BRIEFING PAPER

Achieving MDG 5 for adolescents in Asia and the Pacific: lessons for the delivery of reproductive health services

Part 1: A review of available data in nine countries

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The Knowledge Hubs for Health aim to build knowledge, evidence and expertise, as well as inform health policy dialogue relevant to Asia and the Pacific. In 2008, the Australian Agency for International Development (AusAID) established four Knowledge Hubs for Health, each addressing different dimensions of the health system: Health Policy and Finance; Health Information Systems; Human Resources for Health; and Women and Children’s Health (WCH). This responds to the Australian Government scaling up its commitment to improving health, mounting pressure to meet the Millennium Development Goals in this region, and recognition that evidence-informed, pro-poor health policy is crucial to these objectives. By generating knowledge and building a culture of evidence-based policy, the Hubs aim to improve the quality and effectiveness of Australia’s investments in health.

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Abbreviations

ANC  Antenatal care
DHS  Demographic and Health Survey
FP  Family planning
HIS  Health Information System
HIV  Human Immunodeficiency Virus
ICPD  International Conference on Population and Development
M&E  Monitoring and evaluation
MDG  Millennium Development Goal
MICS  Multiple Indicator Cluster Survey
MMR  Maternal mortality ratio
NGO  Non-government organisation
NZPPD New Zealand Parliamentarians’ Group on Population and Development
PNG  Papua New Guinea
PPTCT  Prevention of parent to child transmission of HIV
RH  Reproductive health
SRH  Sexual and reproductive health
STI  Sexually transmitted infection
UNFPA United Nations Population Fund
UNICEF United Nations Children’s Fund
WHO  World Health Organisation
WPRO Western Pacific Regional Office of WHO
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Summary of Key Points

- Globally, adolescents experience unique developmental and socio-economic vulnerabilities that lead to them experiencing a disproportionate burden of reproductive and maternal mortality and morbidity.

- Adolescents do not automatically share in the benefits of reproductive and maternal health interventions targeted at the overall population.

- Specific evidence-based policy and programs for adolescents are required in order to ensure equitable progress towards MDG 5 in Asia and the Pacific.

- Formulating policy and programs requires easily accessible and high quality data on the reproductive and maternal health outcomes of adolescents, the neonatal outcomes of babies of adolescent mothers, and the access of adolescents to reproductive and maternal health services. In most countries in Asia and the Pacific, the major sources of these data are national-level household surveys such as DHS and MICS.

- This review examined DHS and MICS reports for nine countries to assess the extent to which they provide age-disaggregated data on 128 indicators thought to be necessary to develop evidence-based policy and programs to improve adolescent reproductive and maternal health.

- Data for only 8 indicators were collected by all nine countries; 90 indicators were collected by at least one country. Only 65 indicators collected by at least one country were disaggregated by age; 8 were disaggregated by age in the reports of all countries.

- DHS surveys in different countries vary significantly, which makes it impossible to compare absolute data between countries. Differences include the choice of sample (e.g. whether unmarried women are surveyed), the indicators for which data are sought, the wording of questions, and the time period during which the survey was conducted. MICS surveys vary according to which ‘round’ of questionnaires a country has used.

- The capacity of DHS and MICS data to inform evidence-based reproductive and maternal health policy and programs for adolescents is limited by:
The exclusion of very young adolescents (aged 10-14) from all surveys, and of unmarried women and males from most surveys, despite strong evidence that all three groups have specific sexual and reproductive health needs;

The omission of indicators relating to causes of maternal mortality, prevalence and causes of maternal morbidity, nutrition, knowledge of sexual, reproductive and maternal health, and abortion; and

The failure of survey reports to disaggregate all data collected by age; and failure to further disaggregate age-specific data by marital status, urban/rural location, wealth quintile and education level, despite these data being recorded.

Each of these limitations is amenable to change.

Compared with adult women, adolescent girls utilise less family planning, are less likely to discuss family planning with a fieldworker or at a health facility, are less likely to believe they could obtain a condom, are more likely to experience one or more barriers to accessing health services, are more likely to have their babies less than 18 months apart, and are slightly less likely to be offered the full evidence-based package of antenatal care.

Compared with adult women and adolescent boys, adolescent girls are more likely to report having an STI or symptoms of an STI, and are less likely to be exposed to a family planning message in the media.

DHS and MICS data do not provide any information to explain these poorer outcomes for adolescent girls. Qualitative research is necessary to understand these age-related trends and identify the most appropriate and cost-effective areas for intervention.

The babies of adolescent mothers are more likely to be stillborn, or die in their first week or month of life, than the babies of women aged 20 years or older. Further analysis of primary data are required to determine if this is due to age, parity, access to health services, or a combination of factors.

Part 2 of this Briefing Paper reports on a review of the literature which aims to identify and explain the barriers faced by adolescents in accessing reproductive and maternal health services, and evaluate the programs that have been trialled throughout Asia and the Pacific to address these barriers.
Introduction

Adolescence, defined by the World Health Organisation (WHO) as occurring between 10 and 19 years of age,\(^1\) is a time of rapid physical, psychosocial and emotional change.\(^*\) For the 1.2 billion adolescents globally, it is a unique period of life characterised, on the one hand, by the increasing physical capacity to be sexually active and conceive a child but, on the other, by less than fully developed cognitive and psychosocial capacity to assess the unintended consequences of sexual activity and negotiate safe and consensual sex.\(^2\) These developmental influences on sexual decision-making are, for many adolescents, complicated by challenges such as poverty, gender inequity, low educational attainment, limited employment opportunities, and socio-cultural and regulatory barriers to accessing sexual and reproductive health information, commodities, and services. This combination of factors has been shown to increase the incidence of adolescent pregnancy and sexually transmitted infections (STIs), while reducing care-seeking behaviour.\(^3,4\)

Although rates of sexual activity among unmarried adolescents in Asia and the Pacific are increasing,\(^4,5\) for most adolescent girls in these regions pregnancy occurs in the context of early marriage, social pressure to commence childbearing to prove fertility, and limited power to make decisions about family planning.\(^6\) In Vanuatu, one of the few Pacific Island countries for which data are available, 7% of women marry prior to age 15 and 23.6% marry before age 18. Only 34.5% of married adolescent girls use a modern method of contraception.\(^7\) In Bangladesh, early marriage and pregnancy are even more common. In 2007, 20% of ever-married women reported that they were married by age 15, 12% had commenced childbearing by age 15, and 60% reported that they had at least one child by age 19. Less than a third of married adolescent girls use modern methods of contraception.\(^8\) Similarly, in Central and East Lombok, Indonesia, 50-60% of women give birth to their first baby while aged 14-19 years.\(^9\)

Pregnancy has significant implications for adolescent girls and their babies. Globally, girls aged 15-19 are twice as likely to die from pregnancy related causes as women who begin childbearing after age 20, and maternal mortality is the most common cause of death in this age group.\(^10\) Girls aged 10-14 are five times more likely to die.\(^10\) This higher mortality is thought to result from a combination of biological factors, poorer access to antenatal care, postnatal care and skilled attendance at birth, and higher recourse to unsafe abortion.\(^6\) Babies born to adolescent girls are also at a higher risk of death compared with babies of older women. This

\(^*\) Throughout this document the term ‘adolescent’ will be used to refer to people aged 10-19 years, ‘young people’ will refer to those aged 10-24 years, and ‘youth’ to those aged 15-24 years.
risk of neonatal death is 50% higher in the first week and 50-100% higher during the first month of life and stems from higher rates of preterm birth, complicated delivery, and low birth weight, and lower access to skilled attendance at birth and quality postnatal care. Some evidence suggests that adolescent pregnancies are more likely to be unwanted, and that such pregnancies result in poorer outcomes for both mothers and babies.

