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:

- Total Household expenditure (a component of catastrophic and impoverishing expenditure)

Secondary indicator:

- Total household expenditure stratified by type (e.g., food, housing)

Please note: Catastrophic health expenditure, defined as medical and non-medical out-of-pocket costs that, in total, are greater than 10% of the total household expenditure. Impoverishing health expenditure, as defined as medical and non-medical out-of-pocket costs that, in total, are greater than the difference between household expenditure and the extreme poverty threshold at $1.90 per person per day.

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

The World Health Organization's World Health Report 2000 asserts that financial risk protection is an essential function of health systems; financial risk protection is inherently part of achieving universal health coverage. This is especially relevant in low-resource settings where increased utilization of health services has not been met with development of comprehensive health insurance. Financial risks created by this gap in coverage need to be monitored for Sustainable Development Goal 3.8 (Achieve universal health coverage) with Indicator 3.8.2, which measures the proportion of a country's population that has a large household expenditure on health. This also directly supports Sustainable Development Goal 1, which is to eliminate poverty. Large household expenditures on health services can be categorized as catastrophic and/or impoverishing.

- Catastrophic health expenditure is defined as out-of-pocket expenditure for health services that exceeds a certain percentage of the total household expenditure. This threshold is defined by the World Health Organization as a household expenditure on health services of greater than 10% (SDG 3.8.2_10) or 25% (SDG 3.8.2_25) of total household expenditure. We propose utilizing the 10% threshold to create a comprehensive picture of those lacking financial risk protection.
- Impoverishing health expenditure is defined as out-of-pocket expenditure for health services that pushes a household below a poverty threshold. We propose utilizing the $1.90 per person per day international poverty threshold, per the World Bank.

Calculating catastrophic and impoverishing expenditure requires data on 1) out-of-pocket health expenditure (this is collected in the DHS out-of-pocket health expenditure model, to which we are also proposing the addition of gathering direct non-medical costs) and 2) total household expenditure, a surrogate for income.

Importantly, the World Health Organization notes that catastrophic and impoverishing health expenditure data must be collected in conjunction with service coverage data to ensure that incidence of large health expenditures is not artificially low from excluding those who do not access care for financial reasons.

Strengths of utilizing DHS Survey

The three most highly-cited articles on financial risk protection (outlined below) demonstrate the utility of household surveys for collecting total household expenditure; the DHS Survey will enable this systematic collection of expenditure data. The key findings from these studies are illustrative of the types of evidence that can be gained from analyzing these data that we propose collecting through additional questions to the core DHS survey (See Section III, 4.1). It is important to collect these data to ultimately inform policy interventions around financial risk protection.

1. Wagstaff and van Doorslaer, 2003: utilized the Vietnam Living Standard Survey (VLSS), which captured out-of-pocket payments, to understand the incidence and intensity of impoverishing and catastrophic expenditures. Wagstaff and van Doorslaer found that most catastrophic payments pushed impoverished people further into poverty (as opposed to impoverishing non-poor individuals), and were a result of non-hospital expenditures rather than inpatient care payments.
2. Xu et al., 2003: an analysis of household catastrophic expenditure utilizing household survey data from 59 countries. Authors found that, when controlling for confounders, that the probability of a higher proportion of households making catastrophic expenditures is higher in countries with higher out-of-pocket payments in total health expenditure.
3. Xu et al., 2007: an analysis of household catastrophic expenditure utilizing 116 household surveys which collected data from 89 countries on food and health spending. Authors findings advocate that prepayment mechanisms, instead of out-of-pocket payments, are critical to reducing financial catastrophe.

As acknowledged in these studies, validity and completeness of data is critical; this is another reason why the DHS is appropriate for data collection. Additionally, while a 2018 update from Wagstaff et al. on their retrospective descriptive study of catastrophic health spending in 133 countries relied on many data sources, collecting total household expenditure via the DHS could expand on the number of countries for which there is data, while standardizing the method of collection. Additionally, the DHS's collection of additional household-level demographic data would allow for analysis of expenditure by these characteristics.

Limitations of using DHS Survey

There are several limitations to collecting total household expenditure via the DHS. First, self-report will only provide estimates into broad categories. Second, consumption may not estimate income in low-resource settings. Lastly, some accuracy and/or precision may be sacrificed in not integrating a more comprehensive series of expenditure questions. However, these estimates will provide a helpful starting point for data collection of household expenditure across low-resource settings.

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.

We suggest adding the following question to the core survey:

How much money does your household spend each month, on average, on the following? (If average is unknown, please estimate from last month's expenses.)

1. Food, drink, and livestock
2. Housing (e.g., rent/home payments, electricity/gas, water)
3. Transportation (e.g., public transportation, car)
4. Education (e.g., school fees, books, uniforms)
5. Health care (e.g., insurance premium, medications, fees for medical visits, fees for traditional healers)
6. Other costs (e.g., funerals, weddings, parties, festivals)

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

n/a

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
n/a			
n/a			

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.

Not applicable.

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 suggested deletions.

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

Not applicable.

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	Denominator	Numerator	Comments
Total Household Expenditure per capita	Total population	Sum of household expenditure questions	

Incidence of catastrophic health expenditure, including that from surgical care, as defined as medical and non-medical costs of care that, in total, are greater than 10% of the estimated total household expenditure	Total population	Number of respondents who reported out-of-pocket health expenditures exceeding 10% of total annual household expenditure	Only applicable when OOP module used in combination
Incidence of impoverishing health expenditure, including that from surgery, as defined as medical and non-medical costs of care that, in total, are greater than the difference between household expenditure and the poverty threshold at $1.90 per person per day	Total population	Number of respondents who reported out-of-pocket health expenditures exceeding the difference between total annual household expenditure and the international poverty threshold at $1.90 per person per day	Only applicable when OOP module used in combination

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 only for subnational endemicity zones or project intervention regions. A single estimate at the national level is not meaningful.	Useful at both national and subnational regions, as sample size allows.	Useful only at the national level. Subnational estimates are not needed.
Total Household Expenditure	☐	☒	☐
Percentage of respondents who report catastrophic expenditure from surgery, as defined as indirect and direct costs of surgical care that, in total, are greater than 10% of the estimated total household expenditure for one person.	☐	☒	☐

Percentage of respondents who report impoverishing expenditure from surgery, as defined as indirect and direct costs of surgical care that, in total, are greater than the difference between household expenditure and the poverty threshold at $1.90 per person per day.	☐	☒	☐

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).

No.

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).

These questions are based on an interview that was created for a pilot study in Uganda in April 2016. The interview series was conducted with patients and/or attendants following discharge after surgery at a Mbarara Regional Referral Hospital in Mbarara, Uganda with the goal of collecting total household expenditure to assess financial risk as a result of utilizing surgical care. Feasibility of collecting these data were demonstrated, and results were shared by Anderson et al. in PLoS ONE.

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

Data on total household expenditure will be used as a surrogate for total household income, which is less feasible to collect.

Data are actionable in conjunction with the proposed out-of-pocket module, which will allow for the calculation of incidence of catastrophic and impoverishing health expenditure. This may inform interventions surrounding financial risk protection.

Data will be used by public health researchers and stakeholders.

Data will inform decisions about interventions designed to achieve universal health care and inform

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

Low- and middle-income countries.

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

The DHS Survey has several advantages over other available data sources:

- Data completeness. Some data sources are difficult to utilize for catastrophic and impoverishing expenditure because of missing data.
- Data representation for a larger number of countries than currently exists. This large data set will allow for inter-country comparisons as well as intra-country regional descriptions.
- Data on household demographics allows for analysis of expenditure by these characteristics.