**PTBi-EA Uganda Research Brief No.1**

MAKERERE UNIVERSITY

East Africa
Preterm Birth
Initiative

UCSF

University of California
San Francisco

# PRETERM BIRTH DATA STRENGTHENING IN UGANDA;
## Lessons from six hospitals

## Background

Of the 15 million babies born too early globally, nearly seven percent will die from complications of prematurity. In low resource settings, limited access to early ultrasound and insufficient record systems pose serious challenges to measurement, prevention and management of preterm birth. We showcase the use of data strengthening to strengthen the existing data collection system (HMIS), expand documentation to capture preterm birth informationand measure incidence of Preterm births.

## Methods

The East Africa Preterm Birth Initiative (PTBi-EA) designed and implemented a data strengtheningpackage which included: training of nurses/midwives andrecords personnel in data capture, indicator definition, distribution of pregnancy wheels for estimating gestation age, procurement of updated registers and maternity patient files. Maternity files included a modified version of WHO Safe Childbirth Checklist. An ODK platform was used to collectdata from maternity registers from March 2016 to May2018. Data were analyzed quarterly using 4 main preterm birth data points: Gestational age, Apgar score, birth weight and discharge status. Data quality assessments (DQA) were done on quarterly basis. DQAs involved collection and compiling of preterm data from maternity registers and comparing it with what the hospital HMIS system reported at end of month. We periodically discussed results with in-charges.

## Results

- 48,087 births between March 2016 and May 2018 was recorded.

- Out of which 3908 (8%) were preterm births .

- Of these, 220 (5.6%) were extremely preterm (<24-28 weeks), 973 (24.9%) very preterm (>28-32 weeks) and 2,715 (69.5%) moderate preterm (>32-36 Weeks).

- Identifying and documentation of preterm births improved from an average of10 births per month to 45 births.

- Completeness of preterm indicators improved from 11%-58% (gestational age) and 84%-95% (birth weight)

- The results of the DQA indicate that the HMIS system underestimates the prematurity by an average 17%.

## Lessons learnt 1:

### Lack of disaggregated data in HMIS

The HMIS leaves out a lot of information required for life saving decisions for preterm babies such as stratified birth weights, gestational age, outcomes disaggregated by birth weight as detailed in table below.

| Indicator | PTBi | HMIS |
|---|---|---|
| Birthweight | Continuous birthweight in grams. Able to construct various strata (<500, 500-999, 1000-1499…), along with the outcomes of these infants. | Only captures number of infants <2500 grams and unable to report on outcomes of low birthweight infants. |
| GA | Continuous gestational age. Able to construct various strata, along with the outcomes of these infants. | Only captures number of preterm births and unable to report on outcomes of low birthweight infants |
| Birth Outcomes | Captures the number of stillbirths, live births and neonatal deaths. Able to disaggregate by birthweight, gestational age, apgar and complication | Only captures the number of infants stillborn, live born or died before discharge. |
| Best Practices | Immediate Facility Planning, neonatal resuscitation, immediate skin-to-skin contact, breastfeeding within 1 hour, routine meds (TEO, Vit K, Cholorhexidine) and feeding options. | Captures number of mother initiating breastfeeding within the 1st hour after delivery, and number of women starting ART in maternity. |
| Maternal Risk Factors | Previous system captured mother's age and referral information. New system now captures ANC attendance, gravidity, parity, HIV testing & treatment information, | Captures number of women tested for HIV, including the number of births to HIV+ mothers and number of HIV+ mothers breastfeeding w/in first hour. |
| Delivery Information | Capture date of delivery, allowing construction of effects of day (i.e., weekday vs. weekend, also captures time of delivery. | None. |
| Neonatal Outcomes | Status of preterm infants at 7 days and 28 days, including any available follow-up information. | None. |