Early marriage and adolescent pregnancy also add to the socioeconomic burden of individuals, families and communities. In much of Asia and the Pacific, adolescents girls are expected to leave school upon marriage, or certainly upon becoming pregnant. This reduction in their educational attainment worsens their own health outcomes and those of their children, increases their dependence on their husbands and families, and exacerbates gender inequities in their communities. Leaving school also limits an adolescent girl's livelihood opportunities which, in turn, restricts her capacity to participate in leadership roles in government, business and civil society, reinforces her own cycle of poverty, and contributes to a reduction in the productivity of her community.

These unique developmental and socio-economic vulnerabilities lead to adolescents suffering a disproportionate burden of reproductive and maternal morbidity and mortality and highlight the need for adolescents to be specifically targeted in attempts to achieve Millennium Development Goal (MDG) 5. MDG 5 commits the international community to two targets: a reduction in the maternal mortality ratio (MMR) by three-quarters between 1990 and 2015, and ensuring universal access to reproductive health by 2015. The interventions required to improve reproductive and maternal health are well-known and include access to family planning, diagnosis and treatment of STIs, quality antenatal and postnatal care, skilled attendance at birth, and safe abortion where it is legal and quality post-abortion care where it is not. However, adolescents, particularly those who marry at an early age, live in rural areas, and have low educational attainment, experience significant barriers to accessing information about their reproductive and maternal health needs, as well as modern methods of contraception, antenatal care, skilled attendance at birth, and postnatal care. It therefore cannot be assumed that adolescents will automatically share in the benefits of reproductive and maternal health interventions targeted at the overall population.

The development of evidence-based reproductive and maternal health policies and programs for adolescents requires baseline data regarding their reproductive and maternal health outcomes, health-risk and protective behaviours, access to and utilisation of health information

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1 The maternal mortality ratio (MMR) is the ratio of maternal deaths per 100 000 live births.
and services, and socio-cultural context. In most developing countries, data on health outcomes, risk factors, service coverage and equity are collected by national-level household surveys such as the Demographic and Health Survey (DHS)\textsuperscript{17} and UNICEF's Multiple Indicator Cluster Survey (MICS).\textsuperscript{18} The primary focus of these surveys is to describe demography through the presentation of reproductive and maternal health data that are relevant to monitoring progress towards MDG 5.\textsuperscript{19} Both DHS and MICS have gained reputations for being accurate and representative.\textsuperscript{20} However, they are also subject to a number of criticisms which include a failure to consistently report data in a form that is disaggregated by age, sex, marital status, geographical location, education level and wealth quintile;\textsuperscript{21} the adoption of survey methodologies that systematically fail to include adolescents, for example, by surveying only married women or excluding very young adolescents (aged 10-14);\textsuperscript{1} and the failure to collect data on abortion, sexual violence and the sexual behaviour of unmarried women due to the stigma and/or legal implications associated with these behaviours.

The regional commitment to conducting DHS and MICS in the Pacific, the proposed development of a youth module for the 4\textsuperscript{th} round of MICS\textsuperscript{22} and the increasing need to measure development effectiveness in the countdown to 2015\textsuperscript{19} all represent opportunities to advocate for the improved collection of strategic information on reproductive and maternal health for adolescents. This review provides a starting point for this advocacy by mapping the currently available data in nine countries in Asia and the Pacific in order to assess the extent to which national-level household surveys capture reproductive and maternal health outcomes for adolescents, neonatal outcomes for the babies of adolescent mothers, and adolescents' access to health information and services. Where data are available, the review also assesses whether reproductive and maternal health outcomes, and access to health information and services, are different for adolescents compared with older women and men.

**Research Questions**

1. To what extent do national-level household surveys in nine countries in Asia and the Pacific capture data on:
   a. Sexual, reproductive and maternal health outcomes for adolescents,
   b. Neonatal health outcomes for the babies of adolescent mothers, and
   c. The extent to which adolescents are able to access health information and services?
2. Do the data that are available enable conclusions to be drawn about whether adolescents experience different reproductive and maternal health outcomes, and access to health services, than adults?

**Methods**

*Selection of indicators and countries*
A review of the literature and informal consultations with policymakers and health professionals working in adolescent reproductive health in Asia and the Pacific led to the identification of 128 indicators for sexual and reproductive health, maternal health, neonatal health, and access to health information and services. In addition to including the indicators for tracking progress towards MDG 5, the indicators chosen were those thought to be necessary to inform comprehensive evidence-based sexual, reproductive and maternal health policies and programs for adolescents. The indicators are presented in Appendix 1.

All indicators were defined and a standard format (in terms of proportion, rate or ratio) determined. The definitions for all indicators are included in the accompanying Annex to this Briefing Paper. Where appropriate, data for the indicators for sexual and reproductive health outcomes and access to reproductive health information and services were sought for both females and males. This was partly to assess if available data are able to show whether adolescent girls experience different sexual and reproductive health outcomes and access to health information and services compared with adolescent boys; and partly to emphasise that, despite a legitimate focus by policymakers and health workers on the reproductive health of adolescent girls, adolescent boys have their own sexual and reproductive health needs which should be identified and addressed.

Nine countries in Asia and the Pacific were chosen for this review: Bangladesh, Cambodia, Indonesia, Papua New Guinea, Philippines, Solomon Islands, Timor-Leste, Vanuatu and Vietnam. The inclusion of countries with different rates of progress towards MDG 5, variable socio-cultural and economic contexts, and disparate methodologies for conducting household surveys was intended to maximise the breadth of the findings to enable recommendations of regional relevance to be formulated.

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1. This review of the literature was undertaken in two parts: a review of the barriers to adolescents accessing reproductive and maternal health services and a review of programs to overcome these barriers. The results of these reviews are presented in Part 2 of this Briefing Paper series.

2. The indicators for MDG 5 are the maternal mortality ratio, proportion of births attended by skilled personnel, contraceptive prevalence rate, adolescent birth rate, antenatal care coverage, and unmet need for family planning.
Identification and mapping of available data

DHS reports were identified for Bangladesh,\(^8\) Cambodia,\(^{24}\) Indonesia,\(^{25}\) Papua New Guinea,\(^{26}\) Philippines,\(^{27}\) Solomon Islands,\(^{28}\) Timor-Leste,\(^{29}\) and Vietnam.\(^{30}\) MICS reports were identified for Bangladesh,\(^{31}\) Indonesia,\(^{32}\) Philippines,\(^{33}\) Vanuatu\(^7\) and Vietnam.\(^{34}\) Data relating to each of the 128 indicators listed in Appendix 1 were sought from each of the DHS and MICS reports. Available data for each indicator were entered into a purpose-built Access database disaggregated by age, gender, marital status, geography (urban/rural), wealth quintile and education level.

All data entered into the Access database were exported into Excel; both by country and by indicator. This enabled a picture to be developed of the available data for each country and the extent to which data are disaggregated by age and other important social determinants of health. It was noted during the course of the exercise that different surveys generate data for some indicators by asking slightly different questions; and that some indicators are used as proxies for others. For example, in the Bangladesh DHS, age at first marriage is used as a proxy for age of sexual debut;\(^8\) in both the Cambodian and Indonesian DHS these questions are asked separately.\(^{24,25}\) These differences are important as they are reflective of the socio-cultural context in which household surveys are conducted, which in turn may influence attitudes towards the sexual and reproductive health of adolescents and therefore the data that are collected. In addition, they limit the ability to compare data between countries. For these reasons, the wording of the questions asked for each indicator has been included in the Annex to this Briefing Paper, and indicators that have been used as proxies for others are highlighted.

