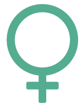
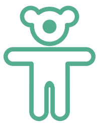
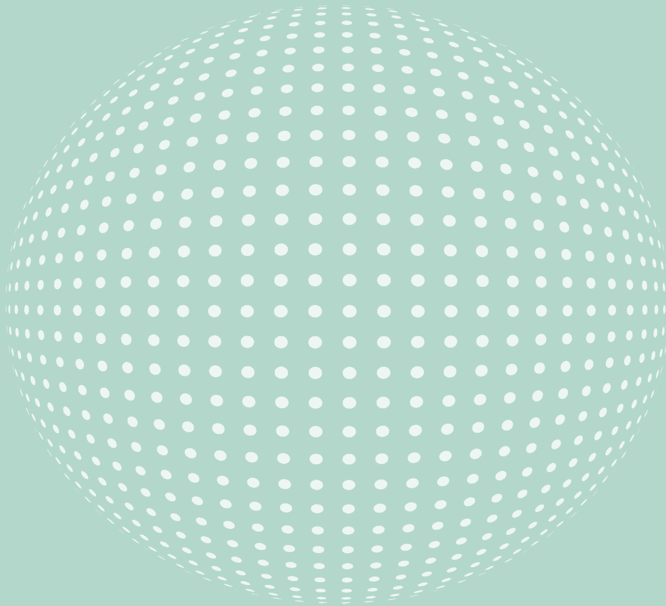


National-level monitoring of the

Achievement of universal access to reproductive health

Conceptual and practical considerations and related indicators





WHO Library Cataloguing-in-Publication Data

National-level monitoring of the achievement of universal access to reproductive health : conceptual and practical considerations and related indicators -- report of a WHO/UNFPA Technical Consultation, 13–15 March 2007, Geneva.

1.Reproductive medicine. 2.Health services accessibility. 3.Reproductive health services. 4.Health status indicators. I.World Health Organization. II.United Nations Population Fund.

ISBN 978 92 4 159683 1 **(NLM classification: WQ 200)**

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WHO Document Production Services, Geneva, Switzerland

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Acknowledgements

Both the technical consultation and the preparation of this report were coordinated by Lale Say and Mike Mbizvo of the Department of Reproductive Health and Research at the World Health Organization (WHO) and Stan Bernstein and Hedia Belhadj of the United Nations Population Fund (UNFPA). Affette McCaw-Binns compiled the first draft of this report. WHO is grateful to the experts listed in Annex 6, who contributed to this report, and to Paul Van Look for his detailed review of the report. Design and layout by Janet Petitpierre.

1. Monitoring the achievement of universal access to reproductive health: background and principles

1.1 Background to the consultation and objectives

The 1994 International Conference for Population and Development (ICPD) identified "*universal access to reproductive health*" as a development goal, making it an important objective for health systems in many countries.[1] In 2004, the World Health Assembly renewed the commitment of the international community to sexual and reproductive health by adopting a global reproductive health strategy (resolution WHA57.12). The purpose of this resolution was to accelerate progress towards the attainment of international development goals, including the ICPD goal of achieving universal access to reproductive health.[2]

The resolution called on WHO Member States, as a matter of urgency, "*to make reproductive and sexual health an integral part of national planning and budgeting*" and "*strengthen the capacity of health systems with the participation of community and nongovernmental groups to achieve universal access to sexual and reproductive health care, with particular attention to maternal and neonatal health in all countries*". In this vein, in 2005, the World Health Assembly adopted resolution WHA58.31, which called on Member States "*to accelerate national action towards universal access and coverage with maternal, newborn and child health interventions, through reproductive health care*", and "*to establish monitoring mechanisms for measuring progress towards the achievement of agreed goals, particularly the target of universal access to reproductive health by 2015*", among others.

Although the ICPD concept of reproductive health was not explicitly included in the framework of the Millennium Development Goals (MDGs), the 2005 World Summit strongly emphasized the role of sexual and reproductive health in achieving gender- and health-related MDGs and recommended that the goal of "achieving universal access to reproductive health" should be integrated into MDG monitoring mechanisms. Following this, the United Nations General Assembly of 2006 adopted the Secretary-General's report recommending the inclusion of a target "to achieve universal access to reproductive health" under MDG 5 (which addresses the improvement of maternal health).[3]

A process has taken place to identify indicators for global monitoring of progress towards achievement of the new access to sexual and reproductive health target within the monitoring framework of the MDGs. The World Health Organization, through the Department of Reproductive Health and Research (RHR), and the United Nations Population Fund (UNFPA) have participated in related interagency discussions. This process involves selection of a limited number of indicators that fulfil certain criteria.[a]

However, this process is not sufficient for monitoring the achievement of universal access to sexual and reproductive health for national and subnational decision-making. For country programmes to measure and monitor the achievement of universal access, a more comprehensive set of indicators, that address the multiple components of sexual and reproductive health, is needed.

The development of such a set of indicators requires the elucidation of the concept of "universal access to reproductive health" and its determinants – not only to measure the extent of the achievement of universal access, but also to plan and implement necessary interventions for its achievement. It is therefore critical to arrive at an operational definition of "universal access to reproductive health" and – based on that definition – to identify a set of indicators for monitoring progress.

A technical consultation was convened in Geneva, Switzerland, from 13 to 15 March 2007. This consultation was jointly organized by WHO/RHR and UNFPA to consider national-level monitoring of progress towards the achievement of universal access to sexual and reproductive health.

Building on earlier work and informed by increasing knowledge on both dimensions of sexual and reproductive health and the concept of "universal access", the consultation sought to recommend, within a clearly specified framework, a set of indicators to monitor progress towards the goal of universal access to sexual and reproductive health at country level. This chapter highlights key issues that were considered and recommendations that were made by the technical consultation.

[a] To qualify as an MDG indicator, an indicator must be relevant to the respective target; there must be an established methodology to measure it; data must be available from a wide range of countries to permit calculation of regional aggregates and time trends; and a United Nations agency should assume responsibility to compile, estimate, and release data.

The following chapters of this document report on the recommendations and outputs of the consultation, including:

- a recommended framework of indicators for five priority aspects of sexual and reproductive health; and
- possible indicators of programmatic linkages between sexual and reproductive health services and HIV prevention, care, and treatment.

OBJECTIVES

The consultation sought to:

- elaborate the concepts of sexual and reproductive health and health care;
- elaborate the concepts of access, universal access, and equity of access;
- elaborate social and contextual determinants of sexual and reproductive health;
- recommend a set of indicators within a conceptual framework for measuring universal access at country level;
- discuss possible indicators for monitoring linkages between sexual and reproductive health care and HIV prevention, care, and treatment; and
- explore the feasibility of establishing a technical reference group for sexual and reproductive health indicators.

EXPECTED OUTCOMES

Among the anticipated outcomes of the consultation were:

- a framework for a set of indicators to monitor the achievement of universal access to sexual and reproductive health;
- recommendations for implementation of the framework within country programmes; and

- recommendations on possible indicators to measure access through linkages between sexual and reproductive health care and HIV prevention, care, and treatment.

1.2 Measuring universal access to sexual and reproductive health

For a number of reasons, measuring universal access to sexual and reproductive health and monitoring the extent to which it has been achieved poses challenges to operation and interpretation (see Box 1). First among these challenges, reproductive health is a broad and comprehensive concept, which is defined by ICPD as: *a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes.*[1]

This definition entails a range of aspects (including family planning, maternal health, sexually transmitted/reproductive tract infections including HIV/AIDS, unsafe abortion, and sexual health) and linkages between them. ICPD places a strong emphasis on the needs and rights of individuals and disadvantaged populations, and upon the influence of the wider context on the achievement of sexual and reproductive health.

A second challenge involves the fact that "health" (in this context, sexual and reproductive health) is influenced by a range of factors – including health-related behaviour, prenatal factors, early childhood, social status, support, living conditions, education, health services, nutrition, and stress.[4] Monitoring the extent of achievement of health requires measuring health outcomes, but it is also necessary to examine determinants in the process of informing related programmes.

Based on the ICPD definition, a previous WHO working document distinguishes three dimensions of reproductive health for operational purposes:

- the human condition (including the level of health and related areas of well-being);
- an approach (policies, legislation and attitudes); and
- health-care services (provision of services, access to them, and their use in the context of primary health care).[5]

Such a distinction could be useful in mapping sexual and reproductive health measures of the achievement of universal access. The second dimension should, however, be broadened to include the range of social factors or determinants[b, 6] that are influential in determining health outcomes[7] – some of which are reflected in the ICPD context of reproductive health (e.g. rights, vulnerable populations, education, inequalities). The third dimension involves health care necessary to improve sexual and reproductive health.

Because of the direct results of effective health care in improving health and as measures of programmatic efforts, health-care indicators are widely used to monitor the ICPD goal of "universal access" – which is sometimes interpreted as reflecting access to "health care" rather than "health."[8] Measuring sexual- and reproductive-health outcomes (for example, the extent of maternal deaths) has been problematic in developing countries. Health-care measures (e.g. access to or use of health care) are therefore usually used as proxies for health status.

A third challenge, is the complexity of the concept of "access" to health care to formulate and measure. The term "access" relates not only to physical access or to the costs (both financial and operational) incurred by the consumer of health care.[9] Rather, "access" usually involves a comprehensive concept including availability of, information about, and cost and quality of services.[10]

In analyses undertaken in the United States, "access" often refers to the insurance status of individuals.[11] In other contexts, "access" refers in a broader sense to "the ability to secure a specified range of services, at a specified level of quality, subject to a specified maximum level of personal inconvenience and cost, while in possession of a specified level of information."[10]

[b] A summary of the literature on the social determinants of health used the following measures as social determinants of health: the social gradient, stress, early life, social exclusion, work, unemployment, social support, addiction, food, and transport.

Ideally, measuring "access" should involve articulation of all these multiple components. Although they can be measured separately, the complex concept that includes all components can rarely be observed directly. Accordingly, the use of health-care services is usually measured in order to indicate "access." Service use, however, is influenced by demand-side factors (e.g. need for, and perceptions and beliefs about, formal health care), in addition to the supply-side characteristics described above. It is therefore important to distinguish supply- and demand-related factors, if "use" of health care is used as a proxy measure of "access" to that health care.

