Women Empowerment and socioeconomic inequality in immunization coverage: a case study of Zambia

Thato Mojapelo
Student Number: MJPTHA003

Mini dissertation submitted to compliment coursework towards meeting requirements for the degree Master of Public Health (MPH) in Health Economics.

School of Public Health and Family Medicine, Faculty of Health Sciences
University of Cape Town

Supervised by Dr John Ataguba
Health Economics Unit, University of Cape Town

February 2020

Declaration

I Thato Mojapelo, hereby declare that all the efforts and contents of this thesis are based on my original work (with exception to when I have otherwise acknowledged another parties work). I further confirm that no part of this thesis has been, or is being, or is to be submitted for another degree at this institution or any other university.

I hereby consent the University of Cape Town to replicate any portion of the contents herein, for the purpose of research.

Signature Signed by candidate

Date: 7th February 2020

Abstract

Basic immunisation coverage for children between 12-23 months in Zambia was 68% in 2013. Nevertheless, a substantial number of child deaths persist as a result of preventable disease. This study assesses the relationship between women empowerment and immunisation coverage in Zambia. It also investigates socio-economic inequality in full, partial, and immunisation intensity. Thus, the findings will support improved immunisation coverage, especially for those who are the poorest in Zambia.

The study uses the 2013-14 Zambia Demographic and Health Surveys (ZDHS), which are nationally representative household surveys [12]. This dataset incorporates information regarding children from 0 to 59 months and for men and women aged 15- 49 years old. The two main study variables are women empowerment and immunisation. Immunisation was divided into three categories namely, full, partial and no immunisation. Concentration indices are used to assess inequality in full, partial and no immunisation coverage as well as in the intensity of immunisation coverage. Briefly, a positive concentration index means that immunisation coverage is pro-rich as richer children are more likely to be immunised. A negative index indicates the opposite.

The main finding of this study was that socioeconomic status has a significant impact on the immunisation coverage of a child. For children who were fully immunised, immunisation was found to be pro-rich (concentration index = 0.046). The distribution of partially immunised children (concentration index = -0.114) and not immunised children (concentration index = -0.138) is pro-poor. This confirmed that poorer women were more likely to have a partially immunised/not immunised children compared to a child whose mother is richer. Immunisation intensity had a pro-rich outcome (concentration index = 0.153). In addition, the study confirmed the importance of household decision making as a determinant of a child's likelihood of being fully immunised (p-value<0.01).

This study has shown that close attention to factors such as women empowerment and a mother's education can support improved immunisation coverage, especially for those who are the poorest in Zambia. This paper further highlighted the importance of socio-economic status as it impacts on immunisation coverage.

Dedication

I dedicate this work to my loving Lord and Saviour Jesus Christ, my supportive mother Gertuds, sister Tumelo and my brother Lehlohonolo Mojapelo.

Acknowledgement

I would like to convey my deepest thanks to the National Research Fund (NRF) through the Health Economics Unit (HEU) as well Investec Private Bank through Winnet Marembo and Mark Miller for their contribution towards funding my Masters.

A special thanks goes to Dr John Ataguba for his tutelage, infectious positivity and support throughout the research process. Without his testimony of diligence, black excellence, vision and technical guidance I may have given up along the way.

I would also like to thank all the staff that I engaged with throughout my journey towards my MPH. The lecturers, tutors and admin staff. All they imparted in passion, conviction, love for what they do continually inspired me and often reminded of the 'why' of this Masters.

I would also love to acknowledge the encouragement of my close friend Dineo Maitisa who suggested that I pursue this master's, after completing hers in a different stream. To all my work colleagues who supported me as I attempted to juggle work and academics, especially since both are demanding responsibilities. The team leaders who believed in my vision, although it fell far from my daily job. Those colleagues who covered for me as I did tests, exams and block weeks. A special thanks goes to Githa Valentine, I will never forget how you supported me at the start of my studies.

I will forever be grateful for my church family who provided much strength and encouragement throughout the past few years. My immediate family who were always a source of upliftment and support, words cannot explain my appreciation towards you.

Finally, to my Ultimate in all things Life, Blessed Jesus – thank you in abundance for the opportunity, the wisdom, means, strength and vision. Dreams and Prayers can be provided and answered by you. Honour and Glory to you always. Eph 3:20

Abbreviations

BCG	Vaccine which protects against tuberculosis
CC	Concentration Curves
CI	Concentration Index
CSO	Central Statistical Office
DHS	Demographic and Health Surveys
DPT	Vaccine which protects against diphtheria, pertussis (whooping cough) and tetanus
GDP	Gross Domestic Product
GEM	Gender Empowerment Measure
MDG	Millennium Development Goal
MNCH	Maternal, neonatal and childhood
OECD	Organisation for Economic Co-operation and Development
RII	Relative Index of Inequality
SDG	Sustainable Developmental Goals
SES	Socioeconomic Status
SSA	Sub-Saharan Africa
SII	Slope of Inequality
TDRC	Tropical Diseases Research Centre
UN	United Nations
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey

Table of Contents

List of figures

List of Tables

PART A: Research Protocol

Women empowerment and socio-economic inequality in immunisation coverage: a case study of Zambia

1. Introduction

Child mortality is a health concern that affects many countries, with the sub-Saharan African (SSA) and the Middle Eastern regions being most acutely impacted [1]. Although there has been a marked decline in deaths compared to more recent decades, 5.6 million children under the age of 5 years died in 2016 [2]. This statistic explains why national governments as well as international agencies, including the United Nations, were compelled to move towards maternal and child health prioritisation. As a result, emphasis on maternal and child health has contributed to the rapid reduction in child mortality around the world [3]. Millennium Development Goal 4 (MDG-4) aimed to reduce under-five mortality rates by two–thirds worldwide by 2015. To lessen the burden of early deaths within childhood, interventions often targeted educating mothers, as they would be the primary caregivers [4]. Building on the MDGs, the Sustainable Developmental Goals (SDGs) have also reduced child mortality a matter of importance by earmarking it as concern for change. In the early 2000's 'more than 10 million children [died] annually from preventable causes' [5]. Despite the above, by 2013 the global mortality rate for children under 5 years was still at a high toll of 6 million deaths, resulting from infectious diseases and neonatal complications [6]. In 2013, SSA contributed roughly half (49.6%, 3.113 million) of under-5 deaths worldwide [1].

Causes of death vary from one geological setting to another. Thus, the need for an in-depth understanding of child health epidemiology at a country level is pertinent [5]. The primary causes of death for infants result from preterm birth complications, pneumonia, birth asphyxia, diarrhoea and malaria [2]. Often malnutrition is an underlying aggravating factor since it makes infants exceptionally vulnerable to the above illnesses [2]. Ataguba, Ojo [7], indicated that over 51% of deaths in children below the age of 5 were caused by as pneumonia, diarrhoea, malaria and meningitis [7]. This shows that non –infectious diseases form part of the leading causes of death for children aged between 0 to 59 months and as such, many have deemed these as avoidable deaths as preventative measures could have

been introduced to save lives. According to MDG4 in respect to child mortality reduction efforts, methods were to be preventative and included nutritional education programmes, promotion of household food security and improved access to health services as well as to basic amenities [8]. In recent times, 2-3 million deaths have been averted by way of paediatric vaccinations [9]. In fact, paediatric immunisation is regarded as one of the most important modern interventions as it has in past decades contributed toward substantial reductions in child deaths globally [9]. The eradication of smallpox and rinderpest are credited to organised immunisation efforts [10]. Immunisation has also contributed to the radical decline in measles, without which, the devastating effects of this disease could have been sorely realised as in the days of when polio, the plague and the Spanish flu wiped out thousands of lives. Immunisation has the added benefit of being a preventative measure, rather than a curative step after the disease has been contracted and spread. Delayed immunisation had resulted in negative after-effects when there were outbreaks of contagious diseases. The measles epidemic of the past decade is one such example [11].

In attempting to mitigate the prevalence of infant mortality from the disease globally, the World Health Organization (WHO) recommends that children should be fully immunised by age of 12 months to prevent major childhood related diseases [9]. According to the WHO, children are considered fully immunised when they have received one dose of the vaccine against tuberculosis (BCG) - which is given at birth or first clinical contact, three doses each of the DTP and polio vaccines – which are given approximately at age 6, 10 and 14 weeks and one dose of measles vaccine which is given following 9 months [12].

The WHO estimated that by 2014, the number of children who had not received the 3rd dose of DTP vaccine was approximately 7.4 million in the African region. This was out of an annual birth cohort of 32.7 million infants in Africa. Approximately one-third of these children were living in six countries; Ethiopia, Kenya, DR Congo, South Sudan, Nigeria and Guinea [13]. This illustrates how gains towards containing child mortality can still be further reinforced within the region.

Childhood vaccination efforts have yielded returns with regards to increased life expectancy. Within Europe and Asia, life expectancy at birth has risen between 30 and 13 years, respectively, over a 30-year period. However, in SSA, over the same time frame, life expectancy has only increased by about 4 months. This is partly because of many things including the modest immunisation coverage, as by 2015, about 19 million children remained unimmunised [9, 14]. Internationally, 'under-five mortality rate has decreased by 26% from 91 deaths per 1000 live births in 1990 to 67 deaths per 1000 live births in 2007; while in sub-Saharan Africa the rate has fallen by only 20%, from 181 to 145 over the same period' [15]. This highlights the social health gradient that is apparent between developed countries and the developing African world, as well as the urgent need for improved child mortality indicators with increased immunisation coverage within Africa being one such indicator. The social gradient reveals disparities in health experience within respective communities worldwide due to differing socio-economic contributing factors [16]. Within countries, the generally observed trend is that individuals with a lower socioeconomic position tend to have poorer health [17]. This is a global phenomenon, seen in low, middle- and high-income countries and it demonstrates that health inequities exist in every country [18]. Poverty, relative deprivation, slow economic growth and social exclusion have a major impact on health and many SSA countries with a high incidence of child mortality continue to struggle with the above factors which are not as evident in developed countries [19]. Thus, an enhanced understanding of social determinants of health along with country-specific structural considerations help in improving child health outcomes in a contextualised manner. To this end, a focus on inequality in immunization is of great importance to improve child health outcomes. A more in depth understanding of inequalities informs, who bears a greater burden of non-full immunisation. Thereafter, an investigation of the role of women empowerment in full immunisation will follow to also aid in impacting decreased child deaths from preventable causes.

1.1 Justification

Although there has been slower uptake of universal immunisation in SSA compared to the more developed countries, successes in child mortality reduction and immunisation coverage have also been

legitimately realised within the region. Kanyuka and colleagues showed that Malawi was one of the "few countries in sub-Saharan Africa likely to meet the MDG 4 target of reducing under-5 mortality by two-thirds between 1990 and 2015. The estimated mortality rate in children younger than 5 years declined substantially in the study period, from 247 deaths (90% CI 234–262) per 1000 livebirths in 1990 to 71 deaths (58–83) in 2013, with an annual rate of decline of 5·4% " [27].There is an expectation that other countries within the region can attain the same outcomes and also meet their SDG targets through accelerated efforts [20]. The Ministerial Conference on Immunisation in Africa ratified this by accepting the Addis Declaration, which re-emphasised the significance of vaccination and its role in improving the health of many within the region [21].

Immunisation studies have focused on Angola, Ethiopia, Nigeria and Congo – at times referred to as the 'Big 4', as they carry the bulk of the burden of preventable disease that leads to child mortality [22]. This study is different, as the country of interest is Zambia.

On the surface, Zambia already has a seemingly decent immunisation coverage statistic compared to other parts of SSA. Basic immunisation coverage for infants between 12-23 months for this country was 68% in 2013 [12]. Through the Expanded Programme on Immunisation, the Ministry of Health's strategy of '*reaching every district*' has shown some successes. Through these measures, Zambia has managed to maintain polio-free status and has eliminated maternal, neonatal tetanus since 2005 [23]. Also, under-five mortality levels reduced to 72.9 deaths per 1000 live births in 2013 from 186.5 deaths per 1000 live births in 1967 (World Bank, 2018). The Zambian Health Ministry contributed to improved child mortality indicators by abolishing user fees for all maternal and child health services to facilitate better access and utilisation [24]. Nevertheless, a substantial number of infant deaths persist in Zambia as a result of preventable diseases [25].

Vaccination utilisation in Zambia is based on numerous factors which impact coverage levels. Long waiting times, the distance that vaccination sites are from mothers as well as caregiver communication have a bearing on acceptability of vaccination services. In Zambia, 20% of mothers were found to be

unsatisfied with vaccination services, with rural caregivers showing higher levels of satisfaction compared to their urban counterparts [26, 27]. Another study found that access to health services is a critical determinant of health outcomes with respect to immunisation in Zambia with children who lived in urban areas and close to health facilities being more likely to have completed all their immunisations [27].

Colson and colleagues (2015) attempted to establish whether there was progress towards universal health coverage by identifying drivers of success for maternal health services in Zambia over two decades [28]. Their study showed that Zambia saw notable gains in the delivery of malaria control interventions, BCG and measles immunisation across districts. They also found that there was a substantial gap between highest-performing and lowest-performing districts when it came to polio and pentavalent immunisation [28].

Although much has been done in establishing links between immunisation coverage and SES, minimal research has been compelling in addressing this explicitly. Since Zambia is ranked amongst some of the world's most unequal societies with a Gini coefficient of 57.10, the findings of the study will either validate this with its outcome or confirm otherwise (World Bank, 2018).

Moreover, literature focusing on immunisation coverage often lacks in including the additional consideration of women empowerment to the debate.

1.2 Aims

The primary aim of this study is to empirically assess the relationship between socio-economic status (SES) and immunisation coverage in Zambia and to understand the role of women empowerment in immunisation coverage in the country.

Objectives

• To assess the relationship between women empowerment and immunisation coverage in Zambia.

• To assess socio-economic inequality in full, partial, and immunisation intensity in Zambia.

2. Brief literature review

2.1 Theoretical review

This section of the proposal provides the theoretical context in which women empowerment and health inequality was handled in the study. Although brief, it offers a foundation upon which the methodological and empirical considerations of women empowerment and health inequality are built. As such defining and contextualising the general understanding of these key concepts namely health inequality and women empowerment are addressed.

2.1.1 Inequality in health and health care

The Oxford dictionary defines equality as 'the state of being equal, especially in status, rights, or opportunities. Within the health context, inequality has become an increasingly prominent consideration within the policy agenda, as indicators which provide average figures on health performance do not cater to such factors [29]. For simplicity, inequality is the 'differences in health across individuals in the population' [29]. William Farr's nineteenth-century observations began much of how social health inequalities are understood [30].In addition to the above, Wagstaff emphasises that the variation in health can be a function of socio-economic grouping where the 'association between poverty and ill-health reflects causality' [17]. This is consistent with Braveman [31] approach which conceptualises health inequalities as a 'specific subset of health differences that are systematically linked with social disadvantage, which entails worse health outcomes among socioeconomically disadvantaged groups' [31].

2.2 What is women empowerment?

Empowerment can be difficult to define as its meaning has a cultural context. It carries both intrinsic and instrumental value. The World Bank Empowerment and Poverty Reduction defines empowerment in its broadest sense as 'freedom of action and choice' [32]. This definition incorporates the complexity of empowerment as it recognises that other intricacies such as a woman falling within another socially excluded subset of society based on SES for examples, would affect their sense of empowerment in practice [32]. Kabeer [33] defines women empowerment as the 'process by which women increase their ability to make strategic life choices' [33]. This definition is one that has carried much influence, although many others exist [34]. Women empowerment is a broad concept which has received at least 3 decades of robust theoretical work. In defining it a distinction is made to not confuse it with other concepts that also contribute to women social standing. These concepts form part of society's construct of women status but are not the same as women empowerment. Examples of such are considerations of household and familial dynamics as suggested by Malhotra and Ruth Schuler [35]. Further, agency – the freedom to make choices and actions, is a core part of the concept of empowerment [33]. The ability to access resources, agency and the realisation of choice exercise are accepted as factors which affect the empowerment process [33, 36, 37]. These considerations often determine how women empowerment is measured.

In cases where autonomy and the above definition of women empowerment intersect, the two concepts may be deemed synonyms. Dyson [38] and Basu [39] explained *Autonomy* as the ability to make decisions through control over information and resources, and it includes the ability to act upon those decisions, this is consistent with the above constructs of what constitutes *women empowerment* as includes resources, agency as well as realisation of achievements [33, 38, 39].

2.3 Brief Empirical Review

Although socioeconomic status continues to impact the health status of many individuals within the developed world, this brief section focuses more on the experience of low and middle-income countries – given that Zambia is a lower-middle-income country.

2.3.1 Socioeconomic status and immunisation coverage

Health outcomes have been shown to be a function of various factors in a society and one such factor is SES. This finding is not only established but also consistent as with the outcome found in a study by Evans which showed that individuals who are more financially stable tend to enjoy improved health in comparison to those who are less well-off [40]. The inverse care law where 'the availability of good medical care tends to vary inversely with the need for it in the population served' [41] reinforces the relationship between SES and health, even in Zambia [42].

This explains why health ministries of developing countries have focused on ways to make to grant subsidised basic health services in an attempt towards achieving universal health coverage and mitigating issues of acceptability due to affordability [43]. Empirical studies have shown, however, that despite interventions by health parties in some countries, widening trends in inequities, in particular, healthcare utilisation may still persist due to other structural factors [44, 45]. This empirical evidence validates findings from many OECD countries [46].

The above pattern is not only true for health outcomes in general but also to those which pertain specifically to the maternal and child health. Even with subsidised immunisation policy in many developing countries, poor immunisation coverage persists in some areas for other reasons which are SES related. In Nigeria and Kenya, communities which have lower SES have poorer immunisation levels [7, 47]. Empirical studies have shown that children residing in slums or rural parts of Kenya and other SSA countries are often underserviced with regards to immunisation coverage. Thus

preventing accessibility, resulting in low coverage and increased infant mortality [47]. Another paper further showed how in Zimbabwe regardless of the location of residence, socioeconomic disparities in maternal health care were mostly pro-rich and had widened between 1994 and 2011 [48].

In a study where 46 low-middle income countries were used to identify factors associated with socioeconomic inequalities in full immunisation coverage against the four core vaccine-preventable diseases, it was found that child vaccination was in favour of the rich with exceptions of Gambia, Namibia and Kyrgyz Republic where children who belonged to higher SES were less likely to have received all four core vaccines against preventable diseases [49]. In fact, a cross country study which included 22 countries, focusing specifically on urban slums found that the urban poor are neglected and due to lower SES tend to not access adequate vaccination coverage and as such experience higher under-five mortality rates [50]. This observed research further confirms that SES does impact immunisation coverage within developing countries.

2.3.2 Relationship between woman empowerment and immunisation coverage

Empirical studies have shown the positive relationship that exists between women empowerment and child health, in particular, immunisation [51]. In fact, the sense of empowerment can have a positive effect on decisions that women make, especially with regards to choices which directly impact their health status within their households [52].

Women are often the primary caregivers for their children and can influence their children's health directly [53]. As such the international development community through the values espoused in the MDGs have launched initiatives focused towards alleviating the constraints faced by women in developing countries [9].

Varkey, Mbbs [54], after assessing the relationship between women's empowerment and health in 75 countries using the gender empowerment measure (GEM) (a composite index measuring gender

inequality in economic participation and decision making), found that the GEM indicator was significantly associated with infant mortality, amongst other significant associations.
Singh, Bloom [55] showed that women from Nigeria who felt that wife-beating is not acceptable, which forms part of the women empowerment indicator- especially in an African context (patriarchal), are more likely to have a fully immunised child [55]. Thus one finds that where women's social status is low, this would result in poor immunisation coverage outcomes [56]. This relationship is consistent across many studies in countries such as Thailand, India, Malaysia, Malawi, Philippines and Ethiopia [9, 56-58].

3. Methods

3.1 Data sources

Data sets were derived from the Demographic and Health Surveys(DHS) for this study, which are nationally representative household surveys that provide data for a wide range of monitoring and evaluation indicators of health in developing countries [12].

Data sets were derived from the Demographic and Health Surveys (DHS), Zambia (2013-2014). This is the most recent DHS dataset available for the country. This data set is designed to incorporate information regarding children from 0 to 59 months and for men and women aged 15- 49 years old. There were 16411 women participants who formed part of the Zambian Demographic Health Survey (ZDHS).

Zambia remains one of the few SSA countries which fared well in its attempt to reach the 80% immunisation coverage goal by 2015. However, they are yet to reach the goal of universal coverage. It has a keen focus on maternal and child health and has thus prioritised immunisation in their basic health services. This paper complements existing research regarding Zambia's child mortality situation [20, 59, 60] by assessing women empowerment and intensity of immunisation. For this reason, results from the study could prove useful for policy formulation and for informing the Health Ministry towards universal immunisation coverage.

3.2 Zambia Data

The 2013-14 Zambia DHS [12] was conducted between August 2013 and April 2014 by the Central Statistical Office (CSO) of Zambia in collaboration with the University Teaching Hospital (UTH)-Virology Laboratory, the Tropical Diseases Research Centre (TDRC), and the Department of Population Studies at the University of Zambia (UNZA) [12].

The sampling frame used for the 2013-14 ZDHS is the frame of the Zambia Population and Housing Census (ZPHC), updated in Zambia in 2010, and provided by the Central Statistical Office (CSO). An Enumeration Area (EA) is a geographic area that covers an average of 130 households or 600 people. The sampling frame contains information about the EA location, type of residence (urban or rural), and the estimated number of residential households [12].

Administratively, Zambia is divided into 10 provinces. The 2013-14 ZDHS sample was stratified and selected in two stages. Each province was stratified into urban and rural areas; therefore, the 10 provinces were stratified into 20 sampling strata. Samples of EAs were selected independently in each stratum in two stages. Implicit stratification and proportional allocation were achieved at each of the lower administrative levels by sorting the sampling frame within each sampling stratum before sample selection, according to administrative units in different levels, and by using a probability proportional to size selection at the first stage of sampling [12].

Information on vaccination coverage was collected both from the child's health card and the direct report from the mother. In instances where the cards were available, the interviewer copied the immunisation details directly on the questionnaire. When there was no immunisation card or if a vaccine had not been recorded on the card as being administered, the respondent was asked to recall the specific vaccines given to her child.

When referring to full immunisation within the study, the child must have at least all the following vaccines/doses at age 12 months [12].

One dose of BCG Vaccine, which protects against tuberculosis

Three doses of DPT, which protects against diphtheria, pertussis (whooping cough) and tetanus

Three doses of polio vaccine

One dose of measles vaccine

3.3 Analysis plan

The Stata 14.2 (StataCorp, Texas) software was used to carry out data cleaning, data exploration and analysis.

3.4 Study variables

The two main study variables are women empowerment and immunisation. The way that they are to be assessed is discussed below.

3.4.1 Women empowerment

Empowerment was assessed among women aged between 15 and 49 years old. Theoretically, in attempting to explain women empowerment two sets of indicators have been proposed for use from the survey- namely women's participation in household decision making as well as women's attitude towards beating [12]. These indicators are summarised into two respective indices.

The first index shows the number of decisions a woman participates within her household either jointly with her husband (or partner) or alone. This index reflects the degree of decision-making/control that a woman can exercise in issues which pertain to her life or her empowerment within society.

There are four factors which are linked to decision making according to the survey which are listed before.

Decision making regarding:

a) Making large household purchases

b) Making day-to-day household purchases

c) Health care for herself

d) Visits to family and friend

The second index indicates the number of reasons for which a woman deems it justified for her husband or partner to beat his wife. If we were to assign a 1 for each time a woman responds in the affirmative (agreeing that a beating is acceptable) and 0 for no, then in general, a lower score for this index shows a higher status of women in the society or the household as per how the DHS scores the response for this question. The survey does not only pose the question regarding attitudes towards wife-beating to married women but all participants of the survey so there is not an exclusion of some respondents due to marital status.

There are five reasons listed which allow for wife-beating to be acceptable according to the survey. These are listed below:

a) If she goes out without telling him?

b) If she neglects the children?

c) If she argues with him?

d) If she refuses to have sex with him?

e) If she burns the food?

In the study to address this question, we assigned scores as per the table below.

The women empowerment variable in the study is generated from the components from the above 2 indices as follows:

Table A 1 Composition of Women Empowerment Variable

Beating	**Decision Making**
1 if beating is unacceptable at all 0 if beating is acceptable (even for 1 reason)	**Making large household purchases** 1 if the woman makes the decision jointly or alone. 0 if otherwise **Making day-to-day household purchases** 1 if the woman makes the decision jointly or alone. 0 if otherwise **Health care for herself** 1 if the woman makes the decision jointly or alone. 0 if otherwise **Visits to family and friend, if the woman has** 1 if the woman makes the decision jointly or alone. 0 if otherwise

The study will enter the women empowerment variables individually in the regressions as each indicator is assumed to measure of empowerment/disempowerment. Other approaches such as counting the

number of empowerment/disempowerments per mother was considered. The proposed approach, including the counting, is important as it does not predetermine which of the above factors prove to be the most significant determinant. Further, it allows for isolating the effects of these respective factors in trying to understand which of them most influence women empowerment for women included in this study within the Zambian context.

3.4.2 Assessing the relationship between woman empowerment and immunisation

The study used multiple logistic regression models with immunisation coverage as the outcome variable and the explanatory variables included women empowerment variables, among other explanatory variables such as mother's age, mother's education, land ownership, employment status, place of residence, age and sex of the child, rural or urban location and quintiles of SES.

3.4.3 Immunisation

Immunisation was divided into four categories with 3 of these being mutually exclusive.

Fully immunised denoting children (12 to 59 months) who have received all 8 immunisations as per WHO guideline regarding basic immunisation doses.

Partially immunised refers to all children (12 to 59 months) who have received at least 1 but less than 8 vaccines.

Never immunised refers to children (12 to 59 months) who received no vaccines.

Immunisation intensity measures the proportion of the total doses of vaccines that children (12 to 59 months) have received. Children that received no dose were scored zero (0) while children that received all doses were scored one (1).

The last category is of interest, as it shows how many children, although not fully immunised, have been reached in progress towards that aim.

3.4.4 Socio-economic status

When using the DHS, some researchers have created a wealth index as a proxy for SES. It is based on household data where factors regarding household assets and amenities [61]. Since the DHS does not include data on income and consumption, index of socio-economic status already generated as part of the ZDHS was a proxy for wealth. Some of the variables included in the wealth index include the source of drinking water, type of toilet, sharing of toilet facilities, cooking fuel, household services and possessions, such as electricity, TV, radio, types of vehicles, agricultural land size owned, bank account, mobile phone [61].

3.4.5 Assessing socio-economic inequality in full, partial and intensity of immunisation

Concentration curves (CC) are used as a means to assess whether socioeconomic inequality exists in particular health variables. However, they are limited in that they do not provide a measure of the magnitude of inequality that can be used for comparison over a range of factors. The concentration index (CI) is defined in reference to the concentration curve as twice the area between the concentration curve and the line of equality (the 45-degree line) [62]. For this reason, concentration indices were obtained, to show the extent of socio-economic related inequalities in immunisation coverage in Zambia. The concentration index is defined in reference to the concentration curve as twice the area between the concentration curve and the line of equality (the 45-degree line) [62]. The index is bounded between -1 and 1. When the index is -1, this means that only the neediest child within the population has received all the immunisations. At a value of +1, the most well-off child within the population has received all the immunisations.

van Doorslaer, Wagstaff [63] deemed concentration indices as a consistent measure of inequality, as they fulfil three important requirements, namely; i) The ability to reflect the socioeconomic dimension to inequalities in health, ii) They reflect the experiences of the entire population, and iii) They are sensitive to changes in the distribution of the population across socioeconomic groups [63].

Since the focus is inequality within the health context, it is important to note that factors such as age and gender can often have an impact by way of association - on health and SES. Failing to account for them, could lead to overestimation of the extent of the socioeconomic inequalities in health- thus standardisation is a method used to control for this effect [63].

To account for age-sex variations, an indirectly standardised concentration index is obtained by running a simple ordinary least squares (OLS) regression and obtaining an estimate β from

$$2\sigma_r^2 \left(\frac{h_i}{\mu}\right) = \alpha_2 + \beta_2 r_i + \sum_j \delta_j \chi_{ji} + \varepsilon_i,$$

The estimate which this equation produces is interpreted as the indirectly standardised concentration index, where χ_{ji} are the confounding variables - age and sex, σ_r^2 is the variance of the rank (r) and ε is the stochastic error term [64, 65]. The concentration index, therefore, measures the extent of inequalities in health (ill-health) that are systematically associated with socioeconomic status [62].

In applying the above to this study, the concertation index will assist when assessing inequality in full, partial and no immunisation coverage as well as in the intensity of immunisation coverage.

4. Ethics

The study uses data which are freely available within the public domain. Permission for the use of the datasets has been formally obtained from the Demographic Health Survey. Thus, there should not be ethics related issues from the use of the data. However, ethics approval was attained from the University of Cape Town's Human Research Ethics Committee.

5. Stakeholders, reporting and implementation

The findings of this paper will be published in an appropriate journal, once reviewed following supervision. The journal article will also be shared with DHS due to the free use of their data sets.

6. Logistics

There are no additional financial costs incurred by the author in writing this paper. The use of the data collected is at no cost to the researcher, neither is the use of the software. The most intensive resource to accomplish the completion of the study is time. Below is a timeline sheet, laying out the anticipated period it will take to complete the study from start to end- an approximation of 6 months in total, excluding agreed vacation time.

7. Timeline sheet

Table A 2

Task	Duration
Concept Note	2 weeks
Plan for objectives	1 weeks
Data Cleaning for DHS	2 weeks
Protocol	4 weeks
First draft of literature Review	6 weeks
Revision of Protocol	1 week
Analysis	3 weeks
Journal Manuscript	2 weeks
Policy Brief	1 week
Final Draft Revisions	2 weeks

References

Afnan-Holmes, H., Magoma, M., John, T., Levira, F., Msemo, G., Armstrong, C. E., . . . Lawn, J. E. (2015). Tanzania's Countdown to 2015: an analysis of two decades of progress and gaps for reproductive, maternal, newborn, and child health, to inform priorities for post-2015. *The Lancet Global Health, 3*(7), e396-e409. doi:10.1016/S2214-109X(15)00059-5

Alsop, R., & Heinsohn, N. (2005). *Measuring Empowerment in Practice: Structuring Analysis and Framing Indicators*.

Arcaya, M. C., Arcaya, A. L., & Subramanian, S. V. (2015). Inequalities in health: definitions, concepts, and theories. *Global Health Action, 8*, 10.3402/gha.v3408.27106. doi:10.3402/gha.v8.27106

Arevshatian, L., Clements, C., Lwanga, S., Misore, A., Ndumbe, P., Seward, J., & Taylor, P. (2007). An evaluation of infant immunization in Africa: is a transformation in progress? *Bull World Health Organ, 85*(6), 449-457.

Ataguba, J. E., Ojo, K. O., & Ichoku, H. E. (2016). Explaining socio-economic inequalities in immunization coverage in Nigeria. *Health Policy Plan, 31*(9), 1212-1224. doi:10.1093/heapol/czw053

Basu, B. K. (1991). Book Reviews. *International Studies, 28*(1), 96-99. doi:10.1177/0020881791028001015

Bates, M., Shibemba, A., Mudenda, V., Chimoga, C., Tembo, J., Kabwe, M., . . . Zumla, A. (2016). Burden of respiratory tract infections at post mortem in Zambian children. *BMC Medicine, 14*(1), 99. doi:10.1186/s12916-016-0645-z

Black, R. E., Morris, S. S., & Bryce, J. (2003). Where and why are 10 million children dying every year? *Lancet, 361*(9376), 2226-2234. doi:10.1016/s0140-6736(03)13779-8

Bloom, S. S., Wypij, D., & Das Gupta, M. (2001). Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. *Demography, 38*(1), 67-78.

Braveman, P. (2010). Social conditions, health equity, and human rights. *Health Hum Rights, 12*(2), 31-48.

C. Caldwell, J. (1979). *Education as a Factor in Mortality Decline An Examination of Nigerian Data* (Vol. 33).

Colson, K. E., Dwyer-Lindgren, L., Achoki, T., Fullman, N., Schneider, M., Mulenga, P., . . . Gakidou, E. (2015). Benchmarking health system performance across districts in Zambia: a systematic analysis of levels and trends in key maternal and child health interventions from 1990 to 2010. *BMC Med, 13*, 69. doi:10.1186/s12916-015-0308-5

CSO. (2015). *Zambia Demographic and Health Survey*. Retrieved from

Deaton, A. Z., Salman (2002.). Guidelines for Constructing Consumption Aggregates for Welfare Analysis. *LSMS Working Paper*(World Bank), No. 135.

Dyson, T. M., M ,. (1983). On kinship structure, female autonomy, and demographic behavior in India. *Population and development review*.

Ebot, J. O. (2015). "Girl Power!": The Relationship between Women's Autonomy and Children's Immunization Coverage in Ethiopia. *Journal of Health, Population and Nutrition, 33*(1), 18. doi:10.1186/s41043-015-0028-7

Evans, W., Wolfe, B., & Adler, N. (2012). *The SES and health gradient: A brief review of the literature*.

Fotso, J.-C., Ezeh, A. C., Madise, N. J., & Ciera, J. (2007). Progress towards the child mortality millennium development goal in urban sub-Saharan Africa: the dynamics of population growth, immunization, and access to clean water. *BMC Public Health, 7*(1), 218. doi:10.1186/1471-2458-7-218

Fotso, J. C., Ezeh, A., Madise, N., & Ciera, J. (2007). *Progress towards the child mortality millennium development goal in urban sub-Saharan Africa: The dynamics of population growth, immunization, and access to clean water* (Vol. 7).

Gakidou, E. E., Murray, C. J., & Frenk, J. (2000). Defining and measuring health inequality: an approach based on the distribution of health expectancy. *Bull World Health Organ, 78*(1), 78.

Greenwood, B. (2014). The contribution of vaccination to global health: past, present and future. *Philos Trans R Soc Lond B Biol Sci, 369*(1645), 20130433. doi:10.1098/rstb.2013.0433

Hajizadeh, M. (2018). Socioeconomic inequalities in child vaccination in low/middle-income countries: what accounts for the differences? *Journal of Epidemiology and Community Health*. doi:10.1136/jech-2017-210296

Hart, J. T. (1971). The inverse care law. *Lancet, 1*(7696), 405-412.

Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change, 30*(3), 435-464. doi:doi:10.1111/1467-7660.00125

Kakwani, N., Wagstaff, A., & van Doorslaer, E. (1997). Socioeconomic inequalities in health: Measurement, computation, and statistical inference. *Journal of Econometrics, 77*(1), 87-103. doi:https://doi.org/10.1016/S0304-4076(96)01807-6

Kamadjeu, R. (2017). The future of routine immunization in Africa. *The Pan African Medical Journal, 27*(Suppl 3), 1. doi:10.11604/pamj.supp.2017.27.3.13054

Kanyuka, M., Ndawala, J., Mleme, T., Chisesa, L., Makwemba, M., Amouzou, A., . . . Colbourn, T. (2016). Malawi and Millennium Development Goal 4: a Countdown to 2015 country case study. *The Lancet Global Health, 4*(3), e201-e214. doi:10.1016/S2214-109X(15)00294-6

Legovini, A. (2005). Measuring Women's Empowerment and the Impact of Ethiopia's Women's Development Initiatives Project. *World Bank, Washington, DC.* .

Lieu, T. A., Black, S. B., Ray, P., Chellino, M., Shinefield, H. R., & Adler, N. E. (1994). Risk factors for delayed immunization among children in an HMO. *American Journal of Public Health, 84*(10), 1621-1625.

Liu, L., Oza, S., Hogan, D., Chu, Y., Perin, J., Zhu, J., . . . Black, R. E. (2016). Global, regional, and national causes of under-5 mortality in 2000–15: an updated systematic analysis with implications for the Sustainable Development Goals. *Lancet, 388*(10063), 3027-3035. doi:10.1016/S0140-6736(16)31593-8

Liu, L., Oza, S., Hogan, D., Perin, J., Rudan, I., Lawn, J. E., . . . Black, R. E. (2015). Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet, 385*(9966), 430-440. doi:10.1016/s0140-6736(14)61698-6

Makate, M., & Makate, C. (2017). The evolution of socioeconomic status-related inequalities in maternal health care utilization: evidence from Zimbabwe, 1994-2011. *Glob Health Res Policy, 2*, 1. doi:10.1186/s41256-016-0021-8

Malhotra, A., & Ruth Schuler, S. (2005). *Measuring Women's Empowerment as a Variable in International Development*.

Marmot, M. (2007). Achieving health equity: from root causes to fair outcomes. *Lancet, 370*(9593), 1153-1163. doi:10.1016/s0140-6736(07)61385-3

Masiye, F., Chitah, B. M., & McIntyre, D. (2010). From targeted exemptions to user fee abolition in health care: Experience from rural Zambia. *Social Science & Medicine, 71*(4), 743-750. doi:https://doi.org/10.1016/j.socscimed.2010.04.029

Mason, K. O., & Smith, H. L. (2000). Husbands' versus wives' fertility goals and use of contraception: the influence of gender context in five Asian countries. *Demography, 37*(3), 299-311.

Merten, S., Martin Hilber, A., Biaggi, C., Secula, F., Bosch-Capblanch, X., Namgyal, P., & Hombach, J. (2015). Gender Determinants of Vaccination Status in Children: Evidence from a Meta-Ethnographic Systematic Review. *PLOS ONE, 10*(8), e0135222. doi:10.1371/journal.pone.0135222

Mutua, M. K., Kimani-Murage, E., & Ettarh, R. R. (2011). Childhood vaccination in informal urban settlements in Nairobi, Kenya: Who gets vaccinated? *BMC Public Health, 11*(1), 6. doi:10.1186/1471-2458-11-6

Narayan, D. (2002). *Measuring empowerment: Cross-disciplinary perspectives* Washington: World Bank.

O'Donnell, O., Doorslaer, E., Wagstaff, A., & Lindelow, M. (2008). *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation*.

Phiri, J., & Ataguba, J. E. (2014). Inequalities in public health care delivery in Zambia. *Int J Equity Health, 13*, 24. doi:10.1186/1475-9276-13-24

Pillai, V. K., & Conaway, M. (1992). Immunisation coverage in Lusaka, Zambia; implications of the social setting. *Journal of Biosocial Science, 24*(2), 201-210. doi:10.1017/S0021932000019738

Richardson, R. A. (2018). Measuring women's empowerment: a need for context and caution. *The Lancet Global Health, 6*(1), e30. doi:10.1016/S2214-109X(17)30460-6

S Rutstein , S. S. (2008). Making the Demographic and Health Surveys Wealth Index.

Sasaki, S., Igarashi, K., Fujino, Y., Comber, A. J., Brunsdon, C., Muleya, C. M., & Suzuki, H. (2011). The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia. *J Epidemiol Community Health, 65*(12), 1171-1178. doi:10.1136/jech.2009.104190

Sasaki, S., Igarashi, K., Fujino, Y., Comber, A. J., Brunsdon, C., Muleya, C. M., & Suzuki, H. (2011). The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia. *Journal of Epidemiology and Community Health, 65*(12), 1171.

Scheffler, E., Visagie, S., & Schneider, M. (2015). The impact of health service variables on healthcare access in a low resourced urban setting in the Western Cape, South Africa. *2015, 7*(1). doi:10.4102/phcfm.v7i1.820

Singh, K., Bloom, S., & Brodish, P. (2015). Gender Equality as a Means to Improve Maternal and Child Health in Africa. *Health Care for Women International, 36*(1), 57-69. doi:10.1080/07399332.2013.824971

Smith, L. C., U. Ramakrishnan, A. Ndiaye, L. Haddad, & R. Martorell. (2003). The importance of women's status for child nutrition in developing countries. *Research Report 131*(International Food Policy Research Institute, Washington, DC).

UN. (2012). Goal 4: Reduce Child Mortality ,Target 4.A:

Reduce by two thirds, between 1990 and 2015, the under-five mortality rate. *We can end Poverty-Millennium Development Goals and beyond 2015.* Retrieved from http://www.un.org/millenniumgoals/childhealth.shtml

van Boven, M., & van Lier, A. (2016). Global trends in vaccination coverage. *The Lancet Global Health, 4*(10), e670-e671. doi:10.1016/S2214-109X(16)30185-1

van Doorslaer, E., & Koolman, X. (2004). Explaining the differences in income-related health inequalities across European countries. *Health Econ, 13*(7), 609-628. doi:10.1002/hec.918

van Doorslaer, E., Wagstaff, A., Bleichrodt, H., Calonge, S., Gerdtham, U.-G., Gerfin, M., . . . Winkelhake, O. (1997). Income-related inequalities in health: some international comparisons. *Journal of Health Economics, 16*(1), 93-112. doi:https://doi.org/10.1016/S0167-6296(96)00532-2

Varkey, P., Mbbs, Kureshi, S., & Lesnick, T. (2010). *Empowerment of Women and Its Association with the Health of the Community* (Vol. 19).

Wado, Y. D., Afework, M. F., & Hindin, M. J. (2014). Childhood vaccination in rural southwestern Ethiopia: the nexus with demographic factors and women's autonomy. *Pan Afr Med J, 17 Suppl 1*, 9. doi:10.11694/pamj.supp.2014.17.1.3135

Wagstaff, A. (2002). Poverty and health sector inequalities. *Bulletin of the World Health Organization, 80*(2), 97-105.

Wagstaff, A., Paci, P., & van Doorslaer, E. (1991). On the measurement of inequalities in health. *Social Science & Medicine, 33*(5), 545-557. doi:https://doi.org/10.1016/0277-9536(91)90212-U

Wahlbeck, K. (2015). Public mental health: the time is ripe for translation of evidence into practice. *World Psychiatry, 14*(1), 36-42. doi:10.1002/wps.20178

Whitehead, M., Burström, B., & Diderichsen, F. (2000). Social policies and the pathways to inequalities in health: a comparative analysis of lone mothers in Britain and Sweden. *Social Science & Medicine, 50*(2), 255-270. doi:https://doi.org/10.1016/S0277-9536(99)00280-4

WHO. (2008). *Immunization and vaccines development*. Retrieved from

WHO. (2017a). Under-five mortality. *Global Health Observatory (GHO) data* Retrieved from http://www.who.int/gho/child_health/mortality/mortality_under_five_text/en/

WHO. (2017b). Improving Immunization Coverage and Equity. *Ministerial Conference on Immunization in Africa*.

WHO -Department of Gender, W. a. H. (2008). Women's empowerment and gender equality: Essential goals for saving women's lives.

Wiysonge, C. S., Ngcobo, N. J., Jeena, P. M., Madhi, S. A., Schoub, B. D., Hawkridge, A., . . . Hussey, G. D. (2012). Advances in childhood immunisation in South Africa: where to now? Programme managers' views and evidence from systematic reviews. *BMC Public Health, 12*(1), 578. doi:10.1186/1471-2458-12-578

Zere, E., Moeti, M., Kirigia, J., Mwase, T., & Kataika, E. (2007). Equity in health and healthcare in Malawi: analysis of trends. *BMC Public Health, 7*(1), 78. doi:10.1186/1471-2458-7-78

PART B: Literature Review

1. Theoretical review

1.1 Theoretical explanation of health inequalities

1.1.1 Background

Health inequalities are disparities that exist between groups of individuals Deaton [66]. When the health status found within a population is unequal as a result of an individuals' position within a societal class, these differences are known as socioeconomic health inequalities and thereby confirm the existence of a social gradient [19]. An understanding of the causes of inequalities is imperative for any meaningful health reform [67]. Academics have documented the differences in the health of groups of people, occupying different positions in society since the mid-nineteenth century [68] and there have been more definitive theories, which have contributed towards the debate markedly.

The Black Report is accepted as one of the first authoritative contributions to health inequalities discussions [Black 69]. This report was initially recorded to explain the phenomenon of health inequalities within Britain. However, it has since been applied more broadly to other contexts. It suggested four possible explanations for social class differences namely: artefact, natural or social selection, materialist and cultural/behavioural differences [Black 69]. This section of the literature review focuses on the concepts which the report introduced and outlined. Also, other commonly accepted theories which stemmed from this body of work, but form part of the social, political, psychological, economic sciences were noted in respect to their contribution towards explaining health differences observed within various contexts.

1.1.2 Theories of health inequality

Artefact theory

The artefact theory is the initial justification provided by the Black Report to explain health inequality using the relationship between health and social class [Black 69]. This theory places prominence on the 'artificial' nature between health and social class as variables which are correlated [70]. It argues that since health and social class are deemed artefacts of measurement, the perceived relationship between these two factors, resulting in socioeconomic inequality may not be 'real' due to measurement error [71-75].

The Black Report found this theory to be relatively inconsequential in its ability to consistently explain the variation found in health inequality as a function of social class [Black 69]. However, in contrast, Bloor et al. concluded that the role of the artefact explanations in mortality differentials was larger, more pervasive, and more complex than Black and his colleagues supposed [71]. Macintyre found it inconsistent to dismiss the relation that respective indicators of the social class had on health outcomes (morbidity and mortality) due to inequality [76]. Various studies confirm that a social gradient exists within health universally, which is consistent with findings where a strong relationship between socioeconomic status (SES) and health is noted, irrespective of how SES is measured [77, 78].

Natural and social selection

This theory in its approach reduces the importance of social class in explaining inequality and assigns a greater degree of causal significance to health itself [76]. This interpretation suggests that there is a real relationship between class and morbidity, which is governed by health. This is contrary to the traditional direction of causality (Macintyre, 1997; Blane, 1985). It is interesting to note that the use of the word *natural* to explain this theory results in the following conclusions. Firstly, in reference to its biological meaning and subsequently in reference to morally neutrality, it appears that this theory may have an effect of 'explaining away observed inequalities in health by occupational class as being nothing

meriting social concern or collective intervention' (Macintyre, 1997, p727). There are two propositions to consider (and distinguish) within the context of this theory, namely *social selection* and *social causation.*

According to the social selection approach, an individual's health can result in their upwardly or downward social mobility [70]. This ideology has a long history, which was initially established by research undertaken in Britain and the US from the 1950s to the 1960s [79-81]. The social selection theory suggests that an individual's social class is a function of their health status [Black 69]. According to this hypothesis, sickness (especially of a long term nature) may result in downward social mobility [79]. This is because illness (possibly, excluding light illnesses) would naturally disadvantage an individual from being active in employment and as such this state of health, would impact negatively on the individual financial standing and class [70]. The inverse would be true where those who are in good health would be able to achieve favourable positions in society [82]. Health is thus delegated as a cause of social class standing [83]. Searle [84] in his attempt to relate Darwinian and Eugenists theories of natural selection to health postulated that a process of 'social sifting' based on natural endowments left the working class inferior, on average, to their social betters in respect to health [76, 84]. In more contemporary times, the converse has been deemed equally true where the healthiest member of each social group may be absorbed into higher groups [78].