It had originally been intended to review all publicly available national-level data sources for each country, including the World Health Statistics Report (WHO), State of the World’s Children (UNICEF) and Country Profiles for Population and Reproductive Health (UNFPA). However, it became apparent during the course of the review that the data presented in these reports are generated from multiple sources, including DHS and MICS, and therefore do not add further value to this mapping exercise. These sources have been listed in the Annex for completeness, but were not included in the analysis.

National-level research studies undertaken by non-government organisations (NGOs) such as the Guttmacher Institute are also listed in the Annex as they are the only source of data on some sensitive issues such as abortion. However, they have a different purpose to household surveys in that they aim to highlight specific (often neglected) issues at a single point in time.
rather than provide an ongoing summary of the health status of a population. For this reason, these sources were not included in the mapping of data.

**Analysis of age-related trends**

Indicators with age-disaggregated data were examined to assess if it was possible to determine whether adolescent girls and boys in each country experience different reproductive and maternal health outcomes, and access to health services, than adult women and men. Up to three graphs for each indicator were generated using Excel (depending on data availability): the age-disaggregated female DHS data, the age-disaggregated male DHS data, and the age-disaggregated female MICS data*. All graphs are presented in the Annex to this Briefing Paper. Graphed data were interpreted by visually examining the trends for each indicator across age groups. As the DHS and MICS reports do not present their raw data and, for most indicators, do not state the denominator used to calculate rates and proportions, it was not possible to use statistical tests to determine difference in outcomes between adolescents and older women and men in each country. However, comments on trends across age groups are included in the Annex, and recommendations for further research are highlighted.

For ease of presentation, and to enable a comparison of age-related trends, each graph includes available data from all countries. However, it is important to recognise that, apart from these age-related trends, the graphs should not be used to compare data between countries. There are a number of reasons for this:

1. As mentioned above, the questions for each indicator are asked slightly differently in different surveys, potentially eliciting varying responses.

2. The surveys included in this review were undertaken over a time span of 15 years: the sampling periods for the DHS surveys range from 1997 (PNG) to 2007/8 (Indonesia), and those for the MICS surveys range from 1994-96 (Indonesia) to 2007 (Vanuatu). Community attitudes towards adolescent reproductive health, which have been shown to impact on individual sexual and health-seeking behaviours, change over time. It is therefore not possible to compare the results of surveys that were conducted during significantly different time periods.

3. The sampling strategies adopted by different countries vary substantially for DHS. The most important of these differences relates to marital status, which is a significant determinant of adolescent sexual and health-seeking behaviour. While some DHS surveys sample all females irrespective of their marital status (Cambodia, Philippines, PNG and Solomon Islands), others include only ever-married females (Bangladesh, Vanuatu).

*MICS surveys only record information from women.
Indonesia, Timor-Leste and Vietnam). Further, in Bangladesh and Vietnam, indicators relating to contraception were asked only of currently married females. Similarly, of the six countries which sample males in their DHS, three include all males (Cambodia, Philippines, Solomon Islands), two include only ever-married males (Bangladesh and Timor-Leste), and Indonesia includes only currently married males. As unmarried, ever-married and currently married adolescent females and males are likely to experience different reproductive health needs, and face different barriers in accessing care, surveys with different sampling denominators are not comparable.

4. MICS surveys are conducted in rounds, with those undertaken during a single round using similar sampling strategies but significant differences between rounds. The surveys included in this review span round 2 (Indonesia and Philippines) and round 3 (Bangladesh, Vanuatu and Vietnam).

Results

Identification and mapping of available data

A summary of available DHS and MICS data for all 128 indicators in the nine chosen countries is presented in Appendix 2. The coloured boxes represent indicators for which data are available. Those for which the data are reported in an age-disaggregated form are further marked with an ‘A’.

Data are available for at least one country for 90 of the 128 indicators (70.3%). However, there are only 8 indicators for which data are available for all nine countries (6.3%). If only DHS data are included, thereby excluding Vanuatu as the only country without a DHS, this rises slightly to 21 indicators (16.4%) with data for all of the remaining eight countries. For 38 indicators, there were no data available for any of the countries, and there are no indicators for which data are available through MICS but not DHS. This highlights both the significant variation in content between DHS surveys in different countries, and the more limited scope of MICS in the areas of reproductive health and access to health services as compared with DHS.

The 38 indicators for which no data were available involve causes of maternal mortality, the prevalence and causes of maternal morbidity, knowledge of reproductive and maternal health issues and, with the exception of some very limited data from Cambodia, abortion. Although

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1 These eight indicators were proportion of births attended by a skilled birth attendant, infant mortality rate, contraceptive prevalence – any (female), contraceptive prevalence – modern methods (female), contraceptive prevalence – traditional methods (female), proportion of females whose partners use a condom, proportion of pregnant women who have at least one antenatal care visit, and proportion of women who attended antenatal care who received tetanus toxoid.
there are recognised barriers to collecting such data through household surveys, including difficulties of definition and measurement in the cases of maternal mortality and morbidity, and political and legal sensitivity in the case of abortion,\textsuperscript{19} these are significant information gaps for those attempting to produce evidence-based reproductive and maternal health policy and programs.

Data disaggregated by age are limited. Of the 90 indicators for which data are collected for at least one country, only 65 indicators (72.2\%) are disaggregated by age to show outcomes for adolescents. Therefore, of the 128 indicators thought to be important for designing evidence-informed interventions to improve adolescent reproductive and maternal health outcomes and access to health services, only 50.8\% have been collected and age-disaggregated by at least one DHS or MICS survey in the nine countries included in this review. Only 8 indicators had data disaggregated by age for all nine countries (8.9\% of indicators with data, 6.3\% of all indicators).\textsuperscript{*} If Vanuatu is once again excluded, this figure rises slightly to 15 indicators for which age-disaggregated data are available for all eight remaining countries (16.7\% of indicators with data, 11.7\% of all indicators).

Indicators for which data are collected by at least one DHS but not reported disaggregated for age involve the health of women during pregnancy, the proportion of pregnant women who attend the recommended four antenatal care visits, breastfeeding, and the access of males to family planning messages through different forms of media (which are only reported for males over 20 years of age). MICS data collected but not reported disaggregated by age include breastfeeding, infant mortality, and prevalence of low birth weight.

The indicators that are disaggregated by age in at least one DHS report include sexual activity (including age of sexual debut and the prevalence of STIs), the proportion of pregnancies that are intended and wanted, newborn outcomes, knowledge of modern methods of contraception, utilisation of contraception, and access to family planning messages, evidence-based antenatal care interventions, and general health services. Indicators disaggregated by age in MICS reports include those used to track progress towards MDG 5 (with the exception of MMR which is not disaggregated and unmet need for contraception which is not collected), the proportion of women who receive evidence-based antenatal care interventions, and prong 3 of the prevention of parent to child transmission of HIV (PPTCT).

\textsuperscript{*} The same 8 indicators with data from all nine countries listed above.
Two other important omissions are revealed by this mapping exercise. The first is that none of the national-level household surveys in any of the nine countries currently collect data from very young adolescents, that is, those aged 10-14 years. Given that a significant proportion of adolescents (including up to 20% of adolescent girls in Bangladesh) become sexually active prior to age 15, and that a number of interventions shown to improve reproductive and maternal health outcomes can be appropriately commenced in this age group, a better understanding of the health needs and access to health services of very young adolescents is essential.