Finally, despite being an objective of many health systems, the definition of "universal access" remains somewhat elusive. In a broad sense, universal access implies the ability of those who need health care to obtain it. This definition suggests, for example, the ability of all individuals with a diagnosed sexually transmitted infection (STI) to receive an effective treatment, or of those who want to delay pregnancy to obtain effective contraception. In practical terms, therefore, "universal access" means "equitable access" – that is, equal access for people with equal need.[9] This definition requires enhancing the provision of services in order to increase uptake and use by those who need them.

1.3 Earlier work on sexual and reproductive health indicators

Considerable work has been conducted by WHO and partners (including UNFPA) to define indicators of sexual and reproductive health. In 1998, UNFPA published indicators for population and reproductive health programmes.[12] In 1999 and 2001, two inter-agency meetings defined a shortlist of 17 indicators for global monitoring, based upon recommendations made at the fifth-year follow-up of ICPD (ICPD+5). A WHO document providing guidelines for data collection, analysis, and interpretation of these indicators was recently published.[13]

The 17 indicators address the main aspects of sexual and reproductive health and provide a list from which indicators can be selected. These indicators, however, are not specific for measuring "access", nor do they provide a framework to address all aspects of sexual and reproductive health systematically. The current effort, therefore, builds upon and further develops this work.

Two other meetings have discussed the measurement of universal access to sexual and reproductive health at the global level. A 2003 UNFPA/WHO consultation to define global indicators recommended four indicators, three of which are already in the MDG framework.[8] In 2005, WHO organized another technical consultation to examine the earlier suggestions.

Box 1. Measurement challenges: universal access to sexual and reproductive health

- Critical global developments, such as ICPD in 1994, shifted the focus of population and development policies from population control to meeting all aspects of the reproductive-health needs of individuals. This approach was articulated as the goal of "achieving universal access to reproductive health." Although initially excluded from the Millennium Development Goals (MDGs), the universal access goal was incorporated among the MDG targets in 2006, creating the need to develop indicators to monitor change.

- Measuring progress towards achieving universal access to sexual and reproductive health must take cognizance of the multidimensional concept of reproductive health. Indicators should include outcomes, as well as important determinants, to guide the planning of effective interventions and to document the role of health care.

- Measuring access to sexual and reproductive health requires interpreting and operationalizing access to health care. This approach includes measuring physical access, financial resources, and constraints, as well as documenting quality – which influences utilization. Universal access is therefore a function of need, including both clinical and social dimensions of need.

The 2005 consultation recommended a set of reproductive health indicators for global monitoring of reproductive health in the context of the MDGs.[14] These recommendations were submitted to the Inter-agency and Expert Group (IAEG) on MDG indicators,[c] to be considered for inclusion in the MDG monitoring framework (see section 1.4, concerning reproductive health indicators within the MDG framework).

Other recent key documents (the implementation framework for the WHO Global Reproductive Health Strategy[15] and the African Union's Maputo Plan of Action)[16] provide a range of indicators for policy and programme monitoring. However, guidance is needed concerning measurement issues and setting of priorities.

Finally, the WHO Department of Reproductive Health and Research collaborated with the Special Rapporteur to the United Nations Commission on Human Rights, concerning the right of everyone to the enjoyment of the highest attainable standard of physical and mental health ("the right to health").[17] The resultant report establishes a human-rights-based approach to health indicators, and applies this approach to the WHO Global Reproductive Health Strategy. The framework produced in this report includes indicators of the main aspects of sexual and reproductive health, as defined in the Global Strategy.

These outputs provide useful information and tools for monitoring progress towards achieving various aspects of sexual and reproductive health or health care, and have been used for various purposes. For example, the shortlist of 17 global indicators was modified according to local contexts, both in developing and developed country settings (see Annex 1).[18,19] The experience gained in this process informed the recommendations of the present consultation.

In addition, the consultation agreed during the discussions that it was important to ensure that terminology remained consistent throughout the documentation. Consistent with a life-course approach to sexual and reproductive health, the consultation also identified the necessity for determining the sexual and reproductive health needs of older women and older men, and recommended special attention to the needs of marginalized groups.

It was noted that existing tools do not measure utilization of alternative health systems, informal health providers, or the private sector. Strategies are also needed to deal with social determinants outside the mandate of the health sector, which could be critical for successful interventions. The meeting also recognized the importance of maintaining a rights-based and gender-sensitive approach.

1.4 "Universal access to reproductive health" in the context of the Millennium Development Goals, and implications for country programmes

The history of the MDGs and universal access to reproductive health began in June 2000, when the report of the United Nations Secretary-General and Heads of Agencies, concerning the Development Goals, included a goal of universal access to reproductive health among the requirements for development. In September 2000, however, the Millennium Summit Declaration did not mention reproductive health.[20]

In 2001, a document describing the "road map" to the Millennium Summit vision included a number of goals related to reproductive health (e.g. maternal health, child survival, HIV/AIDS) without explicit reference to the overall concept of reproductive health.[d] In 2004, the United Nations Millennium Project called for inclusion of universal access to reproductive health as a target within the MDG monitoring framework and later published an analysis of the role of sexual and reproductive health in achieving the MDGs.[21,22]

Political support for universal access to sexual and reproductive health increased after resolution WHA58.31 called for accelerating national action towards universal access and coverage with maternal,

[c] The IAEG on MDG indicators is the technical body within the United Nations system, that follows up on the MDG indicators in terms of dissemination, technical issues, and improvement of data.

[d] United Nations. 2001. *Road map towards the implementation of the United Nations Millennium Declaration: Report of the Secretary-General* (A/56/326, 6 September 2001).

newborn and child health interventions, through reproductive health care.[23] Subsequent events (e.g. the World Summit 2005, the African Union Continental Policy Framework on Sexual and Reproductive Health and Rights, 2006) highlighted the MDGs and their sexual and reproductive health links.

The Secretary-General's report on the work of the organization to the United Nations General Assembly in 2006, formally recommended four new MDG targets, including universal access to reproductive health. The report was noted and the recommendation resulted in a request to the IAEG to identify relevant indicators.[3] The IAEG proposed a core set of indicators for the new target of universal access to reproductive health, which includes *contraceptive prevalence rate*, *unmet need for family planning*, *adolescent birth rate,* and *antenatal care attendance*.

At the national level, the formal global MDG indicator framework does not exhaust the range of sexual and reproductive health services or determinants (within and outside health systems). Programmatic guidance is required, in order to set priorities and monitor health system improvements (including service integration) and outreach to special populations. National-level reporting and national development plans should select and adapt indicators from a core group of priority reproductive-health measures.

Among the new challenges, for country-level achievement of universal access to sexual and reproductive health, is the changing aid environment (e.g. common basket funding, national priority setting), in the midst of health-sector and United Nations reform processes. The persistence of vertical programmes and the diverse 'road map' initiatives (e.g. for maternal health and child survival) also require clear guidance on a core set of social context, health system, and outcome indicators that can be incorporated into the national applications.

These ongoing road map processes and others related to the health MDGs were developed before the reproductive health target was adopted (see Annex 2, *The case of the Congo*). Accordingly, monitoring and evaluation systems become a prime mechanism for ensuring attention to reproductive-health outcomes – hence the need to provide the tools to implement the new target.

The recommended indicators can be used to monitor progress on removing barriers, improving health systems, and positively addressing sexual and reproductive health needs and risks. Dissemination, testing, and use of a core set of indicators can ensure the inclusion of sexual and reproductive health in national policy dialogue and national plans and strategies – including those for poverty reduction.

1.5 Sexual and reproductive health outcomes and health care in the context of ICPD

ICPD recognizes reproductive health as the basic right of all couples/individuals. It highlights the rights of individuals to decide freely the number, spacing, and timing of their children, and to have the information and means to do so; the right to attain the highest standards of reproductive health; and the right to make decisions concerning reproduction which are free of discrimination, coercion, and violence.

These rights incorporate equity for both sexes, as well as attention to individual needs, including those of adolescents and disadvantaged (e.g. poor, rural, or displaced) populations. The needs of men and boys, and those of older men and women, are also explicitly recognized.

With these underlying principles, countries have committed to provide the means (through the primary health-care system) to ensure reproductive well-being of their populations as articulated by the main ICPD goal of universal access (see Box 2).

Box 2. ICPD goal of universal access

All countries should strive to make accessible, through the primary health-care system, reproductive health to all individuals of appropriate ages as soon as possible and no later than the year 2015.

ICPD Programme of Action, paragraph 7.6

The ICPD Programme of Action describes reproductive health care as "the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems." This description also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted infections.

According to the ICPD Programme of Action, the following sexual and reproductive health-care services should be available at the primary-care level; should be designed to serve the needs of women but also be accessible to men, including adolescents, (with referral as required); and should meet the needs for:

- **family planning** counselling, information, education, communication, and services;
- education and services for **prenatal care, safe delivery and postnatal care,** especially breast-feeding and **infant and women's health care;**
- prevention and appropriate treatment of **infertility**;
- prevention of **unsafe abortion** and the management of its complications;
- treatment of reproductive tract infections, **sexually transmitted diseases**, and other **reproductive health conditions**;
- information, education, and counselling, as appropriate, on **human sexuality**, reproductive health, and responsible parenthood; and
- active discouragement of **harmful practices**, e.g. female genital mutilation (FGM).

MEASURING SEXUAL AND REPRODUCTIVE HEALTH OUTCOMES

Due to relative ease of measurement, sexual and reproductive health outcome measures traditionally focus on negative outcomes as proxy measures of the achievement of reproductive well-being (through the above range of health-care services) as defined in ICPD. For example, in measuring **achievement of fertility intentions**, we have counted unwanted pregnancies, infertility, abortion complications; in measuring **safe delivery**: maternal deaths, morbidities (fistula, anaemia); in measuring **newborn health and breast-feeding**: neonatal deaths, perinatal deaths, low birth weights; in measuring **safe sex**: unsafe sex, STIs; in measuring **reproductive well-being**: reproductive cancers; and in measuring **sexual fulfilment**: sexual dissatisfaction, FGM.

Among the 17 reproductive health indicators defined for global monitoring, are 10 outcome measures.[13] Table 1 shows these outcome measures according to aspects of sexual and reproductive health. As can be seen, outcome measures of some aspects of sexual and reproductive health (e.g. family planning, maternal health) are more fully established as compared to others (e.g. STIs, sexual health).

THE ROLE OF HEALTH CARE AND SOCIAL DETERMINANTS

Effective health-care interventions are necessary to prevent and treat the conditions indicated in Table 1. Accordingly, "universal access to reproductive health care" – or, more practically, "equitable access to reproductive health care" – is the aim of country programmes committed to reproductive well-being of their populations.

