

# 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 request is being submitted on behalf of the Population Division of the Department of Economic and Social Affairs of the United Nations (New York, USA), and in the context of the analytical work done on adult and old-age mortality, including as part of the United Nations Maternal Mortality Estimation Inter-agency Group (MMEIG). It is based on suggestions introduced in 2014 by a group made of several demographers (B. Masquelier, S. Helleringer, G. Pison, I. Timæus, P. Gerland, etc.). The suggestions related to sibling survival histories were considered when revising the maternal mortality module in 2014-2015, but the other suggestions related to orphanhood data were not considered.**

## 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)

### **Indicator 2. Proportions of non-orphans classified by age**

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

**The DHS questionnaire also makes it possible to estimate adult mortality from questions on the survival and residence of parents. Proportions of non-orphans classified by age can be converted into probabilities of dying through standard demographic techniques [1-5]. However, this question is currently restricted to children up to age 17 in DHS, which greatly limits its use for mortality estimation. The collect of such information on adults would enable to complement estimates from sibling histories, especially for older ages not well covered through sibling histories. Worldwide most deaths occur at age over 50, and DHS sibling histories do not provide sufficient information on mortality at older ages.**

## 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.*

**A. We suggest collecting parental life histories in the “Maternal and adult mortality” module, and by adding questions on the survival, years of death and ages at death of parents.**

4.1.A **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.

**The following questions should be asked prior to eliciting the list of siblings:**

- **Is your mother still alive?**
- **If YES > How old is your mother?**
- **If NO > How many years ago did she die?**
- **If NO > How old was she when she died?**

**The same questions would be asked for the respondent’s father to estimate male mortality. Both sets of questions should be included in the men’s questionnaire as well.**

**This set of questions is minimal, the data are easy to collect, and the mortality estimates can be obtained using both direct and indirect techniques [6]. Asking these questions would present the following advantages:**

i. **It would allow estimating trends in adult mortality. Because the questions would be asked of respondents aged 15-49, one could potentially obtain a trend in mortality over the last 50 years. By contrast, sibling histories are only useful for the last 15 years because the number of adult siblings of the respondents diminishes rapidly when the reference period extends further back in time.**

ii. **It would provide mortality estimates up to age 75. Currently, DHS surveys can only provide mortality estimates up to age 50 or 60, because the respondents are aged 15 to 49 and they report on siblings of the same age on average. As a result, little information is available on old-age mortality [7].**

iii. **It would yield more reliable estimates of adult mortality than those obtained from the parental survival data collected among children in the household questionnaire. Among children, a large proportion of fostered orphans are misclassified as non-orphans. In the presence of adults, some interviewers do not always probe whether they are the true biological parents of the children observed in the households and automatically record all children as non-orphans [8]. Foster parents may also inadvertently underreport orphans, for instance if they do not understand that the questions concern biological parents. This “adoption bias” is less pronounced among adult respondents.**

iv. **In countries where HIV prevalence is high, adult mortality estimates derived from parental survival are biased by the transmission of HIV from mothers to children and the lower fertility of seropositive mothers. It is possible to adjust for these biases [5]. However, estimates derived from parental survivorship statistics collected among adults are less biased than those obtained from young respondents.**

v. **Most censuses collecting data on orphanhood do not restrict the question to children. Asking adults about the survival of their parents could facilitate the comparisons and the reconstruction of trends in mortality.**

vi. **Information on the mother's survival, her age, and in the case of a deceased mother, on the timing of her death, would also allow additional data quality checks for sibling histories (as these are referring to the birth history of the mother of the respondent).**

**The date of the mother's death has been included in several sample surveys in the 1970s and 1980s in Latin America, and in one DHS conducted in 1987 in Burundi. It has been shown that this question provides more accurate estimates of the moment in time that corresponds to the mortality estimates than when this moment has to be estimated indirectly from the respondent's age [9]. It also provides more recent estimates.**

**If it is thought that an important proportion of respondents will not know the year of death of their parents, an additional question for those unable to provide a date would be: 'Was your mother/father alive at the time of your first marriage?'. This question was asked in some DHS surveys (Senegal in 1986, Burundi in 1987, Ghana and Uganda in 1988). Again, it has been shown that the resulting mortality estimates are more accurate than those obtained without any information on the timing of deaths; they provide more recent mortality than lifetime data and are less plagued by the adoption effect [2]. Alternatively, the question could be 'Was your mother/father alive when your first child was born?' to avoid problems related to the definition of the marriages.**

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

**These questions have equal priority and are specific to countries where the registration of death is incomplete.**

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.