The second omission is that disaggregation of data by marital status, urban/rural location, wealth quintile and education level is only undertaken for the overall 15-49 year age group. The one exception is the age-specific fertility rate which is disaggregated by urban/rural location (and reveals that fertility is higher among rural than urban adolescents). As a result, current DHS and MICS reports provide no information on whether reproductive and maternal health outcomes for adolescents, or their access to health services, are affected by these social determinants of health. Once again, this limits the capacity of these data sources to provide the strategic information necessary to underpin evidence-based interventions for adolescents.

### Analysis of age-related trends

Graphs for all indicators with age-disaggregated data, comments on whether the data suggest that adolescents experience different reproductive and maternal health outcomes and access to health services to adult women and men, and potential explanations for age-related trends, are presented in the Annex to this Briefing Paper. Once again, it should be emphasised that these graphs cannot be used to compare data between countries.

### Sexual, reproductive and maternal health outcomes for adolescents

Sexual debut during adolescence is common in Asia and the Pacific. However, while the median age of sexual debut has remained fairly static over time, the proportion of females who report sexual activity before 15 years of age is decreasing in all countries except the Solomon Islands and Indonesia. This downward trend is most pronounced in Bangladesh, reflecting a decrease in early marriage. About 65% of Bangladeshi women currently aged 45-49 report that they were married (and therefore commenced sexual activity) prior to 15 years of age, compared with just over 20% of current adolescents. The Solomon Islands is experiencing a different trend, with an increase in sexual activity among very young adolescents, most of whom...
are unmarried. As the Indonesia DHS includes only married females, the increase in sexual activity among girls under the age of 15 years in Indonesia must be occurring within the context of marriage.

Data on STI incidence and prevalence are limited, and in most countries the age-related trends in the data that are collected are equivocal. The exceptions are Cambodia and the Solomon Islands where the data indicate that adolescent females experience a higher burden of STIs than adult women or than males; particularly when prevalence is measured in terms of symptoms as well as diagnosis. It is notable for all countries with data that the reported prevalence of ‘genital discharge, sores or ulcers’ is higher than the prevalence of having ‘a disease that was caught through sexual contact’. This is particularly pronounced for adolescents, potentially reflecting both inadequate knowledge about STIs and their transmission and lack of access to health services for diagnosis and treatment.

Adolescent pregnancy is common in Asia and the Pacific. As demonstrated in Figure 1, the percentage of adolescents who are, or have been, pregnant increases steadily between 15 and 19 years of age.

Figure 1: Teen pregnancy percentage, DHS data

It is often assumed that adolescent pregnancy in the region occurs primarily in the context of marriage and is a result of socio-cultural pressure on married adolescent girls to prove their fertility. As the teen pregnancy data for countries that sample both married and unmarried women are not disaggregated by marital status, this review is unable to support or refute this. However, it is interesting to consider the proportion of adolescent pregnancies that are reported to be ‘intended’ or ‘wanted now’ in each country in light of its sampling denominator. As shown
in Figure 2, the proportion of pregnancies that are ‘intended’ or ‘wanted now’ peaks in the adolescent age group in all countries where the data only include married women. However, in the Philippines, PNG and the Solomon Islands, where unmarried women are included in the sample, this peak is less pronounced or does not exist. This suggests that, at least in some countries, a significant proportion of adolescent pregnancies are occurring outside of marriage and that not all of these pregnancies are ‘intended’ and ‘wanted now’.

Figure 2: Proportion of pregnancies which were intended, DHS data

If a high proportion of married adolescent girls are trying to become pregnant, and unmarried adolescent girls are becoming pregnant when they don’t want to be, contraceptive prevalence in this age group could be expected to be low. As shown in Figure 3, this is indeed the case; with fewer adolescent girls in each country using family planning than any other age group (apart from women aged 45-49 in Bangladesh and Indonesia).

The majority of women of all age groups who do use family planning are using a modern method of contraception (Figure 4). This suggests that the availability of modern methods of contraception is not a significant barrier to accessing family planning in the region.
In recognition that a low contraceptive prevalence can reflect either a desire to be pregnant or an inability to access family planning, the DHS include an indicator known as the ‘unmet need for contraception’. Unmet need is defined as the proportion of women of reproductive age who wish to delay, space or limit their births but are not currently using either a modern or traditional form of contraception. Despite asking this question of all women sampled, the countries included in this review only report this indicator for currently married women. The ability of unmarried women to access contraception is not reported for any country. While the available data are important in that they show that unmet need for contraception is higher in currently married adolescents than older women in Philippines, Solomon Islands and Vietnam, it is

*Unmet need for contraception is one of the indicators for MDG 5b.*
possible that the difference would be more pronounced, and exist in more countries, if all women were sampled irrespective of marital status.

The unmet need for birth spacing is similarly reported only for currently married women. These data demonstrate that married adolescents experience a higher unmet need for birth spacing than other age groups (see Figure 5), and that this trend is more consistent and more pronounced that for unmet need for contraception. This suggests that after their fertility has been proven many adolescents would like to space their subsequent births, yet they are still not able to access family planning. It is therefore likely that socio-cultural factors are one of many barriers that married adolescent girls face in accessing contraception.

Figure 5: Unmet need for birth spacing - currently married females, DHS data

One consequence of this unmet need for birth spacing is that many adolescent girls have their babies less than 18 months apart, which is less than that recommended by the WHO and has implications for both maternal and newborn health outcomes. The data presented in Figure 6 are not only for currently married women but accord with the sampling denominator chosen by each country. This means that the high prevalence of inadequate birth spacing among adolescents in the Philippines, for example, reflects the desire for, and lack of access to, family planning for both married and unmarried women. As these data are not further disaggregated by marital status, it is not possible to interpret Figures 5 and 6 together.
Consistent with the data presented above is the finding that, of women not currently using contraception, adolescents are less likely to have discussed family planning with an outreach worker in their community or at a health facility (Figure 7). Although it is useful to know that adolescents are less likely to be offered family planning, or they are less likely to ask for it, the data cannot reveal whether this is because they don’t wish to use family planning, because health workers have limited skills or preconceived attitudes towards young people using contraception, because young people have poor knowledge about their family planning options, or because family planning commodities were not available in that community or health service at that time.

Figure 7: Proportion of women not using contraception who did not discuss family planning with a fieldworker or at a health facility, DHS data
Neither DHS nor MICS provide information on maternal outcomes for adolescent girls. Thus, while other evidence suggests that adolescent girls experience a disproportionate burden of maternal mortality and morbidity, this cannot be confirmed by this review. Data on the quality of care provided to pregnant adolescents are also scarce. MICS data provide some indication that adolescent girls who access antenatal care are less likely to have their blood pressure or urine checked than adult women in Vanuatu\(^7\) and Vietnam\(^34\), but the DHS data on this indicator are more equivocal. Only three countries collect data on whether pregnant women are offered an HIV test during antenatal care. While adolescent girls are far more likely to be offered an HIV test in Cambodia\(^24\) and Vanuatu\(^7\), they are far less likely to be in Vietnam.\(^34\) No data are collected on PPTCT of HIV more broadly.