Access to health care, as elaborated in this section, has proved difficult to measure due to its multiple components (e.g. physical availability, cost, information, and quality). For this reason, utilization is usually observed in an effort to estimate access. A practical way to measure the extent of the achievement of universal access (or "equitable access") is to examine and explain inequalities in the use of effective interventions. Only by trying carefully to determine the reasons for variable use can the observer:

- assess whether variations are actually a cause for concern (if they are due to clinical need and reflect fully informed choices, they might not be inequitable);
- determine policy action needed to address them (for example, it is not necessary to open more clinics if the real reason for underuse lies in negative attitudes of the clinic staff towards certain groups of people).

In explaining inequalities, one can take a simple economic approach in which demand and supply interact to determine whether individuals receive necessary care. If one separates influences on use into demand and supply issues, identification of causes of variation becomes easier.

On the supply side, variation in access may occur if there is exclusion of certain groups due to both direct and indirect costs of access, variations in quality of care offered, lack of information, and differing gate-keeping 'propensities' of medical professionals. Supply, however, does not explain all variations in access.

There are often demand-side factors of use, including variations in the need for a particular service, variable assessment of the benefits and risks of treatment, perceptions regarding availability and efficacy, interpretation of medical advice, implicit cost/prices of use, and availability of alternative options for care. In this context, need may be defined by level of illness or capacity to benefit, and may vary depending on the stage of illness at which it is measured.

Need may also not remain constant across all groups. Even crude measures of need, such as self-reported morbidity, may differ by culture or according to where a person lives. Therefore, country programmes should specify in their planning which populations are in need, considering the specific services listed earlier in this section .

Interpreting empirical data requires an understanding of 'relevant' as contrasted with 'irrelevant' sources of variation. Sometimes, higher utilization may signal inappropriate and inequitable use (e.g. caesarean section rates). Very low utilization rates may suggest public/private/family alternatives. Other issues include controlling for variation in need, multiple disadvantage, and 'ecological fallacy.' Care must be taken when interpreting large- versus small-scale evidence, while remaining aware that association does not always imply causality.

Factors outside the health system are particularly important to consider when studying access in the area of sexual and reproductive health: behavioural,

Table 1. Sexual and reproductive health outcome measures among the 17 WHO indicators

Sexual and reproductive health area	Outcome measure
Fertility/family planning	Total fertility rate Percentage of women of reproductive age at risk of pregnancy, who report having tried for pregnancy for two years or more
Maternal and perinatal health	Percentage of women of reproductive age screened for haemoglobin levels who are anaemic Maternal mortality ratio Perinatal mortality rate Percentage of live births with low birth weights
Cross-cutting maternal and perinatal health and STIs (including HIV)	Positive syphilis serology prevalence in pregnant women attending antenatal care HIV prevalence in pregnant women
STIs in men	Reported incidence of urethritis in men
Harmful sexual practices	Reported prevalence of women with FGM

sociocultural, political, and economic factors play a major part in both related health outcomes and the ability to obtain necessary services. For example, the desire for large families has partly been due to the need to secure care in old age where social security systems are lacking.

Regulations and policies can either restrict or facilitate improved sexual and reproductive health. Restrictive frameworks may prohibit sexuality education for young people, limit free and informed choices regarding fertility regulation, and reduce public financing of family planning and maternity care. Facilitative environments ensure adequate maternity (and paternity) leave, promote dissemination of information regarding availability of sexual and reproductive health services, and recognize a woman's autonomous power to make decisions about her own fertility. Such influences should be considered when examining variable use of health care, as well as in efforts to achieve equity in reproductive health care.

1.6 Summary and recommendations

- The main ICPD goal concerns ensuring "access to health", and thus this goal is not confined to health care. However, the Programme of Action suggests the achievement of this goal through primary health care even as it recognizes the influence of the wider context affecting health behaviour and service uptake. Therefore, health-care indicators constitute a major component determining the extent of the achievement of the ICPD goal. However, important societal factors should also be monitored.
- The concept of "universal access" should reflect equity (equal access for equal need) and the capacity to determine varying levels of need among individuals and during different times for each individual. Equity is difficult to define and measure. Proxies include measuring relative differences in access and use per need.
- It is necessary to address economic and geographic disparities that limit benefit from sexual and reproductive health services. Financial and human resources for health must be equitably distributed, and sexual and reproductive health services must be included in an essential health package.
- Some of the sexual and reproductive health outcomes are more amenable to health-care interventions (e.g. maternal mortality and morbidity), but others (e.g. FGM and sexual violence) are less so. The latter group is largely influenced by social and cultural determinants, and how we measure and monitor them is critical to the development of robust indicators.
- The range of indicators should include social determinants, process indicators, measures of access, utilization, and quality, as well as outcome measures.
- While universal access requires increasing the services offered, efforts must also be devoted to ensuring increased uptake and sustained use. Universal access therefore must be seen in the context of availability, affordability, appropriateness, quality, acceptability, and continuity/sustainability of services.
- In evaluating sexual and reproductive health services, inputs such as policy, financing, and human resources; outputs such as health information, service availability, and quality; and outcomes such as utilization (demographic and geographic) should be available to correlate with outcome measures such as well-being, morbidity, disability, and mortality.
- Process indicators measuring performance further along the 'causal chain' (i.e. intermediate output indicators of service utilization and practice) are stronger proxy indicators than those earlier in the intervention pathway (i.e. input and direct output indicators of availability, physical accessibility, and quality of care) whose influence on eventual outcome will be mediated by intervening factors.

2. A framework to monitor achievement of universal access to sexual and reproductive health

On the basis of the discussions and recommendations summarized in the previous chapter, the consultation agreed to structure a monitoring framework according to the five priority aspects of sexual and reproductive health articulated in the WHO Global Reproductive Health Strategy.[a] The framework would include indicators of sexual and reproductive health outcomes, indicators of health-care access and use (process indicators), and social and contextual determinants.

Working groups were formed according to the priority aspects of sexual and reproductive health. These groups elaborated and suggested a range of key indicators in each of the following broad areas:

- family planning;
- maternal, perinatal, and newborn health, including eliminating unsafe abortion;
- sexually transmitted infections (including HIV) and reproductive tract infections (STI/RTI) and other reproductive morbidities, including cancer; and
- sexual health, including adolescent sexuality and harmful practices.

The working groups examined existing indicator frameworks, particularly the WHO list of 17 reproductive health indicators. The groups then sought to complete and fill gaps in outcome indicators in certain areas of sexual and reproductive health, as well as in key interventions (both at health-care and social/policy levels), to achieve improved outcomes.

[a] Five priority aspects of sexual and reproductive health were described in the WHO Global Reproductive Health Strategy as: improving antenatal, delivery, postpartum, and newborn care; providing high-quality services for family planning, including infertility services; eliminating unsafe abortion; combating sexually transmitted infections, including HIV, reproductive tract infections, cervical cancer, and other gynaecological morbidities; and promoting sexual health.

The range of indicators defined by each of the working groups was presented to the plenary session and discussed. The outcomes of the working groups, presentations, and discussions were integrated into Tables 2a through 2d in Section 2.1. These tables present the recommended indicators for each of the five key aspects of sexual and reproductive health as structured by the WHO Global Reproductive Health Strategy within the following four categories:

- determinants: policy and social factors;
- indicators of access: availability, information/ demand, quality;
- indicators of use; and
- indicators of output/impact.

The indicators were identified as **core**, **additional**, or **extended**, according to their relative importance, feasibility of data collection, and contextual relevance. **Core** indicators are those on which all countries should report; **additional** indicators are those on which countries could report based on their special needs, contextual characteristics, and capabilities (e.g. when coverage for core data is high); and **extended** indicators may be relevant to those countries in which particular problems (e.g. FGM) are prevalent.

These classifications are likely to change over time, and may take on different levels of importance for individual countries. For the most part, core indicators should be readily available, while the additional and extended indicators may require special surveys to document changes.

The consultation also drew attention to the areas in which gaps exist for the development of indicators. Finally, the consultation recommended further work to fill these gaps (see Table 3).

2.1 Recommended indicators

Table 2a. Indicators of policy and social determinants

DETERMINANTS: POLICY AND SOCIAL FACTORS				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator (core, additional,[a] extended)**	**Source of data**
General	National sexual and reproductive health policy (or strategy)	Yes/No	Core	Policy review
	Dedicated budget allocation for sexual and reproductive health commodities in national budget or other nationally controlled sources	Yes/No	Core	Administrative records
Family planning	Family planning effort score[b] (multiple indicators)	Score	Additional	Survey (of experts)
	Multi-year plan for procurement of each family planning product	Yes/No	Additional	Policy review
	Commitment of stakeholders to procurement plan	Yes/No	Additional	Expert assessment
	Donor funding for family planning	Yes/No (Amount in US$)	Additional	Administrative records
	Country funding for family planning	Yes/No (Amount in US$)	Core	Administrative records
Maternal and perinatal health	Information systems exist to identify population able to reach facilities within an hour (Geographic Information System – GIS)	Yes/No	Additional	HIS[d]
	Minimum package of antenatal care services defined	Yes/No	Core	Administrative records
	Anaemia testing included as component of basic antenatal care package	Yes/No	Core	Administrative records
	Recording incidence at delivery of FGM	Yes/No/NA[c]	Extended	HIS
	Birth registration (including weight information) mandated	Both/birth registration only/neither	Core	Vital registration

[a] Indicators requiring special data collection efforts (e.g. surveys) and/or relatively developed health information systems are classified as "additional" instead of "core" except for key measures.

[b] This indicator is a score (ranging from 0 to 120) which measures the strength of the national family planning programme through reports of expert respondents of a given country on four dimensions (policy and stage setting activities, service and service-related activities, evaluation and record keeping, availability and accessibility of fertility control supplies and services) (*Compendium of Indicators for Evaluating Reproductive Health Programs*. MEASURE Evaluation Manual Series, No. 6, 2002).

[c] NA= not applicable.

[d] Health Information Systems.