The 'social causation' hypothesis claims that individuals in more socially advantageous positions can overcome the effects of poor health more readily, than their counterparts in lower socio-economic standings due to resource access and support by virtue of their social class [78, 82]. With this in mind, Kröger, Pakpahan [82] argue that the social gradient in health is therefore created by differences in resources, support, knowledge, behaviour or other factors that are socially stratified [82,p951].

These two approaches have respective proponents for varying reasons although the selection theory has enjoyed much prominence due to evidence found in its support through empirical studies [76, 82]. What

remains to be established is the extent to which social selection contributes towards the social gradient [76, 78].

Cultural-behavioural theory

The cultural-behavioural theory argues that the social distribution of ill health is linked to variations in health behaviours such as smoking, alcohol consumption and other risky behaviours, as a function of a group of individuals' attitudes towards their health [78]. These behavioural health choices are seen as a continuous consequence of low socio-economic standing and as such, are often linked with social disadvantage [85]. Although the authors of the Black Report did not accept cultural factors as a sufficient explanation for health inequalities, other academics have tried to highlight that they are a function of the *culture of poverty* practised within a group of individuals which hold a low socio-economic status, versus 'reckless or irresponsible behaviour or incautious lifestyles' as other authors would suggest [Black 69, 78, 86]. The culture of poverty as proposed by Lewis, notes that "there are certain persistent patterned associations of traits [which can be found] among families with the lowest income level and the least education" thus health choices are considered a function of 'cultural construct' rather than independent choices [75, 87]. In contrast, Raphael argues that health inequalities can be reduced by encouraging individuals to make healthier choices and adopt healthier lifestyles [88].

Materialist/structural theory

This theory emphasises the role that socio-structural and economic forces have on the distribution of health [Black 69]. Health is the dependent variable with social class and health having causal influences on health [70]. According to the authors of the Black Report, these factors ultimately influenced the working and living conditions of the population and as such, became material causes of health [78]. It was found that poor health could be explained by material deprivation as well as structural inequality where relative and absolute deprivation, had a significant impact on health outcomes [78]. Material deprivation is explained as a consequence of income distribution [76]. The theory accounts for the

relation between socioeconomic position and access to socio-economic resources and advocates that variation in the distribution of power, income and material wealth are the central causes of health inequalities [89]. The Black Report suggested that the structural theory provided the best explanation as to the fundamental causes of health inequalities [Black 69]. This finding is not only established but also consistent with the fact that individuals who are more financially stable tend to enjoy improved health in comparison to those who are less well-off [40]. Structural factors can negatively impact health and result in phenomena such as the inverse care law being realised, where 'the availability of good medical care tends to vary inversely with the need for it in the population served'- this reinforces the issue of health inequalities due to class and SES [41]. Although widely accepted, the materialist/structural theory has been challenged as it fails to account for the gap of socio-economic inequalities in health within countries where the material circumstances and standard of living have substantially improved [88].

Psychosocial theory

The psychosocial theory builds on certain elements of the structural theory with a focus on the softer issues of how socio-economic inequalities can impact an individual's health by way of emotional and biological health [75, 85]. This theory argues that there are direct health effects from the negative emotions which an individual experiences due to their perceived social standing [75, 90]. Psychosocial processes link environmental stressors to physical and mental health [91]. It is postulated that psychological stress is generated by society's inequality structures which invariably mostly impacts those of a lower class [90]. It has been shown that a relationship exists between ill-health as a result of psychological reactions. This relationship can either be direct or indirect [92]. Direct effects describe how psychological stress can affect disease development, where indirect effects refer to damaging health behaviours that stress can cause (smoking, excessive alcohol consumption, accident-prone behaviour) [90]. The emerging perspective is a striking attempt to deal with health inequalities as it seems to solve some of the difficulties that other perspectives have had in accounting for existing empirical patterns [90].

Political economy theory

The political economy theory derives some of its perspective from the materialist and psychosocial approaches, which contribute towards explaining health inequalities. This theory attempts to elucidate the effects of the interplay that exists between economic and political factors, and their impact on population morbidity and mortality [75]. This approach is concerned with how variables such as unemployment, Gross Domestic Product (GDP), labour markets and other social determinants affect health as well as how they contribute towards inequalities [Black 69, 75]. This theory acknowledges that politics can be instrumental in effecting societal imbalances within population health and that they can further exacerbate existing conditions which were created by economic structural forces [75, 93]. Ataguba and Alaba [93] use South Africa as a case study to show that health disparities can result from a political system (i.e. Apartheid), which concentrate economic power within the hands of the minority through the unction of historical public policy and as such, these policies negatively impact on the uneven distribution of the social determinants of health within the country [93]. In response to the aforementioned, it is proposed that a coherent intersectoral approach which accounts for the interrelatedness of factors should be adopted in addressing health disparities [93].

Life-course perspective

The life course perspective attempts to validate the link that exists between adult health and early life experiences. This approach is prominent in epidemiology [94]. It was introduced to counterbalance the overemphasis that epidemiology was placing on the impact of biological programming in utero and adult lifestyle approaches to chronic disease [95]. It systematically directs attention to the role of context, showing how biological factors from early childhood can extend its impact on health in the future [94,p163]. This approach also seeks to understand the beginnings of socially determined pathways of health, which can later impact adult life thus providing further insight into how health

inequalities can be generated for individuals [96]. This theory finds relevancy as it shows that health is a lifelong development for individuals [96]. The life-course approach contributes towards providing information about the differential loss of human potential across distinct population groups in respect to health, and more generally, reflect whether resources and investments are equitably distributed in societies due to the outcome of population health groups [97].

Although this theory is widely accepted, it does present limitations such as operationalisation [98]. The issue is that, although the conceptual understanding is logically consistent, it is difficult to isolate various health events as they are not necessarily mutually exclusive and thus one cannot wholly attribute them to having a causal link to later adult health in a way that this approach speculates [98]. Nevertheless, respective disciplines such as psychology, sociology, demography, anthropology and even biologists continue to keenly endorse this approach as it does have a place in explaining biological, behavioural, and psychosocial processes that operate across an individual's life course, or across generations, to influence the development of disease risk [95].

1.1.3 Conclusion

Literature explaining the theoretical approaches that frame the understanding of health inequalities have to a large extent, contributed, not only to the health domain but to other disciplines. Since the Black Report, many historical continuities regarding health inequalities have been formed and understood. In brief, this section has considered various theories in trying to account for health disparities within population groups. These include the artefact, material, behavioural, psychosocial, life-course, selection and political economy approaches.

The materialist or structural approach seems to be the most preferred explanation for health inequality although debates continue regarding the matter [69, 75, 88]. It is important to appreciate the benefits that these theories contribute towards a better understanding of health inequalities and how to best tackle them. McCartney states that ‘theories focusing primarily on behaviour and culture can provide some

insights around the mechanisms through which such inequalities are generated, but they cannot provide sufficient explanation as to their principal causes' [89]. Therefore, it is important to distinguish between underlying causes and mechanisms which impact health, as this informs actions for addressing injustices [89]. Further, social context and its importance with regards to how it can impact concrete hypotheses in inequality reduction would need to be considered [76].

This study draws from the materialist as well as the behavioural approaches. In combining these approaches, socio-economic inequalities are better explained as they touch on different areas of importance with regards to how health inequalities can be explained [85, 99].

2. Methodological review

Following the recognition of health inequalities and theories which attempted to explain their causes, a great deal of literature has been generated to precisely measure inequalities. At first, crude methods were used in measuring health disparities, but with time, more sophisticated means have been employed [62]. Within health economics, Wagstaff and van Doorslaer critically appraise measures of inequality within the early 1990s. Not only did they explain the respective rationales that accompany the differing methods used by academics, they also recommend which methods would be most appropriate in explaining and capturing the variation in health inequalities experienced within and between populations.

After Wagstaff and van Doorslaer, other scholars have recommended alternative methods to measure socioeconomic inequalities. Varying factors must be considered in relation to the objective of the study to best determine the most appropriate tool of measurement [73]. Murray, Gakidou [100] postulated that there are convincing reasons to measure health inequalities on a social group level versus the average outcome based on the population. In fact, they hypothesised that a shift towards measuring health inequalities across individuals would prove profitable in challenging the advantages and disadvantages of various summary indicators of the distribution of health [100].

In this section, the most commonly used measures of inequality were explored—from the basic approaches such as the range to the more advanced methods such as Gini coefficient, the Lorenz curve, the index of dissimilarity, the slope index of inequality and the concentration index. Their advantages, as well as their limitations, also form part of this review. The template established by Wagstaff and colleagues is employed as a standard upon which the respective approaches are discussed [62].

2.1 Overview of common measures of health inequalities

The range

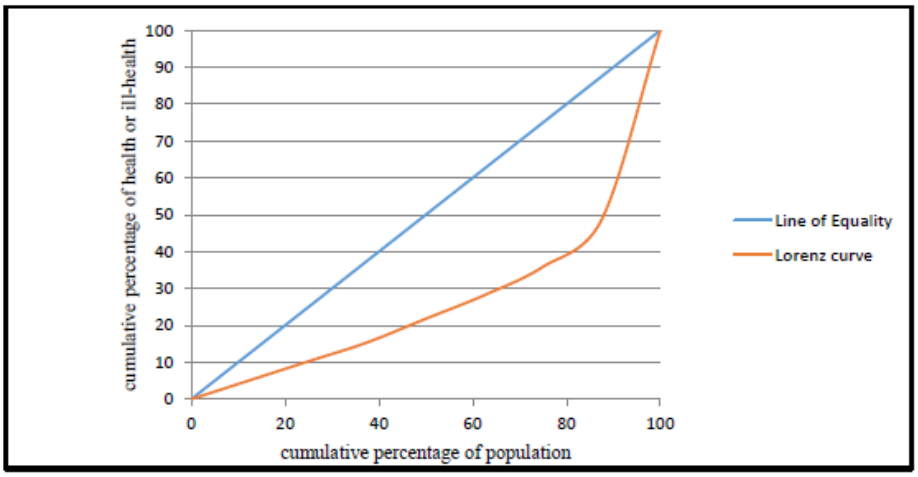
The range is one of the simplest methods used for measuring inequalities. It compares the health experiences of the top tier (e.g., socio-economic tier) of the population to the bottom tier using the extreme points on either end of the spectrum. Although it is a quick tool to gauge the overview of the disparity in inequality, it is flawed as it fails to explain the experience of the intermediate groups [62]. It does not take into account the sizes of the groups being compared or the relative difference due to context. This makes it difficult to generalise findings as outcomes could be ambiguous [101]. Further, since it is concerned with extreme values, it could miss the extent to which inequalities within the intermediate groups may diminish (or increase) [62, 102].

Lorenz curve and Gini coefficient

The Lorenz curve and Gini coefficient are inter-individual indicators of health inequality [102]. The Lorenz curve plots the cumulative proportions of the population as a function of their ranked health status. The relationship between the individual with the poorest health and that of the one who is the healthiest within a population is depicted visually by the use of cumulative health distribution. When the health of that population is equally distributed, the Lorenz curve will coincide with the diagonal line (i.e. the line of equality) otherwise, it lies beneath the diagonal [62]. The farther the Lorenz curve lies

from the diagonal line indicates a greater extent of inequality. Unlike the range, the Lorenz curve manages to incorporate the experience of all individuals within the population rather than only of those who are represented in the extreme ends of the social classes [62]. The Lorenz curve is inadequate in its ability to be sensitive to the socio-economic dimension of inequalities in health [62].

Figure B. 1 Lorenz Curves for health or ill health of the population



The Gini coefficient is a numerical expression of the Lorenz curve and is defined as twice the area between the Lorenz curve and the diagonal [62]. It is a univariate measure of inequality, which is used to express inequality within a population. In health, the Gini co-efficient explains how much more health, the healthiest individuals enjoy compared to unhealthiest individuals within the same population [103]. It ranges from 0 to 1 (i.e. from complete equality to when all the health is concentrated in the hands of one person) [102]. This measure is limited as it cannot be used to account for the sources of inequality by way of decomposition and it does not capture socio-economic variations in ill health. [101].

A pseudo-Gini coefficient and pseudo-Lorenz curve

This method builds on some of the definitive features of the Lorenz curve using grouped data instead of individual-level data [62]. It plots the cumulative proportions of the population grouped by social class and ranked by their mean health status (from the group with lowest mean health status to the group with the highest mean health status) against the cumulative proportion of health [102]. Le Grand and Rabn in 1986 originally proposed it. In the same way, the pseudo-Gini-coefficient is also twice the area between the pseudo-Lorenz curve and the diagonal. Like its original counterpart, it is also restricted in explaining to the socio-economic dimension of inequalities in health [62].

The index of dissimilarity (ID)

The index of dissimilarity is another technique that has been used in measuring inequality. It can be explained as the sum of the absolute difference of share of total population health and share of population for each group divided by two [102]. It is useful as it can account for population size when it comes to comparisons. A situation of perfect equality in this context is reached where everyone's share of health is the same as the population share [63]. The limitation of this technique is that it is unable to account for socio-economic variations in ill health.

The Slope Index of Inequality (SII) and the Relative Index of Inequality (RII)

The Slope Index of Inequality is the slope of the regression line of the "mean health status for each group against the relative rank of socioeconomic status (not health status) beginning with the most disadvantaged. It assumes a linear relationship between the two properties. Both properties are weighted by the square root of the group size. RII is SII "divided by the mean health status for the entire population" [102]. The key benefits of the SII and RII is that they satisfy all three minimum requirements of a good inequality index, which reflect the socioeconomic dimension of inequalities in health; i.e., the fact that inequalities are systematically related to socioeconomic status; (ii) reflects the

experiences of the entire population; i.e., use the information available on all population subgroups and (iii) be sensitive to the changes in the distribution and size of population across socioeconomic groups" [62,p548]. These methods also present disadvantages. The SII Approach can only be applied to socioeconomic variables which are ordered according to hierarchy. Further, the index can be biased should the regression estimate show deviations from linearity (Regidor, 2004).

Concentration curve and index

Concentration curves (CC) are used to assess whether socioeconomic inequality exists in health variables. However, they are limited in that they do not provide a measure of the magnitude of inequality that can be used for comparison over a range of factors. The concentration index (CI) is defined in reference to the concentration curve as twice the area between the concentration curve and the line of equality (the 45-degree line or the diagonal) [62]. The index is bounded between -1 and 1. When the index assumes a value of -1, the neediest individual within the population has all the populations' health. At a value of +1, the population's health is concentrated in the hands of the most well-off individual within the population.

van Doorslaer, Wagstaff [63] deem concentration indices as a consistent measure of inequality, as they also fulfil three important requirements, namely: i) The ability to reflect the socioeconomic dimension to inequalities in health, ii) they reflect the experiences of the entire population, and iii) they are sensitive to changes in the distribution of the population across socioeconomic groups.

2.2 Standardisation of the concentration Index

Since the focus is on inequality within the health context, it is important to note that factors such as age and gender can often have an impact, by way of association, on health and income. Failing to account for them could lead to mis-estimation of the extent of the socioeconomic inequalities in health. Thus standardisation is a method used to control for this effect [63].

This standardisation could be direct or indirect. Direct standardisation entails using grouped data and applying the age-sex average of health (illness rates) for those respective groups to the age-sex structure of the population of each socio-economic group [64]. This method does bare some disadvantage. Its use of grouped data has an impact on the numerical values of the concentration index (CI) (where C+ or C- refers to the positive and negative concentrations indices, respectively) due to the number of socio-economic groups applied. Thus, concentration indices that are produced by this method tend to display a greater reliance on the number of selected socioeconomic status (SES) groups [64, 104].

The indirect standardisation method offers an alternative approach whereby individual-level data are used instead to solve for confounding factors. The method proceeds to replace an individual's health (or ill-health status) by the average health that someone of that age and sex would experience as per the population in question [62-64]. This method is deemed to have more precision and as such is the more favoured approach [46].

2.3 Correction of the concentration index

Thus far, the concentration index has been argued to be one of the superior indicators of the inequality of health in relation to the socioeconomic position of individuals. However, it also does have some limitations which have been highlighted by many academics in recent years [105]. One consideration is the fact that the bounds of the concentration index may depend upon the mean of the health variable and hence make a comparison of populations with different mean health levels problematic where the outcome variable is binary or categorical [105, 106]. Other limitations according to Erreygers (2009) include the fact that 'different rankings are obtained if inequalities in ill health rather than inequalities in health are considered, and that the value of the index is to a large extent arbitrary if the health variable is of a qualitative nature' [107, p2].

In attempting to provide solutions to the above shortcomings, Wagstaff (2005) and Erreygers (2009a) suggest respective normalisation techniques. Wagstaff's method of normalisation aims to correct the

bounds issue by dividing the health concertation index ($C(h)$) by subtracting the upper bound from 1, which in theory results in a normalised health concentration index equal to $C(h) \,/\, (1 - \mu_h)$ [106][1].This method ensures that a uniform range between (-1;1) always exists by way of stretching the index [106]. The generalised health concentration index, which is derived by multiplying the health concentration index by the average health level is sensitive to the scale or unit of the health variable, which then makes it an absolute measure of inequality rather than a relative one [108, 109].

Erreygers offers his normalised technique (E) using the axiomatic approach as one that would satisfy all the properties that a corrected concentration index should encompass. These four properties are namely [110]—transfer, level independence, cardinal invariance and mirror. This is in direct reference to the Wagstaff's corrected index and the standard concertation index. Like its counterparts, the corrected concertation index forms part of the family of rank-dependent measures [110].

Despite the ongoing debate, other scholars have noted that minimal variation exists between the standard concentration index and the normalised index proposed by Wagstaff and that the ordering of inequality has been shown to remain the same for both measures [104]. Moreover, Ataguba, Akazili [104] found that Erreygers' index could be obtained by simply scaling Wagstaff's normalised index if a binary health variable is used.

[1] Here, μ denotes the mean of a binary variable *y* whose distribution by some measure of socioeconomic status (SES) is the subject of interest. $C(h)$ quantifies relative socioeconomic inequalities in a health variable, h.

3. Empirical review

3.1 The objective of the review

This section focuses on reviewing literature that covers the topics of socioeconomic inequalities in immunisation and maternal health. Since this study has a two-pronged focus, the literature on women empowerment and maternal health and immunisation was also reviewed. In investigating existing empirical studies regrading both areas of emphasis, key information regarding study design, country/countries, target population, objectives, the measure of SES, analytical methods used for inequality assessment, variable of interest used, and critical summary of the key findings were obtained. Empirical studies reflecting a variety of contexts and settings were used with a special emphasis on low and middle income (or developing) countries since this study will use Zambia as a case study. The main objective of the literature review is to establish consistencies in existing research as well as isolate areas for further research.

3.2 Socioeconomic inequalities in health

3.2.1 Search strategy, inclusion and exclusion criteria

A search for studies written regarding the topic was conducted where various key terms were included to obtain a body of potential empirical studies. The search was run on the following databases: Google Scholar, PubMed, Springer, Lancet and Web of Science. Keywords and terms for the search were "socioeconomic inequalities and maternal health", "socioeconomic inequalities and immunisation", "disparities in immunisation" and "socioeconomic health inequality". These phrases were amended to include the following suffixes "developing countries", "low-middle-income countries". Reference lists from studies provided an alternative basis for additional literature searches and inclusion. Literature from developing countries was included in the review since the study's subject, explores immunisation coverage within Zambia although this topic is not an area of material concern in developed countries.

Studies were included if they were published within the past two decades as they proved more current. It is important to note that some of these studies had integrated within the data sets that spanned from the 1990s. The primary determinant of inclusion was if a paper mainly centred on socioeconomic

inequality and immunisation or maternal health. It was difficult to find studies from the developed countries, which focused on immunisation specifically since immunisation is nearly universal and child mortality within that context is relatively less evident as is developed countries.

3.2.2 Studies from developing countries

A relatively large body of empirical studies exists for developing countries with regards to inequalities being made manifest in maternal health and immunisation since much of the child mortality burden of disease falls within this region of the world [1]. These studies are more recent with the first of the ones included in this section being published in 2004 and the others spanning until 2018. This section includes 11 studies, eight of which are from sub-Saharan Africa (one cross–country study compromising 22 countries), two from Asia and one more from South America (Brazil).

Many of these studies used the Demographic and Health Survey (DHS) to measure child health inequalities and maternal health. Five studies focused on immunisation and inequality whereas one looked at self-reported illness and inequality, and five used respective factors to serves as proxies for maternal health in light of health inequality.

Table B. 1 Empirical Studies of socioeconomic inequalities in health in developing countries

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
(Sastry, 2004)	Brazil, Sao Paulo (1970-1991) (The sample sizes were 297,729 for 1970, 527,927 for 1980, and 406,976 for 1991-a total of 1,232,632 observations.)	To examine the effects of social and economic development on socioeconomic inequalities in under-five mortality for the state of Sao Paulo, Brazil, over a 21- year period during which much of the transition in infant and child mortality	Household-wealth index (using principal component and was based on the presence of electricity in the household; ownership of a radio, refrigerator, television, and automobile; and the number of bedrooms and bathrooms in the dwelling.)	Concentration index and curves.	Index of child mortality	There was a substantial reduction in under-five mortality over the study period which was due to improved socioeconomic changes within the demographic. The study found that those who were worst impacted by child mortality were families with low SES. (1) There was a decline in inequality in under-five mortality by household wealth but a substantial increase by mother's education. (2) Improvements in infrastructure and economic development were associated with lower levels of socioeconomic

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
						inequality in under-five mortality. (3) Mother's education emerged as the key factor underlying socioeconomic inequalities in under-five mortality even as levels of education for women increased and inequality in schooling fell.
(Fotso, 2007)	22 countries (Urban slums) Ben, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Eritrea, Ghana Kenya, Malawi, Mali, Madagascar, Mozambique, Namibia, Niger, Rwanda, Senegal, Tanzania, Nigeria,	Highlighting of the implications of urban population growth and access to health and social services on progress in achieving MDG 4.	Access to clean water.	Correlation methods.	Full vaccination Access to safe drinking water. Under-five mortality rate. Urban population growth	The study suggested that rapid urban growth can cripple the rate of child mortality reduction**,** especially as safe drinking water is not readily available. Thus, the government ought to improve the living conditions of the impoverished urban in order to realise a significant decrease in child mortality.

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
	Zambia, Togo, Tanzania, Uganda Zimbabwe, Senegal Two or more DHS surveys carried out between the 1990s and the 2000s.					(1) The findings of this study recommend that there should be attention given to the poor urban population with policy ensuring that resources are allocated adequately to them too. (2) Paper establishes the inter-relationships between trends in urban under-five mortality, urban population growth, and trends in access to safe drinking water and in vaccination coverage. (3) The study found that countries which showed the least improvement in child mortality were those which had an urban population which was growing at a rapid rate. (4) Countries, where the urban population had

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
						access to improved water for drinking, had a greater chance of increased declines in under-five mortality
(Zere, 2007)	Malawi, 2007 Data from Demographic and Health Surveys of 1992, 2000 and 2004	To assess trends in inequities in selected indicators of health status and health service utilisation in Malawi.	Asset Index with the use of the Principal Components Analysis (PCA)	Concentration index and curves	Infant mortality rate Under-five mortality Under-five child malnutrition (represented by stunting – low height-for-age and underweight) Prevalence of diarrhoea and acute respiratory infections (ARI) Total fertility rate Low body mass index (BMI in women, which is an indicator of adult undernutrition) Utilisation indicators	The study found that inequities existed where those who experienced the burden of disease with regards to Health indicators tended to receive the least attention or interventions for these diseases. This was true regarding health utilisation and treatment/interventions of certain diseases. (1) It was found that inequality within Malawi in reference to healthcare and health was pervasive and pro-rich despite policy efforts from the government.

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
						(2) In some cases, the pro-rich widening trend is found in inequities, in particular, healthcare utilisation for proven cost-effective interventions
(Lauridsen, 2011)	India	To use a concentration index to quantify the socioeconomic distribution of child not fully immunised. To decompose inequalities by quantifying the contribution attributable to both household/individual covariates.	33 Household Asset Index with the use of the Principal Components Analysis (33 household assets)	Concentration index	Fully Immunised= received vaccinations for (BCG); diphtheria, whooping cough (pertussis), and tetanus (DPT); poliomyelitis (polio); and measles aged 12-23 months. Economic status (poor/non-poor) Education of mother (illiterate/literate) Caste (scheduled caste/tribe (SC/ST)/nonscheduled caste/tribe)	The study offered findings that were original in terms of child health care in India and immunisation in establishing the role of SES on these outcomes. (1) “Poor household economic status, mother's illiteracy, per capita state domestic product and proportion of illiterate at the state level is systematically related to 97% of predictable socioeconomic inequalities in full

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
					Residence (rural/urban) sex of the child (male/female), Birth order (birth order < 3, birth order 3 or more).	immunisation coverage at the national level." (2) Of these determinants, mother's illiteracy proves to have the most significant impact as a determinant of SES inequality.
Mutua 2011	Korogocho and Viwandani slums of Nairobi, Kenya 2006-2008 Longitudinal study N=1848(children between 12-23 months who were expected to have received all the WHO-recommended vaccinations)	To determine the extent of full and up to date (UTD) vaccination coverage among children aged between 12-23 months living in the slums Nairobi, and to identify risk factors associated with incomplete vaccination in these resource-deprived urban settlements of Kenya.	Household assets index (Constructed using the principal component analysis (PCA). The index was derived, which included motor vehicle, motorcycle, cooking stove, TV, refrigerator, and phone.)	Multivariate Analysis Bivariate Analysis	Fully immunised=BCG vaccination at birth; three doses of polio vaccine at 1, 2 and 3 months of age; three doses of DPT vaccine at 1, 2 and 3 months of age; and measles vaccine at 9 months of age. sex of child Maternal education	The study suggests that children rising in slums are most neglected and as such underserved with regards to vaccination and service delivery. (1) "Measles coverage was substantially lower than that for the other vaccines when determined using only vaccination cards or in addition to maternal recall. Up to date (UTD) coverage with all

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
					Maternal age at index child's birth Parity (1, 2, and 3+) Place of delivery (home or health facility/Ethnicity Antenatal care (no ANC, seen by a doctor, seen by a nurse), Birth weight (less than 2.5 kg, 2.5 kg or greater), Postnatal care (no postnatal, postnatal care)	vaccinations at 12 months was 41.3% and 51.8% with and without the birth dose of OPV, respectively. (2) Full vaccination coverage (57.5%) was higher than up-to-date coverage (51.8%) at 12 months overall, and in both slum settlements, using data from cards. Multivariate analysis showed that household assets and expenditure, ethnicity, place of delivery, mother's level of education, age and parity were all predictors of full vaccination among children living in the slums."
(Zere, 2012)	Ghana DHS,2008	To examine the equity dimension of child and maternal health outcomes and interventions in Ghana.	Household Wealth (Derived from the household ownership of assets such as television, car etc.	Slope index of inequality (SII). The relative index of inequality (RII)	Infant mortality rate. Under-five mortality rate. Perinatal mortality rate (Includes pregnancy	The study suggests that the child and maternal health outcomes, which were employed show substantial inequities as observed in the results.

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
			and dwelling characteristics such as flooring material and source of drinking water.)		losses of at least seven months gestation (stillbirths) and deaths among live births that occurred within the first seven days of life (early neonatal deaths) Stunting (Height-for-age of under-five children below minus two standard deviations of the WHO Child Growth Standards median.) Underweight (Weight-for-age of under-five children below minus two standard deviations of the WHO Child Growth Standards median) Anaemia in children 6-59 months. Acute respiratory infection	(1) "No statistically significant inequities are observed in infant and under-five mortality, perinatal mortality, wasting and acute respiratory infection in children." (2) "Stunting, underweight in under-five children, anaemia in children and women, childhood diarrhoea and underweight in women (BMI < 18.5) show inequities that are to the disadvantage of the poorest." (3) "Overweight (BMI 25-29.9) and obesity (BMI ≥ 30) among women reveals that there are inequities in favour of the poorest." (4) "Treatment of diarrhoea in children, receiving all basic

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
					Diarrhoea in children. Anaemia in women age 15-49 years. Nutritional status of women age 15-49 years (Defined using Body Mass Index (BMI). A BMI of < 18.5 was regarded as *thin*, 18.5-24.9 *normal*, 25-29.9 *overweight*, and ≥ 30 *obese*.) Intervention indicators - Immunisation Vaccination.	vaccines among children and sleeping under ITN (children and pregnant women) have no wealth-related gradient."
(Ataguba, 2016)	Nigeria 2016 Data set from 2006 N=34,859 (sub-dataset of children aged between 12 and 59 months)		20 Variable Asset Index.	Standardised Concentration indices	SES **(a**) Fully immunised children (i.e. children aged 12–59 months that received all of the following 12 vaccines2—measles, BCG, DPT1-3, OPV0-3, yellow fever, MMR and vitamin A)	(1) Factors such as mother's literacy, region and location of residence, and socioeconomic status significantly explain disparities in immunisation coverage in Nigeria. (2) Children from richer households, from the

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
					b) Partially immunised children (i.e. those that received at least one but not all of the 'vaccines') (c) Never immunised (i.e. those that have never been vaccinated since birth). Mother's literacy Location (rural or urban) Geopolitical zone	urban areas, and from richer geo-political zones in Nigeria are more likely to be fully immunised compared with their counterparts. (3) In Nigeria, inequality in full immunisation coverage is to the advantage of the rich while inequality in partial or no immunisation coverage suggests that poor children generally are either partially immunised or receive no immunisation.
(Ashish, 2017),	Nepal	To compare immunisation coverage and equity distribution of coverage between 2001 and 2014 in Nepal.	Wealth index (constructed through principal component analysis of scores based on families' ownership	Slope index of inequality (SII). Relative index of inequality (RII)	Fully Immunised =BCG vaccination at birth; three doses of polio vaccine at 1, 2 and 3 months of age; three doses of DPT vaccine at 1, 2 and 3 months of age; and measles vaccine at 9 months of age.	(1) From 2001 to 2014, the proportion of children who received all vaccines at the age of 12 months increased from 68.8%. (2) The poorest wealth quintile showed the greatest improvement in immunisation coverage,

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
			of durable assets, housing characteristics and access to services.)			from 58% to 77.9%, while the wealthiest quintile only improved from 84.8% to 86.0%. 3) The improvement in immunisation coverage between 2001 and 2014 in Nepal can mainly be attributed to the interventions targeting the disadvantaged populations
(Makate, 2017)	Zimbabwe 1994-2011 DHS 1994, 1999, 2005/06 and 2010/11	To quantify and explain the observed differences in prenatal care use and professional delivery assistance in Zimbabwe.	Asset-based household wealth index as a measure of socioeconomic status, created using Principal Components Analysis.	Erreygers corrected concentration index. Decomposition analysis	Binary indicators used for maternal health care utilisation; (1) The receipt of four or more antenatal care visits (2) Receiving professional delivery assistance for the most recent pregnancy. Age of the woman Education level	(1) Socioeconomic disparities in maternal health care use are mostly pro-rich and have widened over time regardless of the location of residence. (2) Inequalities in wealth and education are amongst the top drivers of the observed disparities in maternal health care.

Study Authors	Type of Study & Country of study	Objective(s) of Study	Measure of SES	Methods used for inequality assessment	Variables of interest	Findings, explanations and conclusions
					Marital status Employment status Access to information Previously terminated pregnancy	
(Hajizadeh, 2018)	46 low/middle-income countries (aged 10–59 months, N=372 499) Data collection is done 2010 and 2015.	To measure and identify factors associated with socioeconomic inequalities in full immunisation coverage against the four-core vaccine-preventable diseases (i.e., Bacille Calmette-Guérin, diphtheria-tetanus-pertussis (three doses), polio (three doses) and measles vaccines)	Wealth index (using a principal component analysis (PCA) technique)	Concentration index and curves. Gini index.	Immunisation coverage	(1) Pro-rich distribution of child vaccination in most low/middle-income countries remains an important public health policy concern. (2) Gambia Namibia and the Kyrgyz Republic were the only countries where children who belong to a higher socioeconomic status group were less likely to receive all the four core vaccines than their lower socioeconomic status counterparts.

3.3 Characteristics of reviewed studies from developing countries

3.3.1 Study design: Most of the literature reviewed (eight of the eleven studies) used longitudinal data, although time frames varied between studies. Some studies used various rounds of the Demographic and Health Survey (DHS), and one used the Core Welfare Indicator Survey. Three studies observing inequality in child and maternal health in Nepal, India and Ghana were cross-sectional. Although most of the studies were representative at the national level, one study controlled for observations in three towns within Nairobi, Kenya instead of the entire country [47]. Where immunisation coverage was the outcome of interest, the sample of children ranged from those aged 12-23 months,12-59 month, to those aged 10–59 months.

Health indicators/outcomes: The review aimed to focus on immunisation coverage and the impact of income inequalities thereon. When immunisation was an outcome of interest, it was usually categorised based on either the WHO vaccination norms taking into account the particular vaccination in question. Infants were regarded as fully immunised when they had received BCG vaccination at birth; three doses of polio vaccine at 1, 2 and 3 months of age; three doses of DPT vaccine at 1, 2 and 3 months of age; and measles vaccine at 9 months of age [47, 111, 112].

In other cases, maternal health outcomes were used to indicate health status. One study used the index of child mortality (under five) [113] as a proxy for child health whereas other authors used multiple factors including child mortality such birth weight, mothers' health indicators as well as utilisation of health services to assist in investigating inequities that were rooted in SES (Makate, 2017; Zere, 2012).

Measurement diarrhoea of SES: Ten studies used wealth, household or asset indexes as a proxy for SES. The Principal Component Analysis was used to construct these respective indices. One study, Fotso, Ezeh [45], used access to clean water as a proxy for SES.

Measurement of health inequality: Seven of the eleven studies used the concentration index to measure inequality. Two studies used the concentration index, followed by a decomposition analysis [112, 114]. Another used both a Gini coefficient and a concentration index as a measure of inequality [115]. Other methods used although less popular where the slope index of inequality (SII) and Relative index of inequality (RII) in the study undertaken [111, 116] along with Multivariate Analysis via regressions and correlation methods.

3.3.2 Findings of the review

The findings of these eleven studies proved consistent with those established in the developed countries in connection with income-related inequalities and health. The difference is in the outcome variable under scrutiny. For studies assessing immunisation, SES inequalities were found to have a significant impact on immunisation coverage. In most cases, the findings showed the extent to which children resident in slums or lower SES groups were underserved with vaccinations [47]. In Nigeria, children from richer households and even richer geopolitical areas were more likely to be fully immunised [112]. In Zimbabwe, regardless of residence, socioeconomic disparities in maternal health care were mostly pro-rich and had widened from 1994 to 2011 [114]. Factors such as mother's education and SES had a bearing on inequality experienced in light of child immunisation within Nigeria and Kenya [47, 112]. Lauridsen and Pradhan [117] found by way of decomposing the concentration index that lower SES and mother's illiteracy are systematically related to 97% of predictable socioeconomic inequalities in full immunisation coverage at the national level.

In a study where 46 low/middle-income countries were used to identify factors associated with socioeconomic inequalities in full immunisation coverage against the four core vaccine-preventable diseases, it was found that child vaccination was in favour of the rich with exceptions in Gambia, Namibia and Kyrgyz Republic where children who belonged to higher SES were less likely to have received all four core vaccines against preventable diseases [115]. In fact, a cross country study which

included 22 countries, focusing specifically on urban slums found that the urban poor is neglected, and due to lower SES, tend to not access adequate vaccination and as such experience higher under-five mortality rates [45]. This study showed that in cases where there is an ever-growing urban population without improved living conditions, worsening trends with regards to child mortality can be expected, which would impact negatively on child mortality reduction [45].

Inequalities persist even in other child health indicators such as stunting, underweight in under-five children, anaemia in children and women, childhood diarrhoea and underweight in women (BMI < 18.5) where these indicators demonstrate inequities that are to the disadvantage of the poorest in Ghana [116]. However, there was no wealth-related gradient for treatment of diarrhoea in children, receiving all basic vaccines among children and sleeping under insecticide-treated bed nets (ITN) (children and pregnant women) which are all preventive method of child mortality [116]. In contrast, one study showed that through focused government interventions, immunisation coverage improved in Nepal, with the poorest wealth quintile showing the greatest improvement compared to the wealthiest quintile for immunisation coverage measured from 2001 to 2004 [111]. Further, using Brazil as a case study, it was shown that there was a decline in under-five child mortality over 21 years. This decline was caused by household wealth increases where mothers who had improved education were then able to earn more [113]. This demonstrated how improvements in infrastructure and economic development could positively impact on child mortality [113].

3.4 Woman empowerment and immunisation

3.4.1 Search strategy, inclusion and exclusion criteria – woman empowerment and immunisation

A search for literature published pertaining to women empowerment and immunisation was run where respective key terms, phrases and words were used to collect viable studies of consideration for this section of the literature review. The search was run on the following databases: Google Scholar, PubMed, Springer, Lancet and Web of Science. Keywords and terms for the search was “women empowerment and maternal health”, “women autonomy and immunisation”, “women decision

making" and "women empowerment and child vaccination". These phrases were amended to include the following suffixes "developing countries", "low-middle-income countries" and Reference lists from studies found were also used as an alternative basis for additional literature searches. Mostly studies from developing countries were included in the review, although there are some cross-country studies.

Studies were included which were published from 1979 until 2018. The primary determinant of inclusion was if they focused on women empowerment and factors that not only affect a mother's health but the health of her baby too (special emphasis on immunisation).

3.4.2 Literature review on women empowerment in child health, immunisation and self-reported health

Developing countries

In total, 16 studies from developing countries were reviewed. Empirical studies have shown the positive relationship that exists between women empowerment and child health care, in particular, immunisation [51]. In fact, this sense of empowerment can have a positive effect on decisions that women make, especially with regards to choices which will directly impact their health status within their households [52].

In this section, the relationship between women empowerment and child health (immunisation) is established with a critical emphasis on developing countries. The reason for this is two-pronged. Firstly, literature regarding women empowerment and immunisation within developed countries is scarce. Further, although women empowerment is esteemed within the developing world, it is often perceived through a different lens compared to developing countries due to cultural nuances [9, 55].

Table B. 2 Empirical studies: women empowerment in child health, immunisation and self-reported health

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
(C. Caldwell, 1979)	Nigeria	To gauge whether education has an impact on child mortality decline in Nigeria.	Women empowerment was a function of education-where higher levels of education showed more empowerment. .	Qualitative Methods-Survey	Educational Level Child mortality	(1) It was concluded that women's education in Nigeria can produce profound changes in family structure and relationships, which in turn may influence both mortality and fertility levels.
(Desai, 2000)	Benin, Malawi, Mali, Uganda, and Zimbabwe in sub-Saharan Africa; Egypt, India, and Nepal in Asia; and Haiti, Colombia, Nicaragua, and Peru in the Latin America/Caribbean region.	To examine the impact of women's ability to make independent decisions on children's health outcomes—particularly vaccination status, nutritional status, and child mortality in 12 developing countries	Women empowerment was a function of responses regarding decision making on making large household purchases, making day-to-day household purchases, health care for herself, and	Hierarchical linear models	Mothers decision making power. The proportion of empowered women. Number of vaccinations children age 13-60 months have received (includes three doses of polio three rounds of DPT, and BCG	(1) The impact of women's empowerment on health outcomes differs by the type of outcome, and the effect is greater for height-for-age than for either child mortality or vaccination status. (2) In Nepal and India, women's decision-making authority improves height-for-age and reduces child mortality, even after controlling for education and wealth.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
			visits to family and friend		and measles vaccines. Children's height-for-age standardised score (multiplied by 100) for children age 13-36 months. Likelihood of dying between 13 and 60 months of age for children born 60-120 months before the survey.	(3) More than three-fourths of the effect of women's decision-making is concentrated at the community level; the coefficients for individual effects are relatively small.
(Bloom, 2017)	Varanasi, India	To investigate dimensions of women's autonomy and their relationship to maternal health care utilisation.	Women Autonomy was a function of: (1) Control over finances, (2) Decision-making power (3) Freedom of movement	Probability sampling. Nested logistic regression models. Goodness-of-fit tests. Proportional-odds regression models	Women's autonomy. Maternal health care utilisation Fully-immunised proxied by diphtheria-pertussis-tetanus vaccines (DPT3)	(1) After controlling for age, education, household structure, and other factors, women with closer ties to natal kin were more likely to have greater autonomy in each of these three areas. (2) Women with greater freedom of movement obtained higher levels of antenatal care and were more likely to use safe delivery care.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
						(3) The influence of women's autonomy on the use of health care appears to be as important as other known determinants such as education
(Bloom, 2001)	North Indian City, 2001 Data were collected from November 1995 to April 1996		Women autonomy was assessed by: (1) control over finances, (2) decision-making Power, (3) Extent of freedom of movement. The binary measure was then constructed.	Multivariate analyses with three types of response Variables were conducted. Nested logistic regression models. Goodness-of-fit tests Odds regression models (models to investigate the likelihood of more frequent contact with natal kin and greater decision-making power.	Women Autonomy Relationship with blood vs affinal relatives, and living with mother in law Economic and educational status Age Employment Household structure factors	(1) Women's autonomy, as measured by the extent of a woman's freedom of movement was found to be a major determinant of maternal health care utilisation among poor to Middle-income

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods Linear regression models. Residual and sensitivity Analysis.	Variable of interest?	Findings and explanations (and conclusions)
(Ghuman, 2003)	India, Malaysia, the Philippines, and Thailand (Fifteen settings) in, 2003 Data collected in 1993-1994.	(1) Aim of the paper was to ascertain whether Muslim women are more oppressed than non-Muslims in various dimensions of personal autonomy. (2) To gauge whether there a consistent mortality disadvantage among the 15 Muslim communities compared to non-Muslim ones. (3) To find whether there is an association, both across and within settings, between religious differences in infant and child mortality and women's autonomy.	Autonomy was a function of women's freedom of movement, discretion over earned income, decision making related to economic matters, violence or intimidation by husbands, and decision making related to the care of sick children.	Comparative statistics: Mortality and Economic Decision-Making Index, simple Cox regressions	Child mortality Women autonomy Religion	(1) The study found limited evidence in favour of the idea that higher Muslim than non-Muslim infant and child mortality is related to lower autonomy among Muslim women. (2) Mortality among infants and children was often higher in Muslim communities, particularly in parts of Thailand, the Philippines, and Malaysia.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
(Woldemicael, 2010)	Ethiopia, Eritrea	To determine whether there is a link between women's autonomy and the utilisation of maternal and child health care in these countries, and if so, how such relationships depend on socio-economic factors including educational attainment of women and husbands/partners, women's current work status, and place of residence	Autonomy was a function of decision making regarding in respect to: Health care. Purchase of major household goods. Purchase of daily goods and visits to family/friends. Acceptability of wife beating	Logistic regression models	Women's autonomy Women's education Husbands education Employment type Rural-urban residence Antenatal care during pregnancy as measured by the frequency of visits. Delivery care Child immunisation status	(1) Both women's autonomy and socioeconomic indicators should be analysed in order to derive a complete understanding of the determinants of maternal and child health-care utilisation. (2) Socio-economic factors have a significant influence on women's autonomy, with women's current employment and the rural-urban residence being the most important predictors for each dimension of autonomy
(Babalola, 2009)	Nigeria 2004 household survey conducted in three northern	To examine the determinants of the uptake of the full dose of diphtheria-pertussis-tetanus vaccines (DPT3)	Women decision making	Multilevel models	Multilevel factors: Child's characteristics, Mother's	(1) The most significant predictors of the uptake of DPT3 include child's place of birth, presence of an immunisation card, mother's ideation, mother's

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
	Nigeria states: Borno, Kano and Yobe.				attributes, Household profiles Community factors	decision-making power and perceived social approval of immunisation.
(Varkey, 2010)	Seventy-five countries	To assess the relationship of women's empowerment with health	Gender empowerment was measured by economic participation, decision making, political participation, and power over economic resources.	The gender empowerment measure was a composite index measuring gender inequality. Simple & multiple linear regression models Descriptive statistics, scatter plots.	GEM (Gender Empowerment Measurement) Immunisation (Measles) Low birth weight. Infant mortality. Female life expectancy Male life expectancy Fertility rate. Maternal Mortality Age <=5mortality	(1) Women empowerment is associated with several key health indicators at a national level. (2) When GDP was not considered, GEM had a statistically significant association with all health indicator variables except for the proportion of 1-year-olds immunised against measles.
	Demographic and Health Surveys	To examine the relationship between	Empowerment is a function		Contraceptive use Antenatal care	(1) The odds of having a skilled attendant at delivery for women

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
(Ahmed, 2010)	conducted in 31 developing countries	women's economic, educational and empowerment status and maternal health service utilisation in developing countries.	of women's economic, educational and empowerment status	Logistic regression models. Odds ratios	Skilled birth attendance Economic Education Empowerment status, Woman's age Residence.	in the poorest wealth quintile are 94% lower than that for women in the highest wealth quintile and almost 5 times higher for women with complete primary education relative to those less educated. (2) The likelihood of using modern contraception and attending four or more antenatal care visits are 2.01 and 2.89 times, respectively, higher for women with complete primary education than for those less educated. Women with the highest empowerment score are between 1.31 and 1.82 times more likely than those with a null empowerment score to use modern contraception, attend four or more antenatal care visits and have a skilled attendant at birth.
(Mahapatro, 2012)	India	To examine the simultaneous effect of women's socio-economic and demographic and decision-making status	Women's autonomy reflects decision-making capability	Bi-variate analysis logistic regression	Women Autonomy Women Autonomy Safe Delivery	(1) This study reinforces the importance of education and income as important determinants of health care utilisation.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
		on maternal and child health care utilisation and to understand the relative importance of women's autonomy versus the socioeconomic indicators on the utilisation of maternal and child health care.	assessed in 5 decisions regarding: Large Household Purchases Daily Household Purchases Mobility Overspending Own health care		Full immunisation Full antenatal Care Assistant during delivery Education of women Husband's education Current work status of women Husband's work status The economic status of household Age of the women Birth Order Place of residence	(2) Residing in an urban area enhances the likelihood of using maternity services. (3) Birth order has a significant and consistently negative relationship with women's health-seeking behaviour. (4) However, the husband's occupational status does not have a relation with health care utilisation. (5) Women's autonomy indicators in some cases, influence the utilisation of maternal and child health care, but healthcare seeking behaviours are more strongly affected by socio-economic factors.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
					Safe Delivery Full immunisation Full antenatal care Assistant during delivery Education of women Husband's education Current work status of women Husband's work status The economic status of household Age of the women Birth Order	

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest? Place of residence	Findings and explanations (and conclusions)
(Hou, 2012)	Pakistan	To examine the influence of household decision making on women's uptake of maternal health services	Women's decision-making power is a function of decisions made in: Expenditures on food Clothing Medical treatment Recreation	Ordinary least squares (OLS) model	Women decision making proxy Prenatal care Institutional birth, Skilled birth attendance Postnatal care Woman's age Woman's age during her most recent pregnancy Education Employment	(1) It was found that women's decision-making power has a significant positive correlation with maternal health services uptake and that influential males' decision-making power has the opposite effect, after controlling for socioeconomic indicators and supply-side conditions.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
(Singh, 2013)	Nigeria DHS 2008	To gauge whether measures of gender equality, autonomy and individual attitudes towards gender norms, are associated with a child being fully immunised in Nigeria.	Autonomy was a function of decision making with respect to: health care, purchase of major household goods, purchase of daily goods and visits to family/friends. Acceptability of wife-beating.	Multivariate logistic regression.	The outcome variable is binary – either a child was fully immunised or not. Household and financial decision-making.	(1) Household decision-making and attitudes towards wife-beating were significantly associated with a child being fully immunised after controlling for socioeconomic variables. (2) Ethnicity, wealth and education were also significant factors.
(Wado, 2014)	Ethiopia, cross-sectional community-based study	To examine the influences of demographic factors and women's autonomy on the completion of childhood vaccination.	Women empowerment was a function of responses regarding decision making on making large household purchases, making day-to-day	Chi-square analysis. Two logistic regression models	Full vaccination coverage of children age 12-24 months (BCG), three doses each of DPT-HepB-Hib vaccine, polio vaccines, and a measles vaccination)	(1) Completion of basic vaccination series is very low in the study area. (2) Association between women's decision-making autonomy and vaccination was found.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
			household purchases, health care for herself, and visits to family and friend		The number of children. Pregnancy intention Women's decision making. Education/Wealth index parity. Distance from the health facility.	
(Singh, 2015)	Democratic Republic of the Congo (2008), Egypt (2008), Ghana (2008), Liberia (2007), Mali (2006), Nigeria (2009), Uganda (2006) and Zambia (2007)	To examine whether measures of gender equality are associated with maternal and child health outcomes in Africa.	Gender Equality was a function of: (1) Household decision-making (2) Attitudes toward gender-based violence	Used pooled DHS data from 8 countries. Multilevel logistic regression.	Maternal health outcomes: Low body mass index Facility delivery Child health outcomes: Immunisation status Treatment for an acute respiratory infection	(1) Found protective associations between gender equality measures and the outcomes studied. (2) Found that gender equality is a potential strategy to improve maternal and child health in Africa

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
(Merten, 2015)	A qualitative systematic review. 25 Qualitative studies conducted between 1982 and 2012 were used. 18 were published after 2000.	This paper aims to offer a contextualised understanding and explanation of how gender affects access to vaccination in childhood in low- and middle-income countries.	The paper refers to gender as a social construct. Autonomy defined loosely as a function of decision-making about time and resource allocation.	The meta-ethnographic method was used. A systematic search of Medline, Embase, CINAHL, Cochrane Library, ERIC, Anthropological Lit, CSA databases, IBSS, ISI Web of Knowledge, JSTOR, Soc Index and Sociological Abstracts was conducted. Key words were built around the themes of immunisation, vaccines, health services, health behaviour, and	Keywords were built around the following themes: Immunisation Vaccines health services health behaviour, developing countries	(1) The study found that women's low social status manifests on every level, as a barrier to accessing vaccinations. (2) Indirectly, women's lower status made them vulnerable to blame and shame in case of childhood illness, partly reinforcing access problems, but partly increasing women's motivation to use every means to keep their children healthy. (3) In settings where gender discrimination exists most strongly, increasing availability and information may not be enough to reach the under immunised.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment	Methods	Variable of interest?	Findings and explanations (and conclusions)
				developing countries. Only papers, which reported on in-depth qualitative data, were retained.		
(Ebot, 2015)	Ethiopia	To find if a relationship exists between women autonomy and immunisation	Autonomy, was gauged through EDHS questions asking Women about their household decision-making abilities. Responses to each of these questions were coded. It ranged from 0 to 4: a low score on the household autonomy index	Ordinal logistic regressions for the multivariate analyses. "Partially immunised" and "fully immunised" statuses were contrasted against the reference category of "not vaccinated" children. Sample weights were used to make the results nationally representative	Dependent Var-children's immunisation status. Independent Var-primary independent variable, women's household Autonomy, Education attainment, women's occupation. Other control variables included women's religion,	(1) Women's socioeconomic status and household autonomy were found to be significantly associated with children's immunisation status. (2) Overall, the implications of this study align with those of the Millennium Development Goal #3: (3) Study provides important insight into one of the many ways that empowering women shapes the lives of those around them.