**Neonatal health outcomes for the babies of adolescent mothers**

The data indicate that babies born to adolescent mothers have poorer health outcomes than the babies of adult women. The stillbirth rate, perinatal mortality rate (Figure 8) and neonatal mortality rate (Figure 9) are all higher for the babies of adolescent mothers. Although the reasons for this are complex, and encompass factors such as small pelvis size, inadequate birth spacing, and poor access to health services, it is interesting that young maternal age has a weaker effect on infant mortality than on perinatal and neonatal mortality. This suggests that the poorer outcomes for newborns are closely related to maternal health and maternal access to health services prior to and during pregnancy. The impacts of young maternal age on newborn outcomes are confounded by parity which is not taken into account in any data sources included in this review.

**Figure 8: Perinatal mortality rate (per 1000 live births), DHS data**
Access to health information and services

It may be hypothesised that many of the age-related trends presented above may be explained by the fact that adolescents face more barriers to accessing reproductive and maternal health information and services than adult women. Although the data collected by DHS and MICS do not provide specific information about women’s access to reproductive and maternal health services, most DHS surveys do collect data on barriers to accessing general health services. In all countries for which data are available, except Timor-Leste where the trends are fairly steady across age-groups, the barriers to access that seem to be reported more often for adolescent girls than adult women are: knowledge of where to go, needing to get permission to go (Figure 10), financial barriers, distance to health facility, transport, not wanting to go alone (Figure 11), and concern there will be no female health provider (Figure 12). More adolescents than older women also report at least one barrier to accessing care.
Two additional findings about access to information and services are worth highlighting. The Indonesia DHS asks married women ‘whether they know of a place where a person can get a condom’. Only 30% of married adolescent girls knew the source of a male condom, a figure which rose to 50% for women aged 25-29. The survey then asks women whether they think they could actually get a condom. Only half of the adolescent girls who knew where to get a condom believed that they could actually get one (15% of adolescents). This rose to 30% among women aged 25-29.

The second finding relates to a series of DHS questions which seek to determine the proportion of females and males who have heard or seen a family planning message through a variety of
media (radio, television, newspaper or magazine, poster, pamphlet, and community event). Although there were no apparent differences between adolescents and adults for these indicators, the data do reveal that males are much more likely to have seen or heard a family planning message through all of these media channels than females. This clearly has implications for the delivery of reproductive and maternal health information to communities.

**Discussion**

**Availability of data**

This review reveals that national level household surveys commonly relied-upon to inform the development of evidence-based policy and programs to improve adolescent reproductive and maternal health in fact have limited capacity to provide this information. Three specific limitations are highlighted by this review, each of which is amenable to change.

**Omission of important cohorts**

The first limitation relates to the sampling strategy chosen for DHS and MICS surveys, particularly the failure of all surveys to collect data from very young adolescents (aged 10-14), the exclusion of unmarried women from many DHS surveys, and the failure of all MICS and many DHS surveys to collect data from males. Reasons for the omission of these groups include socio-cultural norms around sexual decision-making, ethical concerns, and logistic difficulties. For example, very young adolescents and unmarried women are often assumed not to be sexually active and therefore not relevant to reproductive and maternal health policies and programs. Choosing to collect data from these groups thus risks being perceived as condoning behaviours that are not culturally acceptable. It has also been argued that pre-marital sexual behaviour for girls is so stigmatised that it would not be possible to obtain accurate information from very young adolescents or unmarried women, particularly where parental consent is required for survey participation. Others have raised the concern that, because sexual activity may be uncommon among very young adolescents and unmarried women, the sample size required to draw statistically significant conclusions is likely to be prohibitively large.

Although valid concerns, they do not outweigh the benefits of collecting information to create an evidence-base around the sexual, reproductive and maternal health needs of unmarried women and very young adolescents in order to generate policy and establish effective programs. It is well established that the rates of pre-marital sexual activity are increasing in the region, and it is likely that sexually active adolescents face substantial socio-cultural and structural barriers to accessing reproductive health information and services. Further, there is strong evidence that
providing young adolescents with the skills to negotiate safe sexual and reproductive behaviours, even prior to the commencement of sexual activity, has protective health effects throughout their lifetime. As such interventions will be effective only if based on comprehensive and high quality information, the development of methodologies that enable such data to be collected while minimising potential risks should be prioritised by donors, governments and technical agencies supporting the creation of survey tools.

Reproductive health is often considered to be ‘women’s business’ and not of importance to males. Yet boys and men, irrespective of their marital status, have their own sexual and reproductive health needs and difficulties accessing services, and specific information is required to develop policies and programs to address these. Further, in many countries, men’s knowledge and attitudes are important determinants of women’s reproductive health and whether women are able to access reproductive and maternal health care. Lack of data about these issues is a missed opportunity to create an evidence-base for supporting women and men to share responsibility for sexual and reproductive health. The inclusion of male data would also enable gender comparisons to be made. This would be particularly useful for highlighting gender differences, such as exposure to family planning messages, which justify an intensified focus on either adolescent girls or boys.

The decision about which population groups to include in the sample for DHS and MICS surveys is made by governments and the donor or technical agency supporting the development of the survey tool. Efforts to develop methodologies suitable for collecting information from very young adolescents, unmarried women, and males should therefore be complemented by advocacy directed at these stakeholders which highlights the benefits for policy and programming of including these groups in national-level household surveys. The Burnet Institute, on behalf of Compass: the Women’s and Children’s Health Knowledge Hub, commenced such advocacy through its submission to the New Zealand Parliamentarians’ Group on Population and Development’s (NZPPD) Open Hearing into Maternal Health in the Pacific in September 2009. This resulted in a recommendation by the NZPPD to ensure that data collected in the Pacific region ‘capture the 10-14 year age group so that comprehensive, accurate and timely maternal health data can be gathered on a regular and ongoing basis’.

Omission of important indicators

The second limitation of current DHS and MICS surveys is that data for a number of indicators considered important to inform evidence-based reproductive and maternal health policy and programs for adolescents are not collected at all. These include data on direct and indirect
causes of maternal mortality, prevalence and causes of morbidity during and after pregnancy and delivery, nutritional status of adolescent girls prior to and during pregnancy, knowledge of sexual, reproductive and maternal health issues and, with the exception of very limited data collected by Cambodia, abortion. Although data for some of these indicators, such as knowledge of sexual and reproductive health issues and abortion, are commonly collected by NGOs, these surveys tend to be ad hoc and are limited by their inability to track population-level health knowledge or outcomes over time.19

The challenges to collecting these data in household surveys are well recognised. For example, in areas where facility-based births are uncommon, the causes of maternal mortality are difficult to determine and may not be known by household members. Even in facilities, limited diagnostic facilities and the rarity of autopsies make distinguishing between direct and indirect causes of death a challenge. This is problematic, as grouping all causes of maternal death together, as occurs in both DHS and MICS, fails to provide information about whether the causes of maternal mortality in adolescents are different to those for adult women. It also creates the risk that policymakers will focus on the more easily identified direct causes of death to the exclusion of indirect causes, which may be more common in adolescents and require different interventions.42

Whether household surveys should collect data on abortion remains a vexed issue. Although unsafe abortion contributes significantly to maternal mortality, and it is thought that adolescents face additional barriers to accessing safe abortion where it is legal and post-abortion care where it is not,43 there are ethical concerns about potential harms being caused to women who report abortions in household surveys. These harms include legal consequences, stigma and discrimination, and lack of referral systems for women who become distressed while completing a household survey.43 There is also a high likelihood that women will be reluctant to admit to abortions, thereby reducing the validity of survey findings.