DETERMINANTS: POLICY AND SOCIAL FACTORS (continued)				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
STI/RTI/ reproductive morbidities	Policy on cervical cancer screening	Yes/No	Core	Policy review
	Policy on STI control	Yes/No	Core	Policy review
Sexual health	Law prohibits discrimination on the basis of gender identity, sexual orientation or physical and intellectual disability	Yes/No	Core	Policy review
	Law prohibits marriage for both men and women prior to age 18	Yes/No	Extended	Policy review
	Law requires full and free consent of the parties to a marriage	Yes/No	Core	Policy review
Sexual violence	Law prohibits sexual violence	Yes/No	Core	Policy review
	Law prohibits marital rape	Yes/No	Core	Policy review
	Strategy/plan to prevent and respond to sexual violence, including marital rape	Yes/No	Core	Policy review
Harmful practices	Law prohibits all forms of FGM	Yes/No/NA	Extended	Policy review
	Strategy/plan for abandonment of FGM (according to local need, informed by local research on cultural practices)	Yes/No/NA	Extended	Policy review
	Existence of medical regulations against the practice of FGM	Yes/No/NA	Extended	Policy review
Adolescent[e] sexual health	School-based sexuality education is mandatory	Yes/No	Core	Policy review

[e] WHO definition of adolescent (aged 10–19 years) applies. However, for certain sexual and reproductive health indicators for adolescents, usual data sources allow for obtaining data only for the age group 15–19 years; inclusion of the 10–14 age group depends on the contextual practices and decisions.

Table 2b. Indicators of access

ACCESS: AVAILABILITY				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
Family planning	Number of family planning service delivery points per 500 000 population	Rate	Core	HIS
	Population living within two hours of travel time from service delivery points providing family planning services	Percentage	Additional	HIS
	Primary health care facilities providing family planning services	Percentage	Core	HIS
	Number of other sources[f] of family planning information, services and supplies per 500 000 population	Rate	Additional	HIS/Survey (facility)
Maternal and perinatal health	Five (5) Emergency Obstetric Care (EmOC)[g] facilities per 500 000 population with at least one offering comprehensive care	Yes/No	Core	HIS
	Population living within one hour of travel time to EmOC facility	Percentage	Additional	Survey (population)
	Population living in areas with community referral and transport system	Percentage	Additional	Survey (population)
Eliminating unsafe abortion	Number of facilities offering safe abortion services[h] per 500 000 population	Rate	Additional	HIS
	Health providers trained to provide safe abortion services[h] to the full extent of the law	Percentage	Additional	Survey (facility)
	Population living within two hours of travel time from a facility providing safe abortion services[h]	Percentage	Additional	Survey (population)
STI/RTI	Primary health-care facilities providing comprehensive recognized case-management approaches for symptomatic STIs	Percentage	Core	HIS
Sexual health	Health providers trained in counselling in sexual health	Percentage	Additional	Survey (facility)
	Alternative delivery mechanisms[i] for providing sexual health information, services and supplies	Yes/No	Additional	Expert assessment
Sexual violence	Service delivery points providing appropriate medical, psychological and legal support for women and men who have been raped or experienced incest	Percentage	Core	Survey (facility)
	Health providers trained to detect signs of sexual abuse or violence	Percentage	Additional	Survey (facility)
	Police trained in sexual health and sexual violence	Percentage	Additional	Survey (special)
Harmful practices	Service delivery points providing medical, psychological, and other needed services and referral for women with FGM	Percentage	Extended	Survey (facility)
	Medical training institutions that provide training on prevention and management of complications of FGM	Number	Extended	Survey (facility)

[f] Other sources include those provided by (for example) nongovernmental organizations or pharmacies.

[g] Revised from the original: “at least four basic and one comprehensive EmOC.”

[h] This indicator is applicable in the context of the countries’ abortion legislation.

[i] Alternative delivery mechanisms include those provided by (for example) nongovernmental organizations, or by government sectors outside health system (e.g. schools, workplace).

ACCESS: AVAILABILITY (continued)				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
Adolescent sexual health	Service delivery points providing youth-friendly[j] services	Percentage	Additional	HIS
	Health providers trained in youth-friendly service provision	Percentage	Additional	Survey (facility)
	Availability of alternative service delivery mechanisms for sexual and reproductive health of adolescents (e.g. peer education, social marketing of condoms)	Yes/No	Additional	Expert assessment
ACCESS: INFORMATION				
Maternal and perinatal health	Knowledge of at least three risk factors/ warning signs of pregnancy-related complications	Percentage	Additional	Survey (population)
	Knowledge of service availability for pregnancy-related complications	Percentage	Additional	Survey (population)
Eliminating unsafe abortion	Population with correct knowledge of legal status of abortion	Percentage	Additional	Survey (population)
	Health personnel with correct knowledge of legal status of abortion	Percentage	Additional	Survey (facility)
STI/RTI and reproductive morbidities Sexual health (young people)	Young men and women (15–24 years) OR "at risk" groups who correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission[k, l]	Percentage (males/ females)	Core	Survey (population)
ACCESS: DEMAND				
Family planning	Women aged 15–49 years, who want to delay or stop childbearing	Percentage	Core	Survey (population)
	Unmet need for family planning[m]	Percentage	Core	Survey (population)
ACCESS: QUALITY				
Family planning	Service delivery points prepared (with stocks and trained providers) to provide at least three family planning methods	Percentage	Core	HIS
	Service delivery points that experience a stock-out of each method at any point during a given period	Percentage	Additional	Survey (facility)
	Health providers reporting (at least one) practice (locally) defined as medical barrier[n]	Percentage	Additional	Survey (facility)

[j] Defined according to WHO standards.

[k] The two major ways of preventing the sexual transmission of HIV are using condoms and limiting sex to one faithful, uninfected partner. The three major misconceptions are locally defined, and include that a healthy-looking person cannot transmit HIV.

[l] Target groups should be selected according to the priorities of the country and the level of epidemic (whether generalized or concentrated).

[m] Unmet need refers to the proportion of all women that are at risk of pregnancy and wanting to space or limit their childbearing who are not using contraception.

[n] Locally defined medical barriers may include, for example, restricting the use of certain methods according to personal characteristics such as parity or age, despite evidence-based recommendations to the contrary.

ACCESS: QUALITY (continued)				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
Eliminating unsafe abortion	Service delivery points that use manual vacuum aspiration for induced abortion (in circumstances where abortion is not against the law)	Yes/No	Additional	Survey (facility)
	Service delivery points that use manual vacuum aspiration for management of abortion complications	Yes/No	Additional	Survey (facility)
STI/RTI	Availability of service delivery standards and protocols for STI/RTI diagnosis, treatment and counselling	Yes/No	Additional	Survey (facility)
Sexual health	Availability of service delivery standards and protocols that promote sexual health	Yes/No	Additional	Survey (facility)

Table 2c. Indicators of service use

USE OF SERVICES				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
Family planning	Contraceptive prevalence	Rate	Core	Survey
Maternal and perinatal health	Women attended at least four times for antenatal care[o] during pregnancy	Percentage	Core	HIS or Survey (population)
	Pregnant women tested for HIV	Percentage	Core	HIS or Survey (population)
	Pregnant women tested for syphilis	Percentage	Core	HIS or Survey (population)
	Pregnant women tested for anaemia	Percentage	Core	HIS or Survey (population)
	Coverage of tetanus vaccination during pregnancy	Percentage	Core	HIS or Survey (population)
	Births attended by skilled health personnel	Percentage	Core	HIS or Survey (population)
	Births occurred in health facilities	Percentage	Additional	HIS or Survey (population)
	Caesarean sections as percentage of all live births	Percentage	Core	HIS or Survey (population)
	Women receiving postpartum/ post-abortion family planning counselling (as a percentage of women seen)	Percentage	Additional	HIS
	Women breastfeeding at three months postpartum	Percentage	Additional	Survey (population)
STI/RTI and reproductive morbidities	Condom use in last high-risk sex	Percentage	Core	Survey (population)
	Condom use at first sex	Percentage	Additional	Survey (population)
	Pregnant women with positive syphilis test receiving appropriate standard treatment	Percentage	Additional	HIS
	HIV-positive pregnant women receiving complete course of antiretrovirals (ARV) for prevention of mother-to-child transmission of HIV (PMTCT)	Percentage	Core	HIS
	Infants of HIV-positive mothers receiving ARV – for prevention of mother-to-child transmission of HIV – at birth	Percentage	Core	HIS

[o] In the list of 17 reproductive health indicators, antenatal care attendance is defined as “attendance at least once”. The framework revises this indicator as “attendance at least four times”.

USE OF SERVICES (continued)				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
STI/RTI and reproductive morbidities (continued)	Women aged 20–50 years screened for cervical cancer in keeping with national cervical cancer prevention policy	Percentage	Additional	HIS
	Women with vesico-vaginal fistula who received surgical treatment (repair)	Percentage	Extended	Survey (special)
Sexual violence	Number of incidents of sexual violence, including marital rape, reported to law enforcement and/or health professionals in the past five years	Number	Additional	Administrative records (police)
	Reported cases of above incidents resulting in prosecution	Percentage (of total reported cases)	Additional	Administrative records (police)
Sexual health	Adolescents who have received comprehensive sexual and reproductive health education in schools	Percentage	Additional	Survey (population)

Table 2d. Outcome/impact indicators

OUTCOME/IMPACT				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
General	Government budget allocated to health	Percentage	Core	Administrative records
	Government health budget allocated to sexual and reproductive health	Percentage	Core	Administrative records
Family planning	Total fertility rate	Rate	Core	Vital registration/Survey (population)
	Adolescent birth rate (age-specific fertility rate for ages 15–19 years)	Rate	Core	Vital registration/Survey (population)
	Women and men aged 18–24 years who became parents before they were 18 years old	Percentage (women/men)	Additional	Survey (population)
	Births within the last 3 or 5 years of children born after an interval of less than 24 months	Percentage	Additional	Survey (population)
	Sexually active women aged 15–49 years at risk of pregnancy, not pregnant, not on contraception, non lactating, who report trying to become pregnant for two years or more	Rate	Additional	Survey (population)
Maternal and perinatal health	Women of reproductive age (15–49 years) screened for haemoglobin levels who are anaemic	Percentage	Core	HIS
	Maternal mortality ratio (maternal deaths per 100 000 live births)	Ratio	Core	HIS/Survey (population)/ vital registration
	Direct obstetric case fatality rate[p]	Rate	Additional	Survey (facility)
	Prevalence/incidence of obstetric fistula	Rate	Extended	Survey (special)
	Perinatal mortality rate (perinatal deaths per 1000 live births)	Rate	Core	HIS/Survey (population)/ vital registration
	Stillbirth rate (stillbirths per 1000 live births)	Rate	Core	HIS/Survey (population)/ vital registration
	Neonatal mortality rate (neonatal deaths per 1000 live births)	Rate	Core	HIS/Survey (population)/ vital registration
	Live births of low birth weight (less than 2500 g)	Rate	Core	HIS/Survey (population)/ vital registration
	Incidence of neonatal tetanus	Rate	Core	HIS/Administrative records

[p] Number of women dying of direct obstetric complications during a specific time period among women with direct obstetric complications (direct obstetric complications include haemorrhage, hypertensive disorders, abortion, sepsis, obstructed labour, ectopic pregnancy, embolisms and anaesthesia related).