Study	Type of Study & Countries/Year	Objective(s) of the study	Measure of empowerment indicates a lower level of household autonomy vice versa.	Methods	Variable of interest? age in years, polygamous marriage, age at first marriage, child's age, child sex, number of children under 5 years of age in the household, region, and urban/rural residential location	Findings and explanations (and conclusions)

3.4.3 Characteristics of reviewed studies from developed countries

Study design

Most studies included, in this section of the review had a representative sample as they often focused on national statistics provided by the DHS and in some cases, they focused on more than one country. Two studies especially focused on regions within countries [58, 118]. All studies were cross-sectional although in some cases, data were collected over a period of five to twelve months [119, 120]. All studies found that women empowerment had a significant positive impact on maternal and child health outcomes. The earliest qualitative study was published in 1979 by Caldwell – at that time women empowerment was understood to be a function of education. In more recent times the concept of women empowerment has evolved to include aspects of autonomy and decision making. In that study, Caldwell attempted to gauge whether a mother's education (level) had an impact on child mortality decline in Nigeria by use of a survey based on population.

Following Caldwell's observation, other authors have subsequently examined the impact that women's decision making has on their children's health outcomes especially in line with child mortality [54], health care utilisation [57] and immunisation coverage [58, 121].

A systematic review by Merten and his colleagues, covering 25 qualitative studies conducted between 1982 and 2012, with 18 of these published after 2000 explain how gender affected access to child vaccination within the context of middle- and low-income countries. A total of six cross-country studies were incorporated into the review. One included 31 developing countries [122], another was composed of 75 countries [54], while Ghuman [120] focused on four countries in his study. Desai and Johnson [121] honed into at least 15 countries for their study and lastly, Singh et al investigated 10 countries.

Health outcome

All studies were specifically concerned with reductions in child mortality, and thus the health outcomes varied as respective factors were assigned as proxies for maternal child health. Women empowerment and its impact on maternal health were most closely observed. In most cases, women empowerment was represented as a function of responses regarding decision making within the household. These decisions were of whether women formed part of decisions concerning large household purchases, day-to-day household purchases, and health care for themselves, and visits to family and friend. In other studies, additional consideration of 'acceptability of wife-beating' was incorporated to create the woman empowerment variable.

At least four studies used child vaccination/immunisation as the main health outcome. In these studies, often, the impact of women empowerment on child immunisation or vaccination was examined. In other studies, immunisation was used as an indicator of child health along with other factors. Child mortality and health care utilisation were also health outcomes of interest in some studies.

Measurement of women empowerment

Initially, education was accepted as an indicator of women empowerment in the past. It was understood that through education, women were able to make more informed decisions not only regarding their own health but also that of their children [51, 52]. In the past few decades, a more evolved understanding of what constitutes women empowerment within the developing world context (especially Africa) has been consistently applied in various studies. In many cases, the measurement of women empowerment is via an index that is constructed from responses from questions asked to women via a survey [61]. These questions touch on two main aspects. Firstly, the extent to which a woman makes decisions either jointly or with a husband/partner for her household. The second paradigm accounts for attitudes toward wife beating and its acceptability (if at all) based on respective

reasons provided within the survey for its cause. At least ten of the studies defined women empowerment as a function of responses regarding a woman's decision-making power in line with household purchases, day-to-day household purchases, her health care, and visits to family and friend [9, 56, 58]. In at least seven studies, an additional element of a woman's attitude towards violence also formed part of women empowerment [55]. Three studies also included an additional consideration of mobility when measuring women empowerment within the maternal-child health context [57].

Measurement of immunisation

Immunisation was defined in a range of varied methods for the empirical studies which were included in the review. In ten of the sixteen studies featured in this section, immunisation status was used as a proxy for maternal health or child mortality reduction. The most crucial point to establish when dealing with immunisation was the immunisation (or vaccination) status of the child in question. In most cases, the authors explicitly stated what would constitute full immunisation. Wado, Afework [58] considered a child fully vaccinated when at the age 12-24 months, the child had received (BCG), three doses each of DPT-HepB-Hib vaccine, polio vaccines, and a measles vaccination (Desai et al, 2000). Bloom (2001) used a child who had received diphtheria-pertussis-tetanus vaccines (DPT3) to serve as a proxy for a fully immunised child. Immunisation was often treated as a binary variable—a child was either fully immunised or not.

3.5 Collating findings from reviewed studies and establishing opportunities for further study

General findings tended to confirm a positive relationship between women empowerment and child health outcomes [9]. In general after assessing the relationship between women's empowerment and health in 75 countries by use of the gender empowerment measure (GEM) (a composite index measuring gender inequality in economic participation and decision making), Varkey, Mbbs [54] found that the GEM indicator was significantly associated most strongly with infant mortality, amongst other significant associations. Interestingly, after accounting for the Gross Domestic Product

(GDP) of countries, GEM had statistically significant associations with health indicators such as low birth weight, maternal mortality and infant mortality except for the proportion of 1-year-olds immunised against measles [54]. Other cross-country studies observed that the impact of women's empowerment on health outcomes differs by the type of outcome [121]. In Nepal and India, women's decision-making authority had a positive impact on child mortality reduction, after the study controlled for education and wealth [121]

In another cross-country study comprising 31 developing countries, it was learnt that income and education, which are at the core of shaping women empowerment, had a significant impact on health outcomes realised for women. This cross-country study aimed to examine the relationship between women's economic, educational and empowerment status in connection to its impact on her maternal health service utilisation within developing countries. Educated women who had completed their primary education had improved health utilisation outcomes versus their less-educated counterparts [123]. In more recent general studies, Merten, Hilber [123] found that women who had a low social status manifested as having a barrier to accessing vaccinations on every level. The study aimed to contextualise the understanding of gender effects on childhood vaccination with low- and middle-income countries using a systematic review compromising 25 countries. They observed that in settings where gender discrimination existed most strongly, providing information and simply increasing the availability of immunisation would not translate into improved immunisation coverage for those under immunised due to the impact of the lack of women empowerment [56].

Moving towards papers focusing on the Asian region, findings of included studies were consistent with those of the cross-country studies. In India, Bloom, Wypij [57] investigated the dimensions of women autonomy and its relationship with maternal health care utilisation, which is an important consideration in child mortality reduction [57]. After controlling for various factors, it was found that women with greater freedom of mobility were more likely to have a safe delivery due to increased probability of improved antenatal care and that together with education, women's autonomy is an important determinant of health care usage [57]. Further, Bloom, Wypij [57] and colleagues also

noted that freedom of mobility for women within Northern India was a key determinant of maternal health care utilisation among the poor to middle-income households. In attempting to examine the simultaneous effects of women's socio-economic, demographic and decision-making status on maternal and child health care utilisation within India, Mahapatro [124] found that the place of residence, especially urban residency impacts the likelihood of a woman using maternity services. The study further found that education accompanied by income remain significant determinants of maternity services utilisation amongst mothers. Hou and Ma [125] focusing on Pakistan instead, also noticed that women's decision-making power had a substantial positive correlation with maternal health services uptake.

Studies in sub-Saharan Africa also showed that there was a positive relationship between women empowerment and maternal health outcomes. In general, Singh, Bloom [55] examined whether measures of gender equality were associated with maternal and child health outcomes in Africa using 8 African countries. They found that there existed protective associations between gender equality measures and the outcomes studied examples of which were immunisation status, maternal health outcomes and the treatment of acute respiratory infection for infants.

In Ethiopia and Eritrea, Woldemicael and Tenkorang [126] showed that there is a need to derive an improved understanding of the factors which impact maternal and child health outcomes. These studies found that factors which most affected woman autonomy were socioeconomic determinants such as women's current employment and rural-urban residence. Further, in Ethiopia, Wado found that there is an association between women's decision-making autonomy and vaccination [58]. Most recently, Ebot [9] study to assess whether a relationship exists between women autonomy and immunisation found that women's socioeconomic status and household autonomy were significantly associated with children's immunisation status. This further reinforces the role of women's decision making on child mortality reduction [9].

In Nigeria, building on Caldwell's initial findings which showed that a positive relationship exists between maternal health and education, other studies using women empowerment were also able to find significant associations between women empowerment and a child's immunisation status [118]. For this study, the uptake of DPT3 (being fully immunised) was significantly influenced by a woman's household decision-making power [118]. Singh, Haney [127] found similar outcomes with their study when they noted that there was a substantial association between a child being fully immunised, after controlling for socioeconomic factors, and their mothers' attitude towards wife-beating and household decision making. This finding was the result of a study that aimed to gauge whether measures of gender equality, autonomy and individual attitudes towards gender norms are associated with a child being fully immunised in Nigeria [127].

In light of the findings of this review, a gap remains unexplored**.** Immunisation studies in SSA have mostly focused on Angola, Ethiopia, Nigeria and Congo but not Zambia. Although much has been done in establishing links between immunisation coverage and socioeconomic status (SES), minimal research has been compelling in addressing this explicitly. Moreover, literature focusing on immunisation coverage often does not include the additional consideration of women empowerment to the debate. Thus, an enhanced understanding of the social determinants of health along with country-specific structural considerations and women empowerment could help in improving child health outcomes in a more contextualised manner in Zambia**.** Lastly, policy interventions will stem from findings that are established from the study. This is due to the growing evidence that will further support the effects that SES can have on immunisation coverage in view of child mortality reduction.

References

Aaberge, R., & Melby, I. (1998). The sensitivity of income inequality to choice of equivalence scales. *Review of Income and Wealth, 44*(4), 565-569.

Ahmed, S., Creanga, A. A., Gillespie, D. G., & Tsui, A. O. (2010). Economic status, education and empowerment: implications for maternal health service utilization in developing countries. *PLoS One, 5*(6), e11190. doi:10.1371/journal.pone.0011190

Alonge, O., & Peters, D. H. (2015). Utility and limitations of measures of health inequities: a theoretical perspective. *Global Health Action, 8*, 10.3402/gha.v3408.27591. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4565845/. doi:10.3402/gha.v8.27591

Ashish, K., Nelin, V., Raaijmakers, H., Kim, H. J., Singh, C., & Målqvist, M. (2017). Increased immunization coverage addresses the equity gap in Nepal. *Bull World Health Organ, 95*(4), 261-269. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/28479621

https://www.ncbi.nlm.nih.gov/pmc/PMC5407251/. doi:10.2471/BLT.16.178327

Asthana , S., & Halliday , J. (2006). Developing an Evidence Base for Policies and Interventions to Address Health Inequalities: The Analysis of "Public Health Regimes". *The Milbank Quarterly, 84*(3), 577-603. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-0009.2006.00459.x. doi:doi:10.1111/j.1468-0009.2006.00459.x

Ataguba, J. E.-O., & Alaba, O. (2012). Explaining health inequalities in South Africa: A political economy perspective. *Development Southern Africa, 29*(5), 756-764. Retrieved from https://doi.org/10.1080/0376835X.2012.730962. doi:10.1080/0376835X.2012.730962

Ataguba, J. E., Akazili, J., & McIntyre, D. (2011). Socioeconomic-related health inequality in South Africa: evidence from General Household Surveys. *International Journal for Equity in Health, 10*(1), 48. Retrieved from https://doi.org/10.1186/1475-9276-10-48. doi:10.1186/1475-9276-10-48

Ataguba, J. E., Ojo, K. O., & Ichoku, H. E. (2016). Explaining socio-economic inequalities in immunization coverage in Nigeria. *Health Policy and Planning, 31*(9), 1212-1224. Retrieved from https://dx.doi.org/10.1093/heapol/czw053. doi:10.1093/heapol/czw053

Babalola, S. (2009). Determinants of the uptake of the full dose of diphtheria-pertussis-tetanus vaccines (DPT3) in Northern Nigeria: a multilevel analysis. *Matern Child Health J, 13*(4), 550-558. doi:10.1007/s10995-008-0386-5

Bambra, C. (2011). Health inequalities and welfare state regimes: theoretical insights on a public health 'puzzle'. *Journal of Epidemiology and Community Health*. Retrieved from https://jech.bmj.com/content/jech/early/2011/06/20/jech.2011.136333.full.pdf. doi:10.1136/jech.2011.136333

Blane, D. (1985). An assessment of the Black Report's explanations of health inequalities. *Sociology of Health & Illness, 7*(3), 423-445. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9566.ep10832355. doi:doi:10.1111/1467-9566.ep10832355

Bloom, S. S., Wypij, D., & Das Gupta, M. (2001). Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. *Demography, 38*(1), 67-78.

Bloom, S. S., Wypij, D., & Gupta, M. d. (2001). Dimensions of Women's Autonomy and the Influence on Maternal Health Care Utilization in a North Indian City. *Demography, 38*(1), 67-78. Retrieved from http://www.jstor.org/stable/3088289. doi:10.2307/3088289

Bloor, M., Samphier, M., & Prior, L. (1987). Artefact explanations of inequalities in health: an assessment of the evidence. *Sociology of Health & Illness, 9*(3), 231-264. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9566.ep10957568. doi:doi:10.1111/1467-9566.ep10957568

Braveman, P., & Barclay, C. (2009). Health disparities beginning in childhood: a life-course perspective. *Pediatrics, 124 Suppl 3*, S163-175. doi:10.1542/peds.2009-1100D

C. Caldwell, J. (1979). *Education as a Factor in Mortality Decline An Examination of Nigerian Data* (Vol. 33).

Chadwick, E. (1842). *Report on the Sanitary Condition of the Labouring Population Of Great Britain* (Vol. 1): H.M. Stationery Office,.

Clarke, P. M., Gerdtham, U. G., Johannesson, M., Bingefors, K., & Smith, L. (2002). On the measurement of relative and absolute income-related health inequality. *Social Science and Medicine, 55*(11), 1923-1928. Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-0036972832&doi=10.1016%2fS0277-9536%2801%2900321-5&partnerID=40&md5=d5f3414092471d0a63dfd51042b121a9. doi:10.1016/S0277-9536(01)00321-5

Deaton, A. (2003). Health, Inequality, and Economic Development. *Journal of Economic Literature, 41*(1), 113-158. Retrieved from http://www.aeaweb.org/articles?id=10.1257/002205103321544710. doi:doi: 10.1257/002205103321544710

Deaton, A. Z., Salman (2002.). Guidelines for Constructing Consumption Aggregates for Welfare Analysis. *LSMS Working Paper*(World Bank), No. 135.

Desai, S., & Johnson, K. (2000). *WOMEN'S DECISIONMAKING AND CHILD HEALTH: FAMILIAL AND SOCIAL HIERARCHIES*.

Ebot, J. O. (2015). "Girl Power!": The Relationship between Women's Autonomy and Children's Immunization Coverage in Ethiopia. *Journal of Health, Population and Nutrition, 33*(1), 18. Retrieved from https://doi.org/10.1186/s41043-015-0028-7. doi:10.1186/s41043-015-0028-7

Elstad, J. I. (1998). The Psycho-social Perspective on Social Inequalities in Health. *Sociology of Health & Illness, 20*(5), 598-618. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9566.00121. doi:doi:10.1111/1467-9566.00121

Erreygers, G. (2009). Correcting the Concentration Index. *Journal of Health Economics, 28*(2), 504-515. Retrieved from http://www.sciencedirect.com/science/article/pii/S0167629608000076. doi:https://doi.org/10.1016/j.jhealeco.2008.02.003

Erreygers, G. (2009). Correcting the concentration index: a reply to Wagstaff. *Journal of Health Economics, 28*. Retrieved from https://doi.org/10.1016/j.jhealeco.2008.12.001. doi:10.1016/j.jhealeco.2008.12.001

Erreygers, G., & Van Ourti, T. (2011). Measuring socioeconomic inequality in health, health care and health financing by means of rank-dependent indices: a recipe for good practice. *Journal of Health Economics, 30*(4), 685-694.

Evans, G. W. (2003). The built environment and mental health. *Journal of Urban Health, 80*(4), 536-555. Retrieved from https://doi.org/10.1093/jurban/jtg063. doi:10.1093/jurban/jtg063

Evans, W., Wolfe, B., & Adler, N. (2012). *The SES and health gradient: A brief review of the literature*.

Fotso, J.-C., Ezeh, A. C., Madise, N. J., & Ciera, J. (2007). Progress towards the child mortality millennium development goal in urban sub-Saharan Africa: the dynamics of population growth, immunization, and access to clean water. *BMC Public Health, 7*(1), 218. Retrieved from https://doi.org/10.1186/1471-2458-7-218. doi:10.1186/1471-2458-7-218

Fuchs, V. (1974). *Who shall live?* . New York.

Ghuman, S. J. (2003). Women's autonomy and child survival: a comparison of Muslims and non-Muslims in four Asian countries. *Demography, 40*(3), 419-436.

Goldberg, E. M., & Morrison, S. L. (1963). Schizophrenia and Social Class. *British Journal of Psychiatry, 109*(463), 785-802. Retrieved from https://www.cambridge.org/core/article/schizophrenia-and-social-class/6AE1EA64FBCB595449D7DC007FFB8FBC. doi:10.1192/bjp.109.463.785

Goldman, N. (2001). Social Inequalities in Health. *Annals of the New York Academy of Sciences, 954*(1), 118-139. Retrieved from https://nyaspubs.onlinelibrary.wiley.com/doi/abs/10.1111/j.1749-6632.2001.tb02750.x. doi:doi:10.1111/j.1749-6632.2001.tb02750.x

Graham, H. (2004). Tackling Inequalities in Health in England: Remedying Health Disadvantages, Narrowing Health Gaps or Reducing Health Gradients? *Journal of Social Policy, 33*(1), 115-131. Retrieved from https://www.cambridge.org/core/article/tackling-inequalities-in-health-

in-england-remedying-health-disadvantages-narrowing-health-gaps-or-reducing-health-gradients/F0BBC784E638A19193963C42E6A4F950. doi:10.1017/S0047279403007220

Hajizadeh, M. (2018). Socioeconomic inequalities in child vaccination in low/middle-income countries: what accounts for the differences? *Journal of Epidemiology and Community Health, 72*(8), 719-725. Retrieved from https://jech.bmj.com/content/jech/72/8/719.full.pdf. doi:10.1136/jech-2017-210296

Halfon, N. (2012). Addressing health inequalities in the US: a life course health development approach. *Soc Sci Med, 74*(5), 671-673. doi:10.1016/j.socscimed.2011.12.016

Hart, J. T. (1971). The inverse care law. *Lancet, 1*(7696), 405-412.

Hausman, D. M. (2009). Benevolence, Justice, Well-Being and the Health Gradient. *Public Health Ethics, 2*(3), 235-243. Retrieved from http://dx.doi.org/10.1093/phe/php024. doi:10.1093/phe/php024

Hernández-Quevedo, C. a. M., C. (2013). Measuring income-related inequalities in health in multi-country analysis. *Estudios de economía aplicada 31* ((2)), pp. 455476.

Hertzman, C., & Power, C. (2004). Child development as a determinant of health across the life course. *Current Paediatrics, 14*(5), 438-443. Retrieved from http://www.sciencedirect.com/science/article/pii/S0957583904000703. doi:https://doi.org/10.1016/j.cupe.2004.05.008

Hou, X., & Ma, N. (2012). *The effect of women's decision-making power on maternal health services uptake: Evidence from Pakistan* (Vol. 28).

Illsley, R. (1955). Social Class Selection and Class Differences in Relation to Stillbirths and Infant Deaths. *British Medical Journal, 2*(4955), 1520-1524. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1981454/.

Kakwani, N., Wagstaff, A., & van Doorslaer, E. (1997). Socioeconomic inequalities in health: Measurement, computation, and statistical inference. *Journal of Econometrics, 77*(1), 87-103. Retrieved from http://www.sciencedirect.com/science/article/pii/S0304407696018076. doi:https://doi.org/10.1016/S0304-4076(96)01807-6

Kröger, H., Pakpahan, E., & Hoffmann, R. (2015). What causes health inequality? A systematic review on the relative importance of social causation and health selection. *European Journal of Public Health, 25*(6), 951-960. Retrieved from http://dx.doi.org/10.1093/eurpub/ckv111. doi:10.1093/eurpub/ckv111

Kuh, D., Ben-Shlomo, Y., Lynch, J., Hallqvist, J., & Power, C. (2003). Life course epidemiology. *Journal of Epidemiology and Community Health, 57*(10), 778-783. Retrieved from https://jech.bmj.com/content/jech/57/10/778.full.pdf. doi:10.1136/jech.57.10.778

Kunst, A. E., Bos, V., Lahelma, E., Bartley, M., Lissau, I., Regidor, E., . . . Mackenbach, J. P. (2005). Trends in socioeconomic inequalities in self-assessed health in 10 European countries. *International Journal of Epidemiology, 34*(2), 295-305. Retrieved from http://dx.doi.org/10.1093/ije/dyh342. doi:10.1093/ije/dyh342

Lauridsen, J., & Pradhan, J. (2011). Socio-economic inequality of immunization coverage in India. *Health Economics Review, 1*(1), 11. Retrieved from https://doi.org/10.1186/2191-1991-1-11. doi:10.1186/2191-1991-1-11

Lewis, O. (1966). *La vida; a Puerto Rican family in the culture of poverty--San Juan and New York*: New York : Random House, [1966].

Liu, L., Oza, S., Hogan, D., Perin, J., Rudan, I., Lawn, J. E., . . . Black, R. E. (2015). Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet, 385*(9966), 430-440. doi:10.1016/s0140-6736(14)61698-6

Macintyre, S. (1997). The black report and beyond what are the issues? *Social Science & Medicine, 44*(6), 723-745. Retrieved from http://www.sciencedirect.com/science/article/pii/S0277953696001839. doi:https://doi.org/10.1016/S0277-9536(96)00183-9

Mahapatro, S. (2012). *Utilization of Maternal and Child Health Care services in India: Does Women's Autonomy Matter?* (Vol. 58).

Makate, M., & Makate, C. (2017). The evolution of socioeconomic status-related inequalities in maternal health care utilization: evidence from Zimbabwe, 1994–2011. *Global Health*

Research and Policy, 2(1), 1. Retrieved from https://doi.org/10.1186/s41256-016-0021-8. doi:10.1186/s41256-016-0021-8

Marmot, M., & Bell, R. (2016). Social inequalities in health: a proper concern of epidemiology. *Annals of Epidemiology, 26*(4), 238-240. Retrieved from http://www.sciencedirect.com/science/article/pii/S1047279716300400. doi:https://doi.org/10.1016/j.annepidem.2016.02.003

Mason, K. O., & Smith, H. L. (2000). Husbands' versus wives' fertility goals and use of contraception: the influence of gender context in five Asian countries. *Demography, 37*(3), 299-311.

McCartney, G., Collins, C., & Mackenzie, M. (2013). What (or who) causes health inequalities: theories, evidence and implications? *Health Policy, 113*(3), 221-227. doi:10.1016/j.healthpol.2013.05.021

Meadows, S. H. (1961). Social Class Migration and Chronic Bronchitis : A Study of Male Hospital Patients in the London Area. *British Journal of Preventive & Social Medicine, 15*(4), 171-176. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1058839/.

Merten, S., Hilber, A., Biaggi, C., Secula, F., Bosch-Capblanch, X., Namgyal, P., & Hombach, J. (2015). *Gender Determinants of Vaccination Status in Children: Evidence from a Meta-Ethnographic Systematic Review* (Vol. 10).

Merten, S., Martin Hilber, A., Biaggi, C., Secula, F., Bosch-Capblanch, X., Namgyal, P., & Hombach, J. (2015). Gender Determinants of Vaccination Status in Children: Evidence from a Meta-Ethnographic Systematic Review. *PLoS One, 10*(8), e0135222. Retrieved from https://doi.org/10.1371/journal.pone.0135222. doi:10.1371/journal.pone.0135222

Murray, C. J., Gakidou, E. E., & Frenk, J. (1999). Health inequalities and social group differences: what should we measure? *Bull World Health Organ, 77*(7), 537-543.

Mutua, M. K., Kimani-Murage, E., & Ettarh, R. R. (2011). Childhood vaccination in informal urban settlements in Nairobi, Kenya: Who gets vaccinated? *BMC Public Health, 11*(1), 6. Retrieved from https://doi.org/10.1186/1471-2458-11-6. doi:10.1186/1471-2458-11-6

Naidoo, J. W., J. (2015). *Health Studies: An Introduction*.

Pearlin, L. I. (1989). The sociological study of stress. *J Health Soc Behav, 30*(3), 241-256.

Raphael, D. (2012). *Raphael, D. (2012). Tackling health inequalities: Lessons from international experiences. Toronto: Canadian Scholars' Press*.

Report, B. (1980). Black Report 6 Explanation of Health Inequalities. Retrieved from http://www.sochealth.co.uk/resources/public-health-and-wellbeing/poverty-and-inequality/the-black-report-1980/black-report-6-explanation-of-health-inequalities/

S Rutstein , S. S. (2008). Making the Demographic and Health Surveys Wealth Index.

Sastry, N. (2004). Trends in socioeconomic inequalities in mortality in developing countries: the case of child survival in Sao Paulo, Brazil. *Demography, 41*(3), 443-464.

Savelieva, K., Pulkki-Råback, L., Jokela, M., Kubzansky, L. D., Elovainio, M., Mikkilä, V., . . . Keltikangas-Järvinen, L. (2017). Intergenerational transmission of socioeconomic position and ideal cardiovascular health: 32-year follow-up study. *Health Psychology, 36*(3), 270-279. doi:10.1037/hea0000441

Searle, J. R. (1981). Analytic Philosophy and Mental Phenomena. *Midwest Studies In Philosophy, 6*(1), 405-424. Retrieved from https://doi.org/10.1111/j.1475-4975.1981.tb00448.x. doi:10.1111/j.1475-4975.1981.tb00448.x

Singh, K., Bloom, S., & Brodish, P. (2015). Gender equality as a means to improve maternal and child health in Africa. *Health care for women international, 36*(1), 57-69. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/24028632

https://www.ncbi.nlm.nih.gov/pmc/PMC4333143/. doi:10.1080/07399332.2013.824971

Singh, K., Haney, E., & Olorunsaiye, C. (2013). Maternal autonomy and attitudes towards gender norms: associations with childhood immunization in Nigeria. *Matern Child Health J, 17*(5), 837-841. doi:10.1007/s10995-012-1060-5

Skalická, V., van Lenthe, F., Bambra, C., Krokstad, S., & Mackenbach, J. (2009). Material, psychosocial, behavioural and biomedical factors in the explanation of relative socio-economic inequalities in mortality: evidence from the HUNT study. *International Journal of Epidemiology, 38*(5), 1272-1284. Retrieved from http://dx.doi.org/10.1093/ije/dyp262. doi:10.1093/ije/dyp262

Stronks, K., Mheen, H. D., Looman, C. W. N., & Mackenbach, J. P. (1996). Behavioural and structural factors in the explanation of socio-economic inequalities in health: an empirical analysis. *Sociology of Health & Illness, 18*(5), 653-674. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9566.ep10934524. doi:doi:10.1111/1467-9566.ep10934524

van Doorslaer, E., & Koolman, X. (2004). Explaining the differences in income-related health inequalities across European countries. *Health Econ, 13*(7), 609-628. doi:10.1002/hec.918

Van Doorslaer, E., Wagstaff, A., Bleichrodt, H., Calonge, S., Gerdtham, U.-G., Gerfin, M., . . . Winkelhake, O. (1997). Income-related inequalities in health: some international comparisons. *Journal of Health Economics, 16*(1), 93-112. Retrieved from http://www.sciencedirect.com/science/article/pii/S0167629696005322. doi:https://doi.org/10.1016/S0167-6296(96)00532-2

Varkey, P., Mbbs, Kureshi, S., & Lesnick, T. (2010). *Empowerment of Women and Its Association with the Health of the Community* (Vol. 19).

Wado, Y. D., Afework, M. F., & Hindin, M. J. (2014). Childhood vaccination in rural southwestern Ethiopia: the nexus with demographic factors and women's autonomy. *Pan Afr Med J, 17 Suppl 1*, 9. doi:10.11694/pamj.supp.2014.17.1.3135

Wadsworth, M. E. (1997). Health inequalities in the life course perspective. *Soc Sci Med, 44*(6), 859-869.

Wagstaff, A. (2005). The bounds of the concentration index when the variable of interest is binary, with an application to immunization inequality. *Health Econ, 14*. Retrieved from https://doi.org/10.1002/hec.953. doi:10.1002/hec.953

Wagstaff, A., Paci, P., & van Doorslaer, E. (1991). On the measurement of inequalities in health. *Social Science & Medicine, 33*(5), 545-557. Retrieved from http://www.sciencedirect.com/science/article/pii/027795369190212U. doi:https://doi.org/10.1016/0277-9536(91)90212-U

Wagstaff, A., Paci, P., & van Doorslaer, E. (1991). On the measurement of inequalities in health. *Social Science and Medicine, 33*. Retrieved from https://doi.org/10.1016/0277-9536(91)90212-U. doi:10.1016/0277-9536(91)90212-u

Woldemicael, G., & Tenkorang, E. Y. (2010). Women's autonomy and maternal health-seeking behavior in Ethiopia. *Matern Child Health J, 14*(6), 988-998. doi:10.1007/s10995-009-0535-5

Zere, E., Kirigia, J. M., Duale, S., & Akazili, J. (2012). Inequities in maternal and child health outcomes and interventions in Ghana. *BMC Public Health, 12*(1), 252. Retrieved from https://doi.org/10.1186/1471-2458-12-252. doi:10.1186/1471-2458-12-252

PART C: Journal Article

Research Article

Women empowerment and socio-economic inequality in immunisation coverage: a case study of Zambia

T Mojapelo [1]

Abstract

Background

Basic immunisation coverage for children between 12-23 months in Zambia was 68% in 2013. Nevertheless, a substantial number of child deaths persist as a result of preventable disease. This study assesses the relationship between women empowerment and immunisation coverage in Zambia. It investigates socio-economic inequality in full, partial, and immunisation intensity. To understand the role of women empowerment in immunisation coverage in the country, two sets of indicators have been proposed for use from the survey- namely women's participation in household decision making as well as women's attitude towards beating. Thus, the findings can support improved immunisation coverage, especially for those who are the poorest in Zambia.

Methods

The study uses the 2013-14 Zambia Demographic and Health Surveys (ZDHS), which are nationally representative household surveys [12]. These datasets incorporates information regarding children from 0 to 59 months and for men and women aged 15- 49 years old. The two main study variables are women empowerment and immunisation. Immunisation is divided into three categories namely, full, partial and no immunisation. Concentration indices are used to assess inequality in full, partial and no immunisation coverage as well as in the intensity of immunisation coverage. Briefly, a positive

[1]Correspondence:missmoj@gmail.com
Health Economics Unit, School of Public Health and Family Medicine, University of Cape Town, Anzio Road, Observatory 7925, South Africa.

concentration index means that immunisation coverage is pro-rich as richer children are more likely to be immunised. A negative index indicates the opposite.

Findings

The main finding of this study was that socioeconomic status has a significant impact on the immunisation coverage of a child. For children who were fully immunised, immunisation was found to be pro-rich (concentration index = 0.046). The distribution of partially immunised children (concentration index = -0.114) and not immunised children (concentration index = -0.138) is pro-poor. This confirmed that poorer women were more likely to have a partially immunised/not immunised children compared to a child whose mother is richer. Immunisation intensity had a pro-rich outcome (concentration index = 0.153). In addition, the study confirmed the importance of household decision making as a determinant of a child's likelihood of being fully immunised (p-value<0.01).

Conclusion

This study has shown that close attention to factors such as women empowerment and a mother's education can support improved immunisation coverage, especially for those who are the poorest in Zambia. This paper further highlighted the importance of socio-economic status as it impacts on immunisation coverage.

Keywords

Immunisation, women empowerment, socioeconomic status, Zambia, children under five years, sub-Saharan Africa

Introduction

Child mortality is a health concern that affects many countries, with the sub-Saharan African (SSA) and the Middle Eastern regions being most acutely impacted [1]. Studies show that there has been a marked decline in under-five mortality. However, deaths remain high at a toll of 5.6 million in 2016 [128]. The causes of under-five deaths vary from one geographic setting to another. Thus, the need for an in-depth understanding of child health epidemiology at a country level is pertinent [69].

The World Health Organization (WHO) cited preterm birth complications, pneumonia, birth asphyxia, diarrhoea and malaria as the prominent reasons for child deaths in many countries. Non–infectious diseases are the leading cause of the death of children under the age of 5 years in 2016 [128].

To mitigate the prevalence of major childhood related diseases and infant mortality, the WHO has adopted a strategy which encourages full immunisation of children by the age of 12 months. Paediatric immunisation is regarded as one of the most important modern interventions as it has in past decades contributed toward substantial reductions in child deaths globally where 2-3 million deaths were averted in recent times [9].

Immunisation studies in SSA have mostly focused on Angola, Ethiopia, Nigeria and Congo but not Zambia. The Zambian Health Ministry contributed to improved child mortality indicators by abolishing user fees for all maternal and child health services to facilitate better access and service utilisation [24]. Nevertheless, a substantial number of infant deaths persist in Zambia as a result of preventable diseases [25]. Vaccination in Zambia is based on numerous factors which impact coverage levels. Long waiting times, the distance that vaccination sites are from mothers as well as how health workers communicate with parents (and caregivers) have a bearing on acceptability of vaccination services [60, 129]. Socioeconomic status has also been reported as an additional consideration which impacts child health indicators in Zambia.

The social gradient (i.e. a situation where socioeconomic status is positively related to good child health indicators) is not only evident in Zambia but also in other parts of the globe, where disparities in health are experienced due to differing contributing factors including socioeconomic status [16]. Low-, middle- and high-income countries have demonstrated the existence of the social gradient [17]. Poverty, relative deprivation, slow economic growth and social exclusion have a major impact on health and many SSA countries with a high incidence of child mortality continue to struggle with the above factors which are not as evident in developed countries [19].

Although much has been done in establishing links between immunisation coverage and socioeconomic status (SES), minimal research has been compelling in addressing this explicitly. Moreover, literature focusing on immunisation coverage often does not include the additional consideration of women empowerment to the debate. Thus, an enhanced understanding of the social determinants of health along with country-specific structural considerations and women empowerment could help in improving child health outcomes in a more contextualised manner in Zambia.

Empirical studies have shown the positive relationship that exists between women empowerment and child health, in particular, immunisation [51]. In fact, the sense of empowerment can have a positive effect on decisions that women make, especially with regards to choices which directly impact their health status within their households [52].

Women are often the primary caregivers for their children and can influence their children's health directly [53]. As such the international development community through the values espoused in the MDGs have launched initiatives focused towards alleviating the constraints faced by women in developing countries [9].

The primary aim of this study is to empirically assess the relationship between SES and immunisation coverage in Zambia and to understand the role of women empowerment in immunisation coverage in the country. An enhanced understanding of the impact of the interaction of these factors on immunisation aids in improving immunisation coverage in Zambia.

Methods

Setting of study

The country of interest for this paper is Zambia, a country which shares borders with Malawi (which has made significant progress in achieving the MDGs). Zambia already has a seemingly decent immunisation coverage statistic compared to other parts of SSA. Basic immunisation coverage for infants aged between 12-23 months for this country was 68% in 2013 [12]. Through the Expanded Programme on Immunisation, the Ministry of Health's strategy of 'reaching every district' has shown some successes. Through these measures, Zambia has managed to maintain a polio-free status and has eliminated maternal and neonatal tetanus since 2005 [18]. It has also managed to reduce under-five mortality levels to 72.9 deaths per 1000 live births in 2013 from 186.5 deaths per 1000 live births in 1967[130].

Study design

Data sets were derived from the Demographic and Health Surveys (DHS), which are nationally representative household surveys that provide data for a wide range of monitoring and evaluation indicators of health in developing countries. Information on vaccination coverage was sourced for the study outcomes, from the most recent DHS for Zambia (2013-2014). This data set is designed to incorporate information regarding children from 0 to 59 months and for men and women aged 15- 49 years old. The Zambia Demographic Health Survey (ZDHS) contains data on 16,411 women and 13,457 children under the age of 5 years [12]. Only women with children who were aged 12 to 59 months formed part of the final sample. The sample size was 9542 respectively for both groups.

Measuring women empowerment

The two main study variables are women empowerment and immunisation. Women empowerment is a function of a woman's participation in household decision making as well as a woman's perception of beating [12]. In the study, these two components which explain women empowerment were defined separately. There was a variable which showed women who were deemed physically empowered should the respondent agree that beatings were unacceptable in all circumstances. The second variable also demonstrated the degree to which a woman is deemed empowered due to the respondent participating in all household decisions alone or with their partner.

There are four factors linked to decision making, according to the DHS. These are decisions in making large household purchases, making day-to-day household purchases, whether a woman can make decisions regarding her own health as well as decisions regarding her movement in visiting friends and family. The survey cites five reasons where respondents may consider women beating acceptable. Reasons for beating include neglect of the children, burning of food, arguing with one's partner, refusal of sex as well as if a woman goes out without telling her partner.

In the study to address this question, we assign scores as per the table below.

The women empowerment variable in the study was generated from the components from the above 2 indices as follows:

Table A 3 Composition of Women Empowerment Variable

Beating	**Decision Making**
1 if beating is unacceptable at all 0 if beating is acceptable (even for 1 reason)	**Making large household purchases** 1 if the woman makes the decision jointly or alone. 0 if otherwise **Making day-to-day household purchases**

	1 if the woman makes the decision jointly or alone. 0 if otherwise **Health care for herself** 1 if the woman makes the decision jointly or alone. 0 if otherwise **Visits to family and friend, if the woman has** 1 if the woman makes the decision jointly or alone. 0 if otherwise

Measuring immunisation coverage

Immunisation uptake is divided into four categories with three of these being mutually exclusive. The mutually exclusive variables include (1) fully immunised denoting children (aged 12 to 59 months) who have received all 8 immunisations as per the WHO guideline regarding basic immunisation doses, (2) partially immunised denoting all children (aged 12 to 59 months) who have received at least 1 but less than 8 vaccines, and (3) never immunised as children (aged 12 to 59 months) who received no vaccines. The fourth category, immunisation intensity, measures the proportion of the total doses of vaccines that children (aged 12 to 59 months) have received. When referring to full immunisation within the study, the child must have all the following vaccines/doses at age 12 months: one dose of BCG vaccine which protects against tuberculosis, three doses of DPT, which protects against diphtheria, pertussis (whooping cough) and tetanus, three doses of polio vaccine and one dose of measles vaccine [12].

Measuring socioeconomic status

The ZDHS does not include data on income and consumption. However, it does generate an index of socioeconomic status which stands as a proxy for wealth. Some of the variables included in the wealth index include the source of drinking water, type of toilet, sharing of toilet facilities, cooking fuel, household services and possessions, such as electricity, TV, radio, types of vehicles, agricultural land size owned, bank account, mobile phone [61]. This measure of SES contained directly in the DHS has been used by researchers as it adjusts for urban and rural differences in asset ownership among other things, which forms part of the reason why this study used this measure. The wealth index forms part of the basis of how the quintiles are derived. The continuous wealth index computes the concentration indices. These measures aid understanding as much of the study focuses on SES inequality.

Measuring socioeconomic related health inequality: concentration index

Concentration curves (CC) are used as a means to assess whether socioeconomic inequality exists in particular health variables. However, they are limited in that they do not provide a measure of magnitude of inequality that can be used for comparison over a range of factors. The concentration index (CI) is defined in reference to the concentration curve as twice the area between the concentration curve and the line of equality (the 45-degree line)[62].

Therefore, a concentration index was used to show the extent of socioeconomic inequality in immunisation coverage in Zambia. The concentration index shows the extent to which the poor, relative to the rich, have less realised or more realised immunisation coverage.

To account for age-sex variations, an indirectly standardised concentration index is obtained by running a simple ordinary least squares (OLS) regression and obtaining an estimate β from

$$2\sigma_r^2 \left(\frac{h_i}{\mu}\right) = \alpha_2 + \beta_2 r_i + \sum_j \delta_j X_{ji} + \varepsilon_i,$$

The estimate, β, is interpreted as the indirectly standardised concentration index, where X_{ji} are the confounding variables - age and sex, σ_r^2 is the variance of the rank (r) and ε is the stochastic error term, The variable h_i is the immunisation coverage variable (i.e. full immunisation, partial immunisation, no immunisation and immunisation intensity), μ_i is its mean, δ_j is the coefficient of the age or sex variable and α_2 is the constant [64, 65].

Should the estimate of a concertation index take a positive value, then the outcome is said to be 'pro-rich', since the concentration curve lies above the line of equality- indicating a disproportionate concentration of the immunisation variable among the poor. When the concentration index value is negative it is 'pro-poor' since the concentration curve lies below the line of equality [131, 132].

Measuring variables

Table 1- Summary description of key variables

	Variable Name	Explanation
Immunisation	Fully Immunised	Children aged at least 12 months who received all 8 immunisations (one dose of BCG vaccine, three doses of DPT, three doses of the polio vaccine and one dose of measles vaccine) as per WHO
	Partially immunised	Children aged at least 12 months who received between 1 and 8 immunisations as per WHO.
	Not immunised	Children aged at least 12 months who have not received any immunisation as per WHO

Physical Empowerment	Immunisation_intensity	The proportion of the 8 immunisations that a child aged at least 12 months had received as per WHO. A child that received all 8 immunisations scores 1 while a child that received no immunisation scores 0
	B_arguing	Dummy variable, where "no" to beating for arguing = 1 and zero otherwise Note: "no" to beating corresponds to being empowered.
	Beat_child_neglect	Dummy variable, where "no" to beating for child neglect = 1 and zero otherwise. Note: "no" to beating for child neglect corresponds to being empowered.
	Beat_movement	Dummy variable, where "no" to beating for movement without permission = 1 and zero otherwise. Note: "no" " to beating for movement without permission corresponds to being empowered.
	Beat_burnt_food	Dummy variable, where "no" to beating for burning food = 1 and zero otherwise. Note: "no" to beating for burning food corresponds to being empowered.

