Maternal and Newborn Indicator Validation Study in Mozambique

A collaboration between Maternal Child Health Integrated Program (MCHIP), Child Health Epidemiology Reference Group (CHERG), and Mozambique Ministry of Health

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Why the study was conducted

"*Skilled birth attendant*" is the core indicator for global monitoring of maternal health care around the time of birth

- This indicator describes health system *contact* but not *content* of care
- Additional information on women's health care is needed for country level planning

Study Objective

To test the validity of women's recall of possible new content of care indicators for interventions delivered around the time of birth

Criteria for Judging Validity of Indicators

We answered two complementary questions concerning validity of the indicators tested:

1. **What is the accuracy of *individual recall*?**

   That is, how accurately does the indicator reflect the status of each individual surveyed? This depends on the sensitivity and specificity of the question.

2. **What is the accuracy of the *population estimate*?**

   That is, how accurately does the indicator estimate the true prevalence as measured during previous direct observation of care? This additionally depends on the prevalence.

Note: Where applicable, the DHS/MICS formulation of the question was used.

Study Design

***Step 1*: Observe Labor & Delivery Care** *(525 labors/births observed in 46 facilities across MZ in Quality of Care Study)*

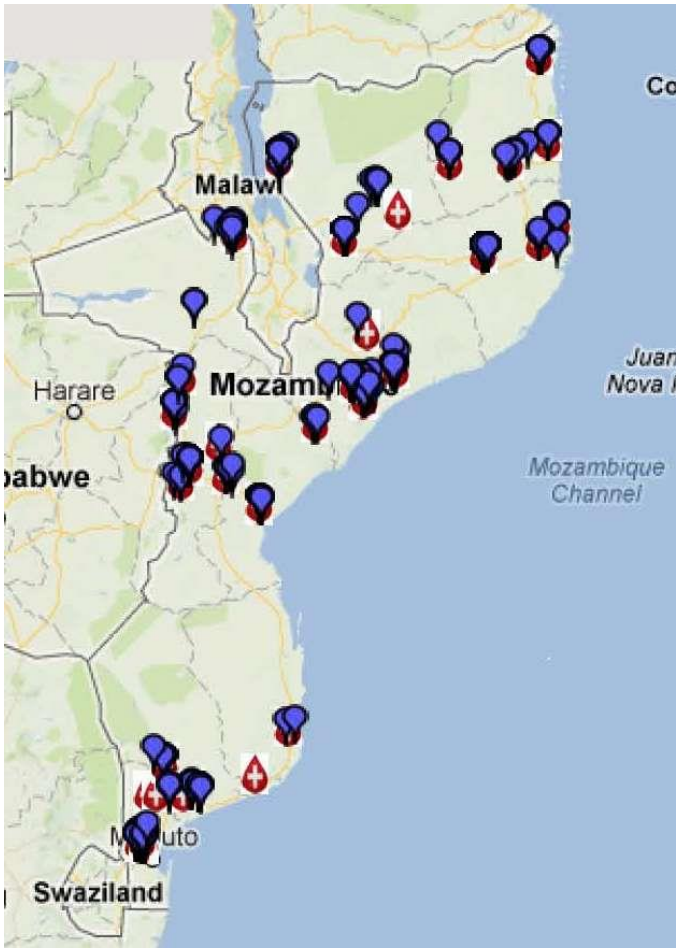
***Step 2*: Wait**
for 8-10 months

***Step 3*: Conduct household interviews**
1) Standard DHS/MICS questions
2) Additional questions

***Step 4*: Compare,** determining validity of respondents' reports

Sample Characteristics

Socio-demographic Characteristics	Maternal Recall Survey	MICS 2008
AGE		
13-19	17.8	17.6
20-24	33.9	29.3
25-29	22.4	23.0
30-34	15.1	16.3
35-39	8.6	10.5
40-44	2.0	2.5
44-49	0.3	0.8
EDUCATION		
None	12.8	23.8
Primary	55.6	62.2
Secondary or higher	31.6	13.4
Don't know/missing	0.0	0.7
RESIDENCE		
Urban	54.0	39.9
Rural	43.1	60.1
Missing	3.0	0.0



MCHIP Maternal and Child Health Integrated Program

Indicators with sufficient data for validation

17 indicators tested for possible inclusion in national household surveys:

- 3 already measured in DHS/MICS (delivery location, immediate breastfeeding, immediate breastfeeding)
- 14 candidates for addition to DHS/MICS

17 other indicators of possible interest for use in special or in-depth studies

Indicators that Met Both Individual and Population Accuracy Criteria

INDICATOR	Individual Accuracy	Population Accuracy
Woman delivered in a hospital versus a health center *(Contact; on DHS/MICS)*	+	+
Woman had a companion present during the labor or delivery *(Content)*	+	+
Newborn is placed skin to skin on mother's chest *(Content)*	+	+

Indicators that Met Population Accuracy Criterion Only

INDICATOR	Individual Accuracy	Population Accuracy
Woman had her blood pressure taken	NO	+
Woman received fundal massage after delivery of the placenta	NO	+
Newborn dried & wrapped in towel/cloth (among those not placed skin-to-skin)	NO	+
Newborn immediately dried	NO	+

Maternal Indicators Not Recommended for Household Surveys

HIV/PMTCT:

- Woman asked about her HIV status

Active Management of Third Stage of Labor:

- Active management of third stage of labor
- Woman received a uterotonic within 3 (a few) minutes after birth of baby
- Woman received controlled cord traction

Newborn Indicators Not Recommended for Household Surveys

Immediate Breastfeeding:

- Breastfeeding of newborn initiated within one hour of birth

Newborn Thermal Care:

- Newborn immediately dried, placed skin to skin and covered with a towel/cloth
- Newborn is placed skin to skin on mother covered with a cloth
- Newborn is wrapped in a towel/cloth

Indicators that could not be tested due to insufficient sample size

- **Woman delivered by cesarean section** *(on DHS/MICS)*
- **Woman asked for urine sample upon arrival at the health facility**

Study Strengths

- Close to a nationally representative sample
- Reference standard was direct observation, rather than chart review
- Follow up period comparable to MICS (study average = 9 months vs. MICS average =12 months)
- 11 of 12 interviewers were recent DHS interviewers, closely mimicking conditions of DHS/MICS data collection.

Study Limitations

- Difficulty with follow up: 1/3 of women could not be located for follow-up interview
- Some bias of sample toward more educated, urban, young women – so it likely overestimates accuracy of recall
- Could not validate 2 indicators of high interest due to small sample size in the observed births

Conclusions / Recommendations (1)

Indicators validated for household surveys:

- *Contact* indicator on location of delivery (hospital or health center) already present in DHS/MICS core questionnaires

- 2 new *Content* indicators recommended
  - Presence of a support person during labor/delivery
  - Placement of the newborn skin-to-skin

Conclusions / Recommendations (2)

This is the first published validation study on maternal recall of routine care provided during labor, delivery, and the immediate post-partum period in a low resource setting.

- Further studies needed, especially in other contexts. Population Council is planning a study in Africa and Latin America
- We hypothesize that if women are more informed about aspects of labor and delivery care, their recall will be more accurate
- Qualitative research may assist in improving the formulation of some questions. Some questions are complex and refer to specific time periods.

Thank you for you attention.