OUTCOME/IMPACT (continued)				
Sexual and reproductive health area	**Indicator**	**Type of measure**	**Type of indicator**	**Source of data**
Eliminating unsafe abortion	Obstetric and gynaecological admissions owing to abortion	Percentage	Core	HIS
	Hospitalization rate for unsafe abortion per 1000 women	Rate	Additional	HIS
	Abortions per 1000 live births	Ratio	Core	HIS/Survey (population)
	Maternal deaths attributed to abortion	Percentage	Core	HIS/Survey (special)/vital registration
STI/RTI	Pregnant women aged 15–24 years attending antenatal clinics whose blood tested positive for syphilis[q]	Percentage	Core	HIS
	Pregnant women aged 15–24 years attending antenatal clinics whose blood tested positive for HIV[q]	Percentage	Core	HIS/Survey (population)
	Men aged 15–49 years reporting at least one episode of urethritis in last 12 months	Percentage	Additional	HIS/Survey (population)
Sexual health	Women reporting to have undergone FGM	Percentage	Extended	Survey/HIS
	Adolescent birth rate[r]	Rate	Core	Vital registration Survey Vital registration (population)
	Adolescents who have ever had sex[s]	Percentage	Additional	Survey (population)
	Sexually initiated adolescents who used contraception at first/last sex[s]	Percentage	Additional	Survey (population)
	Sexually active, unmarried adolescents who consistently use condoms[s]	Percentage	Additional	Survey (population)
	Men and women (aged 15–24 years) who have had sex before age 15 years	Percentage	Additional	Survey (population)

[q] Cross-referenced with maternal/perinatal health indicators.

[r] Cross-referenced with family planning indicators.

[s] Sex-disaggregated.

Table 3. Areas in which further development of indicators is needed

Area	Suggestions/gaps
Family planning	Cost of services Need to determine an indicator of “acceptability”
Maternal/perinatal health	Formulation of caesarean section as a policy issue (to address over-use) Institutional birth for high-risk pregnancies Skilled birth attendant versus institutional delivery – according to the country context Costs of institutional delivery Infection control in maternities (quality)
STI/RTI and reproductive morbidities	Urethritis indicator – examine other outcomes, e.g. genital ulcer disease Infertility – primary versus secondary – may need reformulation according to WHO guidelines Behavioural indicators that lead to STI Quality of care Indicators for vulnerable groups (men having sex with men, commercial sex workers) Utilization of alternate sources for STI treatment, e.g. pharmacies – needs formulation
Sexual health/healthy sexuality	Healthy sexuality/indicator of sexual satisfaction Linkages with women’s empowerment (MDG 3) (as determinants) Sexual dysfunction Access and utilization by vulnerable groups, especially men who have sex with men and commercial sex workers
Adolescent sexual and reproductive health	Beliefs (among adolescents) of the need for preventive services Privacy, confidentiality, informed consent in service delivery Client satisfaction
Sexual violence	Sexual violence outcome measure (to be determined) – concern: intercultural differences in perceptions of sexual violence Trafficking in girls
Female genital mutilation	Non-medical service points, social support services, training of police, etc. Service needs for female genital mutilation

2.2 Discussion and recommendations

The indicators recommended by this consultation were designed to complement and expand upon the 17 reproductive health indicators which had been identified earlier.[24] This approach involved the areas of sexual and reproductive health that were not considered within that earlier context, as well as the broader factors influencing sexual and reproductive well-being. Among the recommendations concerning issues which should be considered in facilitating the implementation of the framework in country programmes are the following.

PRINCIPLES

- The framework developed by the consultation will be useful for diagnosing sexual and reproductive health issues at the country level. The availability of population-based surveys for some indicators presents a good opportunity, but survey data may not be useful at the subnational or service-delivery level. Service providers should be trained to collect and use data. Since it may not be possible to survey all health facilities, a sampling of health facilities may provide high-quality data to inform programme development or interventions.
- Not all indicators (additional or extended) are applicable to every country situation; each country would need to select its additional and extended indicators from among those suggested here, based on their sexual and reproductive health issues and needs.
- National-level indicators allow countries to assess their progress towards the stated goal of universal access and the interim targets. Decision-making on interventions for achieving universal access, however, necessitates understanding variations in indicators among populations; therefore, it is crucial to be able to interpret data at local levels and for subpopulations. At a minimum, and as relevant, data collection processes should maintain the capacity to access and report information disaggregated by age, sex, geography, and ethnicity.
- From a policy perspective, it is important to consider the extent of inequities and their relative importance. These considerations include the extent of the differences in utilization; the size of the groups affected; whether multiple inequities exist in a group; and the impact of these inequities upon health status.

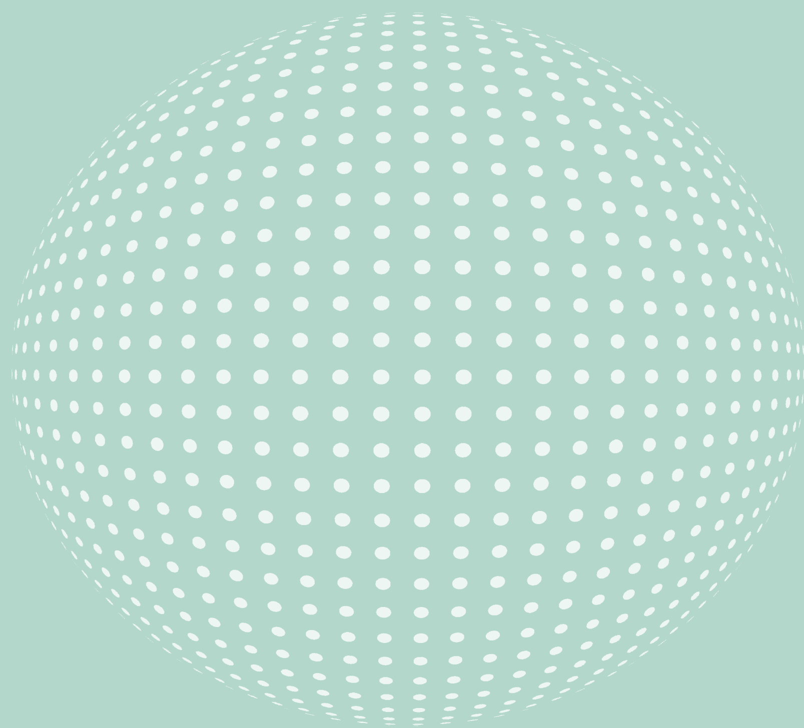
CONSTRAINTS

- At the national level, monitoring and evaluation may be constrained by the level of investment in the development of health information systems. The capacity to generate or analyse data is usually limited.
- A wide range of vertical programmes may result in fragmented monitoring and evaluation processes within countries, as the limited capacity of health information systems tends to respond as a priority to donor demands for accountability.
- The tension between the demand for health information to serve the needs of communities, facilities, and health districts/regions, and the demand for meeting global data needs, may limit the use of information for local decision-making.
- A wealth of data from health facilities is already being collected, albeit usually without evaluating its completeness and quality. This shortcoming leads some users to distrust and therefore to underutilize the data at all levels, including to inform policy-making.
- In many countries, data are not collected from the private sector, thereby underestimating health-care access/use information for a considerable proportion of the population.
- Information on the social determinants of sexual and reproductive health – such as poverty, mobility, and gender inequality – is often not available.
- While some indicators will be available routinely from countries which have vital registration and other health information systems, most indicators for monitoring universal access to sexual and

reproductive health will require population-based surveys. However, most countries will not be able to conduct these surveys regularly. For countries which are part of the Demographic and Health Surveys (DHS) system, linkages are needed to integrate the new indicators (or the revised definitions of existing indicators) to ensure that DHS can provide the required information. Alignment of measurement between survey programmes (e.g. DHS, the Multiple Indicator Cluster Surveys of UNICEF, and national surveys) needs to be improved. A longer-term solution will involve strengthening health information systems in developing countries. In this context, liaison can also be provided with initiatives such as the Health Metrics Network.

WAY FORWARD

- Countries need to be supported in developing their technical capacity to triangulate multiple streams of information, in order to identify and develop programmes which address the service gaps indicated by the information.
- To monitor progress towards achievement of universal access (to sexual and reproductive health), countries should set targets for key interventions and track their implementation through routine monitoring and evaluation.
- Commitment of countries is articulated through their signing up to pursue international development goals related to reproductive health. These goals include the MDGs; regional initiatives (such as those of the WHO Regional Office for Africa, the Reproductive health indicators in the European Union (REPROSTAT) project, and the Pan-American Health Organization) which support these goals; the many consultative exercises which discuss the concept of universal access and set targets; and a wealth of international experience in working with some of the indicators by many stakeholders. This approach will facilitate the implementation of the monitoring framework presented in this document.
- Efforts are needed to ensure data quality and comparability among countries, by their agreeing to clear guidelines for data collection, analysis, and reporting. These efforts are needed because comparability of data across countries can be difficult and complex when systems are different. This need applies to both developed as well as developing countries.
- Feasibility studies should be conducted in two or three countries, to assess the set of proposed indicators. Research evidence will also be required to assess the relationship between process and outcome indicators. Research findings must be disseminated and translated into programme design and management.
- The consultation recommended that a formal reference group be established, concerning sexual and reproductive health indicators and indicators concerning the policy and programme linkages of sexual and reproductive health to other health services. The purpose of this group would be to monitor progress in the development and use of the indicators, and to provide ongoing technical inputs for national, regional, and global applications.



3. Potential indicators on linkages between sexual and reproductive health and HIV/AIDS

3.1 Background and rationale

Recent developments have created an environment for exploring the synergies between sexual and reproductive health and HIV/AIDS programmes. These developments have included the *Glion call to action and New York call to commitment* to strengthen linkages between sexual and reproductive health and HIV/AIDS (2004)[25,26] and the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) *Political Declaration* (2006),[27] which emphasized "the need to strengthen policy and programme linkages and coordination between HIV/AIDS and sexual and reproductive health". It is expected that the outcomes of linked sexual and reproductive health services will be greater than the outcomes of individual services.