	Beat_sex_refusal	Dummy variable, where "no" to beating for refusing sex = 1 and zero otherwise. Note: "no" to refusing sex corresponds to being empowered.
Decision Making	D_self_health	Dummy variable, where "yes" to the woman making decision jointly or alone towards self-health = 1 and zero otherwise. Note: "yes" to the woman makes decision jointly or alone corresponds to being empowered.
	D_large_HH_purchases	Dummy variable, where "yes" to the woman making decision jointly or alone towards large household purchases = 1 and zero otherwise. Note: "yes" to the woman makes decision jointly or alone corresponds to being empowered.
	D_daily_purchase	Dummy variable, where "yes" is for the woman making decision jointly or alone with regards to daily purchases = 1 and zero otherwise. Note: "yes" to the woman makes decision jointly or alone corresponds to being empowered.
	D_family_visits	Dummy variable, where "yes" is for the woman makes decision jointly or alone regarding family visitations = 1 and zero otherwise.

	Note: “yes” to the woman makes decision jointly or alone corresponds to being empowered.
Wealth Quintiles	This is a composite measure of a household’s living standard, demarcated in 5 quintiles where through ranking one can note another quintiles standard of living relative to the others. This was obtained directly from the DHS.
HHsize	The number of members in a household.
urban_dweller	Dummy variable. Living in an urban area = 1 while living in a rural area =0
Employed	Dummy variable: employed = 1 while not employed = 0
Edu	Categorical variable where education is categorised into 4 levels. a) No formal education b) Completed primary education c) Completed secondary education d) Completed tertiary education
Agecat	Categorical variable where age is cut into 4 intervals. a) Women aged between 15 to 19 years b) Women aged between 20 to 29 years

c) Women aged between 30 to 39 years

d) Women aged between 40 to 49 years

Wom_Emp_Physical	This is a binary variable where, 1 = woman is physically empowered 0 = woman is not empowered To be classified as empowered, a respondent must have a score of 5 since they would have found beating unacceptable in all circumstances. Otherwise, she is not considered physically empowered. i.e. Wom_Emp_Physical = 0 if a woman is not empowered
Wom_Emp_Mind	This is a discrete variable where, 1 = woman is mentally empowered 0 = woman is not mentally empowered The respondent is only deemed mentally empowered if they obtain a score 4 (they make all decisions alone or with partner in all instances). Wom_Emp_Mind = 4 if a woman is mentally empowered

Results

As shown in Table 2, a significant number of children are fully immunised (72.1%), with only 2.9% reported as not immunised. The average age of the mothers who formed part of the study was 25 years, with the majority of these women only having completed primary school (56.8%). Over half of the women are employed (56.7%). It is interesting to note that a considerable portion of women do not support beating in general and a majority were generally involved in household decision making. On the surface, the outcomes for these two factors suggest that women empowerment is prominent. However, in the strictest sense, women empowerment with regards to beating and decision making (Wom_Emp_Physical and Wom_Emp_Mind) was not prominent, with reported figures at 47.0% and 42.4%, respectively.

Table 2-Descriptive statistics

Variable Name	**Mean**	**Standard Deviation**	**Min**	**Max**	**Number of Observations**
Fully immunised	0.721	0.448	0	1	9542
Partially immunised	0.250	0.433	0	1	9542
Not immunised	0.029	0.166	0	1	9542
Immunisation intensity	0.913	0.203	0	1	9542
Household size	6.626	2.653	2	23	9542
Urban dweller	0.337	0.473	0	1	9542
Employed	0.567	0.496	0	1	9514

Variable Name	Mean	Standard Deviation	Min	Max	Number of Observations
Education (for mothers; in years)	6.050	0.031	0	19	13,442
Education of mother (categories)					
0- “None”	0.113	0.696	0	1	1,509
1- " primary"	0.568	0.696	0	1	7,481
2- "secondary"	0.283	0.696	0	1	3,981
3- "tertiary"	0.035	0.696	0	1	475
Age of mothers (in years)	25.068	0.075	15	49	9542
Age of mothers (categories)					
1 -"15 to 19 years"	0.048		15	19	962
2 -"20 to 29 years"	0.491		20	29	6,712
3 - "30 to 39 years"	0.367		30	39	4.660
4 -"40 to 49 years"	0.094		40	49	1123
Wom_Emp_Physical	0.470	0.499	0	1	9542
Wom_Emp_Mind	0.424	0.494	0	1	9542

Variable Name	Mean	Standard Deviation	Min	Max	Number of Observations
Wealth index (categories)					13,457
Poorest	0.197				
Poorer	0.203				
Middle	0.222				
Richer	0.206				
Richest	0.172				

Assessing socioeconomic inequality in immunisation coverage in Zambia

Table 3 shows the concentration indices for the four categories describing immunisation coverage. The concentration indices for all four categories were statistically significant at the 5% level. For children who were fully immunised, we see that immunisation is pro-rich (concentration index = 0.046) as a mother from a wealthier household is more likely to have a fully immunised child compared to a child whose mother is from a poorer household. Partially immunised children (concentration index = -0.114) and not immunised children (concentration index = -0.138) are more likely to come from poorer households. This confirms that a woman from a poorer household is more likely to have a partially immunised/not immunised child compared to a child whose mother is from rich household. Immunisation intensity had a pro-rich outcome (concentration index = 0.153). The table reports figures for both the unstandardised and indirectly standardised concentration indices. For fully and partially immunised children, the index had similar outcomes for standardised and unstandardised immunisation indicators. Immunisation intensity results for these figures were also similar in range. For children who were not immunised, once indirect standardisation was applied to account for age-sex variations, the results varied slightly although not to a significant extent.

Table 3- Concentration indices

Variable	Unstandardised concentration index	Indirectly standardised concentration index	Number of observations
Fully	0.046 ***	0.046***	9542
immunised	(0.004)	(0.004)	
Partially	-0.117***	-0.114***	9542
immunised	(0.010)	(0.12)	
Not immunised	-0.126**	-0.138**	9542
	(0.034)	(0.039)	
Immunisation	0.0154***	0.153***	9542
intensity	(0.001)	(0.001)	

Note: *, **, and *** denote statistical significance at the 10%, 5% and 1%, respectively; standard errors in parenthesis

Assessing the relationship between woman empowerment and immunisation coverage

Table 4- Logistic model assessing the relationship between woman empowerment and immunisation coverage

Fully immunised	***Coefficient***	***Standard error***
Wom_Emp_Physical	-0.023	0.0564
Wom_Emp_Mind	0.149***	0.0562
Wealth index	0.165***	0.030
Household size	-0.019*	0.011
Urban dweller	-0.044	0.083
Employed	-0.140**	0.056

Age categories		
(15 to 20yrs)		
20 to 29yrs	0.046	0.126
30 to 39yrs	0.185	0.131
40 to 49yrs	0.141	0.151
Edu		
(none)		
Primary	0.364***	0.079
Secondary	0.537***	0.097
Tertiary	0.721***	0.211
___cons	0.207	0.163
Model	Logit fully_immunised = Wom_Emp_Physical +Wom_Emp_Mind+ Wealth_index+ HHsize i.urban_dweller+i.employed edu ib(first).agecat[pw=wt]	

Note: *, **, and *** denote statistical significance at the 10%, 5% and 1%, respectively

Pseudo R^2=0.0205 , Prov>chi^2 = 0.0000, Wald chi^2 (15) = 144.43

This section presents the results from the analysis to explain the relationship between women empowerment and a child's immunisation coverage status. It is hypothesised that women empowerment is an important factor in a child being fully immunised. The results in Table 4 show that there is a negative relationship between a woman being physically empowered and her child being fully immunised. This means that should a woman find beatings completely unacceptable (i.e. being physically empowered) her child is less likely to be fully immunised. However, this was not statistically significant at conventional levels (p-value>0.1). In contrast, decision making was found to be a

statistically significant (p-value<0.01) contributing factor towards a child's full immunisation status. This confirms that a child is more likely to be fully immunised when their mother participates in making all decisions at home (i.e. she is empowered).

The results also demonstrated the effect of wealth on full immunisation coverage, since women with a higher wealth (p-value<0.01) status were more likely to have fully immunised children. This was found to be statistically significant. Expectedly, women's employment status (p-value <0.05) was also positively associated with being fully immunisation. It is also worth noting that the size of the household also had a negative marginal impact (p-value <0.1) on the child being fully immunised. Further, education of the mother vitally contributes towards the increased likelihood of a child being fully immunised—a child with an educated mother, at a primary, secondary or tertiary level, is more likely to be fully immunised compared to a child with an uneducated mother.

Discussion

The main finding of this study was that socioeconomic status has a significant impact on the immunisation coverage of a child. This proved true whether the child was fully, partially or not immunised. The findings confirmed that for fully immunised children, immunisation coverage was pro-rich. Further, it was found that a poor woman is more likely to have a partially immunised/not immunised child compared to a child whose mother is rich. The findings of this study are consistent with those from other developing countries in connection with income-related inequalities in health in Kenya, Nigeria and Zimbabwe [7, 47, 93, 114]. The results point to the need for strategies that the Zambia Health Ministry would need to focus on in closing the inequality gap in immunisation coverage. This improves immunisation uptake rates, especially among the poor. A study done in Nepal by Ashish showed that through focused government interventions, immunisation coverage improved in Nepal, with the poorest wealth quintile showing the greatest improvement compared to the wealthiest quintile for immunisation coverage measured from 2001 to 2004 [111].

Another outcome of the paper was the importance of household decision making. This was shown to be another significant determinant of full immunisation. This proves that to a degree, being empowered as a mother, especially with regards to participation in all household decisions can improve the chances of a child being fully immunised. This conclusion was one which was previously confirmed in other studies by Ebot with a positive relationship between women empowerment and child health outcomes in the case of immunisation coverage [9]. A mother's educational level was also found to be a vital contributing factor towards the increased likelihood of full immunisation. This was initially reported by Caldwell and then subsequent authors who examined the impact that women's decision making has on their children's health outcomes especially in line with child mortality (Varkey et al, 2010), health care utilisation [119] and immunisation coverage [58, 121].

This study provided an alternative understanding of women empowerment. This is due to the fact that empowerment was a function of both a woman's attitude towards wife-beating (physical empowerment) and decision making (mental empowerment). For both variables, a woman was only deemed empowered if she was completely against wife-beating or participated in all household decision making, respectively. This was useful as it highlighted the impact that a fully empowered woman can have as an agent that influences her child's immunisation coverage status.

Not many studies have undertaken to focus both on women empowerment as well as socioeconomic status when viewing their impact on full immunisation coverage. Nevertheless, the findings which confirmed the impact of SES on full immunisation coverage were consistent with existing studies which also showed full immunisation as being pro-rich [112]. Factors such as mother's education and SES had a bearing on inequality experienced in light of child immunisation as was the case in other studies in Nigeria and Kenya [47, 112].

The use of the DHS data sets is a strength that allows for comparative studies to be done for Zambia in years to come for cross-country analysis. However, limitations to be noted are as a result of the use indicators constructed to explain women empowerment; there could have been a bias introduced during

their construction as they do not allow for the respective factors that contribute towards women beating as well as decision making to be assessed in isolation, in their respective rights.

Nevertheless, the findings of this paper confirm the importance of women empowerment on child health outcomes, including child immunisation. This empowerment is not confined to the household but speaks to education too. Women who had attained higher education levels compared to those who had no schooling background were also shown to have children who are more likely to be fully immunised. In attempting to find alternative avenues to encourage increased take-up of free immunisation, the government should provide educational programmes to mothers of infants to encourage women empowerment.

Further, with regards to government interventions, they would need to be positioned towards those who fall within the lower wealth quintiles- as full immunisation was confirmed to be pro-rich. In attempting to improve immunisation coverage, the government would need to work towards removing perceived and existing barriers to immunisation access since affordability is not a material factor due to the Zambian government providing free immunisation at public clinics. As per other studies, improvements in infrastructure and economic development could positively impact on child mortality and immunisation coverage [113].

Although the Zambian government has shown strong leadership and commitment towards addressing maternal, neonatal and childhood (MNCH) interventions, the fact that the immunisation coverage is in favour of the rich means more work to tackle barriers for those who are poorer needs to take place [133]. Attending to issues of accessibility such as, providing transportation and ensuring improved availability of needed medication would do much to encourage greater adoption amongst the poorer in society [133]. Strategies that would boost the economy to allow for women to participate as active economic contributors would have a two-pronged result in that it would first foster empowerment as well as reduce reliance on external financing through a growing economy [133]. This would ensure that efforts towards focusing on MNCH interventions can be sustained.

Further to address acceptability, the distance of immunisation services for mothers who situated in peri-urban areas can be reduced as it could potentially improve coverage for women who are not based in urban areas [27].

Conclusion

An enhanced understanding of the social determinants of health along with country-specific structural considerations help in improving child health outcomes. This study has shown that close attention to factors such as women empowerment and a mother's education can support improved immunisation coverage, especially for those who are the poorest in Zambia. This paper further highlighted the importance of SES as it impacts on immunisation. Tackling inequalities would contribute significantly to increased immunisation coverage and reduce child mortality. Apart from government concentrating on reducing factors of acceptability and access, it is essential to investigate the causal factors that are fundamental to the observed socioeconomic inequality in immunisation coverage in Zambia.

Abbreviations

BCG: Vaccine which protects against tuberculosis; CC: Concentration curves; CI: Concentration Index; CSO: Central Statistical Office; DHS: Demographic and Health Surveys; DPT: Vaccine which protects against diphtheria, pertussis (whooping cough) and tetanus; GDP: Gross Domestic Product; MDG: Millennium Development Goal; MNCH: Maternal, neonatal and childhood; OECD: Organisation for Economic Co-operation and Development; SDG: Sustainable Developmental Goals; SES: Socioeconomic Status; SSA: Sub-Saharan Africa; UN: United Nations; WHO: World Health Organisation; ZDHS: Zambian Demographic Health Survey.

Acknowledgements

Not applicable.

Authors' contributions

TM conceptualised the paper and prepared the initial draft and conducted an extensive review of the initial manuscript and redrafted the paper accordingly. TM read and approved the final manuscript.

Funding

TM is supported by the National Research Foundation. The findings and conclusions in this paper are entirely those of the author, and they are not those of the funding agency.

Availability of data and materials

The 2013 Zambian Demographic and Health Survey dataset used in this article is available in the DHS repository, https:// dhsprogram.com/data/dataset/Zambia_Standard-DHS_2013.cfm?flag=0. Data are accessible after registration on the website.

Ethics approval and consent to participate

This study is a secondary analysis of the de-identified 2013 Zambian Demographic and Health Survey (ZDHS), a publicly available dataset. Therefore, ethics approval or consent to participate is not applicable.

Consent for publication

Not applicable.

Competing interests

The author declares that they have no competing interests.

Author details

Thato Mojapelo, School of Public Health and Family Medicine, University of Cape Town, Anzio Road, Observatory 7925, South Africa.

Telephone number: +27 (0) 61 417 0650

References

1. Liu, L., et al., *Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis.* Lancet, 2015. **385**(9966): p. 430-40.
2. UNICEF, W., *Progress and Challenges with Achieving Universal Immunization Coverage: 2016 Estimates of Immunization Coverage*. WHO/UNICEF Estimates of National Immunization Coverage, July 2017.
3. Report, B. *Black Report 6 Explanation of Health Inequalities*. 1980 [cited 2018 July];
4. Ebot, J.O., *"Girl Power!": The Relationship between Women's Autonomy and Children's Immunization Coverage in Ethiopia.* Journal of Health, Population and Nutrition, 2015. **33**(1): p. 18.
5. Masiye, F., B.M. Chitah, and D. McIntyre, *From targeted exemptions to user fee abolition in health care: Experience from rural Zambia.* Social Science & Medicine, 2010. **71**(4): p. 743-750.
6. Bates, M., et al., *Burden of respiratory tract infections at post mortem in Zambian children.* BMC Medicine, 2016. **14**(1): p. 99.
7. Sasaki, S., et al., *The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia.* J Epidemiol Community Health, 2011. **65**(12): p. 1171-8.
8. Oku, A., et al., *Perceptions and experiences of childhood vaccination communication strategies among caregivers and health workers in Nigeria: A qualitative study.* PloS one, 2017. **12**(11): p. e0186733-e0186733.

9. Arcaya, M.C., A.L. Arcaya, and S.V. Subramanian, *Inequalities in health: definitions, concepts, and theories.* Global Health Action, 2015. **8**: p. 10.3402/gha.v8.27106.
10. Wagstaff, A., *Poverty and health sector inequalities.* Bulletin of the World Health Organization, 2002. **80**(2): p. 97-105.
11. Deaton, A.Z., Salman *Guidelines for Constructing Consumption Aggregates for Welfare Analysis.* LSMS Working Paper, 2002.(World Bank): p. No. 135.
12. CSO, *Zambia Demographic and Health Survey*. 2015, Central Statistical Office Lusaka.
13. WHO -Department of Gender, W.a.H., *Women's empowerment and gender equality: Essential goals for saving women's lives.* 2008.
14. UN Inter-agency Group for Child Mortality Estimation (UNICEF, W., World Bank, UN DESA Population Division), *Mortality rate, infant (per 1,000 live births).* 2018.
15. S Rutstein , S.S., *Making the Demographic and Health Surveys Wealth Index.* 2008.
16. Wagstaff, A., P. Paci, and E. van Doorslaer, *On the measurement of inequalities in health.* Social Science & Medicine, 1991. **33**(5): p. 545-557.
17. Kakwani, N., A. Wagstaff, and E. van Doorslaer, *Socioeconomic inequalities in health: Measurement, computation, and statistical inference.* Journal of Econometrics, 1997. **77**(1): p. 87-103.
18. O'Donnell, O., et al., *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation*. 2008.
19. Kjellsson, G. and U.-G. Gerdtham, *On correcting the concentration index for binary variables.* Journal of Health Economics, 2013. **32**(3): p. 659-670.
20. Phiri, J. and J. Ataguba, *Inequalities in public health care delivery in Zambia.* International journal for equity in health, 2014. **13**: p. 24.
21. Ataguba, J.E.-O. and O. Alaba, *Explaining health inequalities in South Africa: A political economy perspective.* Development Southern Africa, 2012. **29**(5): p. 756-764.
22. Makate, M. and C. Makate, *The evolution of socioeconomic status-related inequalities in maternal health care utilization: evidence from Zimbabwe, 1994–2011.* Global Health Research and Policy, 2017. **2**(1): p. 1.

23. Mutua, M.K., E. Kimani-Murage, and R.R. Ettarh, *Childhood vaccination in informal urban settlements in Nairobi, Kenya: Who gets vaccinated?* BMC Public Health, 2011. **11**(1): p. 6.

24. Ataguba, J.E., K.O. Ojo, and H.E. Ichoku, *Explaining socio-economic inequalities in immunization coverage in Nigeria.* Health Policy Plan, 2016. **31**(9): p. 1212-24.

25. Ashish, K., et al., *Increased immunization coverage addresses the equity gap in Nepal.* Bulletin of the World Health Organization, 2017. **95**(4): p. 261-269.

26. Bloom, S.S., D. Wypij, and M.d. Gupta, *Dimensions of Women's Autonomy and the Influence on Maternal Health Care Utilization in a North Indian City.* Demography, 2001. **38**(1): p. 67-78.

27. Desai, S. and K. Johnson, *WOMEN'S DECISIONMAKING AND CHILD HEALTH: FAMILIAL AND SOCIAL HIERARCHIES*. 2000.

28. Wado, Y.D., M.F. Afework, and M.J. Hindin, *Childhood vaccination in rural southwestern Ethiopia: the nexus with demographic factors and women's autonomy.* Pan Afr Med J, 2014. **17 Suppl 1**: p. 9.

29. Ataguba, J.E., K.O. Ojo, and H.E. Ichoku, *Explaining socio-economic inequalities in immunization coverage in Nigeria.* Health Policy and Planning, 2016. **31**(9): p. 1212-1224.

30. Sastry, N., *Trends in socioeconomic inequalities in mortality in developing countries: the case of child survival in Sao Paulo, Brazil.* Demography, 2004. **41**(3): p. 443-64.

31. Kipp, A.M., et al., *Improving access to child health services at the community level in Zambia: a country case study on progress in child survival, 2000-2013.* Health Policy Plan, 2017. **32**(5): p. 603-612.

32. Sasaki, S., et al., *The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia.* Journal of Epidemiology and Community Health, 2011. **65**(12): p. 1171.

PART D: Policy Brief

Addressing universal immunisation coverage in Zambia: The role of the government in improving immunisation coverage and reducing disparities between the poor and the rich

Introduction

Child mortality is a health concern that affects many countries, with the sub-Saharan African (SSA) and the Middle Eastern regions being most acutely impacted. Studies show that there has been a marked decline in under-five mortality. The causes of death vary from one area to another, requiring an in-depth understanding of child health epidemiology at a country level.

The World Health Organization (WHO) adopted a strategy to encourage full immunisation of children by the age of 12 months to mitigate the prevalence of major childhood related diseases and infant mortality. Paediatric immunisation is one of the most important modern interventions as it has in past decades contributed toward substantial reductions in child deaths globally where 2-3 million deaths were averted in recent times.

The Zambian Health Ministry contributed to improved child mortality indicators by abolishing user fees for all maternal and child health services to facilitate better access and utilisation.

Nevertheless, a substantial number of preventable infant deaths persist in Zambia.

Socioeconomic status (SES) has also been reported as an additional consideration, which impacts child health indicators in Zambia. This phenomenon where people who are less advantaged in terms of socioeconomic position have worse health than those who are more advantaged, is not only evident in Zambia but also in other parts of the globe.

Low, middle- and high-income countries have demonstrated the existence of health inequities.

KEY MESSAGES

- In general, a child's immunisation coverage is significantly impacted by their mother's socioeconomic status.
- Children with poorer mothers are more likely to not be immunised or partially immunised, since most children who are fully immunised have richer mothers.
- Women who are more educated tend to participate more in household decision making, which was found to impact positively on their children's immunisation status.
- Acceptability factors, such as the distance to immunisation services adversely impact poorer mothers.
- Empowered women are more able to give their children adequate immunisation coverage in Zambia.
- There is a need to improve immunisation coverage especially for those who are the poorest in Zambia.

Study approach

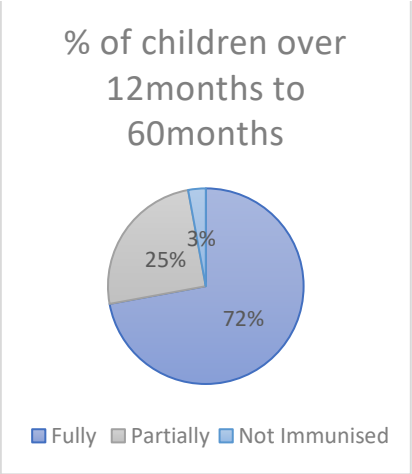
The study assessed the relationship between women empowerment and immunisation coverage in Zambia. It also investigated disparities in immunisation coverage of children, considering the number of vaccinations that they received - while linking them to how wealthy a household is.

Immunisation uptake was divided into four categories with three of these being mutually exclusive. The mutually exclusive variables include (1) fully immunised denoting children (aged 12 to 59 months) who have received all 8 immunisations as per the WHO guideline regarding basic immunisation doses, (2) partially immunised denoting all children (aged 12 to 59 months) who have received at least one but less than eight vaccines, and (3) never immunised as children (aged 12 to 59 months) who received no vaccines. The fourth category, immunisation intensity, measures the proportion of the total doses of vaccines that children (aged 12 to 59 months) have received.

To be considered fully immunised, a child must have the following vaccines/doses at age 12 months: one dose of BCG vaccine which protects against tuberculosis, three doses of DPT, which protects against diphtheria, pertussis (whooping cough) and tetanus, three doses of polio vaccine and one dose of measles vaccine (CSO, 2015).

The 2013 Zambia Demographic and Health Survey data were used.

Figure D. 1 Immunisation Coverage status in Zambia ,2013



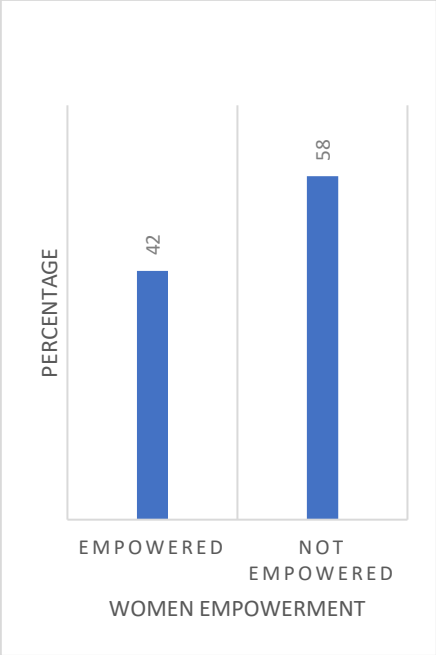


Figure D. 2 Women Empowerment levels in Zambia

Is there evidence to suggest that immunisation coverage is unequal as a result of income levels?

Immunisation coverage was shown to favour children with richer mothers.

There is evidence that points towards unequal immunisation coverage by income levels.

The extent of the disparity by five wealth categories (or quintiles) of the mothers is depicted in D3. By looking at the graphs it is evident that immunisation cover is disproportionate within the poorer individuals of Zambia. About 23% of children that have received all the required immunisation come from the richest households compared to about 18% from the poorest households. More than 25% of children who have never received any vaccine come from the poorest households compared to about 13% from the richest households.

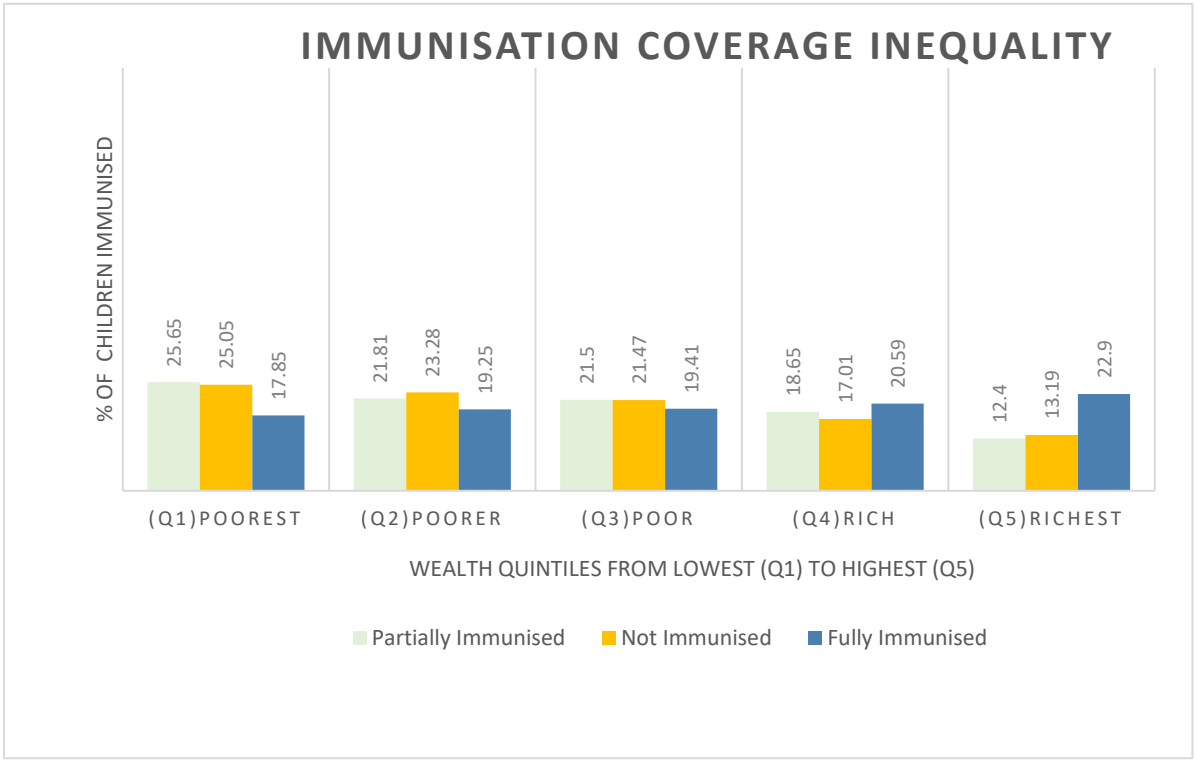


Figure D. 3 Disparities in immunisation coverage by wealth category

Of all the children who received full immunisation before their first birthday, a majority of those had mothers who more educated and richer.

A wealthier woman is more likely to have a fully immunised child compared to a child whose mother is poorer. Partially immunised children and not immunised children are more likely to come from poorer households. This confirms that a poor woman is more likely to have a partially immunised/not immunised child compared to a child whose mother is rich. The number of immunisations that a child receives is disproportionate between the rich and poor in Zambia—children from poorer homes receive fewer immunisations compared to those from richer homes.

Evidently, a woman's employment status was also positively related to her child receiving all the required immunisation. Further, education of the mother vitally contributes towards the increased likelihood of a child being fully immunised—a child with an educated mother, at a primary, secondary or tertiary level, is more likely to have received all the required immunisation compared to a child with an uneducated mother

Policy recommendations

Government intervention is needed, especially for the children of the poor and uneducated in Zambia, as children with richer mothers tend to receive all the required immunisation services than children whose mothers are comparatively poorer. These findings have significant policy implications for policymakers in Zambia.

- To improve immunisation coverage, the government should work towards removing perceived and existing barriers to accessing immunisation services beyond just the direct cost of immunisation as the Zambian government already provides free immunisation.
- Addressing issues of accessibility such as, providing transportation and ensuring improved availability of needed vaccine doses would do much to encourage higher uptake amongst the poor.
- Strategies towards educating mothers, especially those in rural areas could potentially have positive effects as this would enhance their sense of empowerment and encourage them to pursue further education, as necessary. This intervention would have a two-pronged result, in that it would first foster empowerment as well as reduce reliance on male partners in decision making that directly impacts on the mother and the child's health.
- It is essential to sustain efforts towards improving maternal and neonatal child health, including the provision of key childhood interventions. Further, there is a potential to improve immunisation services by bringing vaccination services closer to women and their children. Examples could include providing immunisation services directly to households in remote areas.

Bibliography

1. Liu, L., et al., *Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis.* Lancet, 2015. **385**(9966): p. 430-40.
2. Ataguba, J.E., K.O. Ojo, and H.E. Ichoku, *Explaining socio-economic inequalities in immunization coverage in Nigeria.* Health Policy Plan, 2016. **31**(9): p. 1212-24.
3. Sasaki, S., et al., *The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia.* Journal of Epidemiology and Community Health, 2011. **65**(12): p. 1171.
4. Malhotra, A. and S. Ruth Schuler, *Measuring Women's Empowerment as a Variable in International Development*. 2005.
5. C. Caldwell, J., *Education as a Factor in Mortality Decline An Examination of Nigerian Data*. Vol. 33. 1979.
6. Sasaki, S., et al., *The impact of community-based outreach immunisation services on immunisation coverage with GIS network accessibility analysis in peri-urban areas, Zambia.* J Epidemiol Community Health, 2011. **65**(12): p. 1171-8.
7. Deaton, A., *Health, Inequality, and Economic Development.* Journal of Economic Literature, 2003. **41**(1): p. 113-158.
8. Hausman, D.M., *Benevolence, Justice, Well-Being and the Health Gradient.* Public Health Ethics, 2009. **2**(3): p. 235-243.
9. Chadwick, E., *Report on the Sanitary Condition of the Labouring Population Of Great Britain* Supplementary Report on the Results of Special Inquiry Into the Practice of Interment in Towns. Vol. 1. 1842: H.M. Stationery Office,.
10. Report, B. *Black Report 6 Explanation of Health Inequalities*. 1980 [cited 2018 July]; Available from:
11. Phiri, J. and J. Ataguba, *Inequalities in public health care delivery in Zambia.* International journal for equity in health, 2014. **13**: p. 24.
12. Kipp, A.M., et al., *Improving access to child health services at the community level in Zambia: a country case study on progress in child survival, 2000-2013.* Health Policy Plan, 2017. **32**(5): p. 603-612.

Acknowledgement:

I acknowledge the National Research Fund (NRF) through the Health Economics Unit, the University of Cape Town for sponsoring part of my study. Special thanks also go to Investec Private Bank as well as my academic supervisor Dr John Ataguba for his continued support and tutelage throughout this journey**.**

Disclaimer

The photographs and images in this policy brief are purely used for illustrative purposes. Pictures are sourced from the internet. Can be accessed on below links:

https://www.dandc.eu/en/article/immunisation-programmes-are-making-huge-difference-africa

https://www.vsointernational.org/fighting-poverty/where-we-fight-poverty/zambia/improving-the-economic-status-of-women-in-zambia

For more information, please contact:

Thato Mojapelo**,** School of Public Health and Family Medicine, University of Cape Town, Anzio Road, Observatory 7925, South Africa.

E-mail: missmoj@gmail.com

Part E: Appendices

Appendix 1: UCT Human Research ethics approval

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee
Room ES3-46 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492 Email: sumayah.arlefdien@uct.ac.za

Website: www.health.uct.ac.u(ffis/research/humanethlcs/forms

23 November 2018

HREC REF: 808/2018
A/Prof J Ataguba
School of Public Health & Family Medicine
Room 1.08, Health Economic Building
FHS

Dear A/Prof Ataguba

PROJECT TITLE: WOMEN EMPOWERMENT AND SOCIO-ECONOMIC INEQUALITY IN IMMUNIZATION COVERAGE: A CASE STUDY OF ZAMBIA (MPH Candidate - Ms T. Mojapelo)

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee (HREC) for review.

It Is a pleasure to inform you that the HREC has formally approved the above-mentioned study.
Approval is granted for one year until the 30 November 2019.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form If the study Is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)
We acknowledge that the student: Ms Mojapelo will also be Involved In this study.
Please quote the HREC REF In all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal Investigator.

Please note that for all studies approved by the HREC, the principal Investigator to obtain appropriate Institutional approval, where necessary, before the research may occur.

Signature Removed

Yours sincerely

PROFESSOR M BLOCKMAN

CHAIRPERSON. FHS HUMAN RESEARCH ETH*CS COMMITT"

Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

This serves to confirm that the University of Cape Town Human Research Ethics Committee compiles to the Ethics Standards for Clinical Research with a new drug in patents, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on
Harmonisation Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DOH 2006), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI), and Declaration of Helsinki (2013) guidelines.

The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

FACULTY OF HEALTH SCIENCES
Human Research Ethics Committee

FHS016: Annual Progress Report / Renewal

HREC office use only (FWA00001637; IRB00001938) This serves as notification of annual approval, including any documentation described below.				
☑ Approved	Annual progress report	Approved until/next renewal date	~~30 Nov 2019~~ 30/11/2020	
☐ Not approved	See attached comments			
Signature Chairperson of the HREC	Signature Removed		Date Signed	30/1/20

Comments to PI from the HREC

Principal Investigator to complete the following:

1. Protocol Information

Date (when submitting this form)			
HREC REF Number	808/2018	Current Ethics Approval was granted until	30 November 2019
Protocol title	Women Empowerment and Immunization coverage in Zambia.		
Protocol number (if applicable)			
Are there any sub-studies linked to this study?	☐ Yes ☑ No		
If yes, could you please provide the HREC Ref's for all sub-studies? Note: A separate FHS016 must be submitted for each sub-study			
Principal Investigator	John Ataguba		
Department / Office Internal Mail Address	Dept. of Public Health & Family Medicine Room 1.08 Health Economics Building		

(Note: Please complete the Closure form (FHS010) if the study is completed within the approval period)

1.1 Does this protocol receive US Federal funding?	☐ Yes	☑ No
1.2 If the study receives US Federal Funding, does the annual report require full committee approval? **Note:** Any annual approvals for **Full Committee** review MUST be submitted on the monthly HREC submission dates. (Please send electronic copy for full committee review to hrec-enquiries@uct.ac.za)	☐ Yes	☐ No

If yes in 1.2 please complete section 1.3 below for invoicing purposes

1.3 Annual Approval for **full committee** review	- R 3450 (inclusive of vat)

For invoicing purposes, please provide:

Sponsor's name	
Contact person	
Address	
Telephone number	
Email Address	

2. List of documentation for approval

None. Just a request for extension of ethics approval.

3. Protocol status (tick ✓)

☐	Open to enrolment
☐	Closed to enrolment (tick ✓)
☐	Research-related activities are ongoing
☐	Research-related activities are complete, long-term follow-up only
☐	Research-related activities are complete, data analysis only
☑	Main study is complete but sub-study research-related activities are ongoing
☐	Study is closed → Please submit a Study Closure Form (FHS010)

4. Enrolment

Number of participants enrolled to date	0
Number of participants enrolled, since last HREC Progress report (continuing review)	0

Additional number of participants still required	N/A

5. Refusals

Total number of refusals (participants invited to join the study, but refused to take part)	0

6. Cumulative summary of participants

Total number of participants who provided consent	N/A
Number of participants determined to be ineligible (i.e. after screening)	
Number of participants currently active on the study	
Number of participants completed study (without events leading to withdrawal)	
Number of participants withdrawn at participants' request (i.e. changed their mind)	
Number of participants withdrawn by PI due to toxicity or adverse events	
Number of participants withdrawn by PI for other reasons (e.g. pregnancy, poor compliance)	
Number of participants lost to follow-up. Please comment below on reasons for loss of follow-up.	
Number of participants no longer taking part for reasons not listed above. Please provide reasons below:	

7. Progress of study

Please provide a brief summary of the research to date including the overall progress and the progress since the last annual report as well as any relevant comments/issues you would like to report to the HREC:
The dissertation has been completed and ready for submission for examination. I am kindly requesting for an extension to the original ethics approval to submit the dissertation for examination.

8. Protocol violations and exceptions (tick ✓ all that apply)

☑	No prior violations or exceptions have occurred since the original approval
☐	Prior violations or exceptions have been reported since the last review and have already been acknowledged or approved

☐	Unreported minor violations that have occurred since the last review, as well as significant deviations not yet reported, are attached for review

9. Amendments (tick ✓ all that apply)

☐	No prior amendments have been made since the original approval
☐	Prior amendments have been reported since the last review and have already been approved
☑	New protocol changes/ amendments are requested as part of this continuing review (See note below)

Note: If new protocol changes are being requested in this review, please complete an amendment form (FHS006).
Specific changes in the amended protocol and consent/assent forms must be **bolded**, *italicised* or tracked and all changes must include a rationale.

10. Adverse events

10.1 Please provide below or attach a narrative summary of serious adverse events and/ or unanticipated problems since the last progress report. Please indicate changes made to the protocol and informed consent document(s) as a result (if not already reported to the HREC). Please comment on whether causality to any study procedure or intervention could be established.
We only changed the methods section. Two variables which were part of the initial approved protocol were removed from the model used in the study because they are no longer feasible.

10.2 Have participants received appropriate treatment/ follow-up/ referral when indicated (e.g. in the case of abnormal or incidental clinical findings, distress or anxiety)?		
☐ Yes	☐ No	☑ Not applicable
If yes, please describe:		

11. Summary of Monitoring and Audit Activities (tick ✓)

11.1 Was this study monitored or audited by an external agency (e.g. SAHPRA, FDA)?		
☐ Yes	☐ No	☑ Not applicable

11.2 Did a Data and Safety Monitoring Board publish a report?		
☐ Yes	☐ No	☑ Not applicable

11.3 If yes, please identify the agency and attach a summary of the findings.					
Agency Name		Report attached	☐ Yes	☐ No	☐ Not applicable
		DSMB report attached	☐ Yes	☐ No	☐ Not applicable

(Note: Please complete the Closure form (FHS010) if the study is completed within the approval period)

11.4 Has there been any agency, institutional or other inquiry into non-compliance in this study, or any finding of non-compliance concerning a member of the research team?	
☐ Yes	☑ No
If yes, please explain:	

12. Level of risk (tick ✓)

12.1 In light of your experience of this research, please indicate whether the level of risk to participants has:	
☐	Increased
☐	Decreased
☐	Shown no change
If there has been a change, please explain:	
N/A	

12.2 Please provide a narrative summary of recent relevant literature that may have a bearing on the level of risk.

13. Statement of conflict of interest

Has there been any change in the conflict of interest status of this protocol since the original approval? (tick ✓)	
☐ Yes	☑No
If yes, please explain and if necessary, attach a revised conflict of interest statement (Section #7 in the New Protocol Application Form FHS013):	

14. Signature

My signature certifies that the above is complete and correct.			
Signature of PI	Signature Removed	Date	29 January 2020

Appendix 2: BMC Journal Guidelines

BMC Public Health

Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all the subheadings (please see below for more information).

Title page

The title page should:

present a title that includes, if appropriate, the study design e.g.:

"A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"

or for non-clinical or non-research studies a description of what the article reports

list the full names and institutional addresses for all authors

if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the “Acknowledgements” section in accordance with the instructions below

indicate the corresponding author

Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

Background: the context and purpose of the study

Methods: how the study was performed, and statistical tests used

Results: the main findings

Conclusions: brief summary and potential implications

Trial registration: If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be in stated in this section. If it was not registered prospectively (before enrolment of the first participant), you should include the words 'retrospectively registered'. See our editorial policies for more information on trial registration

Keywords

Three to ten keywords representing the main content of the article.

Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

Methods

The methods section should include:

the aim, design and setting of the study

the characteristics of participants or description of materials

a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses

the type of statistical analysis used, including a power calculation if appropriate

Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

List of abbreviations

If abbreviations are used in the text, they should be defined in the text at first use, and a list of abbreviations should be provided.

Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

Ethics approval and consent to participate

Consent for publication

Availability of data and materials

Competing interests

Funding

Authors' contributions

Acknowledgements

Authors' information (optional)

Please see below for details on the information to be included in these sections.

If any of the sections are not relevant to your manuscript, please include the heading and write 'Not applicable' for that section.

Ethics approval and consent to participate

Manuscripts reporting studies involving human participants, human data or human tissue must:

include a statement on ethics approval and consent (even where the need for approval was waived)

include the name of the ethics committee that approved the study and the committee’s reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner.

See our editorial policies for more information.

If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

Consent for publication

If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our consent form if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

See our editorial policies for more information on consent for publication.

If your manuscript does not contain data from any individual person, please state "Not applicable" in this section.

Availability of data and materials

All manuscripts must include an 'Availability of data and materials' statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

All data generated or analysed during this study are included in this published article [and its supplementary information files].

The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].

Not applicable. If your manuscript does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available here.

BioMed Central also requires that authors cite any publicly available data on which the conclusions of the paper rely in the manuscript. Data citations should include a persistent identifier (such as a DOI) and should ideally be included in the reference list. Citations of datasets, when they appear in the reference list, should include the minimum information recommended by DataCite and follow journal style. Dataset identifiers including DOIs should be expressed as full URLs. For example:

Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014. http://dx.doi.org/10.6084/m9.figshare.853801

With the corresponding text in the Availability of data and materials statement:

The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]. [Reference number]

If you wish to co-submit a data note describing your data to be published in *BMC Research Notes*, you can do so by visiting our submission portal. Data notes support open data and help authors to comply with funder policies on data sharing. Co-published data notes will be linked to the research article the data support (example).

For more information please email our Research Data Team.

Competing interests

All financial and non-financial competing interests must be declared in this section.

See our editorial policies for a full explanation of competing interests. If you are unsure whether you or any of your co-authors have a competing interest, please contact the editorial office.

Please use the authors initials to refer to each authors' competing interests in this section.

If you do not have any competing interests, please state "The authors declare that they have no competing interests" in this section.

Funding

All sources of funding for the research reported should be declared. The role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript should be declared.

Authors' contributions

The individual contributions of authors to the manuscript should be specified in this section. Guidance and criteria for authorship can be found in our editorial policies.

Please use initials to refer to each author's contribution in this section, for example: "FC analysed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney and was a major contributor in writing the manuscript. All authors read and approved the final manuscript."

Acknowledgements

Please acknowledge anyone who contributed towards the article who does not meet the criteria for authorship including anyone who provided professional writing services or materials.

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section.

See our editorial policies for a full explanation of acknowledgements and authorship criteria.

If you do not have anyone to acknowledge, please write "Not applicable" in this section.

Group authorship (for manuscripts involving a collaboration group): if you would like the names of the individual members of a collaboration Group to be searchable through their individual PubMed records, please ensure that the title of the collaboration Group is included on the title page and in the submission system and also include collaborating author names as the last paragraph of the “Acknowledgements” section. Please add authors in the format First Name, Middle initial(s) (optional), Last Name. You can add institution or country information for each author if you wish, but this should be consistent across all authors.

Please note that individual names may not be present in the PubMed record at the time a published article is initially included in PubMed as it takes PubMed additional time to code this information.

Authors' information

This section is optional.

You may choose to use this section to include any relevant information about the author(s) that may aid the reader's interpretation of the article and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

Preparing main manuscript text

Back to top

Quick points:

Use double line spacing

Include line and page numbering

Use SI units: Please ensure that all special characters used are embedded in the text, otherwise they will be lost during conversion to PDF

Do not use page breaks in your manuscript

File formats

The following word processor file formats are acceptable for the main manuscript document:

Microsoft word (DOC, DOCX)

Rich text format (RTF)

TeX/LaTeX (use BioMed Central's TeX template)

Please note editable files are required for processing in production. If your manuscript contains any non-editable files (such as PDFs) you will be required to re-submit an editable file when you submit your revised manuscript, or after editorial acceptance in case no revision is necessary.

Additional information for TeX/LaTeX users

Please use BioMed Central's TeX template and BibTeX stylefile if you use TeX format. Submit your references using either a bib or bbl file. When submitting TeX submissions, please submit both your TeX

file and your bib/bbl file as manuscript files. Please also convert your TeX file into a PDF (please do not use a DIV file) and submit this PDF as a supplementary file with the name 'Reference PDF'. This PDF will be used by our production team as a reference point to check the layout of the article as the author intended. The Editorial Manager system checks for any errors in the Tex files. If an error is present, then the system PDF will display LaTex code and highlight and explain the error in a section beginning with an exclamation mark (!).

All relevant editable source files must be uploaded during the submission process. Failing to submit these source files will cause unnecessary delays in the production process.

TeX templates
BioMedCentral_article (ZIP format) - preferred template
article (part of the standard TeX distribution)
amsart (part of the standard TeX distribution)

Style and language

For editors and reviewers to accurately assess the work presented in your manuscript you need to ensure the English language is of enough quality to be understood. If you need help with writing in English, you should consider:

Visiting the English language tutorial which covers the common mistakes when writing in English.

