUWE			NDOFIA			MUNDINDI		
	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug
# births (register)	20	26	24	ND	37	51	14	14	17	16	17	15	12	15	15	21	20	18	ND	7	3	1	3	2	ND	ND	ND	11	16	16	4	20	18	21	18	11
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# women benefiting from "GATPA" (register)	0	0	0	ND	37	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	16	14	4	19	18	ND	ND	ND
# women benefiting from "GATPA" (SNIS)	0	0	ND	ND	ND	47	36	ND	ND	14	ND	ND	ND	ND	ND	20	18	21	0	0	0	2	0	0	ND	ND	ND	0	20	ND	12	20	22	0	ND	ND
# benefiting from "essential newborn care" (register)	0	24	21	ND	0	0	ND	ND	ND	ND	ND	ND	6	ND	15	7	15	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	15	14	0	0	0	ND	ND	ND
# benefiting from "essential newborn care" (SNIS)	ND	26	ND	33	0	47	34	ND	ND	16	ND	ND	22	30	ND	19	17	21	0	0	0	2	0	0	ND	ND	ND	16	20	ND	12	20	22	23	21	14
# "stillborn" (register)	0	2	3	ND	0	0	ND	ND	ND	ND	2	ND	ND	0	ND	1	1	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	2	0	ND
# "stillborn" (SNIS)	2	2	3	0	0	0	1	ND	ND	0	ND	ND	0	1	ND	1	1	0	18	11	33	0	1	ND	ND	ND	ND	0	0	ND	0	0	0	1	0	0
# attending postnatal appointment #2 (register)	22	14	7	ND	30	39	ND	ND	ND	ND	7	5	ND	6	9	0	0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	9	ND	ND	ND	0
# attending postnatal appointment #2 (SNIS)	22	28	ND	43	38	41	35	ND	ND	14	ND	ND	22	20	ND	19	19	22	30	29	38	4	11	9	ND	ND	ND	14	20	ND	12	20	22	13	16	12

216 (60%) of 360 cells with data

IV. Results

INDICATORS	CHAMBUCHA			HOMBO NORD			LUKARABA			MIANGA			MUSENGE			MALEMBE			NTOTO			LANGIRA			BYUNGU			BIRUWE			NDOFIA			MUNDINDI		
	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug	June	July	Aug
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# women benefiting from "GATPA" (register)	0	0	0	ND	37	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	16	14	4	19	18	ND	ND	ND
# women benefiting from "GATPA" (SNIS)	0	0	ND	ND	ND	47	36	ND	ND	14	ND	ND	ND	ND	ND	20	18	21	0	0	0	2	0	0	ND	ND	ND	0	20	ND	12	20	22	0	ND	ND
# benefiting from "essential newborn care" (register)	0	24	21	ND	0	0	ND	ND	ND	ND	ND	ND	6	ND	15	7	15	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	15	14	0	0	0	ND	ND	ND
# benefiting from "essential newborn care" (SNIS)	ND	26	ND	33	0	47	34	ND	ND	16	ND	ND	22	30	ND	19	17	21	0	0	0	2	0	0	ND	ND	ND	16	20	ND	12	20	22	23	21	14
# "stillborn" (register)	0	2	3	ND	0	0	ND	ND	ND	ND	2	ND	ND	0	ND	1	1	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	2	0	ND
# "stillborn" (SNIS)	2	2	3	0	0	0	1	ND	ND	0	ND	ND	0	1	ND	1	1	0	18	11	33	0	1	ND	ND	ND	ND	0	0	ND	0	0	0	1	0	0
# attending postnatal appointment #2 (register)	22	14	7	ND	30	39	ND	ND	ND	ND	7	5	ND	6	9	0	0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	9	ND	ND	ND	0
# attending postnatal appointment #2 (SNIS)	22	28	ND	43	38	41	35	ND	ND	14	ND	ND	22	20	ND	19	19	22	30	29	38	4	11	9	ND	ND	ND	14	20	ND	12	20	22	13	16	12

21 (19.4%) of 108 paired cells are congruent

IV. Results

Partograph Findings

12 facilities x (3 partographs/month) for June, July, & Aug 2015

- 10 (83%) of 12 facilities had partographs
- 68 partographs reviewed
 - 61 (90%) had ≥ 1 sections completed
 - 48 (71%) had an identifier (# or name)
 - 32 (47%) had active labor and/or delivery sections completed
 - 1 (0.01%) had postpartum surveillance section completed



V. Discussion/Conclusion

Lessons Learned

- Ensure current MN registers and reporting forms are available
- Train all individuals that may fill out registers and reporting forms; do not assume they have been trained on previous versions
- Ensure health facilities have transportation plans for delivering reports to health zone offices on a monthly basis
- Encourage regular supervision and feedback
- Ensure all indicators that are part of register are justified and reportable

V. Discussion/Conclusion

Conclusions

- MN component of DRC National Surveillance System has potential to be effective; the following challenges need to be addressed:
 - Training for staff on registers and reporting
 - Insufficient resources at facility and supervisory levels
 - Overburdened staff will prioritize patient care over data entry and reports
 - Frequent violence and resulting facility closures
 - Poor adherence to reporting deadlines
- Surveillance is a key component for transition from MISIP to Comprehensive Healthcare and should be prioritized during MISIP implementation

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 - Endang Widiastuti
 - Eugene Lam
 - Tom Handzel

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