The rationale for building linkages or integration includes the reality that sexual and reproductive health and HIV/AIDS programmes both serve the same target populations (sexually active men, women, and young people). Moreover, both of these types of programmes promote safe and responsible sexual behaviour, and have the potential to increase dual protection and condom use and a coordinated response to sexual and reproductive health.

Linked approaches would reduce mother-to-child-transmission (MTCT) of HIV and the stigma associated with HIV/AIDS, and would minimize missed opportunities to increase access and coverage. The potential for greater efficiency would yield cost savings, eliminate duplication, and promote coordination. Synergies would likely have increased impact on prevention. Therefore, the overall objective would be to improve access to and accelerate progress on HIV prevention, treatment, and care, as well as sexual and reproductive health, through fostering linkages or integration.

This chapter discusses the development of potential indicators that could be used in monitoring global calls to strengthen linkages as well as national efforts in realizing them.

Box 3. Operational definitions

- **Integration**: integration of services which emerged from ICPD based on the need to offer comprehensive services that meet several needs simultaneously.
- **Linkages**: linkages emerged to reflect alternative ways of combining services, including creating opportunities for systematic referrals within programmes.
- **Synergies**: implies that outcomes of integrated or linked services are greater than the outcomes of individual services.

3.2 Potential indicators

Indicators at the **policy level** could include:

- existence of (or number of countries that have)[a] a national sexual and reproductive health strategy that includes HIV prevention, care, and support;
- existence of (or number of countries that have) [a] a national behavioural change strategy for HIV prevention and care within sexual and reproductive health policies and programmes;
- number of service delivery sites per 500 000 population offering sexual and reproductive health services (including HIV prevention, care, and support) as part of essential basic health care;
- (number of) [a] countries incorporating sexual and reproductive health and HIV prevention within late primary and secondary education curricula;
- proportion of the health-care budget allocated to essential sexual and reproductive services within HIV services, and proportion allocated to HIV prevention and care within sexual and reproductive services; and
- existence of training materials and curricula on sexual and reproductive health/HIV linkages at the programme and service-delivery levels, as part of pre- and in-service training.

It would also be useful to identify **behavioural** indicators, such as:

- the proportion of HIV-discordant couples using condoms for the prevention of partner infection; and
- the proportion of couples (non-formal and formal relationships) who report using condoms for HIV prevention.

[a] At aggregate level.

A range of potential indicators that could be used to assess linkages at the **service delivery level** are presented in Annex 3. Table 4 presents selected indicators within the context of the dimensions of the framework described in Chapter 2, classified according to different components of service delivery.

3.3 Discussion and recommendations

- Linkages or integration of sexual and reproductive health with HIV prevention, treatment, and care services would provide opportunities for better outcomes (due to same target population, potential to increase dual protection and condom use, elimination of duplication, and promotion of efficiency, among other factors).
- Stakeholder assessments are needed to determine which services are present and to identify bottlenecks, so that lessons learnt can guide policy for comprehensive care. In some instances, existing services will need to be strengthened to provide complementary services. In other situations, systematic referrals will need to be organized.
- Other indicators to address behavioural aspects of linkages should be included.
- Some indicators are new, and need to be field-tested.
- At the application level, it was acknowledged that it may be challenging to link services when donor funding encourages vertical programmes.

Table 4. Indicators of linkages between sexual and reproductive health and HIV/AIDS programmes

Type of indicators	Suggested indicators of linkage
Policy	Number of countries that have developed and implemented a national behavioural change strategy for HIV prevention and care within sexual and reproductive health policies and programmes Number of countries with a national sexual and reproductive health strategy that includes HIV prevention, care, and support
Social determinants	Proportion of HIV-discordant couples using condoms and treatment for prevention of partner infection Proportion of primary health care (PHC) service delivery points that are (a) adolescent-friendly, and (b) promote male involvement in sexual and reproductive health
Access: service availability	Number of sites per 500 000 population offering sexual and reproductive health services – including HIV prevention, care, and support – as part of essential basic health care Proportion of PHC service delivery points that offer (a) three or more, or (b) six or more, of the following sexual and reproductive health and HIV/AIDS services: family planning, antenatal care, postnatal care, STI services, voluntary counselling and testing for HIV, provider-initiated testing and counselling, PMTCT, ARV, cervical cancer screening, and prostate cancer screening
Access: information	Number of countries incorporating sexual and reproductive health and HIV prevention within late primary and secondary education curricula Proportion of PHC service delivery points that offer (a) voluntary counselling and testing for HIV, including follow-up of partners for treatment and counselling, and (b) behavioural change communication
Use of services	Proportion of HIV-positive antenatal women receiving (a) appropriate ARV, and (b) PMTCT services at delivery Proportion of partners of HIV-positive or syphilis-positive antenatal women receiving appropriate treatment and counselling
Outcome/impact [b]	Prevalence of HIV among antenatal clinic attendees Incidence of HIV transmission from women with HIV to their infants

[b] Although these types of indicators were not discussed at the meeting, they are included as examples of potential measures for improved health status.

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Annex 1. Application of globally defined indicators to local contexts—case studies

A. Experience from rural China[a]

In 1997, the Ministry of Health of China reported, for rural areas, maternal mortality ratio of 80.4/100 000 live births and an infant mortality rate of 37.7/1000 live births – both measures significantly higher than those in urban areas. In their effort to eliminate this disparity, rural health workers are hampered by the lack of practical and measurable reproductive health indicators that may underlie mortality and morbidity data.

The WHO list of 17 reproductive health indicators could prove useful in filling this gap, but efforts to operationalize them have posed significant challenges. Rural health workers need more practical, feasible, and measurable indicators, which are designed to guide programmatic development both at the local level (so that interventions and services are most relevant) and at the national level (so that national targets and policies are set). A study was undertaken to develop and field-test community-based reproductive health indicators for rural areas, as a means of addressing this problem.

Two participatory techniques, the nominal group process and the Delphi survey methodology were employed. First, the nominal group process was used as a community-based tool by grassroots reproductive health workers to generate an extensive list of potential indicators. Subsequently, the Delphi method was used as a consensus-building process among national and international experts to prioritize these community-based indicators. The major criteria were practicality, feasibility, and measurability within China's rural areas.

NOMINAL GROUP

Reproductive health researchers, practitioners, and administrators, as well as maternal and child health managers, contributed to the development of the reproductive health indicators. The group focused on the biomedical, economic, and sociopolitical factors that affect reproductive health.

The participants, including 32 women and 20 men, were divided into eight working groups. Together, they generated 180 individual indicators covering the following seven areas:

- fertility and fertility regulation (26 items);
- pregnancy and delivery (27 items);
- child health (7 items);
- sexual health (25 items);
- governmental action/policy (15 items);
- women's status – development and empowerment (37 items); and
- rural community development (43 items).

Of these 180 items, 18 were eliminated as impractical or unfeasible (e.g. health workers' attitudes, ethnic minorities' cultural conditions). Others were eliminated because they received low ranking by nominal group participants. There remained 126 high-consensus items, which were reorganized for the Delphi survey.

DELPHI SURVEY

The Delphi survey was self-administered by mail, thereby enabling the participation of people spread across a large geographical area and including both native Chinese and international experts (in the areas of public health, health care, social science, and women's studies). To varying degrees, all had rural experience in developing nations.

The experts were asked to consider whether the indicators were practical, feasible, and measurable for rural areas of developing countries, and to rank the indicators as "Important", "Somewhat important", "Not at all important", "Uncertain as to importance", or "Unfamiliar with concept". The mailed Delphi survey was administered to 63 Chinese experts and 60 international experts. Of these two groups of experts, 60

[a] Detailed information can be found in: Wang CC, Wang Y, Zhang K, Fang J, Liu W, Luo S, et al. Reproductive health indicators for China's rural areas. *Social Science and Medicine* 2003; 57:217-25.

and 43, respectively, completed the first round. Only those responding to the first round were mailed the second round (Delphi II). Of these first-round respondents, 57 Chinese and 43 international experts completed the second survey.

For Delphi I, all items considered "Important" by a simple majority of experts were included in Delphi II (n=50/126). Because six of the 17 WHO indicators were not generated by the nominal group process, they were omitted from Delphi I but included in the Delphi II questionnaire. This questionnaire further included 17 new indicators proposed by the surveyed experts. In total, 73 potential indicators were circulated at this stage.

For Delphi II, items ranked "Important" received a score of two, "Somewhat important" a score of one, and "Not at all important," zero. The community-based reproductive health indicators that received the highest mean scores were selected. Box A1.1 highlights eight variables which are considered determinants for measuring achievements in improving reproductive health. The final list of 21 indicators is presented in Box A1.2. Six indicators are identical to those on the WHO list, while two others are comparable.

The China case demonstrates effective strategies to achieve community involvement in the development of appropriate indicators. It also highlights how local contexts determine priorities in the community. The process included local and international experts, who are important in ensuring competencies and validating the final selection of indicators.

Box A1.1 Determinants for measuring achievements in improving reproductive health

- Proportion of villages with basic essential health care available
- Proportion of the local government's budget allocated to reproductive health matters
- Proportion of villages with safe potable water
- Proportion of villages with transportation from village to town/city
- Proportion of villages with electricity
- Existence of organization responsible for women's crisis intervention
- Proportion of women who share in decisions about family expenditures
- Proportion of reproductive-age women who receive tetanus vaccine

Box A1.2 Community-based reproductive health indicators for China's rural areas and comparison with 17 WHO reproductive health indicators

Reproductive health indicators comparable to WHO indicators (Number on WHO list)	NEW reproductive health indicators for China's rural areas
• Total fertility rate (1) • Contraceptive prevalence rate (2) • Maternal mortality ratio (3) • Percentage of women attended at least once during pregnancy by skilled health personnel (4) • Proportion of villages with access to formally trained midwife (similar to 5) • Proportion of pregnant women who receive regular prenatal care (similar to 6) • Perinatal mortality rate (8) • HIV prevalence among reproductive-age women (16)	• Proportion of women with legal right to decide whether to bear children • Proportion of women with freedom to choose which type of contraception to use • Induced abortion rate • Proportion of women who have reproductive tract infections • Proportion of women with prenatal self-care knowledge • Proportion of deliveries under antiseptic conditions • Incidence of delivery complications • Proportion of women with high-risk pregnancy delivering at hospital • Neonatal mortality rate • Proportion of children aged 0–5 years immunized • Child mortality rate below age 5 years (by age, sex) • Proportion of villages with emergency obstetric care • Number of health-care personnel per 100 000 population who can diagnose and treat common reproductive tract infectious diseases

B. Experience from the European Union (the REPROSTAT project)[b]

Under the auspices of the European Union (EU) health monitoring programme, a project was undertaken to develop a comprehensive set of reproductive health indicators for EU member states. REPROSTAT sought to create a common core of indicators which would allow health professionals, policy-makers, and researchers to evaluate reproductive health and associated health care within the EU. Such a monitoring system was expected to provide early-warning signals when health prevention and care are not effective, and provide cues for further action and research. As not all aspects could be covered in a single set of indicators, there were liaisons with other groups such as PERISTAT (a similar project for developing a core set of perinatal health indicators) and cancer registries, among others. The project ran from 2001 to 2003.