Asking a colleague who is a native English speaker to review your manuscript for clarity.

Using a professional language editing service where editors will improve the English to ensure that your meaning is clear and identify problems that require your review. Two such services are provided by our affiliates Nature Research Editing Service and American Journal Experts. BMC authors are entitled to a 10% discount on their first submission to either of these services. To claim 10% off English editing from Nature Research Editing Service, click here. To claim 10% off American Journal Experts, click here.

Please note that the use of a language editing service is not a requirement for publication in the journal and does not imply or guarantee that the article will be selected for peer review or accepted.

Data and materials

For all journals, BioMed Central strongly encourages all datasets on which the conclusions of the manuscript rely to be either deposited in publicly available repositories (where available and appropriate) or presented in the main paper or additional supporting files, in machine-readable format (such as spread sheets rather than PDFs) whenever possible. Please see the list of recommended repositories in our editorial policies.

For some journals, deposition of the data on which the conclusions of the manuscript rely is an absolute requirement. Please check the Instructions for Authors for the relevant journal and article type for journal specific policies.

For all manuscripts, information about data availability should be detailed in an 'Availability of data and materials' section. For more information on the content of this section, please see the Declarations section of the relevant journal's Instruction for Authors. For more information on BioMed Centrals policies on data availability, please see our [editorial policies].

Formatting the 'Availability of data and materials' section of your manuscript

The following format for the 'Availability of data and materials section of your manuscript should be used:

"The dataset(s) supporting the conclusions of this article is(are) available in the [repository name] repository, [unique persistent identifier and hyperlink to dataset(s) in http:// format]."

The following format is required when data are included as additional files:

"The dataset(s) supporting the conclusions of this article is(are) included within the article (and its additional file(s))."

BioMed Central endorses the Force 11 Data Citation Principles and requires that all publicly available datasets be fully referenced in the reference list with an accession number or unique identifier such as a

DOI.

For databases, this section should state the web/ftp address at which the database is available and any restrictions to its use by non-academics.

For software, this section should include:

Project name: e.g. My bioinformatics project

Project home page: e.g. http://sourceforge.net/projects/mged

Archived version: DOI or unique identifier of archived software or code in repository (e.g. enodo)

Operating system(s): e.g. Platform independent

Programming language: e.g. Java

Other requirements: e.g. Java 1.3.1 or higher, Tomcat 4.0 or higher

License: e.g. GNU GPL, FreeBSD etc.

Any restrictions to use by non-academics: e.g. licence needed

Information on available repositories for other types of scientific data, including clinical data, can be found in our editorial policies.

References

See our editorial policies for author guidance on good citation practice.

Please check the submission guidelines for the relevant journal and article type.

What should be cited?

Only articles, clinical trial registration records and abstracts that have been published or are in press or are available through public e-print/preprint servers, may be cited.

Unpublished abstracts, unpublished data and personal communications should not be included in the reference list but may be included in the text and referred to as "unpublished observations" or "personal communications" giving the names of the involved researchers. Obtaining permission to quote personal communications and unpublished data from the cited colleagues is the responsibility of the author. Only footnotes are permitted. Journal abbreviations follow Index Medicus/MEDLINE.

Any in press articles cited within the references and necessary for the reviewers' assessment of the manuscript should be made available if requested by the editorial office.

How to format your references

Please check the Instructions for Authors for the relevant journal and article type for examples of the relevant reference style.

Web links and URLs: All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, as well as the date the site was accessed, in the following format: The Mouse Tumor Biology Database. http://tumor.informatics.jax.org/mtbwi/index.do. Accessed 20 May 2013. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference. Authors may wish to make use of reference management software to ensure that reference lists are correctly formatted.

Preparing figures

Back to top

When preparing figures, please follow the formatting instructions below.

Figures should be numbered in the order they are first mentioned in the text and uploaded in this order. Multi-panel figures (those with parts a, b, c, d etc.) should be submitted as a single composite file that contains all parts of the figure.

Figures should be uploaded in the correct orientation.

Figure titles (max 15 words) and legends (max 300 words) should be provided in the main manuscript, not in the graphic file.

Figure keys should be incorporated into the graphic, not into the legend of the figure.

Each figure should be closely cropped to minimize the amount of white space surrounding the illustration. Cropping figures improves accuracy when placing the figure in combination with other elements when the

accepted manuscript is prepared for publication on our site. For more information on individual figure file formats, see our detailed instructions.

Individual figure files should not exceed 10 MB. If a suitable format is chosen, this file size is adequate for extremely high-quality figures.

Please note that it is the responsibility of the author(s) to obtain permission from the copyright holder to reproduce figures (or tables) that have previously been published elsewhere. In order for all figures to be open access, authors must have permission from the rights holder if they wish to include images that have been published elsewhere in non-open access journals. Permission should be indicated in the figure legend, and the original source included in the reference list.

Figure file types

We accept the following file formats for figures:

EPS (suitable for diagrams and/or images)

PDF (suitable for diagrams and/or images)

Microsoft Word (suitable for diagrams and/or images, figures must be a single page)

PowerPoint (suitable for diagrams and/or images, figures must be a single page)

TIFF (suitable for images)

JPEG (suitable for photographic images, less suitable for graphical images)

PNG (suitable for images)

BMP (suitable for images)

CDX (ChemDraw - suitable for molecular structures)

For information and suggestions of suitable file formats for specific figure types, please see our author academy.

Figure size and resolution

Figures are resized during publication of the final full text and PDF versions to conform to the BioMed Central standard dimensions, which are detailed below.

Figures on the web:

width of 600 pixels (standard), 1200 pixels (high resolution).

Figures in the final PDF version:

width of 85 mm for half page width figure

width of 170 mm for full page width figure

maximum height of 225 mm for figure and legend

image resolution of approximately 300 dpi (dots per inch) at the final size

Figures should be designed such that all information, including text, is legible at these dimensions. All lines should be wider than 0.25 pt. when constrained to standard figure widths. All fonts must be embedded.

Figure file compression

Vector figures should if possible be submitted as PDF files, which are usually more compact than EPS files.

TIFF files should be saved with LZW compression, which is lossless (decreases file size without decreasing quality) in order to minimize upload time.

JPEG files should be saved at maximum quality.

Conversion of images between file types (especially lossy formats such as JPEG) should be kept to a minimum to avoid degradation of quality.

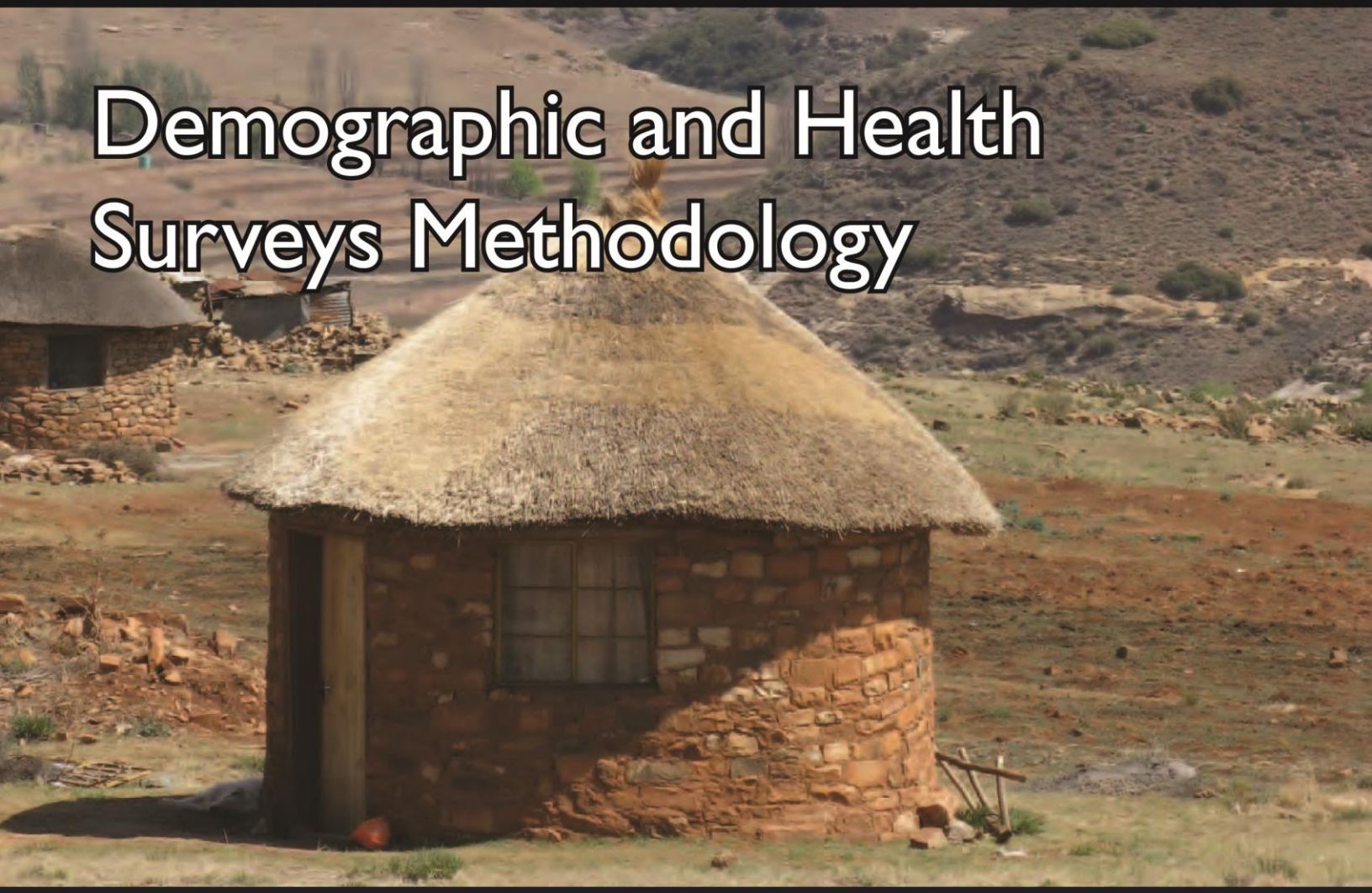
If you have any questions or are experiencing a problem with figures, please contact the customer service team at info@biomedcentral.com.

DHS Questionnaire

USAID
FROM THE AMERICAN PEOPLE

QUESTIONNAIRES:

HOUSEHOLD, WOMAN'S, AND MAN'S



Demographic and Health Surveys Methodology

This document is part of the Demographic and Health Survey's *DHS Toolkit* of methodology for the MEASURE DHS Phase III project, implemented from 2008-2013.

This publication was produced for review by the United States Agency for International Development (USAID). It was prepared by MEASURE DHS/ICF International.

DHS TOOLKIT

[THIS PAGE IS INTENTIONALLY BLANK]

Demographic and Health Surveys Methodology

Questionnaires: Household, Woman's, and Man's

ICF International
Calverton, Maryland

MEASURE DHS is a five-year project to assist institutions in collecting and analyzing data needed to plan, monitor, and evaluate population, health, and nutrition programs. MEASURE DHS is funded by the U.S. Agency for International Development (USAID). The project is implemented by ICF International in Calverton, Maryland, in partnership with the Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs, the Program for Appropriate Technology in Health (PATH), Futures Institute, Camris International, and Blue Raster.

The main objectives of the MEASURE DHS program are to: 1) provide improved information through appropriate data collection, analysis, and evaluation; 2) improve coordination and partnerships in data collection at the international and country levels; 3) increase host-country institutionalization of data collection capacity; 4) improve data collection and analysis tools and methodologies; and 5) improve the dissemination and utilization of data.

For information about the Demographic and Health Surveys (DHS) program, write to DHS, ICF International, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, U.S.A. (Telephone: 301-5720200; fax: 301-572-0999; e-mail: info@measuredhs.com; Internet:

http://www.measuredhs.com). Recommended citation: **ICF International. 2011. Demographic and Health Surveys Methodology - Questionnaires:**

Household, Woman's, and Man's. MEASURE DHS Phase III: Calverton, Maryland, USA.
http://www.measuredhs.com/publications/publication-DHSQ6-DHS-Questionnaires-and-Manuals.cfm

5 November 2012

DEMOGRAPHIC AND HEALTH SURVEYS
MODEL HOUSEHOLD QUESTIONNAIRE

[NAME OF COUNTRY]
[NAME OF ORGANIZATION]

IDENTIFICATION (1)		
PLACE NAME _____		
NAME OF HOUSEHOLD HEAD _____		
CLUSTER NUMBER		
HOUSEHOLD NUMBER		
INTERVIEWER VISITS		
	1	2
DATE	_____	_____
INTERVIEWER'S NAME	_____	_____
RESULT*	_____	_____
NEXT VISIT: DATE	_____	_____
TIME	_____	_____

*RESULT CODES:

1	COMPLETED
2	NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
3	ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME
4	POSTPONED
5	REFUSED
6	DWELLING VACANT OR ADDRESS NOT A DWELLING
7	DWELLING DESTROYED
8	DWELLING NOT FOUND
9	OTHER

_____ (SPECIFY)

SUPERVISOR	FIELD EDITOR
_____ ☐☐☐	_____ ☐☐☐
NAME	NAME

Note: Questions with blue highlighting in the question number column are HIV related questions that may be deleted in some circumstances (see footnotes). Questions with pink highlighting in the question number column are malaria related questions that may be deleted in some circumstances (see footnotes).

THIS PAGE IS INTENTIONALLY BLANK

INTRODUCTION AND CONSENT

Hello. My name is _____. I am working with (NAME OF ORGANIZATION). We are conducting a survey about health all over (NAME OF COUNTRY). The information we collect will help the government to plan health services. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 15 to 20 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.
In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . 1 → RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2 → END

HOUSEHOLD SCHEDULE

							IF AGE 15 OR OLDER			
LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	MARITAL STATUS	ELIGIBILITY		
1	2	3	4	5	6	7	8	9	10	11
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING THE NAMES AND RECORDING THE RELATIONSHIP AND SEX FOR EACH PERSON, ASK QUESTIONS 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK APPROPRIATE QUESTIONS IN COLUMNS 5-20 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? SEE CODES BELOW.	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)? IF 95 OR MORE, RECORD '95'.	What is (NAME)'s current marital status? 1 = MARRIED OR LIVING TOGETHER 2 = DIVORCED/ SEPARATED 3 = WIDOWED 4 = NEVER-MARRIED AND NEVER LIVED TOGETHER	CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49	CIRCLE LINE NUMBER OF ALL MEN AGE 15-49	CIRCLE LINE NUMBER OF ALL CHILDREN AGE 0-5
			M F	Y N	Y N	IN YEARS				
01			1 2	1 2	1 2			01	01	01
02			1 2	1 2	1 2			02	02	02
03			1 2	1 2	1 2			03	03	03
04			1 2	1 2	1 2			04	04	04
05			1 2	1 2	1 2			05	05	05
06			1 2	1 2	1 2			06	06	06
07			1 2	1 2	1 2			07	07	07
08			1 2	1 2	1 2			08	08	08
09			1 2	1 2	1 2			09	09	09
10			1 2	1 2	1 2			10	10	10

CODES FOR Q. 3: RELATIONSHIP TO HEAD OF HOUSEHOLD

01 = HEAD
02 = WIFE OR HUSBAND
03 = SON OR DAUGHTER
04 = SON-IN-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER
09 = OTHER RELATIVE
10 = ADOPTED/FOSTER/ STEPCHILD
11 = NOT RELATED
98 = DON'T KNOW

	IF AGE 0-17 YEARS	IF AGE 5 YEARS OR OLDER	IF AGE 5-24 YEARS	IF AGE 0-4 YEARS

LINE NO.	SURVIVORSHIP AND RESIDENCE OF BIOLOGICAL PARENTS				EVER ATTENDED SCHOOL		CURRENT/RECENT SCHOOL ATTENDANCE		BIRTH REGISTRATION
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
	Is (NAME)'s natural mother alive?	Does (NAME)'s natural mother usually live in this household or was she a guest last night? IF YES: What is her name? RECORD MOTHER'S LINE NUMBER. IF NO, RECORD '00'.	Is (NAME)'s natural father alive?	Does (NAME)'s natural father usually live in this household or was he a guest last night? IF YES: What is his name? RECORD FATHER'S LINE NUMBER. IF NO, RECORD '00'.	Has (NAME) ever attended school?	What is the highest level of school (NAME) has attended? SEE CODES BELOW. What is the highest grade (NAME) completed at that level? SEE CODES BELOW.	Did (NAME) attend school at any time during the (20092010) **(2)** school year?	During this/that school year, what level and grade [is/was] (NAME) attending? SEE CODES BELOW.	Does (NAME) have a birth certificate? IF NO, PROBE: Has (NAME)'s birth ever been registered with the civil authority? 1 = HAS CERTIFICATE 2 = REGISTERED 3 = NEITHER8 = DON'T KNOW
01	Y N DK 1 2 8 GO TO 14		Y N DK 1 2 8 GO TO 16		Y N 1 2 NEXT LINE	LEVEL GRADE	Y N 1 2 NEXT LINE	LEVEL GRADE	
02	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
03	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
04	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
05	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
06	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
07	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
08	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
09	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		
10	1 2 8 GO TO 14		1 2 8 GO TO 16		1 2 NEXT LINE		1 2 NEXT LINE		

CODES FOR Qs. 17 AND 19: EDUCATION

LEVEL	**GRADE**
1 = PRIMARY	00 = LESS THAN 1 YEAR COMPLETED
2 = SECONDARY	(USE '00' FOR Q. 17 ONLY.
3 = HIGHER	THIS CODE IS NOT ALLOWED
6 = PRE-PRIMARY	FOR Q. 19)
8 = DON'T KNOW	98 = DON'T KNOW

							IF AGE 15 OR OLDER			
LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	MARITAL STATUS	ELIGIBILITY		
1	2	3	4	5	6	7	8	9	10	11
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING THE NAMES AND RECORDING THE RELATIONSHIP AND SEX FOR EACH PERSON, ASK QUESTIONS 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK APPROPRIATE QUESTIONS IN COLUMNS 5-20 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? SEE CODES BELOW.	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)? IF 95 OR MORE, RECORD '95'.	What is (NAME)'s current marital status? 1 = MARRIED OR LIVING TOGETHER 2 = DIVORCED/ SEPARATED 3 = WIDOWED 4 = NEVER-MARRIED AND NEVER LIVED TOGETHER	CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49	CIRCLE LINE NUMBER OF ALL MEN AGE 15-49	CIRCLE LINE NUMBER OF ALL CHILDREN AGE 0-5
			M F	Y N	Y N	IN YEARS				
11			1 2	1 2	1 2			11	11	11
12			1 2	1 2	1 2			12	12	12
13			1 2	1 2	1 2			13	13	13
14			1 2	1 2	1 2			14	14	14
15			1 2	1 2	1 2			15	15	15
16			1 2	1 2	1 2			16	16	16
17			1 2	1 2	1 2			17	17	17
18			1 2	1 2	1 2			18	18	18
19			1 2	1 2	1 2			19	19	19
20			1 2	1 2	1 2			20	20	20

TICK HERE IF CONTINUATION SHEET USED ☐

2A) Just to make sure that I have a complete listing: are there any other persons such as small children or infants that we have not listed? YES ☐ → ADD TO TABLE NO ☐

2B) Are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends who usually live here? YES ☐ → ADD TO TABLE NO ☐

2C) Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed? YES ☐ → ADD TO TABLE NO ☐

CODES FOR Q. 3: RELATIONSHIP TO HEAD OF HOUSEHOLD

01 = HEAD
02 = WIFE OR HUSBAND
03 = SON OR DAUGHTER
04 = SON-IN-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER
09 = OTHER RELATIVE
10 = ADOPTED/FOSTER/ STEPCHILD
11 = NOT RELATED
98 = DON'T KNOW

	IF AGE 0-17 YEARS	IF AGE 5 YEARS OR OLDER	IF AGE 5-24 YEARS	IF AGE 0-4 YEARS

LINE NO.	SURVIVORSHIP AND RESIDENCE OF BIOLOGICAL PARENTS				EVER ATTENDED SCHOOL		CURRENT/RECENT SCHOOL ATTENDANCE		BIRTH REGISTRATION
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
	Is (NAME)'s natural mother alive?	Does (NAME)'s natural mother usually live in this household or was she a guest last night? IF YES: What is her name? RECORD MOTHER'S LINE NUMBER. IF NO, RECORD '00'.	Is (NAME)'s natural father alive?	Does (NAME)'s natural father usually live in this household or was he a guest last night? IF YES: What is his name? RECORD FATHER'S LINE NUMBER. IF NO, RECORD '00'.	Has (NAME) ever attended school?	What is the highest level of school (NAME) has attended? SEE CODES BELOW. What is the highest grade (NAME) completed at that level? SEE CODES BELOW.	Did (NAME) attend school at any time during the (20092010) **(2)** school year?	During this/that school year, what level and grade [is/was] (NAME) attending? SEE CODES BELOW.	Does (NAME) have a birth certificate? IF NO, PROBE: Has (NAME)'s birth ever been registered with the civil authority? 1 = HAS CERTIFICATE 2 = REGISTERED 3 = NEITHER8 = DON'T KNOW
11	Y N DK 1 ↓ 2 8 GO TO 14		Y N DK 1 ↓ 2 8 GO TO 16		Y N 1 ↓2 NEXT LINE	LEVEL GRADE	Y N 1 ↓2 NEXT LINE	LEVEL GRADE	
12	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
13	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
14	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
15	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
16	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
17	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
18	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
19	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		
20	1 ↓ 2 8 GO TO 14		1 ↓ 2 8 GO TO 16		1 ↓2 NEXT LINE		1 ↓2 NEXT LINE		

CODES FOR Qs. 17 AND 19: EDUCATION

LEVEL	**GRADE**
1 = PRIMARY	00 = LESS THAN 1 YEAR COMPLETED
2 = SECONDARY	(USE '00' FOR Q. 17 ONLY.
3 = HIGHER	THIS CODE IS NOT ALLOWED
6 = PRE-PRIMARY	FOR Q. 19)
8 = DON'T KNOW	98 = DON'T KNOW

HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	How often does anyone smoke inside your house? Would you say daily, weekly, monthly, less than monthly, or never?	DAILY . . . . . 1 WEEKLY . . . . . 2 MONTHLY . . . . . 3 LESS THAN MONTHLY . . . . . 4 NEVER 5	
102	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO DWELLING . . . . . 11 PIPED TO YARD/PLOT . . . . . 12 PUBLIC TAP/STANDPIPE . . . . . 13 TUBE WELL OR BOREHOLE . . . . . 21 DUG WELL PROTECTED WELL . . . . . 31 UNPROTECTED WELL . . . . . 32 WATER FROM SPRING PROTECTED SPRING . . . . . 41 UNPROTECTED SPRING . . . . . 42 RAINWATER . . . . . 51 TANKER TRUCK . . . . . 61 CART WITH SMALL TANK . . . . . 71 SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL) . . . . . 81 BOTTLED WATER . . . . . 91 OTHER _____ 96 (SPECIFY)	→ 105 → 105
103	Where is that water source located?	IN OWN DWELLING . . . . . 1 IN OWN YARD/PLOT . . . . . 2 ELSEWHERE 3	→ 105
104	How long does it take to go there, get water, and come back?	MINUTES . . . . . ☐☐☐ DON'T KNOW 998	
105	Do you do anything to the water to make it safer to drink?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 107
106	What do you usually do to make the water safer to drink? Anything else? RECORD ALL MENTIONED.	BOIL . . . . . A ADD BLEACH/CHLORINE . . . . . B STRAIN THROUGH A CLOTH . . . . . C USE WATER FILTER (CERAMIC/ SAND/COMPOSITE/ETC.) . . . . . D SOLAR DISINFECTION . . . . . E LET IT STAND AND SETTLE . . . . . F OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	What kind of toilet facility do members of your household usually use? **(3)**	FLUSH OR POUR FLUSH TOILET FLUSH TO PIPED SEWER SYSTEM . . . . . 11 FLUSH TO SEPTIC TANK . . . . . 12 FLUSH TO PIT LATRINE . . . . . 13 FLUSH TO SOMEWHERE ELSE. . . . . 14 FLUSH, DON'T KNOW WHERE . . . . . 15 PIT LATRINE VENTILATED IMPROVED PIT LATRINE . . . . . 21 PIT LATRINE WITH SLAB . . . . . 22 PIT LATRINE WITHOUT SLAB/ OPEN PIT . . . . . 23 COMPOSTING TOILET . . . . . 31 BUCKET TOILET . . . . . 41 HANGING TOILET/HANGING LATRINE. . . . . 51 NO FACILITY/BUSH/FIELD . . . . . 61 OTHER _____ 96 (SPECIFY)	→ 110
108	Do you share this toilet facility with other households?	YES. . . . . 1 NO 2	→ 110
109	How many households use this toilet facility?	NO. OF HOUSEHOLDS IF LESS THAN 10 . . . . . [0] 10 OR MORE HOUSEHOLDS . . . . . 95 DON'T KNOW 98	
110	Does your household have: **(4)** Electricity? A radio? A television? A mobile telephone? A non-mobile telephone? A refrigerator? [ADD ADDITIONAL ITEMS. SEE FOOTNOTE 4.]	YES NO ELECTRICITY. . . . . 1 2 RADIO. . . . . 1 2 TELEVISION . . . . . 1 2 MOBILE TELEPHONE . . . . . 1 2 NON-MOBILE TELEPHONE. . . 1 2 REFRIGERATOR 1 2	
111	What type of fuel does your household mainly use for cooking?	ELECTRICITY. . . . . 01 LPG . . . . . 02 NATURAL GAS . . . . . 03 BIOGAS . . . . . 04 KEROSENE . . . . . 05 COAL, LIGNITE . . . . . 06 CHARCOAL . . . . . 07 WOOD . . . . . 08 STRAW/SHRUBS/GRASS . . . . . 09 AGRICULTURAL CROP . . . . . 10 ANIMAL DUNG . . . . . 11 NO FOOD COOKED IN HOUSEHOLD. . . . . 95 OTHER _____ 96 (SPECIFY)	→ 114

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
112	Is the cooking usually done in the house, in a separate building, or outdoors?	IN THE HOUSE . . . . . 1 IN A SEPARATE BUILDING . . . . . 2 OUTDOORS . . . . . 3 OTHER _____ 6 (SPECIFY)	→ 114
113	Do you have a separate room which is used as a kitchen?	YES. . . . . 1 NO 2	
114	MAIN MATERIAL OF THE FLOOR. **(3)** RECORD OBSERVATION.	NATURAL FLOOR EARTH/SAND . . . . . 11 DUNG. . . . . 12 RUDIMENTARY FLOOR WOOD PLANKS . . . . . 21 PALM/BAMBOO . . . . . 22 FINISHED FLOOR PARQUET OR POLISHED WOOD . . . . . 31 VINYL OR ASPHALT STRIPS . . . . . 32 CERAMIC TILES . . . . . 33 CEMENT . . . . . 34 CARPET. . . . . 35 OTHER _____ 96 (SPECIFY)	
115	MAIN MATERIAL OF THE ROOF. **(3)** RECORD OBSERVATION.	NATURAL ROOFING NO ROOF . . . . . 11 THATCH/PALM LEAF . . . . . 12 SOD . . . . . 13 RUDIMENTARY ROOFING RUSTIC MAT . . . . . 21 PALM/BAMBOO . . . . . 22 WOOD PLANKS . . . . . 23 CARDBOARD . . . . . 24 FINISHED ROOFING METAL . . . . . 31 WOOD . . . . . 32 CALAMINE/CEMENT FIBER . . . . . 33 CERAMIC TILES. . . . . 34 CEMENT. . . . . 35 ROOFING SHINGLES. . . . . 36 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
116	MAIN MATERIAL OF THE EXTERIOR WALLS. **(3)** RECORD OBSERVATION.	NATURAL WALLS NO WALLS. . . . . 11 CANE/PALM/TRUNKS . . . . . 12 DIRT . . . . . 13 RUDIMENTARY WALLS BAMBOO WITH MUD . . . . . 21 STONE WITH MUD . . . . . 22 UNCOVERED ADOBE . . . . . 23 PLYWOOD . . . . . 24 CARDBOARD . . . . . 25 REUSED WOOD . . . . . 26 FINISHED WALLS CEMENT . . . . . 31 STONE WITH LIME/CEMENT . . . . . 32 BRICKS . . . . . 33 CEMENT BLOCKS . . . . . 34 COVERED ADOBE . . . . . 35 WOOD PLANKS/SHINGLES . . . . . 36 OTHER _____ 96 (SPECIFY)	
117	How many rooms in this household are used for sleeping?	ROOMS . . . . . ☐☐	
118	Does any member of this household own: A watch? A bicycle? A motorcycle or motor scooter? An animal-drawn cart? A car or truck? A boat with a motor?	YES NO WATCH . . . . . 1 2 BICYCLE. . . . . 1 2 MOTORCYCLE/SCOOTER . . . 1 2 ANIMAL-DRAWN CART . . . . . 1 2 CAR/TRUCK . . . . . 1 2 BOAT WITH MOTOR 1 2	
119	Does any member of this household own any agricultural land?	YES. . . . . 1 NO 2	→ 121
120	How many hectares of agricultural land do members of this household own? IF 95 OR MORE, CIRCLE '950'.	HECTARES. . . . . ☐☐.☐ 95 OR MORE HECTARES . . . . . 950 DON'T KNOW 998	
121	Does this household own any livestock, herds, other farm animals, or poultry?	YES. . . . . 1 NO 2	→ 123

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
122	How many of the following animals does this household own? **(5)** IF NONE, ENTER '00'. IF 95 OR MORE, ENTER '95'. IF UNKNOWN, ENTER '98'. Cattle? Milk cows or bulls? Horses, donkeys, or mules? Goats? Sheep? Chickens?	CATTLE . . . . . || COWS/BULLS . . . . . || HORSES/DONKEYS/MULES . . . . . || GOATS . . . . . || SHEEP . . . . . || CHICKENS. . . . . ||	
123	Does any member of this household have a bank account?	YES. . . . . 1 NO 2	
124 **(6)**	At any time in the past 12 months, has anyone come into your dwelling to spray the interior walls against mosquitoes?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 126
125 **(6)**	Who sprayed the dwelling?	GOVERNMENT WORKER/PROGRAM. . . . . A PRIVATE COMPANY . . . . . B NONGOVERNMENTAL ORGANIZATION (NGO) . . . . . C OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	
126 **(7)**	Does your household have any mosquito nets that can be used while sleeping?	YES . . . . . 1 NO 2	→ 137
127 **(7)**	How many mosquito nets does your household have? IF 7 OR MORE NETS, RECORD '7'.	NUMBER OF NETS. . . . . | |	

		NET #1	NET #2	NET #3
128 **(7)**	ASK THE RESPONDENT TO SHOW YOU ALL THE NETS IN THE HOUSEHOLD IF MORE THAN 3 NETS, USE ADDITIONAL QUESTIONNAIRE(S).	OBSERVED ..... 1 NOT OBSERVED ... 2	OBSERVED ..... 1 NOT OBSERVED ... 2	OBSERVED ..... 1 NOT OBSERVED ... 2
129 **(7)**	How many months ago did your household get the mosquito net? IF LESS THAN ONE MONTH AGO, RECORD '00'.	MONTHS AGO ... [ ][ ] MORE THAN 36 MONTHS AGO ... 95 NOT SURE 98	MONTHS AGO ... [ ][ ] MORE THAN 36 MONTHS AGO ... 95 NOT SURE 98	MONTHS AGO ... [ ][ ] MORE THAN 36 MONTHS AGO ... 95 NOT SURE 98
130 **(7)**	OBSERVE OR ASK THE BRAND/ TYPE OF MOSQUITO NET. IF BRAND IS UNKNOWN AND YOU CANNOT OBSERVE THE NET, SHOW PICTURES OF TYPICAL NET TYPES/BRANDS TO RESPONDENT.	LONG-LASTING INSECTICIDE-TREATED NET (LLIN) BRAND A ..... 11 BRAND B ..... 12 OTHER/ DK BRAND ... 16 (SKIP TO 134) 'PRETREATED' NET BRAND C ..... 21 BRAND D ..... 22 OTHER/ DK BRAND ... 26 (SKIP TO 132) OTHER BRAND ... 96 DK BRAND 98	LONG-LASTING INSECTICIDE-TREATED NET (LLIN) BRAND A ..... 11 BRAND B ..... 12 OTHER/ DK BRAND ... 16 (SKIP TO 134) 'PRETREATED' NET BRAND C ..... 21 BRAND D ..... 22 OTHER/ DK BRAND ... 26 (SKIP TO 132) OTHER BRAND ... 96 DK BRAND 98	LONG-LASTING INSECTICIDE-TREATED NET (LLIN) BRAND A ..... 11 BRAND B ..... 12 OTHER/ DK BRAND ... 16 (SKIP TO 134) 'PRETREATED' NET BRAND C ..... 21 BRAND D ..... 22 OTHER/ DK BRAND ... 26 (SKIP TO 132) OTHER BRAND ... 96 DK BRAND 98
131 **(7)**	When you got the net, was it already treated with an insecticide to kill or repel mosquitoes?	YES .... 1 NO .... 2 NOT SURE 8	YES .... 1 NO .... 2 NOT SURE 8	YES .... 1 NO .... 2 NOT SURE 8
132 **(7)**	Since you got the net, was it ever soaked or dipped in a liquid to kill or repel mosquitoes?	YES .... 1 NO .... 2 (SKIP TO 134) NOT SURE 8	YES .... 1 NO .... 2 (SKIP TO 134) NOT SURE 8	YES .... 1 NO .... 2 (SKIP TO 134) NOT SURE 8
133 **(7)**	How many months ago was the net last soaked or dipped? IF LESS THAN ONE MONTH AGO, RECORD '00'.	MONTHS AGO ... [ ][ ] MORE THAN 24 MONTHS AGO ... 95 NOT SURE 98	MONTHS AGO ... [ ][ ] MORE THAN 24 MONTHS AGO ... 95 NOT SURE 98	MONTHS AGO ... [ ][ ] MORE THAN 24 MONTHS AGO ... 95 NOT SURE 98
134 **(7)**	Did anyone sleep under this mosquito net last night?	YES .... 1 NO .... 2 (SKIP TO 136) NOT SURE 8	YES .... 1 NO .... 2 (SKIP TO 136) NOT SURE 8	YES .... 1 NO .... 2 (SKIP TO 136) NOT SURE 8

		NET #1	NET #2	NET #3

135 **(7)**	Who slept under this mosquito net last night? RECORD THE PERSON'S NAME AND LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.	NAME_____ LINE NO.	NAME_____ LINE NO.	NAME_____ LINE NO. . . . .
		NAME_____ LINE NO.	NAME_____ LINE NO.	NAME_____ LINE NO. . . . .
		NAME_____ LINE NO.	NAME_____ LINE NO.	NAME_____ LINE NO. . . . .
		NAME_____ LINE NO.	NAME_____ LINE NO.	NAME_____ LINE NO. . . . .
136 **(7)**		GO BACK TO 128 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 137.	GO BACK TO 128 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 137.	GO TO 128 IN FIRST COLUMN OF A NEW QUESTIONNAIRE; OR, IF NO MORE NETS, GO TO 137.

137	Please show me where members of your household most often wash their hands.	OBSERVED . . . . . 1 NOT OBSERVED, NOT IN DWELLING/YARD/PLOT . . . . . 2 NOT OBSERVED, NO PERMISSION TO SEE . . . . . 3 NOT OBSERVED, OTHER REASON . . . . . 4 (SKIP TO 140)
138	OBSERVATION ONLY: OBSERVE PRESENCE OF WATER AT THE PLACE FOR HANDWASHING.	WATER IS AVAILABLE . . . . . 1 WATER IS NOT AVAILABLE 2
139	OBSERVATION ONLY: OBSERVE PRESENCE OF SOAP, DETERGENT, OR OTHER CLEANSING AGENT.	SOAP OR DETERGENT (BAR, LIQUID, POWDER, PASTE) . . . . . A ASH, MUD, SAND . . . . . B NONE C
140	ASK RESPONDENT FOR A TEASPOONFUL OF COOKING SALT. TEST SALT FOR IODINE. **(8)**	IODINE PRESENT . . . . . 1 NO IODINE . . . . . 2 NO SALT IN HOUSEHOLD . . . . . 3 SALT NOT TESTED _____ 6 (SPECIFY REASON)

WEIGHT, HEIGHT AND HEMOGLOBIN MEASUREMENT FOR CHILDREN AGE 0-5

201	CHECK COLUMN 11 IN HOUSEHOLD SCHEDULE. RECORD THE LINE NUMBER AND NAME FOR ALL ELIGIBLE CHILDREN 0-5 YEARS IN QUESTION 202. IF MORE THAN SIX CHILDREN, USE ADDITIONAL QUESTIONNAIRE(S).			
		CHILD 1	CHILD 2	CHILD 3
202	LINE NUMBER FROM COLUMN 11	LINE NUMBER	LINE NUMBER	LINE NUMBER . . . . .

	NAME FROM COLUMN 2	NAME	NAME	NAME
203	IF MOTHER INTERVIEWED, COPY MONTH AND YEAR OF BIRTH FROM BIRTH HISTORY AND ASK DAY; IF MOTHER NOT INTERVIEWED, ASK: What is (NAME)'s birth date?	DAY . . . . . MONTH . . . . . YEAR	DAY . . . . . MONTH . . . . . YEAR	DAY . . . . . MONTH . . . . . YEAR
204	CHECK 203: CHILD BORN IN JANUARY 2005 **(9)** OR LATER?	YES . . . . . 1 NO . . . . . 2 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214)	YES . . . . . 1 NO . . . . . 2 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214)	YES . . . . . 1 NO . . . . . 2 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214)
205	WEIGHT IN KILOGRAMS **(10)**	KG. . NOT PRESENT . . . 9994 REF USED . . . . OTH . . 95 . . . . . 996 ER	KG. . NOT PRESENT . . . 9994 REFUSED . . . . . 9995 OTHER 9996	KG. . NOT PRESENT . . . 9994 REF USED . . . . . OTH . 9995 ER 9996
206	HEIGHT IN CENTIMETERS	CM. . NOT RESENT 994 USED . . . . . OTHER 999	CM. . NOT PRESENT . . . 9994 REFUSED . . . . . 9995 OTHER 9996	CM. . PRESENT . . . 9994 USED . . . . . 9995 . . . . . 9996 OTHER
207	MEASURED LYING DOWN OR STANDING UP?	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3
208	CHECK 203: IS CHILD AGE 0-5 MONTHS, I.E., WAS CHILD BORN IN MONTH OF INTERVIEW OR FIVE PREVIOUS MONTHS?	0-5 MONTHS . . . . . 1 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2	0-5 MONTHS . . . . . 1 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2	0-5 MONTHS . . . . . 1 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2
209	LINE NUMBER OF PARENT/ OTHER ADULT RESPONSIBLE FOR THE CHILD (FROM COLUMN 1 OF HOUSEHOLD SCHEDULE). RECORD '00' IF NOT LISTED.	LINE NUMBER	LINE NUMBER	LINE NUMBER . . . . .
210	ASK CONSENT FOR ANEMIA TEST FROM PARENT/OTHER ADULT IDENTIFIED IN 209 AS RESPONSIBLE FOR CHILD.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. We ask that all children born in 2005 **(9)** or later take part in anemia testing in this survey and give a few drops of blood from a finger or heel. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result will be told to you right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you allow (NAME OF CHILD) to participate in the anemia test?		
211	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 (SIGN) REFUSED 2	GRANTED . . . . . 1 (SIGN) REFUSED 2	GRANTED . . . . . 1 (SIGN) REFUSED 2
212	RECORD HEMOGLOBIN LEVEL HERE AND IN THE ANEMIA PAMPHLET **(11)**.	G/DL . NOT PRESENT . . . . . 994 REFUSED . . . . . .9 95 OTHER 9 96	G/DL . NOT PRESENT . . . . . 994 REFUSED . . . . . .9 95 OTHER 9 96	G/DL . NOT PRESENT . . . . . 9. 94 REFUSED . . . . . 995 OTHER 996
213	GO BACK TO 203 IN NEXT COLUMN OF THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF THE NEXT PAGE; IF NO MORE CHILDREN, GO TO 214.			

		CHILD 4	CHILD 5	CHILD 6

202	LINE NUMBER FROM COLUMN 11 NAME FROM COLUMN 2	LINE NUMBER . . . . . NAME	LINE NUMBER . . . . . NAME	LINE NUMBER . . . . . NAME
203	IF MOTHER INTERVIEWED, COPY MONTH AND YEAR OF BIRTH FROM BIRTH HISTORY AND ASK DAY; IF MOTHER NOT INTERVIEWED, ASK: What is (NAME)'s birth date?	DAY . . . . . . MONTH . . . . . YEAR	DAY . . . . . . MONTH . . . . . YEAR	DAY . . . . . . MONTH . . . . . YEAR
204	CHECK 203: CHILD BORN IN JANUARY 2005 **(9)** OR LATER?	YES . . . . . 1 NO . . . . . 2 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214)	YES . . . . . 1 NO . . . . . 2 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214)	YES . . . . . 1 NO . . . . . 2 (GO TO 203 IN FIRST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE CHILDREN, GO TO 214)
205	WEIGHT IN KILOGRAMS **(10)**	KG. . NOT PRESENT . . . 9994 REFUSED . . . 9995 OTHER 9996	KG. . NOT PRESENT . . . . 9994 REFUSED . . . 9995 OTHER 9996	KG. . NOT PRESENT . . . . 9994 REFUSED . . . 9995 OTHER 9996
206	HEIGHT IN CENTIMETERS	CM. . PRESENT . . . 9994 D . . . . . 9995 . . . . . 9996 REFUSE . OTHER .	CM. . NOT PRESENT . . 9994 REFUSED . . . . . 9995 OTHER . . . . . 9996 .	CM. . PRESENT . . . 9994 D . . . . . 9995 . . . . . 9996 REFUSE OTHER
207	MEASURED LYING DOWN OR STANDING UP?	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3	LYING DOWN . . . . . 1 STANDING UP . . . . . 2 NOT MEASURED 3
208	CHECK 203: IS CHILD AGE 0-5 MONTHS, I.E., WAS CHILD BORN IN MONTH OF INTERVIEW OR FIVE PREVIOUS MONTHS?	0-5 MONTHS . . . . . 1 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2	0-5 MONTHS . . . . . 1 (GO TO 203 FOR NEXT CHILD OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2	0-5 MONTHS . . . . . 1 (GO TO 203 IN FIRST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE CHILDREN, GO TO 214) OLDER 2
209	LINE NUMBER OF PARENT/ OTHER ADULT RESPONSIBLE FOR THE CHILD (FROM COLUMN 1 OF HOUSEHOLD SCHEDULE). RECORD '00' IF NOT LISTED.	LINE NUMBER	LINE NUMBER	LINE NUMBER . . . . .
210	ASK CONSENT FOR ANEMIA TEST FROM PARENT/OTHER ADULT IDENTIFIED IN 209 AS RESPONSIBLE FOR CHILD.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. We ask that all children born in 2005 **(9)** or later take part in anemia testing in this survey and give a few drops of blood from a finger or heel. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result told to you right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you allow (NAME OF CHILD) to participate in the anemia test?		
211	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 (SIGN) REFUSED 2	GRANTED . . . . . 1 (SIGN) REFUSED 2	GRANTED . . . . . 1 (SIGN) REFUSED 2
212	RECORD HEMOGLOBIN LEVEL HERE AND IN THE ANEMIA PAMPHLET **(11)**.	G/DL T . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996	G/DL T . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996	G/DL T . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996
213	GO BACK TO 203 IN NEXT COLUMN OF THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF AN ADDITIONAL QUESTIONNAIRE; IF NO MORE CHILDREN, GO TO 214.			

214	CHECK COLUMN 9 IN HOUSEHOLD SCHEDULE. RECORD THE LINE NUMBER AND NAME FOR ALL ELIGIBLE WOMEN IN 215. IF THERE ARE MORE THAN THREE WOMEN, USE ADDITIONAL QUESTIONNAIRE(S).			
		WOMAN 1	WOMAN 2	WOMAN 3
215	LINE NUMBER FROM COLUMN 9 NAME FROM COLUMN 2	LINE NUMBER . . . . . NAME	LINE NUMBER . . . . . NAME	LINE NUMBER . . . . . NAME
216	WEIGHT IN KILOGRAMS **(10)**	KG. . NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 99996	KG. . NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 99996	KG. . NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 99996
217	HEIGHT IN CENTIMETERS	CM. . NOT PRESENT . . . . . 9994 REFUSED . . . . . 9995 OTHER 9996	CM. . NOT PRESENT . . . . . 9994 REFUSED . . . . . 9995 OTHER 9996	CM. . NOT PRESENT . . . . . 9994 REFUSED . . . . . 9995 OTHER 9996
218	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 223)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 223)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 223)
219	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 223)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 223)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 223)
220	RECORD LINE NUMBER OF PARENT/OTHER ADULT RESPONSIBLE FOR ADOLESCENT. RECORD '00' IF NOT LISTED.	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT
221	ASK CONSENT FOR ANEMIA TEST FROM PARENT/ OTHER ADULT IDENTIFIED IN 220 AS RESPONSIBLE FOR NEVER IN UNION WOMEN AGE 15-17.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. For the anemia testing, we will need a few drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result will be told to you and (NAME OF ADOLESCENT) right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test for (NAME OF ADOLESCENT), or you can say no. It is up to you to decide. Will you allow (NAME OF ADOLESCENT) to take the anemia test?		
222	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 228)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 228)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 228)

		WOMAN 1	WOMAN 2	WOMAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME

223	ASK CONSENT FOR ANEMIA TEST FROM RESPONDENT.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. For the anemia testing, we will need a few drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result will be told to you right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you take the anemia test?		
224	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF REFUSED, GO TO 226)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 226)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 226)
225	PREGNANCY STATUS: CHECK 226 IN WOMAN'S QUESTIONNAIRE OR ASK: Are you pregnant?	YES . . . . . 1 NO . . . . . 2 DK 8	YES . . . . . 1 NO . . . . . 2 DK 8	YES . . . . . 1 NO . . . . . 2 DK 8
226 **(12)**	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 230)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 230)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 230)
227 **(12)**	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 230)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 230)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 230)
228 **(12)**	ASK CONSENT FOR DBS COLLECTION FROM PARENT/ OTHER ADULT IDENTIFIED IN 220 AS RESPONSIBLE FOR NEVER IN UNION WOMEN AGE 15-17.	As part of the survey we also are asking people all over the country to take an HIV test. HIV is the virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in (COUNTRY). For the HIV test, we need a few (more) drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. No names will be attached so we will not be able to tell you the test results. No one else will be able to know (NAME OF ADOLESCENT)'s test results either. If (NAME OF ADOLESCENT) wants to know her HIV status, I can provide a list of [nearby] facilities offering counseling and testing for HIV. I will also give her a voucher for free services that can be used at any of these facilities. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you allow (NAME OF ADOLESCENT) to take the HIV test?		
229 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 239)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 239)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 239)

		WOMAN 1	WOMAN 2	WOMAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME

230 **(12)**	ASK CONSENT FOR DBS COLLECTION FROM RESPONDENT.	As part of the survey we also are asking people all over the country to take an HIV test. HIV is the virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in (COUNTRY). For the HIV test, we need a few (more) drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. No names will be attached so we will not be able to tell you the test results. No one else will be able to know your test results either. If you want to know whether you have HIV, I can provide you with a list of [nearby] facilities offering counseling and testing for HIV. I will also give you a voucher for free services for you (and for your partner if you want) that you can use at any of these facilities. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you take the HIV test?		
231 **(12)**	CIRCLE THE APPROPRIATE CODE, SIGN YOUR NAME, AND ENTER YOUR INTERVIEWER NUMBER.	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF REFUSED, GO TO 239)	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF REFUSED, GO TO 239)	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF REFUSED, GO TO 239)
232 **(12)**	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 236)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 236)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 236)
233 **(12)**	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 236)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 236)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 236)
234 **(12)**	ASK CONSENT FOR ADDITIONAL TESTING FROM PARENT/OTHER ADULT IDENTIFIED IN 220 AS RESPONSIBLE FOR NEVER IN UNION WOMEN AGE 15-17.	We ask you to allow [SURVEY IMPLEMENTING ORGANIZATION/MINISTRY OF HEALTH] to store part of the blood sample at the laboratory for additional tests or research. We are not certain about what additional tests might be done. The blood sample will not have any name or other data attached that could identify (NAME OF ADOLESCENT). You do not have to agree. If you do not want the blood sample stored for additional testing (NAME OF ADOLESCENT) can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for additional testing?		
235 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 238)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 238)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 238)
236 **(12)**	ASK CONSENT FOR ADDITIONAL TESTING FROM RESPONDENT.	We ask you to allow [SURVEY IMPLEMENTING ORGANIZATION/MINISTRY OF HEALTH] to store part of the blood sample at the laboratory for additional tests or research. We are not certain about what additional tests might be done. The blood sample will not have any name or other data attached that could identify you. You do not have to agree. If you do not want the blood sample stored for additional testing, you can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for additional testing?		

