

Template for Requests for Revisions to the DHS Model Questionnaires, Optional Modules, and Biomarkers for DHS-8 (2018-2023)

Section I. Information about the requesting party

1. Is this request being submitted on behalf of a group? If so, please provide the name of the group and the participating parties.

This submission is co-led by Harvard Medical School's Program in Global Surgery and Social Change, Lund University WHO Collaborating Center for Surgery and Public Health, and the German Global Surgery Association. The proposal is further supported by a number of international collaborators (please see Appendix A for full collaborating list).

Section II. Indicator definition and rationale

2. Please define the indicator or indicators you are requesting The DHS Program to incorporate. *Multiple indicators derived from a single set of questions should be included in the same submission.* (Response required)

Primary indicator:

- Maternal death following cesarean section

Secondary indicator

- Maternal death in hospital following childbirth

3. What is the rationale for measuring this indicator (each of these indicators) in DHS surveys? (Response required)

Cesarean sections make up over 50% of all surgical procedures performed in LMICs countries ([Albutt et al., 2019](#)). Cesarean section is an essential treatment in pregnancy and is recommended at a rate of 5-15% of all births ([WHO, 2017](#); [SDG, 2015](#)). It is important to ensure that this essential maternal healthcare service is utilized appropriately in the context of universal access to healthcare ([Harrison et al., 2016](#)).

Perioperative mortality is a marker of surgical systems quality and is essential in achieving SDG 3 targets for health, specifically maternal mortality SDG 3.1 ([LCoGS, 2015](#); [Kruk, 2018](#); [Ng-kamstra, 2018](#)). Collection of post-cesarean mortality will enable us to measure and compare surgical outcomes internationally. Perioperative mortality following cesarean section is a quality marker of Comprehensive Emergency Obstetric and Neonatal Care (CEmONC).

Maternal mortality ratio (MMR) remains high in many low- and middle-income countries. MMR in the hospital setting is a proxy measure for both broader health system performance and quality of maternal

health services. It is important to better understand the *quality* of maternal health services, once those services are accessed. Therefore In-facility maternal death is a useful quality indicator.

Section III. Proposed additions/revisions to the questionnaires or biomarkers

4. Please describe the requested addition or revision.

If the requested change is the addition of new questions to the DHS questionnaires or modules, complete questions 4.1 and 4.1.1. If the requested change is a revision to existing questions, complete question 4.2. If the change relates to anthropometry or a biomarker, please complete question 4.3.

4.1. **For additions:** If you have developed a question or set of questions to measure the indicator(s), please provide them in the space below or in a separate file attached with your submission.

Did (NAME) receive a cesarean section?

Did (NAME) die in the hospital?

4.1.1 If requesting multiple questions, please specify the relative priority of each new question.

Did (NAME) receive a cesarean section?

Did (NAME) die in the hospital?

4.2. **For revisions to existing questions:** Please specify the DHS-7 question number, the proposed revision to the question, and the rationale.

DHS-7 question number	DHS-7 question text	Proposed new question	Rationale

4.3. **For anthropometry and biomarkers:** Please describe the measurement procedures or specimen collection procedures, point-of-care or laboratory testing procedures (as relevant), and any recommendations for return of results.

N/A

5. Can any related questions be deleted from the questionnaire to make room for the proposed new content? If so please specify which questions using the DHS-7 question numbers.

No suggestions for deletion

6. What are the implications of these requested changes on measurement of trends using DHS data?

No impact on measurement of trend of previous DHS data as no suggestions to current structure.

Section IV. Indicator calculation

7. Indicate how to calculate the indicator(s). Include detailed definitions of the numerator and denominator of each individual indicator. If you have developed a tabulation plan for the indicator(s), please attach a file including the suggested table(s) with your submission.

Indicator	Numerator	Denominator	Comments
Maternal death following cesarean section	Number of deaths in the hospital among people who underwent cesarean section	Total number of people who underwent cesarean section	
Proportion maternal deaths in hospital facility	Number of maternal deaths in the hospital	Total number of births in the hospital	

8. Is the indicator useful when measured at the national level, or is it useful only when disaggregated to specific subnational areas, such as endemicity zones or project intervention regions?

For each indicator, select one of the three options by clicking in the appropriate box.

Indicator	Useful <u>only</u> for subnational endemicity zones or project intervention regions. A single estimate at the national level is <u>not</u> meaningful.	Useful at both national and subnational regions, as sample size allows.	Useful only at the national level. Subnational estimates are not needed.
Proportion maternal deaths in hospital facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Maternal death following cesarean section	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section V. Prior testing of the proposed question(s)

9. Have the proposed questions undergone any formal validation; i.e., have the questions been tested against a “gold standard” to assess their accuracy? If yes, please describe how well or poorly the questions performed and/or provide a publication or report of the validation exercise (or a link).

Questions relating to cesarean section have been piloted as part of the DHS Zambia survey.

10. Have the questions undergone any other kind of testing; e.g., cognitive testing, pilot testing. If so, please describe the results of the testing and/or provide a publication or report of the findings (or a link).

No.

Section VI. Other considerations

11. Please provide information relevant to the kinds of questions below, and/or anything else you wish to share with us about this indicator (these indicators).

- Describe how the data for this indicator are being used (or will be used).
 - Are the data produced by this indicator actionable?
 - Who will use the data?

Data will be used by ministries of health, public health researchers and stakeholders interested in both quality of maternal health and surgical services. This will inform decisions about interventions designed to minimize maternal and neonatal mortality through the provision of Comprehensive Emergency Obstetric and Neonatal Care (CEmONC), of importance in order to achieve SDG 3.1 and 3.2. In addition, as the most common surgical procedure, this would enable the reporting of the WHO Core 100 indicator on perioperative mortality. This will enable maternal and surgical health systems strengthening through improved quality and safety of services provided.

- What kinds of decisions will be made using these data?

The data gathered by these indicators will help to inform policy on maternal healthcare access and on quality improvement in the context of universal health care. These data will provide raw frequencies of facility-based maternal deaths related to cesarean deliveries, which adds a layer of granularity to countries' existing maternal mortality ratios. These data are actionable as they link to Sustainable Development Goal 3, which aims to reduce maternal mortality.

- For what kinds of countries would the indicator(s) be most useful?

Low and middle income countries (LMICs)

- Does the DHS survey offer any particular advantage over other available data sources for measuring this indicator? If so, what?

There are currently no available systematic and nationally representative figures for maternal mortality following cesarean section in LMICs.