The initial set of indicators created by REPROSTAT involved assessing the WHO list of global reproductive health indicators and adding others to fulfil the aims of the project. The selected indicators were intended to identify needs for improving the sexual and reproductive health of EU citizens; contribute to regular monitoring and evaluation of quality, effectiveness, and progress of reproductive health programmes within Europe; and enable comparison of reproductive health data both within and among EU member states. A final list of 13 core indicators was completed in 2002 (see Box A1.3). Additionally, four other indicators were recommended, of which the last three required further development (Box A1.4).

[b]Detailed information can be found in: Temmerman M, Foster LB, Hannaford P, Cattaneo A, Olsen J, Bloemenkamp KW, et al. Reproductive health indicators in the European Union: the REPROSTAT project. *European Journal of Obstetrics Gynaecology and Reproductive Biology* 2006; 126:3-10.

Box A1.3 Core indicators

- Acceptance of HIV testing among pregnant women
- HIV seroprevalence among HIV-tested pregnant women (all ages)
- Prevalence of *Chlamydia*
- Reported condom use at last high-risk sexual contact
- Median age at first intercourse
- Proportion of contraceptive use at first intercourse
- Age-specific birth rates in teenagers
- Maternal age at first childbirth
- Total fertility rate
- Proportion of women trying to get pregnant for one year or more
- Proportion of deliveries associated with assisted reproductive technology
- Frequency of induced abortions
- Proportion of women aged 50 or above who have had a hysterectomy.

Box A1.4 Additional indicators

- Proportion of women with urinary incontinence
- Erectile dysfunction
- Sexual health
- Violence during pregnancy

The suggested indicators were based on data that already exist in many countries as part of routinely collected information, while other countries would rely on information gathered from specific surveys. The indicators were field-tested in Germany and Italy and the reviewers concluded that “variability in the data collection methods and availability of information between countries remains a challenge.” While some member states have comprehensive health information systems, including national surveys, methods of data collection differ and will need to be harmonized to ensure comparability of data.

This case highlights the challenges of using different data collection systems in different countries in the same region. Comparability of data across countries was difficult and complex when systems were different. Priority issues in sexual and reproductive health and related health problems were also quite different in developed and developing countries, and even among developed countries.

Assisted reproduction and infertility were identified as critical issues in some countries, while ageing populations and the health problems associated with this phenomenon may be priorities in other countries (such as in Japan). While HIV/AIDS is a major crisis in sub-Saharan Africa, it remains a lower priority in other developing countries. It is important to consider how tools will be adapted at the country level and to recognize the need to ensure that there are the capacity and the resources to support data collection at national and local levels. Support for analysis of data and their application will be necessary for all countries, both developed and developing.

Annex 2. Delivering reproductive health services in developing countries: Enabling factors and constraints – the case of the Congo

SETTING

The Congo is a highly in-debt country, with a high burden of poverty (70% of the population live on less than US$ 1/day). Sixty per cent of the population of four million live in urban settings. HIV prevalence is 6% and life expectancy at birth is 49.6 years for males and 53.7 years among females. The crude birth rate is 40/1000, with 55% of Congolese women having their first pregnancy by 20 years of age.

Low contraceptive prevalence (13%) and high fertility [total fertility rate (TFR)=4.8] contribute to very high maternal mortality levels (maternal mortality ratio 781/100 000 live births) in spite of high reported rates of skilled attendant at delivery (86% overall, 95% urban, 72% rural), with 82% of births occurring in a health facility and 75% of women having at least four antenatal visits. The caesarean section rate is only 3.2%, and the neonatal mortality rate is 33/1000 live births. Abortion is only allowed to save the life of the woman, with 36% to 41% of these procedures conducted in health facilities. Maternal deaths are due to haemorrhage (40%), post-abortion sepsis (19%), puerperal sepsis (13%), eclampsia (11%), malaria (10%), and other causes (7%).

OPPORTUNITIES AND CONSTRAINTS

Opportunities for improving reproductive health include the return of peace after a decade of armed conflicts. This peace has reduced security concerns and improved access, especially among urban residents, and has paved the way for rehabilitation of health facilities. President Sassou-Nguesso's Chairmanship of the African Union in 2006 led to the engagement of the African Union in a process of accelerating progress towards the MDGs. This process has opened up funding from various sources, including oil income.

The first national Safe Motherhood Day was held in 2005, in collaboration with the World Bank, WHO, UNFPA, UNICEF, and the EU (health thematic group). The collaboration advocated a minimum package of care as part of the "road map" on maternal and neonatal mortality reduction, to be launched in June 2007. A national health-sector plan is being developed, using DHS data for 2005 as baseline information to guide planning, advocacy, and measurement of progress. The World Bank has funded a PMTCT project, and the EU has funded a health sector support project. There has also been access to emergency funds for emergency obstetric care in 2006 and 2007.

Constraints include insufficient national investment in basic social services and economic restructuring. Limited geographical access in rural areas (especially in the north and west), which limited the presence of international nongovernmental organizations (NGOs), low capacities of local NGOs, and a small private sector (except for some missions and pharmacies) are among the significant gaps in benefiting from health care.

The human-resource capacity in the health sector is very weak. The existing staff is poorly paid and demotivated, while new staff members are hired without respect to criteria, contributing to poor-quality health services and providers' capacities. These conditions are exacerbated by unavailability of supplies at health facilities. Health services are provided at a high price for the majority poor population, due to required co-financing and graft.

STRATEGIC FRAMEWORK

The strategic principles and approaches underlying the road map include agreeing to one leader (the Ministry of Health), one national plan, and one monitoring and evaluation system for maternal and child survival which integrates the road map for maternal and neonatal health into the national health development plan and regional strategy. This process requires

agreement among all stakeholders on a minimum package of care and the use of evidence-based tools. Partnerships with the United Nations and bi/multilateral agencies, and division of responsibilities (geographically, technically, and with respect to funding) are intended to increase involvement of the community and the private sector in planning and provision of services.

Over the short term (during 2007), the focus will be on family planning, national immunization campaigns, and developing the road map for MDG 4 and MDG 5. Over the medium term (from 2007 to 2009), efforts will be directed towards improving urban-district health-care services – with particular attention to improving quality, coverage, and access to essential obstetrical and neonatal care; promotion of essential community practices; and access to and quality of essential commodities. Over the long term (from 2009 to 2013), the focus will shift to the revitalization of rural health districts, with the development of a minimum package of care for rural areas, building outreach and mobile teams to serve dispersed populations, and promoting essential household practices and access to essential commodities.

SUMMARY AND DISCUSSION

The Congo, a low-income country with 70% of the population living on less than US$ 1 a day, is developing a plan of action to improve services to mothers and infants in response to their high maternal mortality ratio (781 maternal deaths per 100 000 live births, with haemorrhage accounting for 40% of deaths).

The discussion concerning this high maternal mortality, in a country where the percentage of births by skilled birth attendant is high (86%), highlighted the issue of the sensitivity of the indicator “delivery with skilled birth attendant” to accurately reflect progress in maternal mortality-risk reduction. This discussion pointed to the need to assist countries to develop the skills to interpret this information on the basis of wider sexual and reproductive health issues. These issues include access to comprehensive emergency obstetric care (with a caesarean section rate of 3%) and risk factors such as high parity (with a TFR of 4.8) and low contraceptive prevalence (at 13%, of which 10% was condom use), to understand and address the sources of maternal mortality risk.

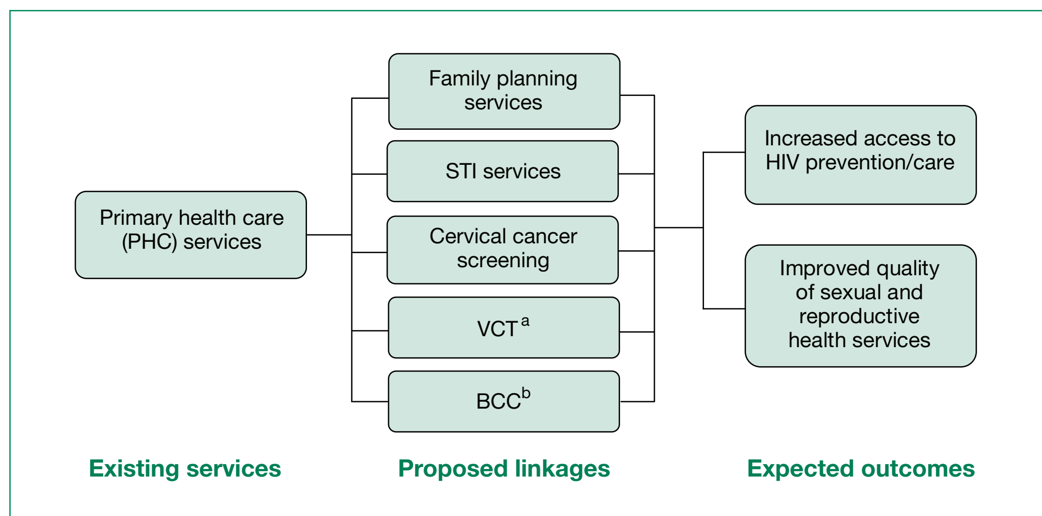
Annex 3. Potential indicators of linkages between sexual and reproductive health and HIV at the service-delivery level

The following service-specific measures are designed to monitor service-specific linkages, considering the components of services as exemplified in Figures A3.1–A3.3.

For **primary health-care** services (Figure A3.1), potential indicators include:

- proportion of primary health-care services offering family planning, including condoms and HIV counselling and testing, care, or referral;
- proportion of primary health-care services offering STI counselling, diagnosis, treatment, or referral;
- proportion of primary health-care services promoting/providing behavioural change communication;
- proportion of primary health-care service users receiving sexual and reproductive health services, including HIV counselling and testing, care, or referral;
- proportion of primary health-care providers trained in sexual and reproductive health, including HIV counselling and care.