		WOMAN 1	WOMAN 2	WOMAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME

237 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . 1 RESPONDENT REFUSED . . . . . . 2 (SIGN) (IF GRANTED, GO TO 239)	GRANTED . . . . 1 RESPONDENT REFUSED . . . . . . 2 (SIGN) (IF GRANTED, GO TO 239)	GRANTED . . . . 1 RESPONDENT REFUSED . . . . . . 2 (SIGN) (IF GRANTED, GO TO 239)
238 **(12)**	ADDITIONAL TESTS	CHECK 235 AND 237: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 235 AND 237: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 235 AND 237: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.
239 **(12)**	PREPARE EQUIPMENT AND SUPPLIES ONLY FOR THE TEST(S) FOR WHICH CONSENT HAS BEEN OBTAINED AND PROCEED WITH THE TEST(S).			
240	RECORD HEMOGLOBIN LEVEL HERE AND IN ANEMIA PAMPHLET **(11).**	G/DL . . . . [ ][ ].[ ] NOT PRESENT . . . . . 994 REFUSED . . . . 995 OTHER 996	G/DL . . . . [ ][ ].[ ] NOT PRESENT . . . . . 994 REFUSED . . . . 995 OTHER 996	G/DL . . . . [ ][ ].[ ] NOT PRESENT . . . . . 994 REFUSED . . . . 995 OTHER 996
241 **(12)**	BAR CODE LABEL	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER . . . . 99996 PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER . . . . 99996 PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER . . . . 99996 PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.
242	GO BACK TO 216 IN NEXT COLUMN OF THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF AN ADDITIONAL QUESTIONNAIRE; IF NO MORE WOMEN, GO TO 243.			

WEIGHT, HEIGHT, HEMOGLOBIN MEASUREMENT AND HIV TESTING FOR MEN AGE 15-49

243	CHECK COLUMN 10 IN HOUSEHOLD SCHEDULE. RECORD THE LINE NUMBER AND NAME FOR ALL ELIGIBLE MEN IN 244. IF THERE ARE MORE THAN THREE MEN, USE ADDITIONAL QUESTIONNAIRE(S).			
		MAN 1	MAN 2	MAN 3
244	LINE NUMBER FROM COLUMN 10 NAME FROM COLUMN 2	LINE NUMBER . . . . [ ][ ] NAME	LINE NUMBER . . . . [ ][ ] NAME	LINE NUMBER . . . . [ ][ ] NAME
245	WEIGHT IN KILOGRAMS **(10)**	KG. [ ][ ][ ].[ ][ ] NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER 99996	KG. [ ][ ][ ].[ ][ ] NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER 99996	KG. [ ][ ][ ].[ ][ ] NOT PRESENT . . . . . 99994 REFUSED . . . . 99995 OTHER 99996
246	HEIGHT IN CENTIMETERS	CM. . . . . [ ][ ][ ].[ ] NOT PRESENT . . . . . . 9994 REFUSED . . . . 9995 OTHER 9996	CM. . . . . [ ][ ][ ].[ ] NOT PRESENT . . . . . . 9994 REFUSED . . . . 9995 OTHER 9996	CM. . . . . [ ][ ][ ].[ ] NOT PRESENT . . . . . . 9994 REFUSED . . . . 9995 OTHER 9996
247	AGE: CHECK	15-17 YEARS 1	15-17 YEARS 1	15-17 YEARS 1

	COLUMN 7.	18-49 YEARS . . . . . 2 (GO TO 252) ←	18-49 YEARS . . . . . 2 (GO TO 252) ←	18-49 YEARS . . . . . 2 (GO TO 252) ←
248	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 252) ←	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 252) ←	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 252) ←
249	RECORD LINE NUMBER OF PARENT/OTHER ADULT RESPONSIBLE FOR ADOLESCENT. RECORD '00' IF NOT LISTED.	☐☐ LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT	☐☐ LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT	☐☐ LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT
250	ASK CONSENT FOR ANEMIA TEST FROM PARENT/ OTHER ADULT IDENTIFIED IN 249 AS RESPONSIBLE FOR NEVER IN UNION MEN AGE 15-17.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. For the anemia testing, we will need a few drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result will be told to you and (NAME OF ADOLESCENT) right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test for (NAME OF ADOLESCENT), or you can say no. It is up to you to decide. Will you allow (NAME OF ADOLESCENT) to take the anemia test?		
251	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 256)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 256)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 256)

		MAN 1	MAN 2	MAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME
252	ASK CONSENT FOR ANEMIA TEST FROM RESPONDENT.	As part of this survey, we are asking people all over the country to take an anemia test. Anemia is a serious health problem that usually results from poor nutrition, infection, or chronic disease. This survey will assist the government to develop programs to prevent and treat anemia. For the anemia testing, we will need a few drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. The blood will be tested for anemia immediately, and the result will be told to you right away. The result will be kept strictly confidential and will not be shared with anyone other than members of our survey team. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you take the anemia test?		
253	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN)
254 **(12)**	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 258) ←	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 258) ←	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 258) ←
255 **(12)**	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 258) ←	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 258) ←	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 258) ←

256 **(12)**	ASK CONSENT FOR DBS COLLECTION FROM PARENT/ OTHER ADULT IDENTIFIED IN 249 AS RESPONSIBLE FOR NEVER IN UNION MEN AGE 15-17.	As part of the survey we also are asking people all over the country to take an HIV test. HIV is the virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in (COUNTRY). For the HIV test, we need a few (more) drops of blood from a finger. The equipment used to take the blood is clean and completely safe. It has never been used before and will be thrown away after each test. No names will be attached so we will not be able to tell you the test results. No one else will be able to know (NAME OF ADOLESCENT)'s test results either. If (NAME OF ADOLESCENT) wants to know his HIV status, I can provide him with a list of [nearby] facilities offering counseling and testing for HIV. I will also give him a voucher for free services that can be used at any of these facilities. Do you have any questions? You can say yes to the test for (NAME OF ADOLESCENT), or you can say no. It is up to you to decide. Will you allow (NAME OF ADOLESCENT) to take the HIV test?		
257 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 267)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) .(IF REFUSED, GO TO 267)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 267)

		MAN 1	MAN 2	MAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME
258 **(12)**	ASK CONSENT FOR DBS COLLECTION FROM RESPONDENT	As part of the survey we also are asking people all over the country to take an HIV test. HIV is the virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in (COUNTRY). For the HIV test, we need a few more drops of blood from a finger. The equipment used in taking the blood is clean and completely safe. It has never been used before and will be thrown away after each test. No names will be attached so we will not be able to tell you the test results. No one else will be able to know your test results either. If you want to know whether you have HIV, I can provide you with a list of [nearby] facilities offering counseling and testing for HIV. I will also give you a voucher for free services for you (and for your partner if you want) that you can use at any of these facilities. Do you have any questions? You can say yes to the test, or you can say no. It is up to you to decide. Will you take the HIV test?		
259 **(12)**	CIRCLE THE APPROPRIATE CODE, SIGN YOUR NAME, AND ENTER YOUR INTERVIEWER NUMBER.	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 267)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 267)	GRANTED . . . . . 1 RESPONDENT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 267)
260 **(12)**	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 264)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 264)	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 264)
261 **(12)**	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 264)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 264)	CODE 4 (NEVER IN UNION) . . . . . 1 OTHER . . . . . 2 (GO TO 264)

262 **(12)**	ASK CONSENT FOR ADDITIONAL TESTING FROM PARENT/OTHER ADULT IDENTIFIED IN 249 AS RESPONSIBLE FOR NEVER IN UNION MEN AGE 15-17.	We ask you to allow [SURVEY IMPLEMENTING ORGANIZATION/MINISTRY OF HEALTH] to store part of the blood sample at the laboratory for additional tests or research. We are not certain about what additional tests might be done. The blood sample will not have any name or other data attached that could identify (NAME OF ADOLESCENT). You do not have to agree. If you do not want the blood sample stored for additional testing, (NAME OF ADOLESCENT) can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for additional testing?		
263 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 266)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 266)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 (SIGN) (IF REFUSED, GO TO 266)

		MAN 1	MAN 2	MAN 3
	NAME FROM COLUMN 2	NAME	NAME	NAME
264 **(12)**	ASK CONSENT FOR ADDITIONAL TESTING FROM RESPONDENT.	We ask you to allow [SURVEY IMPLEMENTING ORGANIZATION/MINISTRY OF HEALTH] to store part of the blood sample at the laboratory for additional tests or research. We are not certain about what additional tests might be done. The blood sample will not have any name or other data attached that could identify you. You do not have to agree. If you do not want the blood sample stored for additional testing, you can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for additional testing?		
265 **(12)**	CIRCLE THE APPROPRIATE CODE AND SIGN YOUR NAME.	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF GRANTED, GO TO 267)	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF GRANTED, GO TO 267)	RESPONDENT REFUSED . . . . . 2 GRANTED. . . . . 1 (SIGN) (IF GRANTED, GO TO 267)
266 **(12)**	ADDITIONAL TESTS	CHECK 263 AND 265: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 263 AND 265: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 263 AND 265: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.
267 **(12)**	PREPARE EQUIPMENT AND SUPPLIES ONLY FOR THE TEST(S) FOR WHICH CONSENT HAS BEEN OBTAINED AND PROCEED WITH THE TEST(S).			
268	RECORD HEMO-GLOBIN LEVEL HERE AND IN ANEMIA PAMPHLET **(11)**.	G/DL . . . . . . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996	G/DL . . . . . . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996	G/DL . . . . . . NOT PRESENT . . . . . 994 REFUSED . . . . . 995 OTHER 996
269 **(12)**	BAR CODE LABEL	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 9 9996	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 9 9996	PUT THE 1ST BAR CODE LABEL HERE. NOT PRESENT . . . . . 99994 REFUSED . . . . . 99995 OTHER 9 9996

		PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.
270	GO BACK TO 245 IN NEXT COLUMN OF THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF AN ADDITIONAL QUESTIONNAIRE; IF NO MORE MEN, END INTERVIEW.			

FOOTNOTES

(1) This section should be adapted for country-specific survey design.

(2) In Q. 18, the year should refer to the school year that is in session at the time the survey begins. If the survey begins between two school years, then the year should refer to the school year that just ended.

(3) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(4) Each country should add to the list at least five items of furniture (such as a table, a chair, a sofa, a bed, an armoire, or a cupboard or cabinet). In addition, each country should add at least four additional household appliances so that the list includes at least three items that even a poor household may have, at least three items that a middle income household may have, and at least three items that a high income household may have. Some possible additions are clock, water pump, grain grinder, fan, blender, water heater, generator, washing machine, microwave oven, computer, VCR or DVD player, cassette or CD player, camera, air conditioner or cooler, color TV, sewing machine.

(5) Add other country-specific animals, such as oxen, water buffalo, camels, llamas, alpacas, pigs, ducks, geese, or elephants.

(6) The question should be deleted in countries that do not have an organized spraying program to prevent the transmission of malaria.

(7) The question should be deleted in countries that are not affected by malaria.

(8) There are many different kinds of iodine testing kits available. The proper test kit should be selected in each country depending on the type of iodine additive used in the country (potassium iodate or potassium iodide). If both of these additives are used in a country, then both types of test kits should be used.

(9) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2006 or 2007, respectively.

(10) In countries where the weighing scale shows the weight to only one decimal place, retain only one box after the decimal point and delete the first '9' from the other three codes.

(11) In countries where some enumeration areas are higher than 1,000 meters, altitude information should be collected on a separate form for each enumeration area higher than 1,000 meters so that the anemia estimates can be adjusted appropriately.

(12) Questions should be omitted in countries in which HIV testing is not a component of the survey.

[THIS PAGE IS INTENTIONALLY BLANK]

DEMOGRAPHIC AND HEALTH SURVEYS
MODEL WOMAN'S QUESTIONNAIRE

[NAME OF COUNTRY]
[NAME OF ORGANIZATION]

IDENTIFICATION (1)

PLACE NAME _____

NAME OF HOUSEHOLD HEAD _____

CLUSTER NUMBER . . . . . | | | |

HOUSEHOLD NUMBER . . . . . | | | |

NAME AND LINE NUMBER OF WOMAN _____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR
INTERVIEWER'S NAME				INT. NUMBER
RESULT*				RESULT
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS
TIME				

*RESULT CODES:
1 COMPLETED
2 NOT AT HOME
3 POSTPONED
4 REFUSED
5 PARTLY COMPLETED
6 INCAPACITATED
7 OTHER _____ (SPECIFY)

COUNTRY-SPECIFIC INFORMATION: LANGUAGE OF QUESTIONNAIRE, LANGUAGE OF INTERVIEW, NATIVE LANGUAGE OF RESPONDENT, AND WHETHER TRANSLATOR USED

SUPERVISOR	FIELD
NAME _____	NAME _____

(1) This section should be adapted for country-specific survey design.

Note: Questions with blue highlighting in the question number column are HIV related questions that may be deleted in some circumstances (see footnotes). Questions with pink highlighting in the question number column are malaria related questions that may be deleted in some circumstances (see footnotes). Questions with yellow highlighting in the question number column are other questions that may be deleted in some circumstances (see footnotes).

SECTION 1. RESPONDENT'S BACKGROUND

INTRODUCTION AND CONSENT

INFORMED CONSENT

Hello. My name is _____. I am working with (NAME OF ORGANIZATION). We are conducting a survey about health all over (NAME OF COUNTRY). The information we collect will help the government to plan health services. Your household was selected for the survey. The questions usually take about 30 to 60 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on the card that has already been given to your household.
Do you have any questions? May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . 1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2 → END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR. . . . . ☐☐ MINUTES. . . . . ☐☐	
102	In what month and year were you born?	MONTH . . . . . ☐☐ DON'T KNOW MONTH . . . . . 98 YEAR. . . . . ☐☐☐☐ DON'T KNOW YEAR 9998	
103	How old were you at your last birthday? COMPARE AND CORRECT 102 AND/OR 103 IF INCONSISTENT.	AGE IN COMPLETED YEARS ☐☐	
104	Have you ever attended school?	YES. . . . . 1 NO 2	→ 108
105	What is the highest level of school you attended: primary, secondary, or higher? (1)	PRIMARY . . . . . 1 SECONDARY. . . . . 2 HIGHER. 3	
106	What is the highest (grade/form/year) you completed at that level? (1) IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.	GRADE/FORM/YEAR. . . . . ☐☐	
107	CHECK 105: PRIMARY ☐ ↓ SECONDARY OR HIGHER ☐ →		110

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
108	Now I would like you to read this sentence to me. SHOW CARD TO RESPONDENT. **(2)** IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL . . . . . 1 ABLE TO READ ONLY PARTS OF SENTENCE. . . . . 2 ABLE TO READ WHOLE SENTENCE 3 NO CARD WITH REQUIRED LANGUAGE _____ 4 (SPECIFY LANGUAGE) BLIND/VISUALLY IMPAIRED 5	
109	CHECK 108: CODE '2', '3' OR '4' CIRCLED ☐ CODE '1' OR '5' CIRCLED ☐ →		111
110	Do you read a newspaper or magazine at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
111	Do you listen to the radio at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
112	Do you watch television at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
113	COUNTRY-SPECIFIC QUESTION ON RELIGION, IF APPROPRIATE.		
114	COUNTRY-SPECIFIC QUESTION ON ETHNICITY, IF APPROPRIATE.		
115 **(3)**	In the last 12 months, how many times have you been away from home for one or more nights?	NUMBER OF TIMES . . . . . ☐☐ NONE. . . . . 00 →	201
116 **(3)**	In the last 12 months, have you been away from home for more than one month at a time?	YES. . . . . 1 NO 2	

(1) Revise according to the local education system.

(2) Each card should have four simple sentences appropriate to the country (e.g., "Parents love their children.", "Farming is hard work.", "The child is reading a book.", "Children work hard at school."). Cards should be prepared for every language in which respondents are likely to be literate.

(3) The question may be considered for deletion in countries with a very low HIV prevalence.

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES. . . . . 1 NO 2	→ 206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES. . . . . 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME. . . . . ☐☐ DAUGHTERS AT HOME . . . . . ☐☐	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES. . . . . 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE . . . . . ☐☐ DAUGHTERS ELSEWHERE ☐☐	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES. . . . . 1 NO 2	→ 208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD . . . . . ☐☐ GIRLS DEAD . . . . . ☐☐	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL BIRTHS . . . . . ☐☐	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES ☐ ↓ NO ☐ → PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: ONE OR MORE BIRTHS ☐ ↓ NO BIRTHS ☐		→ 226

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.
RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE ROWS.
(IF THERE ARE MORE THAN 12 BIRTHS, USE AN ADDITIONAL QUESTIONNAIRE, STARTING WITH THE SECOND ROW).

212 What name was given to your (first/next) baby? RECORD NAME. BIRTH HISTORY NUMBER	213 Is (NAME) a boy or a girl?	214 Were any of these births twins?	215 In what month and year was (NAME) born? PROBE: When is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE: RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (NEXT BIRTH)	DAYS . . . 1 MONTHS 2 YEARS . . 3	
02	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
03	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
04	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
05	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
06	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
07	BOY 1 GIRL 2	SING 1 MULT 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

212 What name was given to your next baby? RECORD NAME. BIRTH HISTORY NUMBER	213 Is (NAME) a boy or a girl?	214 Were any of these births twins?	215 In what month and year was (NAME) born? PROBE: When is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE: RECORD HOUSE-HOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSE-HOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
08	BOY 1 GIRL 2	SING 1 MULT 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 NO . . . 2 → 220	AGE IN YEARS ☐☐	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ → (GO TO 221)	DAYS . . . 1 ☐☐ MONTHS 2 ☐☐ YEARS . . 3 ☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
09	BOY 1 GIRL 2	SING 1 MULT 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 NO . . . 2 → 220	AGE IN YEARS ☐☐	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ → (GO TO 221)	DAYS . . . 1 ☐☐ MONTHS 2 ☐☐ YEARS . . 3 ☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
10	BOY 1 GIRL 2	SING 1 MULT 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 NO . . . 2 → 220	AGE IN YEARS ☐☐	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ → (GO TO 221)	DAYS . . . 1 ☐☐ MONTHS 2 ☐☐ YEARS . . 3 ☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
11	BOY 1 GIRL 2	SING 1 MULT 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 NO . . . 2 → 220	AGE IN YEARS ☐☐	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ → (GO TO 221)	DAYS . . . 1 ☐☐ MONTHS 2 ☐☐ YEARS . . 3 ☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
12	BOY 1 GIRL 2	SING 1 MULT 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 NO . . . 2 → 220	AGE IN YEARS ☐☐	YES . . . 1 NO 2	HOUSEHOLD LINE NUMBER ☐☐ → (GO TO 221)	DAYS . . . 1 ☐☐ MONTHS 2 ☐☐ YEARS . . 3 ☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

222	Have you had any live births since the birth of (NAME OF LAST BIRTH)? IF YES, RECORD BIRTH(S) IN TABLE.	YES . . . . . 1 NO 2
223	COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK: NUMBERS ARE SAME ☐↓ NUMBERS ARE DIFFERENT ☐→ (PROBE AND RECONCILE)	
224	CHECK 215: ENTER THE NUMBER OF BIRTHS IN 2005 **(1)** OR LATER.	NUMBER OF BIRTHS . . . . . ☐ NONE . . . . . 0 → 226

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
225	**C** FOR EACH BIRTH SINCE JANUARY 2005 **(1)**, ENTER 'B' IN THE MONTH OF BIRTH IN THE CALENDAR. WRITE THE NAME OF THE CHILD TO THE LEFT OF THE 'B' CODE. FOR EACH BIRTH, ASK THE NUMBER OF MONTHS THE PREGNANCY LASTED AND RECORD 'P' IN EACH OF THE PRECEDING MONTHS ACCORDING TO THE DURATION OF PREGNANCY. (NOTE: THE NUMBER OF 'P's MUST BE ONE LESS THAN THE NUMBER OF MONTHS THAT THE PREGNANCY LASTED.)		
226	Are you pregnant now?	YES . . . . . 1 NO . . . . . 2 UNSURE 8	→ 230
227	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS. **C** ENTER 'P's IN THE CALENDAR, BEGINNING WITH THE MONTH OF INTERVIEW AND FOR THE TOTAL NUMBER OF COMPLETED MONTHS.	MONTHS	
228	When you got pregnant, did you want to get pregnant at that time?	YES . . . . . 1 NO 2	→ 230
229	Did you want to have a baby later on or did you not want any (more) children?	LATER . . . . . 1 NO MORE 2	
230	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?	YES . . . . . 1 NO 2	→ 238
231	When did the last such pregnancy end?	MONTH . . . . . YEAR	
232	CHECK 231: LAST PREGNANCY ENDED IN JAN. 2005 **(1)** OR LATER ↓ LAST PREGNANCY ENDED BEFORE JAN. 2005 **(1)** →		→ 238
233	How many months pregnant were you when the last such pregnancy ended? **C** RECORD NUMBER OF COMPLETED MONTHS. ENTER 'T' IN THE CALENDAR IN THE MONTH THAT THE PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.	MONTHS	
234	Since January 2005 **(1)**, have you had any other pregnancies that did not result in a live birth?	YES . . . . . 1 NO 2	→ 236
235	ASK THE DATE AND THE DURATION OF PREGNANCY FOR EACH EARLIER NON-LIVE BIRTH PREGNANCY BACK TO JANUARY 2005. **(1)** **C** ENTER 'T' IN THE CALENDAR IN THE MONTH THAT EACH PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.		
236	Did you have any miscarriages, abortions or stillbirths that ended before 2005 **(1)**?	YES . . . . . 1 NO 2	→ 238
237	When did the last such pregnancy that terminated before 2005 **(1)** end?	MONTH . . . . . YEAR	

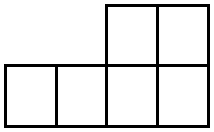
238	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO. . . . . 1 ☐☐ WEEKS AGO . . . . . 2 ☐☐ MONTHS AGO. . . . . 3 ☐☐ YEARS AGO . . . . . 4 ☐☐ IN MENOPAUSE/ HAS HAD HYSTERECTOMY . . . 994 BEFORE LAST BIRTH. . . . . 995 NEVER MENSTRUATED. 996	
239	From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	→ 301
240	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS . . . . . 1 DURING HER PERIOD . . . . . 2 RIGHT AFTER HER PERIOD HAS ENDED. . . . . 3 HALFWAY BETWEEN TWO PERIODS . . . . . 4 OTHER _____ 6 (SPECIFY) DON'T KNOW. 8	

(1) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2006 or 2007, respectively.

SECTION 3. CONTRACEPTION

301	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Have you ever heard of (METHOD)? **(1)**		
01	**Female Sterilization**. PROBE: Women can have an operation to avoid having any more children.	YES. . . . . 1 NO 2	
02	**Male Sterilization**. PROBE: Men can have an operation to avoid having any more children.	YES. . . . . 1 NO 2	
03	**IUD**. PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse.	YES. . . . . 1 NO 2	
04	**Injectables**. PROBE: Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES. . . . . 1 NO 2	
05	**Implants**. PROBE: Women can have one or more small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES. . . . . 1 NO 2	
06	**Pill**. PROBE: Women can take a pill every day to avoid becoming pregnant.	YES. . . . . 1 NO 2	
07	**Condom**. PROBE: Men can put a rubber sheath on their penis before sexual intercourse.	YES. . . . . 1 NO 2	
08	**Female Condom**. PROBE: Women can place a sheath in their vagina before sexual intercourse.	YES. . . . . 1 NO 2	
09 **(2)**	**Lactational Amenorrhea Method (LAM)**. **(2)**	YES. . . . . 1 NO 2	
10	**Rhythm Method**. PROBE: To avoid pregnancy, women do not have sexual intercourse on the days of the month they think they can get pregnant.	YES. . . . . 1 NO 2	
11	**Withdrawal**. PROBE: Men can be careful and pull out before climax.	YES. . . . . 1 NO 2	
12	**Emergency Contraception**. PROBE: As an emergency measure, within three days after they have unprotected sexual intercourse, women can take special pills to prevent pregnancy. **(3)**	YES. . . . . 1 NO 2	
13	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES. . . . . 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	
302	CHECK 226: NOT PREGNANT OR UNSURE ☐ PREGNANT ☐ → 311		
303	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES. . . . . 1 NO 2	→ 311

304	Which method are you using? **(4)** CIRCLE ALL MENTIONED. IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD IN LIST.	FEMALE STERILIZATION . . . . . A MALE STERILIZATION . . . . . B → 307 IUD. . . . . C INJECTABLES . . . . . D → 308A IMPLANTS . . . . . E PILL. . . . . F CONDOM . . . . . G → 306 FEMALE CONDOM . . . . . H DIAPHRAGM . . . . . I FOAM/JELLY . . . . . J LACTATIONAL AMEN. METHOD. . . . . K → 308A RHYTHM METHOD. . . . . L WITHDRAWAL . . . . . M OTHER MODERN METHOD . . . . . X OTHER TRADITIONAL METHOD . . . Y	
305	What is the brand name of the pills you are using? IF DON'T KNOW THE BRAND, ASK TO SEE THE PACKAGE.	BRAND A . . . . . 01 BRAND B . . . . . 02 BRAND C . . . . . 03 OTHER _____ 96 (SPECIFY) DON'T KNOW. 98	→ 308A
306	What is the brand name of the condoms you are using? IF DON'T KNOW THE BRAND, ASK TO SEE THE PACKAGE.	BRAND A . . . . . 01 BRAND B . . . . . 02 BRAND C . . . . . 03 OTHER _____ 96 (SPECIFY) DON'T KNOW. 98	→ 308A
307	In what facility did the sterilization take place? **(5)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 FAMILY PLANNING CLINIC. . . . . 13 MOBILE CLINIC . . . . . 14 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . 21 PRIVATE DOCTOR'S OFFICE. . . . . 23 MOBILE CLINIC . . . . . 24 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW. 98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
308	In what month and year was the sterilization performed?		
308A	Since what month and year have you been using (CURRENT METHOD) without stopping? PROBE: For how long have you been using (CURRENT METHOD) now without stopping?	MONTH . . . . . . YEAR	
309	CHECK 308/308A, 215 AND 231: ANY BIRTH OR PREGNANCY TERMINATION AFTER MONTH AND YEAR OF START OF USE OF CONTRACEPTION IN 308/308A GO BACK TO 308/308A, PROBE AND RECORD MONTH AND YEAR AT START OF CONTINUOUS USE OF CURRENT METHOD (MUST BE AFTER LAST BIRTH OR PREGNANCY TERMINATION).	YES NO	
310	CHECK 308/308A: YEAR IS 2005 **(6)** OR LATER **C** OF INTERVIEW IN THE CALENDAR USED IN MONTH AND IN EACH MONTH BACK TO THE DATE STARTED USING. YEAR IS 2004 **(7)** OR EARLIER **C** INTERVIEW IN THE CALENDAR AND ENTER CODE FOR METHOD ENTER CODE FOR METHOD USED IN MONTH OF EACH MONTH BACK TO JANUARY 2005 **(6)**.	THEN SKIP TO → 322	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
311	I would like to ask you some questions about the times you or your partner may have used a method to avoid getting pregnant during the last few years. USE CALENDAR TO PROBE FOR EARLIER PERIODS OF USE AND NONUSE, STARTING WITH MOST RECENT USE, BACK TO JANUARY 2005. **(6)** **C** USE NAMES OF CHILDREN, DATES OF BIRTH, AND PERIODS OF PREGNANCY AS REFERENCE POINTS. **IN COLUMN 1**, ENTER METHOD USE CODE OR '0' FOR NONUSE IN EACH BLANK MONTH. ILLUSTRATIVE QUESTIONS: * When was the last time you used a method? Which method was that? * When did you start using that method? How long after the birth of (NAME)? * How long did you use the method then? **IN COLUMN 2**, ENTER CODES FOR DISCONTINUATION NEXT TO THE LAST MONTH OF USE. NUMBER OF CODES IN COLUMN 2 MUST BE SAME AS NUMBER OF INTERRUPTIONS OF METHOD USE IN COLUMN 1. ASK WHY SHE STOPPED USING THE METHOD. IF A PREGNANCY FOLLOWED, ASK WHETHER SHE BECAME PREGNANT UNINTENTIONALLY WHILE USING THE METHOD OR DELIBERATELY STOPPED TO GET PREGNANT. ILLUSTRATIVE QUESTIONS: * Why did you stop using the (METHOD)? Did you become pregnant while using (METHOD), or did you stop to get pregnant, or did you stop for some other reason? * IF DELIBERATELY STOPPED TO BECOME PREGNANT, ASK: How many months did it take you to get pregnant after you stopped using (METHOD)? AND ENTER ‘0’ IN EACH SUCH MONTH IN COLUMN 1.		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
312	CHECK THE CALENDAR FOR USE OF ANY CONTRACEPTIVE METHOD IN ANY MONTH NO METHOD USED → ANY METHOD USED		→ 314
313	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES. . . . . 1 NO 2	→ 324
314	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	NO CODE CIRCLED . . . . . 00 FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 IUD. . . . . 03 INJECTABLES. . . . . 04 IMPLANTS . . . . . 05 PILL. . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM. . . . . 08 DIAPHRAGM . . . . . 09 FOAM/JELLY . . . . . 10 LACTATIONAL AMEN. METHOD. . . . . 11 RHYTHM METHOD. . . . . 12 WITHDRAWAL . . . . . 13 OTHER MODERN METHOD . . . . . 95 OTHER TRADITIONAL METHOD. 96	→ 324 → 317A → 326 → 315A → 326
315	You first started using (CURRENT METHOD) in (DATE FROM 308/308A). Where did you get it at that time? **(5)**	PUBLIC SECTOR GOVT. HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 FAMILY PLANNING CLINIC. . . . . 13 MOBILE CLINIC . . . . . 14 FIELDWORKER . . . . . 15 OTHER PUBLIC SECTOR _____ 16 (SPECIFY)	
315A	Where did you learn how to use the rhythm/lactational amenorrhea method? PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . 21 PHARMACY . . . . . 22 PRIVATE DOCTOR. . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) OTHER SOURCE SHOP. . . . . 31 CHURCH. . . . . 32 FRIEND/RELATIVE. . . . . 33 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
316	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	IUD. . . . . 03 INJECTABLES. . . . . 04 IMPLANTS . . . . . 05 PILL. . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM. . . . . 08 DIAPHRAGM . . . . . 09 FOAM/JELLY . . . . . 10 LACTATIONAL AMEN. METHOD. . . . . 11 RHYTHM METHOD. 12	→ 323 → 320 → 326 → 326
317	At that time, were you told about side effects or problems you might have with the method?	YES. . . . . 1 NO 2	→ 319
317A	When you got sterilized, were you told about side effects or problems you might have with the method?		
318	Were you ever told by a health or family planning worker about side effects or problems you might have with the method?	YES. . . . . 1 NO 2	 → 320
319	Were you told what to do if you experienced side effects or problems?	YES. . . . . 1 NO 2	
320	CHECK 317: CODE '1' CIRCLED → At that time, were you told about other methods of family planning that you could use? CODE '1' NOT CIRCLED → When you obtained (CURRENT METHOD FROM 314) from (SOURCE OF METHOD FROM 307 OR 315), were you told about other methods of family planning that you could use?	YES. . . . . 1 NO 2	→ 322
321	Were you ever told by a health or family planning worker about other methods of family planning that you could use?	YES. . . . . 1 NO 2	
322	CHECK 304: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 304, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 IUD. . . . . 03 INJECTABLES. . . . . 04 IMPLANTS . . . . . 05 PILL. . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM. . . . . 08 DIAPHRAGM . . . . . 09 FOAM/JELLY . . . . . 10 LACTATIONAL AMEN. METHOD. . . . . 11 RHYTHM METHOD. . . . . 12 WITHDRAWAL . . . . . 13 OTHER MODERN METHOD . . . . . 95 OTHER TRADITIONAL METHOD . . . 96	→ 326 → 326

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
323	Where did you obtain (CURRENT METHOD) the last time? **(5)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 FAMILY PLANNING CLINIC. . . . . 13 MOBILE CLINIC . . . . . 14 FIELDWORKER . . . . . 15 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . 21 PHARMACY . . . . . 22 PRIVATE DOCTOR. . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) OTHER SOURCE SHOP. . . . . 31 CHURCH. . . . . 32 FRIEND/RELATIVE. . . . . 33 OTHER _____ 96 (SPECIFY)	→ 326
324	Do you know of a place where you can obtain a method of family planning?	YES. . . . . 1 NO 2	→ 326
325	Where is that? **(5)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL . . . . . A GOVT. HEALTH CENTER . . . . . B FAMILY PLANNING CLINIC. . . . . C MOBILE CLINIC . . . . . D FIELDWORKER . . . . . E OTHER PUBLIC SECTOR _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . G PHARMACY . . . . . H PRIVATE DOCTOR. . . . . I MOBILE CLINIC . . . . . J FIELDWORKER . . . . . K OTHER PRIVATE MEDICAL SECTOR _____ L (SPECIFY) OTHER SOURCE SHOP. . . . . M CHURCH. . . . . N FRIEND/RELATIVE. . . . . O OTHER _____X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
326	In the last 12 months, were you visited by a fieldworker who talked to you about family planning? **(8)**	YES . . . . . 1 NO 2	
327	In the last 12 months, have you visited a health facility for care for yourself (or your children)?	YES . . . . . 1 NO 2	→ 401
328	Did any staff member at the health facility speak to you about family planning methods?	YES . . . . . 1 NO 2	

(1) If Standard Days Method is commonly used, it may be added to the table before Lactational Amenorrhea. "**Standard Days Method** (use local term, such as CycleBeads™ , as appropriate) PROBE: A woman uses a string of colored beads to know the days she can get pregnant. On the days she can get pregnant, she uses a condom or does not have sexual intercourse." If Standard Days Method is added to Q. 301, it should also be added before LAM to Qs. 304, 314, 316, 322, and Column 1 of the calendar.

(2) The LAM method should be deleted in countries that do not have a LAM program. In these countries, LAM should also be deleted as a coding category in Qs. 304, 314, 316, 322, and Column 1 of the calendar. A description of LAM should not be provided in Q. 301.

(3) Studies have indicated emergency contraception can be effective up to five days. Verify country program recommendations and modify wording if appropriate.

(4) Other commonly used methods may be added to the list, such as contraceptive patch, contraceptive vaginal ring, or sponge. Any codes added in Q. 304 must also be added to Qs. 314, 316, 322, and Column 1 of the calendar. These methods should not be added to Q. 301.

(5) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(6) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2006 or 2007, respectively.

(7) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2005 or 2006, respectively.

(8) In countries without national fieldworker programs that include family planning, Q. 326 should be deleted.

SECTION 4. PREGNANCY AND POSTNATAL CARE

401	CHECK 224: ONE OR MORE BIRTHS IN 2005 **(1)** OR LATER ☐ ↓ NO BIRTHS IN 2005 **(1)** OR LATER ☐ → 556	
402	CHECK 215: ENTER IN THE TABLE THE BIRTH HISTORY NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 2005 **(1)** OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 3 BIRTHS, USE LAST 2 COLUMNS OF ADDITIONAL QUESTIONNAIRES). Now I would like to ask some questions about your children born in the last five years. (We will talk about each separately.)	

		LAST BIRTH	NEXT-TO-LAST BIRTH	SECOND-FROM-LAST BIRTH
403	BIRTH HISTORY NUMBER FROM 212 IN BIRTH HISTORY	BIRTH HISTORY NUMBER ☐☐	BIRTH HISTORY NUMBER ☐☐	BIRTH HISTORY NUMBER ☐☐
404	FROM 212 AND 216	NAME _____ LIVING ☐ ↓ DEAD ☐ ↓	NAME _____ LIVING ☐ ↓ DEAD ☐ ↓	NAME _____ LIVING ☐ ↓ DEAD ☐ ↓
405	When you got pregnant with (NAME), did you want to get pregnant at that time?	YES . . . . . 1 (SKIP TO 408) ← NO 2	YES . . . . . 1 (SKIP TO 430) ← NO 2	YES . . . . . 1 (SKIP TO 430) ← NO 2
406	Did you want to have a baby later on, or did you not want any (more) children?	LATER . . . . . 1 NO MORE . . . . . 2 (SKIP TO 408) ←	LATER . . . . . 1 NO MORE . . . . . 2 (SKIP TO 430) ←	LATER . . . . . 1 NO MORE . . . . . 2 (SKIP TO 430) ←
407	How much longer did you want to wait?	...MONTHS . . . ☐☐ YEARS . . 2 ☐☐ DON'T KNOW . . . 998	...MONTHS . . . ☐☐ YEARS . . 2 ☐☐ DON'T KNOW . . . 998	...MONTHS . . . ☐☐ YEARS . . 2 ☐☐ DON'T KNOW . . . 998
408	Did you see anyone for antenatal care for this pregnancy?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 415) ←		
409	Whom did you see? **(2)** Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED.	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE B AUXILIARY MIDWIFE . . . . . C OTHER PERSON TRADITIONAL BIRTH ATTENDANT D COMMUNITY/ VILLAGE HEALTH WORKER . . . E OTHER_____ X (SPECIFY)		

		LAST BIRTH	NEXT-TO-LAST BIRTH	SECOND-FROM-LAST BIRTH

NO.	QUESTIONS AND FILTERS	NAME _____	NAME _____	NAME _____
410	Where did you receive antenatal care for this pregnancy? **(2)** Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	HOME YOUR HOME . . . A OTHER HOME . . . B PUBLIC SECTOR GOVT. HOSPITAL C GOVT. HEALTH CENTER . . . . . D GOVT. HEALTH POST . . . . . E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/ CLINIC . . . . . G OTHER PRIVATE MED. SECTOR H _____ (SPECIFY) OTHER X _____ (SPECIFY)		
411	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS . . . ☐☐ DON'T KNOW 98		
412	How many times did you receive antenatal care during this pregnancy?	NUMBER OF TIMES ☐☐ DON'T KNOW 98		
413	As part of your antenatal care during this pregnancy, were any of the following done at least once: Was your blood pressure measured? Did you give a urine sample? Did you give a blood sample?	YES NO BP . . . . . 1 2 URINE . . . . . 1 2 BLOOD . . . 1 2		
414	During (any of) your antenatal care visit(s), were you told about things to look out for that might suggest problems with the pregnancy?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
415	During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth? **(3)**	YES . . . . . 1 NO . . . . . 2 (SKIP TO 418) ← DON'T KNOW 8		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
416	During this pregnancy, how many times did you get a tetanus injection?	TIMES . . . . . ☐ DON'T KNOW 8		
417	CHECK 416:	2 OR MORE TIMES → (SKIP TO 421) OTHER →		
418	At any time before this pregnancy, did you receive any tetanus injections?	YES . . . . . 1 NO. . . . . 2 → (SKIP TO 421) DON'T KNOW . . . 8		
419	Before this pregnancy, how many times did you receive a tetanus injection? IF 7 OR MORE TIMES, RECORD '7'.	TIMES . . . . . ☐ DON'T KNOW 8		
420	How many years ago did you receive the last tetanus injection before this pregnancy?	YEARS AGO . . . . . ☐☐		
421	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? **(4)** SHOW TABLETS/SYRUP. **(4)**	YES . . . . . 1 NO . . . . . 2 → (SKIP TO 423) DON'T KNOW 8		
422	During the whole pregnancy, for how many days did you take the tablets or syrup? **(4,5)** IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS ☐☐☐ DON'T KNOW . . . 998		
423	During this pregnancy, did you take any drug for intestinal worms?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
424 **(6)**	During this pregnancy, did you take any drugs to keep you from getting malaria?	YES . . . . . 1 NO . . . . . 2 → (SKIP TO 430) DON'T KNOW 8		
425 **(6)**	What drugs did you take? RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	SP/FANSIDAR . . . . . A CHLOROQUINE . . . B OTHER X _____ (SPECIFY) DON'T KNOW . . . . . Z		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
426 **(6)**	CHECK 425: SP/FANSIDAR TAKEN FOR MALARIA PREVENTION.	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 430)		
427 **(6)**	How many times did you take (SP/Fansidar) during this pregnancy?	TIMES . . . . . ☐☐		
428 **(6)**	CHECK 409: ANTENATAL CARE FROM HEALTH PERSONNEL DURING THIS PREGNANCY	CODE 'A', 'B' OR 'C' CIRCLED ☐ OTHER ☐ (SKIP TO 430)		
429 **(6)**	Did you get the (SP/Fansidar) during any antenatal care visit, during another visit to a health facility or from another source?	ANTENATAL VISIT . . 1 ANOTHER FACILITY VISIT . . . . 2 OTHER SOURCE 6		
430	When (NAME) was born, was he/she very large, larger than average, average, smaller than average, or very small?	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8
431	Was (NAME) weighed at birth?	YES . . . . 1 NO . . . . 2 (SKIP TO 433) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 433) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 433) DON'T KNOW 8
432	How much did (NAME) weigh? RECORD WEIGHT IN KILOGRAMS FROM HEALTH CARD, IF AVAILABLE.	KG FROM CARD 1 ☐.☐☐☐ KG FROM RECALL 2 ☐.☐☐☐ DON'T KNOW 99998	KG FROM CARD 1 ☐.☐☐☐ KG FROM RECALL 2 ☐.☐☐☐ DON'T KNOW 99998	KG FROM CARD 1 ☐.☐☐☐ KG FROM RECALL 2 ☐.☐☐☐ DON'T KNOW 99998

433	Who assisted with the delivery of (NAME)? **(2)** Anyone else? PROBE FOR THE TYPE(S) OF PERSON(S) AND RECORD ALL MENTIONED. IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE B AUXILIARY MIDWIFE . . . C OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . D RELATIVE/FRIEND .E OTHER X _____ (SPECIFY) NO ONE ASSISTED Y	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE B AUXILIARY MIDWIFE . . . C OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . D RELATIVE/FRIEND . E OTHER X _____ (SPECIFY) NO ONE ASSISTED Y	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE B AUXILIARY MIDWIFE . . . C OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . D RELATIVE/FRIEND .E OTHER X _____ (SPECIFY) NO ONE ASSISTED Y

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
434	Where did you give birth to (NAME)? **(2)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	HOME YOUR HOME . . . 11 (SKIP TO 438) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. HEALTH POST . . . . . 23 OTHER PUBLIC SECTOR 26 _____ (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/ CLINIC . . . . . 31 OTHER PRIVATE MED. SECTOR 36 _____ (SPECIFY) OTHER_____ 96 (SPECIFY) (SKIP TO 438) ←	HOME YOUR HOME . . . 11 (SKIP TO 448) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. HEALTH POST . . . . . 23 OTHER PUBLIC SECTOR 26 _____ (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/ CLINIC . . . . . 31 OTHER PRIVATE MED. SECTOR 36 _____ (SPECIFY) OTHER_____ 96 (SPECIFY) (SKIP TO 448) ←	HOME YOUR HOME . . . 11 (SKIP TO 448) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. HEALTH POST . . . . . 23 OTHER PUBLIC SECTOR 26 _____ (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/ CLINIC . . . . . 31 OTHER PRIVATE MED. SECTOR 36 _____ (SPECIFY) OTHER_____ 96 (SPECIFY) (SKIP TO 448) ←
434A	How long after (NAME) was delivered did you stay there? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 DAYS 2 WEEKS 3 DON'T KNOW . . 998		

435	Was (NAME) delivered by caesarean, that is, did they cut your belly open to take the baby out?	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
436	I would like to talk to you about checks on your health after delivery, for example, someone asking you questions about your health or examining you. Did anyone check on your health while you were still in the facility?	YES . . . . . 1 (SKIP TO 439) NO 2		
437	Did anyone check on your health after you left the facility?	YES . . . . . 1 (SKIP TO 439) NO . . . . . 2 (SKIP TO 442)		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
438	I would like to talk to you about checks on your health after delivery, for example, someone asking you questions about your health or examining you. Did anyone check on your health after you gave birth to (NAME)?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 442)		
439	Who checked on your health at that time? **(2)** PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL DOCTOR . . . . . 11 NURSE/MIDWIFE 12 AUXILIARY MIDWIFE . . . . . 13 OTHER PERSON TRADITIONAL BIRTH ATTENDANT 21 COMMUNITY/ VILLAGE HEALTH WORKER . . . 22 OTHER 96 _____ (SPECIFY)		
440	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998		
442	In the two months after (NAME) was born, did any health care provider or a traditional birth attendant check on his/her health?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 446) DON'T KNOW 8		

443	How many hours, days or weeks after the birth of (NAME) did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HRS AFTER BIRTH . . 1 ☐☐ DAYS AFTER BIRTH . . 2 ☐☐ WKS AFTER BIRTH . . 3 ☐☐ DON'T KNOW . . . 998	
444	Who checked on (NAME)'s health at that time? **(2)** PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL DOCTOR . . . . . 11 NURSE/MIDWIFE 12 AUXILIARY MIDWIFE . . . . . 13 OTHER PERSON TRADITIONAL BIRTH ATTENDANT 21 COMMUNITY/ VILLAGE HEALTH WORKER . . . 22 OTHER 96 _____ (SPECIFY)	

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
445	Where did this first check of (NAME) take place? **(2)** PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	HOME YOUR HOME . . . 11 OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. HEALTH POST . . . . . 23 OTHER PUBLIC 26 _____ (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/ CLINIC . . . . . 31 OTHER PRIVATE MED. 36 _____ (SPECIFY) OTHER 96 _____ (SPECIFY)		

446	In the first two months after delivery, did you receive a vitamin A dose like (this/any of these)? SHOW COMMON TYPES OF AMPULES/CAPSULES/SYRUPS.	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
447	Has your menstrual period returned since the birth of (NAME)?	YES . . . . . 1 (SKIP TO 449) NO . . . . . 2 (SKIP TO 450)		
448	Did your period return between the birth of (NAME) and your next pregnancy?		YES . . . . . 1 NO . . . . . 2 (SKIP TO 452)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 452)
449	For how many months after the birth of (NAME) did you not have a period?	MONTHS . . . ☐☐ DON'T KNOW . . . 98	MONTHS . . . ☐☐ DON'T KNOW . . . 98	MONTHS . . . ☐☐ DON'T KNOW . . . 98
450	CHECK 226: IS RESPONDENT PREGNANT?	☐ ☐ NOTPREGNANT PREG-OR NANTUNSURE (SKIP TO 452)		
451	Have you had sexual intercourse since the birth of (NAME)?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 453)		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
452	For how many months after the birth of (NAME) did you not have sexual intercourse?	MONTHS . . . ☐☐ DON'T KNOW . . . 98	MONTHS . . . ☐☐ DON'T KNOW . . . 98	MONTHS . . . ☐☐ DON'T KNOW . . . 98
453	Did you ever breastfeed (NAME)?	YES . . . . . 1 (SKIP TO 455) NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2

454	CHECK 404: IS CHILD LIVING?	LIVING (SKIP TO 460) DEAD (GO BACK TO 405 IN NEXT COLUMN; OR IF NO MORE BIRTHS, GO TO 501)		
455	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY . . . 000 HOURS 1 DAYS 2		
456	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 458)		
457	What was (NAME) given to drink? Anything else? RECORD ALL LIQUIDS MENTIONED.	MILK (OTHER THAN BREAST MILK) A PLAIN WATER . . . B SUGAR OR GLU-COSE WATER . . . C GRIPE WATER . . . D SUGAR-SALT-WATER SOLUTION . . . . . E FRUIT JUICE . . . . . F INFANT FORMULA G TEA/INFUSIONS . . . H COFFEE . . . . . I HONEY . . . . . J OTHER X (SPECIFY)		
458	CHECK 404: IS CHILD LIVING?	LIVING DEAD (GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501)	LIVING DEAD (GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501)	LIVING DEAD (GO BACK TO 405 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 501)
NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
459	Are you still breastfeeding (NAME)?	YES . . . . . 1 NO 2		

460	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
461		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501.	GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501.	GO BACK TO 405 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 501.