Once again, these challenges are not insurmountable. When countries are planning to undertake a DHS or MICS survey they should be supported to identify a ‘minimum set’ of indicators necessary to inform policy and programs in line with their national health priorities.19 Advocacy is required to ensure that this ‘minimum set’ of indicators adds information on the causes of maternal mortality, the prevalence and causes of maternal morbidity (which is likely to be a significant issue for adolescent girls), the nutritional status of adolescent girls prior to and during pregnancy and, where possible, abortion to their current list of indicators. For countries where collecting information on abortion in household surveys is considered inappropriate,
efforts should be directed towards refining the many innovative methodologies that have been proposed to overcome this important gap in data.\textsuperscript{43} Work on community and facility based maternal mortality audits should also be prioritised in order to better understand the causes of adolescent maternal mortality.\textsuperscript{*}

\textit{Failure to report disaggregated data}

The third limitation of DHS and MICS reports is the lack of disaggregated data presented. Despite age being recorded for each respondent, nearly 30\% of the indicators included in the review are not reported disaggregated by age. Many of these are indicators of access to and quality of care during pregnancy, including the MDG 5 indicator relating to the proportion of women who attend the recommended four antenatal care visits. These are significant omissions to the evidence-base for adolescents and advocacy is required to promote all indicators being age-disaggregated using five year intervals.

The failure to further disaggregate age-specific data by marital status, urban/rural location, wealth quintile and education level, information that is recorded for each respondent, reduces the capacity of the reported data to identify at-risk groups and inform targeted policy and programs. The failure of DHS reports to disaggregate indicators by marital status is of particular concern as, without reviewing each survey’s sampling strategy, it may not be apparent that only married women are included. Further, some countries report indicators on contraception only for currently-married women, even if the overall sample includes ever-married or all women.\textsuperscript{8} This leads to the possibility that data will be misinterpreted and emphasises the need for both overall and age-specific data to be clearly disaggregated by marital status and other social determinants of health.

\textit{Useful information on family planning}

Despite these limitations, both DHS and MICS provide a large amount of useful information. Of particular value are the indicators relating to contraceptive prevalence, exposure to family planning information and services, and access to general health services; all of which are collected by the majority of countries and are disaggregated to include the 15-19 year age group. These are of direct relevance to policy and programs aimed at promoting healthy sexual decision-making, delaying age of first pregnancy, increasing birth spacing, and empowering young women to choose when to commence childbearing and how many children to have. Given that effective family planning alone can reduce approximately 1/3 of maternal

\textsuperscript{*} In 2010, Compass: the Women’s and Children’s Health Knowledge Hub is planning a program of work on the use and limitations of community-based maternal mortality audits in Asia and the Pacific.
and that its benefits extend beyond health to the improvement of educational attainment, gender equality and livelihood opportunities, the collection of these data should continue.

Are adolescents different?

The data that are available support the hypothesis that adolescents in Asia and the Pacific experience different reproductive and maternal health outcomes and access to health services than adults. The most pronounced age-related trends suggest that fewer adolescent girls use modern and traditional methods of contraception than adult women, that adolescent girls are less likely than adult women to discuss family planning with a fieldworker or at a health service, that fewer adolescent girls than adult women know where to obtain a condom and even fewer think they could actually get one, and that adolescent girls are less likely than either adult women or adolescent boys to be exposed to family planning messages through different media channels. Adolescent girls are also more likely to experience one or more barriers to accessing health services and are more likely than adult women to have their babies less than 18 months apart. The babies of adolescent mothers are more likely to be stillborn or die within the first week or month of life than the babies of women aged 20 years or older. Although less striking, the data also suggest that adolescents who access antenatal care are less likely than adult women to receive the full evidence-based package of interventions, and that adolescent girls have a higher prevalence of STIs than either adult women or adolescent boys.

While there are limitations in how these data from the reports can be interpreted statistically, these age-related trends warrant further investigation. This could be done through a secondary analysis of the primary data, which are available from both DHS and MICS, to distinguish the impact of age from that of marital status, parity, socio-economic status, education level and urban/rural location. The Burnet Institute on behalf of Compass: the Women’s and Children’s Health Knowledge Hub intends to commence such an analysis of the DHS outcome data for neonates of adolescent mothers in 2010.

However, even if additional analyses confirm these differences, DHS and MICS data cannot explain why adolescents experience different outcomes and access to health services than adults. For example, low contraceptive prevalence among adolescent girls may result from a desire to become pregnant, a lack of knowledge about contraception and its availability, barriers to accessing family planning services, or a combination of all of these. A stated desire to become pregnant may reflect an informed choice, or socio-cultural pressures and a lack of decision-making power. Further, an inability to access information and services may stem from
demand and/or supply side barriers\textsuperscript{5,37}, each of which require different policy and programmatic responses. The role of real and perceived skills and attitudes of health workers, and potential barriers imposed by the organisational structure and financing mechanisms of the health system, thus need to be explored along with the service delivery preferences of adolescents. DHS and MICS data therefore need to be complemented by qualitative research\textsuperscript{19} aimed at identifying the sexual, reproductive and maternal health needs, and service delivery preferences, of adolescents. Part 2 of this Briefing Paper reports on a review of the literature which aims to identify and explain the barriers faced by adolescents in accessing reproductive and maternal health services, and evaluate the programs that have been trialled throughout Asia and the Pacific to address these.

\textit{Limitations of the review}

This review has a number of limitations. Although a broad range of indicators were chosen, data were only entered into the Access database if they were consistent with the definitions formulated at the beginning of the exercise. This means that some useful information may have been excluded. Further, because the analysis is based on reported data and denominators are not included in DHS or MICS reports, statistical analysis has not been undertaken. The analysis thus comprised graphing and ‘eyeballing’ the available data to describe age-related trends and identify issues that warrant further investigation. While the review is therefore able to explore the limitations of household surveys and develop a research agenda to further explain age-related trends, it is not able to provide definitive conclusions about adolescents’ reproductive and maternal health outcomes or access to health services.
Recommendations

1. Advocacy is required to support the inclusion of very young adolescents (aged 10-14), unmarried women, and males in all DHS and MICS surveys. This advocacy should focus on the benefits to policy and programming of gathering data from these groups, and should be complemented by efforts to develop innovative methodologies that enable such data to be collected while minimising potential risks.

2. Countries planning to undertake a DHS or MICS survey should be supported to identify a ‘minimum set’ of indicators necessary to inform adolescent reproductive health policy and programs in line with their national health priorities. The 128 indicators chosen for this review could potentially form the basis of such a ‘minimum set’.

3. Efforts to develop methodologies for collecting data on indicators that are difficult to measure, such as causes of maternal death, or politically and socially sensitive, such as abortion, need to be prioritised.

4. DHS and MICS reports should provide age-disaggregated data (using five year intervals) for all indicators.

5. DHS and MICS reports should further disaggregate age-specific data by marital status, urban/rural location, wealth quintile, and education level.

6. The standard format for reporting DHS and MICS surveys should be retained. However, in order to minimise the risk of misinterpretation, where surveys from different countries differ in terms of their sampling strategies, the wording of questions, and reporting of certain indicators, this should be emphasised clearly in all reports.

7. The current comprehensive collection and reporting of data on the utilisation of contraception and access to family planning information and services is integral to improving adolescent reproductive health and should be retained.

8. Secondary analysis of primary DHS and MICS data is required to assess the statistical significance of the differences in outcomes and access to services between adolescents and adults, females and males, and married and unmarried adolescent girls. Differences
by parity, urban/rural location, socio-economic status, and education level should also be analysed.