## Lessons learnt 2:

### Over estimation and under estimation of vital Preterm birth indicators.

Data Quality Assessments have shown a mismatch between what is in primary datasources (maternity register) and what is reported in HMIS 105 as shown below.
Percentages of under reporting and over reporting of preterm birth indicators

| Hospital | M1: Admissions | Fresh stillbirth | Macerated | Live Births | Pre-Term Births | Babies-low birthweight |
|---|---|---|---|---|---|---|
| Bugiri Hospital | -3% (844/870) | 7% (16/15) | 0% (9/9) | 8% (617/573) | -2% (42/43) | 19% (56/47) |
| Buluba Hospital | 1% (473/470) | 0% (10/10) | 0% (8/8) | 1% (321/318) | -18% (36/44) | 56% (67/43) |
| Iganga Hospital | 2% (1784/1745) | -15% (33/39) | 4% (28/27) | 2% (1470/1436) | -18% (104/127) | -30% (162/233) |
| Jinja Regional | 2% (1606/1567) | -41% (17/29) | -39% (22/36) | 13% (1399/1236) | -17% (96/116) | -18% (125/153) |
| Kamuli Hospital | -2% (858/876) | 0% (7/7) | 150% (5/2) | 22% (417/343) | -21% (42/53) | 43% (70/49) |
| Kamuli Mission | -3% (907/934) | 3% (31/30) | -6% (31/33) | 4% (585/565) | 6% (52/49) | 37% (107/78) |
| Average | 0% (6472/6462) | -12% (114/130) | -10% (103/115) | 8% (4809/4471) | -14% (372/432) | -3% (587/603) |

Note: - % = Under reporting, +% = Over reporting

| **Lesson learnt 3:** | *There are many institutional challenges to proper documentation.* |

These include:

- Inadequate stationary to facilitate recording

- Long stock-outs of primary tools leads to use of outdated tools that leave out vital data

- Staff shortages on wards limits capacity for proper recording

- Staff are overburdened by forms to fill out.

- Lack of (or non-functioning) vital measuring tools like weighing scales, batteries, clocks, tapes, BP machines make data availability difficult

- Limited use of data by ward staff.

| **Lesson learnt 4:** | *HMIS does not link patient data between wards. This leads to duplicationof records and uninformed clinical decisions* |

PTBi has tried to Mitigate some of theabove through data strengthening by:

a. Provision of updated MoH registers and Newborn Registers

b. Provision of measuring tools e.g measuring tapes, pregnancy wheels and weighing scales

c. Provision of newborn equipment including radiant warmers, monitors, oxygen concentrators

d. Refresher trainings in data capture, quality and data usage

e. Provision of modified safe childbirth check lists.

## Recommendations

1. A structured sample of birth observations is needed to determine the actual validity of register data.

2. Need to strengthen the use of patient data to guide decision making at MOH and District level.

3. Refresher trainings, constant supply of stationery (Maternity and Newborn registers), measurement tools like pregnancy wheels, weighing scales and checklists are important components of a strong preterm births data system.

## About PTBi-EA

The East Africa Preterm Birth Initiative (PTBi-EA) is working to reduce the number of preterm births and save the lives of preterm infants and their mothers, by improving quality of care and engaging in discovery research in regions of Uganda, Kenya and Rwanda. In Uganda the study sites include the Jinja Regional Referral Hospital, Iganga Hospital, Kamuli General Hospital, Bugiri Hospital, St Francis Hospital Buluba and Kamuli Mission Hospital.

PTBi-EA is a collaboration among the University of California San Francisco's Institute for Global Health Sciences; Kenya Medical Research Institute; Makerere University School of Public Health; University of Rwanda and the Rwanda Biomedical Center.

*Website: https://pretermbirtheastafrica.ucsf.edu/*

## Contact Us:

Prof. Peter Waiswa,
PTBi-EA Uganda Principal Investigator
Email: pwaiswa@musph.ac.ug
www.pretermbirth.ucsf.edu
www.mnh.musph.ac.ug

The Republic of Uganda

MAKERERE UNIVERSITY