(1) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2006 or 2007, respectively.

(2) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(3) Vaccination practices may vary; this question should specify where the injection is given, e.g. arm or shoulder.

(4) Syrup should be deleted in countries where syrup is not used.

(5) In countries where it is important to know the number of iron tablets taken per day, an appropriate question may be added.

(6) The question should be deleted in surveys in countries where there is no program for intermittent preventive treatment against malaria during pregnancy.

SECTION 5. CHILD IMMUNIZATION, HEALTH AND NUTRITION

501	ENTER IN THE TABLE THE BIRTH HISTORY NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 2005**(1)** OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 3 BIRTHS, USE LAST 2 COLUMNS OF ADDITIONAL QUESTIONNAIRES).			
502	BIRTH HISTORY NUMBER FROM 212 IN BIRTH HISTORY	LAST BIRTH BIRTH HISTORY NUMBER	NEXT-TO-LAST BIRTH BIRTH HISTORY NUMBER	SECOND-FROM-LAST BIRTH BIRTH HISTORY NUMBER . . . . .
503	FROM 212 AND 216	NAME _____ LIVING / DEAD ☐ (GO TO 503 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 553)	NAME _____ LIVING / DEAD ☐ (GO TO 503 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 553)	NAME _____ LIVING / DEAD ☐ (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE, OR IF NO MORE BIRTHS, GO TO 553)
504	Do you have a card where (NAME)'s vaccinations are written down? **(2)** IF YES: May I see it please?	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 509) NO CARD 3	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 509) NO CARD 3	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 509) NO CARD 3
505	Did you ever have a vaccination card for (NAME)? **(2)**	YES . . . . . 1 (SKIP TO 509) NO 2	YES . . . . . 1 (SKIP TO 509) NO 2	YES . . . . . 1 (SKIP TO 509) NO 2

506 (1) COPY DATES FROM THE CARD. **(2)**
(2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A DOSE WAS GIVEN, BUT NO DATE IS RECORDED.

	LAST BIRTH DAY	LAST BIRTH MONTH	LAST BIRTH YEAR		NEXT-TO-LAST BIRTH DAY	NEXT-TO-LAST BIRTH MONTH	NEXT-TO-LAST BIRTH YEAR		SECOND-FROM-LAST BIRTH DAY	SECOND-FROM-LAST BIRTH MONTH	SECOND-FROM-LAST BIRTH YEAR
BCG				BCG				BCG			
POLIO 0 (POLIO GIVEN AT BIRTH)				P0				P0			
POLIO 1				P1				P1			
POLIO 2				P2				P2			
POLIO 3				P3				P3			
DPT 1				D1				D1			
DPT 2				D2				D2			
DPT 3				D3				D3			
MEASLES				MEA				MEA			
VITAMIN A (MOST RECENT)				VIT A				VIT A			

507	CHECK 506:	BCG TO MEASLES ALL RECORDED **(3)** ☐ (GO TO 511) / OTHER ☐	BCG TO MEASLES ALL RECORDED **(3)** ☐ (GO TO 511) / OTHER ☐	BCG TO MEASLES ALL RECORDED **(3)** ☐ (GO TO 511) / OTHER ☐

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____

508	Has (NAME) had any vaccinations that are not recorded on this card, including vaccinations given in a national immunization day campaign? RECORD 'YES' ONLY IF THE RESPONDENT MENTIONS AT LEAST ONE OF THE VACCINATIONS IN 506 THAT ARE NOT RECORDED AS HAVING BEEN GIVEN.	YES . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 511) NO . . . . 2 (SKIP TO 511) DON'T KNOW 8	YES . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 511) NO . . . . 2 (SKIP TO 511) DON'T KNOW 8	YES . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 511) NO . . . . 2 (SKIP TO 511) DON'T KNOW 8
509	Did (NAME) ever have any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization day campaign?	YES . . . . 1 NO . . . . 2 (SKIP TO 511) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 511) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 511) DON'T KNOW 8
510	Please tell me if (NAME) had any of the following vaccinations: **(4)**			
510A	A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar? **(5)**	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	YES . . . . 1 NO . . . . 2 DON'T KNOW 8
510B	Polio vaccine, that is, drops in the mouth?	YES . . . . 1 NO . . . . 2 (SKIP TO 510E) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 510E) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 510E) DON'T KNOW 8
510C	Was the first polio vaccine given in the first two weeks after birth or later? **(6)**	FIRST 2 WEEKS . . . 1 LATER 2	FIRST 2 WEEKS . . . 1 LATER 2	FIRST 2 WEEKS . . . 1 LATER 2
510D	How many times was the polio vaccine given?	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐
510E	A DPT vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops? **(5)**	YES . . . . 1 NO . . . . 2 (SKIP TO 510G) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 510G) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 510G) DON'T KNOW 8
510F	How many times was the DPT vaccination given?	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐
510G	A measles injection or an MMR injection - that is, a shot in the arm at the age of 9 months or older - to prevent him/her from getting measles? **(7)**	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	YES . . . . 1 NO . . . . 2 DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________________	NEXT-TO-LAST BIRTH NAME ________________	SECOND-FROM-LAST BIRTH NAME ________________

511	Within the last six months, was (NAME) given a vitamin A dose like (this/any of these)? SHOW COMMON TYPES OF AMPULES/CAPSULES/SYRUPS.	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
512	In the last seven days, was (NAME) given iron pills, sprinkles with iron, or iron syrup like (this/any of these)? SHOW COMMON TYPES OF PILLS/SPRINKLES/ SYRUPS.	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
513	Was (NAME) given any drug for intestinal worms in the last six months?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
514	Has (NAME) had diarrhea in the last 2 weeks? **(8)**	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8
515	Was there any blood in the stools?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
516	Now I would like to know how much (NAME) was given to drink during the diarrhea (including breastmilk). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8
517	When (NAME) had diarrhea, was he/she given less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she given much less than usual to eat or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8
518	Did you seek advice or treatment for the diarrhea from any source?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 522)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 522)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 522)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
519	Where did you seek advice or treatment? **(9)** Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)
520	CHECK 519:	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 522)	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 522)	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 522)
521	Where did you first seek advice or treatment? USE LETTER CODE FROM 519.	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐

522	Was he/she given any of the following to drink at any time since he/she started having the diarrhea: a) A fluid made from a special packet called [LOCAL NAME FOR ORS PACKET]? b) A pre-packaged ORS liquid? **(10)** c) A government-recommended homemade fluid? **(11)**	YES NO DK FLUID FROM ORS PKT 1 2 8 ORS LQD 1 2 8 HOMEMADE FLUID . . . 1 2 8	YES NO DK FLUID FROM ORS PKT1 2 8 ORS LQD 1 2 8 HOMEMADE FLUID . . . 1 2 8	YES NO DK FLUID FROM ORS PKT 1 2 8 ORS LQD 1 2 8 HOMEMADE FLUID . . . 1 2 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
523	Was anything (else) given to treat the diarrhea?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 525) DON'T KNOW 8
524	What (else) was given to treat the diarrhea? Anything else? RECORD ALL TREATMENTS GIVEN.	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY B ZINC . . . . . C OTHER (NOT ANTIBIOTIC, ANTIMOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS I HOME REMEDY/ HERBAL MEDICINE . . . . . J OTHER X (SPECIFY)	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY B ZINC . . . . . C OTHER (NOT ANTIBIOTIC, ANTIMOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS I HOME REMEDY/ HERBAL MEDICINE . . . . . J OTHER X (SPECIFY)	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY B ZINC . . . . . C OTHER (NOT ANTIBIOTIC, ANTIMOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS I HOME REMEDY/ HERBAL MEDICINE . . . . . J OTHER X (SPECIFY)
525	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527) DON'T KNOW 8
526 **(12)**	At any time during the illness, did (NAME) have blood taken from his/her finger or heel for testing?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
527	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 530) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 530) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 530) DON'T KNOW 8

528	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, rapid breaths or have difficulty breathing?	YES . . . . 1 NO . . . . 2 (SKIP TO 531) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 531) DON'T KNOW 8	YES . . . . 1 NO . . . . 2 (SKIP TO 531) DON'T KNOW 8
529	Was the fast or difficult breathing due to a problem in the chest or to a blocked or runny nose?	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . 3 OTHER 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 531)	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . 3 OTHER 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 531)	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . 3 OTHER 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 531)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
530	CHECK 525: HAD FEVER?	YES [ ] ↓ NO OR DK [ ] (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	YES [ ] ↓ NO OR DK [ ] (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	YES [ ] ↓ NO OR DK [ ] (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 553)
531	Now I would like to know how much (NAME) was given to drink (including breastmilk) during the illness with a (fever/cough). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8
532	When (NAME) had a (fever/cough), was he/she given less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she given much less than usual to eat or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE . . . . 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8
533	Did you seek advice or treatment for the illness from any source?	YES . . . . 1 NO . . . . 2 (SKIP TO 537)	YES . . . . 1 NO . . . . 2 (SKIP TO 537)	YES . . . . 1 NO . . . . 2 (SKIP TO 537)

		LAST BIRTH	NEXT-TO-LAST BIRTH	SECOND-FROM-LAST BIRTH

NO.	QUESTIONS AND FILTERS	NAME _____	NAME _____	NAME _____
534	Where did you seek advice or treatment? **(9)** Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL A GOVT HEALTH CENTER . . . . . B GOVT HEALTH POST . . . . . C MOBILE CLINIC D FIELDWORKER E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PVT HOSPITAL/ CLINIC . . . . . G PHARMACY . . . H PVT DOCTOR . . . I MOBILE CLINIC J FIELDWORKER K OTHER PRIVATE MED. SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M TRADITIONAL PRACTITIONER N MARKET . . . . . O OTHER X _____ (SPECIFY)
535	CHECK 534:	TWO OR MORE CODES CIRCLED → (SKIP TO 537) ONLY ONE CODE CIRCLED →	TWO OR MORE CODES CIRCLED → (SKIP TO 537) ONLY ONE CODE CIRCLED →	TWO OR MORE CODES CIRCLED → (SKIP TO 537) ONLY ONE CODE CIRCLED →
536	Where did you first seek advice or treatment? USE LETTER CODE FROM 534.	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐
537	At any time during the illness, did (NAME) take any drugs for the illness?	YES . . . . . 1 NO . . . . . 2 → (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 → (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 → (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 553) DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
538	What drugs did (NAME) take? **(13)** Any other drugs? RECORD ALL MENTIONED.	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE B AMODIAQUINE C QUININE . . . . D COMBINATION WITH ARTEMISININ E OTHER ANTI-MALARIAL . . . F ________ (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER X ________ (SPECIFY) DON'T KNOW . . . . . Z	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE C QUININE . . . . D COMBINATION WITH ARTEMISININ E OTHER ANTI-MALARIAL . . . F ________ (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER X ________ (SPECIFY) DON'T KNOW . . . . . Z	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE B AMODIAQUINE C QUININE . . . . D COMBINATION WITH ARTEMISININ E OTHER ANTI-MALARIAL . . . F ________ (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER X ________ (SPECIFY) DON'T KNOW . . . . . Z
539 **(12)**	CHECK 538: ANY CODE A-F CIRCLED?	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	YES ☐ NO ☐ (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 553)
540 **(12)**	CHECK 538: SP/FANSIDAR ('A') GIVEN	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 542)	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 542)	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 542)
541 **(12)**	How long after the fever started did (NAME) first take (SP/Fansidar)?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________________	NEXT-TO-LAST BIRTH NAME ________________	SECOND-FROM-LAST BIRTH NAME ________________
542 **(12)**	CHECK 538: CHLOROQUINE ('B') GIVEN	CODE 'B' CIRCLED ☐ ↓ CODE 'B' NOT CIRCLED ☐ (SKIP TO 544)	CODE 'B' CIRCLED ☐ ↓ CODE 'B' NOT CIRCLED ☐ (SKIP TO 544)	CODE 'B' CIRCLED ☐ ↓ CODE 'B' NOT CIRCLED ☐ (SKIP TO 544)
543 **(12)**	How long after the fever started did (NAME) first take chloroquine?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8
544 **(12)**	CHECK 538: AMODIAQUINE ('C') GIVEN	CODE 'C' CIRCLED ☐ ↓ CODE 'C' NOT CIRCLED ☐ (SKIP TO 546)	CODE 'C' CIRCLED ☐ ↓ CODE 'C' NOT CIRCLED ☐ (SKIP TO 546)	CODE 'C' CIRCLED ☐ ↓ CODE 'C' NOT CIRCLED ☐ (SKIP TO 546)
545 **(12)**	How long after the fever started did (NAME) first take amodiaquine?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8
546 **(12)**	CHECK 538: QUININE ('D') GIVEN	CODE 'D' CIRCLED ☐ ↓ CODE 'D' NOT CIRCLED ☐ (SKIP TO 548)	CODE 'D' CIRCLED ☐ ↓ CODE 'D' NOT CIRCLED ☐ (SKIP TO 548)	CODE 'D' CIRCLED ☐ ↓ CODE 'D' NOT CIRCLED ☐ (SKIP TO 548)
547 **(12)**	How long after the fever started did (NAME) first take quinine?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8

548 **(12)**	CHECK 538: COMBINATION WITH ARTEMISININ ('E') GIVEN	CODE 'E' CIRCLED ☐ CODE 'E' NOT CIRCLED ☐ (SKIP TO 550)	CODE 'E' CIRCLED ☐ CODE 'E' NOT CIRCLED ☐ (SKIP TO 550)	CODE 'E' CIRCLED ☐ CODE 'E' NOT CIRCLED ☐ (SKIP TO 550)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME ________	NEXT-TO-LAST BIRTH NAME ________	SECOND-FROM-LAST BIRTH NAME ________
549 **(12)**	How long after the fever started did (NAME) first take (COMBINATION WITH ARTEMISININ)?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8
550 **(12)**	CHECK 538: OTHER ANTIMALARIAL ('F') GIVEN	CODE 'F' CIRCLED ☐ CODE 'F' NOT CIRCLED ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	CODE 'F' CIRCLED ☐ CODE 'F' NOT CIRCLED ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553)	CODE 'F' CIRCLED ☐ CODE 'F' NOT CIRCLED ☐ (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 553)
551 **(12)**	How long after the fever started did (NAME) first take (OTHER ANTIMALARIAL)?	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8	SAME DAY . . . . 0 NEXT DAY . . . . 1 TWO DAYS AFTER FEVER . . . . 2 THREE OR MORE DAYS AFTER FEVER . . . . 3 DON'T KNOW . . . 8
552		GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553.	GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 553.	GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 553.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
553	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN BORN IN 2005 **(1)** OR LATER LIVING WITH THE RESPONDENT ONE OR MORE ☐ NONE ☐ → 556 RECORD NAME OF YOUNGEST CHILD LIVING WITH HER AND CONTINUE WITH 554 _____ (NAME)		
554	The last time (NAME FROM 553) passed stools, what was done to dispose of the stools?	CHILD USED TOILET OR LATRINE. . . 01 PUT/RINSED INTO TOILET OR LATRINE. . . . . 02 PUT/RINSED INTO DRAIN OR DITCH . . . . . 03 THROWN INTO GARBAGE. . . . . 04 BURIED . . . . . 05 LEFT IN THE OPEN. . . . . 06 OTHER _____ 96 (SPECIFY)	
555	CHECK 522(a) AND 522(b), ALL COLUMNS: NO CHILD RECEIVED FLUID FROM ORS PACKET OR PRE-PACKAGED ORS LIQUID **(14)** ☐ ANY CHILD RECEIVED FLUID FROM ORS PACKET OR PRE-PACKAGED ORS LIQUID **(14)** ☐ → 557		
556	Have you ever heard of a special product called [LOCAL NAME FOR ORS PACKET OR PRE-PACKAGED ORS LIQUID] **(14)** you can get for the treatment of diarrhea?	YES. . . . . 1 NO 2	
557	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN BORN IN 2008 **(15)** OR LATER LIVING WITH THE RESPONDENT ONE OR MORE ☐ NONE ☐ → 601 RECORD NAME OF YOUNGEST CHILD LIVING WITH HER AND CONTINUE WITH 558 _____ (NAME)		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
558	Now I would like to ask you about liquids or foods that (NAME FROM 557) had yesterday during the day or at night. I am interested in whether your child had the item I mention even if it was combined with other foods. **(16)**		
	Did (NAME FROM 557) (drink/eat):	YES NO DK	
	a) Plain water?	**a)** 1 2 8	
	b) Juice or juice drinks?	**b)** 1 2 8	
	c) Clear broth?	**c)** 1 2 8	
	d) Milk such as tinned, powdered, or fresh animal milk?	**d)** 1 2 8	
	IF YES: How many times did (NAME) drink milk? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES DRANK MILK ☐	
	e) Infant formula?	**e)** 1 2 8	
	IF YES: How many times did (NAME) drink infant formula? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES DRANK FORMULA ☐	
	f) Any other liquids?	**f)** 1 2 8	
	g) Yogurt?	**g)** 1 2 8	
	IF YES: How many times did (NAME) eat yogurt? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES ATE YOGURT ☐	
	h) Any [BRAND NAME OF COMMERCIALLY FORTIFIED BABY FOOD, E.G., Cerelac]? **(17)**	**h)** 1 2 8	
	i) Bread, rice, noodles, porridge, or other foods made from grains? **(18)**	**i)** 1 2 8	
	j) Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside? **(19)**	**j)** 1 2 8	
	k) White potatoes, white yams, manioc, cassava, or any other foods made from roots?	**k)** 1 2 8	
	l) Any dark green, leafy vegetables? **(20)**	**l)** 1 2 8	
	m) Ripe mangoes, papayas or [INSERT ANY OTHER LOCALLY AVAILABLE VITAMIN A-RICH FRUITS]?	**m)** 1 2 8	
	n) Any other fruits or vegetables?	**n)** 1 2 8	
	o) Liver, kidney, heart or other organ meats?	**o)** 1 2 8	
	p) Any meat, such as beef, pork, lamb, goat, chicken, or duck?	**p)** 1 2 8	
	q) Eggs?	**q)** 1 2 8	
	r) Fresh or dried fish or shellfish?	**r)** 1 2 8	
	s) Any foods made from beans, peas, lentils, or nuts?	**s)** 1 2 8	
	t) Cheese or other food made from milk?	**t)** 1 2 8	
	u) Any other solid, semi-solid, or soft food?	**u)** 1 2 8	
559	CHECK 558 (CATEGORIES "g" THROUGH "u"): NOT A SINGLE "YES" ☐ ↓ AT LEAST ONE "YES" ☐ →		561

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
560	Did (NAME) eat any solid, semi-solid, or soft foods yesterday during the day or at night? IF 'YES' PROBE: What kind of solid, semi-solid or soft foods did (NAME) eat?	YES. . . . . 1 (GO BACK TO 558 TO RECORD FOOD EATEN YESTERDAY) NO . . . . . 2 → 601	
561	How many times did (NAME FROM 557) eat solid, semi-solid, or soft foods yesterday during the day or at night? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES. . . . . ☐ DON'T KNOW. 8	

SECTION 5 FOOTNOTES

(1) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2006 or 2007, respectively.

(2) To be developed locally since immunization practices may vary from country to country, as may the terms used for the written record and for the vaccinations. Add yellow fever, rubella, MMR, Hib (3 doses), and hepatitis B (3 doses) in Q. 506 in countries where these vaccinations are listed on the vaccination card.

(3) Filter should reflect the vaccination list in Q. 506.

(4) To be developed locally since immunization practices may vary from country to country, as may the terms used for the vaccinations. Include question on pentavalent injection or injections for yellow fever, rubella, MMR, Hib, and Hepatitis B where these are included in Q. 506.

(5) Adapt question locally after determining the most common injection site.

(6) Delete this question in countries where Polio 0 is not part of the immunization schedule.

(7) Adapt question locally, some countries do not give measles vaccination until 12-15 months of age.

(8) The term(s) used for diarrhea should encompass the expressions used for all forms of diarrhea, including bloody stools (consistent with dysentery), watery stools, etc.

(9) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(10) Include in the question the common names/brands for pre-packaged ORS liquids. If pre-packaged ORS liquids are not available in the country, this item should be deleted.

(11) This item should be adapted to include the terms used locally for the recommended home fluid. The ingredients promoted by the government for making the recommended home fluid should be reflected in the category. If the government does not recommend a homemade fluid, then the word "government" should be dropped from the question.

(12) The question should be deleted in countries that are not affected by malaria.

(13) Coding categories to be developed locally and revised based on the pretest. All antimalarials commonly used in the country should be included in the response categories. Common brand names of drugs, such as Bayer, Tylenol or Paracetamol, should be added to the response categories for aspirin, acetaminophen, or ibuprofen as appropriate.

(14) Delete "OR PRE-PACKAGED ORS LIQUID" in countries where such liquid is not available.

(15) Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the year should be 2009 or 2010, respectively.

(16) A separate category: "Foods made with red palm oil, palm nut, or palm nut pulp sauce" must be added in countries where these items are consumed. A separate category: "Grubs, snails, insects or other small protein food" must be added in countries where these items are eaten. Items in each food group should be modified to include only those foods that are locally available and/or consumed in the country. Local terms should be used.

(17) In the case of fortified foods, the interviewer should ask to see the package and/or brand label (if available), to confirm that the food is fortified.

(18) Grains include millet, sorghum, maize, rice, wheat, or other local grains. Start with local foods, e.g. ugali, nshima, fufu, chapati, then follow with bread, rice, noodles, etc.

(19) Items in this category should be modified to include only vitamin A rich tubers, starches, or red, orange, or yellow vegetables that are consumed in the country.

(20) These include cassava leaves, bean leaves, kale, spinach, pepper leaves, taro leaves, amaranth leaves, or other dark green, leafy vegetables.

SECTION 6. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	Are you currently married or living together with a man as if married?	YES, CURRENTLY MARRIED . . . . . 1 YES, LIVING WITH A MAN . . . . . 2 NO, NOT IN UNION 3	→ 604
602	Have you ever been married or lived together with a man as if married?	YES, FORMERLY MARRIED . . . . . 1 YES, LIVED WITH A MAN . . . . . 2 NO 3	→ 612
603	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED . . . . . 1 DIVORCED . . . . . 2 SEPARATED 3	→ 609
604	Is your (husband/partner) living with you now or is he staying elsewhere?	LIVING WITH HER . . . . . 1 STAYING ELSEWHERE 2	
605	RECORD THE HUSBAND'S/PARTNER'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	NAME _____ LINE NO.	
606 **(1)**	Does your (husband/partner) have other wives or does he live with other women as if married?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 609
607 **(1)**	Including yourself, in total, how many wives or live-in partners does he have?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS . . . . . DON'T KNOW 98	
608 **(1)**	Are you the first, second, ... wife?	RANK	
609	Have you been married or lived with a man only once or more than once?	ONLY ONCE . . . . . 1 MORE THAN ONCE 2	
610	CHECK 609: MARRIED/ LIVED WITH A MAN ONLY ONCE → In what month and year did you start living with your (husband/partner)? MARRIED/ LIVED WITH A MAN MORE THAN ONCE → Now I would like to ask about your first (husband/partner). In what month and year did you start living with him?	MONTH . . . . . DON'T KNOW MONTH . . . . . 98 YEAR . . . . . DON'T KNOW YEAR 9998	→ 612
611	How old were you when you first started living with him?	AGE	
612	CHECK FOR THE PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
613	Now I would like to ask some questions about sexual activity in order to gain a better understanding of some important life issues. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE . . . . . 00 AGE IN YEARS . . . . . FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER 95	→ 628

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
614	Now I would like to ask you some questions about your recent sexual activity. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question.		
615	When was the <u>last</u> time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO. . . . . 1 ☐☐ WEEKS AGO . . . . . 2 ☐☐ MONTHS AGO . . . . . 3 ☐☐ YEARS AGO . . . . . 4 ☐☐	→ 627

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
616	When was the last time you had sexual intercourse with this person?		DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3	DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3
617	The last time you had sexual intercourse (with this second/third person), was a condom used? **(2)**	YES . . . . 1 NO . . . . 2 (SKIP TO 619)	YES . . . . 1 NO . . . . 2 (SKIP TO 619)	YES . . . . 1 NO . . . . 2 (SKIP TO 619)
618	Was a condom used every time you had sexual intercourse with this person in the last 12 months?	YES . . . . 1 NO 2	YES . . . . 1 NO 2	YES . . . . 1 NO 2
619	What was your relationship to this person with whom you had sexual intercourse? IF BOYFRIEND: Were you living together as if married? IF YES, CIRCLE '2'. IF NO, CIRCLE '3'.	HUSBAND . . . . 1 LIVE-IN PARTNER . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . 3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ___________ 6 (SPECIFY) (SKIP TO 622)	HUSBAND . . . . 1 LIVE-IN PARTNER . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . 3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ___________ 6 (SPECIFY) (SKIP TO 622)	HUSBAND . . . . 1 LIVE-IN PARTNER . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . 3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ___________ 6 (SPECIFY) (SKIP TO 622)
620	CHECK 609:	MARRIED ONLY ONCE MARRIED MORE THAN ONCE (SKIP TO 622)	MARRIED ONLY ONCE MARRIED MORE THAN ONCE (SKIP TO 622)	MARRIED ONLY ONCE MARRIED MORE THAN ONCE (SKIP TO 622)
621	CHECK 613:	FIRST TIME WHEN STARTED LIVING WITH FIRST HUSBAND (SKIP TO 623) OTHER	FIRST TIME WHEN STARTED LIVING WITH FIRST HUSBAND (SKIP TO 623) OTHER	FIRST TIME WHEN STARTED LIVING WITH FIRST HUSBAND (SKIP TO 623) OTHER
622	How long ago did you first have sexual intercourse with this (second/third) person?	DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3 YEARS AGO 4	DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3 YEARS AGO 4	DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3 YEARS AGO 4
623	How many times during the last 12 months did you have sexual intercourse with this person? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF TIMES IS 95 OR MORE, WRITE '95'.	NUMBER OF TIMES	NUMBER OF TIMES	NUMBER OF TIMES
624	How old is this person?	AGE OF PARTNER DON'T KNOW 98	AGE OF PARTNER DON'T KNOW 98	AGE OF PARTNER DON'T KNOW 98
625	Apart from (this person/these two people), have you had sexual intercourse with any other person in the last 12 months?	YES . . . . 1 (GO BACK TO 616 IN NEXT COLUMN) NO . . . . 2 (SKIP TO 627)	YES . . . . 1 (GO BACK TO 616 IN NEXT COLUMN) NO . . . . 2 (SKIP TO 627)	
626	In total, with how many different people have you had sexual intercourse in the last 12 months? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, WRITE '95'.			NUMBER OF PARTNERS LAST 12 MONTHS . . . DON'T KNOW . . . 98

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
627	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, WRITE '95'.	NUMBER OF PARTNERS IN LIFETIME . . . . . [ ][ ] DON'T KNOW 98	
628	PRESENCE OF OTHERS DURING THIS SECTION	YES NO CHILDREN <10 . . . . . 1 2 MALE ADULTS . . . . . 1 2 FEMALE ADULTS 1 2	
629	Do you know of a place where a person can get condoms?	YES . . . . . 1 NO 2	→ 632
630	Where is that? **(3)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTER . . . . . B FAMILY PLANNING CLINIC . . . . . C MOBILE CLINIC . . . . . D FIELDWORKER . . . . . E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . G PHARMACY . . . . . H PRIVATE DOCTOR . . . . . I MOBILE CLINIC . . . . . J FIELDWORKER . . . . . K OTHER PRIVATE MEDICAL SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M CHURCH . . . . . N FRIENDS/RELATIVES . . . . . O OTHER X _____ (SPECIFY)	
631	If you wanted to, could you yourself get a condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	
632 **(4)**	Do you know of a place where a person can get female condoms?	YES . . . . . 1 NO 2	→ 701
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

633 **(4)**	Where is that? **(3)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTER . . . . . B FAMILY PLANNING CLINIC . . . . . C MOBILE CLINIC . . . . . D FIELDWORKER . . . . . E OTHER PUBLIC SECTOR F _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . G PHARMACY . . . . . H PRIVATE DOCTOR . . . . . I MOBILE CLINIC . . . . . J FIELDWORKER . . . . . K OTHER PRIVATE MEDICAL SECTOR L _____ (SPECIFY) OTHER SOURCE SHOP . . . . . M CHURCH . . . . . N FRIENDS/RELATIVES . . . . . O OTHER X _____ (SPECIFY)	
634 **(4)**	If you wanted to, could you yourself get a female condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	

(1) The question should be deleted in countries where polygyny is not practiced.

(2) In countries with an active female condom program, the wording of the question should be modified to include reference to both the male and female condom.

(3) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(4) The question should be deleted in countries where female condoms are not actively promoted.

SECTION 7. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 304: NEITHER STERILIZED ☐ ↓ HE OR SHE STERILIZED ☐ →		712
702	CHECK 226: PREGNANT ☐ ↓ NOT PREGNANT OR UNSURE ☐ →		704
703	Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE ANOTHER CHILD . . . . . 1 NO MORE . . . . . 2 UNDECIDED/DON'T KNOW 8	→ 705 → 711
704	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 SAYS SHE CAN'T GET PREGNANT 3 UNDECIDED/DON'T KNOW 8	→ 707 → 712 → 710
705	CHECK 226: NOT PREGNANT OR UNSURE ☐ ↓ How long would you like to wait from now before the birth of (a/another) child? PREGNANT ☐ ↓ After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 SAYS SHE CAN'T GET PREGNANT 994 AFTER MARRIAGE . . . . . 995 OTHER _____ (SPECIFY) DON'T KNOW 998	→ 710 → 712 →
706	CHECK 226: NOT PREGNANT OR UNSURE ☐ ↓ PREGNANT ☐ →		711
707	CHECK 303: USING A CONTRACEPTIVE METHOD? NOT CURRENTLY USING ☐ ↓ CURRENTLY USING ☐ →		712
708	CHECK 705: NOT ASKED ☐ ↓ 24 OR MORE MONTHS OR 02 OR MORE YEARS ☐ ↓ 00-23 MONTHS OR 00-01 YEAR ☐ →		711

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
709	CHECK 704: WANTS TO HAVE A/ANOTHER CHILD ☐ →	NOT MARRIED . . . . . A FERTILITY-RELATED REASONS NOT HAVING SEX . . . . . B INFREQUENT SEX. . . . . C MENOPAUSAL/HYSTERECTOMY D CAN'T GET PREGNANT. . . . . E NOT MENSTRUATED SINCE LAST BIRTH . . . . . F BREASTFEEDING . . . . . G UP TO GOD/FATALISTIC . . . . . H OPPOSITION TO USE RESPONDENT OPPOSED. . . . . I HUSBAND/PARTNER OPPOSED . . . J OTHERS OPPOSED . . . . . K RELIGIOUS PROHIBITION. . . . . L LACK OF KNOWLEDGE KNOWS NO METHOD. . . . . M KNOWS NO SOURCE. . . . . N METHOD-RELATED REASONS SIDE EFFECTS/HEALTH CONCERNS . . . . . O LACK OF ACCESS/TOO FAR. . . . . P COSTS TOO MUCH . . . . . Q PREFERRED METHOD NOT AVAILABLE. . . . . R NO METHOD AVAILABLE . . . . . S INCONVENIENT TO USE . . . . . T INTERFERES WITH BODY'S NORMAL PROCESSES . . . . . U OTHER _____ X (SPECIFY) DON'T KNOW. . . . . Z	
	You have said that you do not want (a/another) child soon. Can you tell me why you are not using a method to prevent pregnancy? Any other reason?		
	WANTS NO MORE/ NONE ☐ →		
	You have said that you do not want any (more) children. Can you tell me why you are not using a method to prevent pregnancy? Any other reason?		
	RECORD ALL REASONS MENTIONED.		
710	CHECK 303: USING A CONTRACEPTIVE METHOD? NOT ASKED ☐ → NO, NOT CURRENTLY USING ☐ → YES, CURRENTLY USING ☐ →		712
711	Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
712	CHECK 216: HAS LIVING CHILDREN ☐ →	NONE. 00	→ 714
	If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NUMBER. . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 714
	NO LIVING CHILDREN ☐ →		
	If you could choose exactly the number of children to have in your whole life, how many would that be?		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
713	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?	BOYS GIRLS EITHER NUMBER ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	
714	In the last few months have you: Heard about family planning on the radio? Seen anything about family planning on the television? Read about family planning in a newspaper or magazine?	YES NO RADIO. . . . . 1 2 TELEVISION . . . . . 1 2 NEWSPAPER OR MAGAZINE. . . 1 2	
715	COUNTRY-SPECIFIC QUESTIONS ON MEDIA MESSAGES ABOUT FAMILY PLANNING.		
716	CHECK 601: YES, CURRENTLY MARRIED ☐ → 717 YES, LIVING WITH A MAN ☐ → 717 NO, NOT IN UNION ☐ → 801		
717	CHECK 303: USING A CONTRACEPTIVE METHOD? CURRENTLY USING ☐ → 718 NOT CURRENTLY USING OR NOT ASKED ☐ → 720		
718	Would you say that using contraception is mainly your decision, mainly your (husband's/partner's) decision, or did you both decide together?	MAINLY RESPONDENT . . . . . 1 MAINLY HUSBAND/PARTNER . . . . . 2 JOINT DECISION . . . . . 3 OTHER _____ 6 (SPECIFY)	
719	CHECK 304: NEITHER STERILIZED ☐ → 720 HE OR SHE STERILIZED ☐ → 801		
720	Does your (husband/partner) want the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER. . . . . 1 MORE CHILDREN . . . . . 2 FEWER CHILDREN. . . . . 3 DON'T KNOW. 8	

SECTION 8. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	CHECK 601 AND 602: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ FORMERLY MARRIED/ LIVED WITH A MAN ☐ → 803 NEVER MARRIED AND NEVER LIVED WITH A MAN ☐ → 807		
802	How old was your (husband/partner) on his last birthday?	AGE IN COMPLETED YEARS ☐☐	
803	Did your (last) (husband/partner) ever attend school?	YES . . . . . 1 NO 2	→ 806
804	What was the highest level of school he attended: primary, secondary, or higher? **(1)**	PRIMARY . . . . . 1 SECONDARY . . . . . 2 HIGHER . . . . . 3 DON'T KNOW 8	→ 806
805	What was the highest (grade/form/year) he completed at that level? **(1)** IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.	GRADE . . . . . ☐☐ DON'T KNOW 98	
806	CHECK 801: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ What is your (husband's/ partner's) occupation? That is, what kind of work does he mainly do? FORMERLY MARRIED/ LIVED WITH A MAN ☐ ↓ What was your (last) (husband's/ partner's) occupation? That is, what kind of work did he mainly do?	_____ ☐☐ _____ _____	
807	Aside from your own housework, have you done any work in the last seven days?	YES . . . . . 1 NO 2	→ 811
808	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. In the last seven days, have you done any of these things or any other work?	YES . . . . . 1 NO 2	→ 811
809	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, maternity leave, or any other such reason?	YES . . . . . 1 NO 2	→ 811
810	Have you done any work in the last 12 months?	YES . . . . . 1 NO 2	→ 815
811	What is your occupation, that is, what kind of work do you mainly do?	_____ ☐☐ _____ _____	
812	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER . . . . . 1 FOR SOMEONE ELSE . . . . . 2 SELF-EMPLOYED 3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
813	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR. . . . . 1 SEASONALLY/PART OF THE YEAR 2 ONCE IN A WHILE. 3	
814	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY . . . . . 1 CASH AND KIND. . . . . 2 IN KIND ONLY. . . . . 3 NOT PAID 4	
815	CHECK 601: CURRENTLY MARRIED/LIVING WITH A MAN ☐ NOT IN UNION ☐		→ 823
816	CHECK 814: CODE 1 OR 2 CIRCLED ☐ OTHER ☐		→ 819
817	Who usually decides how the money you earn will be used: you, your (husband/partner), or you and your (husband/partner) jointly?	RESPONDENT . . . . . 1 HUSBAND/PARTNER. . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 OTHER _____ 6 (SPECIFY)	
818	Would you say that the money that you earn is more than what your (husband/partner) earns, less than what he earns, or about the same?	MORE THAN HIM. . . . . 1 LESS THAN HIM. . . . . 2 ABOUT THE SAME. . . . . 3 HUSBAND/PARTNER HAS NO EARNINGS . . . . . 4 DON'T KNOW 8	→ 820
819	Who usually decides how your (husband's/partner's) earnings will be used: you, your (husband/partner), or you and your (husband/partner) jointly?	RESPONDENT . . . . . 1 HUSBAND/PARTNER. . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 HUSBAND/PARTNER HAS NO EARNINGS . . . . . 4 OTHER _____ 6 (SPECIFY)	
820	Who usually makes decisions about health care for yourself: you, your (husband/partner), you and your (husband/partner) jointly, or someone else?	RESPONDENT . . . . . 1 HUSBAND/PARTNER. . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 SOMEONE ELSE. . . . . 4 OTHER 6	
821	Who usually makes decisions about making major household purchases?	RESPONDENT . . . . . 1 HUSBAND/PARTNER. . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 SOMEONE ELSE. . . . . 4 OTHER 6	
822	Who usually makes decisions about visits to your family or relatives?	RESPONDENT . . . . . 1 HUSBAND/PARTNER. . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 SOMEONE ELSE. . . . . 4 OTHER 6	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
823	Do you own this or any other house either alone or jointly with someone else?	ALONE ONLY . . . . . 1 JOINTLY ONLY . . . . . 2 BOTH ALONE AND JOINTLY . . . . . 3 DOES NOT OWN 4	
824	Do you own any land either alone or jointly with someone else?	ALONE ONLY . . . . . 1 JOINTLY ONLY . . . . . 2 BOTH ALONE AND JOINTLY . . . . . 3 DOES NOT OWN 4	
825	PRESENCE OF OTHERS AT THIS POINT (PRESENT AND LISTENING, PRESENT BUT NOT LISTENING, OR NOT PRESENT)	PRES./ LISTEN. / NOT LISTEN. / NOT PRES. CHILDREN < 10 . . . . . 1 2 3 HUSBAND . . . . . 1 2 3 OTHER MALES . . . . 1 2 3 OTHER FEMALES . . . 1 2 3	
826	In your opinion, is a husband justified in hitting or beating his wife in the following situations: If she goes out without telling him? If she neglects the children? If she argues with him? If she refuses to have sex with him? If she burns the food?	YES / NO / DK GOES OUT . . . . . 1 2 8 NEGL. CHILDREN . . . 1 2 8 ARGUES . . . . . 1 2 8 REFUSES SEX . . . . . 1 2 8 BURNS FOOD 1 2 8	

(1) Revise according to the local educational system.