Figure A3.1 Primary health-care services

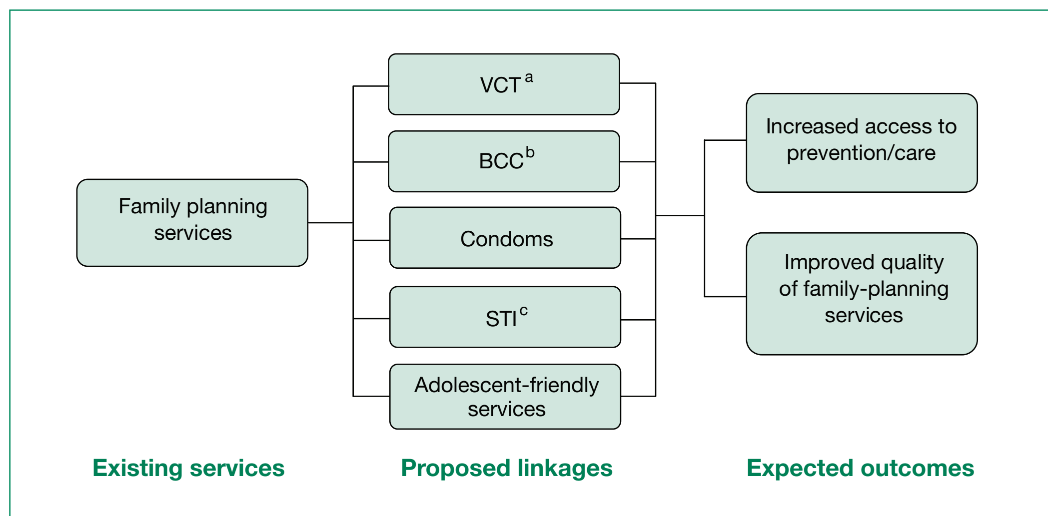


[a] Voluntary counselling and testing of HIV.
[b] Behavioural change communication.

For **family planning** services (Figure A3.2), indicators could include:

- proportion of family planning service sites offering HIV counselling and testing, care, or referral;
- proportion of family planning service-site users counselled on HIV and tested, treated, or referred;
- proportion of people using any family planning method who accept to use a condom (for family planning or prevention of STI or HIV);
- proportion of family planning service-site users receiving BCC;
- proportion of family planning service-site users counselled, referred, or treated for STI;
- proportion of family planning service-site users counselled, referred, or treated for infertility;
- proportion of HIV-positive women with an unmet need for family planning.

Figure A3.2 Family planning services



[a] Voluntary counselling and testing of HIV. [b] Behavioural change communication. [c] Sexually transmitted infection.

For **maternal health** services during pregnancy and delivery, indicators could include:

- proportion of antenatal care and delivery services promoting the four-pronged approach[1] to the prevention of mother-to-child HIV transmission (PMTCT);
- proportion of users of antenatal care and delivery services counselled and treated for STIs, including following up the male partner for treatment and counselling.

Postpartum maternal health services would include indicators that measure:

- proportion of postpartum care service sites that counsel about and offer family planning methods, including condoms;
- proportion of users of postpartum care services counselled on HIV and referred for testing and treatment.

Postabortion care and abortion services could include indicators such as:

- proportion of women receiving postabortion care who are counselled and offered a family planning method and condoms;
- proportion of women receiving postabortion care who are counselled and referred for STI/HIV diagnosis, testing, and treatment.

Programmes aimed at prevention and control of **STI/RTI** would include indicators of:

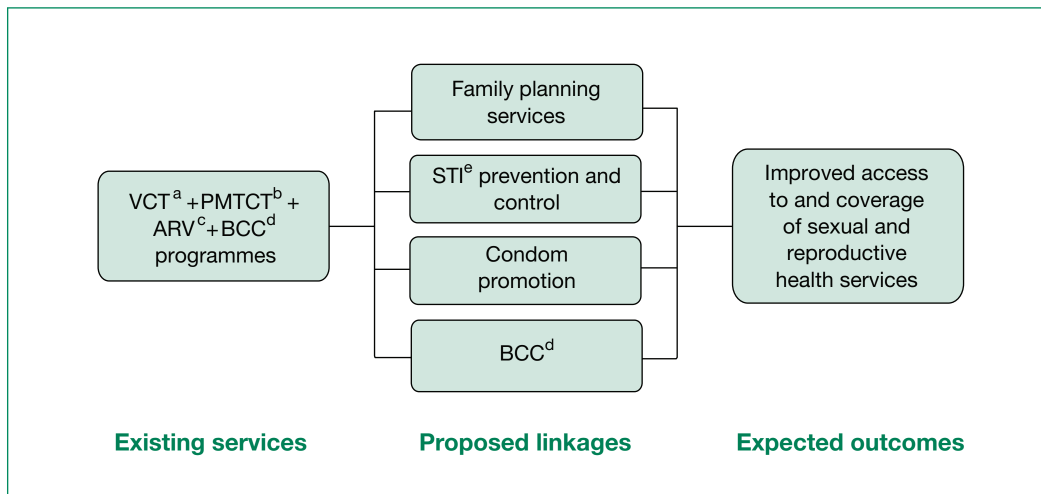
- proportion of STI service sites providing counselling and testing for HIV;
- proportion of STI service sites promoting BCC;
- proportion of users of STI control services who are counselled on family planning and offered condoms.

HIV/AIDS prevention, care, and treatment services (Figure A3.3) would measure:

- proportion of HIV/AIDS service-delivery points offering condoms;
- proportion of HIV/AIDS service sites incorporating BCC materials;
- proportion of HIV-positive people offered treatment and counselled on sexual and reproductive health and rights, including family planning;
- proportion of HIV/AIDS service sites offering or referring for STI diagnosis and treatment.

[1] PMTCT programme linkages include (1) primary prevention of HIV infection among women; (2) prevention of unintended pregnancies among women with HIV; (3) prevention of HIV transmission from women with HIV to their infants; and (4) provision of treatment, care, and support to mothers with HIV, their infants and family.

Figure A3.3 HIV/AIDS prevention, care, and treatment services



[a] Voluntary counselling and testing.
[b] Prevention of mother-to-child transmission of HIV.
[c] Antiretroviral treatment.
[d] Behavioural change communication.
[e] Sexually transmitted infection.

Annex 4. Definitions

SEXUAL AND REPRODUCTIVE HEALTH

Sexual and reproductive health has been defined by ICPD as:

> *a state of complete, physical, mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and its function and processes.*

UNIVERSAL ACCESS TO SEXUAL AND REPRODUCTIVE HEALTH

A suggested definition of "universal access to sexual and reproductive health" might be as follows.

The equal ability of all persons according to their need to receive appropriate information, screening, treatment and care in a timely manner, across the reproductive life course, that will ensure their capacity, regardless of age, sex, social class, place of living or ethnicity to:

- decide freely how many and when to have children and to delay or to prevent pregnancy;
- conceive, deliver safely, and raise healthy children, and manage problems of infertility;
- prevent, treat and manage reproductive tract infections and sexually transmitted infections including HIV/AIDS, and other reproductive tract morbidities, such as cancer; and
- enjoy a healthy, safe and satisfying sexual relationship which contributes to the enhancement of life and personal relations.

REPRODUCTIVE HEALTH CARE IN THE CONTEXT OF PRIMARY HEALTH CARE IN ICPD

At the primary-care level, the following reproductive health services should be available. These services should be designed to meet the needs of women but should also be accessible to men (including adolescents and older persons), with referral as required. These services should meet the following needs:

- family-planning counselling, information, education, communication, and services;
- education and services for antenatal care, safe delivery, and postnatal care, especially breastfeeding and infant and women's health care;
- prevention and appropriate treatment of infertility;
- prevention of unsafe abortion and management of its consequences;
- screening and treatment of reproductive-tract infections, sexually transmitted infections, and other reproductive health conditions, such as reproductive cancers;
- information, education, and counselling (as appropriate) concerning human sexuality, reproductive health, and responsible parenthood; and
- active discouragement of harmful practices such as female genital mutilation, including prevention and mitigation of sexual violence.

Annex 5. Agenda of the meeting

Tuesday, 13 March 2007

Time	Description	Facilitator
09: 00 – 09: 30	Welcome/introductory remarks	M. Mbizvo H. Belhadj
09: 30 – 10: 00	Background Objectives/expected outcomes	M. Mbizvo L. Say
10: 00 – 10: 30	"Universal access to reproductive health" in the context of Millennium Development Goals	S. Bernstein
11: 00 – 12: 00	International goals/indicators – country context: issues to consider Discussion and recommendations	V. Li M. Temmerman
	Lunch	
14: 00 – 15: 00	Sexual and reproductive health and health care (as in ICPD) Discussion and recommendations	L. Say
15: 00 – 15: 30	Social and contextual determinants of sexual and reproductive health Discussion and recommendations	S. Malarcher
16: 00 – 17: 30	Health care: access/universal access/equitable access Discussion and recommendations	M. Goddard

Wednesday, 14 March 2007

Time	Description	
09: 00 – 09: 30	Summary of previous day – a proposed structure for a framework to measure access to sexual and reproductive health Arrangements for working groups	Facilitator
09: 30 – 12: 00	Working groups	All
	Lunch	
14: 00 – 15: 30	Report from working groups Discussion and recommendations	All
16: 00 – 17: 30	Report from working groups Discussion and recommendations	All

Thursday, 15 March 2007

Time	Description	
09: 00 – 09: 30	Summary of previous day – a framework to measure access to sexual and reproductive health Discussion and recommendations	Facilitator
09: 30 – 10: 30	Delivering reproductive health services in developing countries (example of the Congo) – enabling factors and constraints Discussion and recommendations	R. Dackam-Ngatchou
11: 00 – 11: 30	Application to country programmes – issues to consider Discussion and recommendations	Y. Gebre
11: 30 – 12: 00	Guidance/support for countries to monitor (and to plan interventions to accelerate) achievement of universal access Discussion and recommendations	Facilitator
	Lunch	
14: 00 – 15: 00	Sexual and reproductive health and HIV linkages – possible indicators Discussion and recommendations	M. Mbizvo
15: 00 – 16: 00	Next steps Closing remarks	All

Annex 6. List of participants

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