9. Qualitative research that attempts to explain the age-related trends identified in this review should be prioritised for funding. Such research is integral to understanding both the demand and supply side barriers to improving adolescent reproductive and maternal health and therefore to identifying the most appropriate areas for investment.

10. Qualitative research on the perceptions and preferences of adolescents, community members and health service providers as to the type and location of information and care to be provided to adolescents should also be undertaken and used to inform policy and program development.46
References


Appendix 1: List of indicators

**Sexual and reproductive health**

1. Median age at sexual debut – female
2. Median age at sexual debut – male
3. Proportion of females with sexual debut < 15 years of age
4. Proportion of males with sexual debut < 15 years of age
5. Median age at first marriage – female
6. Median age at first marriage – male
7. Median age at first pregnancy
8. Age-specific fertility rate
9. Teen pregnancy rate
10. Teen pregnancy percentage
11. Teen fatherhood percentage
12. Proportion of pregnancies which were intended
13. Proportion of pregnancies which were unintended but wanted
14. Proportion of pregnancies which were unintended and unwanted
15. STI incidence – female
16. STI incidence – male
17. STI prevalence – female
18. STI prevalence – male
19. Proportion of females who have ever experienced coerced / forced sex
20. Proportion of females who have ever experienced gender based violence
21. Proportion of females who have ever experienced female genital mutilation

**Maternal health**

22. Maternal mortality ratio
23. Lifetime risk of maternal death
24. Proportion of maternal deaths attributable to direct causes
25. Proportion of maternal deaths attributable to abortion
26. Proportion of maternal deaths attributable to indirect causes
27. Proportion of maternal deaths attributable to injury
28. Proportion of maternal deaths attributable to violence
29. Proportion of maternal deaths attributable to suicide
30. Proportion of births attended by a skilled birth attendant
31. Proportion of pregnant women who are of short stature (<145cm)
32. Proportion of pregnant women who have anaemia
33. Proportion of pregnant women who have iron deficiency
34. Proportion of pregnant women who have malaria
35. Proportion of pregnant women who are undernourished
36. Proportion of pregnant women who smoke during pregnancy
37. Proportion of women who deliver their babies by C-section
38. Proportion of women who experience 3\textsuperscript{rd} or 4\textsuperscript{th} degree tears during delivery
39. Proportion of women who experience obstetric fistulae
40. Proportion of women who experience postpartum haemorrhage

**Newborn health**
41. Prevalence of STIs in pregnant women
42. Stillbirth rate
43. Proportion of stillbirths that occur during labour
44. Proportion of stillbirths that do not occur during labour
45. Perinatal mortality rate
46. Neonatal mortality rate
47. Infant mortality rate
48. Average birth weight
49. Prevalence of low birth weight (<2500g)
50. Proportion of mothers who commence breastfeeding
51. Proportion of babies who are exclusively breastfed to 4 months
52. Proportion of babies who are exclusively breastfed to 6 months

**Access to reproductive and maternal health information and services**
53. Knowledge of modern methods of contraception – female
54. Knowledge of modern methods of contraception – male
55. Knowledge of use of condoms to protect against STIs – female
56. Knowledge of use of condoms to protect against STIs – male
57. Knowledge of medical abortion – female
58. Knowledge of medical abortion – male
59. Knowledge of the importance of antenatal care – female
60. Knowledge of the importance of antenatal care – male
61. Knowledge of the importance of breastfeeding – female
62. Knowledge of the importance of breastfeeding – male
63. Knowledge of nutrition – female
64. Knowledge of nutrition – male
65. Proportion of females who have heard a family planning message on the radio
66. Proportion of males who have heard a family planning message on the radio
67. Proportion of females who have seen a family planning message on TV
68. Proportion of males who have seen a family planning message on TV
69. Proportion of females who have seen a FP message in a newspaper or magazine
70. Proportion of males who have seen a FP message in a newspaper or magazine
71. Proportion of females who have seen a family planning message on a poster
72. Proportion of males who have seen a family planning message on a poster
73. Proportion of females who have seen a family planning message in a pamphlet
74. Proportion of males who have seen a family planning message in a pamphlet
75. Proportion of females who heard a family planning message at a community event
76. Proportion of males who heard a family planning message at a community event
77. Proportion of females who did not see any family planning messages
78. Proportion of males who did not see any family planning message
79. Current contraceptive prevalence – any method (females)
80. Current contraceptive prevalence – modern method (females)
81. Proportion of women whose partners use a condom
82. Proportion of women who use a female condom
83. Current contraceptive prevalence – traditional method (females)
84. Prevalence of condom use among men
85. Unmet need for birth spacing
86. Unmet need for contraception
87. Prevalence of birth spacing of less than 18 months
88. Proportion of women not using contraception visited by a fieldworker who discussed FP
89. Proportion of women not using contraception who visited a health service and discussed family planning
90. Proportion of women not using contraception who visited a health service but did not discuss family planning
91. Proportion of women not using contraception who did not discuss family planning with a fieldworker or at a health facility
92. Proportion of pregnant women who have at least one antenatal visit
93. Proportion of pregnant women who have at least four antenatal visits
94. Prop. of women attending ANC who were informed of signs of pregnancy complications
95. Proportion of women who attended antenatal care who were not informed of where to go in the case of pregnancy complications
96. Proportion of women who attended ANC who had their blood pressure checked
97. Proportion of women who attended antenatal care who had their urine checked
98. Proportion of women who attended antenatal care who received iron supplementation
99. Proportion of women who attended antenatal care who received tetanus toxoid
100. Prop. of women who attended ANC who were given information about HIV prevention
101. Proportion of women who attended ANC who received an HIV test
102. Proportion of women who received the result of their HIV test
103. Proportion of women who tested positive for HIV who received ARV prophylaxis
104. Proportion of women who received at least one postnatal visit
105. Number of abortions
106. Rate of abortions
107. Proportion of abortions that are unsafe
108. Proportion of abortions performed in a health facility
109. Proportion of abortions performed by a traditional birth attendant / healer
110. Proportion of abortions performed by self
111. Proportion of abortions carried out by vacuum aspiration
112. Proportion of abortions carried out by dilatation and curettage
113. Proportion of abortions carried out by medical abortion
114. Proportion of abortions carried out by injected abortifacient
115. Proportion of abortions carried out by insertion of foreign object
116. Proportion of abortions carried out by ingesting a herbal preparation
117. Proportion of STIs treated – female
118. Proportion of STIs treated – male
119. Proportion of women who know a source of a male condom
120. Proportion of women who think they could get a male condom
121. Proportion of women who cite knowledge of where to go as a barrier to accessing healthcare
122. Proportion of women who cite having to seek permission as a barrier to accessing care
123. Proportion of women who cite cost of health services as a barrier to accessing healthcare
124. Proportion of women who cite transport as a barrier to accessing healthcare
125. Proportion of women who cite distance as a barrier to accessing healthcare
126. Proportion of women who cite not wanting to go alone as a barrier to accessing care
127. Proportion of women who cite concern that there will be no female healthcare provider available as a barrier to accessing care
128. Proportion of women who cite at least one problem in accessing healthcare
Appendix 2: Summary table of available data

- **Data not applicable for this indicator** (e.g. female specific indicator, not reported for males)
- **No data available**
- **Data available**
- **Data available and age-disaggregated, reporting outcome for adolescents**

### Indicators for sexual and reproductive health

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### Indicators for maternal health