SECTION 9. HIV/AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
901	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES. . . . . 1 NO 2	→ 937
902	Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
903 **(1)**	Can people get the AIDS virus from mosquito bites?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
904	Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
905 **(1)**	Can people get the AIDS virus by sharing food with a person who has AIDS?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
906 **(1)**	Can people get the AIDS virus because of witchcraft or other supernatural means?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
907	Is it possible for a healthy-looking person to have the AIDS virus?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
908	Can the virus that causes AIDS be transmitted from a mother to her baby: During pregnancy? During delivery? By breastfeeding?	YES NO DK DURING PREG. . . . . 1 2 8 DURING DELIVERY . . . 1 2 8 BREASTFEEDING . . . 1 2 8	
909	CHECK 908: AT LEAST ONE 'YES' ☐ OTHER ☐		→ 911
910	Are there any special drugs that a doctor or a nurse can give to a woman infected with the AIDS virus to reduce the risk of transmission to the baby?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
911 **(2)**	CHECK 208 AND 215: NO BIRTHS ☐ LAST BIRTH SINCE JANUARY 2008 **(3)** ☐ LAST BIRTH BEFORE JANUARY 2008 **(3)** ☐		→ 926 → 926
912 **(2)**	CHECK 408 FOR LAST BIRTH: HAD ANTENATAL CARE ☐ NO ANTENATAL CARE ☐		→ 920
913 **(2)**	CHECK FOR PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
914 **(2)**	During any of the antenatal visits for your last birth were you given any information about: Babies getting the AIDS virus from their mother? Things that you can do to prevent getting the AIDS virus? Getting tested for the AIDS virus?	YES NO DK AIDS FROM MOTHER 1 2 8 THINGS TO DO 1 2 8 TESTED FOR AIDS 1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
915 **(2)**	Were you offered a test for the AIDS virus as part of your antenatal care?	YES. . . . . 1 NO 2	
916 **(2)**	I don't want to know the results, but were you tested for the AIDS virus as part of your antenatal care?	YES. . . . . 1 NO 2	→ 920
917 **(2)**	Where was the test done? **(4)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . 11 GOVT. HEALTH CENTER . . . . . 12 STAND-ALONE VCT CENTER . . . 13 FAMILY PLANNING CLINIC. . . . . 14 MOBILE CLINIC . . . . . 15 FIELDWORKER . . . . . 16 SCHOOL BASED CLINIC. . . . . 17 OTHER PUBLIC SECTOR _____ 18 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR. . . . . 21 STAND-ALONE VCT CENTER . . . . .22 PHARMACY . . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 SCHOOL BASED CLINIC. . . . . 26 OTHER PRIVATE MEDICAL SECTOR _____ 27 (SPECIFY) OTHER SOURCE HOME. . . . . 31 CORRECTIONAL FACILITY. . . . . 32 OTHER _____ 96 (SPECIFY)	
918 **(2)**	I don't want to know the results, but did you get the results of the test?	YES. . . . . 1 NO 2	→ 924
919 **(2)**	All women are supposed to receive counseling after being tested. After you were tested, did you receive counseling?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	→ 924
920 **(2)**	CHECK 434 FOR LAST BIRTH: ANY CODE 21-36 CIRCLED ☐ OTHER ☐		→ 926
921 **(2)**	Between the time you went for delivery but before the baby was born, were you offered a test for the AIDS virus?	YES. . . . . 1 NO 2	
922 **(2)**	I don't want to know the results, but were you tested for the AIDS virus at that time?	YES. . . . . 1 NO 2	→ 926
923 **(2)**	I don't want to know the results, but did you get the results of the test?	YES. . . . . 1 NO 2	
924 **(2)**	Have you been tested for the AIDS virus since that time you were tested during your pregnancy?	YES. . . . . 1 NO 2	→ 927
925 **(2)**	How many months ago was your most recent HIV test?	MONTHS AGO . . . . . ☐☐ TWO OR MORE YEARS 95	→ 932

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
926	I don't want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES . . . . . 1 NO 2	→ 930
927	How many months ago was your most recent HIV test?	MONTHS AGO . . . . . [ ][ ] TWO OR MORE YEARS. 95	
928	I don't want to know the results, but did you get the results of the test?	YES . . . . . 1 NO 2	
929	Where was the test done? **(4)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 STAND-ALONE VCT CENTER . . . . . 13 FAMILY PLANNING CLINIC . . . . . 14 MOBILE CLINIC . . . . 15 FIELDWORKER . . . . 16 SCHOOL BASED CLINIC . . . . 17 OTHER PUBLIC SECTOR 18 _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR . . . . . 21 STAND-ALONE VCT CENTER . . . . . 22 PHARMACY . . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 SCHOOL BASED CLINIC . . . . . 26 OTHER PRIVATE MEDICAL SECTOR 27 _____ (SPECIFY) OTHER SOURCE HOME . . . . . 31 CORRECTIONAL FACILITY . . . . . 32 OTHER 96 _____ (SPECIFY)	→ 932
930	Do you know of a place where people can go to get tested for the AIDS virus?	YES . . . . . 1 NO 2	→ 932

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
931	Where is that? **(4)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . A GOVT. HEALTH CENTER . . . . . B STAND-ALONE VCT CENTER. . . . . C FAMILY PLANNING CLINIC. . . . . D MOBILE CLINIC . . . . . E FIELDWORKER . . . . . F OTHER PUBLIC SECTOR _____ G (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR. . . . . H STAND-ALONE VCT CENTER. . . . . I PHARMACY . . . . . J MOBILE CLINIC . . . . . K FIELDWORKER . . . . . L OTHER PRIVATE MEDICAL SECTOR _____ M (SPECIFY) OTHER _____ X (SPECIFY)	
932	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had the AIDS virus?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
933	If a member of your family got infected with the AIDS virus, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
934	If a member of your family became sick with AIDS, would you be willing to care for her or him in your own household?	YES. . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
935	In your opinion, if a female teacher has the AIDS virus but is not sick, should she be allowed to continue teaching in the school?	SHOULD BE ALLOWED. . . . . 1 SHOULD NOT BE ALLOWED. . . . . 2 DK/NOT SURE/DEPENDS 8	
936 **(2)**	Should children age 12-14 be taught about using a condom to avoid getting AIDS?	YES. . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
937	CHECK 901: HEARD ABOUT AIDS ☐ → Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact? NOT HEARD ABOUT AIDS ☐ → Have you heard about infections that can be transmitted through sexual contact?	YES. . . . . 1 NO 2	
938	CHECK 613: HAS HAD SEXUAL INTERCOURSE ☐ ↓ NEVER HAD SEXUAL INTERCOURSE ☐ →		946

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
939	CHECK 937: HEARD ABOUT OTHER SEXUALLY TRANSMITTED INFECTIONS? YES ☐ NO ☐ → 941		
940	Now I would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a disease which you got through sexual contact?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
941	Sometimes women experience a bad-smelling abnormal genital discharge. During the last 12 months, have you had a bad-smelling abnormal genital discharge?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
942	Sometimes women have a genital sore or ulcer. During the last 12 months, have you had a genital sore or ulcer?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
943	CHECK 940, 941, AND 942: HAS HAD AN INFECTION (ANY 'YES') ☐ HAS NOT HAD AN INFECTION OR DOES NOT KNOW ☐ → 946		
944	The last time you had (PROBLEM FROM 940/941/942), did you seek any kind of advice or treatment?	YES. . . . . 1 NO 2	→ 946
945	Where did you go? **(4)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . A GOVT. HEALTH CENTER . . . . . B STAND-ALONE VCT CENTER . . . C FAMILY PLANNING CLINIC. . . . . D MOBILE CLINIC . . . . . E FIELDWORKER . . . . . F OTHER PUBLIC SECTOR _____ G (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR. . . . . H STAND-ALONE VCT CENTER . . . I PHARMACY . . . . . J MOBILE CLINIC . . . . . K FIELDWORKER . . . . . L OTHER PRIVATE MEDICAL SECTOR _____ M (SPECIFY) OTHER SOURCE SHOP. . . . . N OTHER _____ X (SPECIFY)	
946 **(2)**	If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in asking that they use a condom when they have sex?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
947	Is a wife justified in refusing to have sex with her husband when she knows he has sex with other women? **(5)**	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
948 **(2)**	CHECK 601: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ NOT IN UNION ☐ →		1001
949 **(2)**	Can you say no to your (husband/partner) if you do not want to have sexual intercourse?	YES. . . . . 1 NO . . . . . 2 DEPENDS/NOT SURE. 8	
950 **(2)**	Could you ask your (husband/partner) to use a condom if you wanted him to?	YES. . . . . 1 NO . . . . . 2 DEPENDS/NOT SURE. 8	

(1) If Qs. 903, 905 and/or 906 do not apply to the local context, replace the question using a specific local misconception. At least two questions related to misconceptions are needed.

(2) The question may be considered for deletion in countries with a very low HIV prevalence.

(3) Year of fieldwork is assumed to be 2010. For fieldwork in 2011 or 2012, the year should be 2009 and 2010, respectively.

(4) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(5) In polygynous societies, the phrase 'other women' should be replaced by the phrase 'women other than his wives.'

SECTION 10. OTHER HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1001	Now I would like to ask you some other questions relating to health matters. Have you had an injection for any reason in the last 12 months? IF YES: How many injections have you had? IF NUMBER OF INJECTIONS IS 90 OR MORE, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE.	NUMBER OF INJECTIONS. . . ☐☐ NONE. 00	→ 1004
1002	Among these injections, how many were administered by a doctor, a nurse, a pharmacist, a dentist, or any other health worker? IF NUMBER OF INJECTIONS IS 90 OR MORE, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE.	NUMBER OF INJECTIONS. . . ☐☐ NONE. 00	→ 1004
1003	The last time you got an injection from a health worker, did he/she take the syringe and needle from a new, unopened package?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
1004	Do you currently smoke cigarettes?	YES. . . . . 1 NO 2	→ 1006
1005	In the last 24 hours, how many cigarettes did you smoke?	NUMBER OF CIGARETTES. . . . . ☐☐	
1006	Do you currently smoke or use any (other) type of tobacco? **(1)**	YES. . . . . 1 NO 2	→ 1008
1007	What (other) type of tobacco do you currently smoke or use? **(1)** RECORD ALL MENTIONED.	PIPE . . . . . A CHEWING TOBACCO. . . . . B SNUFF . . . . . C OTHER _____ X (SPECIFY)	
1008	Many different factors can prevent women from getting medical advice or treatment for themselves. When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?	BIG PROB-LEM / NOT A BIG PROB-LEM	
	Getting permission to go to the doctor?	PERMISSION TO GO. . . 1 / 2	
	Getting money needed for advice or treatment?	GETTING MONEY . . . . . 1 / 2	
	The distance to the health facility?	DISTANCE . . . . . 1 / 2	
	Not wanting to go alone?	GO ALONE. . . . . 1 / 2	
1009	Are you covered by any health insurance? **(2)**	YES. . . . . 1 NO 2	→ 1011

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1010	What type of health insurance are you covered by? **(2)** RECORD ALL MENTIONED.	MUTUAL HEALTH ORGANIZATION/ COMMUNITY-BASED HEALTH INSURANCE . . . . . A HEALTH INSURANCE THROUGH EMPLOYER . . . . . B SOCIAL SECURITY . . . . . C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE D OTHER _____ X (SPECIFY)	
1011	RECORD THE TIME.	HOUR . . . . . ☐☐ MINUTES . . . . . ☐☐	

(1) Add local terms.

(2) If a health service prepayment plan or other types of plans are available in the country, add those types of plans to the question.

INTERVIEWER'S OBSERVATIONS TO BE FILLED

IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF SUPERVISOR: DATE:

EDITOR'S OBSERVATIONS

NAME OF EDITOR: DATE:

INSTRUCTIONS:

1 2

ONLY ONE CODE SHOULD APPEAR IN ANY BOX.
COLUMN 1 REQUIRES A CODE IN EVERY MONTH.

INFORMATION TO BE CODED FOR EACH COLUMN

COLUMN 1: BIRTHS, PREGNANCIES, CONTRACEPTIVE USE**

- B BIRTHS
- P PREGNANCIES
- T TERMINATIONS

- 0 NO METHOD
- 1 FEMALE STERILIZATION
- 2 MALE STERILIZATION

- 7 CONDOM
- 8 FEMALE CONDOM
- 9 DIAPHRAGM
- J FOAM OR JELLY
- K LACTATIONAL AMENORRHEA METHOD
- L RHYTHM METHOD
- M WITHDRAWAL
- X OTHER MODERN METHOD
- Y OTHER TRADITIONAL METHOD

COLUMN 2: DISCONTINUATION OF CONTRACEPTIVE USE

- 0 INFREQUENT SEX/HUSBAND AWAY
- 1 BECAME PREGNANT WHILE USING
- 2 WANTED TO BECOME PREGNANT
- 3 HUSBAND/PARTNER DISAPPROVED
- 4 WANTED MORE EFFECTIVE METHOD
- 5 SIDE EFFECTS/HEALTH CONCERNS
- 6 LACK OF ACCESS/TOO FAR
- 7 COSTS TOO MUCH
- 8 INCONVENIENT TO USE
- F UP TO GOD/FATALISTIC
- A DIFFICULT TO GET PREGNANT/MENOPAUSAL
- D MARITAL DISSOLUTION/SEPARATION
- X OTHER _____ (SPECIFY)
- Z DON'T KNOW

	12	DEC	01			
	11	NOV	02			
	10	OCT	03			
	09	SEP	04			
2	08	AUG	05			2
0	07	JUL	06			0
1	06	JUN	07			1
0	05	MAY	08			0
*	04	APR	09			*
	03	MAR	10			
	02	FEB	11			
	01	JAN	12			
	12	DEC	13			
	11	NOV	14			
	10	OCT	15			
	09	SEP	16			
2	08	AUG	17			2
0	07	JUL	18			0
0	06	JUN	19			0
9	05	MAY	20			9
*	04	APR	21			*
	03	MAR	22			
	02	FEB	23			
	01	JAN	24			
	12	DEC	25			
	11	NOV	26			
	10	OCT	27			
	09	SEP	28			
2	08	AUG	29			2
0	07	JUL	30			0
0	06	JUN	31			0
8	05	MAY	32			8
*	04	APR	33			*
	03	MAR	34			
	02	FEB	35			
	01	JAN	36			
	12	DEC	37			
	11	NOV	38			
	10	OCT	39			
	09	SEP	40			
2	08	AUG	41			2
0	07	JUL	42			0
0	06	JUN	43			0
7	05	MAY	44			7
*	04	APR	45			*
	03	MAR	46			
	02	FEB	47			
	01	JAN	48			
	12	DEC	49			
	11	NOV	50			
	10	OCT	51			
	09	SEP	52			
2	08	AUG	53			2
0	07	JUL	54			0
0	06	JUN	55			0
6	05	MAY	56			6
*	04	APR	57			*
	03	MAR	58			
	02	FEB	59			
	01	JAN	60			
	12	DEC	61			
	11	NOV	62			
	10	OCT	63			
	09	SEP	64			
2	08	AUG	65			2
0	07	JUL	66			0
0	06	JUN	67			0
5	05	MAY	68			5
*	04	APR	69			*
	03	MAR	70			
	02	FEB	71			
	01	JAN	72			

ONLY ONE CODE SHOULD APPEAR IN ANY BOX.
COLUMN 1 REQUIRES A CODE IN EVERY MONTH.

3 IUD
4 INJECTABLES
5 IMPLANTS
6 PILL

X OTHER

Z DON'T KNOW

* Year of fieldwork is assumed to be 2010. For fieldwork beginning in 2011 or 2012, the years should be adjusted.

** Response categories may be added for other methods, including fertility awareness methods.

[THIS PAGE IS INTENTIONALLY BLANK]

3 January 2012

DEMOGRAPHIC AND HEALTH SURVEYS
MODEL MAN'S QUESTIONNAIRE

[NAME OF COUNTRY]
[NAME OF ORGANIZATION]

IDENTIFICATION (1)

PLACE NAME _____

NAME OF HOUSEHOLD HEAD _____

CLUSTER NUMBER . . . . . | | | |

HOUSEHOLD NUMBER . . . . . | | | |

NAME AND LINE NUMBER OF MAN _____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR
INTERVIEWER'S NAME				INT. NUMBER
RESULT*				RESULT
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS
TIME				

*RESULT CODES:

1	COMPLETED	4	REFUSED		
2	NOT AT HOME	5	PARTLY COMPLETED	7	OTHER _____ (SPECIFY)
3	POSTPONED	6	INCAPACITATED		

COUNTRY-SPECIFIC INFORMATION: LANGUAGE OF QUESTIONNAIRE, LANGUAGE OF INTERVIEW, NATIVE LANGUAGE OF RESPONDENT, AND WHETHER TRANSLATOR USED

SUPERVISOR	

NAME	NAME

(1) This section should be adapted for country-specific survey design.

Note: Questions with blue highlighting in the question number column are HIV related questions that may be deleted in some circumstances (see footnotes). Questions with yellow highlighting in the question number column are other questions that may be deleted in some circumstances (see footnotes).

SECTION 1. RESPONDENT'S BACKGROUND

INTRODUCTION AND CONSENT

INFORMED CONSENT

Hello. My name is _____. I am working with (NAME OF ORGANIZATION). We are conducting a survey about health all over (NAME OF COUNTRY). The information we collect will help the government to plan health services. Your household was selected for the survey. The questions usually take about 20 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on the card that has already been given to your household.

Do you have any questions? May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . . . 1 ↓ RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2 → END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR . . . . . ☐☐ MINUTES . . . . . ☐☐	
102	In what month and year were you born?	MONTH . . . . . ☐☐ DON'T KNOW MONTH . . . . . 98 YEAR . . . . . ☐☐☐☐ DON'T KNOW YEAR 9998	

103	How old were you at your last birthday? COMPARE AND CORRECT 102 AND/OR 103 IF INCONSISTENT.	AGE IN COMPLETED YEARS ☐☐	
104	Have you ever attended school?	YES . . . . . 1 NO 2	→ 108
105	What is the highest level of school you attended: primary, secondary, or higher? **(1)**	PRIMARY . . . . . . 1 SECONDARY . . . . . 2 HIGHER 3	
106	What is the highest (grade/form/year) you completed at that level? **(1)** IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.	GRADE/FORM/YEAR . . . . . ☐☐	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	CHECK 105: PRIMARY ☐ → SECONDARY OR HIGHER ☐ → 110		
108	Now I would like you to read this sentence to me. SHOW CARD TO RESPONDENT. **(2)** IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL . . . . . 1 ABLE TO READ ONLY PARTS OF SENTENCE. . . . . 2 ABLE TO READ WHOLE SENTENCE 3 NO CARD WITH REQUIRED LANGUAGE _____ 4 (SPECIFY LANGUAGE) BLIND/VISUALLY IMPAIRED 5	
109	CHECK 108: CODE '2', '3' OR '4' CIRCLED ☐ → CODE '1' OR '5' CIRCLED ☐ → 111		
110	Do you read a newspaper or magazine, at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
111	Do you listen to the radio, at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
112	Do you watch television, at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK. . . . . 1 LESS THAN ONCE A WEEK . . . . . 2 NOT AT ALL 3	
113	COUNTRY-SPECIFIC QUESTION ON RELIGION, IF APPROPRIATE.		
114	COUNTRY-SPECIFIC QUESTION ON ETHNICITY, IF APPROPRIATE.		
115 **(3)**	In the last 12 months, how many times have you been away from home for one or more nights?	NUMBER OF TIMES . . . . . ☐☐ NONE. . . . . 00 → 201	
116 **(3)**	In the last 12 months, have you been away from home for more than one month at a time?	YES. . . . . 1 NO 2	

(1) Revise according to the local education system.

(2) Each card should have four simple sentences appropriate to the country (e.g., "Parents love their children.", "Farming is hard work.", "The child is reading a book.", "Children work hard at school."). Cards should be prepared for every language in which respondents are likely to be literate.

(3) The question may be considered for deletion in countries with a very low HIV prevalence.

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about any children you have had during your life. I am interested in all of the children that are biologically yours, even if they are not legally yours or do not have your last name. Have you ever fathered any children with any woman?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 206
202	Do you have any sons or daughters that you have fathered who are now living with you?	YES . . . . . 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME . . . . . [ ][ ] DAUGHTERS AT HOME . . . . . [ ][ ]	
204	Do you have any sons or daughters that you have fathered who are alive but do not live with you?	YES . . . . . 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE . . . . . [ ][ ] DAUGHTERS ELSEWHERE . . . [ ][ ]	
206	Have you ever fathered a son or a daughter who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD . . . . . [ ][ ] GIRLS DEAD . . . . . [ ][ ]	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL CHILDREN . . . . . [ ][ ]	
209	CHECK 208: HAS HAD MORE THAN ONE CHILD ↓ HAS HAD ONLY ONE CHILD → 212 HAS NOT HAD ANY CHILDREN → 301		
210	Did all of the children you have fathered have the same biological mother?	YES . . . . . 1 NO 2	→ 212
211	In all, how many women have you fathered children with?	NUMBER OF WOMEN . . . . . [ ][ ]	
212	How old were you when your (first) child was born?	AGE IN YEARS . . . . . [ ][ ]	
213	CHECK 203 AND 205: AT LEAST ONE LIVING CHILD ↓ NO LIVING CHILDREN → 301		
214	How old is your (youngest) child?	AGE IN YEARS . . . . . [ ][ ]	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
215	CHECK 214: (YOUNGEST) CHILD IS AGE 0-2 YEARS ☐ ↓ OTHER ☐ → 301		
216	What is the name of your (youngest) child? WRITE NAME OF (YOUNGEST) CHILD _____ (NAME OF (YOUNGEST) CHILD)		
217	When (NAME)'s mother was pregnant with (NAME), did she have any antenatal check-ups?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 219
218	Were you ever present during any of those antenatal check-ups?	PRESENT . . . . . 1 NOT PRESENT 2	
219	Was (NAME) born in a hospital or health facility?	HOSPITAL/HEALTH FACILITY . . . . . 1 OTHER 2	
220	When a child has diarrhea, how much should he or she be given to drink: more than usual, about the same as usual, less than usual, or nothing to drink at all?	MORE THAN USUAL . . . . . 1 ABOUT THE SAME . . . . . 2 LESS THAN USUAL . . . . . 3 NOTHING TO DRINK . . . . . 4 DON'T KNOW. 8	

301	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Have you ever heard of (METHOD)? **(1)**		
01	**Female Sterilization**. PROBE: Women can have an operation to avoid having any more children.	YES . . . . . NO 1 2	
02	**Male Sterilization**. PROBE: Men can have an operation to avoid having any more children.	YES . . . . . NO 1 2	
03	**IUD**. PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse.	YES . . . . . NO 1 2	
04	**Injectables**. PROBE: Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES . . . . . NO 1 2	
05	**Implants**. PROBE: Women can have one or more small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES . . . . . NO 1 2	
06	**Pill**. PROBE: Women can take a pill every day to avoid becoming pregnant.	YES . . . . . NO 1 2	
07	**Condom**. PROBE: Men can put a rubber sheath on their penis before sexual intercourse.	YES . . . . . NO 1 2	
08	**Female Condom**. PROBE: Women can place a sheath in their vagina before sexual intercourse.	YES . . . . . NO 1 2	
09 **(2)**	**Lactational Amenorrhea Method (LAM)**. **(2)**	YES . . . . . NO 1 2	
10	**Rhythm Method**. PROBE: To avoid pregnancy, women do not have sexual intercourse on the days of the month they think they can get pregnant.	YES . . . . . NO 1 2	
11	**Withdrawal**. PROBE: Men can be careful and pull out before climax.	YES . . . . . NO 1 2	
12	**Emergency Contraception**. PROBE: As an emergency measure, within three days after they have unprotected sexual intercourse, women can take special pills to prevent pregnancy. **(3)**	YES . . . . . NO 1 2	

13	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES . . . . . _____ (SPECIFY) 1 _____ 2 (SPECIFY) NO	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
302	In the last few months have you: Heard about family planning on the radio? Seen anything about family planning on the television? Read about family planning in a newspaper or magazine?	YES NO RADIO. . . . . 1 2 TELEVISION . . . . . 1 2 NEWSPAPER OR MAGAZINE 1 2	
303	In the last few months, have you discussed family planning with a health worker or health professional?	YES. . . . . 1 NO 2	
304	Now I would like to ask you about a woman's risk of pregnancy. From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant when she has sexual relations?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	→ 306
305	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS . . . . . 1 DURING HER PERIOD . . . . . 2 RIGHT AFTER HER PERIOD HAS ENDED. . . . . 3 HALFWAY BETWEEN TWO PERIODS . . . . . 4 OTHER _____ 6 (SPECIFY) DON'T KNOW. 8	
306	I will now read you some statements about contraception. Please tell me if you agree or disagree with each one. a) Contraception is a woman's business and a man should not have to worry about it. b) Women who use contraception may become promiscuous.	AGREE DISAGREE DK CONTRACEPTION WOMAN'S BUSINESS 1 2 8 WOMEN MAY BECOME PROMISCUOUS 1 2 8	
307	CHECK 301 (07): KNOWS MALE CONDOM YES ↓ NO →		→ 311
308	Do you know of a place where a person can get condoms?	YES. . . . . 1 NO 2	→ 311
309	Where is that? **(4)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . A GOVT. HEALTH CENTER . . . . . B FAMILY PLANNING CLINIC. . . . . C MOBILE CLINIC . . . . . D FIELDWORKER . . . . . E OTHER PUBLIC SECTOR _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . G PHARMACY . . . . . H PRIVATE DOCTOR. . . . . I MOBILE CLINIC . . . . . J FIELDWORKER . . . . . K OTHER PRIVATE MEDICAL SECTOR _____ L (SPECIFY) OTHER SOURCE SHOP. . . . . M CHURCH. . . . . N FRIENDS/RELATIVES. . . . . O OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
310	If you wanted to, could you yourself get a condom?	YES. . . . . 1 NO 2	
311 **(5)**	CHECK 301 (08): KNOWS FEMALE CONDOM YES ☐ NO ☐ → 401		
312 **(5)**	Do you know of a place where a person can get female condoms?	YES. . . . . 1 NO 2	→ 401
313 **(5)**	Where is that? **(4)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . A GOVT. HEALTH CENTER . . . . . B FAMILY PLANNING CLINIC. . . . . C MOBILE CLINIC . . . . . D FIELDWORKER . . . . . E OTHER PUBLIC SECTOR _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . G PHARMACY. . . . . H PRIVATE DOCTOR. . . . . I MOBILE CLINIC . . . . . J FIELDWORKER . . . . . K OTHER PRIVATE MEDICAL SECTOR _____ L (SPECIFY) OTHER SOURCE SHOP. . . . . M CHURCH. . . . . N FRIEND/RELATIVE . . . . . O OTHER _____ X (SPECIFY)	
314 **(5)**	If you wanted to, could you yourself get a female condom?	YES. . . . . 1 NO 2	

(1) If Standard Days Method is commonly used, it may be added to the table before Lactational Amenorrhea. "**Standard Days Method** (use local term, such as CycleBeads™ , as appropriate) PROBE: A woman uses a string of colored beads to know the days she can get pregnant. On the days she can get pregnant, she uses a condom or does not have sexual intercourse."

(2) The LAM method should be deleted in countries that do not have a LAM program. In these countries, LAM should also be deleted as a coding category in Q. 439. A description of LAM should not be provided in Q. 301.

(3) Studies have indicated emergency contraception can be effective up to five days. Verify country program recommendations and modify wording if appropriate.

(4) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(5) The question should be deleted in countries where female condoms are not actively promoted.

SECTION 4. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Are you currently married or living together with a woman as if married?	YES, CURRENTLY MARRIED . . . . . 1 YES, LIVING WITH A WOMAN . . . . . 2 NO, NOT IN UNION 3	→ 404
402	Have you ever been married or lived together with a woman as if married?	YES, FORMERLY MARRIED . . . . . 1 YES, LIVED WITH A WOMAN . . . . . 2 NO 3	→ 413
403	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED . . . . . 1 DIVORCED . . . . . 2 SEPARATED 3	→ 410
404	Is your (wife/partner) living with you now or is she staying elsewhere?	LIVING WITH HIM . . . . . 1 STAYING ELSEWHERE 2	
405 **(1)**	Do you have other wives or do you live with other women as if married?	YES (MORE THAN ONE) . . . . . 1 NO (ONLY ONE) 2	→ 407
406 **(1)**	Altogether, how many wives or live-in partners do you have?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS . . . ☐☐	
407 **(1)**	CHECK 405: ONE WIFE/ PARTNER ☐ → Please tell me the name of (your wife/the woman you are living with as if married). MORE THAN ONE WIFE/ PARTNER ☐ → Please tell me the name of each of your wives or each woman you are living with as if married. RECORD THE NAME AND THE LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE FOR EACH WIFE AND LIVE-IN PARTNER. IF A WOMAN IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	NAME / LINE NUMBER / 408 How old was (NAME) on her last birthday? **(1)** / AGE _____ ☐☐ ☐☐ _____ ☐☐ ☐☐ _____ ☐☐ ☐☐ _____ ☐☐ ☐☐	
408 **(1)**	ASK 408 FOR EACH PERSON.		
409 **(1)**	CHECK 407: ONE WIFE/ PARTNER ☐ → MORE THAN ONE WIFE/ PARTNER ☐		→ 411A
410	Have you been married or lived with a woman only once or more than once?	ONLY ONCE . . . . . 1 MORE THAN ONCE 2	→ 411A

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
411	In what month and year did you start living with your (wife/partner)?	MONTH	
411A	Now I would like to ask about your first (wife/partner). In what month and year did you start living with her?	DON'T KNOW MONTH . . . . . 98 YEAR. . . . . DON'T KNOW YEAR 9998	→ 413
412	How old were you when you first started living with her?	AGE	
413	CHECK FOR THE PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
414	Now I would like to ask some questions about sexual activity in order to gain a better understanding of some important life issues. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE . . . . . .00 AGE IN YEARS . . . . . FIRST TIME WHEN STARTED LIVING WITH (FIRST) WIFE/PARTNER. 95	→ 501
415	Now I would like to ask you some questions about your recent sexual activity. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question.		
416	When was the last time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO. . . . . 1 WEEKS AGO . . . . . 2 MONTHS AGO . . . . . 3 YEARS AGO 4	→ 430

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
417	When was the last time you had sexual intercourse with this person?		DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3	DAYS AGO 1 WEEKS AGO 2 MONTHS AGO 3
418	The last time you had sexual intercourse (with this second/third person), was a condom used? **(2)**	YES . . . . . 1 NO . . . . . 2 (SKIP TO 420)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 420)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 420)
419	Was a condom used every time you had sexual intercourse with this person in the last 12 months?	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2

420	What was your relationship to this person with whom you had sexual intercourse? **(3)** IF GIRLFRIEND: Were you living together as if married? IF YES, CIRCLE '2'. IF NO, CIRCLE '3'.	WIFE . . . . 1 LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT....3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ______________ 6 (SPECIFY) (SKIP TO 423)	WIFE . . . . 1 LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT....3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ______________ 6 (SPECIFY) (SKIP TO 423)	WIFE . . . . 1 LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT....3 CASUAL ACQUAINTANCE . . . 4 CLIENT/PROSTITUTE 5 OTHER ______________ 6 (SPECIFY) (SKIP TO 423)
421	CHECK 410:	MARRIED MORE THAN ONCE ☐ MARRIED ONLY ONCE OR BLANK ☐ (SKIP TO 423)	MARRIED MORE THAN ONCE ☐ MARRIED ONLY ONCE OR BLANK ☐ (SKIP TO 423)	MARRIED MORE THAN ONCE ☐ MARRIED ONLY ONCE OR BLANK ☐ (SKIP TO 423)
422	CHECK 414:	FIRST TIME WHEN STARTED LIVING WITH FIRST WIFE ☐ (SKIP TO 424) OTHER ☐	FIRST TIME WHEN STARTED LIVING WITH FIRST WIFE ☐ (SKIP TO 424) OTHER ☐	FIRST TIME WHEN STARTED LIVING WITH FIRST WIFE ☐ (SKIP TO 424) OTHER ☐
423	How long ago did you first have sexual intercourse with this (second/third) person?	DAYS AGO 1 ☐☐ WEEKS AGO 2 ☐☐ MONTHS AGO 3 ☐☐ YEARS AGO 4 ☐☐	DAYS AGO 1 ☐☐ WEEKS AGO 2 ☐☐ MONTHS AGO 3 ☐☐ YEARS AGO 4 ☐☐	DAYS AGO 1 ☐☐ WEEKS AGO 2 ☐☐ MONTHS AGO 3 ☐☐ YEARS AGO 4 ☐☐
424	How many times during the last 12 months did you have sexual intercourse with this person? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF TIMES IS 95 OR MORE, WRITE '95'.	NUMBER OF TIMES ☐☐	NUMBER OF TIMES ☐☐	NUMBER OF TIMES ☐☐

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
425	How old is this person?	AGE OF PARTNER ☐☐ DON'T KNOW 98	AGE OF PARTNER ☐☐ DON'T KNOW 98	AGE OF PARTNER ☐☐ DON'T KNOW 98

426	Apart from (this person/these two people), have you had sexual intercourse with any other person in the last 12 months?	YES . . . . . 1 (GO BACK TO 417 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 428)	YES . . . . . 1 (GO BACK TO 417 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 428)	
427	In total, with how many different people have you had sexual intercourse in the last 12 months? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, WRITE '95'.			NUMBER OF PARTNERS LAST 12 MONTHS . . . ☐☐ DON'T KNOW . . . 98

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
428	CHECK 420 (ALL COLUMNS): AT LEAST ONE PARTNER IS PROSTITUTE ☐ NO PARTNERS ARE PROSTITUTES ☐ → 430		
429	CHECK 420 AND 418 (ALL COLUMNS): CONDOM USED WITH EVERY PROSTITUTE ☐ → 433 OTHER ☐ → 434		
430	In the last 12 months, did you pay anyone in exchange for having sexual intercourse?	YES. . . . . 1 NO 2	→ 432
431	Have you ever paid anyone in exchange for having sexual intercourse?	YES. . . . . 1 NO 2	→ 434
432	The last time you paid someone in exchange for having sexual intercourse, was a condom used? **(2)**	YES. . . . . 1 NO 2	→ 434
433	Was a condom used during sexual intercourse every time you paid someone in exchange for having sexual intercourse in the last 12 months?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW 8	
434	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, WRITE '95'.	NUMBER OF PARTNERS IN LIFETIME . . . . . ☐☐ DON'T KNOW. 98	
435 **(2)**	CHECK 418, MOST RECENT PARTNER (FIRST COLUMN): NOT ASKED ☐ → 438 CONDOM USED ☐ NO CONDOM USED ☐ → 438		
436 **(2)**	You told me that a condom was used the last time you had sex. What is the brand name of the condom used at that time? IF BRAND NOT KNOWN, ASK TO SEE THE PACKAGE.	BRAND A . . . . . 01 BRAND B . . . . . 02 BRAND C . . . . . 03 OTHER _____ 96 (SPECIFY) DON'T KNOW. 98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
437 **(2)**	From where did you obtain the condom the last time? **(4)** PROBE TO IDENTIFY TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL. . . . . 11 GOVT. HEALTH CENTER . . . . . 12 FAMILY PLANNING CLINIC. . . . . 13 MOBILE CLINIC . . . . . 14 FIELDWORKER . . . . . 15 OTHER PUBLIC SECTOR _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . 21 PHARMACY . . . . . 22 PRIVATE DOCTOR. . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 OTHER PRIVATE MEDICAL SECTOR _____ 26 (SPECIFY) OTHER SOURCE SHOP. . . . . 31 CHURCH . . . . . 32 FRIEND/RELATIVE. . . . . 33 OTHER _____ 96 (SPECIFY)	
438	The last time you had sex did you or your partner use any method (other than a condom) to avoid or prevent a pregnancy?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 501
439 **(5)**	What method did you or your partner use? PROBE: Did you or your partner use any other method to prevent pregnancy? RECORD ALL MENTIONED.	FEMALE STERILIZATION . . . . . A MALE STERILIZATION . . . . . B IUD. . . . . C INJECTABLES . . . . . D IMPLANTS . . . . . E PILL. . . . . F FEMALE CONDOM . . . . . G DIAPHRAGM . . . . . H FOAM/JELLY . . . . . I LAM. . . . . J RHYTHM METHOD. . . . . K WITHDRAWAL . . . . . L OTHER MODERN METHOD . . . . . X OTHER TRADITIONAL METHOD. . . . . Y	

(1) Delete Qs. 405-409 in countries where polygyny is not practiced and replace with Q. 605 from the Woman's Questionnaire with the word 'HUSBAND'S' replaced with 'WIFE'S' and 'HE' replaced with 'SHE'.

(2) In countries with an active female condom program, the wording of the question should be modified to include reference to both the male and female condom.

(3) High polygyny high HIV prevalence countries may want to add line number of wife from Q. 407 here in the response category.

(4) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(5) The LAM method coding category should be deleted in countries that do not have a LAM program.

SECTION 5. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	CHECK 401: CURRENTLY MARRIED OR LIVING WITH A PARTNER ☐ ↓ NOT CURRENTLY MARRIED AND NOT LIVING WITH A PARTNER ☐ →		509
502	CHECK 439: MAN NOT STERILIZED ☐ ↓ MAN STERILIZED ☐ →		509
503 **(1)**	(Is your (wife/partner)/Are any of your (wives/partners)) currently pregnant?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	505
504 **(1)**	Now I have some questions about the future. After the (child/children) you and your (wife(wives)/partner(s)) are expecting now, would you like to have another child, or would you prefer not have any more children?	HAVE ANOTHER CHILD . . . . . 1 NO MORE . . . . . 2 UNDECIDED/DON'T KNOW 8	506 509
505 **(1)**	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 SAYS COUPLE CAN'T GET PREGNANT . . . . . 3 WIFE (WIVES)/PARTNER(S) STERILIZED . . . . . 4 UNDECIDED/DON'T KNOW 8	509
506 **(2)**	CHECK 407: ONE WIFE/ PARTNER ☐ ↓ MORE THAN ONE WIFE/ PARTNER ☐ →		508
507	CHECK 503: WIFE/PARTNER NOT PREGNANT OR DON'T KNOW ☐ ↓ How long would you like to wait from now before the birth of (a/another) child? WIFE/PARTNER PREGNANT ☐ ↓ After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 COUPLE INFECUND . . . . . 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	509
508 **(2)**	How long would you like to wait from now before the birth of (a/another) child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 HE/ALL HIS WIVES/PARTNERS ARE INFECUND . . . . . 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
509	CHECK 203 AND 205: HAS LIVING CHILDREN ☐ → If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN ☐ → If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NONE. . . . . 00 NUMBER. . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 601 → 601
510	How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?	BOYS GIRLS EITHER NUMBER ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	

(1) The wording of this question should be modified in countries where polygyny is not practiced. In Q. 503, change question to 'Is your (wife/partner) currently pregnant?' In Q. 504, change '(child/children)' to '(child)' and change '(wife/(wives)/partner(s))' to '(wife/partner)'. In Q. 505, change response category 4 from 'WIFE (WIVES)/PARTNER(S) STERILIZED' to 'WIFE/PARTNER STERILIZED'.

(2) This question should be deleted in countries where polygyny is not practiced.

SECTION 6. EMPLOYMENT AND GENDER ROLES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	Have you done any work in the last seven days?	YES . . . . . 1 NO 2	→ 604
602	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, or any other such reason?	YES . . . . . 1 NO 2	→ 604
603	Have you done any work in the last 12 months?	YES . . . . . 1 NO 2	→ 607
604	What is your occupation, that is, what kind of work do you mainly do?	_____ ☐☐ _____ _____	
605	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR . . . . . 1 SEASONALLY/PART OF THE YEAR 2 ONCE IN A WHILE 3	
606	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY . . . . . 1 CASH AND KIND . . . . . 2 IN KIND ONLY . . . . . 3 NOT PAID 4	
607	CHECK 401: CURRENTLY MARRIED OR LIVING WITH A PARTNER ☐ ↓ NOT CURRENTLY MARRIED AND NOT LIVING WITH A PARTNER ☐		→ 612
608	CHECK 606: CODE 1 OR 2 CIRCLED ☐ ↓ OTHER ☐		→ 610
609	Who usually decides how the money you earn will be used: you, your (wife/partner), or you and your (wife/partner) jointly?	RESPONDENT . . . . . 1 WIFE/PARTNER . . . . . 2 RESPONDENT AND WIFE/ PARTNER JOINTLY . . . . . 3 OTHER _____ 6 (SPECIFY)	
610	Who usually makes decisions about health care for yourself: you, your (wife/partner), you and your (wife/partner) jointly, or someone else?	RESPONDENT . . . . . 1 WIFE/PARTNER . . . . . 2 RESPONDENT AND WIFE/ PARTNER JOINTLY . . . . . 3 SOMEONE ELSE . . . . . 4 OTHER _____ 6 (SPECIFY)	
611	Who usually makes decisions about making major household purchases?	RESPONDENT . . . . . 1 WIFE/PARTNER . . . . . 2 RESPONDENT AND WIFE/ PARTNER JOINTLY . . . . . 3 SOMEONE ELSE . . . . . 4 OTHER _____ 6 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
612	Do you own this or any other house either alone or jointly with someone else?	ALONE ONLY . . . . . 1 JOINTLY ONLY . . . . . 2 BOTH ALONE AND JOINTLY . . . . . 3 DOES NOT OWN 4	
613	Do you own any land either alone or jointly with someone else?	ALONE ONLY . . . . . 1 JOINTLY ONLY . . . . . 2 BOTH ALONE AND JOINTLY . . . . . 3 DOES NOT OWN 4	
614	In your opinion, is a husband justified in hitting or beating his wife in the following situations: If she goes out without telling him? If she neglects the children? If she argues with him? If she refuses to have sex with him? If she burns the food?	YES NO DK GOES OUT . . . . . 1 2 8 NEGL. CHILDREN . . . 1 2 8 ARGUES . . . . . 1 2 8 REFUSES SEX . . . . . 1 2 8 BURNS FOOD 1 2 8	

SECTION 7. HIV/AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES. . . . . 1 NO 2	→ 723
702	Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
703 **(1)**	Can people get the AIDS virus from mosquito bites?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
704	Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
705 **(1)**	Can people get the AIDS virus by sharing food with a person who has AIDS?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
706 **(1)**	Can people get the AIDS virus because of witchcraft or other supernatural means?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
707	Is it possible for a healthy-looking person to have the AIDS virus?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
708	Can the virus that causes AIDS be transmitted from a mother to her baby: During pregnancy? Duringde livey ? By breastfeeding?	YES NO DK DURING PREG. . . . . 1 2 8 DURING DELIVERY . . . 1 2 8 BREASTFEEDING . . . 1 2 8	
709	CHECK 708: AT LEAST ONE 'YES' ☐ ↓ OTHER ☐ → 711		
710	Are there any special drugs that a doctor or a nurse can give to a woman infected with the AIDS virus to reduce the risk of transmission to the baby?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
711	CHECK FOR PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
712	I don't want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES. . . . . 1 NO 2	→ 716
713	How many months ago was your most recent HIV test?	MONTHS AGO . . . . . ☐☐ TWO OR MORE YEARS 95	
714	I don't want to know the results, but did you get the results of the test?	YES. . . . . 1 NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
715	Where was the test done? **(3)** PROBE TO IDENTIFY THE TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 STAND-ALONE VCT CENTER . . . 13 FAMILY PLANNING CLINIC . . . . . 14 MOBILE CLINIC . . . . . 15 FIELDWORKER . . . . . 16 SCHOOL BASED CLINIC . . . . . 17 OTHER PUBLIC SECTOR _____ 18 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR . . . . . 21 STAND-ALONE VCT CENTER . . . 22 PHARMACY . . . . . 23 MOBILE CLINIC . . . . . 24 FIELDWORKER . . . . . 25 SCHOOL BASED CLINIC . . . . . 26 OTHER PRIVATE MEDICAL SECTOR _____ 27 (SPECIFY) OTHER SOURCE HOME . . . . . 31 CORRECTIONAL FACILITY . . . . . 32 OTHER _____ 96 (SPECIFY)	→ 718
716	Do you know of a place where people can go to get tested for the AIDS virus?	YES . . . . . 1 NO 2	→ 718
717	Where is that? **(3)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTER . . . . . B STAND-ALONE VCT CENTER . . . C FAMILY PLANNING CLINIC . . . . . D MOBILE CLINIC . . . . . E FIELDWORKER . . . . . F OTHER PUBLIC SECTOR _____ G (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR . . . . . H STAND-ALONE VCT CENTER . . . I PHARMACY . . . . . J MOBILE CLINIC . . . . . K FIELDWORKER . . . . . L OTHER PRIVATE MEDICAL SECTOR _____ M (SPECIFY) OTHER _____ X (SPECIFY)	
718	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
719	If a member of your family got infected with the AIDS virus, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
720	If a member of your family became sick with AIDS, would you be willing to care for her or him in your own household?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
721	In your opinion, if a female teacher has the AIDS virus but is not sick, should she be allowed to continue teaching in the school?	SHOULD BE ALLOWED . . . . . 1 SHOULD NOT BE ALLOWED . . . . . 2 DK/NOT SURE/DEPENDS 8	
722 **(2)**	Should children age 12-14 be taught about using a condom to avoid getting AIDS?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
723	CHECK 701: HEARD ABOUT AIDS → Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact? NOT HEARD ABOUT AIDS → Have you heard about infections that can be transmitted through sexual contact?	YES . . . . . 1 NO 2	
724	CHECK 414: HAS HAD SEXUAL INTERCOURSE HAS NOT HAD SEXUAL INTERCOURSE → 732		
725	CHECK 723: HEARD ABOUT OTHER SEXUALLY TRANSMITTED INFECTIONS? YES NO → 727		
726	Now I would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a disease which you got through sexual contact?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
727	Sometimes men experience an abnormal discharge from their penis. During the last 12 months, have you had an abnormal discharge from your penis?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
728	Sometimes men have a sore or ulcer near their penis. During the last 12 months, have you had a sore or ulcer near your penis?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
729	CHECK 726, 727, AND 728: HAS HAD AN INFECTION (ANY 'YES') HAS NOT HAD AN INFECTION OR DOES NOT KNOW → 732		
730	The last time you had (PROBLEM FROM 726/727/728), did you seek any kind of advice or treatment?	YES . . . . . 1 NO . . . . . 2 → 732	
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

731	Where did you go? **(3)** Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTER . . . . . B STAND-ALONE VCT CENTER . . . C FAMILY PLANNING CLINIC . . . . . D MOBILE CLINIC . . . . . E FIELDWORKER . . . . . F OTHER PUBLIC SECTOR G _____ (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC/ PRIVATE DOCTOR . . . . . H STAND-ALONE VCT CENTER . . . I PHARMACY . . . . . J MOBILE CLINIC . . . . . K FIELDWORKER . . . . . L OTHER PRIVATE MEDICAL SECTOR M _____ (SPECIFY) OTHER SOURCE SHOP . . . . . N OTHER X _____ (SPECIFY)	
732 **(2)**	If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in asking that they use a condom when they have sex?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
733	Is a wife justified in refusing to have sex with her husband when she knows her husband has sex with other women? **(4)**	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	

(1) If Qs. 703, 705 and/or 706 do not apply to the local context, replace the question using a specific localmisconception. At least two questions related to misconceptions are needed.

(2) The question may be deleted in countries with a very low HIV prevalence.

(3) Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

(4) In polygynous societies, the phrase 'other women' should be replaced by the phrase 'women other than his wives.'

SECTION 8. OTHER HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801 **(1)**	Some men are circumcised, that is, the foreskin is completely removed from the penis. Are you circumcised?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	→ 805
802 **(1)**	How old were you when you got circumcised?	AGE IN COMPLETED YEARS. . . . . [ ][ ] DURING CHILDHOOD (<5 YEARS) 95 DON'T KNOW. 98	
803 **(1)**	Who did the circumcision?	TRADITIONAL PRACTITIONER/ FAMILY/FRIEND . . . . . 1 HEALTH WORKER/PROFESSIONAL 2 OTHER . . . . . 3 DON'T KNOW. 8	
804 **(1)**	Where was it done?	HEALTH FACILITY. . . . . 1 HOME OF A HEALTH WORKER/ PROFESSIONAL. . . . . 2 CIRCUMCISION DONE AT HOME . . . 3 RITUAL SITE . . . . . 4 OTHER HOME/PLACE . . . . . 5 DON'T KNOW. 8	
805	Now I would like to ask you some other questions relating to health matters. Have you had an injection for any reason in the last 12 months? IF YES: How many injections have you had? IF NUMBER OF INJECTIONS IS 90 OR MORE, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE.	NUMBER OF INJECTIONS. . . [ ][ ] NONE. 00	→ 808
806	Among these injections, how many were administered by a doctor, a nurse, a pharmacist, a dentist, or any other health worker? IF NUMBER OF INJECTIONS IS 90 OR MORE, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE.	NUMBER OF INJECTIONS. . . [ ][ ] NONE. 00	→ 808
807	The last time you got an injection from a health worker, did he/she take the syringe and needle from a new, unopened package?	YES. . . . . 1 NO . . . . . 2 DON'T KNOW. 8	
808	Do you currently smoke cigarettes?	YES. . . . . 1 NO 2	→ 810
809	In the last 24 hours, how many cigarettes did you smoke?	NUMBER OF CIGARETTES. . . . . [ ][ ]	
810	Do you currently smoke or use any (other) type of tobacco? **(2)**	YES. . . . . 1 NO 2	→ 812
811	What (other) type of tobacco do you currently smoke or use? **(2)** RECORD ALL MENTIONED.	PIPE . . . . . A CHEWING TOBACCO. . . . . B SNUFF . . . . . C OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
812	Are you covered by any health insurance? **(3)**	YES . . . . . 1 NO 2	→ 814
813	What type of health insurance are you covered by? **(3)** RECORD ALL MENTIONED.	MUTUAL HEALTH ORGANIZATION/ COMMUNITY-BASED HEALTH INSURANCE . . . . . A HEALTH INSURANCE THROUGH EMPLOYER . . . . . B SOCIAL SECURITY . . . . . C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE D OTHER X (SPECIFY)	
814	RECORD THE TIME.	HOUR . . . . . MINUTES	

(1) Question may be omitted depending on the practice of male circumcision in specific countries. Translation of circumcision should indicate removal of the foreskin and not merely coming of age ceremonies.

(2) Add local terms.

(3) If a health service prepayment plan or other types of plans are available in the country, add those types of plans to the question.

INTERVIEWER'S OBSERVATIONS TO BE FILLED

IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF SUPERVISOR: _____ DATE: _____

EDITOR'S OBSERVATIONS

NAME OF EDITOR: _____ DATE: _____


DHS
TOOLKIT