**NA.**

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

**The requested changes would make it possible to triangulate estimates of adult mortality generated by sibling histories with estimates based on orphanhood, and introduce new data quality checks for sibling histories. They will not affect the indicators currently produced based on DHS.**

## 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.

The indirect estimation of adult mortality based on orphanhood is well described in Timaeus (2013), "Indirect estimation of adult mortality from orphanhood", in Moultrie et al., Tools for demographic estimation, available online : <http://demographicestimation.iussp.org/content/indirect-estimation-adult-mortality-orphanhood>.

The tabulated data required are (1) the proportion of respondents whose mother is alive by five-year age group of respondent, (2) the number of births in the year before a demographic inquiry tabulated by five-year age group of the women giving birth (provided by the birth history).

The tabulation for the direct approach, based on current ages or ages at death, is similar to the tables used for sibling histories, but for parents. Mortality rates can be measured as a function of the person-years of exposure and number of deaths, excluding person-years before the respondent's birth (since parents had to survive to this date to give birth).

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.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Indicator 1. Proportions of non-orphans classified by age</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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## 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).

**We know of no validation survey for parental survival histories. However, the Vietnam Life History Survey (VLHS) conducted in 1991 in Vietnam asked respondents the birthdates of parents and siblings, and if they had died, the year of death or age at death. The data on survivorship of siblings and parents provided credible estimates of the level of adult mortality.**

**See : <https://www.jstor.org/stable/2137774>**

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).

## 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).

**The adult and old-age mortality rates obtained through this additional set of question will complement and extend our knowledge of mortality levels at old-ages than currently possible through existing household surveys in countries lacking reliable vital registration.**

- Are the data produced by this indicator actionable?

**As explained by Norheim et al [9], about 40% of premature deaths under age 70 are avoidable by 2030 through simple, and cost-effective public health interventions. Better assessment of current levels and progress in measuring adult and old-age mortality is lagging behind in countries lacking good vital registration.**

- Who will use the data?

**Both national authorities, researchers and the international community involved with mortality measurement, and public health.**

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

**Assess progress with the prevention of NCDs, and most preventable causes of deaths by age and sex.**

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

**The suggestions above are specific to countries where the registration of death is incomplete, and especially deficient or inaccurate at older ages, or biased with under-reporting of female deaths.**

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

**The collection of this information in combination with sibling histories would provide some benefits in triangulating levels and trends, and allow additional data quality checks for sibling histories.**

## References

- [1] I. Timæus. An Assessment of Methods for Estimating Adult Mortality from Two Sets of Data on Maternal Orphanhood. *Demography*, 23, 3:435–450, 1986.
- [2] I. Timæus. Estimation of Adult Mortality from Orphanhood Before and Since Marriage. *Population Studies*, 45(3):455–472, 1991.
- [3] I. Timæus. Estimation of Mortality from Orphanhood in Adulthood. *Demography*, 28 (2):213–227, 1991.
- [4] I. Timæus and M. Jasseh. Adult mortality in Sub-Saharan Africa: evidence from demographic and health survey. *Demography*, 41, 4:757–772, 2004.
- [5] I. Timæus and A. Nunn. Measurement of adult mortality in populations affected by AIDS: an assessment of the orphanhood method. *Health transition Review*, 7(2):23–43, 1997.
- [6] T. Moultrie, R. Dorrington, A. Hill, K. Hill, I. Timæus, and B. Zaba. *Tools for demographic estimation*. Paris: International Union for the Scientific Study of Population, 2013.
- [7] E. Bendavid, B. Seligman, and J. Kubo. Comparative Analysis of Old-Age Mortality Estimations in Africa. *PLoS ONE*, 6(10):e26607, 10 2011.
- [8] L. Robertson, S. Gregson, C. Madanhire, N. Walker, P. Mushati, G. Garnett, and C. Nyamukapa. Discrepancies between UN models and DHS survey estimates of maternal orphan prevalence: insights from analyses of survey data from Zimbabwe. *Sexually Transmitted Infections*, 84 S(1):57–62, 2008.
- [9] J. Chackiel and H. Orellana. Adult female mortality trends from retrospective questions about maternal orphanhood included in census and surveys. In *International Population Conference - Florence*, volume 4. IUSSP, Liege, 1985.
- [10] Ole F. Norheim, Prabhat Jha, Kesetebirhan Admasu, Tore Godal, Ryan J. Hum, Margaret E. Kruk, Octavio Gómez-Dantés et al. "Avoiding 40% of the premature deaths in each country, 2010–30: review of national mortality trends to help quantify the UN Sustainable Development Goal for health." *The Lancet* 385, no. 9964 (2015): 239-252.