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<td>2.3.1.1 Direct cause of maternal death: abortion</td>
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<tr>
<td>2.3.2 Indirect causes of maternal death</td>
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<td>2.3.2.1 Indirect cause of maternal death: Injury</td>
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<td>2.3.2.2 Indirect cause of maternal death: violence</td>
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<tr>
<td>2.3.2.3 Indirect cause of maternal death: suicide</td>
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<tr>
<td>2.4 Percentage of births attended by a skilled birth attendant</td>
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<tr>
<td>2.5.1 Proportion of pregnant women of short stature</td>
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<td>2.5.2 Proportion of pregnant women who have anaemia</td>
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<td>2.5.3 Proportion of pregnant women who have Fe deficiency</td>
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<tr>
<td>2.5.4 Proportion of pregnant women who have malaria</td>
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<tr>
<td>2.5.5 Proportion of pregnant women who are undernourished</td>
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<td>2.6 Smoking during pregnancy</td>
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<tr>
<td>2.7.1 Proportion of births by Caesarean section</td>
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<tr>
<td>2.7.2 Proportion of women who experience perineal tears (3rd and 4th degree)</td>
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<td>MICS</td>
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<tr>
<td>2.7.3 Proportion of women who experience obstetric fistulae</td>
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<tr>
<td>2.7.4 Proportion of women who experience postpartum haemorrhage</td>
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### Indicators for newborn health

<table>
<thead>
<tr>
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**Note**: The table above lists indicators for maternal and newborn health, with data from various countries such as Bangladesh, Cambodia, Indonesia, Philippines, PNG, Solomon Is., Timor Leste, Vanuatu, and Vietnam.
Stillbirths and perinatal, neonatal and infant mortality are recorded in the women’s questionnaire of the DHS. The rates reported are overall rates (for babies of both genders).

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<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Bangladesh</th>
<th>Cambodia</th>
<th>Indonesia</th>
<th>Philippines</th>
<th>PNG</th>
<th>Solomon Is.</th>
<th>Timor Leste</th>
<th>Vanuatu</th>
<th>Vietnam</th>
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<tr>
<td>3.1</td>
<td>Prevalence of STIs in pregnant women</td>
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<td>3.2.1</td>
<td>Stillbirths during labour</td>
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<td>3.2.2</td>
<td>Stillbirths not during labour</td>
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<td>3.3</td>
<td>Perinatal mortality rate*</td>
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<td>3.4</td>
<td>Neonatal mortality rate*</td>
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<td>3.5</td>
<td>Infant mortality rate*</td>
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<td>3.6</td>
<td>Average birth weight</td>
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<td>3.7</td>
<td>Prevalence of low birth weight (&lt;2500g)</td>
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<td>3.8.1</td>
<td>Proportion of mothers who commence breastfeeding</td>
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<td>3.8.2</td>
<td>Proportion of babies who are exclusively breastfed to 4m</td>
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<td>3.8.3</td>
<td>Proportion of babies who are exclusively breastfed to 6m</td>
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## Indicators for access to reproductive and maternal health services

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<tr>
<th>Indicator</th>
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<tr>
<td>Knowledge of modern methods of contraception</td>
<td>DHIS</td>
<td>MICS</td>
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<tr>
<td>Knowledge of use of condoms to protect against STIs</td>
<td>DHIS</td>
<td>MICS</td>
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<tr>
<td>Knowledge of medical abortion</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Knowledge of importance of antenatal care</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Knowledge of importance of breastfeeding</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Knowledge of nutrition</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Family planning message: radio</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Family planning message: TV</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Family planning message: Newspaper</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Family planning message: Poster</td>
<td>DHIS</td>
<td>MICS</td>
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<tr>
<td>Family planning message: Pamphlet</td>
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<td>MICS</td>
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<tr>
<td>Family planning message: Community event</td>
<td>DHIS</td>
<td>MICS</td>
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<tr>
<td>Family planning message: no source</td>
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<td>MICS</td>
</tr>
<tr>
<td>Any contraceptive prevalence (women)</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Modern contraceptive prevalence (women)</td>
<td>DHIS</td>
<td>MICS</td>
</tr>
<tr>
<td>Male condom prevalence (women)</td>
<td>DHIS</td>
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</tr>
<tr>
<td>Female condom prevalence (women)</td>
<td>DHIS</td>
<td>MICS</td>
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<tr>
<td>Traditional contraceptive prevalence (women)</td>
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</tr>
<tr>
<td>Prevalence of condom use by men</td>
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<td>MICS</td>
</tr>
</tbody>
</table>

**Notes:**
- DHIS = Demographic and Health Impact Survey
- MICS = Multiple Indicator Cluster Survey
## Compan: Women’s and Children’s Health Knowledge Hub

### Table: Health Knowledge Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Females</th>
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<tbody>
<tr>
<td>4.5 Unmet need for birth spacing</td>
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<tr>
<td>4.6 Unmet need for contraception</td>
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<tr>
<td>4.7 Birth spacing &lt; 18m</td>
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<td>4.8.1 Nonusers visited by a fieldworker who discussed FP</td>
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<tr>
<td>4.8.2 Nonusers who visited a health service and discussed FP</td>
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<tr>
<td>4.8.3 Nonusers who visited a health service but did not discuss FP</td>
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<tr>
<td>4.8.4 Nonusers not discussing FP with fieldworker or health facility</td>
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<td>4.9.1 At least one antenatal visit</td>
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<td>4.9.2 At least four antenatal visits</td>
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<td>4.10.1 ANC: Informed of signs of pregnancy complications</td>
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<tr>
<td>4.10.2 ANC: Not informed where to go if pregnancy complication</td>
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<td>4.10.3 ANC: BP checked</td>
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<tr>
<td>4.10.4 ANC: Urine checked</td>
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<td>4.10.5 ANC: Received iron supplementation</td>
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<td>4.10.6 ANC: Received tetanus toxoid</td>
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<td>4.11.1 PMTCT: Information about HIV prevention at ANC</td>
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<td>4.11.2 PMTCT: HIV test at ANC</td>
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<td>4.11.3 PMTCT: Result of HIV test at ANC</td>
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<td>4.11.4 PMTCT: Tested positive for HIV and received ARV prophylaxis</td>
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<tr>
<td>4.12 Proportion of women receiving at least one postnatal visit</td>
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## Women’s and Children’s Health Knowledge Hub

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<td>4.13.3</td>
<td>Proportion of abortions that are unsafe</td>
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<td>4.13.4.1</td>
<td>Abortion performed in a health facility</td>
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<td>Abortion performed by TBA/traditional healer</td>
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<td>4.13.4.3</td>
<td>Abortion performed by self</td>
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<td>4.13.5.1</td>
<td>Abortion by vacuum aspiration</td>
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<td>Abortion by dilatation and curettage</td>
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<td>Abortion by insertion of foreign object</td>
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<td>Abortion by herbal preparation</td>
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<td>4.14</td>
<td>Proportion of STIs treated</td>
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<td>Proportion of women who know a source of a male condom</td>
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<td>4.15.1</td>
<td>Proportion of women who think they could get a condom</td>
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### Compass: Women’s and Children’s Health Knowledge Hub

#### 4.16.1 Barrier to access for women: knowledge where to go

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#### 4.16.2 Barrier to access for women: permission

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#### 4.16.3 Barrier to access for women: financial

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#### 4.16.4 Barrier to access for women: distance

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#### 4.16.5 Barrier to access for women: transport

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#### 4.16.6 Barrier to access for women: not wanting to go alone

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#### 4.16.7 Barrier to access for women: no female health care provider

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#### 4.16.8 Barrier to access: at least one problem

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